

South Lake Union Height and Density Alternatives EIS



CITY INVESTORS LLC

May 15, 2014

Mr. Garry Papers
Land Use Planner
Seattle Department of Planning and Development
700 Fifth Ave., Suite 2000
PO Box 34019
Seattle, WA 98124-4019

RE: Project # 3017320 and 3017321 – SLU Block 48 – SEPA Process

Dear Garry:

As verified at the project's pre-submittal conference, an EIS Addendum will be prepared for this project. It would be an Addendum to the ***South Lake Union Height and Density Alternatives*** EIS that the City prepared in 2012.

An EIS Addendum is the appropriate SEPA document for this project because the proposed development is consistent with the scope of development that was envisioned for this site in the ***South Lake Union Height and Density Alternatives*** EIS. The Addendum will add greater site-specific information to the analysis contained in that EIS.

You requested that a draft Table of Contents for the Addendum be provided as part of the Master Use Permit application materials. In response, we propose that the EIS Addendum for this project include the following format and analyses:

- ***Introductory Information***
 - **Cover/Title Page;**
 - **Preface – Project Overview** – early explanation of what EIS document this Addendum complements and a sentence or two overview of the project; and
 - **Fact Sheet** – concise project-related administrative information (e.g., project overview, contact people, list of permits, etc.), table of contents, list of tables, etc.

- ***Section I -- Project Description*** – This section will include graphics and text and consist of the following:
 - project location;
 - background information;
 - existing site characteristics;
 - description of the *Proposed Action* and an alternative – In addition to the *Proposed Action which involves a subterranean alley vacation, the Addendum*

will evaluate a project without an alley vacation – the **No Alley Vacation Alternative**. For the *Proposed Action* and the *No Alley Vacation Alternative*, the following information will be presented:

- proposed building functions/uses (e.g., office, residential, retail, parking, etc.);
- proposed public benefit amenities for the alley vacation;
- parking/loading and vehicular site access;
- project design/landscaping;
- use and building relocation/demolition that will be necessary; and
- proposed development schedule.

• **Section II – Comparison of Environmental Impacts and Mitigation Measures --**

While the City's ***South Lake Union Height and Density Alternatives*** EIS was a full scope EIS, it is proposed that the scope of this EIS Addendum be limited to the key environmental issues noted below. It is proposed that each environmental parameter noted below include the following:

- o a summary of the environmental impacts that are noted in the ***South Lake Union Height and Density Alternatives*** EIS for the environmental parameter, as it relates to the project site;
 - o analysis of probable environmental impacts associated with the *Proposed Action* and the *No Alley Vacation Alternative* with a discussion comparing their environmental impacts with those identified in the EIS;
 - o potential mitigation measures; and
 - o significant unavoidable adverse impacts.
- **Greenhouse Gas Emission Analysis** – Greenhouse Gas Emissions were assessed in the City's ***South Lake Union Height and Density Alternatives*** EIS. It is proposed that we include a background discussion of GHG, together with emission estimates of GHG based on the new construction that is proposed. EA will compile this GHG analysis for use as part of the EIS Addendum and as a required element of the MUP submittal package.
- **Land Use** – Land Use was assessed qualitatively in the City's ***South Lake Union Height and Density Alternatives*** EIS. Since the proposed project involves a change of land use on the block, it is proposed that the analysis include a brief discussion regarding the pattern of existing land uses on and surrounding the project site, re-development trends that are occurring in this area of South Lake Union, and an analysis of project consistency with the City's Land Use Code and the City's Alley Vacation Criteria.
- **Aesthetics** – Aesthetics analysis is a significant part of the City's ***South Lake Union Height and Density Alternatives*** EIS. It is proposed that this EIS Addendum supplement the analysis contained in that document by addressing the aesthetic-related issues of urban design and view impacts, as outlined below.

- **Urban Design** -- The basis of the urban design discussion will be information derived from the City's Design Review process, as well as information pertaining to design departures that may be considered for the proposed project.

- **Viewshed** – There are four components to a viewshed analysis for projects in the South Lake Union area; the applicability of each is discussed below.
 1. impacts from a City-designated viewpoint;
 2. impacts to designated views of the Space Needle;
 3. impacts of public views on other City-designated historic Landmarks; and
 4. impacts relative to designated scenic routes.

City-designated Viewpoint -- There are two City-designated public viewpoints that are in the general vicinity of the project site – Bhy Kracke Park and Volunteer Park. It is possible that development associated with the proposed project could be visible from either location. It is proposed that EA take digital photos from each location, coordinate with the architect to determine if the project is visible from either location, and if so, obtain confirmation from the DPD Land Use Planner that these are the correct viewshed images to be depicted. If so, it is proposed that one photosimulation from each location be prepared for inclusion in the EIS Addendum along with the accompanying text. The photosimulations will depict how the view from either viewpoint will change as a result of the proposed project.

Views of the Space Needle -- Seattle's viewshed ordinances protect views of the Space Needle from 10 designated viewpoints. Based on our preliminary analysis, there is one City-designated viewpoint proximate to the site – Volunteer Park. While the proposed project would be within the field of view from this location no impact on views of the Space Needle are expected. However, the fact that there would be no impact is important to show. The photosimulation from Volunteer Park (noted above) will address this requirement.

Views Associated with City Landmarks -- There are no known City-designated Landmarks located within or proximate to the site. Therefore, it is anticipated that no viewshed analysis concerning the impact on nearby Landmarks will be necessary. (And similarly, the Addendum does not need to include an assessment of impacts on Historic Resources.)

Views Associated with Scenic Routes -- View protection from City-designated Scenic Routes will be assessed. In the general vicinity of the project site, there are three designated Scenic Routes: Interstate-5, the Mercer Street off-ramps, and Westlake Ave. Since the project site is adjacent to Westlake Avenue, it is proposed that EA work with the architect to prepare photosimulations just from Westlake Avenue; one looking north along Westlake Avenue from south of Denny Way and another looking south along Westlake Avenue from north of John Street. No photosimulations would be necessary from the two other scenic routes since the project is located approximately 5-6 blocks west of these routes. As described above, EA will take digital photos from each location, obtain confirmation from the DPD Land Use Planner that these are the correct viewshed images to be depicted, and, if so, forward them to the architect for preparation of the photosimulations for inclusion in the EIS Addendum along with the accompanying text. The photosimulations will depict how the view from the scenic route will change as a result of the proposed project.

- **Shadows** -- The nearest public open spaces from the proposed project are Denny Park (located on the block directly west of the site), Lake Union Park (located six blocks north of the site), and Cascade Park/ Playground (and P-Patch), which is located approximately five blocks northeast of the site. For purposes of full disclosure, it is proposed that the architect prepare shadow graphics for inclusion in the EIS Addendum that depict shading that could occur to each park area. EA will prepare the required accompanying text that evaluates shadow impacts, if any, on these public open spaces. The shadow impact analysis will analyze each of the four key days of the solar year (vernal equinox, summer solstice, autumnal equinox and winter solstice) at 8 AM, noon and 5 PM (winter solstice – 9 AM, noon, 4 PM). Color graphics will depict shading at these times caused by existing buildings, as well as shading from the proposed project. Analysis will describe the extent of existing shading that occurs as a result of adjacent buildings and plantings and how the proposed project may contribute to that shading. The importance will be to determine the extent, time of occurrence, duration, and affected area of shading that is anticipated to occur -- if at all -- as a result of the proposed project.
- **Light and Glare** -- The project site is bordered by Westlake Avenue and Denny Way -- both of which are principal arterials that serve as major access routes to and from I-5. In light of that, it is proposed that a reflected solar glare analysis be included as part of this EIS Addendum -- as it relates to vehicular traffic on Westlake Avenue and Denny Way during peak AM and PM traffic periods.

The analysis will evaluate solar glare impacts for each of the four key days of the solar year (vernal equinox, summer solstice, autumnal equinox and winter solstice) at 8 AM and 5 PM¹ (winter solstice – 9 AM, noon, 4 PM). Graphics will depict the extent of glare-related impacts and the accompanying text will describe how reflected solar glare from the proposed project may periodically affect motorists on either street.

- **Transportation/Parking** – Information for this section will be compiled by the transportation consultant and will be incorporated into the EIS Addendum after the draft of the *Transportation Impact Analysis* has been reviewed and approved by DPD.
- **Construction** – It is proposed that a qualitative, construction-related impact analysis be included in this EIS Addendum. The analysis will include: noise, air quality, and transportation/ parking/ access.

Garry – Please let us know if the proposed approach and the environmental parameters that we have outlined in this letter will be acceptable for the SEPA analysis associated with this project.

Thanks!

Sincerely,



Sharon Coleman
Senior Director, Real Estate Development

cc: John Shaw
Rachel Ben Schmuel

¹ during the AM and PM peak traffic times

Draft Environmental Impact Statement

SOUTH LAKE UNION Height and Density Alternatives



City of Seattle
February 2011

Prepared by:
City of Seattle
Department of Planning and Development

DRAFT
ENVIRONMENTAL IMPACT STATEMENT

for the

SOUTH LAKE UNION
HEIGHT AND DENSITY
ALTERNATIVES

City of Seattle
Department of Planning & Development

This Draft Environmental Impact Statement (Draft EIS) considering **South Lake Union Height & Density** alternatives has been prepared in compliance with the State Environmental Policy Act (SEPA) of 1971 (Chapter 43.21C, Revised Code of Washington); the SEPA Rules (Chapter 197-11, Washington Administrative Code); and rules adopted by the City of Seattle implementing SEPA – Seattle’s Environmental Policies and Procedures Code (Chapter 25.05, Seattle Municipal Code). Preparation of this EIS is the responsibility of the City of Seattle. As Lead Agency, the City is responsible for SEPA compliance and based on the scOping process has directed the areas of research and analysis that were undertaken in preparation of this EIS. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action. In its final form – as a Final EIS – it will accompany the *Proposed Action* and will be considered in making final decisions concerning proposed options for **South Lake Union Height & Density**.

Date of Draft EIS Issuance **February 24, 2011**

Dates of Draft EIS Public Meeting: **March 28, 2011**

(Please refer to the City's website

([http://www.seattle.gov/dpd/Planning/South Lake Union/Overview/default.asp](http://www.seattle.gov/dpd/Planning/South_Lake_Union/Overview/default.asp)) or the Fact Sheet of this EIS.)

Date Comments are Due on the Draft EIS..... **April 11, 2011**



City of Seattle

Department of Planning & Development
Diane M. Sugimura, Director

February 24, 2011

Dear Affected Agencies, Organizations and Interested Parties:

Enclosed is the Draft Environmental Impact Statement (Draft EIS) for proposed South Lake Union Height & Density Alternatives in the South Lake Union neighborhood.

Three site alternatives representing varying height and density configurations, as well as geographic locations are evaluated in this Draft EIS, together with a No Action Alternative; the site alternatives include:

- Alternative 1 – Greatest potential increase in height and density;
- Alternative 2 – Moderate potential increase in height and density;
- Alternative 3 – Least amount of potential increase in height and density; and
- Alternative 4 – No Action – current zoning.

The public comment period associated with this Draft EIS is: February 24, 2011 through April 11, 2011.

An open house and public hearing regarding the Draft EIS is scheduled for 5:30 PM March 28, 2011. The open house and public hearing will be held at Unity Church, 200 8th Avenue N, Seattle. Additional information concerning the open house and public hearing is provided on the South Lake Union website http://www.seattle.gov/dpd/Planning/South_Lake_Union/Overview/default.asp and the Fact Sheet in this Draft EIS.

Following the Draft EIS comment period, a Final EIS will be prepared that addresses written comments and public testimony received during the Draft EIS public comment period.

Thank you for your interest in the proposed South Lake Union Height and Density Alternatives. We welcome your comments.

Sincerely,

A handwritten signature in black ink that reads "Diane Sugimura" with the initials "dm" written below it.

Diane Sugimura, Director
City of Seattle Department of Planning and Development

FACT SHEET

Name of Proposal

South Lake Union Height and Density Alternatives

Proponent

City of Seattle

Location

The area represented by this Draft EIS is the South Lake Union neighborhood of downtown Seattle. This is approximately a 340-acre area that is generally bounded by Denny Way on the south, Aurora Avenue N. on the west, Eastlake Avenue E. on the east and Galer Street and E. Nelson Place on the north.

Proposed Alternatives

This Draft EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

- **Alternative 1** – This alternative would allow the greatest increases in height and density relative to the other alternatives. Height and density increases apply both to proposed commercial and residential development. In general, greatest building height would be located along the south boundary of the neighborhood.
- **Alternative 2** – This alternative would allow moderate increases in height and density relative to the three action alternatives. In general, greatest building heights would be located in the southwest portion of the neighborhood.
- **Alternative 3** – This alternative would allow the least amount of height and density increases relative to the three action alternatives. In general, greatest building heights would be allowed in the southwest portion of the neighborhood.
- **Alternative 4** – This alternative would retain existing zoning designations and associated development standards within the neighborhood.

Lead Agency

City of Seattle
Department of Planning and Development

SEPA Responsible Official

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Seattle, WA 98124-4019

EIS Contact Person

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Seattle, WA 98124-4019

Final Action

Adoption of code amendments that would provide incentive zoning provisions to allow increased height and density in the South Lake Union neighborhood

Required Approvals and/or Permits

Approval of amendments by the Seattle City Council.

Authors and Principal Contributors to this EIS

This ***South Lake Union Height and Density*** EIS has been prepared under the direction of the City of Seattle Department of Planning and Development. Research and analysis associated with this EIS were provided by the following consulting firms:

- **EA|Blumen** – lead EIS consultant; document preparation; environmental analysis – land use – relationship to plans/policies & regulations, energy (greenhouse gas emissions), housing, and public services
- **NBBJ** – aesthetics, light/glare, shadow, viewshed
- **Fehr & Peers** – transportation, circulation, parking; greenhouse gas emissions
- **Shannon & Wilson** – earth, plants/animals, environmental health
- **ENVIRON International Corp.** – air quality, noise
- **BOLA Architecture & Planning, Inc.** – historic/resources
- **Cultural Resources Consultants** – archaeology
- **Coughlin Porter Lundeen** – utilities
- **RWDI** – wind

Location of Background Data

City of Seattle, Department of Planning and Development

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EA|Blumen

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Seattle, WA 98109

Fehr & Peers – transportation, circulation, parking

Attn: Tom Noguchi Telephone: 425.820.0100
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Kirkland, WA 98034-6927

Date of Issuance of this Draft EIS

February 24, 2011

Date Draft EIS Comments Are Due

April 11, 2011

Written comments are to be submitted to:

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

or via e-mail: southlakeunioneis@seattle.gov

Date of Draft EIS Open House and Public Hearing

An open house and public hearing regarding this Draft EIS is scheduled for:

- **Date: March 28, 2011**
- **Location – Unity Church, 200 8th Avenue N, Seattle**

This meeting will include the following schedule:

- **5:30 pm – 6:30 pm** – Open House;
- **6:30 pm – 6:35 pm** – Introductions;
- **6:35 pm – 6:50 pm** – Overview of the ***Height and Density EIS*** Alternatives;
- **6:50 pm – 7:00 pm** – Overview of the EIS Process;
- **7:00 pm** – Public Comments Regarding the Draft EIS; and
- Concluding Remarks Following Public Comments.

The purpose of the open house and public hearing is to provide an opportunity for agencies, organizations and individuals to review information concerning the Draft EIS and to present oral comments on the Draft EIS – in addition to submittal of written comments

Availability of this Draft EIS

Copies of this Draft EIS have been distributed to agencies, organizations and individuals noted on the Distribution List (Appendix A). Notice of Availability of the Draft EIS has been provided to organizations and individuals that requested to become parties of record.

The Draft EIS can be reviewed at the following public libraries:

- **Seattle Public Library – Central Library** (1000 Fourth Avenue)
- **Seattle Public Library – Queen Anne Branch** (400 W Garfield Street)
- **Seattle Public Library – Capitol Hill Branch** (425 Harvard Ave. E.)

A limited number of complimentary copies of this Draft EIS are available – while the supply lasts -- either as a CD or hardcopy from the Seattle Department of Planning and Development Public Resource Center, which is located in Suite 2000, 700 Fifth Avenue, in Downtown Seattle. Additional copies may be purchased at the Public Resource Center for the cost of reproduction.

This Draft EIS and the appendices are also available online at:
http://www.seattle.gov/dpd/Planning/South_Lake_Union/Overview/default.asp

TABLE OF CONTENTS

1. SUMMARY 1-1

1.1	Proposal.....	1-1
1.2	Location.....	1-1
1.3	Objectives of the Proposal.....	1-2
1.4	Alternatives.....	1-3
1.5	Summary of Potential Impacts and Mitigation Strategies.....	1-8
1.6	Mitigation Strategies.....	1-28
1.7	Significant Unavoidable Adverse Impacts.....	1-55
1.8	Major Issues to be Resolved	1-55

2. PROJECT DESCRIPTION and ALTERNATIVES 2-1

2.1	Introduction.....	2-1
2.2	Planning Context.....	2-6
2.3	Proposed Action and Alternatives	2-14
2.4	Environmental Review	2-30
2.5	Benefits and Disadvantages of Delaying the Proposed Action	2-32

3. AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, MITIGATION MEASURES and UNAVOIDABLE ADVERSE IMPACTS 3-1

3.1	Geology and Soils	3.1-1
3.2	Air Quality	3.2-1
3.3	Water Quality.....	3.3-1
3.4	Plants and Animals.....	3.4-1
3.5	Environmental Health	3.5-1
3.6	Noise	3.6-1
3.7	Energy (Greenhouse Gas Emissions).....	3.7-1
3.8	Land Use	3.8-1
3.9	Housing.....	3.9-1
3.10	Aesthetics	3.10-1
3.11	Historic Resources.....	3.11-1
3.12	Cultural Resources	3.12-1
3.13	Transportation.....	3.13-1
3.14	Public Services	3.14-1
3.15	Utilities.....	3.15-1

3.16	Open Space and Recreation.....	3.16-1
------	--------------------------------	--------

4. REFERENCES 4-1

APPENDICES

Distribution List	Appendix A
Target/Capacity Methodology	Appendix B
Cultural Resources	Appendix C
Aesthetics	Appendix D
Transportation	Appendix E
Greenhouse Gas.....	Appendix F

LIST OF TABLES

1-1	Alternatives Overview	1-4
1-2	Summary of Impacts	1-9
1-3	PM Peak Hour Trip Generation with and without Mitigation..	1-50
1-4	Mitigate Action Alternatives: Demand-to-Capacity Ratios of Study Corridors	1-51
1-5	South Lake Union Peak Hour Transit Mitigation.....	1-52
2-1	City of Seattle Growth Targets	2-8
2-2	Development Capacity	2-9
2-3	Alternatives Overview	2-15
3.7-1	Existing Greenhouse Gas Emissions Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets	3.7-8
3.7-2	Existing Greenhouse Gas Emissions Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets with the VMT GHG Tool.....	3.7-9
3.7-3	Total Number of Households and Total Number of Jobs that are Assumed Under Each Alternative.....	3.7-11
3.7-4	Total Number of Households and Total Square Footage of Office and Retail Development that are Assumed Under Each Alternative.....	3.7-11
3.7-5	Greenhouse Gas Emissions Estimates King County SEPA GHG Spreadsheet	3.7-12
3.7-6	Estimated Transportation GHG Emissions: VMT-GHG Analysis Tool	3.7-13
3.7-7	Greenhouse Gas Emissions Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool.....	3.7-14
3.8-1	Estimated Wake Zone / Shear Layer Boundary – Alternative 1	3.8-30

3.8-2	Estimated Wake Zone / Shear Layer Boundary – Alternative 2	3.8-31
3.8-3	Estimated Wake Zone / Shear Layer Boundary – Alternative 3	3.8-32
3.9-1	Housing Units in the Vicinity.....	3.9-2
3.9-2	Multifamily Apartment Buildings with more than 20 Housing Units	3.9-3
3.9-3	2004 – 2009: 5-Year Change – Projected vs. Actual Household Units	3.9-5
3.9-4	Affordable Housing Capacity.....	3.9-8
3.11-1	Designated Landmarks.....	3.11-8
3.11-2	Properties Previously Identified as Potentially Eligible for Historic Designation.....	3.11-9
3.12-1	Archaeological sites recorded within an approximately 1-mile radius of the study area	3.12-3
3.13-1	King County Metro Routes in South Lake Union	3.13-9
3.13-2	Study Corridors	3.13-23
3.13-3	Study Corridors	3.13-25
3.13-4	Existing Condition Demand-to-Capacity Ratios of Study Corridors.....	3.13-32
3.13-5	Existing Screenline V/C Ratios.....	3.13-35
3.13-6	South Lake Union Transit AM Load Factors.....	3.13-36
3.13-7	South Lake Union Transit PM Load Factors.....	3.13-37
3.13-8	Commute Trip Reduction In South Lake Union.....	3.13-38
3.13-9	Trip Generation by Alternative	3.13-49
3.13-10	Traffic Impact Analysis Area Screenlines.....	3.13-53
3.13-11	No Action Alternative: Demand-to-Capacity Ratios of Study Corridors.....	3.13-55
3.13-12	No Action Alternative: Screenline V/C Ratios.....	3.13-58
3.13-13	South Lake Union AM Peak Period Transit Headways.....	3.13-59
3.13-14	2030 South Lake Union Transit AM Peak Period Load Factors – Existing Lines.....	3.13-59
3.13-15	2030 South Lake Union AM Transit Load Factors – New Lines S	3.13-60
3.13-16	Demand-to-Capacity Ratios of Study Corridors.....	3.13-64
3.13-17	Action Alternatives Comparison: Screenline V/C Ratios.....	3.13-70
3.13-18	2030 South Lake Union Transit Route AM Load Factors – Existing Lines	3.13-71
3.13-19	2030 South Lake Union Transit Route AM Load Factors – New Lines	3.13-71
3.13-20	South Lake Union Residents Mode Share.....	3.13-74
3.13-21	PM Peak Hour Trip Generation With and Without Mitigation.....	3.13-83

3.13-22	Mitigated Action Alternatives: Demand-to-Capacity Ratios of Study Corridors	3.13-84
3.14-1	Seattle Fire Department Staffing and Equipment	3.14-2
3.14-2	2005-2009 Seattle Fire Department Incident Responses.....	3.14-3
3.14-3	2005-2009 Incident Responses – Station 2, Station 8, and Station 25	3.14-3
3.14-4	2005-2008 Response Times – Station 2, Station 8, and Station 25	3.14-4
3.14-5	2005 – 2009 Seattle Police Department Calls for Service	3.14-7
3.14-6	2005-2009 West Precinct Calls for Service	3.14-7
3.14-7	2004-2008 West Precinct Major Crimes	3.14-8
3.14-8	Projected EMS Service Calls – Alternatives 1-4.....	3.14-10
3.16-1	Existing Parks and Open Space in the South Lake Union Neighborhood Vicinity.....	3.16-2
3.16-2	South Lake Union Neighborhood Parks and Open Space Goals	3.16-4
3.16-3	Potential Increase in Park and Recreation Demand Estimated Jobs and Housing Targets	3.16-8

LIST OF FIGURES

1-1	South Lake Union Neighborhood	1-2
2-1	Vicinity Map.....	2-3
2-2	Neighborhood Plan.....	2-4
2-3	Focus Areas.....	2-5
2-4	Lake Union Seaport Airport Flight Path.....	2-10
2-5	Existing Zoning Designations	2-12
2-6	Alternative 1	2-17
2-7	Alternative 2	2-20
2-8	Alternative 3	2-23
2-9	Alternative 4	2-26
2-10	Upper Level Setback Requirements	2-28
3.1-1	Seattle Critical Areas Map	3.1-3
3.3-1	Stormwater System.....	3.3-2
3.8-1	FAR 77 Approach/Departure Surface.....	3.8-21
3.8-2	Dominant Wind Pattern, Puget Sound Area	3.8-24
3.8-3	Illustration of Building Wake Zones	3.8-28
3.8-4	Illustration of “Channeling” of Wind Between Buildings	3.8-29
3.8-5	Wake Zones and Shear Layer Boundary Streamlines – Alternative 1.....	3.8-36
3.8-6	Wake Zones and Shear Layer Boundary Streamlines – Alternative 2.....	3.8-38

3.8-7	Wake Zones and Shear Layer Boundary Streamlines	
	– Alternative 3.....	3.8-40
3.10-1	Lake Union Seaport Airport Flight Path.....	3.10-7
3.10-2	Birdseye View—Alternative 1.....	3.10-8
3.10-3	Birdseye View—Alternative 2.....	3.10-8
3.10-4	Birdseye View—Alternative 3.....	3.10-9
3.10-5	Birdseye View—Alternative 4.....	3.10-9
3.10-6	Street-Level View: Eighth looking South – Alternative 1.....	3.10-14
3.10-7	Street-Level View: Fairview Avenue N – Alternative 1.....	3.10-15
3.10-8	Street-Level View: Mercer Street – Alternative 1.....	3.10-16
3.10-9	Street-Level View: Eighth looking South – Alternative 2.....	3.10-19
3.10-10	Street-Level View: Fairview Avenue N – Alternative 2.....	3.10-20
3.10-11	Street-Level View: Mercer Street – Alternative 2.....	3.10-21
3.10-12	Street-Level View: Eighth looking South – Alternative 3.....	3.10-23
3.10-13	Street-Level View: Fairview Avenue N – Alternative 3.....	3.10-24
3.10-14	Street-Level View: Mercer Street – Alternative 3.....	3.10-25
3.10-15	Street-Level View: Eighth looking South – Alternative 4.....	3.10-27
3.10-16	Street-Level View: Fairview Avenue N – Alternative 4.....	3.10-28
3.10-17	Street-Level View: Mercer Street – Alternative 4.....	3.10-29
3.10-18	Viewshed Locations.....	3.10-31
3.10-19	Volunteer Park – Alternative 1.....	3.10-36
3.10-20	Bhy Kracke Park – Alternative 1.....	3.10-37
3.10-21	Westlake Avenue N – Alternative 1.....	3.10-38
3.10-22	Westlake Avenue N – Alternative 1.....	3.10-39
3.10-23	Fairview Avenue N – Alternative 1.....	3.10-40
3.10-24	Fairview Avenue N – Alternative 1.....	3.10-41
3.10-25	Mercer Street Off-ramp – Alternative 1.....	3.10-42
3.10-26	I-5 – Alternative 1.....	3.10-43
3.10-27	Volunteer Park – Alternative 2.....	3.10-45
3.10-28	Bhy Kracke Park – Alternative 2.....	3.10-46
3.10-29	Westlake Avenue N – Alternative 2.....	3.10-47
3.10-30	Westlake Avenue N – Alternative 2.....	3.10-48
3.10-31	Fairview Avenue N – Alternative 2.....	3.10-49
3.10-32	Fairview Avenue N – Alternative 2.....	3.10-50
3.10-33	Mercer Street Off-ramp – Alternative 2.....	3.10-51
3.10-34	I-5 – Alternative 2.....	3.10-52
3.10-35	Volunteer Park – Alternative 3.....	3.10-54
3.10-36	Bhy Kracke Park – Alternative 3.....	3.10-55
3.10-37	Westlake Avenue N – Alternative 3.....	3.10-56
3.10-38	Westlake Avenue N – Alternative 3.....	3.10-57
3.10-39	Fairview Avenue N – Alternative 3.....	3.10-58
3.10-40	Fairview Avenue N – Alternative 3.....	3.10-59
3.10-41	Mercer Street Off-ramp – Alternative 3.....	3.10-60

3.10-42	I-5 – Alternative 3.....	3.10-61
3.10-43	Volunteer Park – Alternative 4.....	3.10-62
3.10-44	Bhy Kracke Park – Alternative 4	3.10-63
3.10-45	Westlake Avenue N – Alternative 4.....	3.10-64
3.10-46	Westlake Avenue N – Alternative 4.....	3.10-65
3.10-47	Fairview Avenue N – Alternative 4	3.10-66
3.10-48	Fairview Avenue N – Alternative 4.....	3.10-67
3.10-49	Mercer Street Off-ramp – Alternative 4.....	3.10-68
3.10-50	I-5 – Alternative 4.....	3.10-59
3.11-1	Eligible and Designated Historic Sites.....	3.11-7
3.12-1	Study Area.....	3.12-2
3.12-2	Intersection of 9th Avenue and Harrison Street.....	3.12-6
3.13-1	Pedestrian Facilities	3.13-2
3.13-2	Bicycle Facilities – Existing Conditions.....	3.13-5
3.13-3	Transit Facilities – Existing Conditions.....	3.13-7
3.13-4	Roadway Functional Class – Existing Conditions.....	3.13-10
3.13-5	Major Truck Streets – Existing Conditions	3.13-14
3.13-6	Study Corridors – Existing Conditions.....	3.13-26
3.13-7	Traffic Impact Analysis Area Screenlines – Existing Conditions.....	3.13-29
3.13-8	Demand to Capacity Ratios – Existing Conditions.....	3.13-34
3.13-9	Reasonably Foreseeable Transportation Improvements.....	3.13-41
3.13-10	Unfunded Roadway Improvements.....	3.13-42
3.13-11	Unfunded Pedestrian and Bicycle Improvements.....	3.13-43
3.13-12	Comparison of Traditional and Enhanced Trip Generation Methods.....	3.13-47
3.13-13	Neighborhoods for Trip Generation	3.13-51
3.13-14	Demand-to-Capacity Ratios – No Action Alternative.....	3.13-57
3.13-15	Demand-to-Capacity Ratios – Alternative 1.....	3.13-66
3.13-16	Demand-to-Capacity Ratios – Alternative 2.....	3.13-67
3.13-17	Demand-to-Capacity Ratios – Alternative 3.....	3.13-68
3.13-18	Mitigation Measures	3.13-76
3.14-1	Seattle Fire Station Locations	3.14-1
3.14-2	Seattle Police Department West Precinct	3.14-6
3.15-1	Water System.....	3.15-2
3.15-2	Sewer and Stormwater System	3.15-3
3.16-1	Parks and Open Space Gap Analysis Map.....	3.16-5

Environmental Summary

CHAPTER 1 ENVIRONMENTAL SUMMARY

This chapter summarizes environmental impacts, mitigation strategies and significant unavoidable adverse impacts for four alternatives to height and density in the South Lake Union Neighborhood that are evaluated in this Environmental Impact Statement (EIS). This summary provides a brief overview of the information considered in this EIS. The reader should consult Chapter 2 for a detailed description of the alternatives and Chapter 3 for more information concerning the affected environment, environmental impacts and mitigation strategies for each element of the environment.

1.1 Proposal

This Draft EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

Among the action alternatives, Alternative 1 would provide the greatest potential for increases in height and density, Alternative 3 the least, and Alternative 2 falls between Alternatives 1 and 3. Alternative 1 would allow for building heights of 240 to 300 feet in much of the neighborhood, with maximum heights of 400 feet between John Street and Denny Way. Alternative 2 would allow for maximum heights of 300 feet in the area between Aurora and Westlake avenues north, with much of the rest of the neighborhood at maximum heights of 160 to 240 feet. Under Alternative 3, the majority of the neighborhood would have maximum building heights of 160 feet to 240 feet. Under Alternatives 2 and 3, existing zoning, with no provision for increased height through zoning incentives, would be retained in the majority of the Cascade neighborhood, with changes limited to areas near the western and southern boundaries in Alternative 2 and along the western boundary in Alternative 3. Similarly, under Alternative 3, the majority of the Fairview neighborhood would also retain existing zoning, with no provision for increased height through incentive zoning.

Alternatives 1 and 2 would provide for height and density increases for both commercial and residential development while Alternative 3 is focused primarily on residential development.

<i>Proposal</i>	1
<i>Location</i>	2
<i>Objectives of the Proposal</i>	2
<i>Alternatives</i>	3
<i>Summary of Potential Impacts and Mitigation Strategies</i>	8
<i>Mitigation Strategies</i> ...	28
<i>Significant Unavoidable Adverse Impacts</i> ...	59
<i>Major Issues to be Resolved</i> ...	59

1.2 Location

The South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east, respectively. Consisting of about 340 acres, the area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way and on the north by the Lake Union shoreline.

For planning purposes, the City has identified six neighborhoods in the neighborhood, known as the Dexter, Denny Park, Waterfront, Westlake, Fairview and Cascade neighborhoods. See Figure 1-1.

Figure 1-1
South Lake Union Neighborhood



Source: South Lake Union Urban Center Neighborhood Plan, 2007

1.3 Objectives of the Proposal

The City has identified the following specific objectives of the proposal:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.

- Ensure adequate zoned development capacity for long-term growth consistent with the designation of South Lake Union as one of the City’s six urban centers.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.
- Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems.

1.4 Alternatives

In order to meet the goals of the Comprehensive Plan, the City is considering adoption of incentive zoning provisions to allow increased height and density in certain areas of the South Lake Union neighborhood. The City has identified four alternatives, each of which describes a different pattern of height and density in the neighborhood. In general, Alternative 1 would provide for the greatest increases in building height and corresponding residential density. Similarly, Alternative 2 provides for height and density increases, but relatively less than Alternative 1. Alternative 3 provides for the least amount of height and density increase relative to the action alternatives. Alternative 4 would retain the existing zoning standards and height limits. **Table 1-1** summarizes the key features of the alternatives.

Proposal

Location

Objectives of the Proposal

Alternatives

Summary of Potential Impacts and Mitigation Strategies

Mitigation Strategies

Significant Unavoidable Adverse Impacts

Major Issues to be Resolved

Table 1-1
Alternatives Overview

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Podium Height	45' – 85'	30 – 45'	20 – 45'	Not applicable
Incentive Zoning Height Limits	85' – 400'	85' – 300'	85' – 240'	Not applicable
Floor Plate Size	Commercial - 24,000 sf above podium height for commercial Residential - 10,500 sf average/11,500 sf maximum above podium height			Not applicable
Commercial Floor Area Ratio	Base of 4.5 or 5; up to 7 with bonuses Varies according to building height and podium size. The range of densities at different heights is shown below. Note that not all alternatives include all of the heights listed.			4.5 to 5
Residential Densities	400' height limit: 720 – 890 units/acre 300' height limit: 562 – 655 units/acre 240' height limit: 465 – 535 units/acre 160' height limit: 327 – 385 units/acre Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See Appendix B for complete methodology.			Not applicable
Minimum Lot Size for Towers	22,000 sf (2 towers/block), 60,000 sf (1 tower/block)			Not applicable

A podium is the base of a building that supports a tower.

A floor plate is the horizontal plane of the floor of a building, measured to the inside surface of exterior walls.

Floor area ratio is the ratio of the total square feet of a building to the total square feet of the property on which it is located.

Source: City of Seattle, 2010

Incentives

An incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities. As shown in **Table 1-1**, the three action alternatives include the potential for an FAR bonus and increased height through the provision of public benefits as defined by incentive zoning.

Seattle Municipal Code Section 23.58A establishes conditions and process for development incentives. As described in this Section, buildings less than 85 feet in height may gain increased floor area only through the provision of affordable housing as established by the provisions of

Section 23.58A.014. For buildings greater than 85 feet in height, other City approved bonus options may be used for up to 40% of their increased floor area, as long as at least 60% of the increased floor area is supported by the provision of affordable housing through the process established in Section 23.58A.014.

Although not currently applicable in South Lake Union, future development under any of the action alternatives would be able to seek floor area bonuses consistent with the requirements of Seattle Municipal Code 23.58A. For buildings taller than 85 feet in height, potential public benefits that could be included as a future development incentive, in addition to the affordable housing requirement, will be specifically identified following public comment and City review of Draft EIS findings.

Alternatives 1 – 3 (Action Alternatives)

The following features are common to all of the action alternatives.

- **Shoreline Designations.** No changes to the existing shoreline designations are proposed under any of the alternatives.
- **Permitted Uses.** No change to the permitted uses in the Seattle Mixed zone is proposed under any of the alternatives.
- **Floor Plate Size.** In all alternatives, commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.
- **Floor Area Ratio.** In all alternatives, the commercial floor area ratio is limited to a base of 4.5 or five, with potential of increasing to a maximum of seven through use of incentives or transfer of development rights (TDR).
- **Tower Location.** In all alternatives, a maximum of one tower per block (equivalent to a minimum 60,000 sf lot size) near Lake Union, but outside of the designated shoreline area, is permitted. In all other areas, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.
- **Lake Union Seaport Airport.** In all alternatives, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements.

Key unique features associated with each of the action alternatives are described below:

Alternative 1

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Building Heights. Greatest heights are permitted along the southern edge of the neighborhood, between Denny Way and John Street. In this area, residential towers could be 400 feet and commercial towers 240 feet in height.

Lowest heights continue in the east central part of the neighborhood, roughly corresponding to the Cascade neighborhood. In this area, maximum heights of 160 feet for residential towers and 85 feet for commercial uses are established.

In the balance of the neighborhood, maximum heights range between 240 to 300 feet for residential towers. Commercial uses in mixed use buildings are limited to 20 feet along the 8th Avenue corridor, between John and Republican Streets and to 85 feet in the blocks bounded by Mercer, Valley and Roy streets and 9th Avenue. In the remaining areas, commercial height limits vary from 160 feet to 240 feet.

Podium Heights. Podium heights of up to 85 feet are allowed along the Mercer Street corridor. Along the Dexter, Westlake, Fairview and Denny Way corridors, maximum podium height is 65 feet. Podium heights are limited to 45 feet in the balance of the area.

Alternative 2

Zoning Designations. . The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Greatest heights are permitted in the southwestern portion of the neighborhood, corresponding to the Denny Park subarea. In this area, residential towers could be 300 feet and commercial towers 160 feet in height. Within this area, height limits are reduced along the 8th Avenue corridor, with commercial development limited to 20 feet and residential to 240 feet in height.

Height limits are lowest in the northern part of the neighborhood. In the blocks bounded by Mercer, Valley and Roy Streets and 9th Avenue North, commercial uses are limited to 85 feet and residential uses to 160 feet in height. Immediately to the east, in the Fairview neighborhood, building heights are limited to 125 feet. In the balance of the neighborhood,

maximum height for residential towers is 240 feet and for commercial buildings 160 feet.

Podium Heights. Podium heights are limited to 30 feet along the 8th Avenue corridor and 45 feet in all other parts of the neighborhood.

Alternative 3

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Alternative 3 allows building heights up to 240 feet for residential development and 125 feet for commercial uses between Denny Way, John Street, 9th Avenue North and the east side of Fairview Avenue.

Commercial use height limits vary between 65 feet to 85 feet in the rest of the area. In the central part of the neighborhood, residential height limits decrease from 240 feet along John Street to 125 feet in the blocks between Mercer and Valley Streets. West of 9th Avenue and north of Mercer Street (Dexter neighborhood), residential building heights are limited to 240 feet.

Podium Heights. Podium heights are limited to 20 feet along the 8th and 9th Avenue corridors. West and north of this corridor, podium heights are limited to 30 feet. In the remaining area, podium heights are limited to 45 feet.

No Action Alternative

Zoning Designations. The majority of the neighborhood would remain Seattle Mixed at varying heights, ranging from SM-125" along Denny Way, down to SM-40 in the north central part of the neighborhood. The Fairview area would retain the existing Commercial (C2) zoning. The central portion of the neighborhood would remain in an Industrial Commercial (IC) zone.

Shoreline Designations. No changes to the existing shoreline designations are proposed.

Building Heights. In general, height limits are lowest near Lake Union and in the Cascade Subarea, with height limits ranging between 40 and 75 feet in these areas. Greatest heights (up to 125 feet) are permitted along the southern edge of the neighborhood, along Denny Way and John Street. In this area, a maximum of 125 feet is permitted.

Podium Heights. Existing zoning standards do not specifically define podium heights, but do require upper level setbacks in certain areas. To some extent, these upper level setbacks define a podium for the development. In general, the area along Denny Way in the SM-125' zone requires an upper level setback for any portion of a structure greater than 75 feet in height. Similarly, along portions of Thomas and Harrison Streets, upper level setbacks are required for structures greater than 25 feet (in residential areas) and 45 feet in height.

1.5 Summary of Potential Impacts and Mitigation Strategies

Table 1-2 summarizes the potential environmental impacts for each element of the environment evaluated in Chapter 3.

*Proposal
Location
Objectives of the
Proposal
Alternatives
**Summary of
Potential
Impacts and
Mitigation
Strategies**
Mitigation
Strategies
Significant
Unavoidable
Adverse Impacts
Major Issues to
be Resolved*

Table 1-2
Summary of Impacts

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Geology and Soils			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to geology and soils. Future site-specific development proposals under any of the alternatives, however, could result in impacts to geology and soils. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p>			
<ul style="list-style-type: none"> • Native soils unsuitable for construction, particularly artificial fill and soft compressible soils near the waterfront may be removed and replaced with structural fill and/or other suitable material. • Excavation near existing slopes and/or landslides could result in slope instability. • Surface water and groundwater flow will likely be impacted by new construction. • Steep slopes, landslides, and liquefaction have the potential to impact existing development and new construction. 			
<ul style="list-style-type: none"> • Excavation, grading, soil removal, placement of structural fill, and construction of new foundations could have direct impacts on soils and groundwater. 	<ul style="list-style-type: none"> • Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations. 	<ul style="list-style-type: none"> • Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations. 	<ul style="list-style-type: none"> • Impacts under this alternative would be much less than those discussed under Alternative 1 since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Air Quality			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to air quality. Future site-specific development proposals under any of the alternatives, however, could result in impacts to air quality. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p>			
<i>Construction</i>			
<ul style="list-style-type: none"> • Construction activities could result in temporary, localized increases in particulate concentrations due to emissions from construction-related sources. • Demolition of existing structures would require removal and disposal of building materials that could possibly contain asbestos and lead based paint. • Emissions from construction equipment, especially from diesel-fueled engines, could result in a temporary degradation of local air quality. • Construction activities, such as paving operations using tar and asphalt, could result in short-term localized odors. 			
<i>Operation</i>			
<ul style="list-style-type: none"> • Predicted PM peak hour auto trips are expected to be the highest under this alternative. Traffic sources would not cause an increase in ambient CO concentrations at receptors near two of the three intersections studied. Even with CO concentration increases at the Mercer Street/Fairview Avenue intersection, ambient concentrations would remain well below the NAAQS. Because increased traffic resulting from new development near the most congested intersections would not likely cause an impact to air quality, impacts are also unlikely at other less congested intersections. Therefore, Alternative 1 would be unlikely to affect air quality in the South Lake Union study area. 	<ul style="list-style-type: none"> • Traffic generated under this alternative is predicted to be the same as Alternative 1. Therefore, ambient concentrations with Alternative 2 would likely be the same as that under Alternative 1. No impacts to air quality are expected 	<ul style="list-style-type: none"> • Under this alternative, approx. 3,000 fewer vehicular trips would occur than under Alternatives 1 and 2, therefore it is likely that fewer trips would result in less traffic at the most congested intersections. Therefore, CO concentrations would likely be similar to or less than those predicted for Alternatives 1 or 2. No impacts to air quality are expected. 	<ul style="list-style-type: none"> • Under this alternative trips generated would be slightly fewer than under Alternative 3, therefore maximum-predicted CO concentrations in 2031 would be less than the ambient air quality standards, so no impacts to air quality are anticipated.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Water Quality			
Impacts common to all alternatives			
<p>Construction activities associated with new development or redevelopment under any of the alternatives would be accompanied by ground disturbing activities such as clearing and grading. These activities could result in minor erosion and sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union). In addition to sediment transport, runoff may also carry other contaminants such as fuel or oil, from construction vehicles and machinery used on-site. The risk of these effects would be of short duration (limited to the length of each project construction period) and can largely be minimized or eliminated with the proper use of construction best management practices (BMPs).</p>			
<i>Construction Stormwater Runoff</i>			
<ul style="list-style-type: none"> • Construction activities could cause minor erosion, sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union), as well as possible fuel/oil contamination from construction vehicles. • Implementation of construction best management practices, and compliance with applicable permit requirements and conditions would help to ensure that any impacts would be temporary and minor. 			
<i>Urban Stormwater Runoff</i>			
<ul style="list-style-type: none"> • It is expected that the majority of future development within South Lake Union will exceed the Pollution Generating Impervious Surfaces (PGIS) 5,000 sq. ft. threshold, which will require provision of water quality treatment. Smaller redevelopment projects may not reach this threshold, and multiple, independent small-scale developments in an area could create new PGIS areas without any individual project tripping the 5,000 sq. ft. treatment requirement. • Per city code water quality treatment facilities are designed based on surface area and not on traffic volumes. Under the current stormwater code, increases in density do not require increased stormwater treatment, although increased pollution would likely be generated as a result of increased vehicle traffic to support this level of development. 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Plants and Animals			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to plant and animal habitat. Future site-specific development proposals under any of the alternatives, however, could result in impacts to plant and animal habitat. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p>			
<ul style="list-style-type: none"> • Urban wildlife may be displaced on lots that currently provide urban habitat (such as blackberry thickets, debris piles, and landscaped areas) by future construction/development. • Development of increased building height could indirectly result in increased bird strikes for migratory birds flying through the study area. However, the net effect on northward migrations of birds would likely be low since downtown buildings would still present the first obstacle to migratory birds. • Increasing vehicle use in the study area by allowing increased density may contribute to adverse effects on juvenile salmonids associated with poor water quality. • Potential increases in water quantity associated with increases in the amount of impervious surfaces are not expected to impact fish habitat in Lake Union or downstream waters. • This alternative is not expected to result in increased predation of juvenile salmonids due to changes in shade or shoreline development. 			
Environmental Health			
Impacts common to all alternatives			
<p>The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to environmental health. Future site-specific development proposals under any of the alternatives, however, could result in impacts to environmental health. Development activities could include excavation associated with demolition of existing foundations and construction of new foundations. Potential indirect and cumulative impacts for all alternatives associated with property redevelopment include:</p>			
<ul style="list-style-type: none"> • Contaminated soil and/or groundwater may be encountered during excavation when properties in the study area are redeveloped. • Asbestos Containing Material (ACM) and lead-based paint may be encountered during building demolition when properties in the study area are redeveloped. • Contamination may be cleaned up as properties are redeveloped, resulting in less contamination in the study area. • Contaminated materials may be uncovered during property redevelopment, allowing more direct exposure to the public. • Contamination may be spread as a result of property redevelopment (for example, a new utility corridor could provide a new conduit for contamination to spread through; dewatering activities could pull contaminated groundwater into areas that were initially clean). 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Noise			
Impacts common to all alternatives			
<p>The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union subarea. By itself, this proposal would not directly result in noise impacts in the subarea. Future site-specific development proposals under any of the alternatives, however, could result in impacts to noise. Depending on the nature of these site-specific actions, noise impacts could occur to existing, adjacent land uses in. Construction, parking, and mechanical equipment related to new developments have the potential to cause noise impacts to sensitive receivers (e.g., residences, schools, churches, parks, etc.). Larger residential and commercial structures could result in an increase in traffic volumes and traffic-related noise on local streets. Potential impacts that may be associated with future site-specific development under any of the alternatives are discussed below.</p>			
<p><i>Construction</i></p>			
<ul style="list-style-type: none"> Noise from demolition and construction activities has the potential to temporarily affect nearby receivers, particularly sensitive uses such as residences. 			
<p><i>Operation</i></p>			
<ul style="list-style-type: none"> Increased building heights within the flight path for the Lake Union Seaport Airport could result in increased noise impacts to residences and/or offices in upper portions of new buildings from aircraft overflights. HVAC/mechanical equipment could result in increased noise impacts to nearby residences and/or commercial buildings. Increases in population density and commercial activity could add more traffic to local streets, which would increase noise levels in South Lake Union area. 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Energy (GHG)			
Impacts common to all alternatives			
<p><i>Climate Change</i></p> <ul style="list-style-type: none"> The assumed impacts of climate change would not be anticipated to have a disproportionate impact on the South Lake Union Neighborhood as compared to other sites in Seattle. 			
<p><i>Greenhouse Gas Emissions</i></p>			
<ul style="list-style-type: none"> Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 23,537,267 MTCO₂e additional GHG emissions over existing conditions during the lifespan of future development. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 16,393,154 MTCO₂e additional GHG emissions over existing conditions during the lifespan of future development.
<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,160,080 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,144,150 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 22,686,472 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 18,063,203 MTCO₂e additional GHG emissions during the lifespan of future development.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Land Use			
<i>Plans, Policies, and Regulations</i>			
<ul style="list-style-type: none"> This section of the EIS contains an analysis of the consistency of each alternative with existing state, regional and local planning policies. The proposed action is generally consistent with adopted City plans, policies and regulations. 			
<i>Wind Analysis</i>			
<p>The addition of significantly taller buildings directly south of Lake Union could generally increase the potential for:</p> <ul style="list-style-type: none"> increased height of vertical and leeward wind wake zones and consequently shear layers; introduction of wake effects extending into Lake Union; increase in turbulence intensity north of the subarea; and; change in local wind speed patterns. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.
<ul style="list-style-type: none"> Under this alternative, the maximum height of buildings is higher than the anticipated elevation of float planes travelling over/through this area. Apart from the risk of physical impact, small aircraft flying through a “canyon” or “corridor” of tall structures can be significantly affected by turbulent, local winds channeling and accelerating between buildings 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing			
<ul style="list-style-type: none"> Increases in population and employment would result in an associated increase in demand for diverse housing opportunities, and public facilities within the subarea. With capacity for 21,000 units, Alternative 1 provides the greatest housing capacity. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. Alternative 2 would have capacity for 19,000 units, 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. Alternative 3 would have capacity for 15,000 units. 	<ul style="list-style-type: none"> Similar to but less than Alternative 3. Alternative 4 would have capacity for 11,500 units.
<ul style="list-style-type: none"> Increased residential capacity due to incentive zoning under this alternative has the potential to result in an increased number of affordable housing units. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> This alternative has the largest development potential, therefore it would have the potential through incentive zoning programs to generate the greatest amount of developer financial contributions for affordable housing for lower wage workers. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> Alternative 1 may also provide market-driven opportunities for new construction of affordable housing separate from the residential towers. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> Redevelopment under this alternative has the potential to reduce the existing inventory of affordable housing due to displacement of existing wood frame buildings and older single family residences in the subarea. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing (con't)			
<ul style="list-style-type: none"> Under this alternative, height and density increases in the focus areas could result in increased residential development within these corridors. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
Aesthetics			
<i>Area Context</i>			
<ul style="list-style-type: none"> As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.
<i>Neighborhood Character</i>			
<ul style="list-style-type: none"> As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.
<i>Height, Bulk and Scale</i>			
<ul style="list-style-type: none"> This alternative proposes a relatively new building typology for the neighborhood, which would feature a high-rise tower positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<ul style="list-style-type: none"> This alternative would generally gradually transition down in height from the south boundary of the neighborhood toward Mercer Street on the north. Building heights increase slightly in the block north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street.
<ul style="list-style-type: none"> Tower bulk (length and width) and podium bulk are not expected to create significant impacts given the restrictions on floor plate size for the towers and restrictions on podium height. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.
<i>Viewshed</i>			
<u>Designated Viewpoints</u>			
<ul style="list-style-type: none"> New high-rise buildings within the study area would be prominent in these views. However, the Space Needle, Elliott Bay, Seattle Downtown skyline, Bainbridge Island, the Cascade Mountains, and the Olympic Peninsula would still be visible. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1
<u>Scenic Routes</u>			
<ul style="list-style-type: none"> New high-rise buildings within the study area would frame route corridors and would have the potential to screen/block some existing views of the Space Needle from these routes. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Shadows</i>			
<ul style="list-style-type: none"> Cumulative shadow impacts would result due to the increased amount of development under this alternative. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Generally, the infill development on undeveloped or under-developed sites would increase the local shadows on streets and adjacent properties 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Shadows from this alternative could shade portions of the water area of Lake Union in the winter morning (southeast lake shore) and in the winter afternoon (southwest lake shore) hours. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Overall, the shadow impacts are not expected to result in significant adverse environmental impacts. The impacts are typical of an urbanizing area changing from lower intensity development to that of more intensive development. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Light and Glare</i>			
<ul style="list-style-type: none"> The increased amount of buildings would increase the cumulative level of artificial illumination in South Lake Union. The new buildings will include towers that may potentially incorporate reflective surfaces that could on occasion create glare impacts. The exposure may extend to adjacent hillsides and the freeway because of the topographic basin location. . 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.
<ul style="list-style-type: none"> Potential increases in building heights in this area and specular surfaces on buildings could, at times, generate increased light and glare impacts that may affect seaplane approaches to the south. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.
<ul style="list-style-type: none"> The distant visibility from Capitol Hill and Gas Works Park of artificial illumination of the towers is high because of their currently unobstructed location. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Historic Resources			
<ul style="list-style-type: none"> This alternative allows for the greatest amount of development, which could also result in the greatest amount of development pressure on existing small scale structures that may be eligible for historic designation. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Maintaining the existing zoning in the study area would not change the development pressure on historic resources.
<ul style="list-style-type: none"> Differences in character, height, and bulk of new development adjacent to a designated historic structure or a structure that is potentially eligible for historic designation, could negatively impact the historic value of the existing structure. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Not anticipated under this alternative.
Cultural Resources			
Impacts common to all alternatives			
<ul style="list-style-type: none"> Because the study area is considered to have a low potential to contain intact archaeological deposits, no significant impacts to archaeological sites are anticipated. No pre-contact archaeological sites have been identified within the study area. One historic-period archaeological site has been recorded within the study area and was previously impacted by sewer line and trail construction. Further development is not anticipated to generate additional impacts to this site. 			
Transportation			
Impacts Common to the Action Alternatives			
<p>Study Corridors. Under all three action alternatives, the following study corridors experience significant impacts to traffic operations:</p> <ul style="list-style-type: none"> Westlake Avenue N from Valley Street to Harrison Street Westlake Avenue N from Harrison Street to Denny Way Mercer Street from Dexter Avenue N to Fairview Avenue N 	<p>Study Corridors. The following study corridors would operate at LOS E or F, exceeding the City's LOS standard, which constitutes a traffic operations deficiency (note that these facilities will also experience deficient</p>		

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
<ul style="list-style-type: none"> • Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Boren Avenue from Pine Street to University Street • Stewart Street from Eastlake Avenue E to Boren Avenue • Harrison Street from Aurora Avenue N to Eastlake Avenue E • 9th Avenue N from Roy Street to Republican Street <p>In addition to those previously listed, the following study corridors are significantly impacted under Alternatives 1 and 2:</p> <ul style="list-style-type: none"> • Fremont Bridge • Eastlake Avenue E from Fairview Avenue to Lakeview Blvd E • Dexter Avenue N from Valley Street to Denny Way • E Pine Street from Boren Avenue to Broadway • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue <p>Poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.</p> <p>Transit. Transit lines that would operate unacceptably under the action alternatives include:</p> <ul style="list-style-type: none"> • Route 21 (northbound AM and southbound PM) • Route 28 (northbound AM and southbound PM) • Route 29 in both directions (AM and PM peak hours) • Route 56 (northbound AM and southbound PM) <p>Planned capacity increases for the Seattle Streetcar will keep pace with the future ridership estimates from the City's travel model. Transit frequency is the same as under the No Action Alternatives and would not meet the frequency goals outlined in the Urban Village Transit Network (UVTN).</p> <p>Bicycle and Pedestrian System. No pedestrian or bicycle demand/capacity impacts are anticipated under the three action alternatives. While no bicycle or pedestrian demand/capacity impacts are anticipated, there are several adverse impacts to the pedestrian and bicycle system:</p> <ul style="list-style-type: none"> • The increased heights and densities associated with each of the alternatives will lead to additional traffic demand on area roadways, which could result in longer traffic signal cycle lengths. Longer cycle lengths are associated with increased pedestrian delay, which discourages pedestrian travel. Any increases in pedestrian delay at intersections would be an impact to pedestrian mobility. 			<p>operations under the three Action Alternatives):</p> <ul style="list-style-type: none"> • Street to Westlake Avenue N • Westlake Avenue N from Valley Street to Harrison Street • Westlake Avenue N from Harrison Street to Denny Way • Fairview Avenue N from Eastlake Avenue to Yale Avenue N • Dexter Avenue N from Fremont Bridge to Valley Street • Dexter Avenue N from Valley Street to Denny Way • Mercer Street from Dexter Avenue N to Fairview Avenue N • Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Stewart Street from Eastlake Avenue E to Boren Avenue • E Pine Street from Boren Avenue to Broadway • Harrison Street from Aurora Avenue N to Eastlake Avenue N • 9th Avenue N from Roy Street to Republican Street • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue <p>Transit. Two transit routes serving South Lake Union will not operate with acceptable load factors – Route 29 and Route 56. Eight transit lines do</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
<ul style="list-style-type: none"> Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. <p>Parking. If current parking demand trends continue, short-term shortages are likely for both on-street and off-street parking, particularly around office uses. The level of impact will vary depending on the intensity of land use. The balance between parking supply, parking cost, and alternative mode use will cause some travelers to change modes. Therefore, the parking impact may not be long-term since travelers will shift to other modes in response to limited parking supply and higher parking cost.</p> <p>Although Alternatives 1 and 2 would have the most demand, they would also provide more supply based on market trends. Because of the relationship between development intensity, parking supply, and parking demand, all action alternatives are expected to have short-term parking impacts.</p> <p>Freight. The increase in traffic congestion along the Major Truck Streets is caused by both additional development in South Lake Union and regional traffic. There are also potential localized freight impacts that could occur as the neighborhood develops. Impacts to freight mobility could be caused by lack of loading areas and small curb radii that cannot be navigated by trucks.</p> <p>Traffic Safety. While it is likely that the total number of vehicle collisions will increase proportionally with the increase in traffic in the South Lake Union area, there is nothing to suggest that the volume-based rate of vehicle-to-vehicle collisions will increase with the implementation of the height and density alternatives.</p>			<p>not meet the UVTN frequency goal of peak hour -- Routes 16, 25, 28, 29, 66, 15 minute headways during the AM 308, 313, and 316. Since the Height and Density alternatives do not affect transit frequency, these routes will also fail to meet frequency goals under the Action Alternatives.</p> <p>Pedestrian and Bicycle System.</p> <ul style="list-style-type: none"> Anticipated development will result in a substantial number of pedestrian and bicycle trips within the study area. Pedestrian and bicycle demand/capacity issues not likely, but could lead to consequences such as: Additional pedestrian and vehicle travel at major intersections could lead to increased pedestrian delays if the City retimes traffic signals to facilitate vehicle flow. Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. <p>Parking. If current parking demand trends continue, there will likely be at least temporary shortages for both on-street and off-street parking, particularly around office uses. The</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
			<p>relationship between parking supply and cost will cause prices to climb as demand approaches or exceeds supply. In turn, this will cause some travelers to switch to modes such as transit, thereby freeing up some parking.</p> <p>Freight. Increase in traffic congestion on Mercer Street between Dexter Avenue and Fairview Avenue N will lead to increased difficulty for trucks to maneuver and increased travel times, which could delay trucking operations. This is considered a freight mobility deficiency in the area. With future development there could be localized freight deficiencies related to the lack of loading areas and small curb radii that trucks cannot navigate. The removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street will leave a gap in the City of Seattle Major Truck Street network.</p> <p>Traffic Safety. Increased traffic volumes could lead to the identification of additional High Accident Locations. While there may be more High Accident Locations there is no data available to suggest that a volume-based collision rate (e.g., collisions per million entering vehicles) will increase.</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Public Services			
Impacts common to all alternatives			
<i>Fire and Emergency Services</i>			
<ul style="list-style-type: none"> Construction activities associated with potential development under the proposed alternatives could result in an increase in demand for fire services. The Fire Department would attempt to maintain response times consistent with current performance levels. An additional 1-2 EMS companies could be required over the next 10 years in order to maintain performance levels. However, given that Stations 2 and 25 are two of the busiest stations in the Department, additional EMS companies could be required in SLU even without potential development under this alternative 			
<i>Police Services</i>			
<ul style="list-style-type: none"> Potential construction under this alternative could result in an increase in demand for police services. Potential increases in onsite population and employment associated with development under this alternative would be incremental and would result in associated incremental increases in demand for police services. Sufficient staffing and facilities exist to accommodate the increased demand for service under this alternative and no additional safety problems are anticipated. 			
<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 18 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 17 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 15 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 14 percent by 2031.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Utilities			
<p><i>Water System</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on the water supply and distribution system. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Combined Sewer System</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on the local sewer collection system and on the downstream conveyance and treatment facilities. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Storm Sewer System</i></p> <ul style="list-style-type: none"> Potential development under any of the alternatives is not expected to result in increased demand on the storm water systems of the neighborhood. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Electric Power</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on electrical energy. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Open Space and Recreation			
Impacts common to all alternatives			
<ul style="list-style-type: none"> <li>• Potential increases in height and density associated with this alternative would subsequently result in an increase in population and employment in the SLU Neighborhood, which would result in an associated increase in demand for parks, open space and recreation facilities in the area. <li>• Based on current parks and recreation distribution guidelines and the estimated 2031 household and employment targets for SLU, the total estimated park and recreation demand under this alternative would be approximately 14.1 acres, which is an increase over the total 2024 estimated demand of 12.78 acres, but still less than the existing 15.7 acres of open space. <li>• Future residential and employment growth under this alternative would tend to increase the overall use and activity levels of existing parks and recreation facilities in the SLU Neighborhood and site vicinity. <li>• This alternative could include an incentive program that offers development bonuses for projects (typically an allowance for additional height or floor area). Potential public benefits that could be considered as part of a development incentive program include new park and recreation facilities such as a new center for community, arts, and culture, pocket plazas, and/or children’s play areas. 			

1.6 Mitigation Strategies

Mitigation Strategies

Table 1-3, below summarizes all mitigation strategies listed in the EIS and is organized by element of the environment. As described in the EIS, many of the strategies are intended to address future site-specific development that could occur under any of the alternatives. Other strategies focus on area-wide mitigation that is intended to directly address potential impacts associated with the increased height and density associated with the alternatives.

Geology and Soils

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur with development under any of the alternatives. Site specific measures may include reducing the size of the project, placing limits on project timing and schedule, or requiring additional practices during construction to avoid adverse impacts (SMC 25.05.675(D)). Additional practices might include landscaping, supplemental drainage measures, water quality control, erosion control, and stabilization measures.

Air Quality

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. These are briefly described below.

Although significant air quality impacts are not anticipated due to construction activities, construction contractors would be required to comply with all relevant federal, state, and local air quality rules. In addition, implementation of best management practices would reduce emissions related to the construction of the developments.

Possible management practices for reducing the potential for air quality impacts during construction address measures for reducing exhaust emissions and fugitive dust. The Washington Associated General Contractors brochure Guide to Handling Fugitive Dust from Construction Projects and the PSCAA suggest a number of methods for controlling dust and reducing the potential exposure of people to emissions from diesel

<i>Proposal</i>
<i>Location</i>
<i>Objectives of the Proposal</i>
<i>Alternatives</i>
<i>Summary of Potential Impacts and Mitigation Strategies</i>
Mitigation Strategies
<i>Significant Unavoidable Adverse Impacts</i>
<i>Major Issues to be Resolved</i>

equipment. A list of some of the possible control measures that could be implemented to reduce potential air quality impacts from construction activities include:

- use only equipment and trucks that are maintained in optimal operational condition;
- require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
- use car-pooling or other trip-reduction strategies for construction workers;
- implement restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
- spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
- pave or use gravel on staging areas and roads that would be exposed for long periods;
- cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
- provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways;
- cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris; and
- stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

Operation

No impacts have been identified and no mitigation is proposed or necessary.

Water Quality

Although current City Stormwater Code provisions would not require additional mitigation for increased height or density within the study area, increased pollution would likely be generated as a result of increased vehicle traffic to support increased development under any of the alternatives. In addition to requiring water quality treatment in storm water basins and flow control in CSO basins for certain levels of development, the Stormwater Code requires the use of green stormwater infrastructure (GSI) to the maximum extent feasible on all projects. These GSI techniques can provide additional water quality and/or flow control benefits.

Sustainable Drainage Strategies

The alternatives to increase height and density within the study area would not require additional water quality or flow control measures; however, several strategies are provided below that could further mitigate impacts from urban road runoff.

- Water quality treatment best management practices (BMPs) are facilities that remove pollutants by some combination of the following: gravity settling of particulate pollutants, filtration, plant Uptake, biological processes, and/or adsorption. Examples include bio-filtration swales, sand filtration systems, raingardens and stormwater wet ponds.

Urban settings are challenging to provide water quality facilities since the space needed to provide these systems is typically not readily available. Incorporating the water quality facility into the streetscape design is an option designers can use to ensure roadway runoff is properly treated. Typical examples of integrated water quality BMPs into streetscape design include: roadside raingardens, porous paving, bio-filtration swales, filter strips and ecology embankments.

Planning of streetscape improvements could consider incorporating water quality design features as noted above to treat runoff prior to discharging to the storm system. The City's Stormwater Code requires use of these and other Green Stormwater Infrastructure (GSI) methods as part of stormwater design.

- As noted, significant portions of the pollution generating surfaces are comprised of public rights-of-way. As such, the development of a regional or neighborhood treatment facility could become an alternative to individual solutions. Redevelopment of the area provides the opportunity for partnering to install regional stormwater treatment facilities. An example of this is the Swale on Yale/Capitol Hill Water Quality Facility which is the project being jointly developed through a public/private partnership with SPU to provide stormwater quality treatment via biofiltration for a large portion of the approximately 500-acre basin draining through the 72-inch storm drain.

Plants and Animals

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under

any of the alternatives, such as adverse impacts to vegetation, the avian patterns of use in the study area, and fish habitat in Lake Union. Potential impacts will be assessed in future project-level SEPA review associated with any specific development proposal to determine whether adverse impacts are significant. The mitigating measures described below address potential site-specific mitigation that may be associated with future site-specific actions.

When project-specific environmental review occurs in the future for development projects located within the South Lake Union neighborhood, an inventory of all non-native and native trees six inches or greater in diameter (measured 4.5 feet above the ground) would be required for the site-specific proposal. City staff would determine which trees qualify as exceptional and would determine protection requirements at that time. If exceptional trees or trees with a diameter of 2 ft. or greater are located within the site area of a new building, the project would be required to comply with the provisions of the City's code, as described above. In addition, Seattle Municipal Code 23.47A.016 requires landscaping and screening for most commercial developments, which would likely mitigate any vegetation loss in the study area.

City permitting of proposed redevelopment under all alternatives would require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. Mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a "lights out" program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.

Environmental Health

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

- Further site investigations to determine the potential for contamination to be present on the property.

- Soil and groundwater investigations to evaluate the type, concentration, and extent of contamination, if present.
- Cleanup of contamination sources (e.g. removal of underground storage tanks, excavation of contaminated soil).
- Handling and disposing of contaminated soil and groundwater according to local and state regulations.

Noise

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

Construction

Practices which can reduce the extent to which people are affected by construction noise and ensure that construction noise levels stay within the applicable daytime sound level limits include:

- Use properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turn off idle equipment.
- Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.
- Stationary equipment should be placed as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors, welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the use of portable barriers demonstrates to the public the contractor's commitment to minimizing noise impacts during construction.
- Substitute hydraulic or electric models for impact tools such as jack hammers, rock drills and pavement breakers could also reduce construction and demolition noise. And electric pumps could be specified if pumps are required.

- Although as a safety warning device, back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise -- but without using a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.
- Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 feet of existing uses (e.g., residences, schools/classrooms, and noise-sensitive businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although overall construction sound levels would vary with the type of equipment used, common sense distance attenuation should be applied.

Operation

To minimize the potential for noise impacts, HVAC units should be located away from residences – or other sensitive receptors, whenever possible and/or shielded to comply with applicable noise limits. No other specific impacts have been identified and, therefore, no other specific mitigation measures are necessary.

Energy (Greenhouse Gas Emissions)

The following potential mitigation strategies would address potential impacts to climate change, energy use and greenhouse gas emissions from future development in the South Lake Union neighborhood:

- **Natural Drainage and Green Roofs** – Green roofs can provide additional open space, opportunities for urban agriculture, and decreased energy demands by reducing the cooling load for the

building. Green Stormwater Infrastructure (GSI) could also be used for flow control and water quality treatment.

- **Tree Protection** – The City of Seattle has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial office development by achieving 15-20 percent overall tree canopy within 30 years.
- **Urban Agriculture** – New P-patch Community Gardens and rooftop gardens could be provided or encouraged within the neighborhood for residents to grow food. Balconies, decks, and right-of-way planting strips could also be utilized for individual residents' agriculture needs. A farmer's market could be established for residents to sell locally grown food.
- **Native Plants** – Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by City code, could be planted to reduce water demand and integrate with the local urban ecosystem.
- **District Infrastructure Systems for Energy, Water and Waste** – District Infrastructure Systems aggregate enough service demands to make local neighborhood utility solutions feasible, and may reduce greenhouse gases by utilizing renewable sources of energy and increasing the use of local resources, materials and supplies. District parking solutions and car sharing are designed to reduce vehicle trips. Water reuse and anaerobic digesters may reduce sewer flows. Rainwater capture may reduce stormwater flows. Water reuse and rainwater capture could also reduce potable water demands. District systems for the South Lake Union neighborhood could potentially include energy, potable water, wastewater, and solid waste.
- **Waste Management and Deconstruction** – When existing buildings need to be demolished, there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However,

these rates can be increased by implementing aggressive demolition recycling. Such efforts can require considerable additional effort on the part of the contractor.

- **Building Design** – Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance, such as Built Green, LEED, and the Evergreen Sustainable Development Criteria, could be encouraged or required for development within the South Lake Union neighborhood.

Land Use

Plans, Policies and Regulations

- In order to ensure that buildings do not obstruct the flight path and airspace established by FAR 77, maximum building heights in this area of South Lake Union will be adjusted to ensure that buildings do not penetrate the airspace.
- A vertical safety buffer – below the approach surface – should be considered to ensure adequate separation between the airspace and building rooftops.
- Consideration should be given to limiting the height of rooftop appurtenances (e.g., antennae, flag poles, etc.) proximate to the flight path that could penetrate the airspace or the associated safety buffer.
- Consideration should also be given as part of the City's design review process to limiting rooftop specular surfaces that can act as a distraction for pilots.
- Proximate to the flight path, consideration should be given to limiting electrical interference on frequencies used by aircraft.

Wind Analysis

The mitigation measures presented below apply to all action alternatives.

- The area of the tallest height limit should be located near the outer perimeter of the South Lake Union neighborhood most distant from Lake Union. The largest buildings would tend to create the most significant, far reaching shear layers and would need a maximum separation from the lake.
- Reduce overall building massing and height progressively, approaching the lake. The upwind buildings would provide a measure of wind shielding of the downwind buildings. The shorter buildings adjacent to the lake would result in smaller wakes that extend towards the south approach/departure surface.

- The building height and space relationships and their influence on the approach/departure surface winds should be assessed as part of future consideration of building heights in the flight path vicinity. In order to establish a more specific definition of the extent of wakes and other significant wind dominated effects, quantitative wind modeling with a scale model of proposed development in a boundary layer wind tunnel would be required.

Housing

Future population and employment increases in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for diverse housing opportunities within the subarea. In order to address the City's goals of providing affordable housing, the following incentives and programs could be implemented in the South Lake Union subarea:

Existing Development Incentives

Multi-Family Property Tax Exemption

Seattle's Multifamily Tax Exemption (MFTE) program allows developers to receive a property tax exemption on the residential portion of a development for a specified number of years in exchange for providing a specified percentage of housing units in rental projects that are affordable for moderate-wage workers during the time the exemption is utilized. The current MFTE program expired on Dec. 31, 2010; however the Seattle City Council is currently reviewing the program for renewal. There may be changes to existing program requirements once the City Council renews the program. It is assumed that the MFTE Program will continue to be available in 39 target areas in Seattle, one of which is the South Lake Union Urban Center.

Incentive Zoning

Incentive zoning is a strategy to both encourage the desired density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits in the form of affordable housing and other amenities valued by communities. By helping to direct growth to areas targeted in the Comprehensive Plan, incentive zoning could also work to preserve the character of many of Seattle's neighborhoods. Incentive zoning is used to offer extra floor area for new development in exchange for community amenities. A baseline height limit or Floor Area Ratio (FAR) limit is created in a given neighborhood or a zone. Developers can then take advantage of additional height or FAR

by purchasing TDR and/or acquiring bonus floor area in exchange for providing public benefits, which include low-income housing (defined as affordable to households making less than 80 or 100 percent of Area Median Income depending on tenure) and a long list of on-site public amenities (SMC 23.50.051).

The commercial/industrial bonus provision of Seattle's incentive zoning enables developers to achieve additional floor area ratio (FAR) in exchange for housing and childcare that is affordable to lower-wage workers. The housing and/or childcare can be provided by the developer or a contribution of \$18.75 per bonus square foot for housing and \$3.25 per bonus square foot for childcare facilities may be made to the City for those purposes. This bonus is currently available in high-rise downtown commercial zones and on a few IC-zoned lots in the South Lake Union Urban Center (SMC 23.50.052).

The residential bonus provision of Seattle's incentive zoning enables residential developers to achieve extra floor area above the base height limit when affordable housing is provided. Developers can build affordable housing as part of their development or, in certain zones, make a contribution of approximately \$19 per bonus square foot to the City to fund new affordable housing. The housing is intended to primarily serve Seattle's modest-wage workers. The residential bonus is currently available in midrise and high-rise zones, in certain Downtown zones, and in certain areas of the Dravus neighborhood; this program is not presently available in the South Lake Union subarea.

Transferable Development Rights (TDR)

This option helps Seattle maintain a more variable scale of buildings in the South Lake Union neighborhood by allowing density to be moved from one site to another (SMC 23.50.053). Owners of certified TDR sites — ones with low-income housing, an arts facility, or a designated Landmark building— can sell excess development rights to developers in certain IC zones and use the proceeds for preservation of those priority uses. A TDR program is also in effect in downtown.

Other Strategies Specific to South Lake Union to Achieve Affordable Housing Objectives

Preservation

Structure incentive programs to allow use of TDR to preserve the following older residential buildings (all red brick buildings):

- Grandview Apartments (409 Eastlake East)

- Carolina Court (527 Eastlake North)
- Carlton Apartments (603 Pontius North)
- 502 Minor North
- Carolyn Manor Apartments (1309 Dexter North)
- Jensen Apartments

Employers Promoting Living near Work

Involve employers in identifying strategies to promote living near work.

- Create innovative ways for employers to help develop a “live and work” community.
- Explore ways for South Lake Union employers to contribute to housing if employees live in South Lake Union through Transportation Management Plans.

Surplus Sites for Affordable Housing

- Inventory publicly owned property in South Lake Union suitable for development in affordable housing.
- Identify key community properties for particular uses, including affordable housing.

Family Housing

- Encourage affordable family sized homes through employer-developer partnerships and direct City funding.
- Use surplus property to achieve housing objectives not being met through private market, such as family housing.
- Use zoning and design guidelines to encourage ground-related housing in the six block area along 8th Avenue from John to Republican.
- Encourage ground-related housing units with good access to open space around Denny Park and Cascade Park.

Subsidized Housing Resources

- Leverage public funding to preserve existing and create new subsidized housing within South Lake Union.
- Use South Lake Union commercial/industrial bonus payment option funds for new low-income housing in the South Lake Union subarea.

Aesthetics

Height, Bulk and Scale

A number of potential approaches for mitigation are discussed below. See also mitigation recommendations contained in SMC 25.05.675, some of which are incorporated below.

Possible mitigation strategies to reduce the impact of height, bulk and scale that may apply to all alternatives include:

- a. Either limit the height of development or create additional zones that transition building heights down more gradually.
- b. Implement measures to modify the bulk of development.
- c. Modify building façades or envelopes through adjustments in building modulation, finish material, color, architectural detailing or fenestration (including type or percentage of glazing).
- d. Reduce, relocate or rearrange of accessory structures.
- e. Modify required building setbacks.
- f. Relocate buildings on-site.
- g. Modify building orientation.
- h. Redesign the building profile of a project.
- i. Create or modify on-site view corridors.
- j. Reduce or modify walls, fences, screening or landscaping.
- k. Require or encourage incorporation of open space or through-block pedestrian connections as part of development projects.
- l. Develop and adopt design guidelines to specifically address bulk impacts identified with each alternative.

Viewshed

No significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis and, therefore, no mitigation is necessary.

At such time site-specific development occurs, detailed viewshed analysis should be performed relative to any development that would be within the view corridor between Volunteer Park and the Space Needle.

Shadows

At such time site-specific development occurs, detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground or Lake Union Park with attention to times of the year and hours of the day the open space could be affected, the geographical area(s) of the open space affected, anticipated seasonal use

of the open space, availability of other open spaces in the area, and the number of people affected.

SMC 25.05.675Q2e authorizes the City to employ measures to mitigate adverse shadow impacts to key open spaces, including:

- a. limiting the height of development;
- b. limiting the bulk of the development;
- c. redesigning the profile of the development;
- d. limiting or rearranging walls, fences or plant material;
- e. limiting or rearranging accessory structures, i.e., towers, railings, antennae; and
- f. relocating the project on the site.

Light and Glare

SMC 25.05.675K2d authorizes the City to employ measures to mitigate adverse light and glare impacts, including the following:

- a. "limiting the reflective qualities of surface materials that can be used in the development;
- b. limiting the area and intensity of illumination;
- c. limiting the location or angle of illumination;
- d. limiting the hours of illumination; and
- e. Providing landscaping."

Other measures that may be also employed include:

- f. install screening, overhangs, or shielding to minimize spillover lighting impacts – particularly near sensitive residential receivers;
- g. shield exterior lighting fixtures and directing site security lighting away from nearby residential uses;
- h. include pedestrian-scaled and pedestrian-oriented lighting for safety along sidewalks, parking areas, street crossings and building access points;
- i. employ timers or motion sensors for lighting to reduce spillover lighting and generally reduce ambient light levels;
- j. avoid large expanses of smooth, uniform, reflective building surfaces;
- k. incorporate architectural relief and detail, such as exterior sun shades, deep spandrels, mullions or other features of façade articulation, that reduce reflectivity; and
- l. as necessary, undertake project-specific solar impact analysis studies to determine the extent of light and/or glare impacts and to identify specific mitigation measures.

Historic Resources

In order to comprehensively assess existing resources and identify historic preservation priorities, potentially undertake a new inventory of historic resources in the South Lake Union neighborhood. Up-to-date information will allow proper assessment of potentially eligible properties. A new survey would address buildings such as 501 Dexter Avenue N, which appears to have architectural significance yet has not been cited in earlier surveys.

If higher-density alternatives (1, 2, or 3) are chosen, funding to the Department of Neighborhoods Historic Preservation Office for preparation of landmark nominations should be considered as mitigation. The work would allow the properties to be taken through the nomination process to clarify the status of potentially significant properties.

The *South Lake Union Urban Center Neighborhood Plan* of September 2007 identifies goals and policies that specifically relate to historic or older buildings in the neighborhood. The plan identifies the following policies, which would be appropriate as mitigation measures for increased height and density allowed in the neighborhood (under Alternatives 1, 2, or 3).

- Establish incentives to encourage preservation, adaptive use, and rehabilitation of historically significant structures in the neighborhood.
- Explore incentives to encourage the adaptive use of older, character-providing buildings in the neighborhood.
- Provide incentives to support property owners who wish to maintain existing buildings.

A zoning capacity and financial feasibility model should be created and analyzed to determine whether an expanded transfer of development rights (TDR) program would be an effective financial incentive and mitigation tool for preservation of local landmark properties in the South Lake Union neighborhood.

A certified arborist should undertake a conditions analysis of the trees in Denny Park, including an assessment of their need for seasonal sunlight from the north. Design standards should be modified accordingly to allow ample light.

Cultural Resources

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the location and nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Mitigation measures could potentially include archaeological monitoring, testing, or data recovery excavations; development of interpretive signs, markers, or exhibits; and/or minimization or avoidance of further impacts through redesign.

Transportation

Bicycle and Pedestrian System

Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust pedestrian system is provided.

Based on a review of the Pedestrian Master Plan, several improvements could be implemented in South Lake Union. Some of the improvements related to Tier 1 Pedestrian mobility issues in the South Lake Union neighborhood include, but are not limited to:

- Complete missing sidewalks along Terry Avenue consistent with the *Terry Avenue Street Design Guidelines*
- Add sidewalk to north side of Denny Way between Stewart Street and Melrose Avenue consistent with the proposed *Denny Way Streetscape Concept Plan*¹
- Add sidewalk along the east side of Eastlake Avenue from Denny Way to Harrison Street and add a signalized² crossing at the Eastlake Avenue/Republican Street intersection
- Close pedestrian system gaps on Roy Street between Fairview Avenue and Minor Avenue and on Valley Street between Minor Avenue and Yale Avenue

The Bicycle Master Plan identifies the following relevant actions in the South Lake Union neighborhood including but not limited to:

¹The *Denny Way Streetscape Concept Plan* has not yet been adopted.

² To be implemented, a signal must meet warrants and be approved by SDOT.

- Add bikeways along Fairview Avenue from Valley Street to Eastlake Avenue E to connect to facilities provided as part of Mercer East and West projects on Valley and Roy Streets
- Add bikeways along Harrison or Thomas street between Fifth N and Eastlake and along Fairview Avenue between Denny Way and Valley Street
- Improve bicycle access through the Fairview Avenue/Denny Way intersection
- Signalize intersection at Minor Avenue N and Denny Way consistent with the *Denny Way Streetscape Concept Plan*

All Bicycle Master Plan improvements were considered for this analysis. However, before implementation, SDOT would review the projects during the design stage to address any potential concerns, such as safety. Other pedestrian and bicycle network projects include the following:

- Implement the planned Lake to Bay Loop
- Repair facilities in poor condition
- Require that projects which develop above the “base height” implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework
- Provide additional signalized crossings on Thomas Street at the Dexter Avenue, 9th Avenue, and Westlake Avenue N intersections³
- Provide additional signalized crossings on John Street at the Dexter Avenue and Westlake Avenue N intersections⁴
- Evaluate opportunity to provide enhanced, marked crossing locations across Westlake Avenue N, between Galer Street and 9th Avenue N⁵, and implement improvement as appropriate
- Implement the hill climbs defined in the Urban Design Framework
- Improve street lighting and way finding

³ Given the multi-lane nature of these streets, a pedestrian signal or half-signal is necessary to provide a safe crossing. The signal is required because of the adjacent land uses and likely pedestrian desire lines.

⁴ To be implemented, a signal must meet warrants and be approved by SDOT..

⁵ The frequency of marked crossings is a key component of the pedestrian network. The exact location of each crossing is not known at this time. In the future, the City would evaluate pedestrian desire lines to determine the precise location and treatment for each crossing.

Travel Demand Management and Parking Strategies

Implement best management practices for travel demand management including maximum parking limits and unbundled parking costs for residential and commercial properties. Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state has shown that implementation of travel demand management programs can substantially reduce vehicle trip generation (see **Appendix E** for details), which, in turn, reduces traffic congestion impacts. Parking maximums would limit the number of parking spaces which can be built with new development. Unbundled parking separates parking costs from total property cost, allowing buyers or tenants to forego buying or leasing parking spaces. These types of potential mitigation measures would tend to reduce the number of work-based commute trips and all types of home-based trips. Shopping-based trips would also decrease, but at a lower level since these types of trips are less sensitive to parking costs and limited supply for short-term use.

The parking-based travel demand management strategies described above could be further supported by implementing the car sharing incentives identified in the Seattle Municipal Code⁶ and through the development of a parking management program like the recently deployed e-park system in Downtown Seattle to better utilize private parking resources.

Note that the parking analysis in the previous sections identified potential short-term parking impacts related to an imbalance between supply and demand. Any reductions to the parking supply in the South Lake Union area would exacerbate this short-term impact. However, as described in the previous sections, while reduced supply will create a short-term shortage in parking spaces, over time prices will adjust and some drivers will switch to other modes. This shift to other modes is the primary goal of the potential travel demand management mitigation measures since it will reduce the impacts to traffic congestion and freight mobility.

In addition to the parking management strategies described above, the City of Seattle could also seek to expand the Downtown Growth and Transportation Efficiency Center (GTEC) program to include the South Lake Union area, or institute a separate GTEC for South Lake Union. As

⁶ SMC – 23.54.020.J

described in *Growth and Transportation Efficiency Center Program 2009 Report to the Legislature*, WSDOT describes the GTEC program as an extension of the existing CTR program. The GTEC program engages employers of all sizes in vehicle trip reduction programs through an area-wide approach. GTECs must also include an evaluation of transportation and land use policies to determine the extent to which they complement and support trip reduction goals. The South Lake Union Height and Density land use changes along with the potential mitigation packages conform well to the general goals of the GTEC program.

Transit Service Expansion

Impacts to transit load factors could be reduced and frequencies could increase by providing capital and/or operational support existing and planned transit service between Uptown and Capitol Hill. King County Metro should consider options to increase the frequency and capacity on the impacted routes by running additional busses. A South Lake Union shuttle service connecting destinations along Eastlake, the streetcar line, and the Aurora Rapid Ride line would provide additional transit service opportunities in the area, while supporting the shift to other modes caused by the potential travel demand management mitigation measures.

Additional improvements to the transit network include transit signal priority at the Fairview Avenue N./Denny Way intersection, and a northbound queue jump lane and southbound transit signal priority at the Fairview Avenue N./Harrison Street intersection.

Roadway Capacity Enhancements

Impacts to traffic congestion and freight mobility along the Mercer Street corridor could be reduced by the completion of the Mercer West Corridor Project. The roadway changes include:

- Widen the Mercer Street underpass between Dexter and 5th Avenues N to include three lanes in each direction, left-turn lanes, wider sidewalks, and a bicycle path
- Connect 8th Avenue N between Mercer and Roy Streets
- Consider separating southbound left turn phase at 9th Avenue/Denny Way/Bell Street intersection

Potential Mitigation Measure Implementation

Implementation of the potential mitigation measures described above is anticipated to be achieved through an update of the South Lake Union Voluntary Impact Fee Program and updates to the City Code to support the potential travel demand management/parking mitigation measures.

As the South Lake Union neighborhood builds out, the Seattle Department of Transportation will monitor the transportation system, prioritize projects, and use the fees collected to construct projects, much as the current Voluntary Impact Fee Program is operated.

Projects that develop within the South Lake Union neighborhood may pay the voluntary mitigation fee in order to receive a Master Use Permit. Alternatively, if a project applicant does not wish to pay the voluntary impact fee, project applicants must perform a supplemental environmental analysis to determine transportation impacts and appropriate measures to mitigate project impacts.

Specific Mitigation Measures

This section summarizes each impact along with potential mitigation measures.

Impact 1: Under all three alternatives, there will be significant impacts to study corridor traffic operations.

Potential Mitigation 1: The Roadway Capacity Enhancement mitigation measure, which includes the completion of the Mercer West Corridor Project, will reduce the impact on Mercer Street corridor and improve overall pedestrian and bicycle circulation in the area by implementing a key section of the Lake to Bay Loop.

Since no other roadway capacity expansion projects are planned or considered feasible, many of the remaining impacts can be lessened by implementing the Bicycle and Pedestrian System and Travel Demand Management mitigation measures, as described below.

Based on the output from the Mixed Use Development (MXD) model, the Bicycle and Pedestrian System mitigation measures will reduce vehicle trip generation by approximately 7 percent (for PM peak hour trips, see **Appendix E** for other time periods). The MXD trip generation tool predicts mode share based primarily on land use and demographic information, and does not take additional travel demand management into account. To estimate the reduction in trips prompted by travel demand management programs, research summarized by CAPCOA⁷ was

⁷*Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from GHG Mitigation Measures*, CAPCOA, August, 2010.

consulted. According to this research, the travel demand management strategies will reduce vehicle trip generation by 15 percent⁸. Combined, these two measures would reduce overall PM vehicle trip generation by about 21 percent for all three height and density alternatives⁹. Additional information regarding these calculations and the CAPCOA research are available in **Appendix E**.

As shown in **Table 1-3**, these trip generation rates would be lower than what is anticipated under the No Action Alternative and the impact on many study roadway segments would be reduced to a less-than-significant level. However, because the change in traffic congestion would affect drivers' behavior, some roadway segments would continue to be impacted, as described in the next section.

The Transit Service Expansion mitigation measure is also recommended. Based on the CAPCOA research, providing capital support that would lead to increased transit frequency would lead to an additional two percent reduction in vehicle trip generation. CAPCOA estimates an additional five percent reduction in vehicle trip generation could be achieved by providing new transit service (e.g., new service between Queen Anne, South Lake Union, and Capitol Hill via Mercer Street; South Lake Union shuttle service connecting the neighborhood with the Streetcar and the Aurora Rapid Ride). However, additional studies would need to be conducted to determine the exact level of ridership on new transit lines.

Any additional transit would also support and enhance the pedestrian, bicycle, and travel demand management mitigation measures described above. However, since the City of Seattle does not generally own and operate the transit service in South Lake Union, there is no guarantee that expanded transit service (beyond what is assumed in the Seattle travel model) will occur. Therefore, this mitigation measure was not assumed when reporting the results with mitigation in **Table 1-4**.

⁸ 15 percent reduction in trip generation assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative. Unbundled parking is assumed to cost an average of \$100 per month per space.

⁹ As noted in Appendix E, the combined effects of two trip reduction strategies are not additive since there are diminishing returns when multiple strategies are implemented.

Impact 2: Under all three height and density alternatives, there will be impacts to bicycle and pedestrian mobility.

Potential Mitigation 2: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System mitigation measures be implemented.

Impact 3: Under all three height and density alternatives, freight mobility is significantly impacted.

Potential Mitigation 3: As discussed, the Roadway Capacity Enhancements will not address congestion on Mercer Street between Dexter Avenue and Fairview Avenue N. Therefore it is recommended that the Bicycle and Pedestrian System and Travel Demand Management mitigation measures also be implemented to reduce the automobile trip generation from residents and employees of South Lake Union. These measures will free up more capacity on the Mercer Street corridor for freight traffic.

It is also recommended that the City update the Major Truck Street network to identify a replacement for Broad Street. Further, improvements to major truck streets and arterials expected to carry heavy vehicles on a regular basis will continue to be considered pursuant to the City's adopted Complete Streets policy which guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users. For example, the need for wider corner radii to accommodate turning trucks must be balanced with the need to shorten pedestrian crossings and slow regular passenger vehicles. The City will evaluate these trade-offs on a case-by-case basis.

Also, as specific projects seek a Master Use Permit, the City should review the applications to ensure that adequate loading and truck circulation facilities are provided based on the proposed use.

Impact 4: Under all three height and density alternatives, there will be significant impacts to transit in terms of load factors.

Potential Mitigation4: To reduce the significance of this impact, it is recommended that King County Metro increase the frequency and capacity on the impacted routes by running additional busses.

Impact 5: Under all three height and density alternatives, there will be significant short-term impacts to parking. The impacts would be felt by employees who must pay more for parking, and building owners who must maintain active TDM programs to accommodate all the tenants.

Potential Mitigation 5: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System, Travel Demand Management, and Transit Service Expansion mitigation measures be implemented. There is a strong relationship between parking supply, parking cost, and mode share. Although there may be short-term impacts as individual developments are completed (causing parking demand to exceed supply), over the long-term the situation will reach equilibrium as drivers shift to other modes.

The City may have to review its on-street parking policies and consider implementing variable parking pricing to maintain supply. The shift from driving to transit may also require more transit service from King County Metro. The parking maximum limits suggested as mitigation for Impact 1 would also reduce supply and shift travelers to other modes.

Mitigation Results

The potential mitigation measures were taken into account and analysis was repeated on the three height and density rezone alternatives. The Pedestrian and Bicycle System and Travel Demand Management mitigation packages were factored in at the trip generation level. The Roadway Capacity Enhancement mitigation measures were integrated into the travel model. The trip generation results of the mitigated height and density alternatives are summarized in **Table 1-3** (more details may be found in **Appendix E**). The d/c ratios of the three action alternatives with mitigation are shown in **Table 1-4**, along with the No Action Alternative for comparison.

Table 1-3
PM Peak Hour Trip Generation with and without Mitigation

Alternative	No Mitigation			Mitigation		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning (Mitigation Not Applicable)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	12,648 (51.4%)	7,279 (26.9%)	5,871 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)

Source: Fehr & Peers, 2010

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Table 1-4
Mitigated Action Alternative: Demand-to-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,754	PM/N	1.10/F	1,755	PM/N	1.10/F	1,733	PM/N	1.08/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,316	PM/N	0.82/D	1,316	PM/N	0.82/D	1,320	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	988	PM/S	0.94/E	991	PM/S	0.94/E	946	PM/S	0.90/E
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,029	PM/S	0.98/E	1,030	PM/S	0.98/E	994	PM/S	0.95/E
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	610	PM/N	0.68/D	616	PM/N	0.68/D	598	PM/N	0.66/D
Eastlake Avenue E	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,130	AM/SW	0.59/D	1,129	PM/NE	0.59/D	1,108	AM/SW	0.58/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,130	AM/S	0.59/D	1,127	AM/S	0.59/D	1,109	AM/S	0.58/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	547	PM/N	0.78/D	544	PM/N	0.78/D	549	PM/S	0.78/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	849	PM/N	0.61/D	851	PM/N	0.61/D	858	PM/N	0.61/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	781	AM/SW	1.12/F	766	AM/SW	1.09/F	774	AM/SW	1.11/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,381	PM/N	0.82/D	1,384	PM/N	0.82/D	1,396	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,000	PM/N	0.60/D	1,000	PM/N	0.60/D	985	PM/N	0.59/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,140	AM/S	1.19/F	1,134	AM/S	1.18/F	1,151	AM/S	1.20/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,737	PM/N	1.24/F	1,734	PM/N	1.24/F	1,709	PM/N	1.22/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	636	PM/E	0.76/D	633	PM/E	0.75/D	611	PM/E	0.73/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,980	PM/W	0.79/D	1,983	PM/W	0.79/D	1,970	AM/W	0.78/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,054	AM/W	0.98/E	2,072	AM/W	0.99/E	2,040	AM/W	0.97/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,031	PM/W	0.61/D	1,031	PM/W	0.61/D	1,032	AM/W	0.61/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,591	PM/E	1.52/F	1,586	PM/E	1.51/F	1,573	PM/E	1.50/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,126	AM/W	0.70/D	1,122	PM/W	0.70/D	1,102	AM/W	0.69/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,289	AM/NW	1.07/F	1,282	AM/NW	1.07/F	1,270	AM/NW	1.06/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,063	PM/SE	0.89/D	1,068	PM/SE	0.89/D	1,051	PM/SE	0.88/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,194	AM/SW	1.04/F	2,208	AM/SW	1.05/F	2,163	AM/SW	1.03/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,344	AM/SW	0.75/D	1,347	AM/SW	0.75/D	1,340	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	860	AM/SW	0.72/D	862	AM/SW	0.72/D	840	AM/SW	0.70/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	854	PM/NE	0.71/D	851	PM/NE	0.71/D	856	PM/NE	0.71/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,195	PM/NE	0.66/D	1,203	PM/NE	0.67/D	1,177	PM/NE	0.65/D
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	676	AM/W	0.94/E	689	PM/W	0.96/E	678	AM/W	0.94/E
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	419	PM/E	0.58/D	436	PM/E	0.61/D	390	PM/E	0.54/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	522	PM/E	0.87/D	515	PM/E	0.86/D	502	PM/E	0.84/D
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	661	PM/N	0.94/E	667	PM/N	0.95/E	648	PM/N	0.93/E
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/F	1,099	PM/N	0.92/E	1,093	PM/N	0.91/E	1,095	PM/N	0.91/E

Source: Fehr & Peers, 2010

Note: Bold text signifies a significant impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Potential transit mitigation calculations were completed independently of the other potential mitigation measures. **Table 1-5** shows the number of additional busses that would need to run during the peak hour to reduce the load factor to acceptable levels. Details of the calculations may be found in **Appendix E**.

Table 1-5
South Lake Union Peak Hour Transit Mitigation

Route	Termini Locations	No Action Load Factor	Action Load Factor	Peak Hour Ridership	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	1.17	1.35	520	1	1.18
28 NB	Downtown, Broadview	1.19	1.40	240	1	1.06
29 NB	Downtown, Woodland Park	1.19	1.49	120	1	1.04
29 SB	Downtown, Woodland Park	1.49	1.79	144	1	1.25
56 NB	South Lake Union, West Seattle	1.38	1.53	396	2	1.07

Source: Fehr & Peers, 2010

Public Services

Future population and employment increases associated with potential development in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for fire and emergency services and police services in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenue generated from potential redevelopment in the neighborhood – including construction sales tax, business and operation tax, property tax and other fees, licenses and permits – would accrue to the City of Seattle and could help offset demand for police and fire services.
2. All new buildings would be constructed in accordance with the 2006 Fire Code which is comprised of the 2006 International Fire

Code with Seattle amendments or the applicable fire code in effect at the time of permit submittal.

3. Design features could be incorporated into potential development in the South Lake Union neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility.

Utilities

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Leadership in Energy and Environmental Design (LEED) provides a framework and ranking system to reduce the impact of development on the environment including the utility infrastructure. By using LEED methods to reduce energy and other resources, projects can reduce the overall effects of new or re-development. Encouraging the use of the LEED or a similar standard score card (such as Built Green) for resource use reduction with some type of development incentives would help to reduce the effects on the utility infrastructure.

Water

1. The use of low or no-flow fixtures and water saving devices in new construction and renovations.
2. Collection and re-use of storm water for non-potable uses (irrigation, toilet flushing, mechanical make up water, etc.) would reduce demand on the public water supply.
3. A replacement or rehabilitation plan for the oldest water mains in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.

Combined Sewer & Storm Sewers

1. Modern low flow or no-flow plumbing will reduce the per capita waste water volume discharged to the combined sewer pipes and sent to the treatment facility.
2. New development in the area will be required to meet the 2009 City of Seattle Stormwater Code. Stormwater collected on

site will be required to be held on site with Green Stormwater Infrastructure (GSI) methods, or detained before discharge to the city storm system. These measures will reduce the peak rate of water discharged to the combined and storm sewer systems.

3. A replacement or rehabilitation plan for the oldest sewer pipes in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.
4. Installation of a separated storm sewer system in this area, sized for the approved level of development, would reduce the load of storm water sent to the treatment plant, and nearly eliminate combined sewer over flows in this area. The existing combined sewer system would be retained for use as a sanitary sewer.

Electric Power

1. The installation of photovoltaic and other local generating technologies will reduce the demand on the public generating and distribution facilities.
2. Construction and operation of LEED compliant (or similar ranking system) buildings will reduce the level of increase required in power systems.
3. Reduce the use of power in building heating and cooling with passive systems and modern power saving units.

Open Space and Recreation

Future population and employment increases in the South Lake Union Neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for park and recreation facilities in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenues generated from potential future development in the South Lake Union Neighborhood would accrue to the City of Seattle and could help offset demands for park and recreation facilities.
2. Future increases in population and employment in the South Lake Union Neighborhood could be planned for through the City's ongoing capital facilities planning process.
3. New park and recreation facilities could be provided in conjunction with potential future development as part of the development bonus process under Alternatives 1-3.

4. New open space facilities could be provided in the Fairview and Dexter Subareas in conjunction with potential future development.
5. Consider facilities to address the identified gaps in service in the 8th Avenue Corridor and the Fairview Corridor focus areas in conjunction with potential future development.

1.7 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except transportation. Significant unavoidable adverse impacts associated with transportation are as described below.

Transportation

Even with the proposed mitigation strategies, two study corridors would continue to have unmitigated traffic operations impacts:

- Dexter Avenue N from the Fremont Bridge to Valley Street – Alternatives 1 and 3
- Mercer Street from Dexter Avenue N to Fairview Avenue N – Alternative 2

The above impacts could be mitigated through additional roadway corridor widening. However, as described earlier, the City has no additional roadway widening plans and additional roadway widening would have right-of-way, cost, and environmental consequences. Additionally, roadway widening would tend to induce more vehicle trips in the South Lake Union neighborhood, which could conflict with the transportation goals outlined in the Seattle Comprehensive Plan. Therefore, additional widening is considered infeasible.

In addition to the traffic operations impacts described above, the impacts to transit load factors may remain. Although transit service expansion was identified as a potential mitigation measure, the City of Seattle does not generally own and operate the transit service in South Lake Union. Therefore, expanded transit service cannot be guaranteed by the City and no expansion was assumed in the analysis.

All other impacts were reduced to a less-than-significant level with mitigation.

1.8 Major Issues to be Resolved

The key planning issue facing decision-makers is whether and how to change development regulations and standards for building height, bulk and scale in the South Lake Union neighborhood. Major environmental

<i>Proposal</i>
<i>Location</i>
<i>Objectives of the Proposal</i>
<i>Alternatives</i>
<i>Summary of Potential Impacts and Mitigation Strategies</i>
<i>Mitigation Strategies</i>
Significant Unavoidable Adverse Impacts
Major Issues to be Resolved

issues include potential impacts to the transportation system and to the aesthetic/visual character of the neighborhood.

Description of the Alternatives

CHAPTER 2 DESCRIPTION OF THE ALTERNATIVES

2.1 Introduction

The City of Seattle Comprehensive Plan, *Toward a Sustainable Seattle*, establishes a framework for accommodating future growth in a manner that is sustainable and consistent with community values. The urban village strategy is a key component of the plan. The urban village strategy, as described in the Urban Village element, is a comprehensive approach to planning for future growth in a sustainable manner. The Urban Village element identifies four categories of urban villages, including urban centers, manufacturing/industrial centers, hub urban villages and residential urban villages. Urban centers are identified as the densest neighborhoods in the City, with a diverse mix of uses, housing, and employment. The South Lake Union neighborhood is identified as an urban center.

As an urban center, the Comprehensive Plan establishes that the South Lake Union neighborhood should contain a concentration of housing and employment and provide a regionally significant focus for housing and employment growth. Densities and mix of uses should support walking, transit use and cohesive community development.

Consistent with these goals, the Urban Center Neighborhood Plan for South Lake Union (Neighborhood Plan) establishes goals, policies and strategies supportive of the urban center designation. Strategy 2c specifically addresses the use of increased height and density to achieve Neighborhood Plan goals (see sidebar). Although the Neighborhood Plan notes that there was disagreement about this strategy, it is identified as a high priority, with implementation to start in the near term (defined as within a five-year period).

The City is considering the use of incentive zoning as a strategy to encourage increased density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits valued by the community. The City initiated an Environmental Impact Statement (EIS) process to study the potential impacts of increased height and density in the neighborhood. Over the course of 2008 and 2009, working in partnership with interested citizens and organizations, the City identified three alternative zoning scenarios, each providing a different configuration of height and density in the South Lake Union neighborhood.

Introduction	1
Planning Context	6
Proposed Action and Alternatives ...	14
Environmental Review ...	31
Benefits and Disadvantages of Delaying the Proposed Action ...	33

Urban villages ... enable the City to: deliver services more equitably, pursue a development pattern that is environmentally and economically sound, and provide better means of managing growth and change through collaboration with the community...

Toward a Sustainable Seattle, 2004.

Strategy 2c: Use additional height and density as an incentive for projects that implement multiple neighborhood plan policies where the additional height will not negatively affect the surrounding area, flight paths or key public view corridors
South Lake Union Neighborhood Plan, 2007

The City is testing these scenarios, along with a scenario that does not provide for height increases (No Action), through this Draft EIS. Based on the analysis and public comment received during the Draft EIS comment period, the City will determine future actions, if any, associated with code updates to permit increased height and density in the South Lake Union neighborhood.

2.1.1 Overview of the Proposal

This Draft EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

Among the action alternatives, Alternative 1 would provide the greatest potential for increases in height and density, Alternative 3 the least, and Alternative 2 falls between Alternatives 1 and 3. Alternative 1 would allow for building heights of 240 to 300 feet in much of the neighborhood, with maximum heights of 400 feet between John Street and Denny Way. Alternative 2 would allow for maximum heights of 300 feet in the area between Aurora and Westlake avenues north, with much of the rest of the neighborhood at maximum heights of 160 to 240 feet. Under Alternative 3, the majority of the neighborhood would have maximum building heights of 160 feet to 240 feet. Under Alternatives 2 and 3, existing zoning, with no provision for increased height through zoning incentives, would be retained in the majority of the Cascade neighborhood, with changes limited to areas near the western and southern boundaries in Alternative 2 and along the western boundary in Alternative 3. Similarly, under Alternative 3, the majority of the Fairview neighborhood would also retain existing zoning, with no provision for increased height through incentive zoning.

Alternatives 1 and 2 would provide for height and density increases for both commercial and residential development, while Alternative 3 is focused primarily on residential development.

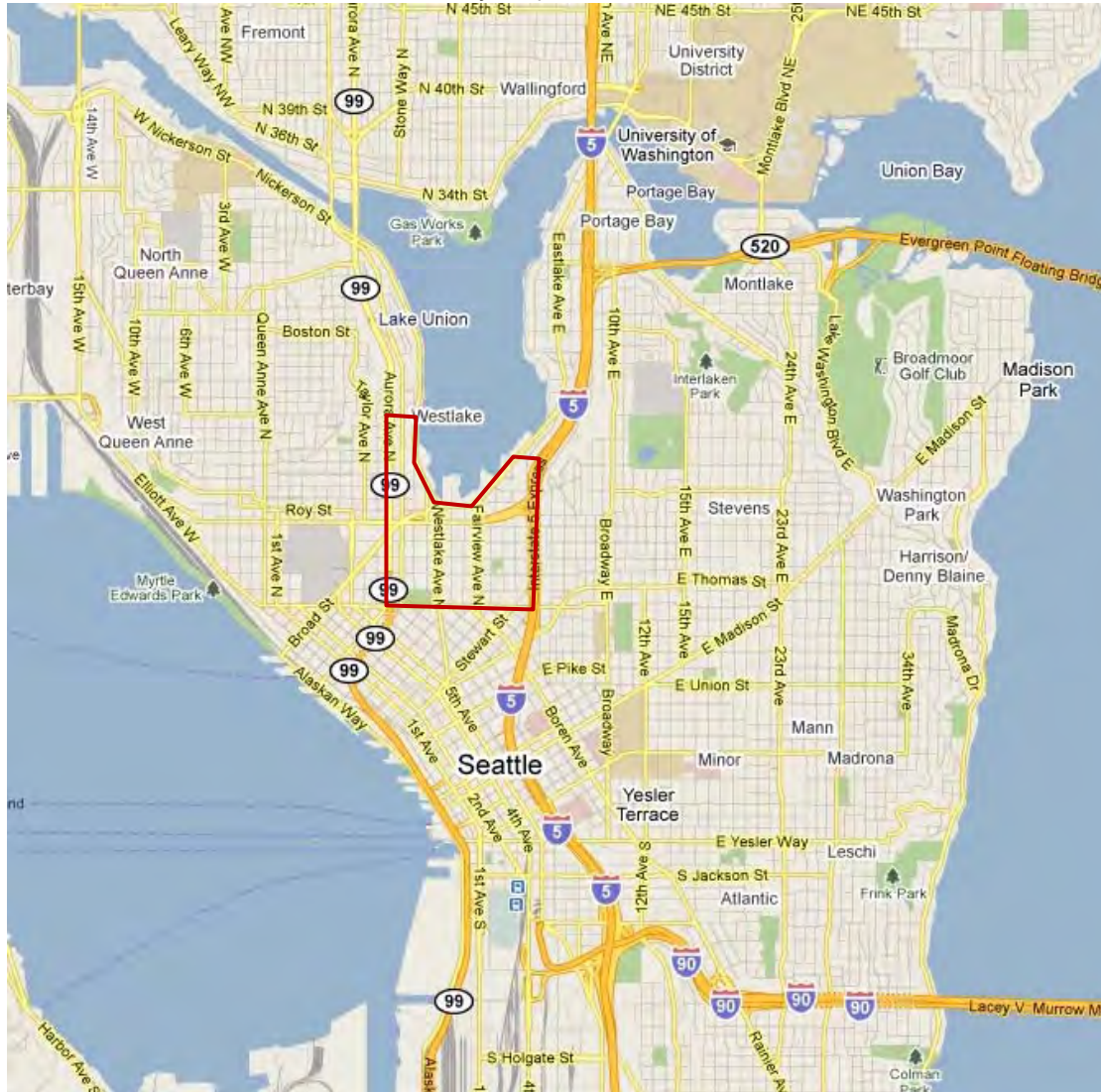
All of the alternatives are described in more detail in Section 2.3 and shown in Figures 2-5 through 2-8.

Study Area

The South Lake Union neighborhood is located in the center of the City of Seattle, located immediately north of the Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east. Consisting of about

340 acres, the area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way and on the north by the Lake Union shoreline. See **Figure 2-1**.

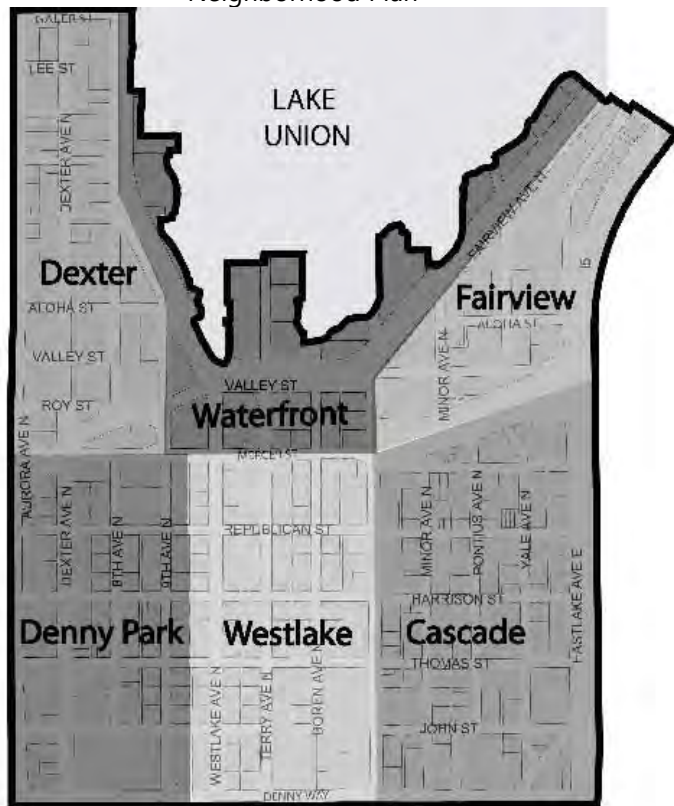
Figure 2-1
Vicinity Map



Source: Google Maps, 2010

For planning purposes, the City has identified six neighborhoods in the neighborhood, known as the Dexter, Denny Park, Waterfront, Westlake, Fairview and Cascade neighborhoods See **Figure 2-2**.

Figure 2-2
Neighborhood Plan



Source: South Lake Union Urban Center Neighborhood Plan, 2007.

Within the study area boundaries and where appropriate, this EIS will consider in greater detail existing conditions and potential environmental impacts of the alternatives in three focus areas. Due to the area-wide cumulative nature of the analyses, the focus areas are not specifically called out in the transportation, energy (greenhouse gas), and air quality analyses.

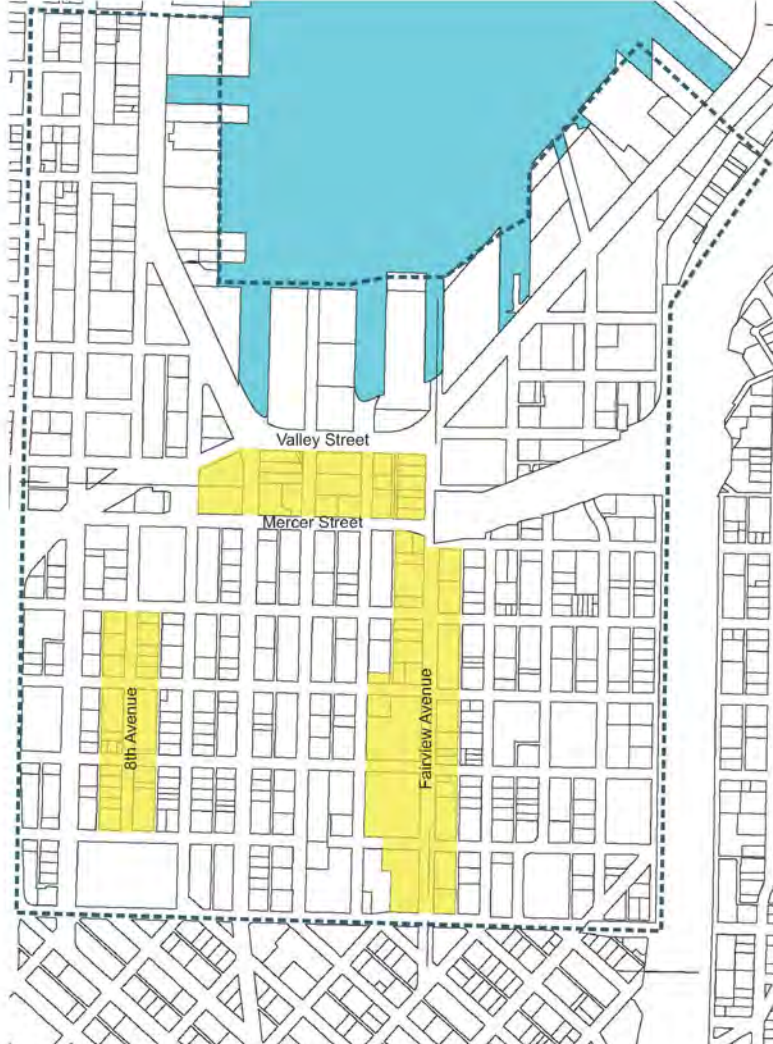
Focus areas are shown in **Figure 2-3** and described below:

- 8th Avenue Corridor – Consisting of about 5.9 acres in the Denny Park area, this area is comprised of one-half block east and west of 8th Avenue between Republican and John Streets.
- Fairview Avenue Corridor – About 16.2 acres, generally consisting of one-half block east and west of Fairview Avenue between Mercer Street and Denny Way. This area straddles the boundary between the Westlake and Cascade neighborhoods.
- Valley/Mercer Blocks – Consisting of about 8 acres in the Waterfront area, this area is bounded by Valley Street on the north, Mercer Street on the south, 9th Avenue on the west and Fairview Avenue on the west.



8th Avenue at Harrison Street

Figure 2-3
Focus Areas



Source: EA|Blumen, 2010.

Transportation Network

Due to its central location and proximity to the major regional north/south corridors of Aurora Avenue North and Interstate 5, South Lake Union is heavily affected by regional and local traffic. Major transportation projects in the neighborhood that would result in changes to right-of-way alignment and associated access and configuration of parcels adjacent to the affected rights of way include the Mercer Corridor-East Project and the Bored Tunnel Street Grid Reconnection. Because these projects are either funded or highly likely to be funded, they have been assumed as part of the underlying street network for the neighborhood.

2.1.2 Objectives of the Proposal

The City has identified the following specific objectives of the proposal:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.
- Ensure adequate zoned development capacity for long-term growth consistent with the designation of South Lake Union as one of the City’s six urban centers.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.
- Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems.

2.2 Planning Context

2.2.2 Seattle Comprehensive Plan

The Seattle Comprehensive Plan, *Toward a Sustainable Seattle*, is a GMA-compliant 20-year plan that provides guidance for how Seattle will accommodate growth in a way that is consistent with the vision of the citizens of the City. As a policy document, the Plan lays out general guidance for future City actions. In many cases, general guidance in the Plan is more specifically addressed in functional plans that focus on a particular aspect of City services, such as parks, transportation or drainage. The City implements the Plan through development and other regulations, primarily found in the City's zoning map and Land Use Code.

The City adopted the current Plan in 1994. It has been updated in major and minor ways in subsequent years. The amendment processes for the Comprehensive Plan are defined under state law:

<i>Introduction</i>	Chapter 2 Contents
Planning Context	
<i>Proposed Action and Alternatives</i>	
<i>Environmental Review</i>	
<i>Benefits and Disadvantages of Delaying the</i>	
<i>...</i>	
<i>...</i>	

- Once a year, the City may amend the plan to address specific proposed changes initiated by the City and private parties.
- Every seven years, the City must review and consider amendments to ensure continued compliance with the Growth Management Act, reflect updated population projections and ensure capacity to accommodate projected population for the next 20-year time horizon.

Growth Targets

The Comprehensive Plan contains growth targets that establish how much residential and employment growth is anticipated through 2024 and where it will be located. Recently, King County and its cities have allocated new growth targets that extend the planning horizon to 2031. It is expected that this updated target will be the basis for the City's next 10-year comprehensive plan update, due in 2014. However, the City has not yet adopted those targets into the Comprehensive Plan or allocated portions of those targets to individual urban centers or urban villages.

In order to provide the City with an early opportunity to consider the fit of the alternatives relative to the future comprehensive plan update effort, this EIS assumes a 2031 South Lake Union target that is proportionate to the adopted South Lake Union 2024 target, see **Table 2-1** below. The estimate is for analysis purposes only and does not represent policy intent by the City.

It should be noted that the adopted 2024 growth target for the neighborhood allocated a relatively high share of citywide growth to South Lake Union. Because the current growth target is ambitious, it is unlikely that future planning would increase the proportion of citywide growth that is allocated to South Lake Union. It is more likely that future planning will match the current proportion or reduce it by distributing citywide growth to other areas of the City. Therefore, the EIS estimate of a 2031 growth target that is proportionate to the adopted 2024 target is a conservative assumption.

Table 2-1
City of Seattle Growth Targets¹

	City		South Lake Union	
	2024	2031	2024	2031 ²
Residences	47,000	70,000	8,000	11,900
Jobs	84,000	115,000	16,000	21,900

Source: City of Seattle, EA|Blumen, 2010

¹ Growth targets for the City in 2024 and 2031 and for South Lake Union in 2024 represent adopted City policy. The growth target shown for South Lake Union in 2031 is an estimate developed for analysis in this EIS and has not been reviewed, recommended or adopted by the City. See Note 2, below.

² The City has not yet identified specific 2031 targets for neighborhoods within the City. For this analysis, the estimated 2031 target for South Lake Union was determined by determining the ratio of the 2024 South Lake Union to City targets and applying this ratio to the 2031 citywide target (About 17% of the citywide total for residences and 19% of the citywide total for jobs).

Development Capacity

Development capacity is a measure of the total amount of new development that could be added in an area. The City of Seattle calculates this measure by comparing existing land uses to what could be built under current or proposed zoning. The difference between the potential and existing development is the capacity for new development. Development capacity estimates are not a prediction that a certain amount of development will occur or when it may occur, but instead a measure of the maximum development that could occur in a given area. Development capacity is expressed in terms of housing units and the number of potential jobs that could be added.

The estimate of development capacity varies according to the amount and type of development that is permitted. Accordingly, the development capacity for South Lake Union has been calculated for each alternative, including No Action (Alternative 4). **Table 2-2**, below summarizes the development capacity for South Lake Union under each alternative. Please see **Appendix B** for complete description of the development capacity methodology used in this analysis.

Table 2-2
Development Capacity

	Employment Capacity¹ (jobs)	Residential² (dwelling units)
Alternative 1	31,500	21,000
Alternative 2	30,500	19,000
Alternative 3	23,000	15,000
Alternative 4 (No Action)	20,000	11,500

Source: City of Seattle, 2010

- ¹ Assumes one job/350 square feet of commercial development and 45% of new development will be for commercial use.
- ² Assumes recent residential development trends (see Appendix B) and 55% of new development will be for residential use

2.2.3 Lake Union Seaport Airport Flight Path

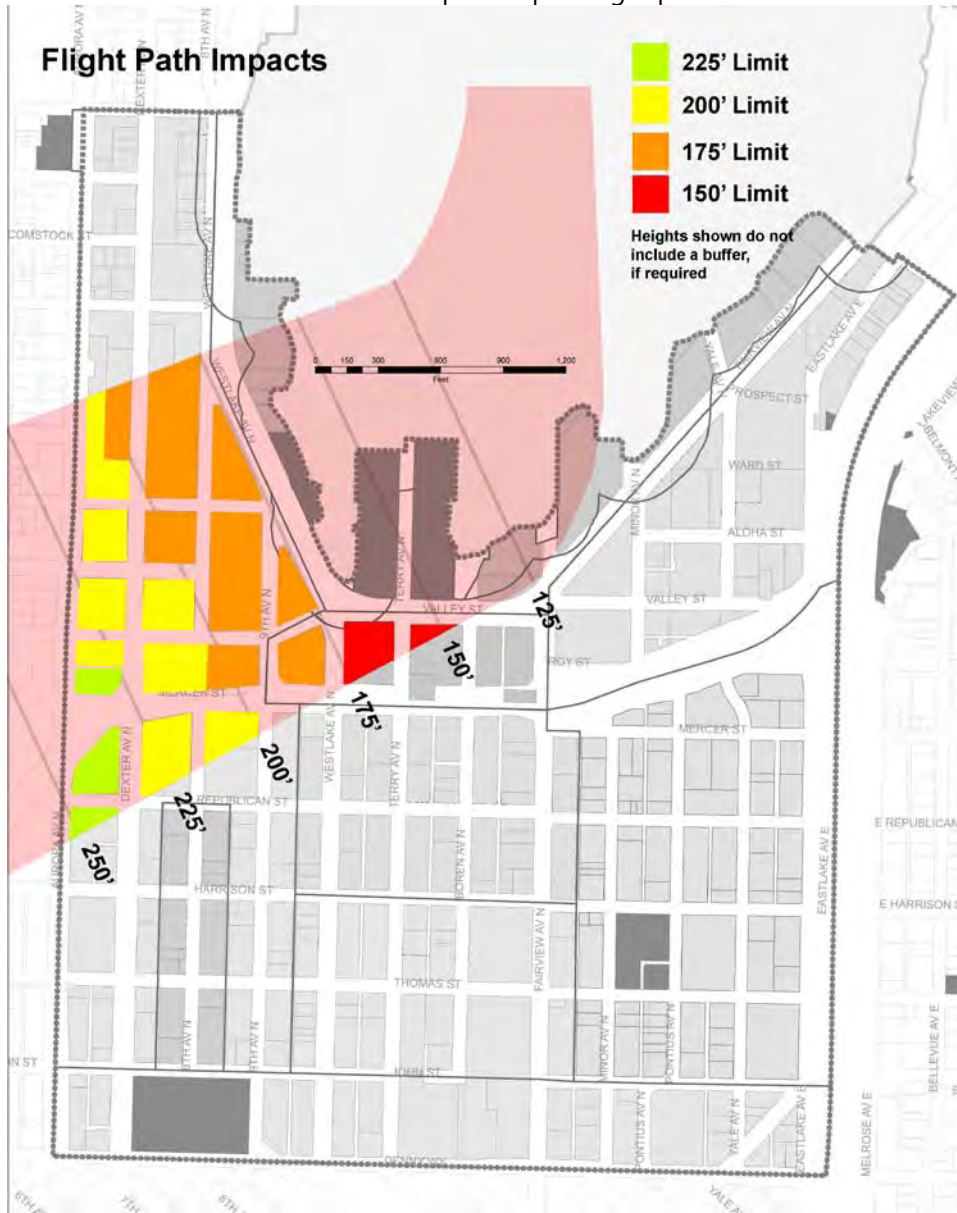
The Lake Union Seaport Airport is a public airport connecting downtown Seattle with regional destinations. Kenmore Air, the primary airport operating from Lake Union, provides daily service to the San Juan Islands and Canada. During its peak season, extending from late spring until fall, Kenmore Air provides up to 80 daily arrivals and departures from morning until dusk. The area between the south shore of Lake Union and extending over Seattle Center to Puget Sound is a primary flight path.

Figure 2-4 shows the Lake Union Seaport Airport flight path, as prepared by the Washington Department of Transportation, Aviation Division, and assumed in this EIS. This figure shows the flight path elevation as it rises over the South Lake Union neighborhood. Impacts associated with this flight path are discussed in Chapter 3, Land Use (Section 3.8) and Aesthetics (Section 3.10) of this EIS.



Seaplane on Lake Union

Figure 2-4
Lake Union Seaport Airport flight path



Source: WSDOT (Aviation Division), NBBJ, 2010.

2.2.4 South Lake Union Urban Center Neighborhood Plan

In 2004, the City designated South Lake Union as an Urban Center. The City's Comprehensive Plan describes urban centers as the City's densest neighborhoods, providing a diverse mix of uses, housing and employment opportunities. Collectively, the City's six urban centers are intended to accommodate most of the City's targeted future growth. Accordingly, Plan policies focus on these areas to ensure their continued vitality and capacity for growth.

City of Seattle Urban Centers

- Northgate
- University Community
- Uptown
- South Lake Union
- First Hill/Capitol Hill
- Downtown

The South Lake Union Urban Center Neighborhood Plan is a free-standing plan that establishes goals, policies and strategies supportive of the urban center designation. Portions of the Neighborhood Plan have been adopted as part of the Comprehensive Plan.

The Neighborhood Plan describes the future vision for the neighborhood:

The future of South Lake Union will be characterized by:

- *A pervasive human scale ambiance consistent with a vital aesthetically pleasing, safe and energetic neighborhood which embraces a dynamic intermixing of opportunities for working living and playing;*
- *Retention of a significant element of the area's commercial activities, including opportunities for business growth;*
- *A full spectrum of housing opportunities;*
- *Ecologically sound development and lifestyles and promotion of ecologically sound business practices consistent within the regulatory environment;*
- *Ease of transportation for all modes within and through the area;*
- *A variety of open spaces serving the needs of the area and the city, with emphasis on Lake Union, and its continued preservation for a wide range of uses;*
- *A sensitivity to the area's history and historical elements; and*
- *Coordination with plans of adjacent areas.*

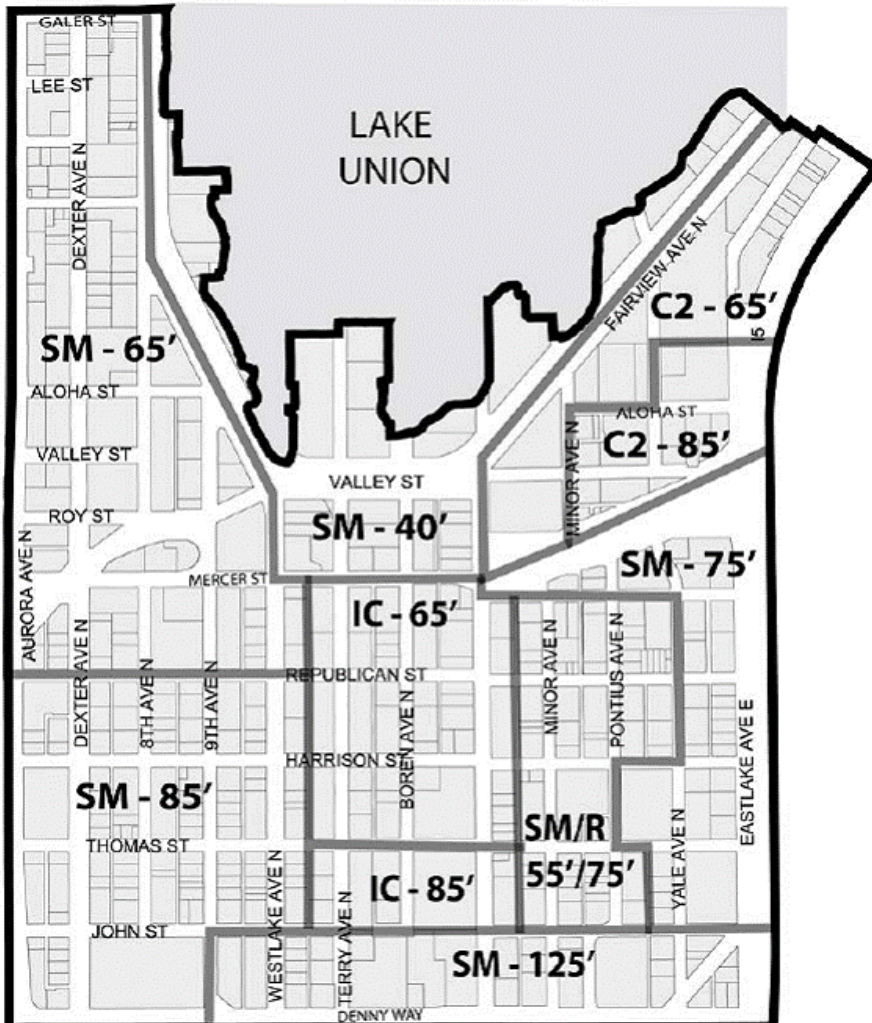
City of Seattle. South Lake Union Neighborhood Plan, 2007.

The Neighborhood Plan contains five chapters: Neighborhood Character, Transportation, Parks and Open Space, Housing and Sustainable Development. In each of these chapters, one or more goals for the neighborhood's future are identified. In order to meet those goals, the plan identifies policies, which provide broad direction for City and neighborhood action, and strategies, which are more specific actions to be implemented over the next twenty years.

2.2.5 Existing Zoning

Figure 2-5 shows the existing zoning designations in the neighborhood. Most of the neighborhood is currently zoned Seattle Mixed (SM) with varying height limits. The SM zone provides for a range of residential and commercial uses to support a pedestrian-oriented mixed-use neighborhood. An Industrial Commercial (IC) designation is located in the central part of the neighborhood. This designation allows for a mix of industrial and commercial uses and prohibits most types of residential development. To the northeast and near Lake Union, property is zoned Commercial 2 (C2), providing for auto-oriented, primarily non-retail commercial uses. Height limits range from 40 feet adjacent to Lake Union to 125 feet along Denny Way.

Figure 2-5
Existing Zoning Designations



Source: South Lake Union Urban Center Neighborhood Plan, 2007

8th Avenue Corridor

This area is currently zoned Seattle Mixed (SM), with a height limit of 85 feet.

Fairview Avenue Corridor

The Fairview Avenue area is zoned Industrial Commercial (IC) between Mercer and John streets. North of Thomas Street, the IC zone has a height limit of 65 feet; while between Thomas and John streets, the height limit is 85 feet. Between John Street and Denny Way, existing zoning is Seattle Mixed (SM), with a height limit of 125 feet.

Valley/Mercer Blocks

This area is currently zoned Seattle Mixed (SM), with a height limit of 40 feet.

Development allowed under existing zoning represents the No Action Alternative in this EIS. Please see Section 2.3.6 for a description of the No Action Alternative.

2.2.4 Urban Design Framework

The Urban Design Framework (UDF) identifies strategies to guide zoning changes, amendments to the South Lake Union Design Guidelines and Right-of-Way Improvement Manual and other implementation actions. The UDF was developed over a multi-year process, beginning in 2008, and included participation from a range of constituents, including planners, urban designers, architects, landscape architects, and neighborhood residents and business owners. The UDF contains recommendations addressing the following elements:

Guiding Principles	Upper-level setbacks
Gateways, hearts and edges	Urban form
Street character	Lakefront
Residential and retail focus areas	Neighborhood connections
Residential open space strategies	Green stormwater infrastructure
Public space network	Incentive zoning priorities
Views	

The UDF will guide the work of the Seattle Department of Planning and Development and other departments within the City. Please see Section 2.3.2 for a discussion of the incentive zoning recommendations contained in the UDF and Chapter 3.8 for additional description of the UDF.

2.2.5 Public Outreach

An extensive public outreach effort was integral to preparation of the South Lake Union Neighborhood Plan. Community members and organizations were involved in shaping the Neighborhood Plan through provision of background information, meeting participation and/or feedback on draft plan recommendations. A summary of major public meetings is provided below, beginning with the most recent.

- Urban Design Framework Public Meeting. Held January 26, 2010, to review and comment on draft South Lake Union Design Framework Principles and Actions
- Public Workshop. Held February 12, 2008 to review and comment on the results of a recent design charrette conducted as part of the South Lake Union Urban Form Study. At the charrette, several scenarios for future development of the South Lake Union

neighborhood were produced. The open house was an opportunity to view the charrette results, offer comments, and learn how these alternative scenarios will be used in the Urban Form Study.

- Urban Form Study Scoping Meeting. Held November 19, 2008 to invite comments on the preliminary EIS scope.
- Kick-Off Meeting. Held January 9, 2008 to kick off the South Lake Union Urban Form Study, leading to recommendations for changes to height and density regulations that will help shape the character of South Lake Union for the next 20-30 years.
- Public Hearing. Held December 10, 2007, public hearing on proposed land use code amendments to the South Lake Union Industrial Commercial Zone.
- Open House. Held on October 29, 2007 as a celebration of the completion of the South Lake Union neighborhood plan.
- Open House. Held June 26, 2007 to discuss the priorities of the South Lake Union Neighborhood Plan recommendations.
- Open House. Held June 12, 2006 to present the updated South Lake Union Neighborhood Plan.
- Public Workshop. Held on April 4, 2006 to discuss key issues in the neighborhood plan update.
- Open House. Held on November 29, 2005 to gather feedback on draft goals and policies for a draft South Lake Union Neighborhood Plan.
- Open House. Held on June 7, 2005. University of Washington Master of Urban Planning students showcased 20 weeks of work on topics such as urban design, housing, sustainability, community identity, streetscapes, historic preservation, and more.

Public involvement continues to be an important element of the planning process. This EIS process includes a public comment period, during which one or more public meetings have been scheduled. During the public comment period, written and verbal comments are invited. All comments will be considered and addressed in the Final EIS. Please see the Fact Sheet at the beginning on this Draft EIS for the dates of the public comment period and public meeting(s).

2.3 Proposed Action and Alternatives

2.3.1 Overview

In order to meet the goals of the Comprehensive Plan, the City is considering adoption of incentive zoning provisions to allow increased height and density in certain areas of the South Lake Union neighborhood. The City has identified four alternatives, each of which

Introduction
Planning Context
***Proposed Action
and Alternatives***
*Environmental
Review*
*Benefits and
Disadvantages of
Delaying the
Proposed Action*

describes a different pattern of height and density in the neighborhood. In general, Alternative 1 would provide for the greatest increases in building height and corresponding residential density. Similarly, Alternative 2 provides for height and density increases, but relatively less than Alternative 1. Alternative 3 provides for the least amount of height and density increase relative to the action alternatives. Alternative 4 would retain the existing zoning standards and height limits. **Table 2-3** summarizes the key features of the alternatives.

Table 2-3
Alternatives Overview

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Podium Height	45' – 85'	30 – 45'	20 – 45'	Not applicable
Incentive				Not applicable
Zoning Height Limits	85' -- 400'	85' – 300'	85' – 240'	Not applicable
Floor Plate Size	Commercial - 24,000 sf above podium height for commercial Residential - 10,500 sf average/11,500 sf maximum above podium height			Not applicable
Floor Area Ratio Limits	Commercial: Base of 4.5 or 5; up to 7 with bonuses Residential: no FAR limits Varies according to building height and podium size. The range of densities at different heights is shown below. Note that not all alternatives include all of the heights listed.			4.5 to 5
Residential Densities	400' height limit: 720 – 890 units/acre 300' height limit: 562 – 655 units/acre 240' height limit: 465 – 535 units/acre 160' height limit: 327 – 385 units/acre Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See Appendix B for complete methodology.			Not applicable
Minimum Lot Size for Towers	22,000 sf (2 towers/block), 60,000 sf (1 tower/block)			Not applicable

Source: City of Seattle, 2010

A podium is the base of a building that supports a tower.

A floor plate is the horizontal plane of the floor of a building, measured to the inside surface of exterior walls.

Floor area ratio is the ratio of the total square feet of a building to the total square feet of the property on which it is located.

2.3.2 Incentives

An incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities. As shown in **Table 2-2**, the three action alternatives include the potential for an FAR bonus and increased height through the provision of public benefits as defined by incentive zoning.

Seattle Municipal Code Section 23.58A establishes conditions and process for development incentives. As described in this Section, buildings less than 85 feet in height may gain increased floor area only through the provision of affordable housing as established by the provisions of Section 23.58A.014. For buildings greater than 85 feet in height, other City approved bonus options may be used for up to 40% of their increased floor area, as long as at least 60% of the increased floor area is supported by the provision of affordable housing through the process established in Section 23.58A.014.

Although not currently applicable in South Lake Union, future development under any of the action alternatives would be able to seek floor area bonuses consistent with the requirements of Seattle Municipal Code 23.58A. For buildings taller than 85 feet in height, potential public benefits that could be included as a future development incentive, in addition to the affordable housing requirement, will be specifically identified following public comment and City review of Draft EIS findings.

The *South Lake Union Urban Design Framework* addresses strategies to support increased density and intensity of development while maintaining the neighborhood character described in the Neighborhood Plan. The document identifies the following list of public amenity priorities that could be incorporated into an incentive program for South Lake Union:

- **Renovation of 100 Dexter.** Convert the Parks office facility into a new center for community, arts, and culture.
- **Public Space and Streetscapes.** Develop pocket plaza, play area, or streetscape improvements consistent with Urban Design Framework. Improvements should focus in pedestrian corridors, such as Thomas, Terry and 8th Avenue. Streetscape improvements could include green stormwater facilities exceeding Stormwater Code requirements.
- **Landmark Preservation.** Use transfer of development rights to landmark buildings based on an updated inventory of South Lake Union.

A bonus is an incentive offered to developers, usually in the form of increased height or floor area, for providing a public benefit, such as affordable housing, energy efficiency, open space and others.

Transfer of development rights is a zoning tool that allows property owners in areas with constraints to development, such as significant environmental features or historical significance, to sell their development rights to property owners in areas more suitable for development.

- **Housing Preservation.** Use transfer of development rights to protect existing affordable housing, including red brick buildings (Carolina Ct, Grandview, Carlton Apts., 502 Minor N, Carolyn Manor Apts., Brewster, Jensen).
- **Reduced Overwater Coverage.** Use transfer of development rights to encourage removal of overwater buildings along the west shore of Lake Union to provide shoreline habitat and public access trail improvements consistent with Shoreline Master Program.

Source: South Lake Union Urban Design Framework, 2010

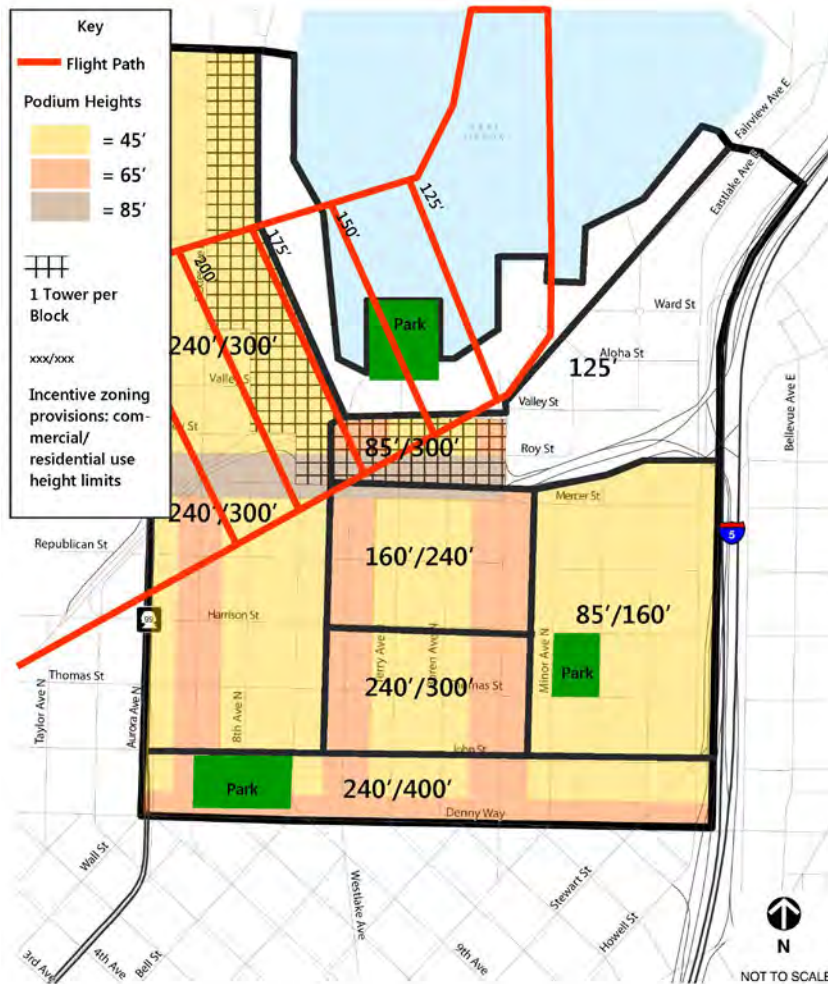
In addition to affordable housing, existing incentive programs in other zones in the City provide bonuses for meeting a specific LEED™ standard, provision or payment in lieu of childcare, provision of public amenities, such as open space, TDR, or some combination of these benefits.

2.3.3 Alternative 1

Alternative 1 would permit the greatest increases in height and density, relative to the other alternatives. Key features of this alternative are described below and shown in **Figure 2-6**.

LEED (Leadership in Energy and Environmental Design) is a building certification program focused on environmental and human health, energy efficiency, indoor environmental quality, materials selection, sustainable site development and water savings. Buildings can qualify for four levels of ratings: certified, silver, gold or platinum.

Figure 2-6
Alternative 1



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 1 provides the greatest potential for increased FAR and building height through the use of incentive

zoning, relative to the action alternatives. Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Greatest heights are permitted along the southern edge of the neighborhood, between Denny Way and John Street. In this area, residential towers could be 400 feet and commercial towers 240 feet in height.

Lowest heights continue in the east central part of the neighborhood, roughly corresponding to the Cascade neighborhood. In this area, maximum heights of 160 feet for residential towers and 85 feet for commercial uses are established.

In the balance of the neighborhood, maximum heights range between 240 to 300 feet for residential towers. Commercial uses in mixed use buildings are limited to 20 feet along the 8th Avenue corridor, between John and Republican Streets and to 85 feet in the blocks bounded by Mercer, Valley and Roy streets and 9th Avenue. In the remaining areas, commercial height limits vary from 160 feet to 240 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights of up to 85 feet are allowed along the Mercer Street corridor. Along the Dexter, Westlake, Fairview and Denny Way corridors, maximum podium height is 65 feet. Podium heights are limited to 45 feet in the balance of the area.

Floor Area Ratio. Commercial floor area ratio is limited to a base of five, with the potential of increasing to a maximum of seven through use of incentives or TDR.

Floor Plate Size. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 400' height limit: 720 – 890 units/acre
- 300' height limit: 562 – 655 units/acre
- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots near Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Tower Location. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-6**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

8th Avenue Corridor. This area is zoned SM 20/300, allowing a maximum height of 20 for commercial uses and 300 feet for residential uses. The maximum podium height in this area is 45 feet. Two towers per block area permitted.

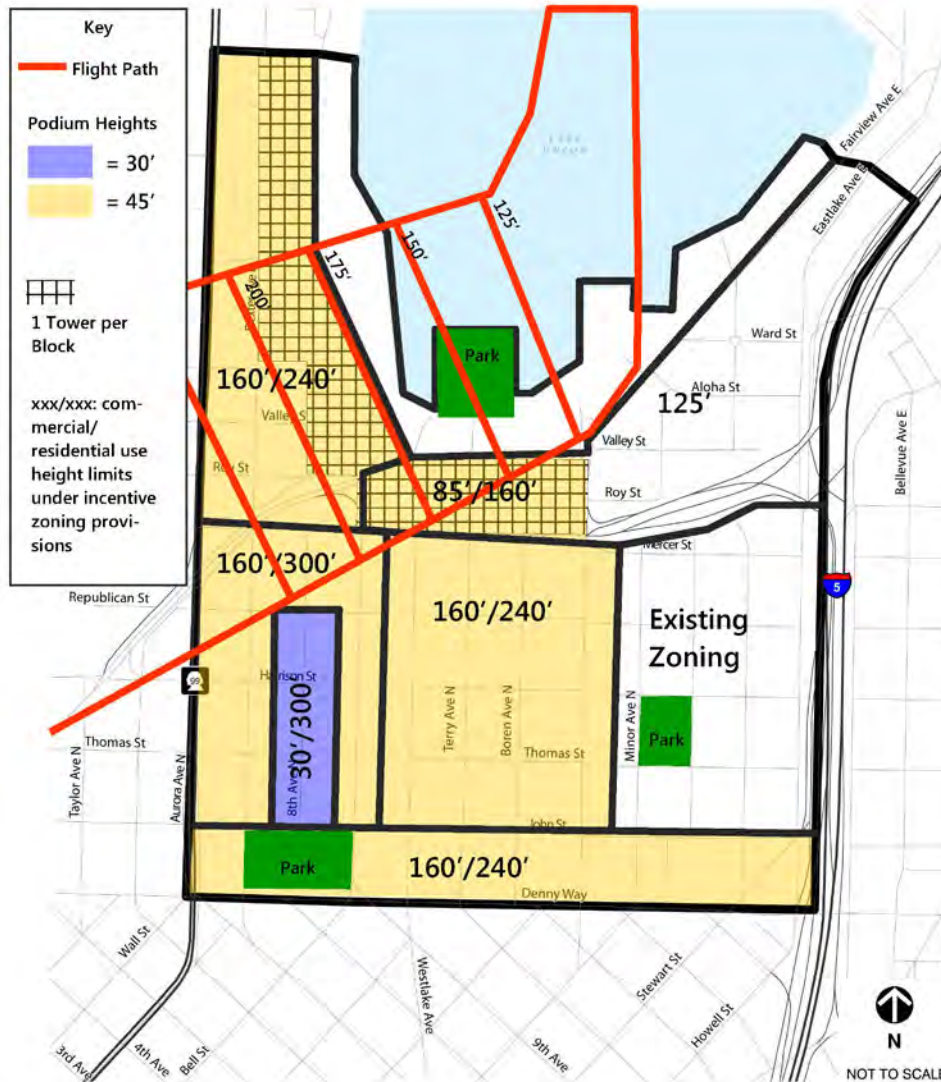
Fairview Avenue Corridor. This area is zoned SM, with varying building heights. In the blocks between Valley and Mercer streets, the height limit is 300'. In the area between Mercer and Harrison streets, height limits are 160 feet for commercial uses and 240 feet for residential uses, increasing to 240 feet for commercial uses and 300 feet for residential uses between Harrison and John streets and to 240 feet for commercial uses and 400 feet for residential uses between John Street and Denny Way. The maximum podium height is 65 feet. Two towers per block are permitted.

Valley/Mercer Blocks. This area is zoned SM 85/300, allowing a maximum building height of 85 feet for commercial uses and 300 feet for residential uses. Permitted podium heights vary between 45 and 85 feet within this area. A maximum of one tower per block is permitted in this area.

2.3.4 Alternative 2

Alternative 2 describes a development scenario that would allow increases in height and density that are generally between that of Alternatives 1 and 3. Key features of this alternative are described below and shown in **Figure 2-7**.

Figure 2-7
Alternative 2



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 2 provides for a mid-range of increased FAR and height bonuses through the use of incentive zoning, relative to the action alternatives. No incentives for increased height and FAR would be established in the eastern portion of the neighborhood (portions of the Cascade and Fairview neighborhoods). Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Greatest heights are permitted in the southwestern portion of the neighborhood, corresponding to the Denny Park subarea. In this area, residential towers could be 300 feet and commercial towers 160 feet in height. Within this area, height limits are reduced along the 8th Avenue corridor, with commercial development limited to 20 feet and residential to 240 feet in height.

Height limits are lowest in the northern part of the neighborhood. In the blocks bounded by Mercer, Valley and Roy Streets and 9th Avenue North, commercial uses are limited to 85 feet and residential uses to 160 feet in height. Immediately to the east, in the Fairview neighborhood, building heights are limited to 125 feet. In the balance of the neighborhood, maximum height for residential towers is 240 feet and for commercial buildings 160 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights are limited to 30 feet along the 8th Avenue corridor and 45 feet in all other parts of the neighborhood.

Floor Area Ratio. Same as Alternative 1. Commercial floor area ratio is limited to a base of five, with the potential of going up to a maximum of seven with incentives or TDR.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 300' height limit: 562 – 655 units/acre
- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Floor Plate Size. Same as Alternative 1. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Tower Location. Same as Alternative 1. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-7**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

8th Avenue Corridor. This area is zoned SM 20/240, allowing a maximum height of 20 feet for commercial uses and 240 feet for residential uses. The maximum podium height in this area is 20 feet. Two towers per block area permitted.

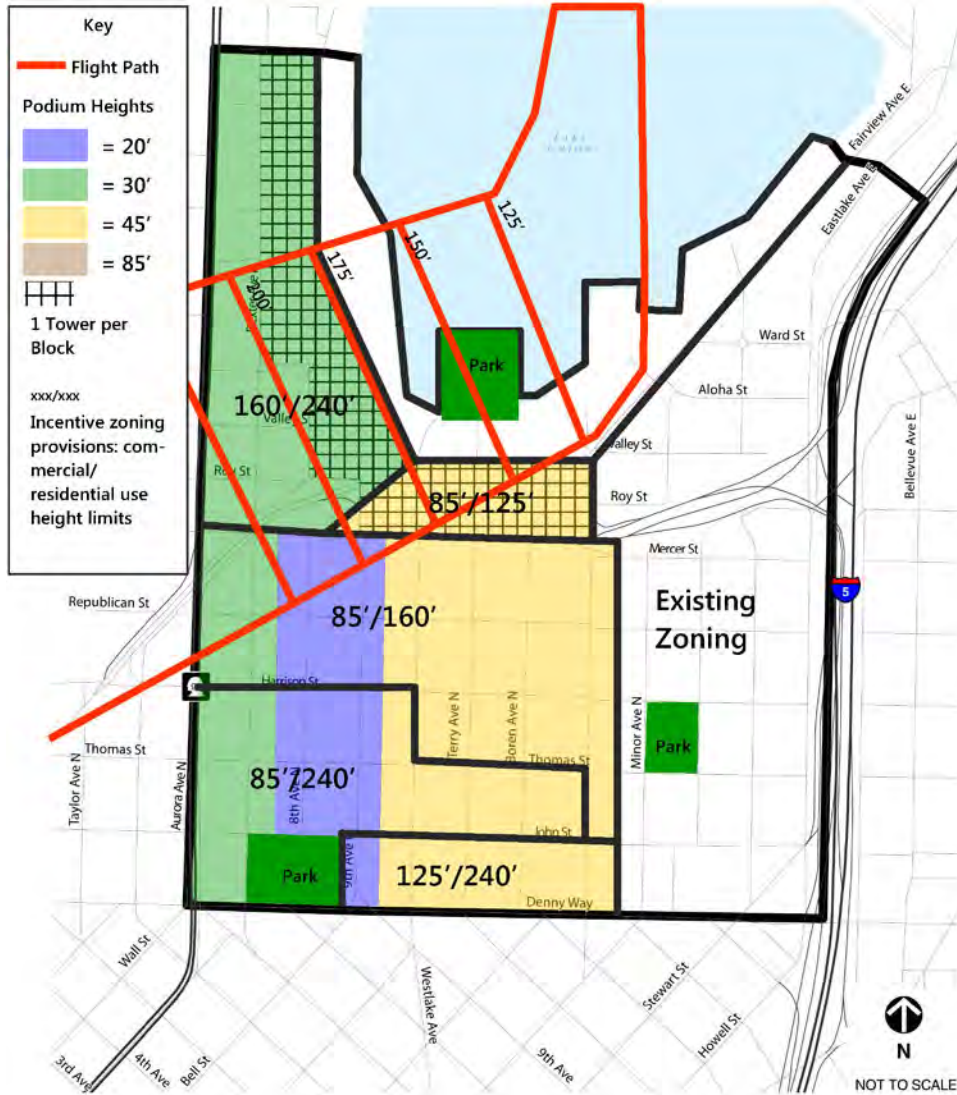
Fairview Avenue Corridor. This area is zoned SM, allowing a maximum building height of 160 feet for commercial uses and 240 feet for residential development. The maximum podium height is 45 feet. Two towers per block are permitted.

Valley/Mercer Blocks. This area is zoned SM 85/300, allowing a maximum building height of 85 feet for commercial uses and 300 feet for residential uses. Permitted podium heights vary between 45 and 85 feet within this area. A maximum of one tower per block is permitted in this area.

2.3.5 Alternative 3

Alternative 3 describes a development scenario that would permit the least amount of increase in height and density, relative to the other action alternatives. Potential height increases are focused on residential development. Key features of this alternative are described below and shown in **Figure 2-8**.

Figure 2-8
Alternative 3



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 3 provides the least potential for increased FAR and height bonuses through the use of incentive zoning, relative to the action alternatives. No incentives for increased height and FAR would be established in the eastern portion of the neighborhood (portions of the Cascade and Fairview neighborhoods). Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Alternative 3 allows building heights up to 240 feet for residential development and 125 feet for commercial uses between Denny Way, John Street, 9th Avenue North and the east side of Fairview Avenue.

Commercial use height limits vary between 65 feet to 85 feet in the rest of the area. In the central part of the neighborhood, residential height limits decrease from 240 feet along John Street to 125 feet in the blocks between Mercer and Valley Streets. West of 9th Avenue and north of Mercer Street (Dexter neighborhood), residential building heights are limited to 240 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights are limited to 20 feet along the 8th and 9th Avenue corridors. West and north of this corridor, podium heights are limited to 30 feet. In the remaining area, podium heights are limited to 45 feet.

Floor Area Ratio. Same as Alternatives 1 and 2. Commercial floor area ratio is limited to a base of five with the potential of going up to a maximum of seven with incentives or TDR.

Floor Plate Size. Same as Alternatives 1 and 2. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots near Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Tower Location. Same as Alternatives 1 and 2. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-8**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

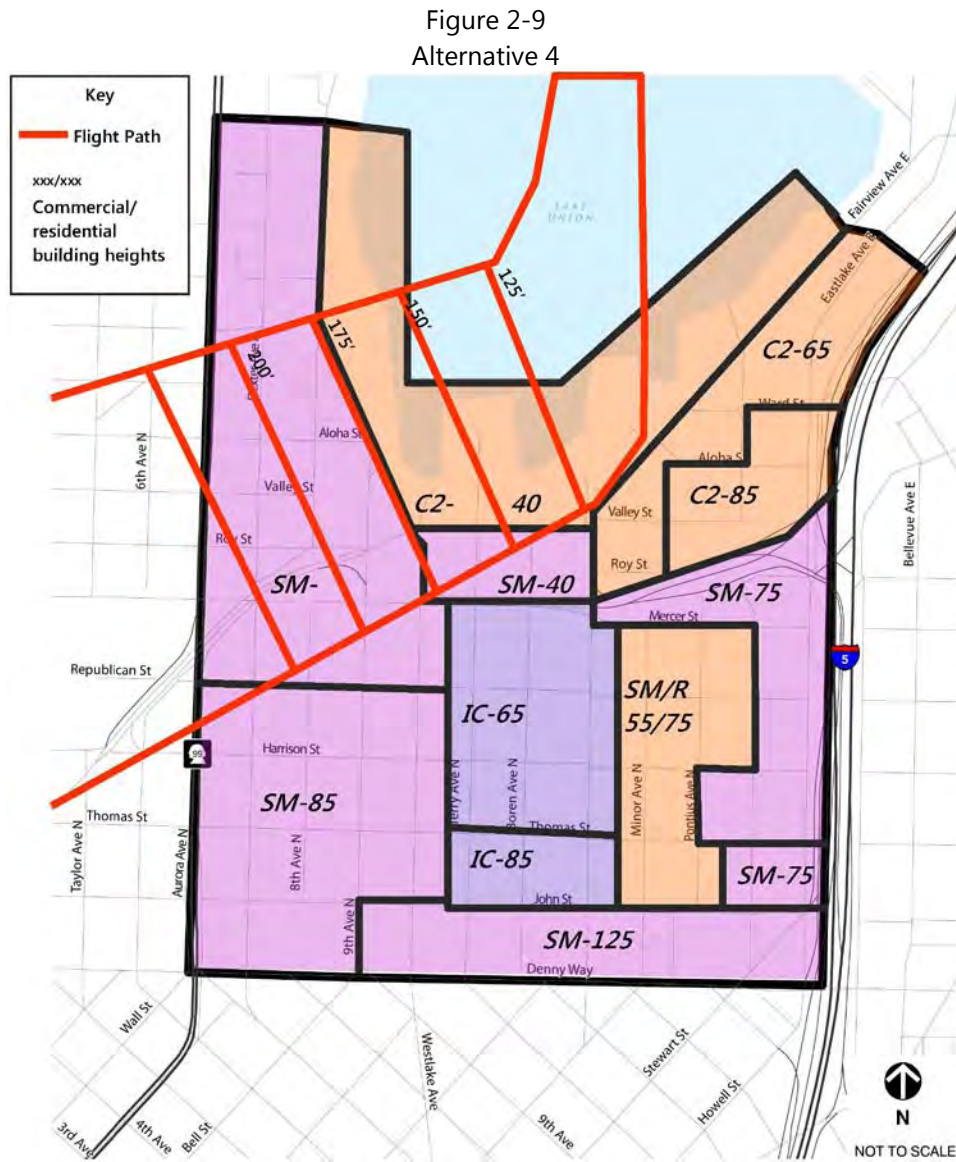
8th Avenue Corridor. This area is zoned SM, with increasing height allowed moving south from Republican Street. Between Republic and Harrison streets, building heights are limited to 85 feet for commercial uses and 160 feet for residential uses. South of Harrison, the maximum commercial use limit remains at 85 feet, but the height limit for residential uses increases to 240 feet. The maximum podium height in this area is 20 feet. Two towers per block area permitted.

Fairview Avenue Corridor. This area is zoned SM, with increasing heights allowed moving south from Mercer Street. In the area between Mercer and Thomas streets, buildings height limits are 85 feet for commercial uses and 160 feet for residential uses, remaining at 85 feet for commercial uses and increasing 240 feet for residential uses between Thomas and John streets, and to 125 feet for commercial uses and 240 feet for residential uses between John Street and Denny Way. The maximum podium height is 45 feet. Two towers per block are permitted.

Valley/Mercer Blocks. This area is zoned SM, allowing a maximum building height of 85 feet for commercial uses and 125 feet for residential uses. Maximum podium height is 45 feet. A maximum of one tower per block is permitted in this area.

2.3.6 Alternative 4

Alternative 4 retains the existing zoning designations in the neighborhood, with no potential for height increases through incentive zoning provisions. Key features of this alternative are described below and shown in **Figure 2-9**.



Source: City of Seattle, 2010

Zoning Designations. The majority of the neighborhood would remain Seattle Mixed at varying heights, ranging from SM-125" along Denny Way, down to SM-40 in the central Waterfront area, as shown in **Figure 2-8**. The Fairview area would retain the existing Commercial (C2) zoning. The central portion of the neighborhood would remain in an Industrial Commercial (IC) zone.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

The C-2 zone provides for an auto-oriented, primarily non-retail commercial area that provides a wide range of commercial activities serving a community, citywide, or regional function, including uses such as manufacturing and warehousing that are less appropriate in more-retail-oriented commercial areas.

The IC zone is intended to promote development of businesses which incorporate a mix of industrial and commercial activities, including light manufacturing and research and development, while accommodating a wide range of other employment activities. Most residential development is not permitted in this zone.

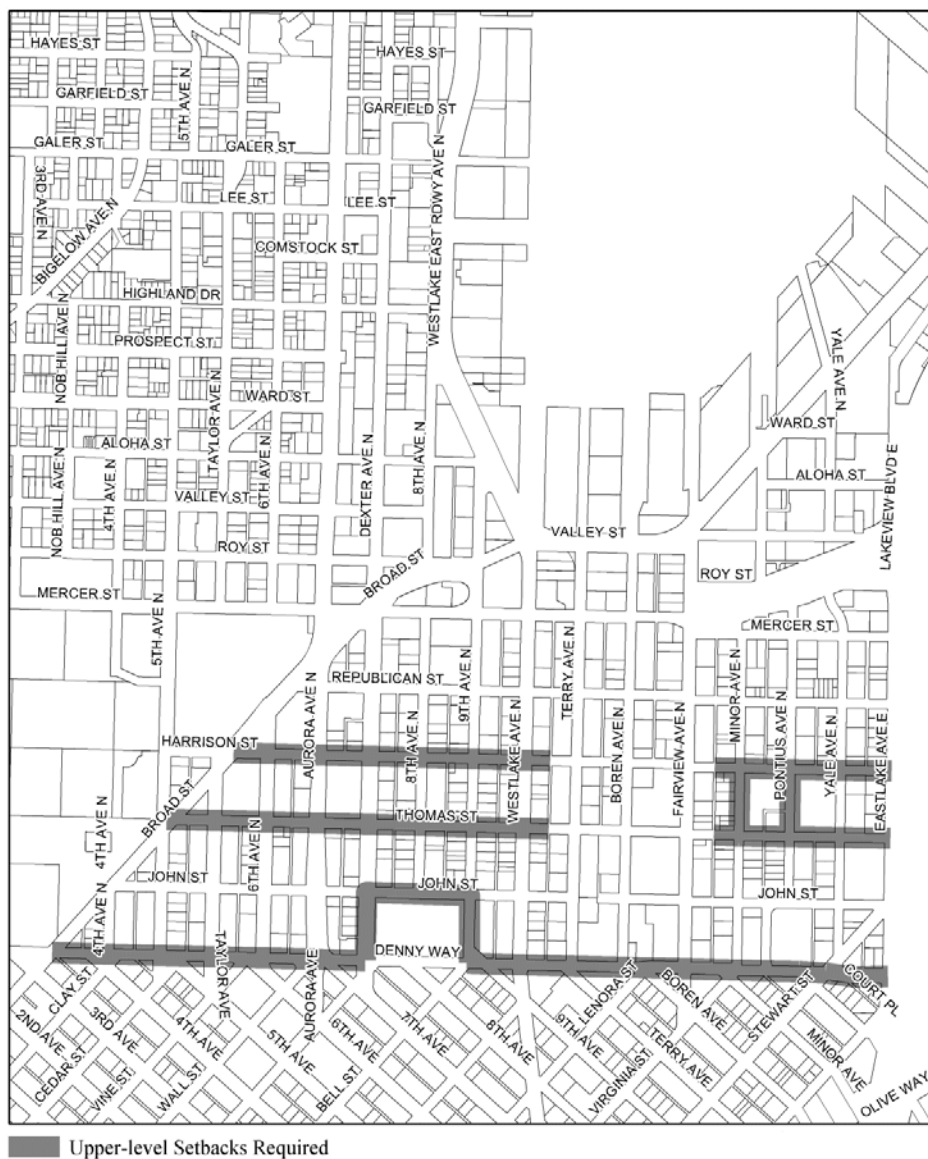
Height and FAR Bonuses. Alternative 4 does not propose any height or FAR bonuses through incentive zoning provisions.

Building Heights. In general, height limits are lowest near Lake Union and in the Cascade subarea, with height limits ranging between 40 and 75 feet in these areas. Greatest heights (up to 125 feet) are permitted along the southern edge of the neighborhood, along Denny Way and John Street. In this area, a maximum of 125 feet is permitted.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Existing zoning standards do not specifically define podium heights, but do require upper level setbacks in certain areas. To some extent, these upper level setbacks define a podium for the development. In general, the area along Denny Way in the SM-125' zone requires an upper level setback for any portion of a structure greater than 75 feet in height. Similarly, along portions of Thomas and Harrison Streets, upper level setbacks are required for structures greater than 25 feet (in residential areas) and 45 feet in height. See **Figure 2-10** for the location of upper level setback requirements.

Figure 2-10
Upper Level Setback Requirements



Source: City of Seattle Land Use Code, 2010

Floor Area Ratio. In the SM 85 zone, the maximum commercial FAR is 4.5. In the SM-125' zone, the maximum commercial FAR is 5. There are no FAR limits for residential uses and the remaining zoning designations do not establish a maximum FAR standard.

Floor Plate Size. Existing zoning standards do not establish a minimum floor plate size.

Density. Densities are not limited under current zoning, except by existing height and bulk requirements.

Tower Location. Existing zoning standards do not establish a minimum lot size for towers.

8th Avenue Corridor. This area is currently zoned Seattle Mixed (SM), with a height limit of 85 feet.

Fairview Avenue Corridor. The Fairview Avenue area is zoned Industrial Commercial (IC) between Mercer and John streets. North of Thomas Street, the IC zone has a height limit of 65 feet; while between Thomas and John streets, the height limit is 85 feet. Between John Street and Denny Way, existing zoning is Seattle Mixed (SM), with a height limit of 125 feet.

Valley/Mercer Blocks. This area is currently zoned Seattle Mixed (SM), with a height limit of 40 feet.

2.3.7 Alternatives Eliminated from Consideration

The 2008 South Lake Union Urban Form Study resulted in initial alternatives that were described in the 2008 EIS Scoping Notice. These initial alternatives were similar to those currently proposed, but had substantive differences in terms of tower spacing and podium heights. As previously described, the current alternatives were developed as part of the 2009 Design Framework planning process and are intended to address concerns raised by the neighborhood about the initial alternatives. Specific changes made to the initial alternatives that led to the current alternatives include:

All Alternatives

- Residential floor plate size reduced from 12,500 sf below 160' to an average of 10,500 sf for the entire tower.
- Commercial floor plate size reduced from 35,000 sf to 24,000 sf.
- Commercial floor area ratio changed from unlimited to seven.
- Increase minimum lot size from 18,000 sf to 24,000 sf (2 towers per block); established minimum lot size of 60,000 sf for lots Lakefront lots.
- In most places where height of 400 feet had been proposed, reduced to no greater than 300 feet.

Alternative 1

- Podiums reduced to 45' in most areas, but higher on wider and more intensely used streets.

Alternative 2

- Maximum height between Valley and Mercer streets reduced from 240 to 160’.
- Commercial height in the area generally between Westlake and Fairview streets reduced from 240 to 160’.
- Residential focus changes from 8th and 9th avenues to only 8th Avenue.

Alternative 3

- Maximum height for commercial buildings between Valley and Mercer streets reduced to from 125’ to 85’.

2.4 Environmental Review

2.4.1 Purpose

The purpose of this EIS is to assist the public and agency decision-makers in considering the potential environmental effects of proposed changes to Zoning Code standards for height and density in the South Lake Union Neighborhood.

2.4.2 Programmatic Review

SEPA requires government officials to consider the environmental consequences of proposed actions, and to consider better or less damaging ways to accomplish the objectives of those proposed actions. They must consider whether the proposed action will have a probable significant adverse environmental impact on the elements of the natural and built environment.

This Draft EIS provides qualitative and quantitative analysis of environmental impacts as appropriate to the general nature of the Proposed Action planning efforts. The adoption of development regulations is classified by SEPA as a non-project (i.e., programmatic) action. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. An EIS for a non-project proposal does not require site-specific analyses; instead, the EIS will discuss impacts and alternatives appropriate to the scope of the non-project proposal and to the level of planning for the proposal. (WAC 197-11-442)

Within the context of programmatic review, and as described in Section 2.1, this EIS will also consider three focus areas in greater detail. This increased level of detail will provide a basis for future environmental review, allowing for a more streamlined review of specific sites within these focus areas. (see **Figure 2-3**).

<i>Introduction</i>
<i>Planning Context</i>
<i>Proposed Action and Alternatives</i>
<i>Environmental Review</i>
<i>Benefits and Disadvantages of Delaying the</i>

2.4.3 Phased Review

SEPA encourages the use of phased environmental review to focus on issues that are ready for decision, and to exclude from consideration issues already decided or not yet ready for decision-making [WAC 197-11-060 (5)]. Phased review is appropriate where the sequence of a proposal is from a programmatic document, such as an EIS addressing a comprehensive plan, to other documents that are narrower in scope, such as for a site-specific, project-level analysis. The City of Seattle is using phased review, as authorized by SEPA, in this environmental review. The analysis in this EIS will be used to review the environmental impacts of the proposed height and density changes in the South Lake Union neighborhood.

This analysis will also provide a more specific review of potential development impacts within three focus areas. This analysis will allow for a future phase of SEPA review that may be able to incorporate the analysis in this EIS and streamline future project-level SEPA review.

2.4.4 EIS Scope of Analysis

The City issued a Determination of Significance and Scoping Notice on November 18, 2008. During the scoping comment period, which extended from November 18 to December 18, 2008, interested citizens, agencies, organization and affected tribes were invited to provide comments on the scope of the EIS. Comments received during the comment period raised issues related to specific environmental impacts proposed for study in the EIS, the alternatives proposed for study and the planning process that led to the proposed alternatives.

Subsequently, the City worked with neighborhood stakeholders to develop an Urban Design Framework. This Design Framework was developed in direct response to the concerns raised by stakeholders in their scoping comments and is intended to complement and inform the EIS alternatives, provide direction on potential impact mitigation, as well as serve as a tool to guide implementation of the Neighborhood Plan.

Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Environmental topics addressed in this EIS include:

Land Use Plans & Policies	Public Services & Utilities	Environmental Health
Housing	Soils/Geology	Noise
Aesthetics & Urban Design	Water	Plants & Animals
Transportation	Air Quality	Historic & Cultural Resources
Open Space & Recreation	Greenhouse Gas	

2.4.5 Prior Environmental Review

The South Lake Union neighborhood has experienced a significant amount of public and private development in the past several years. The documentation of the SEPA review process for many of these projects is a source of valuable data and have been consulted in preparing this EIS. Whenever used in this EIS, prior documents have been cited as a source of information. Consulted documents include:

Amazon World Headquarters SEPA Review (multiple processes and documents)

Group Health Headquarters/Westlake Terry Building Expanded SEPA Checklist

Fred Hutchison Cancer Research Center EIS,

UW School of Medicine Phase II and III EIS

Museum of History & Industry (MOHAI) Expanded SEPA Checklist

2200 Westlake Avenue/2200 EIS Addendum

2201 Westlake Avenue/ENSO EIS Addendum

Lake Union Park Master Plan EIS

2.5 Benefits and Disadvantages of Delaying the Proposed Action

Delaying adoption of zoning incentives to allow for increased height and density in the South Lake Union neighborhood could reduce the likelihood of public benefits that may be experienced as a result of zoning incentives. Because the existing IC and C2 zones would be retained, residential development would remain focused in the existing SM zone. Delaying the action would also maintain existing height limits. Depending on the perspective of the individual, this may be seen as a benefit or a disadvantage.

<i>Introduction</i>	Chapter 2 Contents
<i>Planning Context</i>	
<i>Proposed Action and Alternatives</i>	
<i>Environmental Review</i>	
<i>Benefits and Disadvantages of Delaying the Proposed Action</i>	

**Affected Environment, Significant Impacts,
Mitigation Measures and
Unavoidable Adverse Impacts**

3.1 GEOLOGY AND SOILS

The following discussion of geology and soils in the South Lake Union neighborhood is based readily available secondary sources of information. Primary research, such as soil borings, was not conducted for this analysis. The following sources of information were used to evaluate the geology and soils in the South Lake Union neighborhood:

- City of Seattle environmentally critical areas maps
- King County sensitive areas maps
- The Geologic Map of Seattle (Troost and others, 2005)

<i>Affected Environment.....</i>	<i>1</i>
<i>Environmental Impacts.....</i>	<i>5</i>
<i>Mitigation Strategies.....</i>	<i>6</i>
<i>Significant Unavoidable Adverse Impacts.....</i>	<i>7</i>

3.1.1 Affected Environment

Geology and Soils

Regional Geologic Setting

Seattle is located in the central portion of the Puget Sound Basin, an elongated, north-south depression situated between the Olympic Mountains and the Cascade Range. Repeated glaciation (glacial events) of this region strongly influenced the present-day topography, geology, and groundwater conditions. The topography is dominated by a series of north-south ridges and troughs formed by glacial erosion and sediment deposition. Puget Sound, Lake Union, and Lake Washington now occupy some of these troughs.

The sediment distribution in the Puget Sound area is complex as a result of the repeated glaciations. Each glaciation deposited new sediment and partially eroded previous sediment. During the intervening periods when glacial ice was not present, normal stream processes, wave action, and landsliding eroded and reworked some of the glacially derived sediments. The most recent glaciation that covered the central Puget Lowland (termed Vashon) retreated about 13,500 years ago. The weight of the glacial ice resulted in compaction of the glacial and nonglacial soils. As a result, the glacially overridden deposits tend to be very dense or hard.

Glacially overridden deposits are overlain by recessional glacial deposits that accumulated during retreat and wasting of the Vashon ice sheet and by younger (Holocene Epoch) soils that include lacustrine, alluvial, colluvial, peat, landslide, and fill deposits. These deposits are typically very loose to dense or very soft to stiff.

Geology, Soils, and Groundwater in the Study Area

Much of the ground in the South Lake Union neighborhood has been modified by grading or placement of artificial fill. Artificial fill in Seattle is highly variable, and can range from very soft to stiff or very loose to dense, sand, gravel, silty, and/or clay. Fill is mapped across nearly the entire waterfront area north of Mercer Street. South of Mercer Street, fill is mapped along Eastlake Avenue E as far south as John Street, and in isolated pockets between 8th Avenue and Terry Avenue N north of Republican Street.

Native surficial deposits mapped in the South Lake Union neighborhood include overridden Vashon and pre-Vashon glacial and nonglacial deposits, and non-overridden recessional glacial and Holocene deposits (Troost and others, 2005).

Very soft to stiff Holocene and recessional lake deposits (Ql and Qvrl) underlie much of the waterfront area of the South Lake Union neighborhood. These deposits occur along Westlake Avenue N on the west side of Lake Union and along Fairview Avenue N on the east side of the lake. South of Lake Union, the deposits extend as far south as Harrison Street and as far west as the neighborhood edge between Mercer Street and Republican Street.

Loose to dense recessional outwash (Qvr) and ice-contact (Qvi) deposits are mapped across much of the South Lake Union neighborhood south of Mercer Street. Qvi deposits are mapped between Aurora Avenue N and Terry Avenue N south of Republican Street. Qvi and Qvr deposits occur between Boren Avenue N and Yale Avenue N south of Roy Street and north of John Street.

The margins of the South Lake Union neighborhood are generally underlain by glacially overridden deposits, including Vashon till (Qvt) and pre-Vashon glacial and nonglacial deposits (Qpf and Qob). These very dense and/or hard deposits are principally mapped along Eastlake Avenue E and Lakeview Boulevard E, along Dexter Avenue north of Mercer Street, and between Terry Avenue N and Boren Avenue N south of Harrison Street.

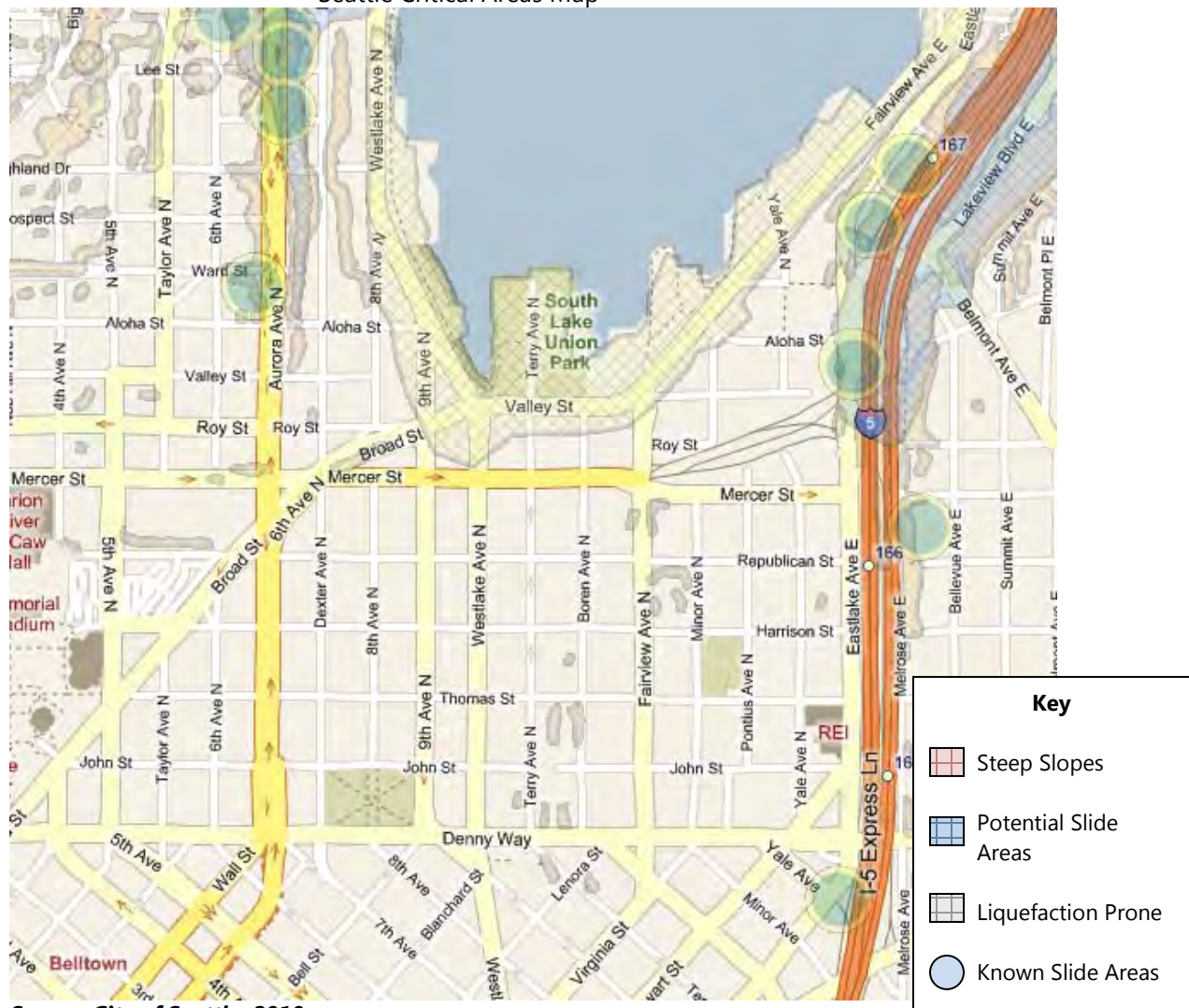
In general, groundwater across the South Lake Union neighborhood is anticipated to be relatively shallow. Groundwater typically ranges from a few feet to approximately 20 feet deep. In general, surface water and groundwater flow is expected to be towards Lake Union. Suitability of soils for development at a specific site will depend not only on the soil characteristics, but also on the type and design of the proposed structure.

In general, soft and loose soils are not considered suitable as a foundation subgrade. However, unsuitable soils can be removed or improved, or a foundation can be lowered so that is founded on denser or harder material. A geotechnical investigation would need to be performed to evaluate subsurface soil conditions, soil suitability, and to provide engineering recommendations during the design process.

Critical Areas

Steep slopes, potential slide areas, and liquefaction-prone areas are mapped within the South Lake Union neighborhood by the City of Seattle (See **Figure 3.1-1**). These critical areas and their approximate locations are discussed in the following sections.

Figure 3.1-1
Seattle Critical Areas Map



Source: City of Seattle, 2010

Steep Slopes

A steep slope is defined in the Seattle Municipal Code (Section 25.09.020) as any slope with an inclination greater than or equal to 40%, and having a height of at least 10 feet. Such slopes are at an increased risk of erosion and landslides. These risks become more acute with steeper and higher slopes.

Steep slopes are distributed sporadically across the South Lake Union neighborhood. They are most concentrated along the east and west margins of Lake Union north of Mercer Street. On the west side of the lake, north-south oriented steep slopes flank the east and west sides of Dexter Avenue N. On the east side of the lake, steep slopes generally follow the west margin of the I-5 corridor, adjacent to the eastern boundary of the study area. South of Mercer Street, isolated steep slopes occur along Fairview Avenue N between Mercer and Harrison Streets, adjacent to Terry Avenue N and Boren Avenue N and south of Harrison Street, and in the vicinity of the intersection of Broad and Mercer Streets.



Steep slope along shoreline

Landslide Hazards

Potential slide areas include areas of historic landslides, areas with topographic or geologic evidence of past sliding, and areas adjacent to or within steep slopes. Risks posed by landslides include injury or death to humans and damage to, or destruction of, structures.

Potential slide areas in the South Lake Union neighborhood are generally associated with the steep slopes on the east and west sides of Lake Union. On the west side of the lake, potential slide areas are mapped on the west side of Dexter Avenue north of Aloha Street, in the northwest corner of the study area. On the east side of the lake, potential slide areas are mapped along the I-5 corridor and Eastlake Avenue E north of Roy Street, near the northeast corner of the study area.

Liquefaction

Liquefaction is the loss of soil strength due to ground shaking. The process is most common in low density sand or silt deposits that are below the water table. Liquefaction can cause significant damage to buildings and infrastructure by causing settlement and slope movement.

Liquefaction-prone areas are mapped near the shore of Lake Union. They generally include the areas between the lake and Dexter Avenue to the west, Mercer Street to the south, and Eastlake Avenue E to the east.

8th Avenue Corridor

Surficial deposits mapped along the 8th Avenue Corridor consist of loose to dense, sandy and gravelly, recessional ice-contact deposits (Qvi). Geologic mapping shows that the 8th Avenue Corridor has been modified by grading along nearly its entire length.

Steep slopes, potential slide areas, and liquefaction prone areas are not currently mapped within the limits of the 8th Avenue Corridor.

Fairview Avenue Corridor

Surficial deposits along the Fairview Avenue Corridor consist principally of loose to dense, sandy and gravelly, recessional outwash and ice-contact deposits (Qvr and Qvi). Soft to stiff, recessional lake (Qvrl) deposits are mapped across the northwest corner of the corridor, west of Fairview Avenue N and north of Republican Street. Very dense and/or hard pre-Vashon deposits (Qpf) are mapped near the southern limit of the Fairview Avenue Corridor south of John Street. Geologic mapping shows that the corridor has been modified by grading along nearly its entire length.

Steep slopes occur in the Fairview Avenue Corridor between Mercer and Harrison Streets. Potential slide areas and liquefaction-prone areas are not currently mapped within the limits of the Fairview Avenue Corridor.

Valley/Mercer Blocks

The Valley/Mercer Blocks are underlain by artificial fill and very soft to stiff, Holocene and recessional lake deposits (Ql and Qvrl).

The Valley/Mercer Blocks are mapped as a liquefaction-prone area. Steep slopes and areas of potential sliding are not currently mapped within the limits of the Valley/Mercer Blocks.

3.1.2 Environmental Impacts

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to geology and soils.

Future site-specific development proposals under any of the alternatives, however, could result in impacts to geology and soils. Potential impacts that could be associated with future site-specific development under any alternative are briefly discussed below.

<i>Affected Environment</i>	Geology and Soils Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

Impacts Common to All Alternatives

Any future development will likely require excavation, grading, soil removal, placement of structural fill, and construction of new foundations. These activities could have direct impacts on soils and groundwater. The impacts would likely be greater for those alternatives with greater height limits (such as Alternative 1), because deeper foundations would probably be required for construction.

Construction operations may result in changes to native soil conditions because of the need for grading or to remove unsuitable soil and replace it with structural fill. In particular, artificial fill and soft compressible soils near the waterfront (Valley/Mercer Blocks) may need to be excavated and replaced with suitable material.

Excavation operations have the potential to impact areas near construction. Excavation near existing slopes and/or landslides can result in slope instability. Some excavations will require installation of shoring, which may cause ground vibrations depending on the installation method chosen.

Future development is also likely to impact surface water and groundwater flow in the area. Changes in grade and the addition of impervious surfaces would alter surface water flow. Excavation and foundation construction may require temporary or permanent dewatering to lower groundwater levels. Once constructed, foundations or underground structures may alter the natural flow of groundwater by acting as a barrier to groundwater movement.

Steep slopes, landslides, and liquefaction could have the potential to impact future development under any of the alternatives. Steep slopes in the Fairview Avenue Corridor could be destabilized by construction activities. Destabilization could result in increased erosion or landsliding. Liquefaction-prone areas, such as the Valley/Mercer Blocks, might experience settlement and/or increased earth pressures on retaining structures during an earthquake. Impacts associated with development in areas with steep slopes, landslide potential, or liquefaction hazards can be minimized through appropriate design and construction measures.

3.1.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur with

*Affected
Environment
Environmental
Impacts*

**Mitigation
Strategies**

*Significant
Unavoidable Adverse
Impacts*

Geology and Soils Contents

development under any of the alternatives. Site specific measures may include reducing the size of the project, placing limits on project timing and schedule, or requiring additional practices during construction to avoid adverse impacts (SMC 25.05.675(D)). Additional practices might include landscaping, supplemental drainage measures, water quality control, erosion control, and stabilization measures.

3.1.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to earth resources are anticipated.

<i>Affected Environment</i>	Geology and Soils Contents
<i>Environmental Impacts</i>	
<i>Mitigation Strategies</i>	
Significant Unavoidable Adverse Impacts	

3.2 AIR QUALITY

3.2.1 Affected Environment

Future development associated with any of the alternatives would likely add small-scale commercial pollution-generating activities within the South Lake Union neighborhood. Emissions from motor vehicles associated with future development would comprise the major source of air quality emissions within this study area – compared with any direct emissions related to the potential uses in the study area. Vehicles directly emit, among other things, relatively large quantities of carbon monoxide (CO). The potential for air quality impacts due to vehicles, therefore, is the focus of this air quality analysis.

Regulatory Overview

Ambient Air Quality Standards and Attainment Status

Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards that are established to protect human health and welfare. Ambient air quality standards are set for what are referred to as "criteria" pollutants (e.g., CO, and particulate matter). Three agencies have jurisdiction over ambient air quality in the Seattle area: the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). These agencies establish regulations that govern both the concentrations of pollutants in the ambient air and rates of contaminant emissions from air pollution sources. Although their regulations are similar in stringency, each agency has established its own standards. Unless the state or local jurisdiction has adopted more stringent standards, the EPA standards apply. Applicable local, state, and federal ambient air quality standards for federally designated "criteria" pollutants that may pertain to this review are displayed in **Table 3.2-1**. These standards are intended to protect human health with a margin of safety, including sensitive individuals like the aged, chronically ill, and the very young.

Ecology and PSCAA maintain a network of air quality monitoring stations throughout the Puget Sound area. In general, these stations are located where air quality problems may occur. As such, they are usually in or near urban areas or close to specific large air pollution sources. Other stations that are located in more remote areas provide indications of regional or background air pollution levels. Based on monitoring information for criteria air pollutants that has been collected over a period of years,

<i>Affected Environment.....</i>	<i>1</i>
<i>Environmental Impacts.....</i>	<i>5</i>
<i>Mitigation Strategies.....</i>	<i>10</i>
<i>Significant Unavoidable Adverse Impacts.....</i>	<i>12</i>

Ecology and EPA designate regions as being "attainment" or "nonattainment" areas for particular pollutants. Attainment status is, therefore, a measure of whether air quality in a specific area complies with the federal health-based ambient air quality standards for criteria pollutants.

Once a nonattainment area achieves compliance with the National Ambient Air Quality Standards (NAAQSs), that area is considered an air quality "maintenance" area.

Table 3.2-1
Applicable Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Terms of Compliance ¹	Concentration
Inhalable Particulate Matter (PM10)		
24-Hour Average ($\mu\text{g}/\text{m}^3$)	The 3 year average of the 98th percentile of the daily concentrations must not exceed	150 $\mu\text{g}/\text{m}^3$
Fine Particulate Matter (PM2.5)		
Annual Average ($\mu\text{g}/\text{m}^3$)	The 3-year annual average of daily concentrations must not exceed	15 $\mu\text{g}/\text{m}^3$
24-Hour Average ($\mu\text{g}/\text{m}^3$)	The 3-year average of the 98th percentile of daily concentrations must not exceed	35 $\mu\text{g}/\text{m}^3$
Carbon Monoxide (CO)		
8-Hour Average (ppm)	The 8-hour average must not exceed more than once per year	9 ppm
1-Hour Average (ppm)	The 1-hour average must not exceed more than once per year	35 ppm
Ozone (O₃)		
8-Hour Average (ppm)	The 3-year average of the 4th highest daily maximum 8-hour average must not exceed	0.075 ppm

Source: ENVIRON International Corporation, 2010

Note: $\mu\text{g}/\text{m}^3$ = micrograms per cubic meter; ppm = parts per million

¹ All limits are federal *and* state air quality standards except as noted. All indicated limits represent "primary" air quality standards intended to protect human health.

Air Quality Conformity Review

Special air quality rules pertain in areas that are designated as nonattainment or maintenance for one or more air pollutants. These rules apply to CO sources in the study area by virtue of the region being a CO maintenance area.

Transportation Conformity

The air quality conformity rules pertain to transportation projects and to development projects that include substantial "transportation components" and that have the potential to affect the regional transportation system. Transportation conformity review is triggered when a transportation project or a transportation component of a development project would affect the operation of or require structural changes to either a state-controlled facility (i.e., a highway) or a "regionally significant arterial." While no state-controlled highway would be affected, each of the alternatives would affect traffic flows on City streets in the area – several of which may be considered "regionally significant."

Existing Air Quality Conditions

Carbon Monoxide

Carbon monoxide (CO) is the product of incomplete combustion. It is generated by transportation sources and other fuel-burning activities like residential space heating, especially heating with solid fuels like coal or wood. Carbon monoxide is usually the pollutant that serves as an indicator of transportation source air pollution. This is because it is the pollutant that is emitted in the greatest quantity for which short-term health standards exist. CO is a pollutant whose impact is usually localized and CO concentrations typically diminish within a short distance of roadways. The highest ambient concentrations of CO usually occur near congested roadways and intersections during wintertime periods of air stagnation.

The South Lake Union neighborhood is located within the former Puget Sound region CO nonattainment area (established in 1991). This designated area encompassed a large portion of the Everett-Seattle-Tacoma urban area. Because no monitoring stations had recorded violations of the CO standards in many years, in 1997 EPA re-designated the Central Puget Sound region as attainment for CO. The former nonattainment area remains an air quality maintenance area for CO. However, there have been no measured violations of the standards in many years and the former CO problem is thought to have been resolved.

Ozone

Ozone is a highly reactive form of oxygen created by sunlight-activated chemical transformations of nitrogen oxides and volatile organic compounds (hydrocarbons) in the atmosphere. Ozone problems tend to be regional in nature because the atmospheric chemical reactions that produce ozone occur over a period of time and because during the delay between emission and ozone formation, ozone precursors can be

transported far from their sources. Key transportation sources that produce ozone precursors include large marine vessels, locomotives, trucks and other motor vehicles.

In the past, due to violations of the federal ozone standard, the Puget Sound region was designated as nonattainment for ozone based on the 1-hour standard in effect at that time. In 1997, the EPA determined that the Puget Sound ozone nonattainment area had attained the public health-based NAAQS for ozone. At that time EPA re-designated the Puget Sound region as attainment for ozone and approved the associated air quality maintenance plan. In 2005, EPA revoked the 1-hour ozone standard in most areas of the U.S., including the Puget Sound region. This action ended the maintenance status of this region. At the same time, however, EPA adopted a new more stringent 8-hour average ozone standard that has since been made even more stringent. Based on ozone measurements over the last few years, the Puget Sound region seems to again be on the brink of becoming nonattainment for ozone based on measured violations of the current 8-hour average standard (**Table 3.2-1**). As described above, ozone problems are regional in nature and can be transported far from their sources. For these reasons, the potential future nonattainment status for ozone would have no direct implications for any of the South Lake Union alternatives.

Inhalable Particulate Matter – PM10 and PM2.5

Particulate matter air pollution is generated by industrial activities and operations, fuel combustion sources like marine vessels and residential wood burning, motor vehicle engines and tires, and other sources. Federal, state, and local regulations set limits for particulate concentrations in the air based on the size of the particles and the related potential threat to human health. When first regulated, particle pollution rules were based on concentrations of "total suspended particulate," which included all size fractions. As air sampling technology has improved and the importance of particle size and chemical composition have become more clear, ambient standards have been revised to focus on the size fractions thought to be most dangerous to people. Based on the most recent studies, EPA has redefined the size fractions and set new, more stringent standards for particulate matter based on fine and coarse inhalable particulate matter to focus control efforts on the smaller size fractions.

There are currently health-based ambient air quality standards for PM10, (particles less than or equal to about 10 micrometers [microns] in diameter), as well as for PM2.5 (particulate matter less than or equal to 2.5 microns in diameter) (**Table 3.2-1**). The latter size fraction and even

smaller (ultra-fine) particles are now considered the most dangerous size fractions of airborne particulate matter because such small particles¹ can be breathed deeply into lungs. In addition, such particles are often associated with toxic substances that are deleterious in their own right that can absorb to the particles and be carried into the respiratory system.

With revocation of the federal annual standard for PM10 in October 2006, the focus of ambient air monitoring and control efforts related to particle air pollution in the Puget Sound region has been almost entirely on fine particulate matter (PM2.5).

Based on particulate matter measurements over the last few years, EPA in 2009 established a PM2.5 nonattainment area in Tacoma.² There are no other particulate matter nonattainment areas in the Puget Sound region.

3.2.2 Environmental Impacts

The analysis of potential air quality impacts related to the alternatives focuses on traffic and was based on consideration of ambient concentrations of carbon monoxide (CO) that could occur under worst-case conditions near congested intersections. The analytical process is described below.

Analysis Method

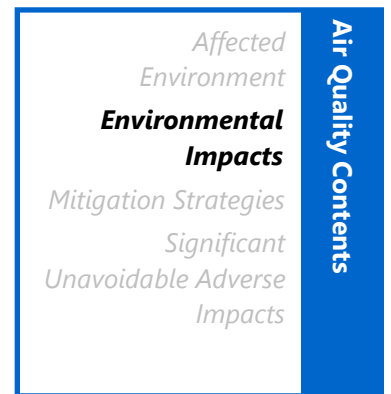
The air quality impact review consisted of a microscale CO "hot-spot" analysis using computer models recommended or required by EPA guidelines and/or air quality rules. The assessment considered air quality due to emissions from the traffic sources in the future year (2031).³

The air quality review considered potential air quality impacts in accordance with EPA air quality "hot-spot" modeling guidelines. Based on these guidelines, signalized intersections that would be affected by traffic related to a proposed project are screened for possible quantitative analysis using dispersion modeling (i.e., computerized analysis to estimate air pollutant concentrations due to sources of interest). Such screening is

¹ For comparison, a typical human hair is about 100 microns in diameter.)

² The proposed nonattainment area is called the Wapato Hills-Puyallup River Valley area. See information and maps at: <http://www.ecy.wa.gov/programs/air/Nonattainment/Nonattainment.htm>.

³ The hot spot analysis did not include modeling the existing condition because emissions in the South Lake Union neighborhood were already considered in the Mercer Corridor Improvements EIS, 2007.



conducted by reviewing the predicted future signalized intersection peak-hour traffic levels of service (LOS). EPA guidance suggests modeling signalized intersections with an LOS that would deteriorate to "D" or worse due to a proposed project. By definition, intersections that do not warrant signalization, as well as signalized intersections that operate at LOS "C" or better have little if any potential to cause air quality impacts at nearby locations

In accord with EPA guidance, the three most congested signalized intersections that would also be affected by potential future traffic were selected for air quality analysis. These intersections were modeled CO for the evening peak commute period. These are the intersections are Mercer Street/Dexter Avenue N, Mercer Street/Westlake Avenue N and Mercer Street/Fairview Avenue N.

The air quality analysis involved review of the carbon monoxide (CO) implications of traffic using quantitative dispersion analysis with the CAL3QHC model (EPA 1995) or the WASIST intersection screening tool (WSDOT 2009). The former computerized analytical procedure is the recommended tool for assessing potential CO impacts at congested intersections; the latter is a simplified version of this same tool with built-in emission rates and intersection geometries.

The WASIST screening tool was used to evaluate potential impacts near the intersection of Mercer Avenue at Westlake Avenue N. For this effort, model defaults and WSDOT-suggested input parameters (speed of 15 mph) were used to determine CO concentrations. The remaining intersections were analyzed using the CAL3QHC model because the intersection geometry was not sufficiently similar to the types allowed in the WASIST screening tool. CAL3QHC requires additional input parameters that are "hard-coded" into the WASIST screening tool, so the CAL3QHC dispersion modeling analysis applied a number of assumptions regarding vehicle emission rates and atmospheric conditions as follows:

- meteorological parameters included a 1,000-meter mixing height, low wind speed (1 meter/second) and a neutral atmosphere (Class D);
- modeling evaluated 72 wind directions (in 5 degree increments) to ensure worst-case conditions were considered for each receptor location;
- a "background" 1-hour carbon monoxide concentration of 4 ppm was assumed to represent other sources in the project area;
- the modeling configuration considered road links extending up to 1,000 feet from single most project-affected intersection;

- both free-flow and queue links were configured approaching and departing intersection;
- near-road receptors were placed along both sides of each roadway about 3, 25, 50, and 100 meters from cross streets, 3 meters from the nearest traffic lane, and 1.8 meters above the ground (typical sidewalk locations at breathing height);
- modeled calculated 1-hour CO concentrations were converted to represent 8-hour concentrations using a 0.7 "persistence factor" (i.e., the ratio of 8-hour to 1-hour CO concentrations) to represent variability in both traffic volumes and meteorological conditions; and
- emission factors for the year 2031 determined by the WASIST model for the Puget Sound maintenance area were used with the CAL3QHC modeling for consistency of the analysis method.

These assumptions are consistent with EPA guidance for CO dispersion modeling.

Impacts Common to All Alternatives

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to air quality.

Future site-specific development proposals under any of the alternatives, however, could result in impacts to air quality. Potential impacts that could be associated with future site-specific development under any alternative are briefly discussed below.

Construction

Redevelopment in the study area could include demolition of existing buildings and construction of new buildings, as well as other infrastructure improvements. Construction could entail extensive grading and excavation for building foundations, as well as removal of existing pavement and grading for new development. Such activities could result in temporary, localized increases in particulate concentrations due to emissions from construction-related sources. For example, dust from construction activities such as excavation, grading, sloping and filling would contribute to ambient concentrations of suspended particulate matter. Construction contractor(s) are required to comply with PSCAA regulations requiring that reasonable precautions be taken to minimize dust emissions.

Demolition of existing structures would require removal and disposal of building materials that could possibly contain asbestos and lead based

paint. Demolition contractors would, therefore, be required to comply with EPA and PSCAA regulations related to the safe removal and disposal of any asbestos-containing materials.

Construction would require the use of heavy trucks, excavators, graders, and pavers along with smaller equipment such as generators, pumps, and compressors. Emissions from existing traffic sources in the vicinity would likely outweigh any degradation of local air quality resulting from construction equipment emissions. Nonetheless, emissions from such sources and especially from diesel-fueled engines are coming under increased scrutiny, because of their suspected risk to human health. Specific dose/response effects are unknown, but long-term exposure to excessive amounts of diesel emissions is now understood to represent a human health risk, especially to sensitive individuals like the elderly, chronically ill, and the very young. Hence, although there is little or no danger of such emissions resulting in pollutant concentrations that would exceed an applicable ambient air quality standard, pollution control agencies are now urging that emissions from diesel equipment be minimized to the extent practicable in order to reduce potential health risks. By taking steps such as minimizing on-site diesel engine idling, construction-related diesel emissions are not expected to have any substantial impact on air quality within the South Lake Union neighborhood.

Although some construction activity could cause odors, particularly during paving operations using tar and asphalt, any odors related to construction activity would be short-term and localized. Construction contractors would have to comply with PSCAA regulations that prohibit the emission of any air contaminant in sufficient quantities and of such characteristics and duration as is, or is likely to be, injurious to human health, plant or animal life, or property, or which unreasonably interferes with enjoyment of life and property.

Construction equipment and material hauling can affect traffic flow in a project area if construction vehicles travel during peak periods or other heavy-traffic hours of the day and pass through congested areas, thereby further impeding traffic flow. Material hauling would likely be limited to daytime off-peak hours.

With implementation of the controls required for the various aspects of construction activities and consistent use of best management practices to minimize on-site emissions, construction activity would not be expected to significantly affect air quality.

Operation

Potential operational impacts that could be associated with future site-specific development under any alternative are briefly discussed below.

The traffic analysis determined the number of trips generated by each alternative during the PM Peak period. This data was used to assess changes in intersection performance at the three most congested intersections along Mercer Avenue. Modeling results indicate that maximum-predicted CO concentrations near each of the modeled signalized intersections meet the 1-hour and 8-hour ambient air quality standards of 35 ppm and 9 ppm respectively. In addition, increased traffic has no effect on ambient concentrations at two of the three intersections considered for analysis. However, maximum-predicted CO concentrations would increase with increased traffic at the Fairview Avenue/Mercer Street intersection in 2031.

Table 3.2-2
Estimated CO Concentration at Key Intersections in 2031

Intersection	Averaging Period	Alternative 4 (No Action)	Alternative 1
Fairview and Mercer Street	1-hour	9.0 ppm	9.3ppm
	8-hour	6.3	6.5
Westlake and Mercer Street	1-hour	7.1	7.1
	8-hour	6.2	6.2
Dexter and Mercer Street	1-hour	6.3	6.3
	8-hour	4.4	4.4

Source: ENVIRON International Corporation, 2010

Note: The estimated concentrations include a background of 4 ppm (parts per million), using a persistence factor of 0.7 to convert 1-hour values to 8-hour values.

Alternative 1

Under Alternative 1, predicted PM peak hour auto trips are expected to be the highest among the alternatives and represents a worst-case traffic scenario. Based on the modeling results, traffic sources would not cause an increase in ambient CO concentrations at receptors near two of the three intersections. Even with CO concentration increases at the Mercer Street/Fairview Avenue intersection, ambient concentrations would remain well below the NAAQS. Because increased traffic resulting from new development near the most congested intersections would not likely cause an impact to air quality, impacts are also unlikely at other less congested intersections. Therefore, Alternative 1 would be unlikely to affect air quality in the South Lake Union study area.

Alternative 2

Traffic generated by Alternative 2 is predicted to be the same as that associated with Alternative 1. Therefore, assuming the same traffic and modeling conditions, ambient concentrations with Alternative 2 would likely be the same as that under Alternative 1. No impacts to air quality are expected.

Alternative 3

Under Alternative 3, future development is expected to result in approximately 3,000 fewer vehicular trips than Alternatives 1 and 2. Although traffic conditions with Alternative 3 were not specifically modeled, it is likely that fewer trips would result in less traffic at the most congested intersections. Therefore, CO concentrations would likely be similar to or less than those predicted for Alternatives 1 or 2. No impacts to air quality are expected.

Alternative 4 (No Action)

Under the no action alternative, future development could occur up to the limits of the current zoning. Trips generated under this scenario would be slightly fewer than with Alternative 3. Based on the modeling, maximum-predicted CO concentrations in 2031 would be less than the ambient air quality standards, so no impacts to air quality are anticipated.

3.2.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. These are briefly described below.

Although significant air quality impacts are not anticipated due to construction activities, construction contractors would be required to comply with all relevant federal, state, and local air quality rules. In addition, implementation of best management practices would reduce emissions related to the construction of the developments.

Possible management practices for reducing the potential for air quality impacts during construction address measures for reducing exhaust emissions and fugitive dust. The Washington Associated General Contractors brochure Guide to Handling Fugitive Dust from Construction Projects and the PSCAA suggest a number of methods for controlling dust and reducing the potential exposure of people to emissions from diesel equipment. A list of some of the possible control measures that could be

<i>Affected Environment Environmental Impacts</i>	Air Quality Contents
Mitigation Strategies	
<i>Significant Unavoidable Adverse Impacts</i>	

implemented to reduce potential air quality impacts from construction activities include:

- use only equipment and trucks that are maintained in optimal operational condition;
- require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
- use car-pooling or other trip-reduction strategies for construction workers;
- implement restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
- spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
- pave or use gravel on staging areas and roads that would be exposed for long periods;
- cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
- provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways;
- cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris; and
- stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

Operation

No impacts have been identified and no mitigation is proposed or necessary.

3.2.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to air quality are anticipated under any of the proposed alternatives.

<i>Affected Environment Environmental Impacts Mitigation Strategies</i>	Air Quality Contents
Significant Unavoidable Adverse Impacts	

3.3 WATER QUALITY

This section addresses the effects of the proposed alternatives on the water quality of stormwater runoff to Lake Union.

3.3.1 Affected Environment

The South Lake Union neighborhood is a highly urbanized area characterized by a high percentage of impervious coverage. With the exception of three parks in the neighborhood, the dominant land coverage is impervious rooftops, roadways, and sidewalks. As a result, nearly all the precipitation that falls on this area is runoff; there is little to no opportunity for infiltration and groundwater re-charge.

The South Lake Union neighborhood slopes generally from south to north toward Lake Union with flat to moderate grades. Stormwater runoff from the 340-acre study area either discharges directly to Lake Union or is captured in roof or surface drains and flows into one of two existing piped systems – a separated storm system or a combined sewer system (see **Figure 3.3-2**). Infrastructure for both systems is present within the study area (**Figure 3.3-1**). Approximately 75% of the study area is served by the combined sewer system.

Urban runoff from private development is primarily from building roof or plaza areas which are not considered “pollution-generating impervious surfaces (PGIS)” per the Seattle Stormwater Code¹Runoff from these surfaces can contain pollutants from sources such as atmospheric deposition and roofing materials. However, pollutant concentrations are much lower than for PGIS surfaces such as surface parking lots and roadways, which are a significant source of pollution in highly urbanized commercial areas.

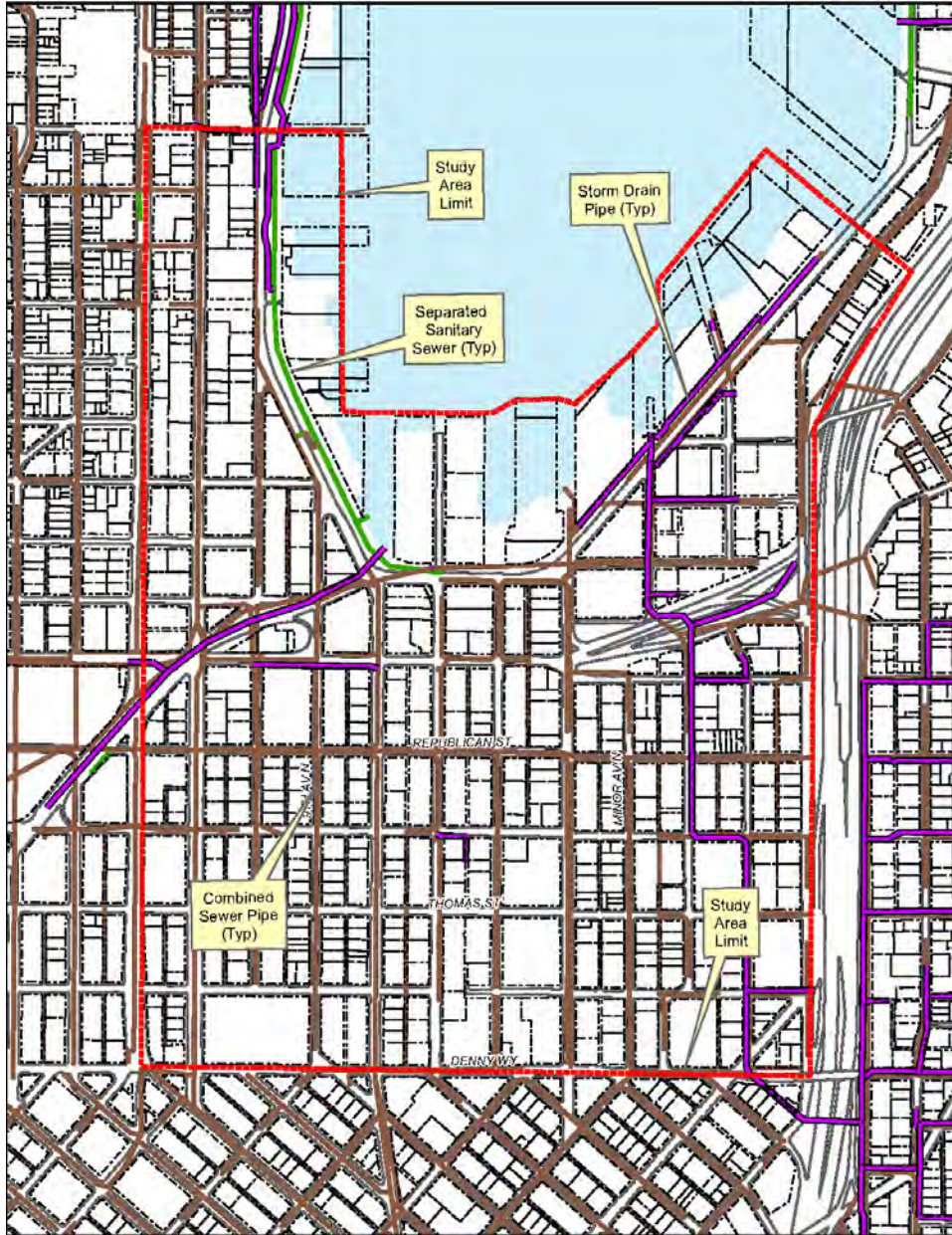
¹As described in the Seattle Stormwater Code (Appendix A Definitions), PGIS is defined as “Those impervious surfaces considered to be a significant source of pollutants in drainage water. Such surfaces include those that are subject to: vehicular use; certain industrial activities; or storage of erodible or leachable materials, wastes, or chemicals, and which receive direct rainfall or the run-on or blow-in of rainfall. Erodible or leachable materials, wastes, or chemicals are those substances which, when exposed to rainfall, measurably alter the physical or chemical characteristics of the drainage water.”

Affected Environment	1
Environmental Impacts	7
Mitigation Strategies	14
Significant Unavoidable Adverse Impacts	15



Lake Union from Lake Union Park

Figure 3.3-1
Sewer and Storm Systems



Source: Coughlin Porter Lundeen, 2010

Lake Union's watershed is highly urbanized and has been home to major industries over the last 100 years. Significant sediment contamination (heavy metals and organics) has been documented in Lake Union, primarily from historic industrial sources. Lake Union has a surface area of approximately 600 acres and a total volume of 20,000 acre-feet. During the last century, Lake Union has been affected by sewage, storm water, and industrial pollutants. Early activities affecting the lake included a gas plant on the north shore, a steam plant on the southeast shore, sawmills,

a coal transport dock, brick and other industrial manufacturing, and numerous sewage outfalls. Current sources include point source discharges directly from stormwater and combined sewer overflow (CSO) outfalls (see below under Combined Sewer System for description of CSOs); nonpoint discharges resulting from storage, handling, and processing of materials at lakeside industries and from other predominantly auto-related sources; recreational and commercial boat sewage and bilge waste discharges; and precipitation. Lake Union is included on the WA Department of Ecology's list of impaired and threatened water bodies, pursuant to Clean Water Act 303(d). Lake Union/Lake Washington Ship Canal is 303(d) listed for total phosphorus, fecal coliform bacteria, lead and aldrin in the water column and for sediment bioassay.

Sediment bioassay is a procedure that measures the response of living plants, animals, or tissues to a sediment sample. (WAC 173-204-200)

At this time, little if any of the storm water discharged directly to the lake from the South Lake Union neighborhood is treated. In the portion of the study area served by separated storm sewers, stormwater from streets, parking lots, rooftops and other exposed surfaces is typically discharged to the lake without any water quality treatment.

Increased density will generate more vehicle traffic in the area. Higher concentrations of pollutants commonly associated with vehicles could be generated. Oils, grease, antifreeze, and metals are commonly found on surfaces subject to vehicle use.

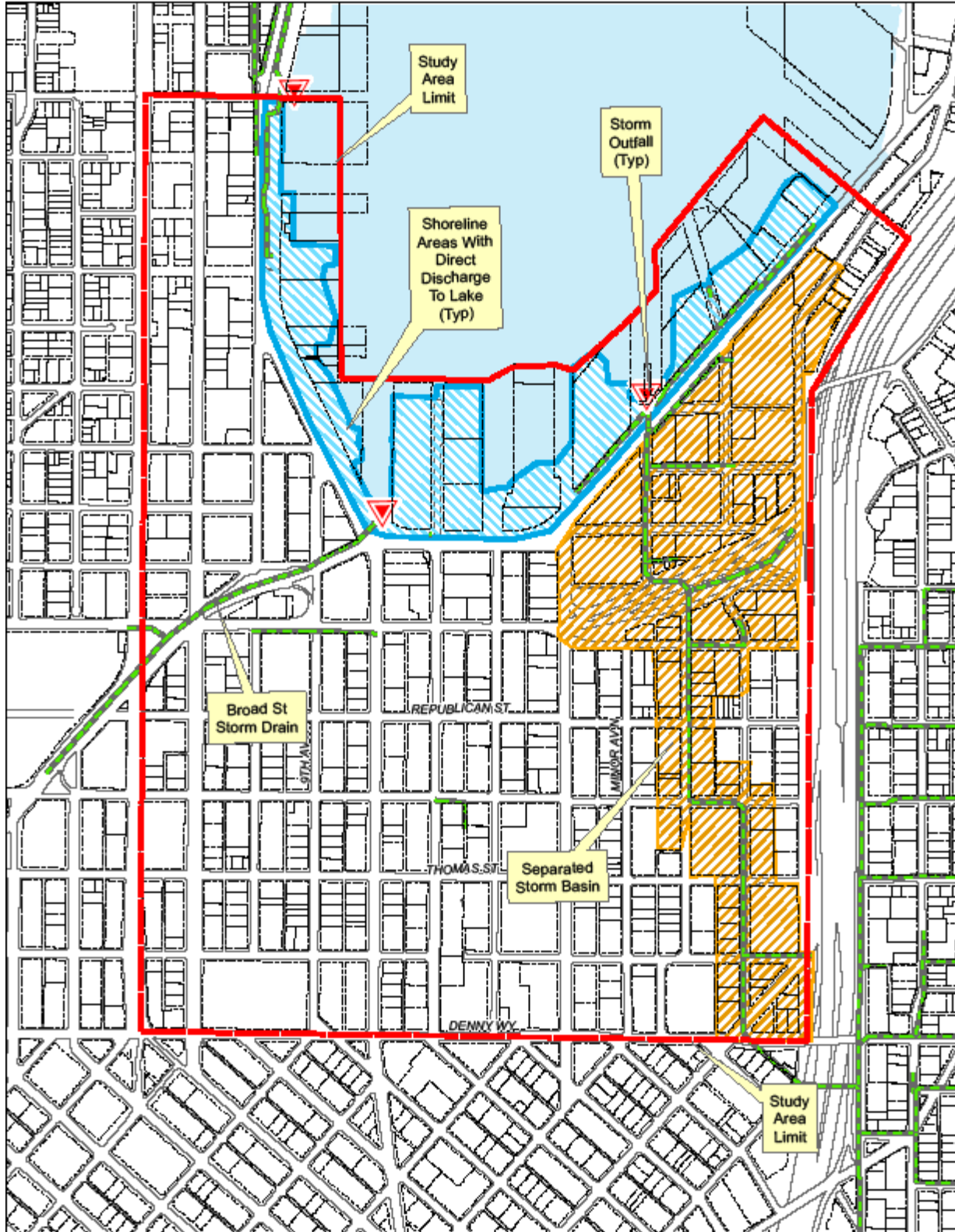
Separated Stormwater System

Within the study area, there are two methods for stormwater to directly enter Lake Union.

Parcels Directly Adjacent to Lake Union

As shown in **Figure 3.3-2**, most parcels adjacent to Lake Union and portions of the public streets that border the lake discharge surface water directly into the lake; runoff enters the lake from the surface or from small piped outfalls.

Figure 3.3-2
Separated Stormwater Systems



Source: Coughlin Porter Lundeen, 2010

Regional Piped Outfall

Near Minor Avenue and Fairview Avenue a 72-inch piped outfall discharges stormwater collected from the east side of the study area, portions of the I-5 freeway and Capitol Hill into Lake Union. This pipe serves a total basin of approximately 500-acres, of which the portion in the study area is about 75-acres (roughly 15 percent of the total basin).

With the exception of several recently re-developed parcels within this drainage basin, stormwater receives no water quality treatment prior to discharge to Lake Union.

Combined Sewer System

The rest of the study area is served by a public combined sewer system, see **Figure 3.3-3**. Surface water from private property and public streets is combined in a single pipe system with sanitary waste water from inside the buildings.

Stormwater runoff from approximately 75 percent of the 340-acre study area is routed to the City of Seattle's combined sanitary and stormwater system. This effluent is then conveyed to King County Metro's West Point Treatment Facility where, after processing, it is discharged to Puget Sound from a deep water outlet.

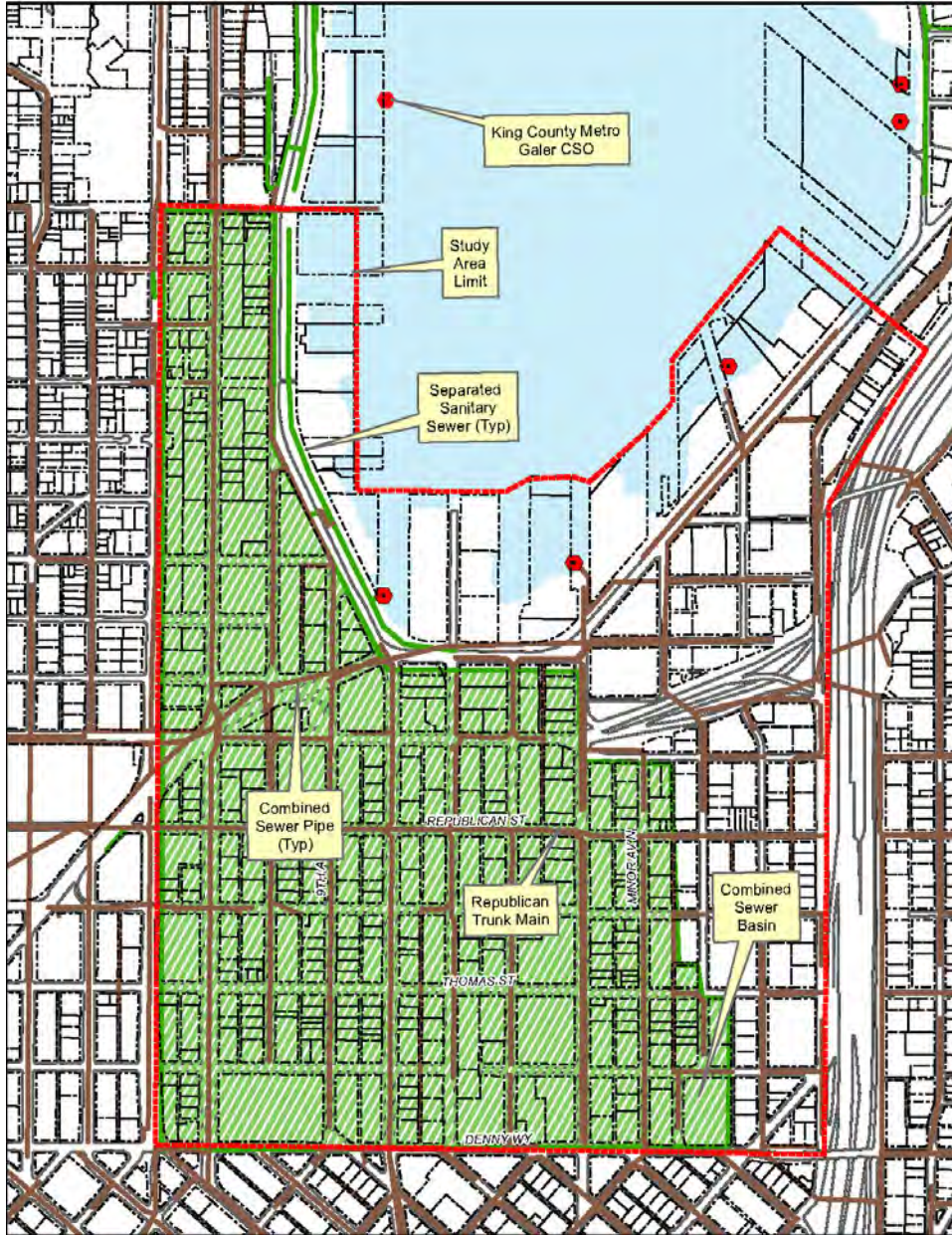
For those areas discharging to the combined sewer systems, water quality of stormwater runoff is usually not an issue since it is combined with the sanitary waste and treated accordingly, prior to discharge to the environment.

The combined sewer system does have "safety valves" in the form of overflow pipes in various locations in Lake Union and Elliott Bay. Commonly known as Combined Sewer Overflows (CSOs), these CSO outfalls allow the system to overflow un-treated sanitary and stormwater to the environment during large storms or other unusual events. Emergency CSOs are short-term events intended to prevent damage to the sewer infrastructure that could take the pipe system or treatment plant off line for an extended period of time and to prevent backups into buildings.

The South Lake Union neighborhood has at least five CSO facilities associated with it, see **Figure 3.3-3**. These CSOs are operated, monitored and maintained by King County Metro under a permit from Washington State Department of Ecology (WSDOE). One is located near Galer Street just north of the study area. The others are from the Metro mains along the Ship Canal and Elliot Bay, on the way to the treatment facility at West

Combined sewers collect both stormwater and sanitary waste in a single pipe. Combined sewer overflow (CSO) are discharges of untreated sewage and stormwater released directly into marine waters, lakes and rivers during heavy rainfall, when the sewers have reached their capacity.

Figure 3.3-3
Combined Sewers, CSO & ESOs



Source: Coughlin Porter Lundeen, 2010

Point. The CSO at Galer, per the Metro permit with the WSDOE, should not overflow more than once per year.

In addition to Combined Sewer Overflows, there are Emergency Overflow locations operated by Seattle Public Utilities along Lake Union. These Emergency Overflow locations are primarily for pump stations that serve small sewer basins near the shore line. These locations only overflow into

Lake Union in extreme events where mechanical or power failures prevent the pumps from operating.

Despite on-going efforts by the City and King County to add capacity and redundancy to the combined sewer system, combined sewer and emergency overflows occur occasionally for various reasons. Large storms, power outages and equipment breakdowns can result in a discharge of untreated sanitary and stormwater from the combined and separated sewers into adjacent water bodies.

Focus Areas²

8th Avenue Corridor

Stormwater runoff from the 8th Avenue Corridor is routed to a 12 and 15-inch diameter combined sewer system in 8th Avenue. This sewer joins the main trunk sewer at Republican Street and 9th Avenue N.

The combined sewer in 8th Avenue has capacity issues starting with the 2-year storm event, in a 25-year event some manholes in the system could over top, causing local street flooding.

Fairview Avenue Corridor

Stormwater runoff from most of the Fairview Avenue Corridor is routed to a combined sewer system in Fairview Avenue N. The system in Fairview consists of two parallel pipes – one 8-inch and one 12-inch in diameter. Both pipes join the main trunk sewer at the intersection with Republican Street. Surface water from the west portion of this area (between Harrison and John Streets) enters the combined sewer system in an 8-inch sewer in Boren Avenue. This sewer connects to the main trunk sewer in Republican Street.

The 8-inch combined sewer main in Fairview begins to have capacity issues during the 2-year storm event, and the 12-inch has capacity problems starting in the 25-year storm. Over topping of some manholes near the north end of the system is predicted during the 25-year storm.

Valley/Mercer Blocks

Stormwater runoff from the Valley and Mercer Blocks is routed to the combined sewer system. Local sewer mains in Fairview, Boren, Terry,

²Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

Westlake and 9th Avenues all convey collected surface water to the main trunk sewer in Republican Street.

During the 2-year storm, local collector sewers in 9th, Westlake, Terry and Fairview all begin to have capacity issues. In the 25-year storm manhole overflows and street flooding is possible from these systems.

As part of the Mercer Corridor project, the combined sewer in 9th Avenue, north of Republican will be replaced. The new design will relieve some of the capacity issues in this area. Additional changes to the existing combined and separated storm systems along the Mercer corridor will partially separate the sewer and storm systems in this area. Water quality treatment will be provided for the storm water runoff from new pavements that have direct discharge to Lake Union.

Beginning at the Republican Street trunk main, this sewer network flows either west, under Queen Anne, then north along Elliott Bay to the Metro main under Elliott Avenue, or north to the Ship Canal and then to the West Point treatment facility.

3.3.2 Pollution Sources

The primary source of pollution in urban runoff is material from motor vehicle usage. Stormwater running off various surfaces can carry pollutants from roads, buildings, parking lots, and parks to a down stream water body. Typical pollutants found in stormwater include, but are not limited to:

- street and parking lot deposits –street dirt, metals, fluids leaked from vehicles, and litter;
- from vehicles –hydrocarbons, oils, metals and antifreeze
- uncovered outdoor storage material – old cars and engines, leaking dumpsters, and storage drums; and
- bacteria – from various sources including pets, wildlife and sewage overflows.

3.3.3 Environmental Impacts

As noted above, the primary source of pollutants for urban runoff is from the roadways and other vehicle use surfaces. For those areas that drain directly to Lake Union or drain to the separated storm system, the analysis below is common for all four proposed alternatives.

<i>Affected Environment</i> Environmental Impacts <i>Mitigation Strategies</i> <i>Significant Unavoidable Adverse Impacts</i>	Water Contents
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Impacts Common to All Alternatives

Construction Stormwater Runoff

Construction activities associated with new development or redevelopment under any of the alternatives would be accompanied by ground disturbing activities such as clearing and grading. These activities could result in minor erosion and sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union). In addition to sediment transport, runoff may also carry other contaminants such as fuel or oil, from construction vehicles and machinery used on-site. The risk of these effects would be of short duration (limited to the length of each project construction period) and can largely be minimized or eliminated with the proper use of construction best management practices (BMPs).

Chapters 22.800 through 22.808 of the Seattle Municipal Code, referred to as *Volume 2 Construction Stormwater Control Technical Requirements Manual*, establish requirements for all discharges and land uses with respect to land disturbing activities. This manual presents approved methods, criteria, details, and general guidance for preventing contaminants from leaving a site during construction. All new development or redevelopment projects are required to adhere to these requirements.

Although no significant impacts to water resources would be anticipated during construction activities associated with redevelopment or new development, the implementation of construction best management practices, and compliance with applicable permit requirements and conditions would help to ensure that any impacts would be temporary and minor.

In addition to City of Seattle construction stormwater requirements, any project that will disturb an acre or more of soil is required to obtain coverage through the Washington State Department of Ecology (WSDOE) for Construction Stormwater discharges. The WSDOE permit coverage requires a Stormwater Pollution Prevention Plan (SWPPP) be developed, implemented and updated by the construction site operator. Stormwater discharged from the site must be sampled and analyzed for turbidity and pH balance. Departures from specified standards for turbidity and pH must be reported to the Department of Ecology, and remedial action taken to bring the discharges into compliance with the standard.

Urban Stormwater Runoff

In the separated storm sewer area, the City's Stormwater Code requires water quality treatment for new or replaced Pollution Generating Impervious Surfaces (PGIS) that are over 5,000 sq. ft. within a project.

It is expected that the majority of the development that is envisioned to occur within the South Lake Union neighborhood as a result of any of the alternatives will exceed the 5,000 sq. ft. threshold and would provide water quality treatment for PGIS surfaces. It is possible, however, that some smaller redevelopment projects may not reach the threshold. Multiple, independent small-scale developments in an area could create new areas of pollution generating surfaces, without any individual project tripping the 5,000 sq. ft. requirement.

With the exception of certain high-use vehicle sites (e.g., vehicle fleet use facilities), City of Seattle Stormwater Code requirements and water quality treatment facilities are designed based on surface area and not on traffic volumes. Therefore, there is no difference in the treatment requirements for a 5-story building or a 25-story building. Under the current Stormwater Code, increases in density do not require increased stormwater treatment.

As shown in **Figure 3.3-2**, only the eastern side of the study area is drained by a separated storm sewer system. The balance of the study area drains to the combined sewer system or discharges directly to Lake Union. All of the focus areas are served by the combined sewer system. Sites served by the combined sewer system would continue to have the storm water that drains to the combined sewer system treated by the West Point treatment facility except during large storm events CSOs may overflow to Lake Union or other water bodies in the area.

Although increased traffic is thought to result in more auto-related pollutants, there is not direct correlation in traffic and a specific increase in the amount of water-related pollution that is generated. Many factors relate to how much material is left on the roadway by the passage of vehicles (e.g., the types of vehicles, typical age of vehicles, maintenance quality, frequency, etc.).

The Transportation (See **Section 3.13**) section of this EIS projects a 27% increase in auto and bus trips for Alternatives 1 and 2 and an 8.6% increase for Alternative 3 over the No Action Alternative. These values were established for other corridors that are served by the separated storm system, but it can be reasonably assumed that similar increases could be expected for similar increased density.

The eastern portion of the study area that is served by the separated storm drain represents about 15% of a 500-acre drainage basin served by this pipe. While an increase in density and vehicular traffic within the study area would occur in conjunction with each of the alternatives, growth, albeit of a lesser intensity, may occur in other parts of this drainage basin that is served by the separated stormwater system. As noted previously, the majority of this drainage basin consists of similar urbanized areas including portions of the I-5 freeway. Pollution increases within the study area, would be expected to be small compared to this basin as a whole. Compliance with water quality provisions of the City's Stormwater Code will lessen any water quality-related impacts of redevelopment and could result in an overall decrease in water quality impacts from the basin as existing PGIS is replaced with new PGIS for which water quality treatment is required.

3.3.4 Mitigation Strategies

Although current City Stormwater Code provisions would not require additional mitigation for increased height or density within the study area, increased pollution would likely be generated as a result of increased vehicle traffic to support increased development under any of the alternatives. In addition to requiring water quality treatment in storm water basins and flow control in CSO basins for certain levels of development, the Stormwater Code requires the use of green stormwater infrastructure (GSI) to the maximum extent feasible on all projects. These GSI techniques can provide additional water quality and/or flow control benefits.

Sustainable Drainage Strategies

The alternatives to increase height and density within the study area would not require additional water quality or flow control measures; however, several strategies are provided below that could further mitigate impacts from urban road runoff.

- Water quality treatment best management practices (BMPs) are facilities that remove pollutants by some combination of the following: gravity settling of particulate pollutants, filtration, plant Uptake, biological processes, and/or adsorption. Examples include bio-filtration swales, sand filtration systems, raingardens and stormwater wet ponds.

Urban settings are challenging to provide water quality facilities since the space needed to provide these systems is typically not readily available. Incorporating the water quality facility into the streetscape design is an option designers can use to ensure



roadway runoff is properly treated. Typical examples of integrated water quality BMPs into streetscape design include: roadside raingardens, porous paving, bio-filtration swales, filter strips and ecology embankments.

Planning of streetscape improvements could consider incorporating water quality design features as noted above to treat runoff prior to discharging to the storm system. The City's Stormwater Code requires use of these and other Green Stormwater Infrastructure (GSI) methods as part of stormwater design.

- As noted, significant portions of the pollution generating surfaces are comprised of public rights-of-way. As such, the development of a regional or neighborhood treatment facility could become an alternative to individual solutions. Redevelopment of the area provides the opportunity for partnering to install regional stormwater treatment facilities. An example of this is the Swale on Yale/Capitol Hill Water Quality Facility which is the project being jointly developed through a public/private partnership with SPU to provide stormwater quality treatment via biofiltration for a large portion of the approximately 500-acre basin draining through the 72-inch storm drain.

3.3.5 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to water quality have been identified as a result of any of the proposed alternatives.

<i>Affected Environment</i>	Water Contents
<i>Environmental Impacts</i>	
<i>Mitigation Strategies</i>	
Significant Unavoidable Adverse Impacts	

3.4 PLANTS AND ANIMALS

3.4.1 Affected Environment

Regulatory Framework

Some vegetation, fish, and wildlife species and their habitats are considered particularly sensitive based on their limited occurrence. The National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (FWS), and the Washington Department of Fish and Wildlife (WDFW) have assigned these species to several categories to assist with their management and protection. Federal threatened, endangered, and proposed species include those that are listed under the Endangered Species Act (ESA) or are proposed for listing. Endangered species are in imminent danger of extinction, while threatened species are at risk of becoming endangered. Proposed species are those for which enough information exists to warrant listing them as endangered or threatened but such listing has not yet occurred. The State of Washington also maintains a list of protected species, called species of concern. State listing categories include:

- Endangered. "Any wildlife species native to the state of Washington that is seriously threatened with extinction throughout all or a significant portion of its range within the state" (WAC 232-12-297(2.4)).
- Threatened. "Any wildlife species native to the state of Washington that is likely to become an endangered species within the foreseeable future throughout a significant portion of its range within the state without cooperative management or removal of threats" (WAC 232-12-297(2.5)).
- Sensitive. "Any wildlife species native to the state of Washington that is vulnerable or declining and is likely to become endangered or threatened in a significant portion of its range within the state without cooperative management or removal of threats" (WAC 232-12-297(2.6)).
- Candidate. "A species will be considered for designation as a State Candidate if sufficient evidence suggests that its status may meet the listing criteria defined for State Endangered, Threatened, or Sensitive" (WDFW 2007a).
- Monitor. "[Species] that require management, survey, or data emphasis for one or more of the following reasons: a. They were classified as endangered, threatened, or sensitive within the previous five years. b. They require habitat that is of limited

Affected Environment.....1
Environmental Impacts.....6
Mitigation Strategies.....10
Significant Unavoidable Adverse Impacts.....11



Lake Union wildlife

availability during some portion of their life cycle. c. They are indicators of environmental quality. d. There are unresolved taxonomic questions that may affect their candidacy for listing as endangered, threatened, or sensitive species” (WDFW 2007b).

WDFW also maintains a list and geographic database of Priority Habitats and Species (PHS). Priority habitats are crucial or important to many species. The WDFW priority species list includes species that are state or federally listed as threatened, endangered, candidate, or sensitive; animal aggregations that are considered vulnerable; and species of recreational, commercial, or tribal importance that are considered vulnerable. WDFW designation of priority habitat types is advisory and such designation may increase the significance of impacts as evaluated through the National Environmental Policy Act (NEPA) and SEPA processes.

City of Seattle

Seattle Municipal Code Chapter 25.05 - Chapter 25.05, Seattle Municipal Code (SMC) implements the State Environmental Policy Act (SEPA) and authorizes the Department of Planning and Development (DPD) to grant, condition, or deny land use and construction permit applications for public and/or private proposals that are subject to environmental review. This authority is exercised based on adopted City policies, plans, rules or regulations set forth in Chapter 25.05, SMC.

In addition, *Seattle Municipal Code Chapter 25.11* provides a means for protecting outstanding trees (or Exceptional Trees) in Seattle, especially on sites that are undergoing development.

Director's Rule 16-2008 - Director's Rule 16-2008 (DR16-2008) clarifies SMC 25.05 for the purpose of determining the value of outstanding trees on sites undergoing environmental review, in order to establish appropriate tree protection mitigating measures. This rule defines standards and procedures for identifying "exceptional trees", pursuant to SMC 25.11.

The SEPA policy articulated in SMC 25.05 calls for protecting three categories of trees and/or vegetation where development would reduce or damage:

1. rare, uncommon, unique or exceptional plant or wildlife habitat; or
2. wildlife travelways; or
3. habitat diversity for species (plants or animals) of substantial aesthetic, educational, ecological or economic value.

In DR 16-2008, the City provides a list of common and native Seattle tree species that should be considered for exceptional status along with a specified "threshold diameter." The City considers trees of these species that meet or exceed the diameter threshold to be exceptional if they meet the risk and condition criteria described in DR 16-2008.

DR 16-2008 defines "grove" as a group of 8 or more trees 12 inches in diameter or greater that form a continuous canopy. Trees that are part of a grove shall also be considered for exceptional status.

Heritage Tree Program - The Heritage Tree Program was initiated by the non-profit group PlantAmnesty in partnership with the City of Seattle in 1996 to recognize and preserve trees in the City of Seattle that are:

- tree specimens of exceptional size, form, or rarity;
- trees recognized by virtue of their age, association with or contribution to a historic structure or district, or association with a noted person or historic event;
- trees that are landmarks of a community; and
- trees that are in a notable grove, avenue, or other planting.



Tree at Denny Park

Heritage trees may be on City or private property. Each candidate tree is assessed by a certified arborist and evaluated by a review committee. Trees can be nominated individually or as a collection, but must have the owner's approval and meet the criterion for health.

Methodology

The Washington Department of Natural Resources (WDNR) Natural Heritage Program database was reviewed to determine whether any state or federal Endangered Species Act-listed plants or other rare plants are documented in the study area.

Due to the programmatic nature of this South Lake Union Height & Density EIS, a comprehensive tree inventory was not conducted for the neighborhood. As site-specific development occurs in the future within the South Lake Union neighborhood, an on-site tree inventory would be required – as part of the project-specific environmental and permit review processes for the project.

Existing Conditions

The dense and highly urban study area provides limited vegetation or natural habitat for wildlife. The majority of the study area is covered with impervious surfaces (buildings and parking lots). Vegetation is primarily ornamental lawns, shrubs, and trees. A narrow fringe of native vegetation

is located along parts of Lake Union. Buildings taller than 400 feet are located in the downtown section of Seattle, immediately south of the study area.

A review of City data found no exceptional or heritage trees identified in the study area. Priority Habitats and Species (PHS) database information from Washington Department of Fish and Wildlife (WDFW) indicates no state or federal Endangered Species Act-listed species, or other documented species of concern, have been identified in the study area. Wildlife in the study area is likely limited to species adapted to urban areas and birds migrating through the study area.

Anadromous fish also complete annual migrations adjacent to the study area in Lake Union despite generally poor water quality and an altered aquatic environment dominated by docks and structural debris. Based on WDFW SalmonScape mapping, migration corridors for Puget Sound Chinook salmon, coho salmon, sockeye salmon, bull trout, and steelhead trout exist along the north and south shores of Lake Union. These migrations generally occur twice a year: in the spring and early summer for juveniles and in the fall for adults. Although juveniles are known to migrate along the northern and southern shorelines of Lake Union, studies suggest that adults move quickly from the ocean to Lake Washington, spending no more than a couple of days in the Lake Washington Ship Canal and generally remaining in the ship canal (northern) portion of Lake Union (Fresh et al, 2000). Puget Sound Chinook salmon, bull trout, and steelhead trout are listed species under the federal Endangered Species Act.

Seaward migration through Lake Union is hazardous for juvenile salmonids due to stressful water quality conditions combined with an abundance of predator cover along the route associated with overwater structure. To reach Puget Sound safely, juveniles generally remain close to the shoreline for safety, and must survive numerous encounters with freshwater predators such as smallmouth bass and pikeminnow. Because juvenile salmonids require time to adjust to changes in light, juvenile salmonid predators often hide under shading structure along urban waterfronts. Increased structure along shorelines may, therefore, reduce juvenile salmonid survival rates during migration by providing additional predator cover.

Foraging by juvenile salmonids may also occur in Lake Union. Various studies of salmonid juvenile foraging behavior indicate a preference for feeding during the evening dusk, presumably when light is adequate for juvenile foraging but insufficient for predators of juveniles (Bieber, 2004;

Benkwitt et al, 2009). Additional artificial lighting from neighboring areas, therefore, may increase foraging opportunities for juveniles if the lighting allows for an extended evening period of safe juvenile foraging.

Focus Areas¹

From a plants and wildlife habitat perspective, the three focus areas within the study area (8th Avenue Corridor, Fairview Avenue Corridor, and Mercer/Valley Blocks) are similarly limited in available natural area. All are currently urbanized areas that drain to Puget Sound through the King County Metro sewage treatment plant combined sewage system.

8th Avenue Corridor

The 8th Avenue Corridor is developed with buildings and parking lots. Vegetation is limited to trees planted in landscape strips located (1) around the parking lots south of Harrison Street, between Dexter Avenue North and 8th Avenue North, and (2) around the warehouse located on the southeast corner of the Harrison Street and 8th Avenue North intersection.

Wildlife that uses or passes through this area is likely limited to highly urbanized species, such as small rodents, opossums, raccoons, and passerine birds; however, these species are more likely to use/inhabit Denny Park, which is located immediately south of the 8th Avenue Corridor.

Fairview Avenue Corridor

Development in the Fairview Avenue Corridor consists of buildings, parking lots, and a small, private park on the northeast corner of the John Street and Fairview Avenue North intersection. Vegetation is limited to (1) the small park, which is planted with trees, small shrubs, and lawn; and (2) trees planted in landscape strips along Fairview Avenue North and around the parking lot on the northwest corner of the John Street and Minor Avenue North parking lot.

Similar to the 8th Avenue Corridor, wildlife that uses or passes through the Fairview Avenue Corridor area is likely limited to highly urbanized species; however, wildlife is more likely to use/inhabit Cascade Park and

¹ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

pea patch, which is located 1/2 block east of the Fairview Avenue Corridor.

Mercer/Valley Blocks

The Mercer/Valley Blocks focus area contains of buildings and parking lots. Vegetation is limited to (1) trees planted in landscape strips around the parking lot south of Valley Street, between Terry Avenue North and Boren Avenue North, and (2) three trees and a narrow strip of blackberries located on the west and north property boundaries of the gasoline station located on the northwest corner of the Mercer Street and Boren Avenue North intersection.

Similar to the 8th Avenue Corridor, wildlife that uses or passes through the Mercer/Valley Blocks area is likely limited to highly urbanized species; however, wildlife is more likely to use/inhabit Lake Union Park, which is located immediately north of the Mercer/Valley Blocks focus area.

3.4.2 Environmental Impacts

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to plant and animal habitat.

Future site-specific development proposals under any of the alternatives, however, could result in impacts to plant and animal habitat. Potential impacts that could be associated with future site-specific development under any alternative are briefly discussed below.

Vegetation

Vegetation is primarily ornamental lawns, shrubs, and trees, with the exception of a narrow fringe of native vegetation along parts of Lake Union. Because no height and density changes are proposed along Lake Union, and due to requirements associated with Seattle's Critical Areas Ordinance, no vegetation impacts are expected along Lake Union.

No exceptional or heritage trees have been listed for the study area. Existing ornamental lawns, shrubs, and trees may be cleared during future development in the study area; however, Seattle Municipal Code 23.47A.016 requires landscaping and screening for most commercial developments, which would likely mitigate any vegetation loss in the study area.

<i>Affected Environment</i>	Plants and Animals Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

Wildlife

Urban Wildlife

Wildlife in the neighborhood is limited to highly urbanized species, such as small rodents, opossums, raccoons, and passerine birds. These species are adapted to urban environments, including impervious surfaces, lack of vegetation, and a human-dependent food source. These species may be temporarily displaced during construction, and potentially permanently displaced on lots that currently provide urban habitat (such as blackberry thickets, debris piles, and landscaped areas) that are converted to high-rise structures. However, these populations are not considered sensitive and no significant adverse impacts are anticipated.



Geese at Lake Union Park

Bird Strikes

Fatal daytime and nighttime bird strikes against high-rise buildings have been documented in urban areas, particularly in migratory flight corridors in the spring and fall. Daytime strikes are typically associated with windows that reflect habitat, such as sky or trees, or reveal habitat, such as sky on the other side of the building or greenery immediately inside the building. Nighttime strikes are generally associated with lights left on at night, both within the building and on the outside of the building, particularly skyward aesthetic flood lights (American Bird Conservancy 2007).

Urban avian species that inhabit the Seattle area are likely adapted/accustomed to the high rise structures found in downtown Seattle. Bird strikes likely occur, but not at a level that would significantly adversely affect their populations.

Numerous migratory bird species travel through the Puget Sound area moving generally north in the spring and south in the fall. Therefore, Alternatives 1, 2, and 3, which all allow increased building height, could indirectly result in increased bird strikes in the study area. However, the net effect on northward migrations of birds would likely be low since downtown buildings would still present the first obstacle to migratory birds. During the fall migration, the effect would be more measureable, but still not considered a significant adverse affect, as southward-flying birds would experience the barriers presented by taller building facades a few minutes sooner than they would today. More importantly, because Alternatives 1 through 3 are essentially in-fill proposals that do not extend the high-rise character of downtown further west or east, none would result in a wider high-rise obstacle to the north-south migratory pathway.

Fish Habitat

Migration corridors for Puget Sound Chinook salmon, coho salmon, sockeye salmon, bull trout, and steelhead trout are documented in Lake Union. Impacts to these species are generally related to stormwater runoff, shade, light pollution, and shoreline development. These potential impacts are discussed in more detail below.

Stormwater Runoff: Water Quality

Studies show that vehicular pollution in stormwater, particularly dissolved metals from brake pads, can stress juvenile salmonids and may increase juvenile predation rates (Pyle and Mirza, 2007; Sandahl et al, 2007; Baldwin et al. 2003; Hansen et al, 1999). Increasing vehicle use in the study area by allowing increased density may contribute, therefore, to adverse effects on juvenile salmonids associated with poor water quality. The potential for the proposed alternatives to alter water quality in Lake Union is discussed in Section 3.3, Water Quality. The conclusion of the water quality analysis is that no significant adverse effects to Lake Union water quality would likely occur as a result of the proposed alternatives, mainly due to the limited surface in the study area that is draining to Lake Union and exposed to stormwater and vehicular traffic.

Stormwater Runoff: Water Quantity

Most of the study area draining to Lake Union is already covered by impervious surfaces; only a small amount of this area is currently vegetated and pervious. Changes in density associated with the proposed alternatives may result in conversion of these areas to impervious surfaces. However, a subsequent potential increase in water quantity is not expected to impact fish habitat in Lake Union or downstream waters due to the following factors: (1) no spawning habitat exists in Lake Union or downstream waters, (2) there are no constrictions downstream that would cause scour if an increase in water quantity occurred, and (3) the lake is elevation-controlled by the Army Corps of Engineers via the Ballard Locks (therefore, an increase in water quantity would not equate to an increase in lake water levels).

Shade, Light Pollution, and Shoreline Development

As discussed above, shade from overwater structures is often associated with increased predation of juvenile salmonids. The proposed alternatives could allow increased direct shade of the Lake Union nearshore migratory corridor from higher buildings or could promote additional shoreline development over and near the water.

Several factors suggest, however, that the proposed alternatives would not result in increased predation of juvenile salmonids due to changes in shade or shoreline development:

- 1) The exposure of juvenile salmonids to changes in the Lake Union environment would generally be limited to the spring and summer months during the peak juvenile salmonid outmigration periods. Shade studies using maximum-height buildings (see Section 3.10, Aesthetics) indicate that potential shade impacts during the spring and summer months are minimal; only three lots in the study area are close enough to the lake edge to cast shadows on the water after a maximum-height build-out under Alternatives 1 and 2. If built to the maximum allowable height, one building on the west side of Lake Union (on tax parcels 0053000025 and 3025049035) and one building on the east side of Lake Union (on tax parcel 1984200105) would shade the water for a few additional hours during spring mornings (east building) and for a few additional hours during spring evenings (west building). Alternative 3 does not increase shade on the lake beyond what is currently possible under existing zoning height limits (Alternative 4).
- 2) None of the proposed alternatives include a change in the zoning adjacent to Lake Union, which currently allows building heights at or near existing levels. Significant changes in light and shade near the shoreline are therefore not expected as a result of the proposed alternatives.
- 3) Overwater development in the Lake Washington basin is highly regulated. Any proposed docks or proposed changes to existing dock widths or materials would need to comply with Seattle's Shoreline Master Program and Critical Areas Ordinance, Section 404 of the Clean Water Act, the Endangered Species Act, and those sections of the Washington Administrative Code addressing "hydraulic projects." Collectively, these regulations generally disallow a net loss of aquatic habitat from a proposed project.

Focus Areas

From a plant and animal habitat perspective, impacts associated with the three focus areas within the study area (8th Avenue Corridor, Fairview Avenue Corridor, and Mercer/Valley Blocks) are not appreciably different. Development in all three areas would be essentially infill and associated increases in tall buildings would more or less extend a high-rise building character further northward.

From an avian perspective, taller buildings may have a greater effect on birds that congregate on or near Lake Union if they are located in the Valley/Mercer blocks than in the 8th and Fairview Corridors, simply due to proximity, but also due to the fact that taller buildings in the 8th and Fairview Corridors are more of an extension of a high-rise building character further northward from downtown Seattle. Insufficient data are available on the bird species that migrate through Seattle to determine if a high percentage of birds migrating through the City (and therefore through the study area) are waterfowl. Waterfowl congregate in open water. Therefore, waterfowl may be more affected than songbirds by high-rises close to the waterfront. Waterfowl leaving the surface of Lake Union may be more likely to strike a tall building in the Valley/Mercer Block area than in the 8th/Fairview Corridor areas.

With regard to fish habitat, none of the focus areas are close enough to shade Lake Union under the proposed building heights.

3.4.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives, such as adverse impacts to vegetation, the avian patterns of use in the study area, and fish habitat in Lake Union. Potential impacts will be assessed in future project-level SEPA review associated with any specific development proposal to determine whether adverse impacts are significant. The mitigating measures described below address potential site-specific mitigation that may be associated with future site-specific actions.

When project-specific environmental review occurs in the future for development projects located within the South Lake Union neighborhood, an inventory of all non-native and native trees six inches or greater in diameter (measured 4.5 feet above the ground) would be required for the site-specific proposal. City staff would determine which trees qualify as exceptional and would determine protection requirements at that time. If exceptional trees or trees with a diameter of 2 ft. or greater are located within the site area of a new building, the project would be required to comply with the provisions of the City's code, as described above. In addition, Seattle Municipal Code 23.47A.016 requires landscaping and screening for most commercial developments, which would likely mitigate any vegetation loss in the study area.

<p><i>Affected Environment Environmental Impacts</i></p> <p>Mitigation Strategies</p> <p><i>Significant Unavoidable Adverse Impacts</i></p>	Plants and Animals Contents
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City permitting of proposed redevelopment under all alternatives would require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. Mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a "lights out" program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.

No different or additional mitigating measures have been identified for the focus areas.

3.4.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to plants and animals are anticipated.

<i>Affected Environment Environmental Impacts Mitigation Strategies</i>	Plants and Animals Contents
Significant Unavoidable Adverse Impacts	

3.5 ENVIRONMENTAL HEALTH

3.5.1 Affected Environment

Hazardous Materials Policies and Regulations

Characterization of existing site conditions as they relate to environmental health, and the need for any future cleanup activities would be assessed in accordance with applicable local, state and federal regulations, including:

Federal Regulations:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Superfund Amendments and Reauthorization Act
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act
- Occupational Safety and Health Act
- Clean Air Act
- Clean Water Act
- National Environmental Policy Act

Washington State Regulations:

- Model Toxics Control Act Cleanup Regulation (MTCA)
- Dangerous Waste Regulations
- Solid Waste Regulations
- State Environmental Policy Act (SEPA)
- Water Pollution Control Act
- Washington Industrial Safety and Health Act
- Washington State Department of Transportation (WSDOT) Environmental Procedures Manual M31-11 (April 2007)

MTCA regulations, managed by the Washington Department of Ecology, define types and levels of contamination that are harmful to human health; provide guidelines for evaluation and investigation of potential contamination; and, specify appropriate cleanup levels and methods for cleanup actions involving soil, groundwater and media other than sediment. Under MTCA regulations, all cleanups must meet certain minimum requirements, including: compliance with cleanup standards; compliance with applicable state and federal laws; protecting human health and the environment; provision for compliance monitoring; use of permanent solutions to the maximum extent practical; provision for a reasonable restoration time frame; and, consideration of public concerns.

<i>Affected Environment 1</i>	Environmental Health Contents
<i>Environmental Impacts 6</i>	
<i>Mitigation Strategies 7</i>	
<i>Significant Unavoidable Adverse Impacts 7</i>	

Methodology

This section of the Draft EIS identifies potential existing environmental hazards that have been documented in the South Lake Union Neighborhood and evaluates how each of the alternatives would be affected by the presence of these contaminants.

The Environmental Health sections of the following reports were reviewed to determine the types of contaminants that may be encountered in the South Lake Union Neighborhood:

- Draft and Final Environmental Impact Statements (including Environmental Health Technical Appendix) for the Seattle Commons/South Lake Union Plan (May, 1995);
- Draft Hazardous Materials Discipline Report, South Lake Union Park (April, 2005); and
- Mercer Corridor Improvements Project Environmental Assessment (December, 2008).

Historic and Present Day Uses

Historically, properties within the study area have been occupied by a range of industrial and commercial businesses, some of which used hazardous materials. Commercial properties are found throughout the study area, but are focused along major arterials, including Westlake, Fairview, Mercer, Denny Way and others. These businesses included gas stations, auto repair shops, dry cleaners, lead paint manufacturers, print shops, and metal working shops. Some of these uses continue to this day.

Many industrial businesses, including a sawmill, were formerly located along the south shoreline of Lake Union. During this time period, railroad tracks were also present along the south end of Lake Union. Based on its location adjacent to the south shore of the lake and downgradient from the rest of the study area, this formerly mostly industrial area is likely to have more fill material, and shallower groundwater, than the rest of the study area.

Based on the industrial and commercial businesses that have occupied the study area over the past 100 years, the following hazardous materials may be encountered during property redevelopment.

- **Gasoline-range petroleum** contamination generally results from leaks and spills associated with former gasoline stations and vehicle maintenance facilities. Gasoline is relatively mobile in the environment and is more toxic at lower concentrations than heavier grades of hydrocarbons (diesel and oil). Depending on the

age of the gasoline release, it can also include benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether and/or lead. These fuel constituents can pose a substantial risk to humans and the environment, are highly soluble and mobile in groundwater, and will float on the water table or perched groundwater.

- **Diesel- and oil-range petroleum** is used to fuel vehicles and heat businesses and homes. Oil-range petroleum is also often associated with auto repair shops. For the most part, these contaminants are relatively low in toxicity, and are not particularly mobile. Diesel- and oil-range petroleum tends to bind to soil and float on the water table rather than dissolve or disperse throughout the water column. As a result, any given leak or release of diesel or oil is not likely to have resulted in widespread contamination.
- **Polycyclic aromatic hydrocarbons (PAHs)**, some of which are carcinogenic, are present in heavy-range petroleum hydrocarbons and are also created during burning as a result of incomplete combustion. They are also present in creosote. PAHs may be associated with petroleum releases such as leaking heating oil USTs and lubricating oils used by railroads. In general, PAHs are relatively insoluble in water and bind to soil particles. Consequently, although some of the compounds are extremely toxic to humans, they are relatively immobile.
- **Heavy metals**, including arsenic, cadmium, chromium, lead, zinc, and copper, are associated with metal manufacturers, welders, paint manufacturers, and printers. Metals can become soluble and migrate to groundwater, depending on the chemistry of infiltrating water and/or the media into which the metals were initially released. However, metal contamination is more commonly found in shallow, subsurface soils.
- **Solvents**, such as trichloroethylene and tetrachloroethylene, were used historically as solvents in dry cleaning and for degreasing at a variety of businesses such as auto body shops and paint shops/manufacturers. Dry cleaners used large volumes of these solvents. Solvents are highly toxic at low concentrations and are highly mobile in soil and groundwater. Most solvents are denser than water and, therefore, tend to move downward through the subsurface and water column. Unlike most contaminants, solvents can migrate readily through fine-grained soils.
- **Creosote** is a yellowish to greenish-brown oily liquid containing polycyclic aromatic hydrocarbons (PAHs), such as phenols, creosols, and naphthalene. Creosote is derived from coal tar and is

commonly used to treat railroad ties, piles, and telephone poles. It can cause severe neurological disturbances if inhaled in high concentrations. Creosote-contaminated soil associated with railroad ties is typically relatively shallow. However, if creosote migrates to groundwater, it is considered relatively mobile because some constituents of creosote are water-soluble.

Other potential environmental concerns include:

- **Methane** gas may be encountered in the wood waste fill associated with the former lumber mill operations on the south shore of Lake Union. The decomposition of organics such as wood waste typically produces methane gas. Methane may build up to explosive levels in basements and other confined areas. Methane gas can also migrate laterally through coarser soils and subsurface utility corridors. Methane gas is a fire hazard because it is flammable and can be ignited in concentrations ranging 5 to 15 percent in air.
- **Asbestos-containing material (ACM)** and **lead-based paint** may be encountered during building demolition. Inhalation of ACM can lead to asbestosis (scarring fibrosis of the lung) and lung cancer. Ingestion of lead-based paint (through dust inhalation) can cause high blood pressure, digestive problems, nerve disorders, and memory and concentration problems.

8th Avenue Corridor

Based on prior studies, it is likely that the 8th Avenue Corridor contains sites that may still have underground storage tanks (USTs) and sites with the potential for chemical releases. Land uses of concern in this focus area were likely smaller, commercial businesses that used, transported, stored, and/or disposed of hazardous materials.

Fairview Avenue Corridor

Based on prior studies, it is likely that the Fairview Corridor contains sites that have had USTs removed, sites that may still contain USTs, sites that have leaking USTs and sites with the potential for chemical releases. Land uses of concern in this focus area were likely smaller, commercial businesses that used, transported, stored, and/or disposed of hazardous materials.

Two hazardous material sites have been mapped in previous studies in the Fairview Avenue Corridor. One hazardous material site is listed as a confirmed release and is mapped on the northeast corner of the intersection of Denny Way and Fairview Avenue North. The second

hazardous material site is listed as cleaned up or having received no further action letter and is mapped on the southeast corner of Thomas Street and Boren Avenue North.

Valley/Mercer Blocks

According to prior studies conducted in the neighborhood, numerous hazardous material sites have been identified in the Valley/Mercer Blocks area, most of which have more than one environmental concern. These sites were likely smaller commercial and industrial businesses that used, transported, stored, and/or disposed of hazardous materials. Many larger industrial businesses, including a sawmill, were formerly located along the south shoreline of Lake Union, immediately north of the Valley/Mercer Blocks. Fill associated with the sawmill may extend beneath the focus area blocks.

The westernmost block (between 8th Avenue North and Westlake Avenue North) is mapped as one site with the following environmental concerns: a steam laundry (cleaning and dyeing), refuse burning, foundry/blacksmith/machine shop, gas station, auto service garage, auto cleaning, carpet manufacturing, auto wrecking, junk dealers, car dealers, and fill.

The next block east (between Westlake Avenue North and Terry Avenue North) contains six sites with the following environmental concerns: sawmill, brewery, tank house, stove heat, electric powerhouse, machine shop, refuse fill, auto service station, auto clearing and polishing, gas station, underground storage tanks and hydraulic hoists, paints, and grease shed. This block contains at least two sites that have had confirmed petroleum releases.

The block between Terry Avenue North and Boren Avenue North contains four sites with the following environmental concerns: junk warehouse, oil burner, wagon painting and repair, truck and auto repair, asphalt plant, testing station, fill, sash/door/blind factory, cabinet shop, glazing/painting shop, oil house, steel products manufacturing, blacksmith, machine shop, motor oil and greases, paint shop, gas station, and marine products. This block contains at least one site that has had a confirmed petroleum release.

The easternmost block, between Boren Avenue North and Fairview Avenue North, contains seven sites with the following environmental concerns: furniture factory, service station, graphics studio, boat company, print shop, soap factory, surfacing machine company, photography,

towing company, stove heat, fuel shed, fuel and hauling company, and paint storage.

3.5.2 Environmental Impacts

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to environmental health.

Future site-specific development proposals under any of the alternatives, however, could result in impacts to environmental health. Development activities could include excavation associated with demolition of existing foundations and construction of new foundations. Potential indirect and cumulative impacts for all alternatives associated with property redevelopment include:

- Contaminated soil and/or groundwater may be encountered during excavation when properties in the study area are redeveloped.
- Asbestos Containing Material (ACM) and lead-based paint may be encountered during building demolition when properties in the study area are redeveloped.
- Contamination may be cleaned up as properties are redeveloped, resulting in less contamination in the study area.
- Contaminated materials may be uncovered during property redevelopment, allowing more direct exposure to the public.
- Contamination may be spread as a result of property redevelopment (for example, a new utility corridor could provide a new conduit for contamination to spread through; dewatering activities could pull contaminated groundwater into areas that were initially clean).

The amount of contamination encountered during redevelopment is related to the amount of excavation required. In general, the higher the building, the deeper the foundation excavation will need to be. Under this assumption, Alternative 1 would have the most excavation and Alternative 4 would have the least excavation. Therefore, Alternative 1 potentially could have more contamination encountered and remediated than the other alternatives.

Impacts to the focus areas would not be appreciably different than those anticipated for the study area as a whole.

<i>Affected Environment</i>	Environmental Health Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

3.5.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

- Further site investigations to determine the potential for contamination to be present on the property.
- Soil and groundwater investigations to evaluate the type, concentration, and extent of contamination, if present.
- Cleanup of contamination sources (e.g. removal of underground storage tanks, excavation of contaminated soil).
- Handling and disposing of contaminated soil and groundwater according to local and state regulations.

No different or additional mitigating measures would be required for the focus areas.

3.5.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to environmental health are anticipated under any of the proposed alternatives.

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Mitigation Strategies

**Significant
Unavoidable
Adverse Impacts**

3.6 NOISE

3.6.1 Affected Environment

Noise Terminology and Descriptors

Noise is sometimes defined as unwanted sound, and the terms noise and sound are used more or less synonymously in this section. The human ear responds to a very wide range of sound intensities. The decibel (dB) scale used to describe and quantify sound is a logarithmic scale that provides a convenient system for considering the large differences in audible sound intensities. On this scale, a 10-dB increase represents a perceived doubling of loudness to someone with normal hearing. Therefore, a 70-dB sound level would sound twice as loud as a 60-dB sound level.

People generally cannot detect sound level differences (increases or decreases) of 1 dB in a given noise environment. Although differences of 2 or 3 dB can be detected under ideal laboratory conditions, such changes are difficult to discern in an active outdoor noise environment. A 5-dB change in a given noise source, however, would likely be perceived by most people under normal listening conditions.

When addressing the effects of noise on people, it is necessary to consider the "frequency response" of the human ear, or those frequencies that people hear best. Sound-measuring instruments are, therefore, often programmed to "weight" sounds based on the way people hear. The frequency-weighting most often used to evaluate environmental noise is A-weighting and measurements using this system are reported in "A-weighted decibels" or dBA. All sound levels discussed in this evaluation are reported in A-weighted decibels.

As mentioned above, the decibel scale used to describe noise is logarithmic. On this scale, a doubling of sound-generating activity (i.e., a doubling of the sound energy) causes a 3-dBA increase in average sound produced by that source, not a doubling of the loudness of the sound (which requires a 10-dBA increase). For example, if traffic along a roadway is causing a 60-dBA sound level at some nearby location, twice as much traffic on this same road would cause the sound level at this same location to increase to 63 dBA. Such an increase might not be discernible in a complex acoustical environment.

Relatively long, multi-source "line" sources such as roads emit cylindrical sound waves. Due to the cylindrical spreading of these sound waves,

<i>Affected Environment.....</i>	<i>1</i>
<i>Environmental Impacts.....</i>	<i>7</i>
<i>Mitigation Strategies.....</i>	<i>11</i>
<i>Significant Unavoidable Adverse Impacts.....</i>	<i>13</i>

sound levels from such sources decrease with each doubling of distance from the source at a rate of 3 dBA. Sound waves from discrete events or stationary "point" sources (such as a backhoe operating in a stationary location) spread as a sphere, and sound levels from such sources decrease 6 dBA per doubling of the distance from the source. Conversely, moving half the distance closer to a source increases sound levels by 3 dBA and 6 dBA for line and point sources, respectively.

For a given noise source, a number of factors affect the sound transmission from the source, which in turn affects the potential noise impact. Important factors include distance from the source, frequency of the sound, absorbency and roughness of the intervening ground surface, the presence or absence of obstructions and their absorbency or reflectivity, and the duration of the sound. The degree of impact on humans also depends on existing sound levels, and who is listening.

Federal regulatory agencies often use the equivalent sound level (L_{eq}) to characterize sound levels and to evaluate noise impacts. The L_{eq} is the level that if held constant over the same period of time would have the same sound energy as the actual, fluctuating sound. As such, the L_{eq} can be considered an energy-average sound level. But this metric should not be confused with an arithmetic average which tends to de-emphasize high and low values; the L_{eq} gives most weight to the highest sound levels because they contain the most sound energy.

Typical sound levels of some familiar noise sources and activities are presented in **Table 3.6-1**.

Table 3.6-1
Sound Levels Produced by Common Noise Sources

Thresholds/ Noise Sources	Sound Level (dBA)	Subjective Evaluations 1	Possible Effects on Humans 1
Human Threshold of Pain	140		
Carrier jet takeoff at 50 ft			
Siren at 100 ft	130		
Loud rock band		Deafening	Continuous exposure to levels above 70 can cause hearing loss in majority of population
Jet takeoff at 200 ft	120		
Auto horn at 3 ft			
Chain saw	110		
Noisy snowmobile			
Lawn mower at 3 ft	100		
Noisy motorcycle at 50 ft		Very Loud	
Heavy truck at 50 ft	90		
Pneumatic drill at 50 ft	80		
Busy urban street, daytime		Loud	
Normal automobile at 50 mph	70		Speech Interference
Vacuum cleaner at 3 ft			
Air conditioning unit at 20 ft	60		
Conversation at 3 ft		Moderate	
Quiet residential area	50		
Light auto traffic at 100 ft			Sleep Interference
Library	40		
Quiet home		Faint	
Soft whisper at 15 ft	30		
Slight rustling of leaves	20		
Broadcasting Studio	10	Very Faint	
Threshold of Human Hearing	0		

Source: EPA 1974 and Others

¹ Note that both the subjective evaluations and the physiological responses are continuums without true threshold boundaries. Consequently, there are overlaps among categories of response that depend on the sensitivity of the noise receivers.

Regulatory Limits

Seattle Noise Code

The noise limits included in Seattle's Noise Control Code (Seattle Municipal Code Chapter 25.08) are applicable to the construction and operation of all development proposed as part of the project. The Noise Code sets levels and durations of allowable daytime/nighttime operational noise (upper portion of **Table 3.6-2**) and daytime

construction noise (lower portion of **Table 3.6-2**). These limits are based on the zoning of the source and receiving properties.

Table 3.6-2
Seattle Maximum Permissible Levels and Construction Noise Limits (dBA)

Zoning District of Noise Source [25.08.410 & 420& 425]	Zoning District of Receiving Property		
	Residential Day / Night	Commercial	Industrial
Operational Noise Limits ¹			
Residential	55 / 45	57	60
Commercial	57 / 47	60	65
Industrial	60 / 50	65	70
Daytime Construction Noise Limits ²			
On-site sources like dozers, loaders, power shovels, cranes, derricks, graders, off-highway trucks, ditchers, and pneumatic equip (maximum+25) [25.08.425 A.1]			
Residential	80	82	85
Commercial	82	85	90
Industrial	85	90	95
Portable equip used in temporary locations in support of construction like chain saws, log chippers, and powered hand tools (maximum+20) [25.08.425 A.2]			
Residential	75	77	80
Commercial	77	80	85
Industrial	80	85	90
Impact types of equipment like pavement breakers, pile drivers, jackhammers, sand-blasting tools, or other impulse noise sources - may exceed maximum permissible limits between 8 AM and 5 PM weekdays and 9 AM and 5 PM weekends, but may not exceed the following limits [25.08.425 B]:			
Leq (1 hr) 90 dBA			
Leq (30 minutes) 93 dBA			
Leq(15 minutes) 96 dBA			
Leq (7.5 minutes) 99 dBA			

Source: Seattle Municipal Code - 25.08 - Specific sections indicated.

Note: All sound level limits (except those applied to impact type construction equipment) are based on the measurement interval equivalent sound level (Leq) and a not-to-be-exceeded Lmax level 15 dBA higher than the indicated limits.

¹ The operational noise limits for residential receivers are reduced by 10 dBA during nighttime hours (i.e., 10 PM to 7 AM weekdays, 10 PM to 9 AM weekends). The operational noise limits are displayed for daytime/nighttime hours.

² Construction noise limits apply at 50' or a real property line, whichever is greater. Construction noise is limited to the higher levels listed in the bottom portion of the table during daytime hours only, which are defined as 7 AM to 10 PM weekdays and 9 AM to 10 PM weekends. These limits effectively prohibit construction at night except in special cases.

The Seattle noise limits are based on the hourly equivalent sound level (L_{eq}) and short-term maximum sound level (L_{max}) attributable to a sound source.

The Noise Code also identifies a number of noise sources or activities that are exempt from the maximum permissible sound levels described in SMC 25.08.410, including sounds created by motor vehicles on public streets (SMC 25.08.480) and aircraft in flight (SMC 25.08.530).

As mentioned previously, the City's Noise Code allows noise from temporary, daytime construction activities to exceed the noise limits that apply to operational activities by amounts that vary based on the types of equipment involved. These construction noise limits apply at exterior locations. In order to protect interior commercial uses from excessive levels of construction noise, Section 25.08.425C of the code also prohibits construction noise from exceeding more stringent operational noise limits (i.e., the levels shown in the upper portion of **Table 3.6-2**) in the interior of buildings in commercial districts between the hours of 8:00 AM and 5:00 PM. Compliance with this requirement is intended to be assessed after every reasonable effort, including but not limited to closing windows and doors, has been taken to reduce such noise in the interior space.

FHWA/WSDOT Noise Impact Criteria

Federal and State noise guidelines are presented below. Because these criteria are intended for analyzing noise impacts related to new, expanded or substantially modified roadways that are controlled by state or federal agencies, they are not applicable to this analysis. However, the Federal Highway Administration (FHWA) traffic noise criteria and the Washington State implementation of these rules through state policies are discussed below to provide readers a perspective on the noise levels related to traffic sources.

The FHWA defines a traffic noise impact as a predicted traffic noise level (peak hourly L_{eq}) approaching or exceeding 67 dBA at exterior locations associated with residential uses, or when the predicted traffic noise levels substantially exceed the existing noise levels. FHWA leaves the definition of "approach" to the states. The Washington State Department of Transportation (WSDOT) defines "approaching" the FHWA limits as sound levels within 1 dBA of the criterion level (i.e., 66 dBA for residential properties). WSDOT defines "substantially exceeding" existing noise levels as an increase greater than 10 dBA.

Sounds created by motor vehicles on public roads and aircraft in flight are exempt from maximum permissible sound levels.

SMC 25.08.480 and 530

Zoning and Land Use

As mentioned previously, Seattle's Noise Code is based on the underlying zoning of the source and receiving properties. Most of the neighborhood is currently zoned Seattle Mixed (SM) which encourages pedestrian friendly neighborhoods with close residential and commercial developments. In addition, Commercial 2 (C2) zones are located in the northeast and in areas adjacent to Lake Union. Both SM and C2 zones are considered commercial districts when applying the Seattle's Noise Code. The Seattle Noise Code limits operational noise from commercial sources affecting other commercial receivers to 60dBA, day and night. Daytime construction noise limits are higher as shown in the bottom of **Table 3.6-2**.

An Industrial Commercial (IC) zone, which is classified as an industrial district, is located in the center of the South Lake Union neighborhood. The Noise Code limits operational noise from commercial sources affecting industrial receivers to 65 dBA, day and night and industrial sources affecting other industrial sources to 70 dBA day and night. Again, daytime construction noise limits are higher, as described previously.

Existing Sound Environment

The South Lake Union contains a mix of commercial and residential properties that are served by various forms of transportation. Bus stops line major east-west arterials including Denny Way, Mercer and Broad Streets as well as major north-south arterials: Aurora, Dexter, Westlake, Fairview, and Eastlake Avenues. The South Lake Union Streetcar's route includes Westlake Avenue and parts of Terry Avenue to Valley Street and northeast portions of Fairview Avenue.

The existing acoustic environment within the South Lake Union neighborhood is typical of an urban setting. Major contributing sources of ambient noise in this area include: traffic on local streets, I-5 and Aurora Avenue N; the streetcar; and aircraft overflights. Amplified public address systems associated with tour boats, marine engines from watercraft operating on the lake, and sounds from float planes (particularly taking off) are noticeable proximate to Lake Union.

Focus Areas¹

In general, the noise environment in the three focus areas is very similar to the noise environment in the study area as whole. Distinctions, if any, in each focus area are noted below.

8th Avenue Corridor. Existing noise characteristics in the 8th Avenue Corridor are comparable the noise environment in the study area as a whole. The northern edge of the 8th Avenue Corridor is near the Lake Union Seaport Airport flight path and may experience increased noise associated with aircraft overflights.

Fairview Avenue Corridor. The majority of the Fairview Avenue Corridor is zoned Industrial Commercial (IC). As described above, this zoning designation permits slightly higher noise levels for construction and operations activities, compared to commercial designations.

Three noise measurements were taken in the study area on August 31, 2005 as part of the Mercer Corridor Improvement Project. These measurements, presented in **Table 3.6-3**, were primarily affected by traffic noise on local roadways. While measured sound levels exceeded the Seattle City noise limits for both residential and commercial zones, the dominant source of noise in the area (i.e., noise from motor vehicles on public roads) is exempt from the maximum permissible sound levels. The noise measurement at the corner of Fairview and Republican are in the Fairview Avenue Corridor.

Table 3.6-3
Sound Level Measurements

Location	Time	Leq (dBA)
Mercerview Apartments	13:34	70
Residences at the corner of Fairview and Republican	14:05	67
Lake Union Park	14:40	59

Source: Seattle Department of Transportation, January 2007

Mercer/Valley Blocks. Because the Valley/Mercer Blocks are relatively close to Lake Union, noise from the lake, including marine engines and float plan activity, is more present here than in the other focus areas. The

¹ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

western portion of the Valley/Mercer Blocks focus area is also located under the Lake Union Seaport Airport flight path.

As presented above in **Table 3.6-3**, measured sound levels taken in 2005 for the Mercer Corridor project exceeded the Seattle City noise limits for both residential and commercial zones. The Mercerview Apartments, located at 1200 Mercer Street, is within, and Lake Union Park immediately north of, the focus area. The dominant source of noise in the area (i.e., noise from motor vehicles on public roads) is exempt from the maximum permissible sound levels.

3.6.2 Environmental Impacts

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in noise impacts in the neighborhood.

Future site-specific development proposals under any of the alternatives, however, could result in impacts to noise. Depending on the nature of these site-specific actions, noise impacts could occur to existing, adjacent land uses in. Construction, parking, and mechanical equipment related to new developments have the potential to cause noise impacts to sensitive receivers (e.g., residences, schools, churches, parks, etc.). Larger residential and commercial structures could result in an increase in traffic volumes and traffic-related noise on local streets. Potential impacts that may be associated with future site-specific development under any of the alternatives are discussed below.

Impacts Common to All Alternatives

Construction

Noise from demolition and construction activities has the potential to affect nearby receivers, particularly sensitive uses. For daytime construction activities, the Seattle Noise Code allows temporary construction to exceed the noise limits applied to long-term operations by a set amount. This allows noisier construction activities to occur while still controlling the potential for noise impacts to nearby receivers. During nighttime hours (10 PM to 7 AM weekdays, 10 PM to 9 AM weekends), however, allowed increases to sound levels are not applied to construction activities. Because it is difficult for construction activities to meet these stricter nighttime noise limits, construction activities are generally limited to daytime hours. The temporary nature of construction coupled with its restriction to daytime hours would minimize the potential for significant impacts from construction activities and equipment.

<i>Affected Environment</i>	Noise Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

The greatest potential for noise impacts would be to residential uses within or proximate to the study area. Although the entire area is classified as either a commercial or industrial noise district (depending on zoning), careful attention should still be given to demolition and construction activity relative to nearby residences -- to ensure that construction activities comply with the applicable noise limits and minimize potential disturbances.

As described above, variations in zoning establish varying construction noise limits. The daytime construction noise limits shown in the lower portion of **Table 3.6-2**, range from 80 to 95 dBA for commercial and industrial districts, depending on the type of equipment in use and the specific source and receiver combination. Under all of the action alternatives, the most applicable construction noise limit will be 85 dBA in the SM zoning district. Under the No Action alternative (Alternative 4), the majority of the area would also be subject to the SM noise limit, but a portion of the neighborhood would retain its Industrial Commercial (IC) zoning designation, with a slightly higher construction noise limit (see **Table 3.6-2**).

As can be seen in the upper portion of **Table 3.6-4**, construction activities at a distance of 50 feet have the potential to exceed 85 dBA. Therefore, construction noise management plans should be conceived and implemented for construction projects within about 50-100 feet of potentially affected receivers, particularly those containing more sensitive residential uses.

In addition to showing overall hourly noise levels from various construction activities, **Table 3.6-4** (in the lower portion) shows the range of sound levels (i.e., minimum to maximum levels) emitted by individual pieces of equipment. Because this equipment would not necessarily operate for an entire hour, it is not appropriate to compare these levels with Seattle's noise limits. However, these levels give an idea of the relative sound levels that can be expected from different kinds of equipment. In the absence of intervening terrain or structures, sounds from construction equipment and activities (usually point sources) decrease about 6 dBA for each doubling in distance from the actual source.

Table 3.6-4
 Typical Noise Levels from Construction Activities Equipment (dBA)

Activity	Range of Hourly Leqs		
	At 50'	At 100'	At 200'
Clearing	83	77	71
Grading	75-88	69-82	63-76
Paving	71-88	66-82	60-76
Erection	72-84	66-78	60-72
Types of Equipment	Range of Noise Levels		
	At 50'	At 100'	At 200'
Bulldozer	77-96	71-90	65-84
Dump Truck	82-94	76-88	70-82
Scraper	80-93	74-87	68-81
Paver	86-88	80-82	74-76
Generators	71-82	65-76	59-70
Compressors	74-81	68-75	62-69
Pneumatic Wrenches	83-88	77-82	71-76
Jackhammers	81-98	75-92	69-86

Source: EPA, 1971

Operation

As described in Chapter 2 of this Draft EIS, the three action alternatives would allow an increase in building heights in the west-central portion of the study area – roughly from Prospect Street (extended) to Republican Street. This is the area that is also shown in **Figure 2-4** as the flight path for the Lake Union Seaport Airport. As indicated, the flight path elevation varies from approximately 150 feet (above average ground level) near the Lake Union shoreline to 200 feet in the vicinity of Aurora Avenue N. Existing height limits in this portion of the study area range from 40 – 65 feet. Increased building heights within this area associated with Alternatives 1, 2 or 3 could result in increased noise impacts to residences and/or offices in upper portions of new buildings from aircraft overflights. As noted previously, however, while sounds from seaplane operations may on occasion be a nuisance to some, such sounds levels are exempt from Seattle's Noise Code.

Elements of future development under any of the alternatives with the most potential to result in noise impacts at nearby noise-sensitive receivers include noise from mechanical equipment and noise from increased vehicular traffic. The following evaluates the potential for each of these noise factors.

Mechanical Equipment

Heating, ventilation, and air conditioning (HVAC) units may be installed to service commercial/retail uses and possibly new residences. Refrigeration

units also may be required for potential future restaurants and/or cafes. Specific noise levels generated by such equipment would depend on the location, height, and design of individual equipment and building systems. Noise from these types of sources would need to be controlled to comply with the Seattle noise limits at the nearest sensitive receivers – during both day and nighttime hours. For noise sources and receivers in commercial districts (including residences), the noise limit would be 60 dBA, 24-hours a day (**Table 3.6-2**). Source or receiving properties in industrial districts would be subject to a higher noise limit. With proper placement and design, it is likely that future HVAC units and related mechanical equipment could meet these limits. However, if they are placed in areas near sensitive receivers, equipment vendors and contractors should ensure that the equipment would be installed with effective noise mitigating enclosures and/or directed away from sensitive areas.

Traffic

Increases in population density and commercial activity could add more traffic to local streets, which would increase noise levels in South Lake Union area. As mentioned previously, a doubling of sound-generating activity – in this case traffic – causes a 3-dBA increase in average sound produced by a noise source. Comparisons of projected related traffic volumes and maximum traffic-related noise increases in the future with and without the proposal are summarized in **Table 3.6-5**.

Based on the traffic analysis that is contained in this Draft EIS, traffic-related noise would increase by 0 to 3 dBA proximate to streets noted in **Table 3.6-5**. Fairview Avenue N between Harrison Street and Denny Way would experience the greatest increase in traffic volume under Alternative 2 – resulting in a 2.8 dBA increase in traffic-related noise from this roadway. However, as mentioned previously, differences of 2 or 3 dB are difficult to discern in an active outdoor noise environment. Therefore, no noise impacts are anticipated from changes in traffic volumes as a result of this or any of the alternatives.

Focus Areas

Under and near the flight path for the Lake Union Seaport Airport, (the western portion of the Valley/Mercer Blocks area and the northern portion of the 8th Avenue Corridor), taller buildings in the action alternatives would have relatively greater noise exposure to overhead aircraft. In the Fairview Avenue Corridor, the retention of the existing IC zoning under the No Action alternative (Alternative 4) would continue to allow for slightly higher noise levels for construction and operations activities, compared to permitted noise levels in the SM zoning

designation contemplated in the action alternatives in this area. Other than these differences, noise impacts in the focus areas would generally be similar to those described for the study area as a whole.

Table 3.6-5
Maximum Traffic-Related Noise Level Increases

Road	Segment	2008 Existing Volume	2030 No Action Volume	2030 Alt 1 Volume	2030 Alt 2 Volume	2030 Alt 3 Volume	Maximum Increase over Existing (dBA)
Fairview Ave. N.	Harrison Street to Denny Way	745	1,400	1,424	1,427	1,420	2.8
Westlake Ave.	Denny Way to Stewart Street	357	571	612	614	590	2.4
Virginia St.	Westlake Ave N to 3rd Ave	832	1,378	1,425	1,429	1,409	2.3
Denny Way	Aurora Ave N to Stewart Street	1,233	1,637	1,712	1,720	1,661	1.4
E Pine St.	Boren Ave to Broadway	530	684	690	681	691	1.2
Fremont Bridge	N 35th Street to Westlake Ave	1,424	1,782	1,819	1,820	1,794	1.1
Mercer St.	5th Ave N to Dexter Ave N	1,445	1,761	1,803	1,801	1,785	1.0
Stewart St.	7th Ave to 3rd Ave	729	861	869	875	873	0.8
Broad St.	Denny Way to Westlake Ave N	1,643	1,727	1,769	1,769	1,744	0.3

Source: Fehr & Peers, 2010.

3.6.2 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. The mitigating measures described below address potential site-specific mitigation that may be associated with future site-specific actions.

*Affected Environment
Environmental Impacts*

Mitigation Strategies

Significant Unavoidable Adverse Impacts

Noise Contents

Construction

Practices which can reduce the extent to which people are affected by construction noise and ensure that construction noise levels stay within the applicable daytime sound level limits include:

- Use properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turn off idle equipment.
- Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.
- Stationary equipment should be placed as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors, welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the use of portable barriers demonstrates to the public the contractor's commitment to minimizing noise impacts during construction.
- Substitute hydraulic or electric models for impact tools such as jack hammers, rock drills and pavement breakers could also reduce construction and demolition noise. And electric pumps could be specified if pumps are required.
- Although as a safety warning device, back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise -- but without using a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.
- Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 feet of existing uses (e.g., residences, schools/classrooms, and noise-sensitive

businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although overall construction sound levels would vary with the type of equipment used, common sense distance attenuation should be applied.

Operation

To minimize the potential for noise impacts, HVAC units should be located away from residences – or other sensitive receptors, whenever possible and/or shielded to comply with applicable noise limits. No other specific impacts have been identified and, therefore, no other specific mitigation measures are necessary.

3.6.3 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to noise are anticipated under any of the proposed alternatives.

<i>Affected Environment</i>	Noise Contents
<i>Environmental Impacts</i>	
<i>Mitigation Strategies</i>	
Significant Unavoidable Adverse Impacts	

3.7 CLIMATE CHANGE AND GREENHOUSE GAS EMISSIONS

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation and temperature. The extent of the change or the exact contribution from sources influenced by human activity, including the construction and operation of developments, such as the proposed alternatives, remains in debate. This analysis provides a qualitative discussion of the potential impacts of the proposed alternatives on global climate change based upon the best information available at this time.

3.7.1 Affected Environment

Climate Change and Greenhouse Gas Emissions

The global climate is continuously changing, as evidenced by repeated episodes of warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. Scientists have observed, however, an unprecedented increase in the rate of warming in the past 150 years. This recent warming has coincided with the global Industrial Revolution, which resulted in widespread deforestation to accommodate development and agriculture and an increase in the use of fossil fuels, which has released substantial amounts of greenhouse gases into the atmosphere.

Greenhouse gases (GHG), such as carbon dioxide, methane, and nitrous oxide, are emitted by both natural processes and human activities and trap heat in the atmosphere. The accumulation of GHG in the atmosphere affects the earth's temperature. While research has shown that Earth's climate has natural warming and cooling cycles, evidence indicates that human activity has elevated the concentration of GHG in the atmosphere beyond the level of naturally- occurring concentrations resulting in more heat being held within the atmosphere. The International Government on Climate Change (IPCC), an international group of scientists from 130 governments, has concluded that it is "very likely" - a probability listed at

<i>Affected Environment</i>	1
<i>Environmental Impacts</i> ...	10
<i>Mitigation Strategies</i> ...	14
<i>Significant Unavoidable Adverse Impacts</i> ...	15

more than 90 percent – that human activities and fossil fuels explain most of the warming over the past 50 years.”¹

The IPCC predicts that under current human GHG emission trends, the following results could be realized within the next 100 years:²

- global temperature increases between 1.1 – 6.4 degrees Celsius;
- potential sea level rise between 18 to 59 centimeters or 7 to 22 inches;
- reduction in snow cover and sea ice;
- potential for more intense and frequent heat waves, tropical cycles and heavy precipitation; and
- impacts to biodiversity, drinking water and food supplies.

The Climate Impacts Group (CIG), a Washington-state based interdisciplinary research group that collaborates with federal, state, local, tribal, and private agencies, organizations, and businesses, studies impacts of natural climate variability and global climate change on the Pacific Northwest. CIG research and modeling indicates the following possible impacts of human-based climate change in the Pacific Northwest:³

- changes in water resources, such as decreased snowpack; earlier snowmelt; decreased water for irrigation, fish and summertime hydropower production; increased conflict over water; increased urban demand for water.
- changes in salmon migration and reproduction.
- changes in forest growth and species diversity and increases in forest fires; and
- changes along coasts, such as increased coastal erosion and beach loss due to rising sea levels; increased landslides due to increased winter rainfall, permanent inundation in some areas; and increased coastal flooding due to sea level rise and increased winter streamflow.

¹ IPCC, Fourth Assessment Report, February 2, 2007.

² IPCC, Summary for Policymakers, April 30, 2007.

³ Climate Impacts Group, Climate Impacts in Brief, accessed 2/7/2008, <http://www.cses.washington.edu/cig/pnwc/ci.shtml>.

Energy

One source of greenhouse gas emissions is the fossil fuels (especially coal) used to produce power used by consumers for electrical power and home heating needs. In the Pacific Northwest - unlike other regions in the United States - power companies are generally able to utilize hydro-electric energy sources which are considered renewable.

Electrical service is provided to Seattle, including the South Lake Union subarea, by Seattle City Light. Seattle City Light has a variety of sources of power including: hydro-electric (88.83 percent), nuclear (5.68 percent), wind (3.43 percent), coal (1.38 percent) and natural gas (0.58 percent)⁴. Only a small percentage (less than 2 percent) of the power provided by Seattle City Light is generated from fossil fuels. Seattle City Light offers consumers options for reducing or offsetting their energy carbon footprint, such as providing energy audits and providing the option to participate in the "green-up" program which allows customers to purchase renewable energy sources (solar and wind) for a portion of their electricity use.

Other strategies that can further reduce greenhouse gas from energy use are: employing design features that naturally reduce energy use, such as daylighting and green roofs; retaining mature trees to provide carbon sequestration, air purification and cooling; and, providing onsite power generation such as solar panels or wind turbines.

Regulatory Context

United States Environmental Protection Agency

The United States Environmental Protection Agency (EPA) is charged with enforcing the Clean Air Act and has established air quality standards for common pollutants. In addition, the EPA has been directed to develop regulations to address the GHG emissions of cars and trucks.

On September 22, 2009, the EPA released final regulations that require 29 categories of facilities to report their GHG emissions annually, starting in 2011. Covered facilities include oil refineries, pulp and paper manufacturing, landfills, and a variety of other manufacturing and industrial sources of emissions. Programmatic development projects, such as the alternatives discussed in this Draft EIS are not subject to these regulations.

⁴ Seattle City Light, <http://www.seattle.gov/light/FuelMix/>, accessed July 10, 2010.

Western Regional Climate Action Initiative

On February 26, 2007, the governors of Arizona, California, New Mexico, Oregon and Washington signed the Western Climate Initiative (WCI) to develop regional strategies to address climate change. WCI is identifying, evaluating and implementing collective and cooperative ways to reduce greenhouse gases in the region. Subsequent to this original agreement, the governors of Utah and Montana, as well as the premiers of British Columbia and Manitoba joined the WCI. The WCI objectives include setting an overall regional reduction goal for GHG emissions to 15 percent below 2005 levels by 2020, developing a design to achieve the goal and participating in the Climate Registry, a multi-state registry to enable tracking, management, and crediting for entities that reduce their GHG emissions.

On June 8, 2007, Washington Governor Christine Gregoire and British Columbia Premier Gordon Campbell signed a Memorandum of Understanding to launch a collaborative effort to cap and significantly reduce greenhouse gas emission and to collaborate on the innovation and implementation of clean technologies.

On September 23, 2008, the WCI released its final design recommendations for a regional cap-and-trade program. On July 27, 2010, the WCI released the report, *Design for the WCI Regional Program*, which identifies specific elements of the program. This program would cover GHG emissions from electricity generation, industrial and commercial fossil fuel combustion, industrial process emissions, gas and diesel consumption for transportation, and residential fuel use. The first phase of the program, which will cover electricity emissions and some industrial emission sources, is to begin January 1, 2012. Programmatic development projects, such as the alternatives discussed in this Draft EIS, are not currently covered by the WCI cap-and-trade program.

State of Washington

In February of 2007, Governor Gregoire signed Executive Order No. 07-02, establishing goals for Washington regarding reductions in climate pollution, increases in "green" jobs, and reductions in expenditures on imported fuel.⁵ This Executive Order established Washington's goals for reducing greenhouse gas emissions as the following: to reach 1990 levels by 2020, 25 percent below 1990 levels by 2035, and 50 percent below

⁵ http://www.governor.wa.gov/execorders/eo_07-02.pdf

1990 levels by 2050. This order was intended to address climate change, grow the clean energy economy and move Washington toward energy independence. In 2007, the Washington State Legislature passed SB 6001, which among other things, adopted the Executive Order No. 07-02 goals into statute.

In 2008, the Legislature built on SB 6001 by passing E2SHB 2815, the Greenhouse Gas Emissions Bill (codified as RCW 70.235). While SB 6001 set targets to reduce emissions, E2SHB 2815 established reductions in emissions as requirements to be met by the state, and directed the Department of Ecology to submit a comprehensive greenhouse gas reduction plan to the Legislature by December 1, 2008. As part of the plan, Ecology was to describe the actions necessary to achieve the emission reductions, develop a system for reporting and monitoring greenhouse gas emissions within the state, and identify a design for a regional multi-sector, market-based system to reduce statewide greenhouse gas emissions. Ecology's report was submitted to the Legislature in December 2008. The Plan addresses measures to be taken at the state-level and does not apply to individual development projects, such as the alternatives discussed in this Draft EIS.

In 2008⁶, the Department of Ecology issued a memorandum stating that climate change and greenhouse gas emissions should be included in all State Environmental Policy Act (SEPA) analyses and committing to providing further clarification and analysis tools.

In 2009, Governor Gregoire signed Executive Order 09-05, ordering Ecology and the Washington State Department of Transportation to take certain actions to reduce climate-changing greenhouse gas emissions, to increase transportation and fuel-conservation options for Washington residents, and to protect the state's water supplies and coastal areas. The Executive Order directs these state agencies to develop a regional emissions reduction program; develop emission reduction strategies and industry emissions benchmarks to make sure 2020 reduction targets are met; work on low-carbon fuel standards or alternative requirements to reduce carbon emissions from the transportation sector; address rising sea levels and the risks to water supplies; and increase transit options, such as buses, light rail, and ride-share programs, to give Washington residents more choices for reducing the effect of transportation

⁶ Manning, Jay. RE: Climate Change - SEPA Environmental Review of Proposals, April 30, 2008.

emissions. The measures described in the Executive Order do not apply to individual development projects, such as the alternatives discussed in this Draft EIS.

On June 1, 2010, the Department of Ecology issued draft guidelines entitled, *Guidance on Climate Change and SEPA*, for a 25-day public comment period. These draft guidelines include guidance regarding the types of greenhouse gas emissions that should be calculated, a discussion of how to determine if emissions surpass a threshold of "significance", and a description of different types of mitigation measures. Guidance is also provided regarding the requirement to discuss the ability of a proposal to adapt to climate changes as a result of global warming. After closure of the public comment period on June 25, 2010, the Department of Ecology issued a statement indicating that significant changes would be required to the Draft Guidelines before they are issued. If the final *Guidance on Climate Change and SEPA* is issued subsequent to the issuance of this Draft EIS but before issuance of the Final EIS, additional analysis may be included in the Final EIS.

City of Seattle

In 2007, the Seattle City Council adopted Comprehensive Plan goals and policies, related to achieving reductions in GHG emissions. In December 2007, the City Council adopted Ordinance No. 122574, which requires City departments that perform environmental review under SEPA to evaluate greenhouse gas (GHG) emissions when reviewing permit applications for development.

Methodologies

King County SEPA GHG Spreadsheet

Tabulation of existing greenhouse gas emissions within the South Lake Union subarea was based on the SEPA Greenhouse Gas Emissions spreadsheet tool developed by King County⁷. The King County spreadsheet is a comprehensive spreadsheet tool that encompasses a variety of emissions categories that estimates GHG emissions related to the building materials, energy consumed at the development, and transportation to and from the development. In accordance with findings regarding the primary sources of greenhouse gas emissions, this

⁷http://www.kingcounty.gov/property/permits/publications/~media/property/permits/documents/forms/SEPA_GHG_EmissionsWorksheet_Bulletin26PDF.ashx

tabulation focused on three areas/sources of emissions as described below.

- Building materials and processes (Embodied emissions). This portion of the calculation considered both the "upstream" (i.e., mining, harvest, manufacturing, and transport) and the "downstream" (i.e., subsequent, "in place" use and maintenance) of building materials. The King County spreadsheet lifespan of the buildings is projected to be 80.5 years for multi-family buildings and 62.5 years for office and retail uses.
- Post-development energy usage (Energy). This element considered energy consumption such as heating and electrical usage. No consideration was made to whether or not the buildings would incorporate Built Green or Energy Star ratings, or LEED® ratings. Some studies suggest that these ratings could represent at least 20 percent reductions in overall energy usage.
- Transportation (Transport). This component considered GHG emissions related to vehicle travel of residences and employees. The King County default calculation was used to calculate existing conditions in **Table 3.7-1**, which includes annual miles traveled and mileage assumptions for King County residents.

To estimate the GHG emissions of the existing development within the South Lake Union neighborhood, this analysis used data from the City of Seattle travel demand model, consistent with the transportation analysis documented in Section 3.13 of this EIS. Data in the travel demand model is based on existing travel characteristics and is a reliable basis for measuring the incremental differences in GHG emissions resulting from the action alternatives, the most significant of which are transportation – related emissions.

Table 3.7-1 provides greenhouse gas emissions estimates from the existing development within the South Lake Union subarea based upon the *King County Greenhouse Gas Emissions Inventory Worksheets*.

Table 3.7-1
Existing Greenhouse Gas Emissions
Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets

Methodology	Embodied Emissions (MTCO _{2e})	Energy Emissions (MTCO _{2e})	Transportation Emissions (MTCO _{2e})	Total Estimated Existing GHG Emissions (MTCO _{2e})*
King County SEPA GHG Emissions Worksheet	374,151	6,327,793	5,675,947	12,372,531

Source: EA|Blumen, 2010.

** Total may differ than sum due to rounding during calculation.*

Based upon the calculations from the King County SEPA GHG Emissions worksheet, the South Lake Union subarea currently generates roughly 12,372,531 MTCO_{2e}⁸ GHG emissions.

VMT-GHG Analysis Tool

As described in the Transportation Chapter (3.13) of the EIS, the unique characteristics of the South Lake Union neighborhood (high density, mix of land uses, proximity to downtown Seattle, robust pedestrian and bicycle network), will lead to less vehicle travel when compared to a typical area within King County. The King County SEPA GHG spreadsheet has no way to account for the travel characteristics of a dense urban area like South Lake Union. As stated in the King County spreadsheet, the transportation GHG analysis is based on the average vehicle-miles-traveled (VMT) estimate of Washington State residents. To prepare a more accurate transportation GHG analysis, an alternative approach based on the MXD trip generation model (described in **Section 3.13**) was used.

The tailored transportation GHG analysis starts with the trip generation estimates described in **Section 3.13**, transportation analysis, in this EIS. These trip generation estimates are based on a trip generation model that accounts for the built environment within South Lake Union.

The trip generation estimates were input into the City of Seattle travel model to estimate the neighborhood's total VMT, stratified by speed. The VMT/speed data were processed using CO₂ emissions factors from the

⁸ MTCO_{2e} is defined as Metric Tonne Carbon Dioxide Equivalent; equates to 2204.62 pounds of CO₂. This is a standard measure of amount of equivalent CO₂ emissions

California Air Resources Board’s EMFAC air quality model.⁹ The emissions factor estimates from EMFAC were further factored to estimate CO₂ equivalent (which accounts for trace amounts of other GHGs like hydrocarbons and HFCs) using a factor from the US EPA.

The results of the EMFAC analysis indicates that the South Lake Union area generates about 397 metric tons of CO₂e per day. Using the building lifespan assumptions from the King County GHG SEPA spreadsheet and the results from the EMFAC analysis, the lifetime transportation GHG emissions from the existing uses in the South Lake Union area amounts to 8,910,451 metric tons of CO₂e¹⁰.

Table 3.7-2 presents greenhouse gas emissions estimates from the existing development within the South Lake Union subarea based on the *King County Greenhouse Gas Emissions Inventory Worksheet* for embodied and energy emissions. Lifetime transportation GHG emissions as described above were substituted for the transportation estimates included in the King County worksheets.

Table 3.7-2
Existing Greenhouse Gas Emissions Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets with the VMT GHG Tool

Methodology	Embodied Emissions (MTC02e)	Energy Emissions (MTC02e)	Transportation Emissions (MTC02e)	Total Estimated Existing GHG Emissions (MTC02e)*
King County SEPA GHG Emissions Worksheet w/VMT-GHG Transportation Emissions	374,151	6,327,793	8,910,451	15,610,858

Source: EA|Blumen, Fehr & Peers, 2010.

*** Total may differ than sum due to rounding during calculation.**

⁹ The more traditional US EPA MOBILE6 air quality model was not used since it does not consider variations in speed when estimating CO₂ emissions and therefore tends to produce inaccurate results.

¹⁰ The King County lifetime GHG emissions data is not quite relevant for existing development since some buildings may be demolished prior to the lifespan assumption from the spreadsheet. However, the overall magnitude of GHG emissions from this analysis can be compared to the results of the 2030 impact analysis since the same assumptions about building lifespan were used.

The amount of CO₂e generated per person (residents and employees) was calculated in South Lake Union during the three-hour PM peak period of travel. This result indicates that under existing conditions, each person who lives/works in the area generates about 6.64 pounds per person in the PM peak period. This result is higher than the 2030 CO₂e emissions estimates discussed under Impacts of the Alternatives later in this section (which were between 5.92 and 5.55 pounds per person), which is expected given the lower densities and the relatively poor balance between jobs and housing under existing conditions.

Based upon the calculations from the table above, the South Lake Union subarea currently generates roughly 15,610,858 MTCO₂e GHG emissions.

3.7.2 Environmental Impacts

The scale of global climate change is so large a project's impacts can only be considered on a "cumulative" scale. It is not anticipated that a single development project or programmatic action, even one on the scale of the development alternatives in this Draft EIS, would have an individually discernable impact on global climate change. It is more appropriate to conclude that the greenhouse gas emissions from future development in the South Lake Union subarea would combine with emissions across the state, country and planet to cumulatively contribute to global climate change.

This section describes the assumed impacts of the development alternatives on climate change, and greenhouse gas emissions. This analysis does not quantify or take into consideration any potential efforts to reduce climate change impacts by incorporating sustainable features into future redevelopment. However, it is assumed that some sustainable features would be incorporated into future development to reduce the impacts quantified in this section.

Climate Change

The assumed impacts of climate change would not be anticipated to have a disproportionate impact on the South Lake Union subarea as compared to other sites in Seattle. The site is not located along a saltwater coastline, does not include significant forest growth, and no rivers are located within the subarea. Existing landslide/erosion areas located within the neighborhood would be sufficiently shored, per City of Seattle regulations, to reduce the potential for landslide hazards. Any changes in water resource levels would be similar to changes experienced region-wide and would not disproportionately impact the South Lake Union subarea.

<i>Affected Environment</i>	Energy Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

Greenhouse Gas Emissions

As described in the Transportation section of this Draft EIS, each of the alternatives contains land use assumptions that were determined by the City of Seattle, which result in a total number of households and a total number of jobs that are targeted under each alternative (**Table 3.7-3** below). Alternatives 1, 2, and 3 all have the same employment and housing growth targets, but each alternative proposes accomplishing these targets by using different methods.

Table 3.7-3
Total Number of Households and Total Number of Jobs
that are Assumed Under Each Alternative

Totals	Existing Conditions	No Action Alternative	Alternatives 1, 2 and 3
Households	1,686	9,686	13,586
Jobs	23,336	39,336	45,236

Source: *Fehr & Peers and EA|Blumen, 2010.*

- ¹ Assumes one job/350 square feet of commercial development and 45% of new development will be for commercial use.
- ² Assumes recent residential development trends (see Appendix B) and 55% of new development will be for residential use
- ³ Assumes that retail jobs would account for 15% of all jobs within SLU for each of the future year alternatives. This proportion was based on the retail/non-retail ratio of the surrounding more established areas (Belltown, Uptown, Capitol Hill).

Using the assumptions contained in **Table 3.7-4**, total square footage of office and retail uses were derived for each alternative as well and are contained in **Table 3.7-4**.

Table 3.7-4
Total Number of Households and Total Square Footage of Office and Retail
Development that are Assumed Under Each Alternative

Totals	Existing Conditions	No Action Alternative	Alternatives 1, 2 and 3
Households	1,686	9,686	13,586
Office (sq. ft)	6,942,460	11,702,460	13,457,710
Retail (sq. ft.)	1,225,140	2,065,140	2,374,890

Source: *Fehr & Peers and EA|Blumen, 2010.*

King County SEPA GHG Spreadsheet

These square footages and number of households were then used to derive GHG emissions totals using the *King County Greenhouse Gas Emissions Inventory Worksheets*.

Table 3.7-5 shows greenhouse gas emissions associated with existing conditions and the development alternatives based upon the *King County*

Greenhouse Gas Emissions Inventory Worksheets. The completed SEPA Greenhouse Gas Emissions Worksheets for all alternatives, as well as an explanation of the methodology employed to create the formulas, are included as **Appendix F** to this Draft EIS.

Table 3.7-5
Greenhouse Gas Emissions Estimates King County SEPA GHG Spreadsheet

Alternative	Estimated GHG Emissions Associated by Alternative (MTCO ₂ e)
Existing Conditions	12,372,531
No-Action Alternative	28,765,685
Alternatives 1, 2 and 3	35,909,798

Source: EA|Blumen, 2010.

Based upon the calculations from the SEPA GHG Emissions worksheet, Alternatives 1, 2, and 3 would generate roughly 23,537,267 MTCO₂e additional GHG emissions over existing conditions during the lifespan of future development, and the No-Action Alternative would generate roughly 16,393,154 MTCO₂e additional GHG emissions.

VMT-GHG Analysis Tool

Based on the results discussed in the Affected Environment section and the “average building life span” estimates in the King County SEPA spreadsheet, the following total transportation lifetime emissions estimates were derived for existing conditions, as well as each alternative using the VMT-GHG analysis tool:

Existing Conditions:	8,910,451 MMCO ₂ e
No Action Alternative:	19,709,284 MMCO ₂ e
Alternative 1:	22,756,080 MMCO ₂ e
Alternative 2:	22,740,150 MMCO ₂ e
Alternative 3:	21,282,472 MMCO ₂ e

Since the numbers above are large and difficult to put in perspective, the transportation GHG emissions can be summarized in another way, which compares the three-hour PM peak period CO₂e emissions in pounds per person (residents plus employees in South Lake Union). As a point of comparison, driving an average car for one mile emits approximately one pound of CO₂e.

Table 3.7-6
 Estimated Transportation GHG Emissions: VMT-GHG Analysis Tool

Scenario	PM Peak Period pounds of CO ₂ e per person (residents and employees)
Existing Conditions	6.64
No Action Alternative	5.92
Alternative 1	5.65
Alternative 2	5.65
Alternative 3	5.55
Bel-Red Corridor Comparison Site	6.47

Source: Fehr & Peers, 2010.

The table above illustrates that under existing conditions, each person who lives/works in the area generates about 6.64 pounds per person in the PM peak period. This result is higher than the CO₂e emissions estimates for each of the three height and density alternatives, which is expected given the lower densities and the relatively poor balance between jobs and housing under existing conditions.

As is also shown in the table above, the three height and density alternatives produce transportation GHG emissions per capita that are about five percent lower than the No Action Alternative. The table also shows the result of the transportation GHG emissions rates for a more suburban employment center along the Bel-Red Corridor in Bellevue and Redmond. This corridor has about 15 percent higher CO₂e emissions per person because the corridor is more isolated and is less dense than South Lake Union. Both the Bel-Red Corridor and South Lake Union have a similar mix of land uses and both areas are assumed to be served by relatively high quality transit in the 2030 horizon year.

Table 3.7-7 compares greenhouse gas emissions from the development alternatives based on the *King County Greenhouse Gas Emissions Inventory Worksheets* for embodied and energy emissions. Lifetime transportation GHG emissions as described above were substituted for the transportation estimates included in the King County Worksheets. The completed [SEPA Greenhouse Gas Emissions Worksheets](#) for all alternatives, as well as an explanation of the methodology employed to create the formulas, are included as **Appendix F** to this Draft EIS.

Table 3.7-7
Greenhouse Gas Emissions Based on the King County SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool

Alternative	Estimated GHG Emissions Associated with Alternative (MTCO _{2e})
Existing Conditions	15,610,858
No-Action Alternative	33,674,061
Alternative 1	39,770,938
Alternative 2	39,755,008
Alternative 3	38,297,330

Source: EA|Blumen, Fehr & Peers, 2010.

Based on these calculations, Alternative 1 would generate roughly 24,160,080 MTCO_{2e} additional GHG emissions during the lifespan of future development, Alternative 2 roughly 24,144,150 MTCO_{2e} additional GHG emissions, Alternative 3 roughly 22,686,472 MTCO_{2e} additional GHG emissions, and the No-Action Alternative roughly 18,063,203 MTCO_{2e} additional GHG emissions.

3.7.3 Mitigation Strategies

The following potential mitigation strategies would address potential impacts to climate change, energy use and greenhouse gas emissions from future development in the South Lake Union subarea:

- **Natural Drainage and Green Roofs** – Green roofs can provide additional open space, opportunities for urban agriculture, and decreased energy demands by reducing the cooling load for the building. Green Stormwater Infrastructure (GSI) could also be used for flow control and water quality treatment.
- **Tree Protection** – The City of Seattle has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial office development by achieving 15-20 percent overall tree canopy within 30 years.
- **Urban Agriculture** – New P-patch Community Gardens and rooftop gardens could be provided or encouraged within the

Affected Environment Environmental Impacts

Mitigation Strategies

Significant Unavoidable Adverse Impacts

Energy Contents

neighborhood for residents to grow food. Balconies, decks, and right-of-way planting strips could also be utilized for individual residents' agriculture needs. A farmer's market could be established for residents to sell locally grown food.

- **Native Plants** – Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by City code, could be planted to reduce water demand and integrate with the local urban ecosystem.
- **District Infrastructure Systems for Energy, Water and Waste** – District Infrastructure Systems aggregate enough service demands to make local neighborhood utility solutions feasible, and may reduce greenhouse gases by utilizing renewable sources of energy and increasing the use of local resources, materials and supplies. District parking solutions and car sharing are designed to reduce vehicle trips. Water reuse and anaerobic digesters may reduce sewer flows. Rainwater capture may reduce stormwater flows. Water reuse and rainwater capture could also reduce potable water demands. District systems for the South Lake Union subarea could potentially include energy, potable water, wastewater, and solid waste.
- **Waste Management and Deconstruction** – When existing buildings need to be demolished, there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However, these rates can be increased by implementing aggressive demolition recycling. Such efforts can require considerable additional effort on the part of the contractor.
- **Building Design** – Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance, such as Built Green, LEED, and the Evergreen Sustainable Development Criteria, could be encouraged or required for development within the South Lake Union subarea.

3.7.4 Significant Unavoidable Adverse Impacts

Declaring an impact significant or not significant implies an ability to measure incremental effects of global climate change. The body of research and law necessary to connect individual land uses, development projects, operational activities, etc. with the broader issue of global

<i>Affected Environment Environmental Impacts Mitigation Strategies</i>	Energy Contents
Significant Unavoidable Adverse Impacts	

warming remains weak. Scientific research and analysis tools sufficient to determine a numerical threshold of significance are not available at this time and any conclusions would be speculative. For these reasons, a determination of significance cannot be made at this time.

3.8 LAND USE

This section of the EIS focuses on the consistency of each alternative with existing state, regional and local planning policies. This section is comprised of two major topic areas.

The first is a general land use policy review of the following documents:

- *Washington Growth Management Act*
- *Washington State Greenhouse Gas Emissions Reduction Law*
- *Washington State Commute Trip Reduction Law*
- *Puget Sound Regional Council VISION 2040*
- *City of Seattle Comprehensive Plan*
- *City of Seattle Climate Action Plan*
- *City of Seattle Pedestrian Master Plan*
- *City of Seattle Bicycle Master Plan*
- *City of Seattle Transit Master Plan*
- *City of Seattle Urban Village Transit Network*
- *South Lake Union Transportation Study*
- *Terry Avenue North Street Design Guidelines*
- *Lake to Bay Loop*
- *City of Seattle Parks and Recreation 2006 Development Plan*
- *City of Seattle North Downtown Park Plan*
- *City of Seattle Consolidated Plan for Housing and Community Development, 2009-2012*
- *South Lake Union Urban Center Neighborhood Plan*
- *South Lake Union Design Framework*
- *South Lake Union Multimodal Transportation Mitigation Plan*
- *City of Seattle Land Use Code*
- *City of Seattle Environmental Policies and Procedures*
- *Federal Air Regulations Part 77*

The second topic area focuses on regulations and potential impacts associated with the flight path of float planes in and out of Lake Union. This topic area reviews the requirements of the Federal Air Regulation and includes a discussion of the potential impacts of building heights in the immediate vicinity of the departure corridor with special consideration for wind shear and mechanical turbulence in the lee of buildings.

Affected Environment 2	Land Use Contents
Environmental Impacts ... 36	
Mitigation Strategies ... 51	
Significant Unavoidable Adverse Impacts ... 52	



Seaplane landing on Lake Union

3.8.1 Affected Environment

Plans, Policies, and Regulations

Growth Management Act

The Growth Management Act (GMA) (RCW 36.70A), adopted in 1990 and subsequently amended, provides a comprehensive framework for managing growth and coordinating land use planning with the provision of infrastructure. The general goals of the GMA include, in part: directing growth to urban areas; reducing sprawl; encouraging economic development consistent with adopted comprehensive plans; protecting private property rights; providing efficient multi-modal transportation systems; encouraging a variety of housing types and densities affordable to all economic segments of the population; protecting the environment; and ensuring that public facilities and services necessary to support development meet locally established minimum standards at the time development is in place (RCW 36.70A.020).

Jurisdictions subject to GMA must prepare and adopt countywide planning policies; comprehensive plans containing policies with specific elements for land use, transportation, housing, capital facilities, utilities, rural lands, and economic development; and development regulations implementing those plans. The Growth Management Act requires that each city and county in Washington comprehensively review and revise its comprehensive plan and development regulations as necessary every seven years to ensure that they comply with the GMA.

The GMA has concurrency provisions to ensure sufficient public facilities are available for new development. Developers may assume that funded projects scheduled to be completed within six years are in place at the time of development. To evaluate the effect of proposed development on facilities, local jurisdictions must set level of service (LOS) standards. If the impacts associated with a proposed development will cause a facility to fall below the LOS standard established by the jurisdiction, the local government may deny permits for the project or change the LOS standard to allow the development. Changes may be made to the development to meet the concurrency requirements, such as reducing the size or employing travel demand management to reduce the number of trips generated.

The GMA authorizes a financing option for roadway improvements in the form of impact fees. Local jurisdictions may impose these fees on developers based upon the number of trips generated by a proposed development. These fees contribute funding to specific projects identified

Affected Environment

*Environmental
Impacts*

*Mitigation
Strategies*

*Significant
Unavoidable*

Adverse Impacts

in the local Transportation Master Plan that offset the expected traffic impacts of the development.

Discussion: Consistent with the GMA, the City of Seattle has adopted a Comprehensive Plan to guide future development and fulfill the City's responsibilities under the GMA (latest major update in 2004). The Alternatives, as identified and discussed in detail in Chapter 2 of this Draft EIS, would encourage economic development and provide a variety of housing types and densities within the South Lake Union Urban Center consistent with the GMA goals and policies outlined above. Pursuant to the GMA, the City of Seattle maintains LOS standards and concurrency requirements. The City of Seattle does not have a mandatory impact fee program. The relationship of the alternatives to the City of Seattle Comprehensive Plan is discussed in greater detail below.

Washington State Greenhouse Gas Emission Reduction Law

In 2008, Washington State passed a law aimed at reducing greenhouse gas (GHG) emissions. The law requires Washington State to reduce its GHG emissions to 1990 levels by 2020; to 25 percent below 1990 levels by 2035; and to 50 percent below 1990 levels by 2050. The Washington State Legislature also adopted a bill recognizing that the emissions goals will not be met without a substantial reduction in transportation emissions. Furthermore, the bill acknowledges the effect of land use development patterns on transportation emissions. The Department of Commerce provides assistance and evaluation tools to local agencies that choose to address the GHG reductions through their planning activities.

Discussion: Consistent with the intent of this law, the proposed land use pattern in South Lake Union consists primarily of compact mixed-use development that would support an efficient multimodal transportation system. This EIS considers the greenhouse gas impacts of the alternatives (see Section 3.7 of this EIS). Information contained in this analysis will be considered as part of the decision-making process.

Commute Trip Reduction Law

In 1991, Washington State passed the Commute Trip Reduction (CTR) Law. CTR is meant to reduce traffic congestion, air pollution, and oil consumption and applies to employers with more than 100 employees. Employers implement programs that encourage employees to reduce drive alone commutes. Employers may offer financial incentives to encourage employees to forego a drive alone commute. For example, employees may be reimbursed for some transit pass or vanpool costs.

Goals are set for each participating company and periodic surveys measure progress.

The Growth and Transportation Efficiency Center (GTEC) program is a part of the CTR law described above and provides commute options programs to smaller employers, residents, and students. Common program elements include trip reduction incentives, transit passes, outreach and information for commuters, small-scale infrastructure investments, and local policy development and implementation.

Discussion: Seattle's GTEC program includes the downtown area, and there have been discussions of expanding the GTEC program into South Lake Union, however, no action has been taken in this direction.

Puget Sound Regional Council VISION 2040

VISION 2040 (updated in 2008) is the long-range growth management, economic and transportation strategy for the central Puget Sound region encompassing King, Kitsap, Pierce and Snohomish counties. VISION 2040 provides a regional framework for achieving the goals of the Growth Management Act and meets the multi-county planning requirements of the Growth Management Act for King, Kitsap, Pierce, and Snohomish counties. The vision is for diverse, economically and environmentally healthy communities framed by open space and connected by a high-quality, multimodal transportation system that provides effective mobility for people and goods. VISION 2040 calls for locating development in urban growth areas so services can be provided efficiently, and farmlands, forests and other natural resources are conserved. Within urban areas, it supports creating compact communities with employment and housing growth focused in regional growth centers. The strategy is designed to ensure that development contains a greater mix of land uses and a more complete and efficient network of streets and other public rights-of-way, making it easier to walk, bicycle, use transit, and drive. Seattle is one of the five designated Regional Growth Centers in Vision 2040.

Discussion: The action alternatives in this EIS are consistent with VISION 2040 in that they would provide for a significant increase in development capacity within a designated regional growth center, specifically the South Lake Union neighborhood in the City of Seattle. Consistent with VISION 2040, the proposal, including the action and no action alternatives, would support creation of a compact mixed-use community, with a development pattern that would support a multi-modal transportation system.

City of Seattle Comprehensive Plan (1994, as amended)

The City of Seattle developed its Comprehensive Plan in compliance with the Growth Management Act (GMA) and the King County Countywide Planning Policies (CPP), both of which provide a comprehensive framework for managing growth and coordinating land use planning with the provision of infrastructure. The City of Seattle's Comprehensive Plan – *Toward a Sustainable Seattle*, was adopted in 1994 and has been amended nearly every year since. The plan contains the elements that are required by GMA, Multiple Urban Center concepts associated with the PSRC Vision 2040 Multi-County Planning Policies, King County's Countywide Planning Policies (King County, 1992), and Seattle's *Framework Policies* (Seattle 1992).

GMA requires a review of the 20-year plan every 7 years with action taken to revise the plan, if necessary. The City completed its last revision in December 2004 and the next Comprehensive Plan update must be completed by 2014 (the State Legislature recently revised the update cycle in recognition of local government budget shortfalls). The 2004 update involved the City working with King County, other cities in the County, and the Growth Management Planning Council to establish new growth allocations. In addition, during the update process, the City's Planning Commission and City departments analyzed the effectiveness of policies contained in the current plan, and an extensive community outreach/public participation effort occurred. Annual updates to the *Comprehensive Plan* also occur in order to provide the opportunity to amend the Plan to address changing conditions or to manage new issues.

The City's updated *Comprehensive Plan* consists of eleven major elements – urban village, land use, transportation, housing, capital facilities, utilities, economic development, neighborhood, human development, cultural resources and environment. Each element contains goals and policies that are intended to "guide the development of the City in the context of regional growth management" for the next 20 years. The *Urban Village, Land Use, Housing, Transportation and Neighborhood Planning Elements* are the most relevant elements to the proposal.

The following goals and policies from the Comprehensive Plan are the most applicable to the proposed alternatives.

**Urban Village
Element**

Land Use

Housing

Transportation

South Lake

Union

Neighborhood

Urban Village Element

Urban Village Strategy

Goals

Goal UVG4 – Promote densities, mixes of uses and transportation improvements that support walking, use of public transportation, and other transportation demand management (TDM) strategies, especially with urban centers and urban villages.

Goal UVG5 – Direct the greatest share of future development to centers and urban villages and reduce the potential for dispersed growth along arterials and in other areas not conducive to walking, transit use, and cohesive community development.

Goal UVG6 – Accommodate planned levels of household and employment growth. Depending on the characteristics of each area, establish concentrations of employment and housing at varying densities and with varying mixes of uses.

Goal UVG8 – Accommodate the City's existing and future housing needs through maintenance of existing residential neighborhoods and the creation of new residential neighborhoods. Encourage housing development so that by 2024, a citywide ratio of 1.8 jobs per household is maintained.

Goal UVG9 – Use limited land resources more efficiently and pursue a development pattern that is more economically sound, by encouraging infill development on vacant and underutilized sites, particularly within urban villages.

Policies

Policy UV1 – Promote the growth of urban villages as compact mixed use neighborhoods in order to support walking and transit use, and to provide services and employment close to residences.

Policy UV3 – Consider the following characteristics appropriate to all urban village categories except Manufacturing and Industrial Centers:

1. Clearly defined geographic boundaries that reflect existing development patterns, functional characteristics of the area, and recognized neighborhood boundaries.
2. Zoning sufficient to accommodate the residential and employment growth targets established for that village.

3. *The ability to accommodate a range of employment or commercial activity compatible with the overall function, character, and intensity of development specified for the village.*
4. *Zoning that provides locations for commercial services convenient to residents and workers and, depending on the village designation, serving a citywide and regional clientele.*
5. *Zoning sufficient to allow a diversity of housing to accommodate a broad range of households.*
6. *Zoning regulations that restrict those public facilities that are incompatible with the type of environment intended in centers and villages.*
7. *Most future households accommodated in multi-family housing.*
8. *Additional opportunities for housing in existing single-family areas, to the extent provided through neighborhood planning, and within other constraints consistent with this Plan.*
9. *Public facilities and human services that reflect the role of each village category as the focus of housing and employment and as the service center for surrounding areas.*
10. *Parks, open spaces, street designs, and recreational facilities that enhance environmental quality, foster public health and attract residential and commercial development.*
11. *A place, amenity, or activity that serves as a community focus.*
12. *Neighborhood design guidelines for use in the City's design review process.*

Discussion: Consistent with the goals and policies identified for the City's Urban Village Strategy, the EIS Alternatives would increase residential and employment density within the South Lake Union Urban Center to accommodate planned levels of household and employment growth, which would result in a compact mixed-use area where residents of the neighborhood could live near services, employment, and transit.

Categories of Urban Villages – Urban Centers

Goals

Goal UVG17 – *Guide public and private activities to achieve the function, character, amount of growth, intensity of activity, and scale of development of each urban village consistent with its urban village designation and adopted neighborhood plan.*

Goal UVG18 – *Designate as urban centers unique areas of concentrated employment and housing, with direct access to high-capacity transit, and a*

wide range of supportive land uses such as retail, recreation, public facilities, parks, and open space.

Goal UVG19 – Recognize areas that provide a regionally significant focus for housing and employment growth as urban centers. Enhance the unique character and collection of businesses and housing types of each center.

Policies

Policy UV16 – Designate the following locations as urban centers:

- 1. Downtown Seattle*
- 2. First Hill/Capitol Hill*
- 3. Uptown Queen Anne*
- 4. University Community*
- 5. Northgate*
- 6. South Lake Union***

Policy UV18 – Promote the balance of uses in each urban center or urban center village indicated by one of the following functional designations, assigned as follows:

- 3. Mixed Residential and Employment – South Lake Union*

Discussion: Consistent with the goals and policies identified for designating Urban Centers within the City, all of the alternatives would contribute to increased employment and housing density within the South Lake Union neighborhood, which would help to achieve the 2024 Urban Center housing targets established by the City. Under the all of the EIS alternatives, a mix of uses is assumed for future development within the neighborhood, which would help to create a mixed-use community where residents could live near employment opportunities, public facilities, services, transit, recreational facilities, and parks and open space areas.

Distribution of Growth

Goals

Goal UVG30 – Encourage growth in locations within the city that support more compact and less land-consuming, high quality urban living;

Goal UVG31 – Concentrate a greater share of employment growth in locations convenient to the city's residential population to promote walking and transit use and reduce the length of work trips.

Goal UVG32 – Plan for urban centers to receive the most substantial share of Seattle’s growth consistent with their role in shaping the regional growth pattern;

Goal UVG35 – Achieve growth in urban centers that is consistent with the 20-year residential and employment growth targets contained in Urban Village Appendix A, below;

2024 Household and Employment Growth Targets
for the Urban Centers & Center Villages

Center or Village	Land Area in Acres	Households (HH)				Employment (Jobs)			
		Existing (2004)	Existing Density (HH/Acre)	Growth Target (HH Growth)	2024 Density (Est.)	Existing (2002)	Existing Density (Jobs/Acre)	Growth Target (Job Growth)	2024 Density (Est.)
Urban Centers & Center Villages									
Downtown Urban Center Total	952	15,700	16	10,000	27	156,960	165	29,015	195
First Hill/Capitol Hill Center Total	916	22,520	25	3,500	28	37,940	41	4,600	46
Northgate Urban Center Total	411	3,490	8	2,500	15	11,030	27	4,220	37
South Lake Union Urban Center Total	340	1,210	4	8,000	27	19,690	58	16,000	105
University Community Urban Center Total ¹	758	6,850	9	2,450	12	32,360	43	6,140	51
Uptown Queen Anne Urban Center Total	297	4,580	15	1,000	19	15,570	52	1,150	56

Source: City of Seattle Comprehensive Plan Urban Village Element Appendix A.

¹ The University of Washington campus is part of the University Community Urban Center, but is not a distinct urban village. These numbers includes jobs and housing on the University of Washington campus not reflected in Ravenna and the University District Northwest figures.

Discussion: Consistent with the goals and policies identified for Urban Centers, the action alternatives would increase residential and employment density within the South Lake Union Urban Center, which would help to create a mixed-use area where residents of the City can live near services, employment, and transit adjacent to the Office and Retail Cores, and near numerous bus routes, the South Lake Union Streetcar, and Sound Transit’s Link Light Rail Westlake Station.

Of the four EIS Alternatives, Alternative 1 would provide development capacity for the most jobs, the greatest number of residential units, and would represent the potential for the highest density within the neighborhood. Alternative 1 would also have the potential through incentive zoning programs to supply the highest number of low income housing units. Alternatives 2 and 3 would also provide increased development capacity for employment and residential units, as well as low income housing, but at a lower level than Alternative 1. Alternative 4 would retain the existing zoning and would essentially represent a continuation of the current development trend within the neighborhood.

All of the alternatives are consistent with the City's adopted 2024 growth targets for the South Lake Union neighborhood. As discussed in Chapter 2 of this Draft EIS, King County and its cities have allocated new growth targets that extend the planning horizon to 2031. It is expected that the updated target will be the basis for the City's next 10-year comprehensive plan update, due in 2014. However, the City has not yet adopted those targets into the Comprehensive Plan or allocated portions of the targets to individual urban centers or urban villages.

As a proxy for a 2031 South Lake Union growth target, this EIS contains an estimated growth target (see Chapter 2, Section 2.2.2). All of the action alternatives have development capacities that exceed the 2031 target estimate. The development capacity of the no action alternative is less than the 2031 target estimate. Formal City action to establish a growth target will occur in the future based on an analysis of the capacity of all of the urban centers and other areas in the City. The South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.

Land Use Element

The City of Seattle Future Land Use Map designates the South Lake Union neighborhood as a Commercial/Mixed Use Area with an Urban Center overlay. The following are goals and policies that have been identified for these areas.

Mixed-Use Commercial Areas

Goals

Goal LUG17 – Create strong and successful commercial and mixed use areas that encourage business creation, expansion and vitality by allowing

Urban Village

**Land Use
Element**

Housing

Transportation

*South Lake
Union*

Neighborhood

for a mix of business activities, while maintaining compatibility with the neighborhood-serving character of business districts, and the character of surrounding areas.

Goal LUG18 – Support the development and maintenance of areas with a wide range of characters and functions that provide for the employment, service, retail and housing needs of Seattle’s existing and future population.

Goal LUG19 –Include housing as part of the mix of activities accommodated in commercial areas in order to provide additional opportunities for residents to live in neighborhoods where they can walk to services and employment.

Policies

Policy LU104 – Consistent with the urban village strategy, prefer the development of compact concentrated commercial areas, or nodes, in which many businesses can be easily accessed by pedestrians, to the designation of diffuse, sprawling commercial areas along arterials, which often require driving from one business to another.

Policy LU105 – Designate as mixed-use commercial areas, existing areas that provide locations for accommodating the employment, service, retail and housing needs of Seattle’s existing and future population. Allow for a wide range in the character and function of individual areas consistent with the urban village strategy.

Policy LU117 – Generally permit a greater intensity of development in pedestrian and transit supportive environments found in pedestrian-oriented commercial areas within urban villages than is permitted in general commercial areas or outside of urban villages.

Discussion: As mentioned above, the City of Seattle Future Land Use Map designates the South Lake Union neighborhood as a Commercial/Mixed-Use Area with an Urban Center Overlay.

Notwithstanding the portion of the No Action Alternative that would retain Industrial Commercial zoning, all of the EIS Alternatives would increase residential and employment density within the South Lake Union Urban Center, which would help to create a mixed-use area where residents of the City can live near services, employment, and transit adjacent to the Downtown Office and Retail Cores, and near numerous bus routes, the South Lake Union Streetcar, and Sound Transit’s Link Light Rail Westlake Station. The built character and compatibility of the alternatives is illustrated and discussed in Section 3.10, Aesthetics.

Urban Village

Land Use

**Housing
Element**

Transportation

South Lake

Union

Neighborhood

Housing Element

The Housing Element contains goals for the percentage of housing units that will be affordable to lower income households and identifies incentives and other tools the City can use to achieve these goals.

Accommodating Growth & Maintaining Affordability

Goals

Goal HG1 – Accommodate 47,000 additional households over the 20 years covered by this Plan;

Policies

Policy H2 – Maintain sufficient zoned development capacity to accommodate Seattle’s projected share of King County household growth over the next 20 years;

Policy H8 – Consider providing incentives that encourage public agencies, private property owners and developers to build housing that helps fulfill City policy objectives. Examples of development incentives include height and density bonuses, minimum densities and transferable development rights. Consider programs that make maximum use of City resources such as bridge loans, credit enhancement, and tax exemptions.

Policy H9 – Promote housing preservation, development and affordability in coordination with transit plans and in proximity to light rail stations and other transit hubs, and coordinating housing, land use, human services, urban design, infrastructure and environmental strategies to support pedestrian-friendly communities at light rail station areas and other transit hubs;

Encouraging Housing Diversity & Quality

Goals

Goal HG4 – Achieve a mix of housing types that are attractive and affordable to a diversity of ages, incomes, household types, household sizes, and cultural backgrounds;

Goal HG7 – Accommodate a variety of housing types that are attractive and affordable to potential home buyers;

Goal HG11.5 – Implement strategies and programs to help ensure a range of housing opportunities affordable to those who work in Seattle;

Policies

Policy H10 – Reflect anticipated consumer preferences and housing demand of different sub-markets in the mix of housing types and densities permitted

under the City's Land use Code. Encourage a range of housing types....which are needed to accommodate most of the growth over the 20-year life of this Plan;

Policy H11 – Strive to make the environment, amenities and housing attributes in urban villages attractive to all income groups, ages and household types;

Providing Housing Affordable to Low Income Households

Goals

Goal HG13 – Provide new low income housing through market rate housing production and assisted housing programs.

Goal HG14 – Preserve existing low income housing, particularly in urban centers and urban villages where most redevelopment pressure will occur.

Policy

Policy H30 -- Address the city's share of affordable housing needs resulting from expected countywide household growth, consistent with the countywide affordable housing policies, by planning for:

- a. at least 20 percent of expected housing growth to be affordable to households earning up to 50 percent of median income (estimated 9,400 affordable units).*
- b. at least 17 percent of expected housing growth to be affordable to households earning between 51 percent and 80 percent of median income (estimated 7,990 affordable units).*
- c. At least 27 percent of expected housing growth to be affordable to households earning between 81 percent and 120 percent of median income (estimated 12,690 units).*

Both new housing and existing housing that is acquired, rehabilitated or preserved for long-term low-income and affordable occupancy count toward meeting this policy.

Discussion: Consistent with the goals and policies outlined above, the EIS Alternatives, as identified and discussed in detail in Chapter 2 of this EIS, would encourage economic development and promote a variety of housing types and densities within the South Lake Union Urban Center, which would help to create a mixed-income, mixed-use community where residents can live near services, employment, and transit.

Of the four EIS Alternatives, Alternative 1 would provide the greatest development capacity, which would also have the potential through incentive zoning programs to supply the highest number of low income housing units. Alternatives 2 and 3 would also provide increased development capacity, as well as low income housing, but at a lower level than Alternative 1. Alternative 4 would retain the existing zoning and would essentially represent a continuation of the current development trend within the neighborhood.

All of the action proposals will provide additional capacity and opportunity for development of affordable housing, consistent with adopted City policy. Consolidation of parcels for tower development may create remainder parcels available for affordable housing development. At the same time, potential increases in land values and construction costs of high-rise development may serve as deterrents to future development of affordable housing. Similarly, redevelopment may displace existing affordable housing stock. Please see Section 3.9, Housing, for additional discussion of potential affordability impacts associated with each of the alternatives.

Transportation Element

The Transportation Element details citywide goals and related policies which are strongly tied to the urban village strategy. The City seeks to strike a balance between achieving an improved pedestrian, bicycle and transit network and maintaining the auto access necessary for growth. The competition between uses is complicated by the limited space available in a mature city, so Seattle aims to make the best use of the existing facilities by employing Complete Streets principles. The City recognizes that alternative modes must be made more convenient and accessible to effectively reduce single occupancy vehicle (SOV) travel.

Specific mode choice goals are stated for the South Lake Union neighborhood: by 2020, 50 percent of work trips to South Lake Union should be non-SOV and 75 percent of all South Lake Union residents' trips should be non-SOV. The Transportation Element provides policies to achieve increased travel choices through transit, pedestrian, and bicycle improvements as well as through parking management. In working towards this multimodal transportation system, the City requires that economic development, the environment, regional connectivity, and efficient operation and maintenance be considered.

*Urban Village
Land Use
Housing
**Transportation
Element**
South Lake
Union
Neighborhood*

The *Seattle Transportation Strategic Plan (TSP)* is the implementation document for the goals and policies set out in the Comprehensive Plan. Specific programs and projects are designated to bring the City closer to its goals. The TSP considers budgetary constraints and prioritizes projects. The Plan also sets out performance reporting process for the Seattle Department of Transportation. The most recent TSP was released in 2005, and a 2010 update is currently in progress.

The goal and policies pertaining to transportation and land use in urban villages and other centers are excerpted below.

Goal

Goal TG1 – Ensure that transportation decisions, strategies and investments are coordinated with land use goals and support the urban village strategy.

Policies

Policy T1 – Design transportation infrastructure in urban villages to support land use goals for compact, accessible, walkable neighborhoods.

Policy T2 – Make the design and scale of transportation facilities compatible with planned land uses and with consideration for the character anticipated by this Plan for the surrounding neighborhood.

Policy T4 – Provide sufficient transportation facilities and services to promote and accommodate the growth this Plan anticipates in urban centers, urban villages, and manufacturing/industrial centers while reducing reliance on single occupancy vehicles.

Policy T5 – Establish multi-modal hubs providing transfer points between transit modes in urban centers and urban villages.

Discussion: In support of the goal and policies listed above, the transportation analysis in this EIS uses the mixed-use development (MXD) model, to analyze the future year land use scenarios. The MXD model is based on a growing body of research, which focuses on the relationship between travel and the built environment. This method supplements conventional trip generation methods employed by the City of Seattle to capture effects related to built environment variables (known as the Ds) like **d**ensity, **d**iversity of land uses, **d**estinations (accessibility), **d**evelopment scale, pedestrian and bicycle **d**esign, and **d**istance to transit services, and **d**emographics. The proposed height and density alternatives in the South Lake Union area incorporate changes in a number of these built environment D variables that, in turn, would influence the neighborhood's travel characteristics.

Use of this approach ensure that estimated trip generation accurately reflects the likely travel associated with future mixed use development, recognizes and supports multi-modal travel, and allows the City to plan for sufficient transportation facilities to support future growth.

Neighborhood Planning Element - South Lake Union Urban Center Neighborhood Plan

Neighborhood Character

Goals

Goal SLU-G1 – A vital and eclectic neighborhood where people both live and work, where use of transit, walking and bicycling is encouraged, and where there are a range of housing choices, diverse businesses, arts, a lively and inviting street life and amenities to support and attract residents, employees and visitors.

Goal SLU-G2 – A neighborhood that recognizes its history as a maritime and industrial community and embraces its future as a growing urban center that provides for a wide range of uses.

Policies

Policy SLU-P1 – Encourage the co-location of retail, community, arts and other pedestrian-oriented activities in key pedestrian nodes and corridors.

Policy SLU-P2 – Promote diversity of building styles and support the diverse characters of neighborhood sub-areas.

Policy SLU-P6 – Establish incentives to encourage preservation, reuse and rehabilitation of historically significant structures in the neighborhood; explore incentives to encourage the adaptive reuse of other older buildings in the neighborhood that provide a visual reminder of the past and promote diversity of character and building types.

Policy SLU-P9 – Support the growth of innovative industries in South Lake Union including biotechnology, information technology, environmental sciences and technology, and sustainable building.

Discussion: Development under the proposed EIS alternatives would be consistent with the emerging pattern of development that is occurring throughout the South Lake Union area, but each alternative describes a different approach to the pattern of height and density in the neighborhood. In general, Alternative 1 proposes the greatest increases for both commercial and

Urban Village
Land Use
Housing
Transportation

**South Lake
Union
Neighborhood
Element**

Seattle Comprehensive Plan

residential development. Similarly, Alternative 2 provides for height and density increases for both residential and commercial development, but relatively less than Alternative 1. Alternative 3 would focus height and density increases primarily in residential development, although some commercial increases are permitted. Alternative 4 would retain the existing zoning standards and height limits. Under all alternatives, assumptions regarding floor plate and building heights considered the needs of innovative industries. Please see Chapter 2 for a detailed description of each alternative.

Future building design under each of the alternatives would be consistent with the South Lake Union design guidelines, which include consideration of neighborhood character, sustainable development, and encouragement of the preservation, reuse and/or rehabilitation of older structures, as well as historically significant structures in the neighborhood.

Housing

Goals

Goal SLU-G11 – A wide range of housing types is integrated into the community, accommodating households that are diverse in their composition and income.

Goal SLU-G12 – Housing in South Lake Union is affordable for and attractive to workers in South Lake Union, to enable people to live near their jobs.

Policies

Policy SLU-P33 – Provide incentives to encourage housing for people across a range of incomes in a variety of housing types, particularly in mixed-income buildings.

Policy SLU-P34 – Encourage affordable housing units throughout the community through new construction and preservation of existing buildings.

Policy SLU-P35 – Encourage both rental and ownership housing.

Discussion: Consistent with the goals and policies of the Housing section of the *Neighborhood Planning Element*, the EIS Alternatives would promote more intensive urban development in the neighborhood and would promote additional housing development opportunities within the South Lake Union Urban

Center. All of the action proposals will provide additional capacity and opportunity for development of affordable housing, consistent with adopted City policy. Of all of the action proposals, Alternative 3 emphasizes future residential uses relative to commercial uses by primarily focusing height and density increases for residential development, while allowing for some height increases for commercial development as well.

Seattle Climate Action Plan

In 2007, the City adopted policies and goals aimed at reducing the effects of climate change. By 2024, Seattle's goal is to reduce its GHG emissions to 30 percent below 1990 levels. By 2050, Seattle plans to reduce its GHG emissions to 80 percent below 1990 levels. The City also released a Climate Action Plan in 2006 which included programs geared toward residents (Seattle Climate Action Now) and businesses (Seattle Climate Partnership). In 2008, the City reached the Climate Action Plan's goal of reducing Seattle's global warming pollution by at least 7 percent below 1990 levels.

Discussion: The scale of global climate change is so large that a project's impacts can only be considered on a cumulative scale. It is not anticipated that a single development project or programmatic action, even one on a scale of the development alternatives in this EIS, would have an individually discernable impact on global climate change. It is more appropriate to consider that the greenhouse gas emissions from future development in the South Lake Union neighborhood would combine with emissions from across the state, country and planet to cumulatively contribute to global climate change.

Section 3.7 of this EIS considers potential greenhouse gas emissions associated with the alternatives. In general, the analysis concludes that the three action alternatives produce transportation greenhouse gases per capita that are about five percent lower than the no action alternative. Compared to a similar suburban employment center, per capita transportation greenhouse gas emissions are about 15 lower in South Lake Union. This is due to the relatively higher density of development and proximity to other uses in South Lake Union compared to the suburban setting. Please see Section 37 for the complete discussion of potential greenhouse gas impacts associated with the proposal.

Seattle Transportation Planning Documents

In addition to the Comprehensive Plan, which establishes a land use and transportation vision and direction for the City, there are several specialized implementing plans that address pedestrian, bicycle, transit. These plans provide additional context for the transportation analysis and are briefly described below.

Seattle Pedestrian Master Plan

The *Seattle Pedestrian Master Plan*, published in 2009, aims to make Seattle the most walkable city in the country. To accomplish this mission, the Master Plan lays out four goals: safety, equity, vibrancy, and health. The Plan identifies the physical design elements of a walkable street and the types of destinations that create high pedestrian demand. Six objectives are presented:

Objective 1. Complete and maintain the pedestrian system identified in the Pedestrian Master Plan.

Objective 2. Improve walkability on all streets.

Objective 3. Increase pedestrian safety.

Objective 4. Plan, design, and build complete streets to move more people and goods.

Objective 5. Create vibrant public spaces that encourage walking.

Objective 6. Get more people walking for transportation, recreation, and health.

A web-based toolbox of strategies provides possible solutions to address various pedestrian issues. The *Pedestrian Master Plan* also contains an analysis that prioritizes each neighborhood's infrastructure needs and most of South Lake Union is rated as high priority.

Seattle Bicycle Master Plan

The Seattle *Bicycle Master Plan* was published in 2007 and sets forth actions to be completed by 2017. This is to be accomplished using the Complete Streets Policy as a guide and the "Bridging the Gap" initiative as a funding source. The *Bicycle Master Plan* has two central goals:

- *Goal 1:* Increase use of bicycling in Seattle for all trip purposes. Triple the amount of bicycling in Seattle between 2007 and 2017.
- *Goal 2:* Improve safety of bicyclists throughout Seattle. Reduce the rate of bicycle crashes by one third between 2007 and 2017.

The plan aims to provide bicycle facilities within a quarter mile of 95 percent of Seattle residents. In addition to simply adding bicycle facilities, the *Bicycle Master Plan* contains guidance regarding the provision of supporting elements such as parking, showers, and integrated transit service. The plan also recommends partnering with other agencies to help provide education, enforcement, and encouragement programs.

Seattle Transit Master Plan

The Seattle Transit Master Plan (TMP) is currently being developed by SDOTthe Seattle Department of Transportation and builds upon the 2005 Seattle Transit Plan. The TMP is proposed to addresses transit planning through 2030. The plan will determine which corridors require transit, and what mode should be implemented in each corridor. The TMP is aimed at creating an integrated transit system between SDOTthe City of Seattle, King County Metro, and Sound Transit.

Urban Village Transit Network

In 2005, the Seattle Department of Transportation (SDOT) established the Urban Village Transit Network (UVTN). The UVTN is a recommended network of transit corridors to connect Seattle’s urban villages. The goal is for UVTN lines to provide transit service at least every fifteen minutes in both directions, eighteen hours a day, seven days a week. This frequency of service allows for rapid transfers and removes the need for travelers to consult schedules. The UVTN calls for local transit service on the following streets in the study area:

- Dexter Avenue N
- Westlake Avenue N/Terry Avenue N
- Valley Street
- Fairview Avenue N
- Denny Way

There are no bus rapid transit or light rail lines planned in the South Lake Union neighborhood, however, Mercer Street is a candidate UVTN corridor.

While the UVTN establishes a vision for transit service in Seattle, King County Metro and Sound Transit operate the transit systems and have their own procedures related to transit system planning, expansion, financing, and operations that are outside the control of the City of Seattle.

South Lake Union Transportation Study

The South Lake Union Transportation Study was released in 2004. It analyzed the changing transportation needs of the neighborhood due to expected housing and employment growth through 2020. The transportation study set out potential strategies to manage congestion and enhance mobility that can be used throughout the study area. Some of the recommendations have since been (or are in the process of being) implemented, including converting Mercer Street, Roy Street, 9th Avenue N, and Westlake Avenue N to two-way operations.

South Lake Union
Transportation Study

Terry Avenue North Street Design Guidelines

The Seattle Department of Transportation and the Seattle Department of Planning and Development released the Terry Avenue North Street Design Guidelines in 2005. The document aims to develop Terry Avenue N into a pedestrian-oriented streetscape. Terry Avenue N was chosen due to its central location within South Lake Union, its connection from downtown straight into the Lake Union Park, and its relatively low vehicle volumes. The guidelines lay out the design principles (including curb specifications, landscaping, materials and Americans with Disabilities Act standards implementation) that should be used as Terry Avenue N is redeveloped.

Terry Avenue North
Street Design Guidelines

Lake to Bay Loop

The Lake to Bay Loop is a planned multi-use path with a pedestrian focus. It may include public sidewalks and open spaces as well as private land. The route takes on a figure-eight shape, running from Myrtle Edwards Park through Seattle Center to Lake Union Park along Broad Street, 5th Avenue N, Mercer Street, Terry Avenue N, and Thomas Street. The Lake to Bay Loop would be implemented incrementally as various transportation and private development projects are completed.

Lake to Bay Loop

Discussion: The mixed use development pattern considered under all of the alternatives is consistent with the multimodal transportation system anticipated by these transportation system plans. These plans provided context for the transportation analysis documented in this EIS.

As shown in the Transportation section (Figure 3.13.1), not all existing headways through South Lake Union meet the frequency goal of 15 minutes throughout the day. Those routes include 16,

17, 25, 26, 28, 30, 66, and 70. The City of Seattle travel model forecasts all existing route headways¹ to decrease between the base year and future year. Therefore, some of these routes may meet the UVTN goals in the future. This change in frequency is independent of any of the alternatives analyzed in this document.

Please see Section 3.13 for the full transportation analysis.

Parks and Recreation 2006 Development Plan

In 2006, the City of Seattle adopted the *Parks and Recreation 2006 Development Plan*, which replaced the *Parks and Recreation Plan 2000*. The *2006 Development Plan* identifies goals, objectives and policies for the Parks and Recreation system, identifies distribution guidelines for parks and open space, and provides an analysis of gaps in areas of the City where parks and open space distribution guidelines remain to be met.

As it relates to the South Lake Union neighborhood, distribution guidelines are broken up into two categories: Total Open Space (Breathing Room) and Usable Open Space.

- Total Open Space (Breathing Room) – The combined acreage of all dedicated open spaces (parks, greenspaces, trails, and boulevards), but not including tidelands and shorelands. One acre per 100 residents is desirable; one-third acre per 100 resident or community approved offset is acceptable.
- Usable Open Space – Relatively level and open, easily accessible, primarily green open space available for drop-in use. Publicly owned or dedicated open space that is easily accessible and intended to serve the immediate urban village. This encompasses various types of open space for passive enjoyment as well as activity and includes green areas and hard-surfaced plazas, street parks and pocket parks. One acre per 1,000 households, one acre of urban space per 10,000 jobs in the Downtown urban and one-quarter acre within 1/8 mile of all locations in urban villages density areas is desirable. One-quarter acre within one-half mile or community approved offset is acceptable.

¹ This excludes Route 30 which no longer serves South Lake Union in 2031 per the City of Seattle travel model.

Discussion: The South Lake Union neighborhood contains approximately 15.7 acres of usable open space (Lake Union Park, Cascade Playground, and Denny Park/Playfield). The *2006 Development Plan* and associated gap analysis identifies the South Lake Union neighborhood as an area that has exceeded the existing and projected distribution guideline goals for urban centers. Please see Section 3.16, Open Space and Recreation, for additional discussion of parks and open space standards.

North Downtown Park Plan

In addition to the city-wide parks development plan, the City of Seattle also adopted a park plan for the North Downtown area (Denny Triangle and South Lake Union Neighborhoods) in 2004. The *North Downtown Park Plan* includes an analysis of existing and future parks and open space needs in the North Downtown area and provides recommendations to address park and open space goals and deficiencies.

Discussion: As described above, the South Lake Union neighborhood would have a surplus of parks and open space in 2024; however, the Denny Triangle Neighborhood, located immediately south of South Lake Union, would have a deficit of approximately 10 acres by 2024. Therefore, the combined North Downtown area would need approximately 8 acres of parks and open space by 2024 to meet future needs. Please see Section 3.16, Open Space and Recreation, for additional discussion of parks and open space standards.

City of Seattle Consolidated Plan for Housing and Community Development, 2009-2012

The Consolidated Plan for Housing and Community Development is a four year plan, updated annually, which outlines Seattle's housing and community development needs, and provides strategies for meeting identified needs. The city's Office of Housing prepares this plan to meet the Department of Housing and Urban Development's requirements for financial assistance. Using a five-year horizon, the plan describes the City's housing, public service and community development needs, and demonstrates how anticipated funding from HUD will be used to address those needs. The Plan also provides policy guidance for implementing City programs funded by four U.S. Department of Housing and Urban Development (HUD) grants.

The three primary HUD goals outlined in the 2009-2012 Plan are:

1. *Promote suitable living environments;*

2. *Support decent housing; and,*
3. *Promote economic opportunity.*

City strategies for achieving these goals that are relevant to the proposed alternatives include:

- 1 – *C. Increase availability of affordable housing.*
- 2 – *A. Prevent homelessness*
- 2 – *F. Develop and maintain Seattle’s supply of affordable rental housing*
- 2 – *G. Increase opportunities for low income households to purchase and/or maintain their own home.*

Discussion: Consistent with the goals and strategies outlined above, the EIS alternatives, as identified and discussed in detail in Chapter 2 of this Draft EIS, would encourage economic development and allow a variety of housing types and densities within the South Lake Union Urban Center, which would help to create a mixed-income, mixed-use community where residents can live near services, employment, and transit.

Of the four EIS alternatives, Alternative 1 would provide the greatest development capacity, and would also have the potential through incentive zoning programs to supply the highest number of low income housing units. Alternatives 2 and 3 would also provide increased development capacity, as well as low income housing, but at a lower level than Alternative 1. Alternative 4 would retain the existing zoning and would essentially represent a continuation of the current development trend within the neighborhood.

South Lake Union Urban Center Neighborhood Plan

Completed in 2007, the South Lake Union Urban Center Neighborhood Plan (Neighborhood Plan) is a free-standing plan that establishes goals, policies and strategies supportive of its urban center designation. The Neighborhood Plan is intended to help to implement the adopted neighborhood goals and policies in the City’s Comprehensive Plan. Plan elements include neighborhood character, transportation, parks and open space, housing and sustainable development. Portions of the Neighborhood Plan have been adopted as part of the City’s Comprehensive Plan.

The Plan states that the South Lake Union Neighborhood will:

- *balance housing and job growth, providing a live/work neighborhood;*
- *provide a model for sustainable redevelopment and infrastructure;*
- *respect the neighborhood's marine and industrial past, but welcome change;*
- *be easy to get around on foot, bike, boat, transit and car;*
- *attract innovative industries and organizations; and*
- *be safe and attractive to a diverse range of families and households.*

The following goals, policies and strategies from the *South Lake Union Urban Center Neighborhood Plan* are the most applicable to the proposed alternatives.

Neighborhood Character

Strategy 1d – Encourage residential and job growth to promote a vital and vibrant neighborhood and to meet neighborhood growth targets.

Strategy 2a – Support the key characteristics of neighborhood sub-areas.

Strategy 2b – Provide incentives for the retention and adaptive reuse of existing buildings that meet goals for subareas or that can help maintain a diversity of building styles.

Strategy 2c – Use additional height and density as an incentive for projects that implement multiple neighborhood plan policies where the additional height will not negatively affect the surrounding area, flight paths or key public view corridors.

Discussion: Development under the proposed EIS alternatives would be consistent with the emerging pattern of development that is occurring throughout the South Lake Union area, but each alternative describes a different approach to the pattern of height and density in the neighborhood. In general, Alternative 1 proposes the greatest increases for both commercial and residential development. Similarly, Alternative 2 provides for height and density increases for both residential and commercial development, but relatively less than Alternative 1. Alternative 3 would focus height and density increases primarily in residential development, although some commercial increases are permitted. Alternative 4 would retain the existing zoning standards and height limits. Please see Chapter 2 for a detailed description of each alternative.

Future building design under each of the alternatives would be consistent with the South Lake Union design guidelines, which include consideration of neighborhood character and encouragement of the preservation, reuse and/or rehabilitation of

older structures, as well as historically significant structures in the neighborhood.

Transportation

Goals

SLU-G6. A livable, walkable community that is well served by transit and easy to get around by foot, bicycle, or transit.

SLU-G7. A transportation system that provides safe, convenient access to businesses, residences, and other activities in the neighborhood.

SLU-G8. A well-connected neighborhood with bicycle, pedestrian, waterborne, and vehicular access to adjacent neighborhoods.

SLU-G9. A neighborhood with principal arterials that move people and freight efficiently through the neighborhood, support local access, and provide circulation for all modes.

Policies

SLU-P17. Work with transit agencies to provide transit service to and through South Lake Union to meet growing demand and changing markets.

SLU-P18. Promote a system of safe pedestrian and bicycle connections linking key activity areas and destinations, such as open spaces, schools, and arts facilities.

SLU-P19. Collaborate with businesses, developers, housing providers and transit providers to reduce demand for automobile trips by making transit and other alternative modes attractive choices for residents and commuters.

SLU-P20. Develop flexible off-street parking requirements that provide parking adequate to a building's occupants and encourage the use of transit, walking, bicycling, and other non-automotive modes.

SLU-P21. Encourage the efficient use of on-street parking for neighborhood businesses, residents and attractions through innovative parking management and pricing strategies.

SLU-P22. Explore transportation improvements to link South Lake Union with its surrounding neighborhoods.

SLU-P23. Seek to provide improved access to and connections across Aurora Avenue North that result in a more integrated and efficient transportation system for multiple transportation modes.

SLU-P24. Create a street network that enhances local circulation and access for all modes of travel by balancing the need to move people and freight efficiently through the neighborhood with the need for increased accessibility and safety for pedestrians and bicyclists.

SLU-P25. Encourage improvements to Mercer and Valley Streets that support development of South Lake Union Park, improve neighborhood circulation for all modes, and move people, and freight efficiently through this corridor.

Discussion: The transportation analysis conducted in this EIS considers all modes of travel and potential trip/travel patterns specifically associated with mixed use infill development. Please see the discussion under the Transportation Element of the Seattle Comprehensive Plan, above.

Housing

Strategy 33a – Provide programs and incentives that support the development of housing affordable to lower- and moderate-income households.

Strategy 33c – Support the adaptive reuse of existing buildings for housing.

Strategy 33d – Consider incentives to encourage the development of street-oriented units, such as townhouses and live-work units.

Strategy 34b – Provide affordable and workforce housing units at the same time as other new units.

Strategy 34c – Seek new sources of housing subsidies for affordable housing.

Strategy 34d – Work with property owners to identify sites for low-income housing.

Strategy 34e – Assess City-owned parcels in, or adjacent to, South Lake Union for their potential to facilitate low income housing development.

Strategy 35a – Market incentive programs to apartment, townhouse, cooperative and condominium developers.

Discussion: Consistent with the strategies in the Housing section of the *Neighborhood Plan*, the EIS Alternatives would promote more intensive urban development in the neighborhood and would promote additional housing development opportunities within the South Lake Union Urban Center. All of the action proposals would provide additional capacity and opportunity for

development of affordable housing, consistent with adopted City policy and any potential incentive zoning programs that could be adopted and implemented by the City in the future.

South Lake Union Urban Design Framework

The South Lake Union Urban Design Framework (Design Framework) is intended to establish a design vision and implementation strategy that will help realize the vision described in the Neighborhood Plan. The Design Framework was developed in 2008 and 2009 through an interactive public process that progressed through a series of workshops with participation by public and private planners, urban designers, architects, landscape architects and neighborhood members. The UDF will guide the work of the Seattle Department of Planning and Development and other departments within the City.

The Design Framework provides specific recommendations for the following areas:

- Gateways, hearts, and edges
- Street character
- Residential and retail focus areas
- Residential open space strategies
- Public space network
- Views
- Upper-level setbacks
- Urban form
- Lakefront
- Neighborhood connections
- Green stormwater infrastructure
- Incentive zoning priorities

The guiding principles identified in the Urban Design Framework are excerpted below:

- *Set a clear vision for South Lake Union's future development that reflects the neighborhood's unique setting*
- *Integrate South Lake Union with adjacent neighborhoods*
- *Create a network of great streets with safe connections for all modes*
- *Development a diverse system of open spaces and community services*

- *Revise zoning and design guidelines to support an urban form appropriate to SLU's physical setting and Urban Center designation*
- *Create opportunities for families in clusters along 8th Avenue and around Cascade Park*
- *Guide new affordable housing investment²*

The Executive Summary of the Design Framework summarizes the intent of the design recommendations as follows:

Specific recommendations include organizing the neighborhood around community "hearts" including Lake Union Park, Westlake Avenue, and Cascade People's Center, creating innovative new green streets and other street types, and clustering residential and retail uses, including a requirement for pedestrian-oriented uses along Westlake and Valley Streets. Residential clusters in these recommendations would be anchored by highrise towers wrapped with ground-level housing and open space. View corridors and sunlight access to streets were carefully considered, leading to recommendations to limit the number of new towers allowed close to Lake Union and for upper-level setbacks to preserve a range of public views.³

Discussion: Work conducted on the Design Framework provided the groundwork for the alternatives considered in this EIS, including alternatives that provide for a residential focus in the 8th Avenue Corridor, maintain a residential focus in the Cascade neighborhood, and provide for pedestrian-oriented uses at street level. Recommendations also inform applicable mitigation strategies in this EIS, especially those identified in the aesthetics element, see Section 3.10 of this EIS.

South Lake Union Multimodal Transportation Mitigation Program

South Lake Union was the pilot area for Seattle's multimodal transportation mitigation program. The program was developed to

² City of Seattle Department of Planning and Development. South Lake Union Urban Design Framework. December 31, 2010.

³ City of Seattle Department of Planning and Development. South Lake Union Urban Design Framework. December 31, 2010.

address not only the road impacts, but also the pedestrian, bicycle and transit impacts, caused by new developments. As described previously, the GMA authorizes impact fees, but only allows payments for road improvements. In response, Seattle has implemented a multimodal impact fee using the voluntary agreement provision in the State Environmental Policy Act (SEPA). The impact fee is calculated using the person trips generated by the proposed development and the expected cost per trip. The funds are used for transportation projects that meet at least one of the following criteria:

- Add capacity to the transportation system in the area (considering all modes)
- Provide better multimodal mobility
- Reduce congestion

The funds may not be used to address existing deficiencies in the transportation system. Examples of eligible projects in the South Lake Union neighborhood include adding bicycle lanes to Fairview Avenue N between Eastlake Avenue and Valley Street, adding stop signs at uncontrolled intersections along Thomas Street and Harrison Street, and installing additional bus shelters.

Discussion: The process and criteria established in this program were used as background context in consideration of mitigation strategies for the transportation analysis see section 3.13 of this EIS.

Seattle Land Use and Zoning Code

Consistent with provisions of the Growth Management Act, Seattle's Land Use Code implements the goals and policies of the City's Comprehensive Plan. Most of the neighborhood is currently zoned Seattle Mixed (SM) with height limits ranging from 40 feet to 125 feet with most areas in the 65-foot to 85-foot height range. Generally, the tallest buildings are allowed at the southern edge of the neighborhood abutting downtown, and decrease moving northward to the lake, with the lowest height areas along the shoreline. The SM zone provides for a range of residential and commercial uses to support a pedestrian-oriented mixed-use neighborhood. The Cascade neighborhood, east of Fairview and south of the Mercer ramps to I-5, is zoned Seattle Mixed (SM) and Seattle Mixed/Residential (SM/R). Both of these zones allow mixed residential and non-residential uses, but the SM/R zone includes special provisions to encourage residential development. An Industrial Commercial (IC) designation is located in the central part of the neighborhood. This designation allows for a mix of industrial and commercial uses, including

high technology research and development uses, and prohibits most types of residential development. To the northeast and near Lake Union, property is zoned Commercial 2 (C2), providing for auto-oriented, primarily non-retail commercial uses.

As with Seattle's other zoning districts, these zones contain provisions relating to land uses and development regulations, including maximum building heights and Floor Area Ratio (FAR). Use provisions in these zones identify land uses that are permitted outright, uses that may be conditionally authorized, and land uses that are prohibited; a wide variety of land uses are permitted outright in each of these zoning districts.

Discussion: Consistent with the City's Comprehensive Plan and in order to meet the goals of the South Lake Union Urban Center Neighborhood Plan, the City proposes to change the existing zoning designations to increase height and density in certain areas of the South Lake Union neighborhood. Four EIS Alternatives have been identified by the City, each of which describes a different approach to the pattern of height and density in the neighborhood – please see **Figures 2-6** through **2-8** for newly proposed changes to existing zoning. **Table 2-3** also summarizes the key features of each of the alternatives.

In general, Alternative 1 would provide for the greatest proposed increases for both commercial and residential development through incentive zoning provisions. Under Alternative 1, the existing IC area would be rezoned to a Seattle Mixed zone and the neighborhood would permit varying maximum building heights through incentive zoning provisions. Similarly, Alternative 2 provides for height and density increases for both residential and commercial development, but relatively less than Alternative 1. Alternative 3 would focus height and density increases primarily in residential development, although some commercial increases are permitted. Alternative 4 would retain the existing zoning standards and height limits.

Seattle Environmental Policies and Procedures

Seattle Municipal Code Chapter 25.05 establishes local SEPA Rules, as authorized by WAC 197-11. The City's SEPA Rules are intended to establish a process that provides useful information to decision-makers in clear documents that are supported by environmental analysis, SMC 25.05.675 provides specific policy guidance for review of the environmental topics established under SEPA.

Discussion: This EIS follows the guidance provided by the City's SEPA Rules. Where appropriate, analyses of specific elements of the environment included in Chapter 3 provide a short summary of the environmental policies found in SMC 25.05.675 for the topic under consideration. Please see individual elements of the environment in Chapter 3 of this EIS.

Federal Air Regulations Part 77

The navigable airspace around an airport is delineated in accordance with standards set forth in Federal Aviation Regulations (FAR) Part 77. The regulations define a set of imaginary surfaces in the air around an airport. FAR 77 approach/departure surface width, length, angles and slopes vary depending on the category of airport to which they are applied and the kinds of approaches (visual or instrument) that are anticipated. A key feature is their slope ratio, or angle of rise-over distance. Any object – including structures, trees, antennae – that penetrate the airspace is considered an obstruction and problematic.

For Lake Union air operations, the key issue is the height, width and location of the approach surface for departures. A 20:1 (5 percent) slope has been identified as appropriate for Lake Union air operations.⁴ As the slope rises from the lake surface at a 20:1 ratio, it also widens at a 10:1 angle. **Figure 3.8-1** shows the FAR 77 approach/departure imaginary surface as it rises and widens over the South Lake Union area. In this figure, the red "x" identifies the approximate location where aircraft will depart and land on the water. The red lines define the width of the flight path south and west of Lake Union that is necessary to protect the airspace for approaches and departures associated with Lake Union. The

20:1 Ratio: This is a ratio of the horizontal distance to the vertical rise. For example, for every 200 feet of horizontal distance, the height would increase by 10 feet.

⁴ Washington State Department of Transportation, Aviation Division. Letter from Carter Timmerman dated February 3, 2011.

black lines identify the height of the flight path surface as that surface rises at a 20:1 slope and widens at a 10:1 angle.

Figure 3.8-1
FAR 77 Approach/Departure Surface



Source: Washington Department of Transportation, Aviation Division, 2010

This flight path represents a refinement by the Washington State Department of Transportation (WSDOT) of earlier flight path information that was available. Lake Union is considered a general use airport. WSDOT has jurisdiction and Washington State Regulations (RCW 36.70.547, RCW 36.70A.510, and RCW 36.70.547) require that “[e]very county, city, and town in which there is located a general aviation airport ... shall, through its comprehensive plan and development regulations, discourage the siting of incompatible uses adjacent to such general aviation airport.”

In the South Lake Union neighborhood, the flight path crosses over the northwest portion of the study area in a northeast/southwest diagonal direction. At the northern most point, the flight path enters the study area

from the Lake Union shoreline at roughly Highland Street. At the southernmost point, the flight path exits the study area at Aurora Avenue N, roughly between Republican and Harrison streets. The approach/departure surface within the flight path (shown in **Figure 3.8-1**) rises from approximately 150 feet in elevation at the Lake Union shoreline to between 200 to 250 feet in elevation as it leaves the study area. This surface represents the height of the flight corridor over the study area. Buildings or other obstructions above this surface would create an obstruction into the flight path.

In addition, establishment of a vertical buffer below the approach surface, would ensure safety in the event of mechanical or other problems in the departure or arrival of aircraft. A vertical buffer would establish a minimum distance for structures and appurtenances from the identified approach surface. FAR 77 does not require a vertical buffer.

8th Avenue N. Corridor and Fairview Avenue N. Corridor

The 8th Avenue N. and the Fairview Avenue N. corridors are outside of the identified flight path. Development in these areas would not directly impact the approach/departure surface.

Valley/Mercer Blocks

The entire block between Westlake and 9th Avenues and portions of the blocks between Westlake and Boren avenues is located within the approach/departure surface (see **Figure 3.8-1**). In this area, the approach/departure surface increases from approximately 160 feet in elevation near the Lake Union shoreline to about 175 feet in elevation near the intersection of Westlake and Mercer.

Wind Analysis

This section reviews the potential for the proposed alternatives to affect wind conditions, and ultimately approaches and departures associated with float planes into and out of Lake Union.

Affected Environment

Flight Operations

Lake Union has been the site of commercial seaplane operations since the early 1920s. Kenmore Air, presently the largest commercial operator on Lake Union, has operated commercial flights from the lake since the mid 1940s. In the mid-to-late 1980s, scheduled commercial seaplane operations were initiated by Kenmore Air from a temporary base on the east side of the lake. In 1991, Kenmore's operations moved to a permanent location at the lake's southwest corner. From Lake Union, the

airline connects downtown Seattle with destinations in the San Juan Islands and Canada. Flights are operated year around from 8 am (weekdays) or 9 am (weekends) to dusk. During the most active time, late spring through early fall, Kenmore Air operates an average of 80 daily arrivals and departures. Total passengers served at the Kenmore Air Lake Union base, which also acts as a US Customs Service Port of Entry, exceeded 80,000 in 2009.

Flights to and from Lake Union operate in either a northerly or southerly direction, depending on wind conditions. When wind is from the south, departures from Lake Union are to the southwest and approaches to Lake Union are from the northwest. When wind is from the north, departures are to the northwest and approaches are from the southwest. Consequently, regardless of wind direction, the area between the south shore of Lake Union over Seattle Center to Puget Sound is a primary flight path. A secondary route, used occasionally for approaches to Lake Union, is from the southeast over Fairview Avenue.

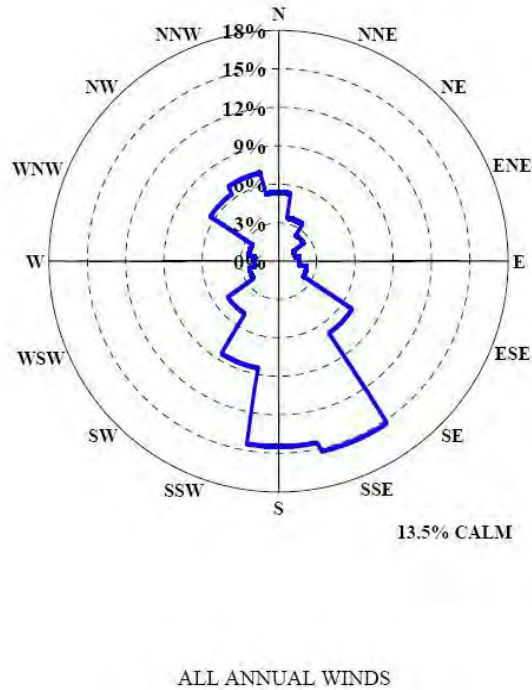
Existing Wind Conditions

Wind statistics from Boeing Field/King County and Seattle-Tacoma International Airports were reviewed to understand typical wind conditions in the region. Dominant winds at Boeing Field/King County International Airport are from the south and south-southeast directions (see **Figure 3.8-2**). Seattle-Tacoma International Airport shares the strong southerly dominance, but also has notable southwest and north winds. For the purpose of this review, southerly winds were considered to be dominant, coming directly over the study area and into the southern tip of Lake Union. Westerly winds are also important because, although they do not occur frequently, these winds blow over the development area coinciding with the aircraft approach/departure surface.

Diurnal Trends

The majority of air flights to and from Lake Union operate between 8AM and dusk. Wind direction can often change from day to night due to land and sea breeze effects. A review of diurnal ("daily") average wind statistics from the closer Boeing/King County airport confirms the strong southerly dominance during the daytime and early evening hours, although the summertime brings more northwesterly winds in the afternoon and evening.

Figure 3.8-2
Dominant Wind Pattern, Puget Sound Area



Source: RWDI, 2010

3.8.2 Environmental Impacts

Land Use Plans, Policies and Regulations

As described above, the proposed action is generally consistent with adopted City plans, policies and regulations. With regard to development capacity and growth targets, all of the alternatives provide adequate capacity to meet 2024 growth targets. Although the City has been assigned a citywide growth target for 2031, it has not yet allocated the citywide number among the neighborhoods. Therefore, it is not possible to confirm whether each of the alternatives will provide sufficient development capacity to meet a future 2031 growth target for the neighborhood. Based on an initial estimate of the 2031 target (see discussion in Chapter 2, section 2.2.2), all of the action alternatives have capacity that exceeds the 2031 estimated target. The no action alternative does not have capacity to meet the 2031 estimate.

The proposal will provide additional capacity and opportunity for development of affordable housing, consistent with adopted City policy. At the same time, factors such as market conditions, individual developer decisions and availability of financing also impact future development decisions about affordable housing. Zoning incentives to promote

<p><i>Affected Environment</i></p> <p>Environmental Impacts</p> <p><i>Mitigation Strategies</i></p> <p><i>Significant Unavoidable Adverse Impacts</i></p>	Land Use Contents
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provision of affordable housing units can help expand the affordable housing inventory. Please see Section 3.9, Housing, of this EIS for additional discussion of housing in the neighborhood.

With respect to FAR Part 77, some of the proposed building heights for any of the action alternatives could penetrate the identified approach/departure airspace. The relative impacts of each alternative are described below.

Alternative 1

Within the area beneath the flight path, Alternative 1 allows a maximum building height of 300 feet for residential uses and up to 240 feet for commercial uses. If built to the maximum height limit allowed, conceivably some buildings under this alternative would rise above the approach/departure surface.

Depending on whether a vertical buffer is established below the approach surface and the size of this buffer, some proposed buildings could protrude into the buffer.

Valley/Mercer Blocks

Under Alternative 1, structures built to the maximum 300 feet in height would obstruct the approach/departure surface. At a maximum height of 85 feet, commercial development would not penetrate the approach/departure surface. However, depending on whether a vertical buffer below the surface is established and the size of the buffer, development to 85 in height could intrude into the buffer.

Alternative 2

Within the area beneath the flight path, Alternative 2 would allow a maximum building height of 300 feet for residential uses and 85 to 160 feet for commercial uses. If built to the maximum height limit allowed under this alternative, some buildings could penetrate the approach/departure airspace.

Depending on whether a vertical buffer below the approach surface is established and the size of this buffer, some proposed buildings could protrude into the buffer.

Valley/Mercer Blocks

Under Alternative 2, structures built to the maximum height of 160 feet may, depending on building location, obstruct the approach/departure airspace. At a maximum height of 65 feet, commercial development would not obstruct the approach/departure surface. However, depending

on whether a vertical buffer is established below the approach/departure surface and the size of the buffer, new residential or commercial development could penetrate the buffer.

Alternative 3

Within the area under the flight path, Alternative 3 would allow a maximum building height of 160 feet for residential uses and 65 to 160 feet for commercial uses. In general, building heights permitted under this alternative are lowest near the shoreline and increase in height further south. Therefore, permitted building heights under this alternative appear to be at or below the approach/departure airspace.

Depending on whether a vertical buffer below the approach/departure surface is established and the size of this buffer, some proposed buildings could protrude into the buffer.

Valley/Mercer Blocks

Under Alternative 3, it is unlikely that structures built to the maximum allowed height of 125 feet would penetrate the approach/departure airspace. At a maximum height of 85 feet, commercial development would not obstruct the approach/departure surface. However, depending on whether a vertical buffer below the surface is established and the size of the buffer, new residential or commercial development could intrude into the buffer.

Alternative 4

The No Action alternative would not impact the approach/departure airspace. Permitted building heights of 40 to 85 feet are below the flight path. Depending on whether a vertical buffer below the approach surface is established and the size of this buffer, some proposed buildings may protrude into the buffer.

Valley/Mercer Blocks

Under Alternative 4, permitted buildings heights of 40 feet would not penetrate the approach/departure airspace and it is unlikely that such buildings would protrude into any future buffer.

Wind Analysis

The addition of significantly taller buildings directly south of Lake Union could generally increase the potential for:

- increased height of vertical wind wake zones and consequently shear layers;
- introduction of wake effects extending into Lake Union;

- increase in turbulence intensity north of the neighborhood; and;
- change in local wind speed patterns.

Wind shear describes an atmospheric boundary in which there is a rapid change in speed and/or direction. Wind shear can affect aircraft by resulting in sudden changes in altitude. Large buildings push wind up and over their roofs, resulting in a relatively calm “wake zone” resembling a bubble (see **Figure 3.8-3**). The wind speeds at the outer edge of these wake zones are accelerated while speeds within the zone are calmer, resulting in a wind speed differential shear layer above the buildings.

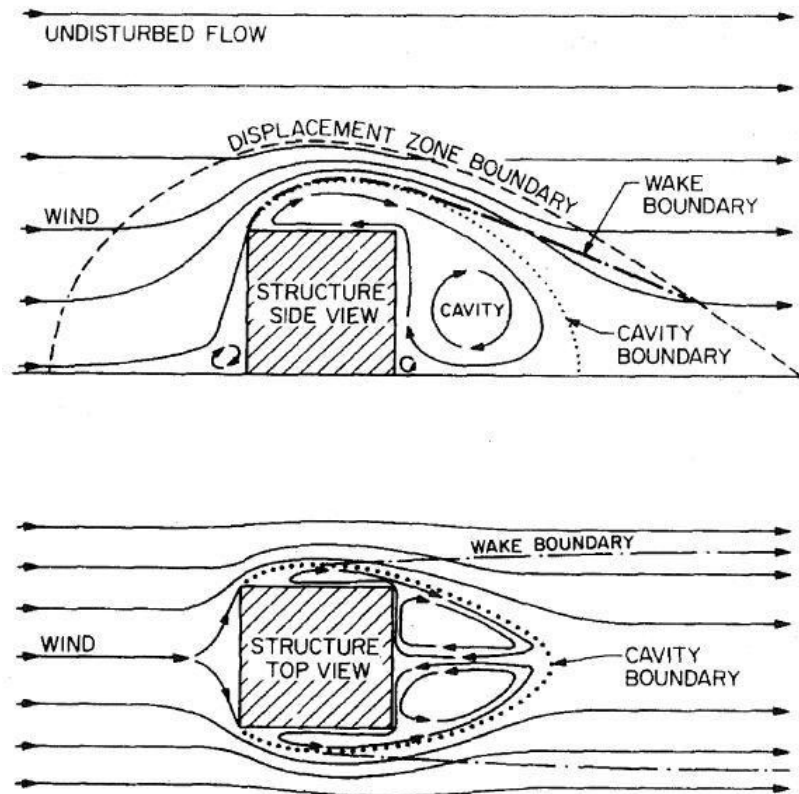
Turbulence is caused by rapid irregular motion of air and does not typically influence the intended flight path of an aircraft significantly. However, in severe cases abrupt changes in the attitude and altitude of an aircraft may occur and the pilot may suffer a momentary loss of control.

The ambient wind to which an aircraft is exposed is an important factor affecting aircraft performance. Sudden changes in wind speed or high levels of turbulence can have significant effects on the small aircraft aerodynamic response and thus can affect their safety margin (Peterka & Cermak [1975]).

Although the size of these building induced wake zones and shear layers is defined by the shape of the building or structure itself, the wind speed differential would be higher as the approaching wind speed increases. It is, therefore, important that aircraft, particularly small aircraft, fly beyond these zones.

Figure 3.8-3

Illustration of Building Wake Zones, both in Section (top) and Plan (bottom) view.



Source: RWDI, Inc., 2010

Similarly, winds flowing over top of a large structure will form large wakes on the leeward (downwind) side of the structure (see **Figure 3.8-3**). This is another important shear layer as the winds within this zone would be lower than outside it. However, there can be an increase in the creation of turbulent eddies both within the zone and further downwind where the zone is less defined. The most significant effects of these leeward zones can extend three building heights downwind (Drivas & Shair [1974]); however, full recovery of the wind stream (i.e., back to undisturbed state) would occur much farther downstream. For example, turbulence recovers up to 10 building heights downwind (Kothari *et al.* [1986]) and velocity even farther at 20 or more building heights (Peterka & Cermak [1975]). Within the main leeward zone, the wind direction can also change, flowing opposite the approaching wind direction heading back towards the structure.

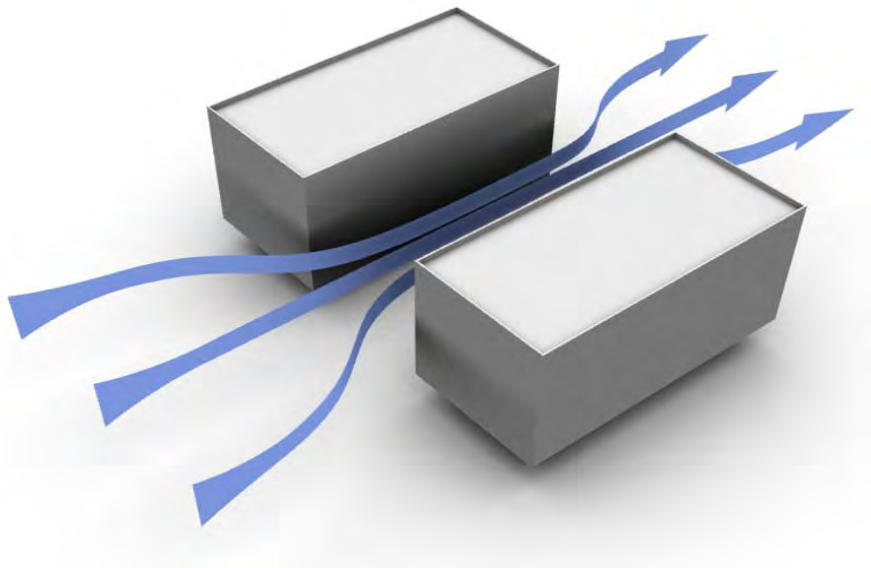
The size and potential for wake zones depends on many factors such as the height and width of buildings, shape and orientation of buildings, development density, variability in building heights across a neighborhood, wind direction, etc.

Impacts Common to All Alternatives

Development under the action alternatives would result in increased building façade area fully exposed to winds at their perimeters. This is where the most significant rooftop wakes (and shear layers) would be created.

Under some of the alternatives, the maximum height of buildings is higher than the anticipated elevation of float planes travelling over/through this area. Apart from the risk of physical impact, small aircraft flying through a “canyon” or “corridor” of tall structures can be significantly affected by turbulent, local winds channeling and accelerating between buildings (see **Figure 3.8-4**).

Figure 3.8-4
Illustration of “channeling” of wind between buildings. The channeled winds are accelerated.



Source: RWDI, 2010

Alternative 1

Alternative 1 includes the potential for the largest/tallest building massing among the three action alternatives. **Table 3.8-1** summarizes the estimated size and extent of the more critical vertical (above building) and leeward (into Lake Union) wake/shear layer zones.

Table 3.8-1
Estimated Wake Zone / Shear Layer Boundary (Alternative 1)

Wind Direction (from)	Building Block (upwind street)	Height of Vertical Wake Effect ^{1,2} (ft)	Length of Leeward Wake Effect (ft)
South	Denny Way	90 – 200	800 – 1200
South	Mercer Street	60 – 150	300 – 600
West	Aurora Avenue N	70 – 170	600 – 900

Source: RWDI, 2010

- 1 Values are approximate and were estimated using methodologies published by the American Society of Heating Refrigeration and Air Conditioning Engineers (2007).
- 2 Heights are referenced above the tallest building roof level. For example, a height range of 90 – 200 ft for the Denny Way block represents 90 – 200 ft above the tallest 400 ft building for a total of 490 – 600 ft above local grade. The range of wake zones accounts for potential separation between buildings. The upper end of the range assumes high building density in which buildings would act more like a solid mass, pushing vertical wake up higher. The lower end of the range assumes lower building density, in which spaces between buildings would help maintain a lower vertical wake.

Vertical Wakes

The tallest buildings that would be responsible for the highest vertical shear layers would be located at the extreme south end of the study area. This would help separate the tallest buildings from the Kenmore Air approach/departure surface.

However, as shown in **Table 3.8-2** below, when the estimated vertical wakes are added to proposed building heights, the result exceeds the flight path elevation in the vicinity around Mercer Street and Aurora Avenue N. Where the building height plus the vertical wake exceed the flight path elevation, safety for planes taking off or landing is compromised. Along Denny Way, the tallest buildings would be located between Denny Way and John Street, outside of the flight path, and is shown for information only.

This information is provided to illustrate the magnitude of the potential impact. Regardless of the building height permitted by local zoning, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to FAA requirements.

Table 3.8-2
 Alternative 1 Building Height and Vertical Wake
 Compared to Estimated Flight Path Elevation

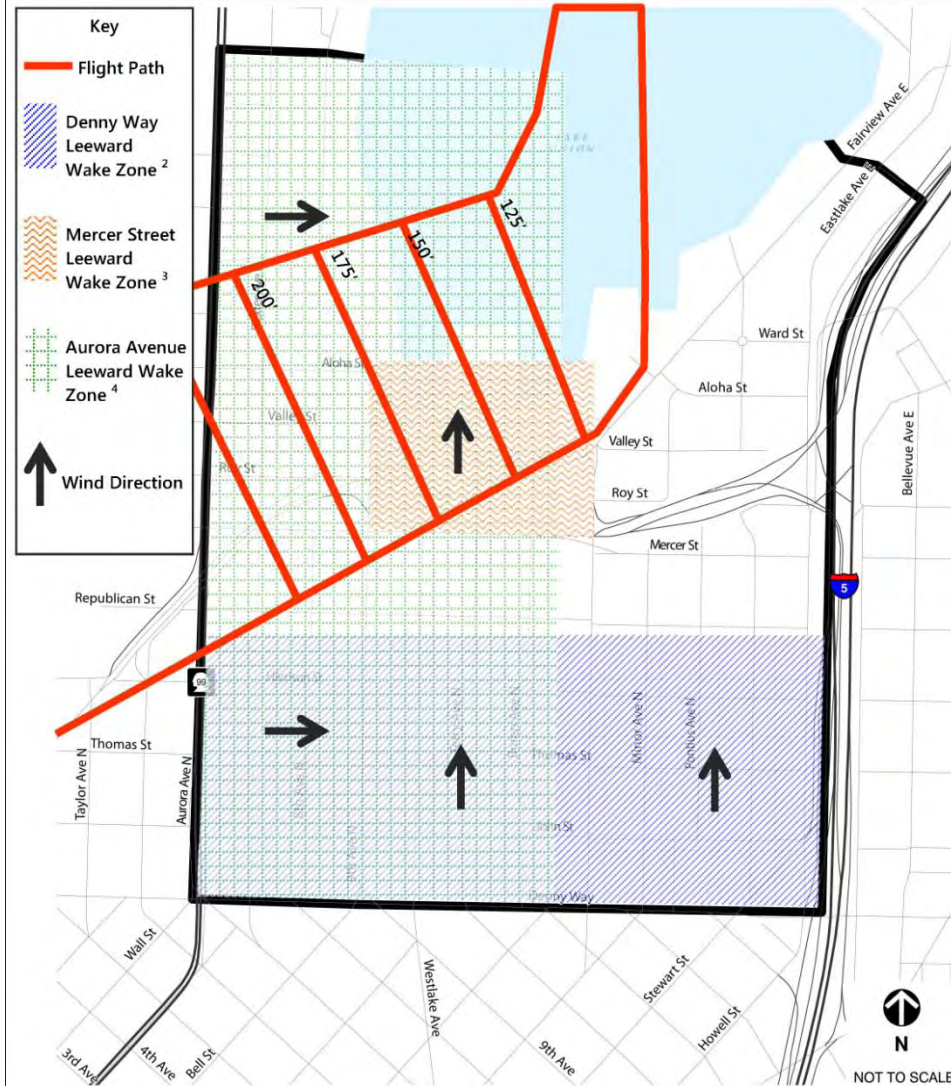
	Mercer Street Vicinity	Aurora Avenue Vicinity	Denny Way Vicinity
Maximum Proposed Building Height	300 feet	300 feet	400 feet
Estimated Vertical Wake	60 to 150 feet	70 to 170 feet	90 to 200 feet
Combined Building Height and Vertical Wake	360 to 450 feet	370 to 470 feet	490 to 600 feet
Estimated Flight Path Elevation	150 to 175 feet	175 to 225 feet	Outside flight path
Maximum Building Height and Vertical Wake Compared to the Flight Path Elevation	Exceeds estimated flight path elevation by 185 to 300 feet	Exceeds estimated flight path elevation by 145 to 295 feet	Outside of flight path

Source: RWDI, EA|Blumen, WSDOT, 2010

Leeward Wakes

In general, the largest estimated leeward wake from Denny Way could reach approximately Harrison Street; from Mercer Street, approximately the southern edge of the Lake Union shoreline and from Aurora Avenue, to the Lake Union shoreline to the north and just west of 8th Avenue North to the south. Although the most significant wake effects would occur within the areas shown in figure 3.8-5, residual effects such as turbulent eddy formation would extend farther into Lake Union and could act to change local wind conditions at the lake. For example, large building massing surrounding the lake could act to slow wind speeds in the approach/departure surface near the lake. (See **Figure 3.8-5**)

Figure 3.8-5
Alternative 1 Estimated Leeward Wake Zone¹



Source: RWDI, EA|Blumen, 2010

1. Assumes longest potential leeward wake zone, as shown in **Table 3.8-1**, but does not include residual turbulence area
2. Assumes building heights of 400 feet in the area between Denny Way and John St
3. Assumes building heights of 300 feet in the area bounded by Westlake Ave N, Fairview Ave N, Mercer St and Valley St
4. Assumes building heights of 300 feet in the area between Aurora Ave N and Westlake Ave N

Note: This figure shows the area of the most significant wake effect; residential effects such as turbulent eddies would extend farther.

Buildings in the northwest portion of the study area, adjacent to Aurora Avenue N may have multiple effects. First, notable wakes, both above the buildings and leeward into Lake Union, would be created for westerly winds. The primary leeward wake would extend well into the approach/departure surface at 600-900 feet from the trailing edge of the

development. When the height of the wake is added to the height of the tallest building, the overall elevation of the resulting shear layer may be upwards of 400+ feet above grade. This is significant as the elevation of the aircraft approach/departure surface through this area is only a maximum of 225 feet elevation. Either the flight path would need to be significantly modified, or buildings even as low as 100 ft or less would need to be avoided directly underneath and adjacent to the approach/departure surface, within at least a city block (plan view).

Overall, Alternative 1 is expected to have the most significant effect on local wind patterns and the south approach/departure airspace for float plane accessing Lake Union.

Alternative 2

Compared to Alternative 1, Alternative 2 represents a reduction in building height across the majority of the study area. The southward pattern of buildings is also modified compared to Alternative 1, with heights decreasing from south to north. This is positive as the upwind buildings provide a measure of protection to the shorter downwind buildings, which in turn reduces the potential of these closest buildings influencing the local winds. **Table 3.8-3** summarizes the estimated size and extent of vertical (above building) and leeward (into Lake Union) wake/shear layer zones.

Table 3.8-3
Estimated Wake Zone / Shear Layer Boundary (Alternative 2)

Wind Direction (from)	Building Block (upwind street)	Height of Vertical Wake Effect ^{1,2} (ft)	Length of Leeward Wake Effect (ft)
South	Denny Way	50 – 130	400 – 700
South	Mercer Street	30 – 90	150 – 400
West	Aurora Avenue N	50 – 130	400 – 700

Source: RWDI, 2010

- 1 Values are approximate and were estimated using American Society of Heating Refrigeration and Air Conditioning Engineers (2007).
- 2 Heights are referenced above the tallest building roof level. For example, a height range of 50 – 130 ft for the Denny Way block represents 50 – 130 ft above the tallest 240 ft building for a total of 290 – 370 ft above local grade. The range of wake zones accounts for potential separation between buildings. The upper end of the range assumes high building density in which buildings would act more like a solid mass, pushing vertical wake up higher. The lower end of the range assumes lower building density, in which spaces between buildings would help maintain a lower vertical wake.

Vertical Wakes

The extent of potential vertical wakes/shear layers resulting from Alternative 2 are significantly lower compared to Alternative 1, particularly

when accounting for the differences in building height. However, as shown in **Table 3.8-4** below, when the estimated vertical wakes are added to proposed building heights, the result still exceeds the flight path elevation in the vicinity around Mercer Street and Aurora Avenue N. Where the building height plus the vertical wake exceed the flight path elevation, safety for planes taking off or landing is compromised. Along Denny Way, the tallest buildings would be located between Denny Way and John Street, outside of the flight path, and is shown for information only.

This information is provided to illustrate the magnitude of the potential impact. Regardless of the building height permitted by local zoning, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to FAA requirements.

Table 3.8-4
Alternative 2 Building Height and Vertical Wake
Compared to Estimated Flight Path Elevation

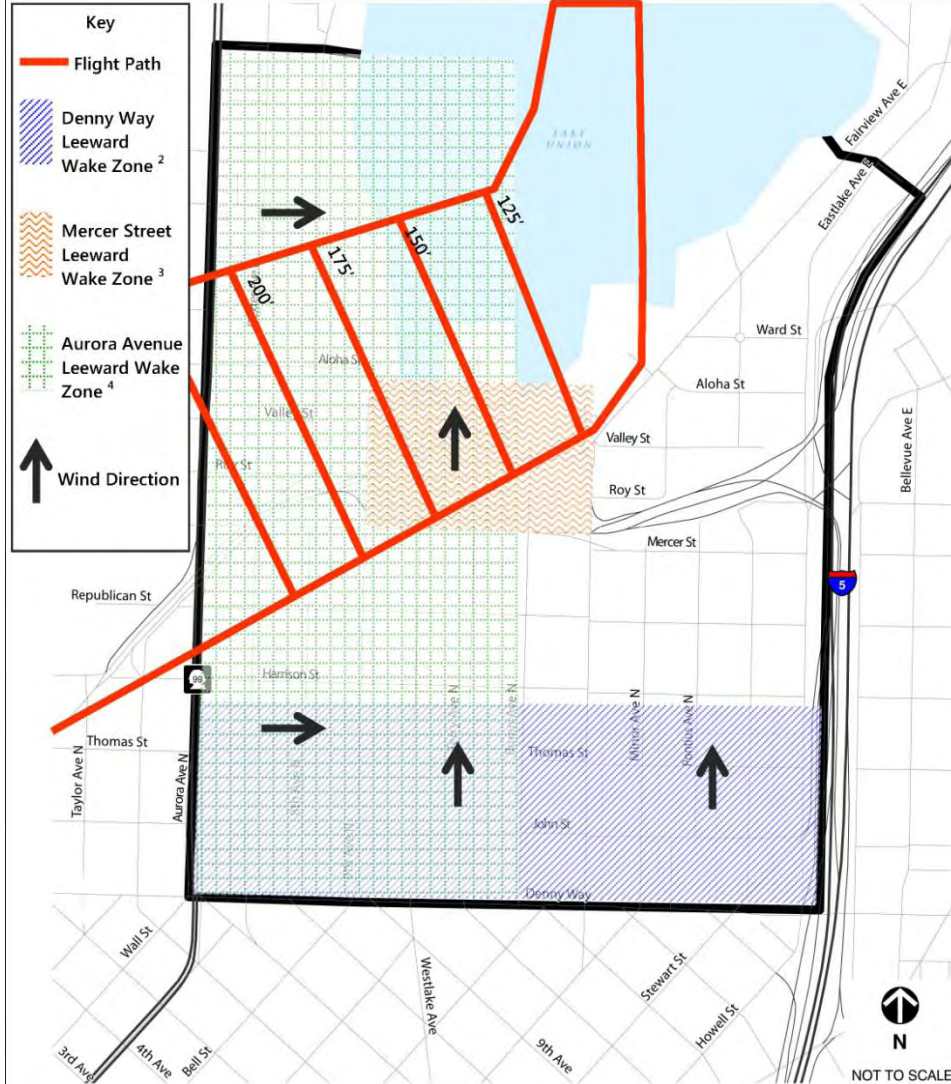
	Mercer Street Vicinity	Aurora Avenue Vicinity	Denny Way Vicinity
Maximum Building Height	160 feet	300 feet	240 feet
Estimated Vertical Wake	30 to 90 feet	50 to 130 feet	50 to 130 feet
Combined Building Height and Vertical Wake	180 to 250 feet	350 to 430 feet	290 to 370 feet
Estimated Flight Path Elevation	150 to 175 feet	175 to 225 feet	Outside flight path
Maximum Building Height and Vertical Wake Compared to Flight Path Elevation	Exceeds estimated flight path elevation by 5 to 100 feet	Exceeds estimated flight path elevation by 125 to 255 feet	Outside of flight path

Source: RWDI, EA|Blumen, WSDOT, 2010

Leeward Wakes

As shown in **Figure 3.8-6**, the primary leeward wake into Lake Union for south winds is expected to be less significant as well, and is estimated to extend to 400 feet (although residual turbulence would extend further).

Figure 3.8-6
Alternative 2 Estimated Leeward Wake Zone¹



Source: RWDI, EA|Blumen, 2010

1. Assumes longest potential leeward wake zone, as shown in **Table 3.8-1**, but does not include residual turbulence area
2. Assumes building heights of 400 feet in the area between Denny Way and John St
3. Assumes building heights of 300 feet in the area bounded by Westlake Ave N, Fairview Ave N, Mercer St and Valley St
4. Assumes building heights of 300 feet in the area between Aurora Ave N and Westlake Ave N

Note: This figure shows the area of the most significant wake effect; residential effects such as turbulent eddies would extend farther.

This is expected to fall short of the approach/departure surface. This benefit is mainly attributed to the shorter buildings at the lake edge and the overall pattern of consistent building height reductions from south to north.

In the northwest portion of the study area, the shorter building massing in the Aurora Avenue vicinity would still influence winds in the vicinity of the approach/departure surface. However, the shorter buildings represent an improvement over Alternative 1, as they would tend to reduce the extent of the primary leeward wake by about 200 feet. Although the most significant wake effects would occur within the areas shown in **Figure 3.8-6**, residential effects such as turbulent eddy formation would extend farther into Lake Union and could act to change local wind conditions at the lake. For example, large building massing surrounding the lake could act to slow wind speeds in the approach/departure surface near the lake.

Alternative 3

Alternative 3 would have the shortest buildings of the three action alternatives. It also includes a similar reducing progression of building height across the site from south to north as Alternative 2, which is a positive means of reducing wind effects. Of particular interest would be buildings directly adjacent to Lake Union, which are the shortest on the site resulting in the smallest wake/shear effect into the lake among the action alternatives. **Table 3.8-5** summarizes the estimated size and extent of vertical (above building) and leeward (toward Lake Union) wake/shear layer zones.

Table 3.8-5
Estimated Wake Zone / Shear Layer Boundary (Alternative 3)⁵

Wind Direction (from)	Building Block (upwind street)	Height of Vertical Wake Effect ^{1,2} (ft)	Length of Leeward Wake Effect (ft)
South	Denny Way	50 – 130	300 – 600
South	Mercer Street	20 – 70	100 – 300
West	Aurora Avenue N	40 – 100	250 – 500

Source: RWDI, 2010

- ¹ Values are approximate and were estimated using American Society of Heating Refrigeration and Air Conditioning Engineers (2007).
- ² Heights are referenced above the tallest building roof level. For example, a height of 50 – 130 ft for the Denny Way block represents 50 f- 130 t above the tallest 240 ft building for a total of 290 – 370 ft above local grade. *The range of wake zones accounts for potential separation between buildings. The upper end of the range assumes high building density in which buildings would act more like a solid mass, pushing vertical wake up higher. The lower end of the range assumes lower building density, in which spaces between buildings would help maintain a lower vertical wake.*

Vertical Wakes

The extent of potential vertical wakes/shear layers resulting from Alternative 3 would be the lowest among the action alternatives. . As shown in **Table 3.8-6** below, when the estimated vertical wakes are added to proposed building heights, the lowest end of the range would be below the estimated flight path elevation in the Mercer Street vicinity and

the amount exceeded in other areas is less than in the other action alternatives, but still above the estimated flight path elevation. Along Denny Way, the tallest buildings would be located between Denny Way and John Street, outside of the flight path, and is shown for information only.

This information is provided to illustrate the magnitude of the potential impact. Regardless of the building height permitted by local zoning, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to FAA requirements.

Table 3.8-6
Alternative 3 Building Height and Vertical Wake
Compared to Estimated Flight Path Elevation

	Mercer Street Vicinity	Aurora Avenue Vicinity	Denny Way Vicinity
Maximum Building Height	125 feet	240 feet	240 feet
Estimated Vertical Wake	20 to 70 feet	40 to 100 feet	50 to 130 feet
Combined Building Height and Vertical Wake	145 to 195 feet	280 to 340 feet	290 to 370 feet
Estimated Flight Path Elevation	150 to 175 feet	175 to 225 feet	Outside flight path
Maximum Building Height and Vertical Wake Compared to Flight Path Elevation	At low end of range, below estimated flight path, at high end of range, exceeds estimated flight path elevation by 45 feet	Exceeds estimated flight path elevation by 55 to 165 feet	Outside of flight path

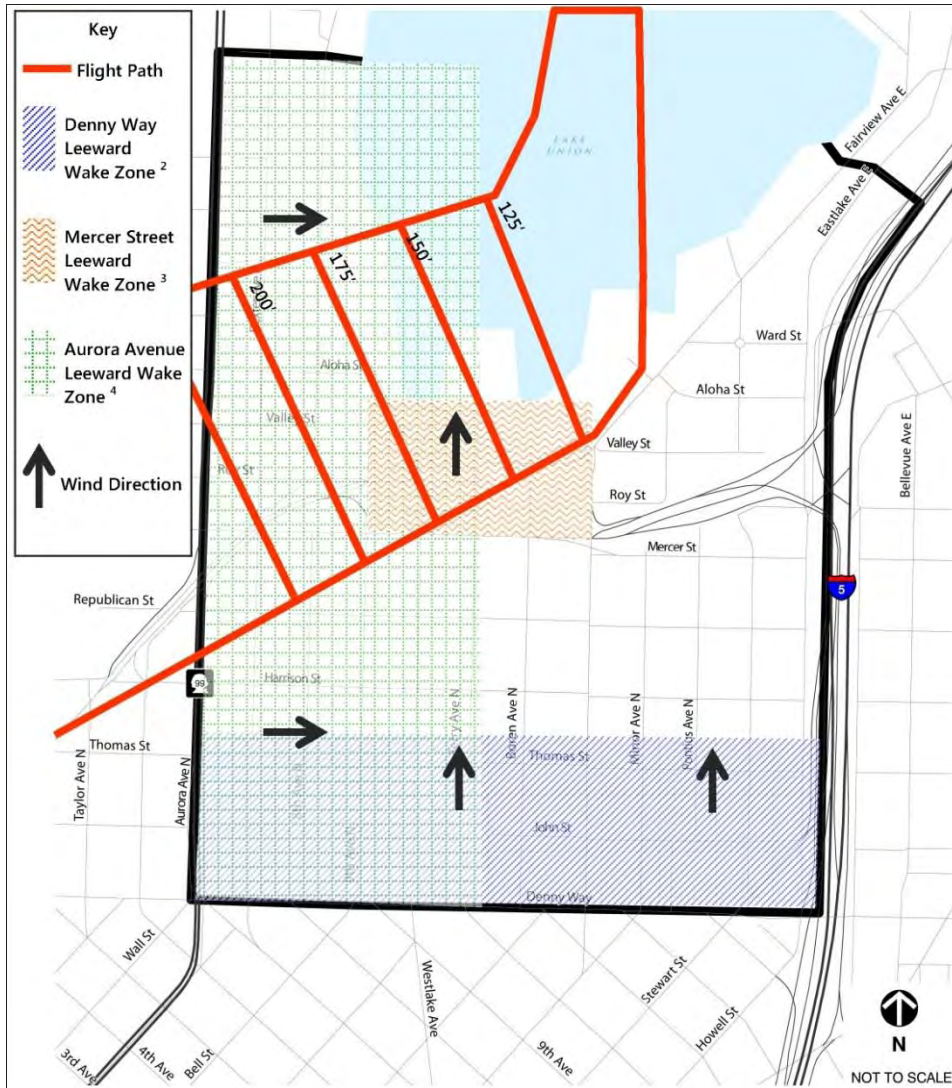
Source: RWDI, EA|Blumen, WSDOT, 2010

Leeward Wakes

As shown in **Figure 3.8-7**, the primary leeward wake into Lake Union for south winds is expected to be the least significant, estimated to extend to 300 feet (although residual turbulence would extend further). Similar to Alternative 2, this is expected to fall short of the approach/departure airspace with a benefit attributed to shorter building massing toward the water's edge. Although the most significant wake effects would occur within the areas shown in **Figure 3.8-7**, residual effects, such as turbulent

eddy formation would extend farther into Lake Union and could act to change local wind conditions at the lake. For example, large building massing surrounding the lake could act to slow wind speeds in the approach/departure surface near the lake.

Figure 3.8-7
Alternative 3 Estimated Leeward Wake Zone¹



Source: RWDI, EA|Blumen, 2010

1. Assumes longest potential leeward wake zone, as shown in **Table 3.8-1**, but does not include residual turbulence area
2. Assumes building heights of 400 feet in the area between Denny Way and John St
3. Assumes building heights of 300 feet in the area bounded by Westlake Ave N, Fairview Ave N, Mercer St and Valley St
4. Assumes building heights of 300 feet in the area between Aurora Ave N and Westlake Ave N

Note: This figure shows the area of the most significant wake effect; residential effects such as turbulent eddies would extend farther.

Overall, of the action alternatives, Alternative 3 would have the least impact on the south approach/departure surface for Lake Union.

Alternative 4 (No Action)

No significant impacts on wind patterns affecting the approach/departure airspace is anticipated for Alternative 4 (No Action), as the wake effects of the existing buildings would not be significant.

For comparison with the action alternatives, the Alternative 4 (No Action) estimated vertical wake in the vicinity of Mercer Street is estimated at 15 to 30 feet and in the vicinity of Aurora Avenue N 20 to 45 feet (RWDI, 2011). As shown in **Table 3.8-7**, below, the combined building height and vertical wake for buildings in the flight path falls below the estimated flight path elevation.

Table 3.8-7
Alternative 4 Building Height and Vertical Wake
Compared to Estimated Flight Path Elevation

	Mercer Street Vicinity	Aurora Avenue Vicinity
Maximum Building Height	40 feet	65 to 85 feet
Estimated Vertical Wake	15 to 30 feet	20 to 45 feet
Combined Building Height and Vertical Wake	55 to 70 feet	85 to 130 feet
Estimated Flight Path Elevation	150 to 175 feet	175 to 225 feet
Maximum Building Height and Vertical Wake Compared to Flight Path Elevation	Below estimated flight path elevation	Below estimated flight path elevation

Source: RWDI, EA|Blumen, WSDOT, 2010

Similarly, leeward wake effects are not anticipated to be significant.

3.8.3 Mitigation Strategies

Plans, Policies and Regulations

- Please see the Housing section of this EIS for potential mitigating measures to address housing affordability.
- In order to ensure that buildings do not obstruct the flight path and airspace established by FAR 77, maximum building heights in this area of South Lake Union will be adjusted to ensure that buildings do not penetrate the airspace.

Land Use Contents

Affected Environment

Environmental Impacts

Mitigation Strategies

Significant Unavoidable Adverse Impacts

- A vertical safety buffer – below the approach surface – should be considered to ensure adequate separation between the airspace and building rooftops.
- Consideration should be given to limiting the height of rooftop appurtenances (e.g., antennae, flag poles, etc.) proximate to the flight path that could penetrate the airspace or the associated safety buffer.
- Consideration should also be given as part of the City’s design review process to limiting rooftop specular surfaces that can act as a distraction for pilots.
- Proximate to the flight path, consideration should be given to limiting electrical interference on frequencies used by aircraft.

Wind Analysis

The mitigation measures presented below apply to all action alternatives.

- The area of the tallest height limit should be located near the outer perimeter of the South Lake Union neighborhood most distant from Lake Union. The largest buildings would tend to create the most significant, far reaching shear layers and would need a maximum separation from the lake.
- Reduce overall building massing and height progressively, approaching the lake. The upwind buildings would provide a measure of wind shielding of the downwind buildings. The shorter buildings adjacent to the lake would result in smaller wakes that extend towards the south approach/departure surface.
- The building height and space relationships and their influence on the approach/departure surface winds should be assessed as part of future consideration of building heights in the flight path vicinity. In order to establish a more specific definition of the extent of wakes and other significant wind dominated effects, quantitative wind modeling with a scale model of proposed development in a boundary layer wind tunnel would be required.

3.8.4 Significant Unavoidable Adverse Impacts

If proposed mitigation strategies are implemented, no significant unavoidable adverse impacts are anticipated.

<p><i>Affected Environment Environmental Impacts Mitigation Strategies</i></p> <p>Significant Unavoidable Adverse Impacts</p>	Land Use Contents
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3.9 HOUSING

This section of the Draft EIS describes existing housing conditions within the South Lake Union neighborhood and surrounding vicinity and evaluates how future housing within the neighborhood would be affected under each of the proposed alternatives.

3.9.1 Affected Environment

The following is a summary of existing housing conditions within the South Lake Union neighborhood and surrounding vicinity.

Inventory of Existing Housing

According to City of Seattle Department of Planning and Development (DPD) data, there were 849 housing units within what is today the South Lake Union neighborhood, which equated to approximately 3 percent of the City's total housing supply at that time¹. Since 2000, there have been approximately 2,226 housing units built within the neighborhood, for a current total of approximately 3,075 units².

As described in the South Lake Union Urban Center Plan, most housing units within this neighborhood are in multi-family buildings and less than 10 percent of the units are owner-occupied.³ The study area has approximately eight City-funded affordable housing developments containing more than 400 housing units, which currently make up more than 13 percent of the total number of dwelling units within the neighborhood.⁴

The majority of the residential development is located within or near the Cascade subarea of the neighborhood with additional residential development scattered throughout the neighborhood.

Table 3.9-1 contains a listing of most of the apartment and condominium buildings within the neighborhood and the affordability and number of housing units available in each. Additionally, **Table 3.9-2** contains a listing of subsidized rental housing available within the South Lake Union neighborhood.

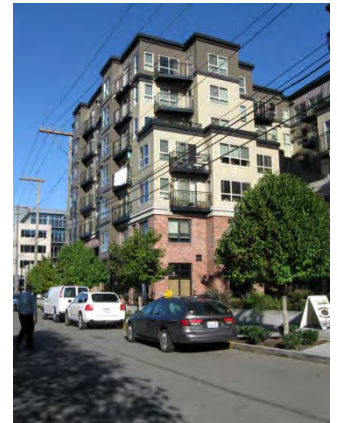
¹ DPD Urban Center/Village Residential Growth Report, 3Q 2010.

² Ibid.

³ City of Seattle. South Lake Union Urban Center Neighborhood Plan. September 2007.

⁴ Ibid.

Affected Environment.....1
Environmental Impacts.....7
Mitigation Strategies.....11
Significant Unavoidable Adverse Impacts.....13



Cairns Apartments

As illustrated by these tables, currently existing housing units available in the South Lake Union neighborhood are affordable to varying income levels.

Table 3.9-1
Multi-Family Apartment Buildings within the South Lake Union Neighborhood

Building	Housing Units							Unres- tricted	Total # of Units
	% Median Income (AMI) Rent/Income Limit								
	30%	40%	50%	60%	70%	80%			
502 Minor Avenue N							11	11	
Alcyone Apts							161	161	
Alley24				35			137	172	
Amlis 535							199	199	
Bart Harvey Apts			50					50	
Borealis							53	53	
Brewster Apts		9	26					35	
The Cairns					30		70	100	
Canady House	83							83	
The Carlton							30	30	
Carolina Court							72	72	
Carolyn Manor Apts							22	22	
Casa Pacifica			24	39			2	65	
Compass Ctr	34							34	
David Colwell Bldg.	25		75	24		2		126	
Denny Park Apts	20		25	5				50	
Dexter Lake Union							201	201	
Grandview Apts							25	25	
Jensen Block Apts	2	24	4					30	
Kerner-Scott House	40							40	
Lakeview Apts	20		26	13		13		59	
Mercerview Apts							67	67	
Mirabella						31	349	380	
Neptune							222	222	
Rollin Street Flats							208	208	
Union Bay Apts							73	73	
Veer Lofts							99	99	
TOTALS	224	33	230	116	30	46	2,001	2,680	

Sources: City of Seattle, Office of Housing, 2010. Vulcan Real Estate, 2010, King County Assessor's Office, 2010.

Table 3.9-2
Existing Subsidized Rental Housing
within the South Lake Union Urban Center

Regulatory Agency or Program					
Building	CITY ¹	WSHFC ²	K CTY ³	CTED ⁴	MFTE ⁵
Alley24					√
Brewster Apts	√			√	
The Cairns					√
Canady House	√		√		
Casa Pacifica	√	√			
Compass Ctr	√			√	
David Colwell Bldg.	√	√			
Denny Park Apts	√	√		√	
Jensen Block Apts	√	√		√	
Kerner-Scott House	√	√	√	√	
Lakeview Apts	√	√			
Mirabella		√			

Sources: **City of Seattle, Office of Housing**

- 1 CITY -- City of Seattle
- 2 WSHFC - Washington State Housing Finance Commission
- 3 K CTY - King County
- 4 CTED - State of Washington
- 5 MFTE - Seattle Multifamily Property Tax Exemption Program

Housing Occupancy

According to 2000 census data, the total housing vacancy rate in the City of Seattle was 4.4 percent. In Fall 2010, Dupre + Scott reported a market vacancy rate of 3.5 percent citywide.⁵

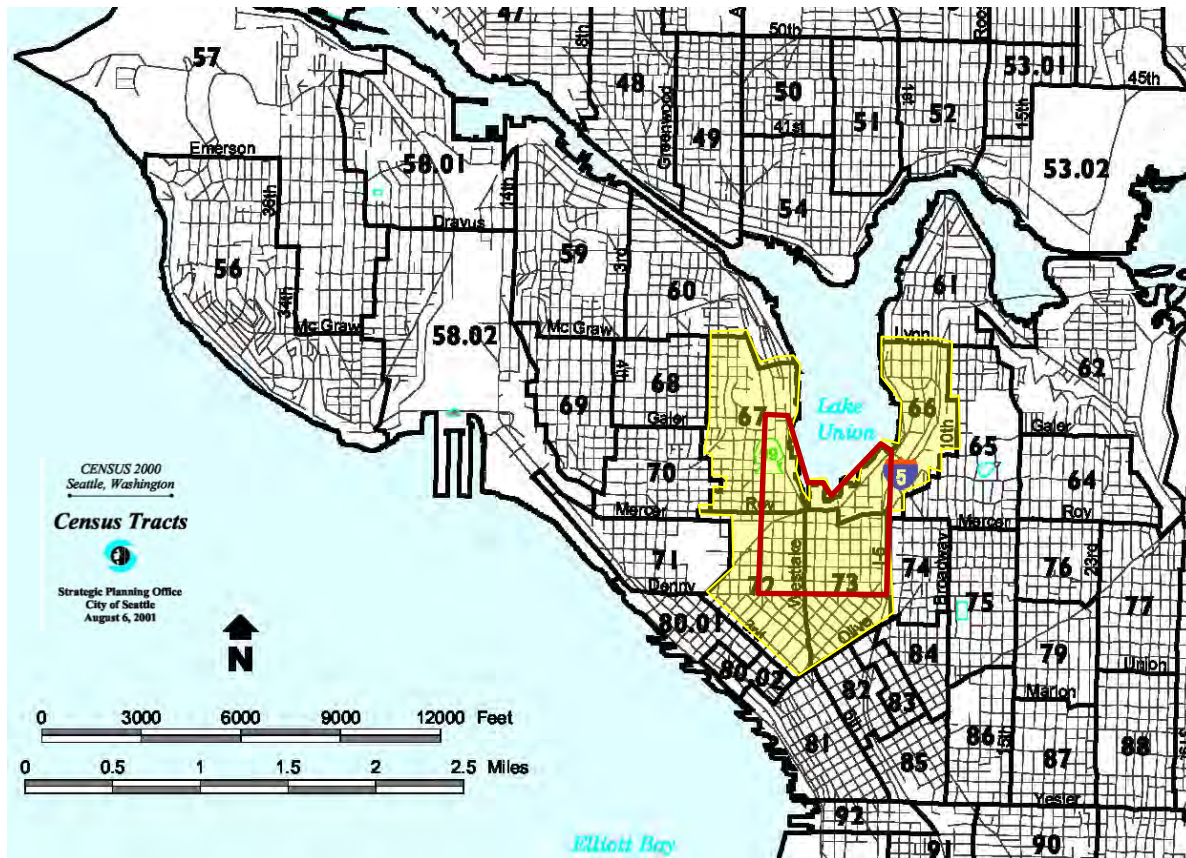
US Census data for the South Lake Union neighborhood reported a housing vacancy rate of 14 percent in 2000. Updated data specific to the South Lake Union neighborhood is not available. However, updated Dupre + Scott data is available for the several census tracts that encompass the neighborhood (census tracts 66, 67, 72 and 73). As depicted by Figure 3.9-1 below, Census Tracts 72 and 73 represent roughly two-thirds of the South Lake Union neighborhood area; however, they also include portions of Belltown and the Denny Triangle,

Census Tracts 66, 67, 72, and 73 together extend roughly 1/2 mile in each direction beyond the boundary of the South Lake Union neighborhood into areas of lower Queen Anne, First Hill, Belltown and the Denny Triangle. Although these census tracts contain the South Lake Union subarea, the majority of the housing is located in the surrounding neighborhoods.

⁵ Dupre+Scott Apartment Advisors, , Fall 2010 (custom City of Seattle report run by Seattle Office of Housing).

respectively. Similarly, Census Tract 66 extends further north and east of the neighborhood and Census Tract 67 extends further north and west of the neighborhood.

Figure 3.9-1
Census Tracts that Encompass the South Lake Union Neighborhood



Source: DPD, 2010.

Table 3.9-3 contains the autumn 2010 vacancy rate data for these census tracts. As shown in this table, market vacancy rates are similar to the estimated 3.5 percent citywide vacancy rate.

Table 3.9-3
2010 Vacancy Rate for Census Tracts Containing the South Lake Union Neighborhood

Census Tract	Market Vacancy Rate ¹ (%)
66	2.06
67	4.33
72	3.36
73	3.34

Source: Dupre + Scott Apartment Advisors, Fall 2010, (custom report for Census Tracts 66, 67, 72 and 73 run by Seattle Office of Housing).

¹ Market Vacancy rate excludes vacancies in new construction still in lease-up, as well as properties going through extensive renovation.

Housing Affordability

As shown in **Tables 3.9-1** and **3.9-2** above, the South Lake Union neighborhood contains a range multi-family housing units affordable to varying income levels, including market rate housing and subsidized rental buildings restricted to specific incomes.

The City's Comprehensive Plan⁶ includes policies that address the city's low-income housing needs. Specifically, Housing Policy 30 establishes affordability goals for at least 20 percent of expected housing growth to be affordable to households earning up to 50% of the Area Median Income (AMI), at least 17 percent of expected housing growth affordable to households earning 51 to 80% of AMI, and at least 27 percent of expected housing growth to be affordable to households earning 81 to 120% of AMI.

See Table 3.9-4 for information showing South Lake Union affordable housing growth between 2004 and 2009 compared to Seattle Comprehensive Plan Housing Policy 30. Between 2004 and 2009, 11percent of new housing units in South Lake Union were available to income groups earning 0 to 50 percent of median income, compared to the City's 20 percent goal. For the 51 to 80 percent of median income group, 8 percent of new housing units were affordable, compared to the goal of 17 percent. Because data was not collected for the 80 to 120 percent of median income group, it is not possible to assess attainment of the goal of 27 percent of total housing growth affordable to this income group.

Table 3.9-4
2004 – 2009:5-Year Change – Projected vs. Actual Number of Household Units
South Lake Union Urban Center

Median Income	2004 Total Housing Units	2009 Total Housing Units	2004 – 2009 Housing Growth
0-50%	479	657	178 (11%)
51-80%	299	428	129 (8%)
81%+	<u>528</u>	<u>1,855</u>	<u>1,327 (81%)</u>
TOTAL	1,306	2,940	1,634 (100%)

Source: Seattle Office of Housing, 2009; EA|Blumen, 2010.

⁶ Seattle Comprehensive Plan, Housing Element, 2010.

Residential Character

As described in the South Lake Union Urban Center Plan, the neighborhood is characterized by a mix and variety of uses, which include large and small retail businesses, a cancer research center, car dealerships, studio space for artists, the state's largest newspaper and a Russian Orthodox church. This complexity of uses is further reflected along the south shore of Lake Union where Kenmore Air's seaplanes share the waterfront with the City's new Lake Union Park, the Center for Wooden Boats, the future home of MOHAI, private moorage, restaurants, office buildings and marine-oriented service industries. There are also two other parks located within this neighborhood besides Lake Union Park --Denny Park (Seattle's oldest public park) and Cascade Playground.

Recent development in the South Lake Union neighborhood has experienced a shift in land use away from the neighborhood's traditional industrial and Downtown support services to that of office, biotechnology and residential development. Since 1998, over two million square feet of office and biotechnology lab space and three large hotels have been built⁷. Also over the same period more than 2,229⁸ residential units have been built or were under construction (as of autumn 2010).

Within the neighborhood, there are currently five independent schools that serve a diverse population of approximately 300 students in grades pre-K through 8. There are no public schools in South Lake Union and the neighborhood is split into two different school clusters (Magnolia/Queen Anne and Central), meaning that children in different parts of the neighborhood are assigned to schools in different areas of Seattle.⁹

With regard to community facilities, the closest community center to the South Lake Union neighborhood is located at the top of Queen Anne Hill. The closest City libraries are the Queen Anne Branch, the Capitol Hill Branch, and the Central Library (Downtown).The Cascade People's Center, which is located in the Cascade subarea of South Lake Union, is a small family and community support center, which focuses on family support and environmental sustainability and provides free programs and meeting space for the surrounding community.The community center site also includes the Cascade P-Patch garden, as well as the adjacent Garden of

⁷ City of Seattle. South Lake Union Urban Center Neighborhood Plan. September 2007.

⁸ DPD Permit Data Warehouse Building Construction Permits, Urban Center/Village Residential Growth Report Through 3Q 2010.

⁹ City of Seattle. South Lake Union Urban Center Neighborhood Plan. September 2007.

Happiness, which is another community-based garden project only with a native plant focus.

Focus Areas¹⁰

8th Avenue North Corridor

The 8th Avenue Corridor currently contains two apartment buildings; including the recently constructed Denny Park Apartments (230 8th Avenue N). This facility contains approximately 50 low-income housing units (see **Table 3.9-1**).

Fairview Avenue Corridor

The Fairview Avenue Corridor, which is located along the western boundary of the Cascade subarea, does not currently contain residential uses.

Valley/Mercer Blocks

The Valley/Mercer Blocks, which are located along the south end of Lake Union, do not currently contain residential uses.



8th Avenue N/Harrison Street looking south

3.9.2 Environmental Impacts

This subsection focuses on the probable significant environmental impacts on housing in the South Lake Union neighborhood as a result of redevelopment under Alternatives 1-4. Impacts that would be common to Alternatives 1-4 are discussed at the beginning of this subsection followed by a discussion of impacts that would be unique to each alternative.

Impacts Common to All Alternatives

Potential increases in height and density associated with Alternatives 1-3 would result in an increase in population and employment as future development occurs in the South Lake Union neighborhood. Increases in population and employment in this area would result in an associated increase in demand for diverse housing opportunities and public facilities (e.g., community centers and libraries, parks and open spaces, public schools, etc.) within the neighborhood. Each alternative provides different capacity levels to meet increased demand. With capacity for 21,000 units, Alternative 1 provides the greatest housing capacity, followed by

Effected Environment	Housing Contents
Environmental Impacts	
Mitigation Strategies	
Significant Unavoidable Adverse Impacts	

¹⁰ Focus areas are small areas in the South Lake Union neighborhood, which are considered in greater detail, where applicable. Please see discussion and Figure 2-3 in Chapter 2.

Alternative 2 with capacity for 19,000 units, Alternative 3 with capacity for 15,000 units and Alternative 4, with capacity for 11,500 units. Incentive zoning provisions under any of the action alternatives can ensure that the City has adequate capacity to meet current and future housing targets for the neighborhood.

Housing Affordability

As noted previously, Comprehensive Plan Housing Policy 30 establishes citywide affordable housing goals to “address the city’s share of affordable housing needs resulting from expected countywide household growth [2004-2024], consistent with the countywide affordable housing policies...” Those goals are:

- at least **20 percent** of the expected housing growth affordable for households earning up to 50% of the Area Median Income (AMI);
- at least **17 percent** of the expected housing growth affordable for households earning 51 to 80% of AMI; and
- at least **27 percent** of the expected housing growth affordable for households earning 81 to 120% of AMI.

According to DPD data, there are approximately 3,075 existing housing units in the South Lake Union neighborhood. To meet the adopted 2024 housing target of 8,000 additional housing units, there would need to be approximately 4,925 new housing units developed by 2024. Using the affordable housing goals listed above, roughly 985 units would need to be affordable to households earning up to 50 percent of AMI, approximately 837 units would need to be affordable to households earning between 51 to 80 percent of AMI, and approximately 1,330 units would need to be affordable to households earning 81 to 120 percent of AMI.

For comparison, to meet the 2031 estimated goal of 11,900 additional housing units, there would need to be approximately 8,825 new housing units developed by 2031. Of these, roughly 1,765 units would need to be affordable to households earning up to 50 percent of AMI, approximately 1,500 units would need to be affordable to households earning between 51 to 80 percent of AMI, and approximately 2,383 units would need to be affordable to households earning 81 to 120 percent of AMI.

Table 3.9-5 illustrates the potential for affordable housing if the affordable housing goals listed above are met. Because the goal is the same regardless of the alternative, these estimates apply equally to all alternatives.

Table 3.9-5
Affordable Housing Goals

	Total New Housing Units ¹	Affordable Housing Targets ¹¹		
		0-50% AMI	51-80% AMI	81%+ AMI
Estimated Growth to Achieve Affordability Goal				
Adopted 2024 Target				
All Alternatives	4,925	985	837	1,330
Estimated 2031 Target				
All Alternatives	8,825	1,765	1,500	2,383

Source: City of Seattle, EA|Blumen, 2010

¹ New housing development estimated based on 3,075 existing housing units (see p 3.9-1) subtracted from the 2024 total housing target (8,000 units) or the estimated 2031 housing target (11,900 units) to arrive at estimated future growth.

In general, the increased residential capacity provided by the action alternatives has potential to result in an increased number of affordable units, compared to the No Action Alternative. However, there are a number of factors that impact the potential for affordable housing development, including potential development costs, property values, market demand, individual property owner goals, and opportunities for financing of affordable housing. To a greater or lesser extent, these factors will affect the actual number of affordable housing units that are built for low- and moderate-income households under any of the alternatives.

Alternative 1

Alternative 1 would provide the largest capacity for housing development and the largest amount of development that would likely occur through increased height provided under incentive zoning provisions. Because of this, Alternative 1 may have the potential through incentive zoning provisions to generate the greatest amount of developer financial contributions for affordable housing for lower wage workers.

Alternative 1 may also provide market-driven opportunities for new construction of affordable housing separate from the residential towers. Development of new towers will require a minimum of 22,000 square feet of lot area in most of the subarea. Depending on lot configurations, consolidation of parcels to create the minimum lot required for a tower may create remainder lot area that is not large enough for another tower

¹¹ City of Seattle Comprehensive Plan, Housing Element, Housing Policy 30, December 2010.

and potentially available at a lower cost for other types of low scale development, including affordable housing. Development of remainder parcels for affordable housing could occur through a market-driven process and could also be encouraged through an incentive zoning provision that addresses such parcels.

While providing capacity for new development of housing, development of residential towers through incentive zoning provisions would increase the potential for displacement of existing wood frame buildings and older single family residences located throughout the neighborhood, but particularly in the Cascade subarea. To the extent that these units provide relatively lower-cost affordable housing, redevelopment under Alternative 1 has the potential to reduce that inventory of older stock affordable housing. As noted above, however, (assuming the City's current incentive zoning system is expanded to South Lake Union) development in any zone with a height limit of 85' or greater would require production of housing affordable to households with incomes up to 80 percent of area median income or a cash contribution to the City's bonus fund, which would then be used for production or long-term preservation (at least 50 years) of very low-income housing (≤ 50 percent of area median income) or even extremely low-income housing (≤ 30 percent of area median income) in the South Lake Union neighborhood.

Under Alternative 1, height and density increases in the focus areas could result in increased residential development within these corridors, especially in the 8th Avenue Corridor due to residential height allowances that are significantly higher than those allowed for commercial uses. Similarly, the change in zoning from IC to SM in the Fairview corridor provides new capacity for residential development, expanding overall residential development opportunities in the neighborhood.

Alternative 2

Relative to the other alternatives, Alternative 2 is neither the highest nor the lowest regarding capacity for housing development amount of development that would likely occur through increased height provided under incentive zoning provisions. Because of this, Alternative 2 may have a relatively moderate potential through incentive zoning provisions to generate developer financial contributions for affordable housing for lower wage workers.

Alternative 2 also provides development opportunities on remainder lots that may be attractive to low scale development, including affordable housing. Development of remainder parcels for affordable housing could



Single family residence in South Lake Union neighborhood

occur through a market-driven process and could also be encouraged through an incentive zoning provision that addresses such parcels.

Alternative 2 would also have the potential for displacement of existing wood frame buildings and older single family residences located throughout the neighborhood, but particularly in the Cascade subarea for new construction of towers. To the extent that these units provide relatively lower-cost affordable housing, redevelopment under Alternative 2 has the potential to reduce that inventory of older stock affordable housing. (See discussion under Alternative 1 above.)

Height and density increases in the focus areas could result in increased residential development within these corridors, especially in the 8th Avenue Corridor due to residential height allowances that are significantly higher than those allowed for commercial uses. Similarly, the change in zoning from IC to SM zoning in the Fairview corridor provides new capacity for residential development, expanding overall residential development opportunities in the neighborhood.

Alternative 3

Relative to the other action alternatives, Alternative 3 provides the least capacity for housing development and amount of development that would likely occur through increased height provided under incentive zoning provisions. Because of this, Alternative 3 may have the least potential through incentive zoning provisions to generate developer financial contributions for affordable housing for lower wage workers.

Similar to the other action alternatives, development under Alternative 3 could result in development opportunities on remainder lots that may be attractive to low scale development, including affordable housing. Development of remainder parcels for affordable housing could occur through a market-driven process and could also be encouraged through an incentive zoning provision that addresses such parcels.

Alternative 3 would also have the potential for displacement of existing wood frame buildings and older single family residences located throughout the neighborhood, but particularly in the Cascade subarea for new construction of towers. To the extent that these units provide relatively lower-cost affordable housing, redevelopment under Alternative 3 has the potential to reduce that inventory of older stock affordable housing. (See discussion under Alternative 1 above.)

Under Alternative 3, height and density increases in the focus areas could result in increased residential development within these corridors, due to

residential height allowances that are significantly greater than those allowed for commercial development. Height limits on residential development in the focus areas would range from 125 feet near Lake Union to 240 feet near Denny Way. Similarly, the change in zoning from IC to SM zoning in the Fairview corridor provides new capacity for residential development, expanding overall residential development opportunities in the neighborhood.

Alternative 4 (No Action)

Alternative 4 would retain the existing zoning with no new incentive zoning provisions and essentially represent a continuation of current development trends within the neighborhood. As described previously, Alternative 4 would provide the least amount of additional housing capacity within the South Lake Union neighborhood.

Under Alternative 4, current residential development trends occurring in the focus areas would likely continue, as this alternative would retain the existing zoning in these corridors.

3.9.3 Mitigation Strategies

Future population and employment increases in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for diverse housing opportunities within the neighborhood. In order to address the City's goals of providing affordable housing, the following incentives and programs could be implemented in the South Lake Union neighborhood:

Existing Development Incentives

Multi-Family Property Tax Exemption

Seattle's Multifamily Tax Exemption (MFTE) program allows developers to receive a property tax exemption on the residential portion of a development for a specified number of years in exchange for providing a specified percentage of housing units in rental projects that are affordable for moderate-wage workers during the time the exemption is utilized. The current MFTE program expired on Dec. 31, 2010; however the Seattle City Council is currently reviewing the program for renewal. There may be changes to existing program requirements once the City Council renews the program. It is assumed that the MFTE Program will continue to be available in 39 target areas in Seattle, one of which is the South Lake Union Urban Center.

<i>Effected Environment</i>	Housing Contents
<i>Environmental Impacts</i>	
Mitigation Strategies	
<i>Significant Unavoidable Adverse Impacts</i>	
<i>Impacts</i>	

Incentive Zoning

Incentive zoning is a strategy to both encourage the desired density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits in the form of affordable housing and other amenities valued by communities. By helping to direct growth to areas targeted in the Comprehensive Plan, incentive zoning could also work to preserve the character of many of Seattle's neighborhoods. Incentive zoning is used to offer extra floor area for new development in exchange for community amenities. A baseline height limit or Floor Area Ratio (FAR) limit is created in a given neighborhood or a zone. Developers can then take advantage of additional height or FAR by purchasing TDR and/or acquiring bonus floor area in exchange for providing public benefits, which include low-income housing (defined as affordable to households making less than 80 or 100 percent of Area Median Income depending on tenure) and a long list of on-site public amenities (SMC 23.50.051).

The commercial/industrial bonus provision of Seattle's incentive zoning enables developers to achieve additional floor area ratio (FAR) in exchange for housing and childcare that is affordable to lower-wage workers. The housing and/or childcare can be provided by the developer or a contribution of \$18.75 per bonus square foot for housing and \$3.25 per bonus square foot for childcare facilities may be made to the City for those purposes. This bonus is currently available in high-rise downtown commercial zones and on a few IC-zoned lots in the South Lake Union Urban Center (SMC 23.50.052).

The residential bonus provision of Seattle's incentive zoning enables residential developers to achieve extra floor area above the base height limit when affordable housing is provided. Developers can build affordable housing as part of their development or, in certain zones, make a contribution of approximately \$19 per bonus square foot to the City to fund new affordable housing. The housing is intended to primarily serve Seattle's modest-wage workers. The residential bonus is currently available in midrise and high-rise zones, in certain Downtown zones, and in certain areas of the Dravus neighborhood; this program is not presently available in the South Lake Union neighborhood.

Transferable Development Rights (TDR)

This option helps Seattle maintain a more variable scale of buildings in the South Lake Union neighborhood by allowing density to be moved from one site to another (SMC 23.50.053). Owners of certified TDR sites — ones with low-income housing, an arts facility, or a designated Landmark

building— can sell excess development rights to developers in certain IC zones and use the proceeds for preservation of those priority uses. A TDR program is also in effect in downtown.

Other Strategies Specific to South Lake Union to Achieve Affordable Housing Objectives

Preservation

Structure incentive programs to allow use of TDR to preserve the following older residential buildings (all red brick buildings):

- Grandview Apartments (409 Eastlake East)
- Carolina Court (527 Eastlake North)
- Carlton Apartments (603 Pontius North)
- 502 Minor North
- Carolyn Manor Apartments (1309 Dexter North)
- Jensen Apartments

Employers Promoting Living near Work

Involve employers in identifying strategies to promote living near work.

- Create innovative ways for employers to help develop a “live and work” community.
- Explore ways for South lake Union employers to contribute to housing if employees live in South Lake Union through Transportation Management Plans.

Surplus Sites for Affordable Housing

- Inventory publicly owned property in South Lake Union suitable for development in affordable housing.
- Identify key community properties for particular uses, including affordable housing.

Family Housing

- Encourage affordable family sized homes through employer-developer partnerships and direct City funding.
- Use surplus property to achieve housing objectives not being met through private market, such as family housing.
- Use zoning and design guidelines to encourage ground-related housing in the six block area along 8th Avenue from John to Republican.
- Encourage ground-related housing units with good access to open space around Denny Park and Cascade Park.

Subsidized Housing Resources

- Leverage public funding to preserve existing and create new subsidized housing within South Lake Union.
- Use South Lake Union commercial/industrial bonus payment option funds for new low-income housing in the South Lake Union neighborhood.

3.9.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to housing are anticipated.

Effected Environment

*Environmental
Impacts*

Mitigation Strategies

**Significant
Unavoidable
Adverse Impacts**

Housing
Contents

3.10 AESTHETICS

This section illustrates and describes the physical character of the South Lake Union neighborhood and its immediate surroundings using 3-D computer modeling and photographic simulations. These simulations provide representative views of both the existing neighborhood and each of the proposed Alternatives 1 – 4. Representations include selected viewpoints inside and outside the neighborhood, shadow studies of each alternative and possible light and glare impacts.

HEIGHT, BULK AND SCALE

3.10.1 Affected Environment

Area Context

The South Lake Union neighborhood is immediately north of Seattle's Downtown Urban Center and the Denny Triangle neighborhood, west of the Capitol Hill Urban Center and east of the City's Uptown Urban Center. Each area is urban in character and is typically dominated by mid-rise and high-rise structures (commercial, residential and institutional). The area proximate to the boundary between the Capitol Hill neighborhood and the South Lake Union neighborhood is entirely residential in character with mid-rise multi-family buildings. The Uptown and Queen Anne neighborhoods to the west and northwest are also predominantly residential in the vicinity of the South Lake Union neighborhood with mid-rise multi-family buildings being the most common building type.

Much of the Uptown Urban Center, however, is dominated by the structures and open space of Seattle Center. While not currently part of the South Lake Union neighborhood, the Uptown Triangle (formed by Broad Street, Denny Way and Aurora Avenue) will be physically re-attached to the South Lake Union neighborhood once the SR 99 Bored Tunnel is completed and three east-west streets – John, Thomas and Harris Streets – are again reconnected across Aurora Avenue N. The existing character of the Uptown Triangle is similar to the South Lake Union neighborhood – largely commercial and light industrial, with multi-family residential development interspersed throughout.

Due to their heights, predominant features visible from the South Lake Union neighborhood are located outside the study area and include: Queen Anne Hill, the Space Needle, Capitol Hill and the Downtown Seattle Skyline. An exception is Lake Union, which is partially visible at the north-end of 5 of the neighborhood's 12 north-south streets.

Height, Bulk and Scale1
Viewshed40
Shadows82
Light and Glare90



Single family residences



Multi-family residences



Office development

Neighborhood Character

The visual character varies widely within the South Lake Union neighborhood due to substantial growth and changes in building types and uses in recent decades. Several structures or building features stand out due to their size (or the relative size of adjacent structures), unusual shape or dynamic character, including: the high-rise AGC Building on Lake Union, the former Naval Reserve Center (proposed new location for the Museum of History and Industry [MOHAI]), the consistent red brick buildings that constitute the Fred Hutchinson Cancer Research Center, the complex of new development associated with Amazon.com, the Mirabella Continuing Care Retirement Community (CCRC), the steeple of the Immanuel Lutheran Church and the domes of St. Spiridon Orthodox Cathedral, the glass enclosed REI Climbing Wall, and the digital sign atop the Pemco Insurance Headquarters.



Immanuel Lutheran Church

The variety of these building types demonstrates the changing nature of the study area. The area was predominantly light industrial and commercial in nature for most of the twentieth century with residential uses in several areas – the largest being the Cascade subarea, which occupies the eastern one-third of the study area. The Industrial Commercial (IC) and later Seattle Mixed (SM) zoning has accommodated a wide variety of commercial and light industrial uses, as well as continued multi-family residential development. Numerous underdeveloped and vacant parcels have buffered land uses from each other and kept the population density (day and night) at relatively low levels. This pattern began to change after the Seattle Commons initiative in the 1990s, when development attention turned toward this neighborhood.

Interwoven through the South Lake Union neighborhood, but largely in its eastern half, are a number of older brick structures that serve as one of the neighborhood's defining features. These structures are a combination of industrial and residential buildings from the first half of the twentieth century. Some, but not all, of these buildings are designated Seattle Landmarks (see Section 3.11). The largest examples include the former Ford Motor Company Assembly Plant (now Shurgard Storage) and the multiple commercial laundry facilities (e.g., Troy Laundry, New Richmond Laundry [now incorporated into Alley 24] and the Supply Laundry, which features a tall brick smokestack). While visible only on the streets they face, smaller brick buildings, such as The Webster and Van Vorst Buildings, add to the character of their immediate surroundings and the neighborhood as a whole.

Incremental growth over time has resulted in the emergence of multiple neighborhood epicenters. These epicenters tend to be oriented around

parks or boulevards. The most established is the Cascade subarea, which is distinguished by a predominantly residential character with Cascade Playground as its centerpiece. A number of half-block apartment buildings have also contributed to the neighborhood's emerging character, including the Alcyone, the Neptune, the Cairns and Union Bay Apartments.

The South Lake Union waterfront, separated from the rest of the neighborhood by heavy traffic on Mercer and Valley Streets, is dominated by restaurants and public amenities, such as the new Lake Union Park, the non-profit Center for Wooden Boats and in the immediate future MOHAI; as well as a passenger terminal for float plane operations.

A largely new commercial and institutional core has emerged along (or proximate to) the axis of Westlake Avenue. Two multi-phase projects currently under construction in the study area – the multi-block office campuses for Amazon.com and the University of Washington's School of Medicine's expanding biotechnology and medical research facility – are already altering the built character of this portion of the South Lake Union neighborhood. The largest complex under construction in the vicinity of the South Lake Union neighborhood is the Bill and Melinda Gates Foundation facility in the Uptown Triangle.

Height, Bulk and Scale

Height, bulk and scale relate to the size of buildings and their relationship to neighboring structures. The City's SEPA policies recognize that physical characteristics of buildings affect the character of neighborhoods. These policies also recognize a need to address building height, bulk and scale as a means to achieve appropriate transition from one zoning district to another.

There is currently a broad range of building types and sizes in the South Lake Union neighborhood – from single-family residences, churches and one- and two-story commercial and/or light industrial (fabrication and storage) buildings, multi-block biotech campuses, and high-rise office towers. It is a neighborhood in transition where the differences between the new and old, small and large, intimate and public, are noticeable.

With regard to the surrounding neighborhoods, there are significant differences in allowed height. Development standards in the Denny Triangle to the south allow for buildings up to 400 feet in height. Properties in the Uptown/Queen Anne area that border the South Lake Union neighborhood are zoned to allow increasingly tall structures from north to south, starting with 30 foot structures in the L-3 zones, rising to

65 foot structures in the C1-65 and SM-65 zones, and 85 foot structures in the SM 85 zones that border on Denny Way. Properties on Capitol Hill that face the study area are zoned L-3 at the north-end and MR on the south, which limits building height to 30 feet and 75 feet respectively.

The height of Queen Anne and Capitol Hills can provide territorial views for existing low-rise and mid-rise buildings – overlooking existing buildings in the South Lake Union neighborhood. This is particularly true of the buildings on Capitol Hill, which are separated from the study area by I 5.

Aside from Seattle Center, much of the Uptown Urban Center is similar in use, texture and character to the South Lake Union neighborhood. As noted previously, Seattle Center is an assemblage of rather bulky, low-rise structures – with the important exception of the iconic Space Needle. The SR 99 right-of-way has historically provided a clear separation between the South Lake Union and the Uptown neighborhoods. However, as noted earlier, plans associated with the SR 99 Bored Tunnel would involve reconnection of the east-west John, Thomas and Harrison Streets.

Focus Areas¹

8th Avenue North Corridor

This area is currently only lightly developed with a broad range of uses and building types, including Denny Park Lutheran Church and the Unity Church of Truth, which anchor either side of 8th Avenue N where it terminates at Denny Park. Other than one two-story and another six-story apartment building midway along this corridor, 8th Avenue N is edged with surface parking lots and two-story commercial or light industrial buildings. Mature street trees line both sides of the corridor for most of its length.



8th Avenue N

Fairview Avenue Corridor

While the blocks and half-blocks that constitute the Fairview Avenue Corridor have experienced recent development at either end, for the most part, this corridor remains largely underdeveloped. There is currently a broad mix of uses along the corridor, starting at the north-end with biomedical uses associated with the Fred Hutchinson Cancer Research Center campus and the large Shurgard storage facility and anchored at



Seattle Times building at John Street and Fairview Avenue N

¹ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

the south-end by the Mirabella Continuing Care Retirement Community (CCRC) and buildings associated with the Seattle Times. In between is a mix of low-rise commercial structures with surface parking – including restaurants, professional offices and retail services. Mature street trees line both sides of this corridor for most of its length.

Valley/Mercer Blocks

The four east-west blocks between Valley and Mercer Streets, Westlake and Fairview Avenues are currently vacant in conjunction with the City's Mercer Corridor Project, which is under construction.

3.10.2 Environmental Impacts

This section describes changes to the aesthetic character of the built environment that could occur in conjunction with any one of the four EIS alternatives. The EIS alternatives prescribe potential zoning envelopes, but do not locate, size or architecturally define particular buildings. Therefore, for purposes of this EIS and to provide a worst-case – yet realistic scenarios – assumptions have been formulated to allow for analysis of potential aesthetic impacts. These assumptions strive to be realistic in terms of development footprints, tower dimensions and orientations, but also conservative in terms of potential build-out on each respective site.

The assumptions include the following:

- All undeveloped and under-developed sites will redevelop in the future. Under-developed sites are defined as those that contain development square footage that is 40 percent or less than currently allowed by zoning;
- Property owners with sites larger than 22,000 sf will use available zoning incentives to build the maximum gross building area allowable, while sites with less than 22,000 sf will develop consistent with underlying zoning;
- Where individual parcels with separate ownership are contiguous and can be assembled to create a lot size of 22,000 sf or greater, a developer or property owner will do so in order to build the maximum gross building area allowable;

*Affected
Environment*
**Environmental
Impacts**
*Mitigation
Strategies*
*Significant
Unavoidable
Adverse Impacts*

Height, Bulk and Scale

- Since they will not be constrained by Floor Area Ratio (FAR) ² restrictions, the towers of new residential buildings will be built to the maximum height and footprint allowable;
- Commercial towers will be built to the maximum FAR available and footprint allowable;
- Commercial and residential projects will maximize the size and height of their podiums;
- On-site structured parking will be provided half above grade and half below grade.
- Since contemporary office buildings generally have footprints of 20,000 sf or greater, lots under 20,000 sf will generally be used for residential development;
- A mix of commercial and residential projects are expected in the future, but since residential development will typically be allowed to build greater total square footage than commercial development (which is restricted by FAR maximums), more residential than commercial development is shown in the alternatives;
- Future development on lots within the defined flight path of the Lake Union Seaplane Airport will be limited by the lowest elevation indicated in the *FAR Part 77 Study*,³ but no additional height buffer⁴ has been included in the studies for purpose of this analysis (see **Figure 3.10-1**); and
- New public open space, although a likely incentive for accessing maximum FAR, is not shown because the amount and location of open space is unknown and would be speculative.

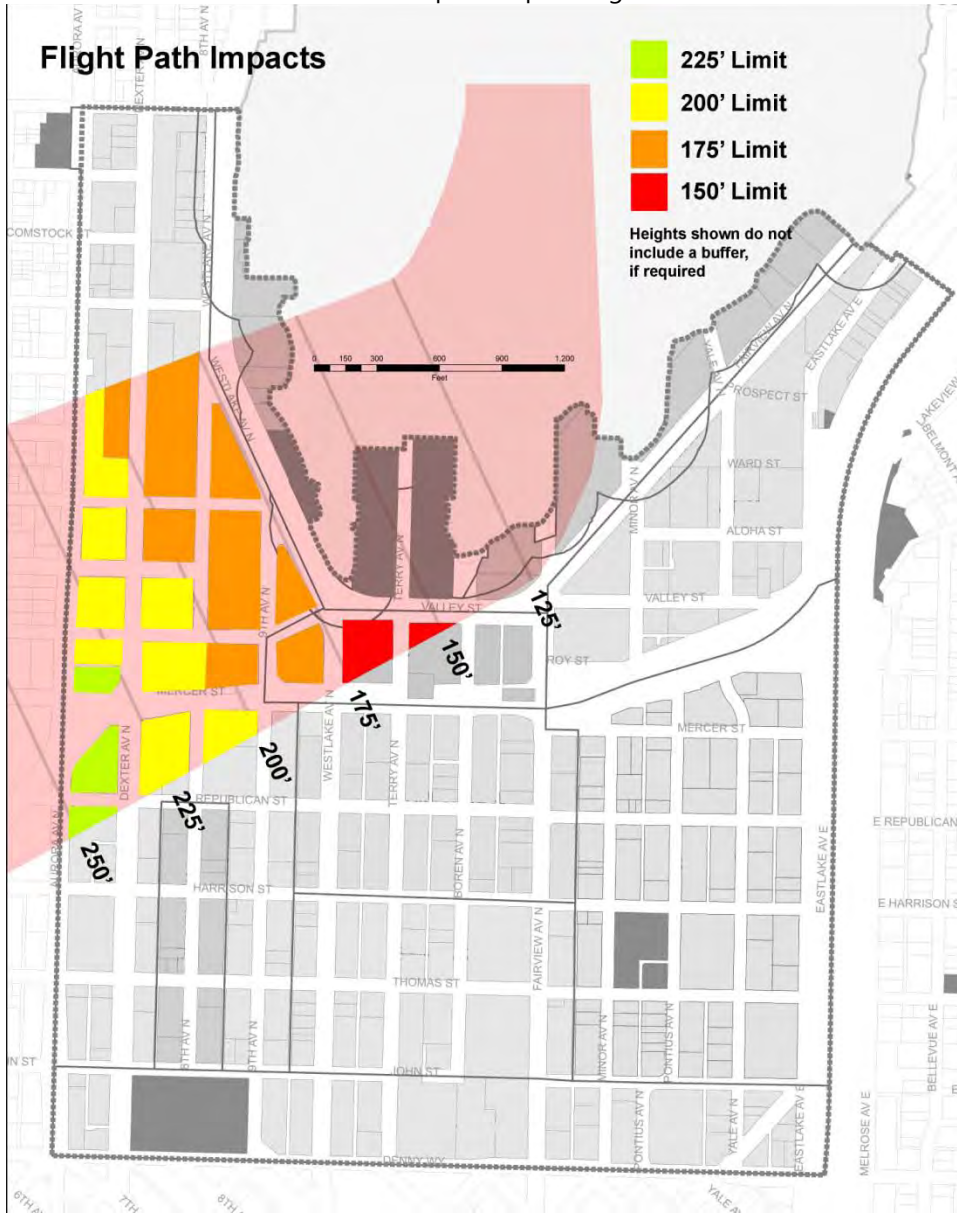
The Preliminary Draft of the "South Lake Urban Design Framework" document being developed by the City of Seattle has informed the study for locations of proposed uses.

² "Floor area ratio" ... (FAR is) ... a ratio expressing the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure is, or structures are, located..." (23.84A.012).

³ Washington State Department of Transportation, Aviation Division. Letter from Carter Timmerman, Aviation Planner. February 3, 2011.

⁴ This is a vertical separation between building heights allowed by zoning and the floor or lowest height of the flight path within each block.

Figure 3.10-1
Lake Union Seaport Airport Flight Path



Source: Kenmore Air, NBBJ, 2010.

Impacts Common to All Alternatives

All the alternatives assume that every currently undeveloped or under-developed site, including surface parking lots, is built out to its maximum potential using the prescribed land use criteria. Therefore, all alternatives envision a significantly more dense urban environment.

Further, it should be noted that the assumed development pattern would result in employment and residential development that would exceed the estimated 2031 South Lake Union growth target and meet the estimated

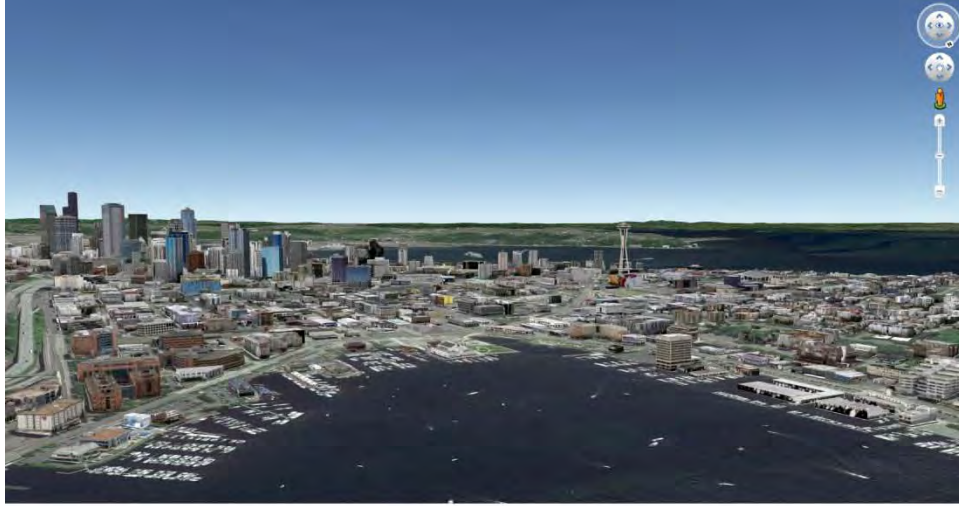
capacity described in Chapter 2 of this EIS (see tables 2-1 and 2-2). From a cumulative perspective, it is unlikely that full build-out would ever occur under any scenario. However, by assuming a full build-out scenario, this aesthetics analysis considers a development pattern under each alternative that would result in the greatest possible impact on a neighborhood-wide basis.

Actual development and associated visual impacts would likely be less than those shown in this EIS. For comparative purposes, massing studies are included for both the full build-out version and one associated with the 2031 growth targets; however, the view analyses and shadow studies were all performed only using the full-build-out version.

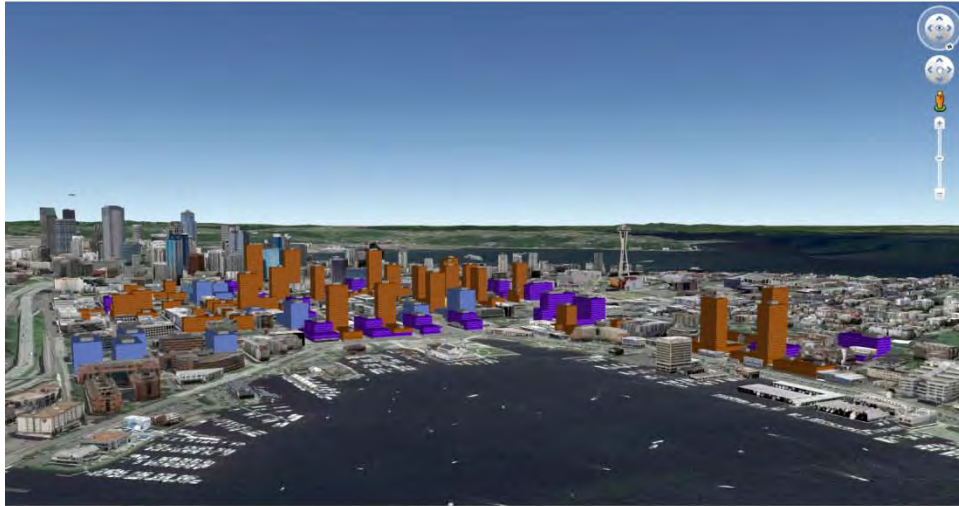
Figures 3.10-2 through 3.10-9 illustrate multiple views of each developed alternative over the South Lake Union neighborhood. Two views are typically shown for each alternative, one is a birds-eye view looking southwest and the other approximates the view from the top of the hill in Gas Works Park at the north end of Lake Union.

In the views for Alternatives 1 and 2, the top view shows the existing condition, the middle view portrays a 2031 growth target version and the bottom view a full build-out version. Since Alternatives 3 and 4 do not fully achieve the growth targets (times 1.25), the top view is of existing conditions and the bottom view portrays full build-out.

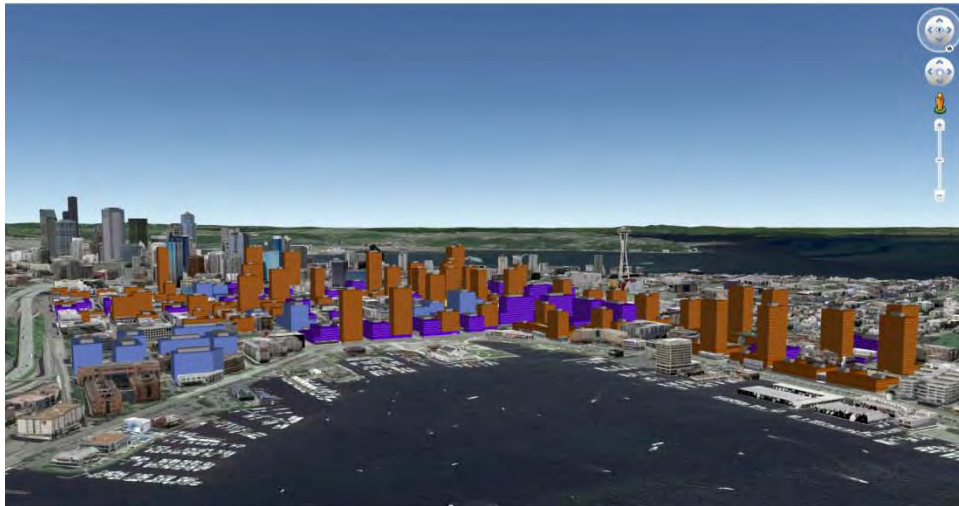
Figure 3.10-2
Birds-eye View – Alternative 1



EXISTING



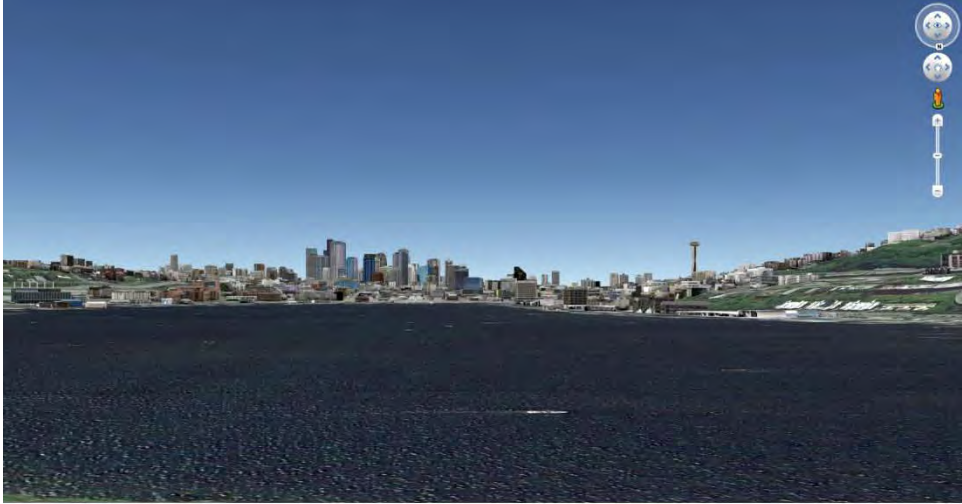
2031



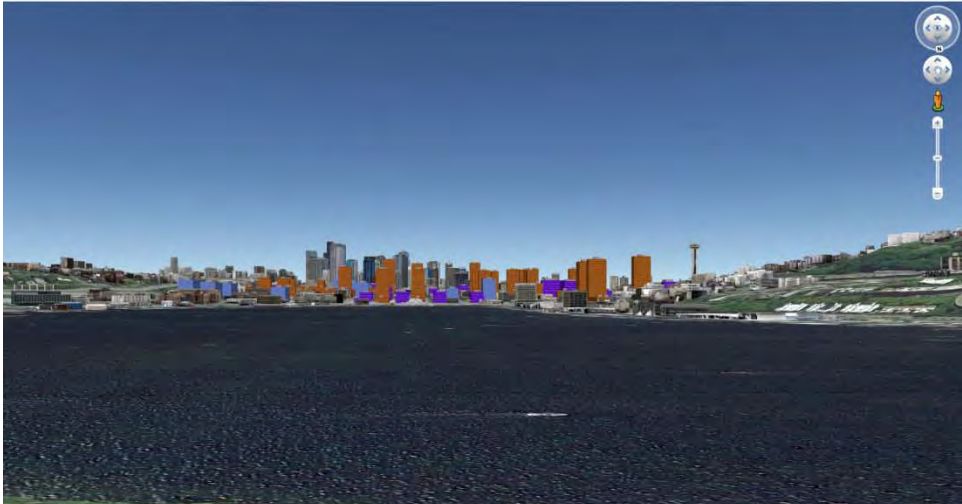
FULL BUILD-OUT

Source: NBBJ, 2010.

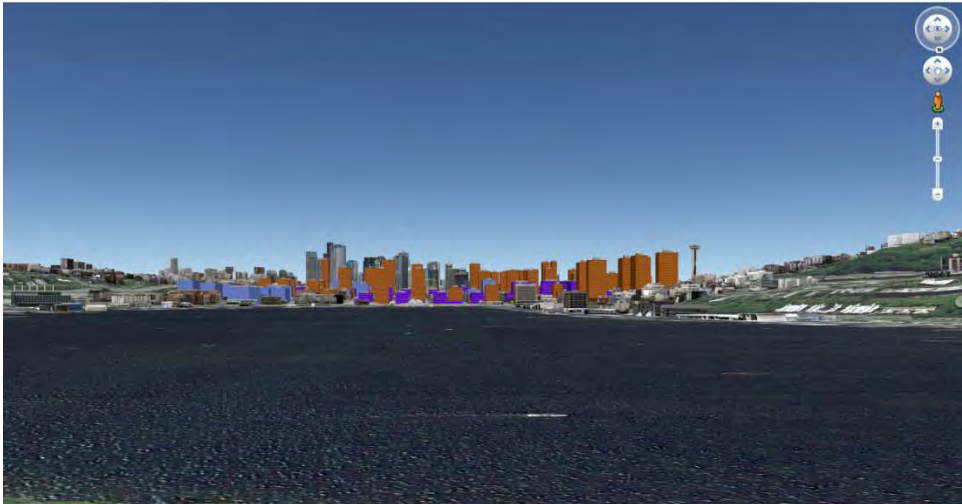
Figure 3.10-3
Gasworks Park View – Alternative 1



EXISTING



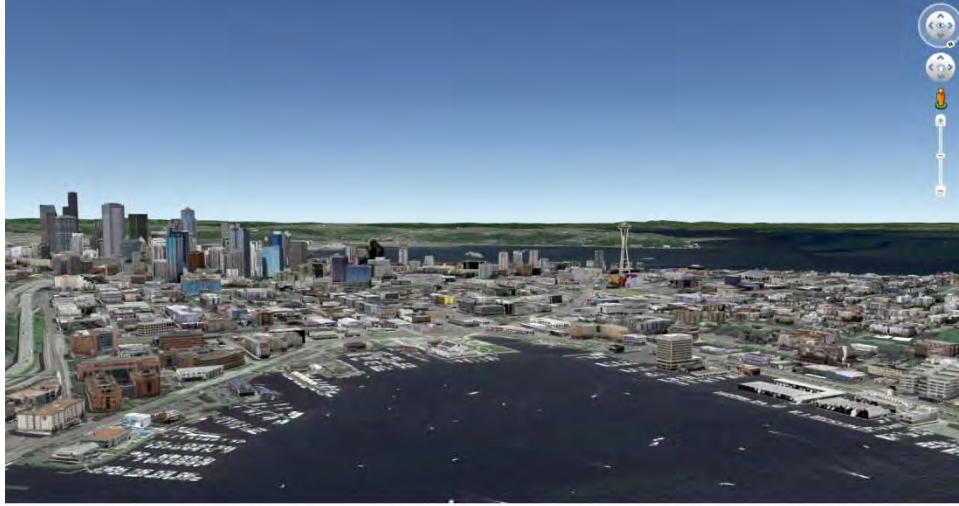
2031



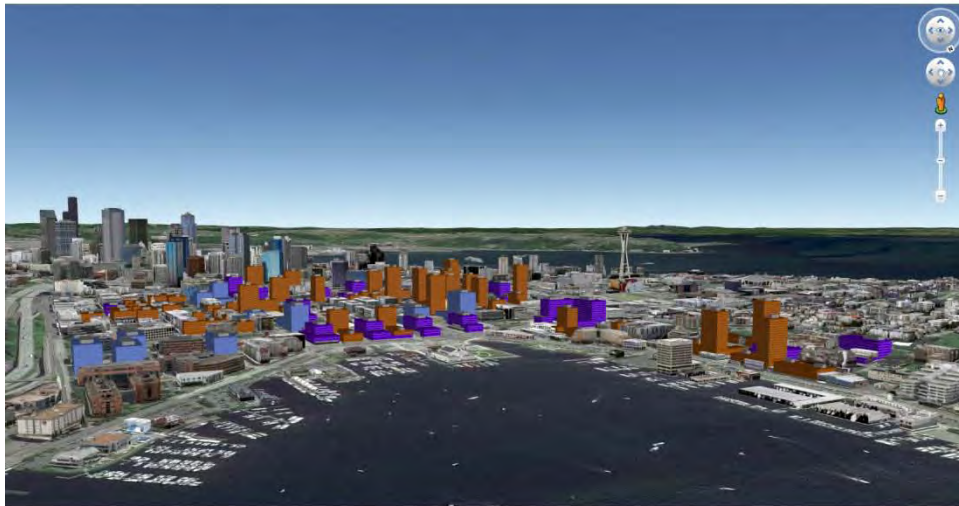
FULL BUILD-OUT

Source: NBBJ, 2010.

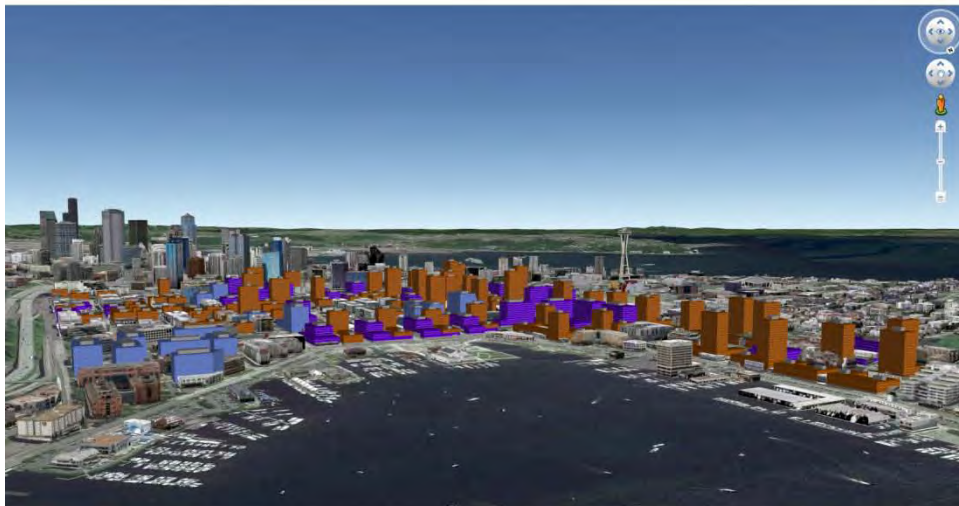
Figure 3.10-4
Birds-eye View – Alternative 2



EXISTING



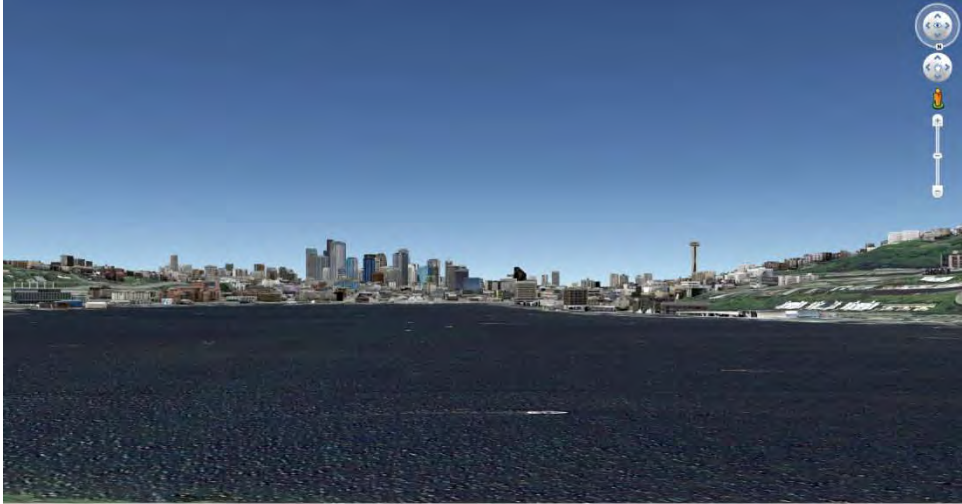
2031



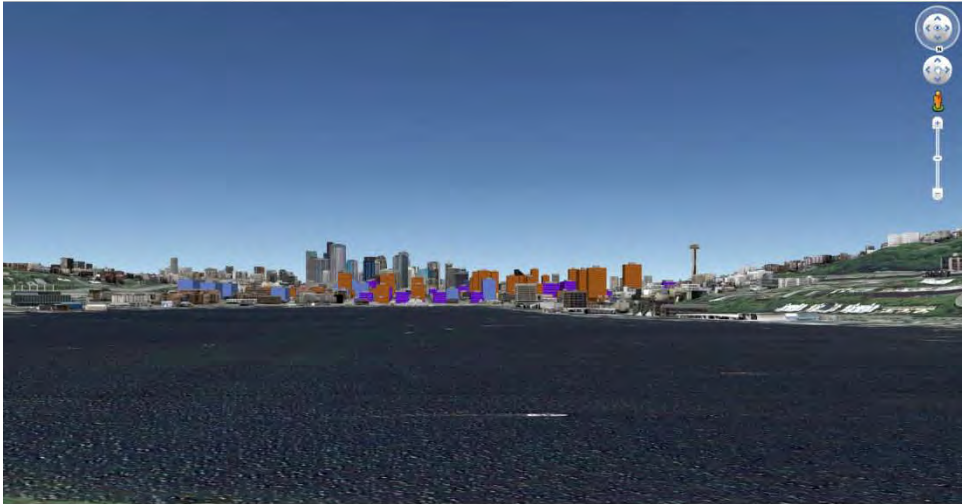
FULL BUILD-OUT

Source: NBBJ, 2010.

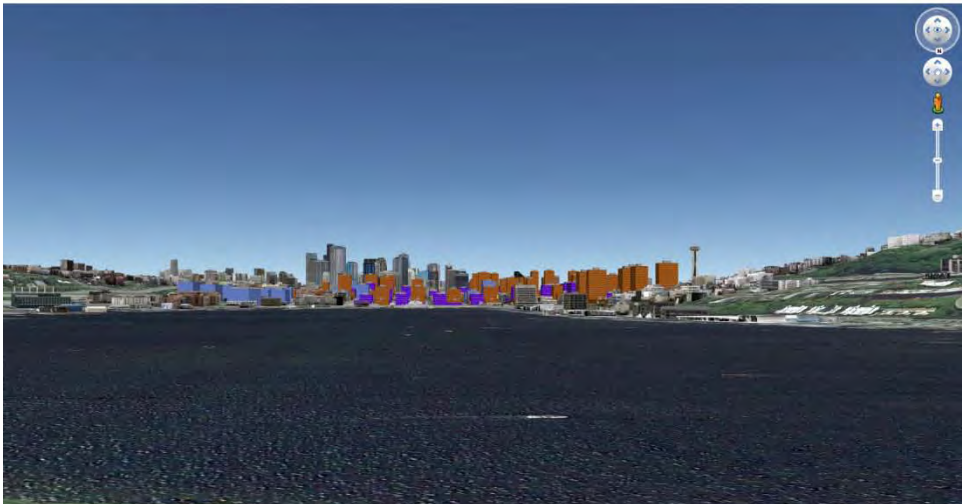
Figure 3.10-5
Gasworks Park View – Alternative 2



EXISTING



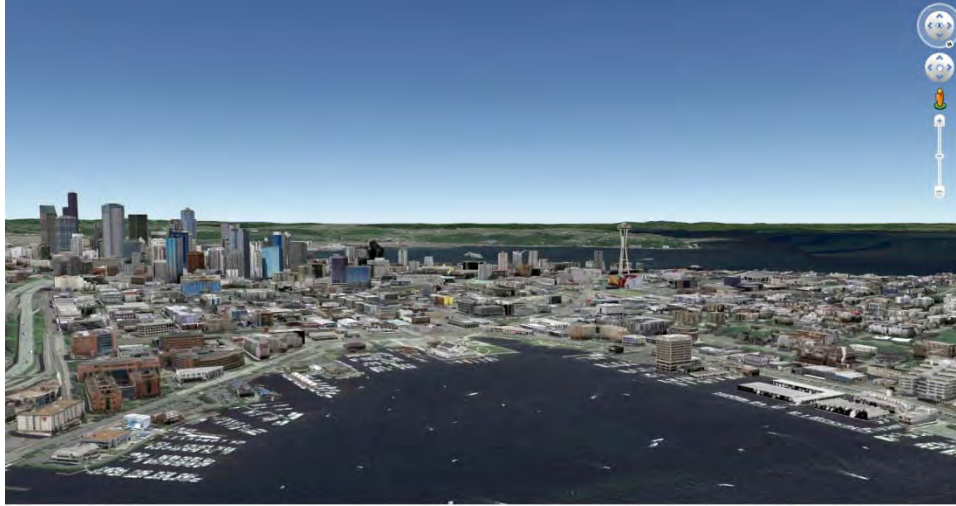
2031



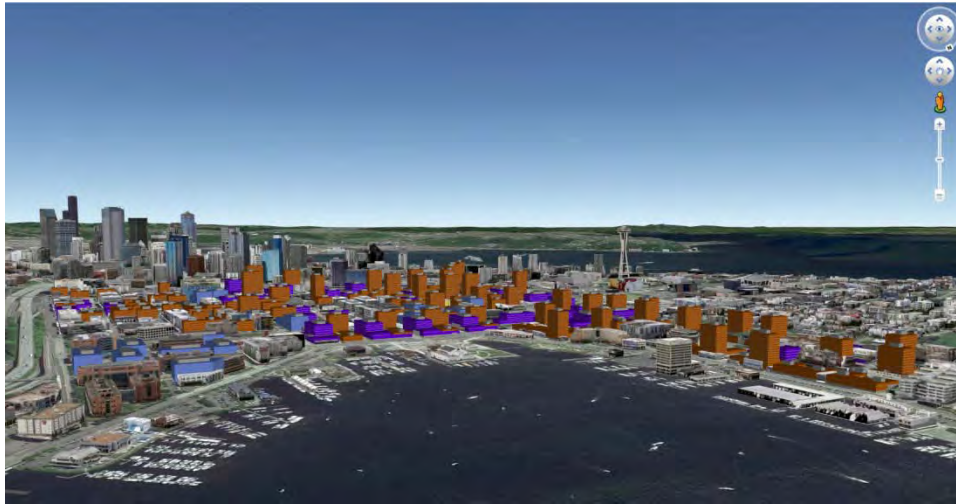
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.10-6
Birds-eye View – Alternative 3



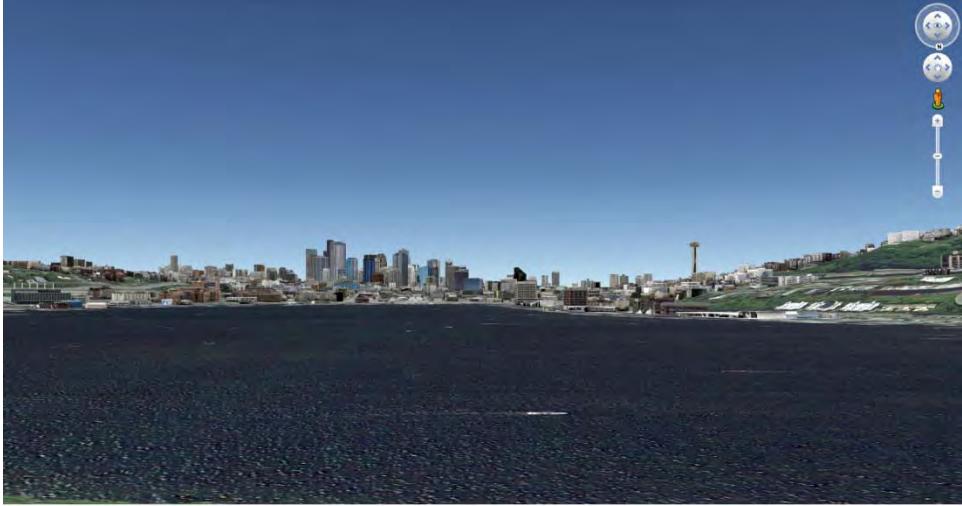
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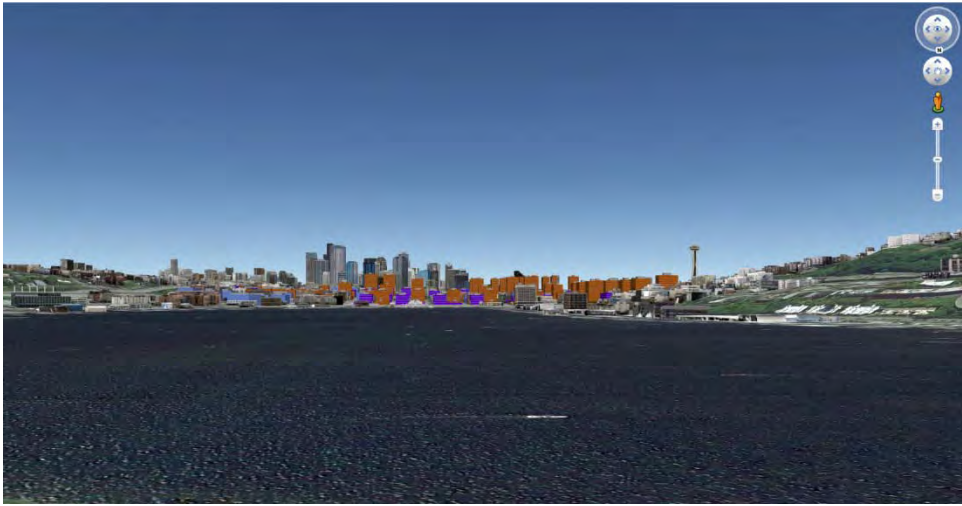
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.10-7
Gasworks Park View – Alternative 3



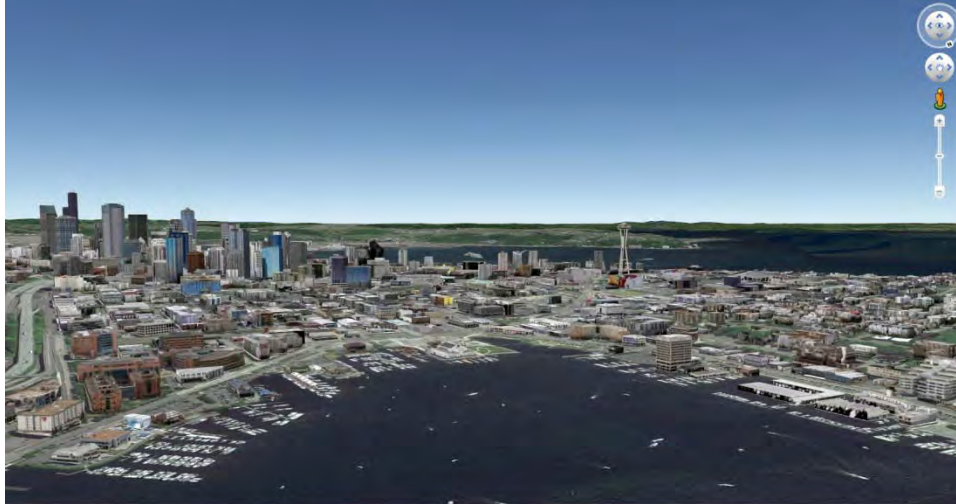
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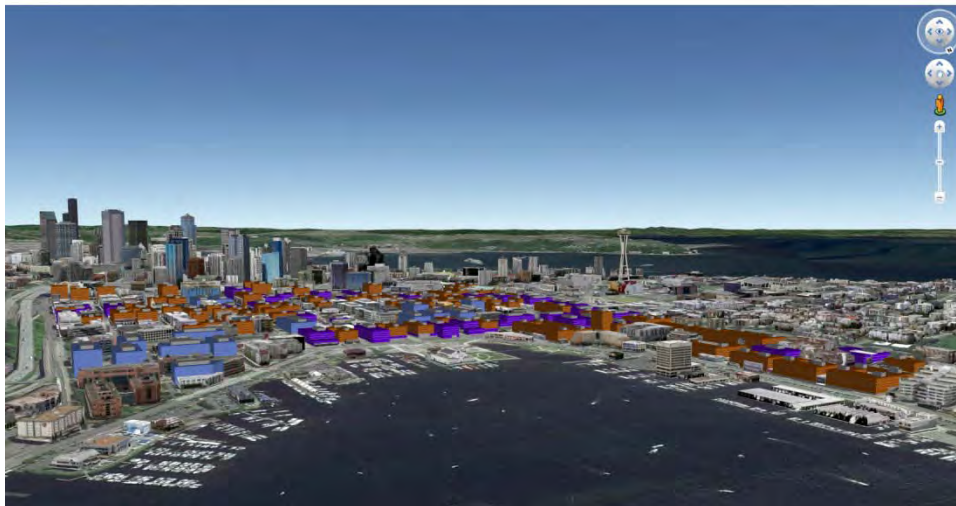
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.10-8
Birds-eye View – Alternative 4



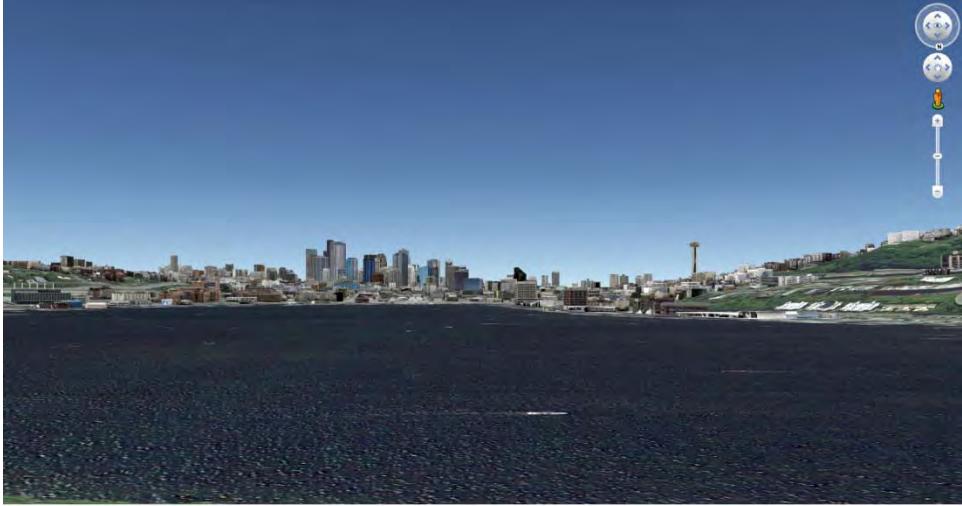
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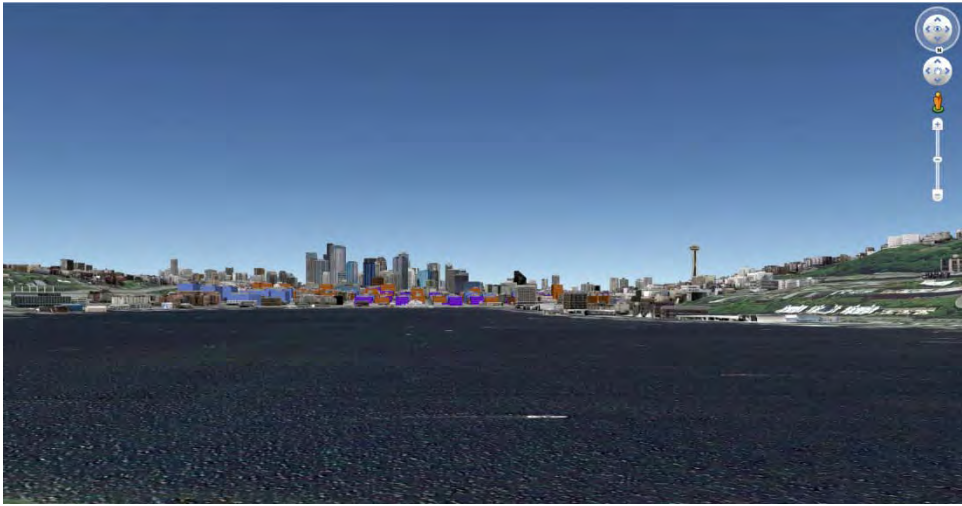
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.10-9
Gasworks Park View – Alternative 4



EXISTING



FULL BUILD-OUT

Source: NBBJ, 2010.

Area Context

The difference between Alternatives 1 and 2 is largely a matter of scale. The lines between height zones are drawn almost identically to those in Alternative 1, but building heights are reduced through much of the neighborhood.

As infill occurs in both the Denny Triangle and the South Lake Union neighborhoods, the greatest aesthetic difference resulting from the development under the first three alternatives – to greater or lesser degrees determined by the allowed height and density of development – will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. Although higher in elevation, territorial views of residents in the surrounding neighborhoods could be affected by new high-rise buildings within the study area. This impact, however, would not occur relative to development under Alternative 4 – No Action.

Neighborhood Character

All alternatives contemplate a significantly greater amount of development, with vacant lots, surface parking lots and under-utilized properties being developed to their full economic potential. Greater density of buildings, residents and employees will create a more urban environment with a consequent increase in street-front retail, employment opportunities and housing options, as well as pedestrian and vehicular traffic.

Height, Bulk and Scale

Alternatives 1 through 3 propose a relatively new building typology for the South Lake Union neighborhood. The new building type would feature a high-rise tower with a limited floor plate area positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line.

The heights of the towers would vary with the alternatives – potentially ranging from 125 feet to 240 feet for commercial buildings and from 125 feet to 400 feet for residential buildings. Floor plate sizes of towers would be limited to 24,000 sf above the podium for commercial use and an average of 10,500 sf (maximum of 11,500 sf) for residential development. Thus, although the same building typology would apply to both commercial and residential projects, the residential towers would typically be taller and narrower compared to the commercial towers.

The FAR limitation on commercial buildings would reinforce the physical difference between commercial and residential projects. Not being

constrained by maximum FAR restrictions, residential development would always have the potential to build to the maximum allowed building height for the use, but commercial development would be restricted by FAR and typically not rise to the maximum allowable building height.

Podiums at the base of the towers would provide the towers with a visual base and create a clear edge along the street.

To a greater or lesser degree, all of the alternatives for the South Lake Union neighborhood would gradually transition down in height from the south boundary of the neighborhood toward Lake Union on the north. However, Alternative 1 would allow buildings of similar height to the maximum allowed in the Denny Triangle – up to 400 feet – for one block of depth along its border (Denny Way) with the Denny Triangle before decreasing to 300 feet at John Street.

Tower bulk (length and width) is not expected to create significant impacts given the restrictions on floor plate size in the alternatives using incentive zoning. Similarly, the bulk of podiums created under incentive zoning would not be expected to be impactful given the restrictions on their height – with the possible exception of the double length blocks along Dexter Avenue N between Aloha and Galer Streets where the street grid is interrupted. In addition, it should be noted that podiums are not required and towers may be developed without a podium base.

While for purposes of this EIS maximum development has been assumed, it is possible that some property owners may not choose to maximize their full development potential. In addition, owners with properties of less than 22,000 sf would still have the option to develop projects to the standards of the underlying zoning. The typology for these buildings is well established within the neighborhood and includes (in plan view) simple rectangles, L-shapes and U- shapes that fill out their zoning envelope from property line to property line and to the maximum height allowed by zoning code, typically ranging between 65 and 85 feet (exceptions being a narrow zone along Denny Way that has a 125 foot height limit and another between Mercer and Valley that is restricted to 40 feet).

Focus Areas

The impacts of potential development in the Focus Areas are shown in conceptual massing studies for each alternative. The orientation of each of these views is described and depicted by computer modeling relative to each alternative (see Focus Area discussion within each alternative later in this section). The depictions show massing of the buildings relative to

the street width and surrounding context, but do not attempt to show designs for the individual building or streetscapes.

Alternative 1

Of the development alternatives, full development under Alternative 1 could have the greatest impact on aesthetics in that this alternative would permit the greatest building heights and could result in the greatest increase in development density. The difference between this alternative and Alternative 2, however, is largely a matter of scale.

Area Context

The greatest difference to the surrounding context envisioned in Alternative 1 would be the apparent visual expansion of the Downtown Seattle skyline to the shore of Lake Union due to the potential for new high-rise construction.

Neighborhood Character

As previously discussed, a greater density of buildings, residents and employees would create a more urban environment with consequently an increase in street-front retail, employment and housing, as well as pedestrian and vehicular access. Over time, it is anticipated that small-scale buildings would redevelop to the larger building typology permitted under the proposed zoning. Relative to the other alternatives, the South Lake Union neighborhood would likely experience the greatest change in character as a result of Alternative 1, although the difference between Alternatives 1 and 2 is incremental in nature.

Similar to Alternative 2, Alternative 1 would encourage a future residential character of the 8th Avenue corridor, through a greater emphasis on residential development compared to commercial. In this corridor, residential building heights allowed at up to 300 feet, while commercial uses in residential buildings are limited to 20 feet in height and free-standing commercial buildings are limited to a maximum of 85 feet.

Alternative 1 is the only alternative that would change the existing Seattle Mixed Residential (SMR) zoning designation in the Cascade neighborhood to Seattle Mixed (SM) and allow commercial building heights to increase from 55 to 85 feet, with potential for greater increases through use of incentive zoning. Compared to the other alternatives, this change could allow for the greatest increase in non-residential floor area and significantly impact the existing residential character of the Cascade neighborhood.

Height, Bulk and Scale

Alternative 1 would allow the greatest building heights of the alternatives under consideration – potentially ranging from 85 feet for commercial buildings in the Cascade area and within the Mercer Blocks to 240 feet for much of rest of the study area, and ranging from 160 feet for residential buildings in the Cascade subarea up to 400 feet along Denny Way. This alternative would allow future buildings that may be more than twice the height than is currently allowed by zoning in the Cascade area and three or more times the allowed height in the rest of the South Lake Union neighborhood.

The impact of these differentials in zoning may be an abrupt juxtaposition of building heights as sites within the neighborhood redevelop. Potential impacts associated with height, bulk and scale differences between new and existing development could occur in the following situations.

- Areas where neighborhood character is more established and consistent (e.g., the Cascade area). Until recently, high-rise buildings were a rarity in the South Lake Union neighborhood and non-existent in the Cascade area. Alternative 1 would allow for substantial change in the physical scale of individual buildings, create greater differential in the neighborhood skyline and reduce the visual presence of older structures – including Landmark structures.
- Places of transition with neighboring low and mid-rise neighborhoods, such as Uptown. The border with the Uptown Urban Center has numerous available sites for high-rise towers, as well as many additional sites along Dexter Avenue N and 8th Avenue N. The impact of this scale differential could be substantial at full build-out. Given the anticipated re-connection of the Uptown and South Lake Union neighborhoods across Aurora Avenue N, it may be appropriate to address this potential issue by addressing the zoning of the Uptown Triangle and South Lake Union neighborhoods together rather than independently.
- Areas now only very lightly developed, such as the 8th Avenue Corridor and the Dexter Avenue Corridor north of Mercer Street These are areas where the density of new high-rises, if fully developed, could create a potential wall of building to the neighbors. This concern also applies to the Valley/Mercer Blocks, but to a lesser degree. Towers within the Valley/Mercer Blocks would have less impact due to limitation on the number of towers imposed, as a result of the requirement to assemble 60,000 sf of site area for each potential tower (although the relatively tall podium

heights of up to 85 feet permitted by Alternative 1 in the Valley/Mercer Blocks could contribute to a more bulky appearance in this area). This impact could be mitigated by a requirement to limit building height within the flight path of the Lake Union Seaplane Airport, which restricts building height to 150 feet (or less if a height buffer is mandated). This restriction could severely constrain building height on two of the four blocks in this area (see **Figure 3.10-1**).

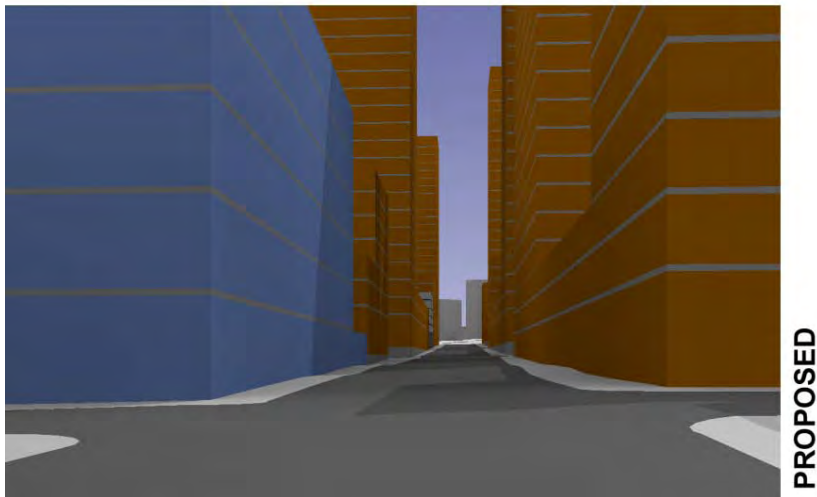
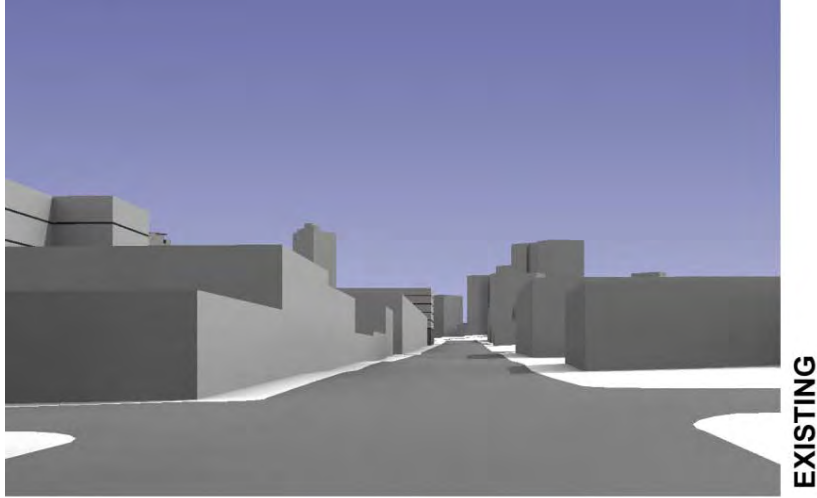
Focus Areas

Alternative 1 would allow the greatest degree of development and could potentially result in the greatest amount of change within the designated Focus Areas. Such changes would be particularly noticeable within the Fairview and 8th Avenue Corridors

8th Avenue Corridor

Figure 3.10-10 is a computer-generated graphic depicting the existing, as well as a developed street-level view associated with Alternative 1 along 8th Avenue N from the intersection at Republican Street. This view looks south toward Denny Park. A concentration of multi-family residential development that could be expected to occur on blocks facing onto 8th Avenue N could result in a neighborhood with one or two new towers on every block between Denny Way and Republican Street. Lower podium heights and the retention of the mature street trees that currently line both sides of this corridor could partially mitigate the building heights. Furthermore, there is a natural association between the concentration of residential buildings in this corridor with the existing open space and amenities provided by a renovated Denny Park.

Figure 3.10-10
Street-Level View: Eighth looking South – Alternative 1

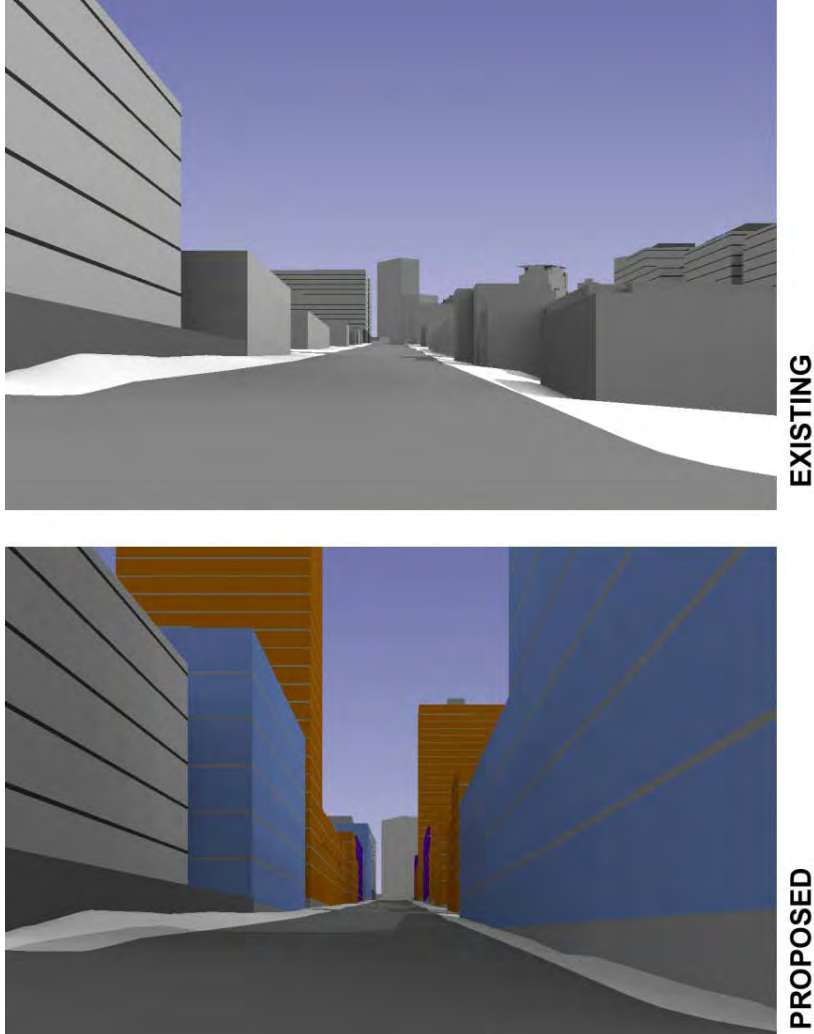


Source: NBBJ, 2010.

Fairview Avenue Corridor

Figure 3.10-11 is a computer-generated graphic depicting the existing and developed view (Alternative 1) along Fairview Avenue N from the intersection with the Mercer Street ramp to I-5. This view looks south toward Downtown Seattle. The anticipated mix of new residential towers with significantly shorter commercial structures, together with the retention of some existing (including landmark) structures would result in a neighborhood character with a great variety of building types and heights.

Figure 3.10-11
Street-Level View: Fairview Avenue N – Alternative 1



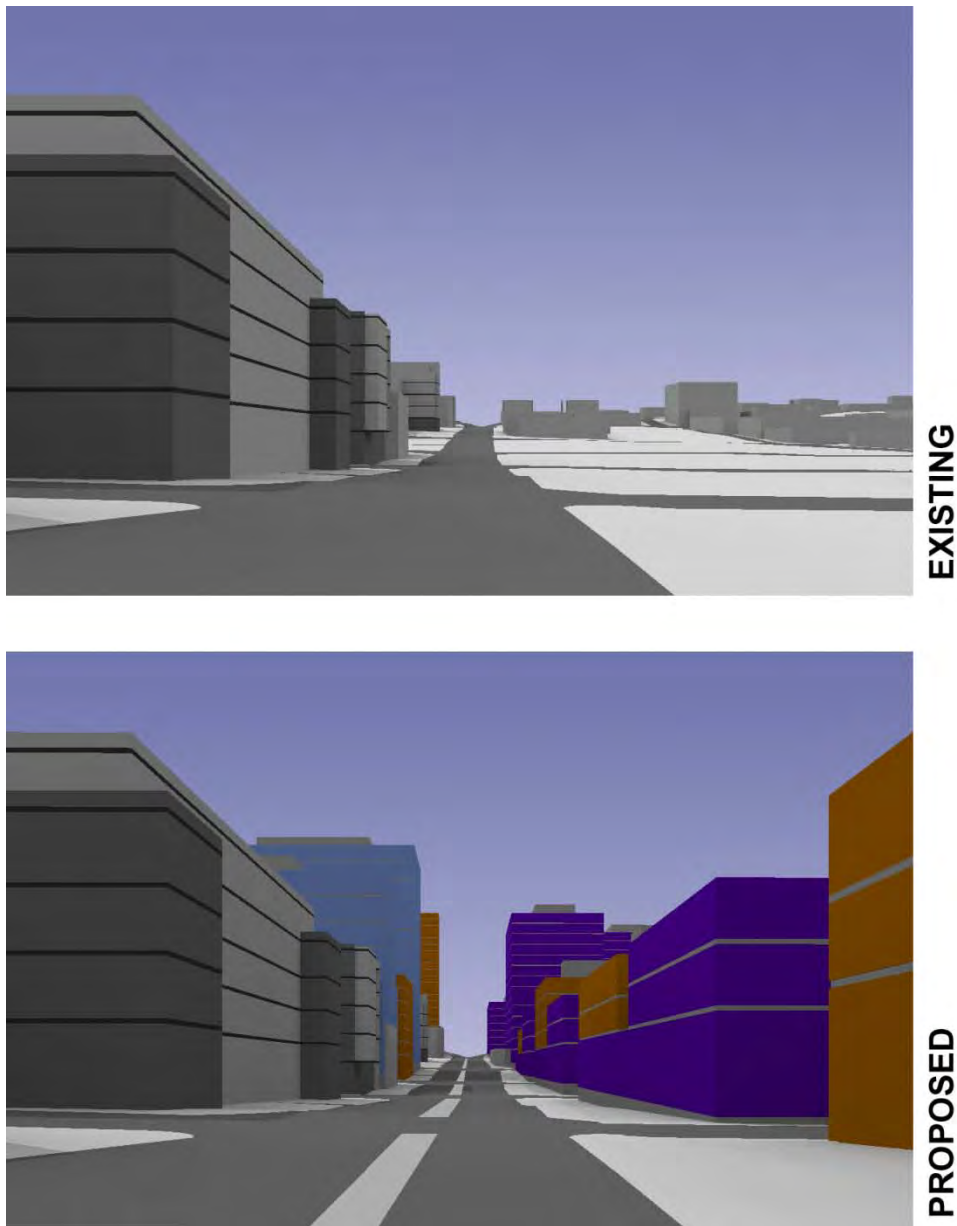
Source: NBBJ, 2010.

Valley/Mercer Blocks

Figure 3.10-12 is a computer-generated graphic depicting the existing and developed view (Alternative 1) along Mercer Street from the intersection of Mercer and Boren Avenue N. The view associated with this corridor looks west toward Uptown and Queen Anne along Mercer Street. The Valley/Mercer Blocks are on the right in this view. Alternative 1 would produce less impact on the Mercer Corridor and the Valley/Mercer Blocks than on the other two Focus Areas. This is due not only to the limit of a single tower in each block on the north-side of Mercer, but also the reduction in tower height due to the air corridor study associated with the Lake Union Seaplane Airport, which would affect three of the Valley/Mercer Blocks (see **Figure 3.10-1**). Improvement of the Mercer Way corridor (presently under construction) is expected to provide an

enhanced pedestrian environment and would be important to mitigating the scale of future development associated with this alternative. In particular, the addition of a new median with a row of street trees and public art should both improve conditions for all forms of mobility, but also add foreground elements that would mitigate the scale of surrounding buildings. New development also has the potential to create a synergistic relationship with the new Lake Union Park that could benefit both the public and private realms.

Figure 3.10-12
Street-Level View: Mercer Street – Alternative 1



Source: NBBJ, 2010.

Alternative 2

The difference between Alternatives 1 and 2 is largely incremental and a matter of scale.

Area Context

The greatest difference to the surrounding context envisioned in Alternative 2, like Alternative 1, will be the visual expansion of the Seattle City skyline to the shores of Lake Union as a direct consequence of new high-rise construction. There will, however, be a more noticeable height change from neighborhoods to the south and the South Lake Union neighborhood due to the reduction in allowable building heights across Denny Way, from 400 feet in the Triangle to 240 feet in South Lake Union.

Also like the first alternative, Alternative 2 creates an abrupt transition with the Uptown neighborhood (see “Height, Bulk and Scale” below) and impacts some views from neighboring communities (see “Viewshed” later in this Chapter).

Neighborhood Character

Generally speaking, the South Lake Union neighborhood would become more urban in its physical appearance, but maintain a distinct character commensurate with its unique community of uses and the retention of its historic structures. Since this alternative would retain existing zoning in the Cascade area, Cascade would continue to stand apart with its combination of low-rise and mid-rise buildings.

As noted in Alternative 1, the 8th Avenue Corridor and Valley/Mercer Blocks Focus Areas would likely be those areas within the study area that would experience the greatest change. Both have an opportunity to create a synergistic relationship with their neighboring parks – a renovated historic Denny Park at the south end of the 8th Avenue Corridor and the new Lake Union Park adjacent the Valley/Mercer Blocks.

Similar to Alternative 1, Alternative 2 emphasizes residential development in the 8th Avenue corridor, with commercial building heights limited to 20 feet and residential development permitted at building heights of up to 240 feet. In contrast to Alternative 1, Alternative 2 would maintain the existing SMR zoning designation in the Cascade neighborhood.

Height, Bulk and Scale

In terms of height, bulk and scale, Alternative 2 would have similar, but fewer, impacts as compared to Alternative 1.

Outside of the Cascade area, building heights could potentially range from 160 feet for residential buildings on the Valley/Mercer Blocks up to 300 feet along the western border with Uptown. Although there are significant differences in the allowed maximum height for commercial buildings between alternatives, the FAR limitation would be the controlling factor and the commercial building envelopes in Alternative 2 would be largely unchanged compared to Alternative 1, except for some size reduction (approximately one floor) in the Cascade area. As noted, the Cascade area would retain its existing zoning.

The tallest buildings anticipated by Alternative 2 would be 300-foot residential towers that are proposed for the portion the study area that borders the Uptown Urban Center. Therefore, potential impacts described in Alternative 1 under 'Height, Bulk and Scale' would also apply to Alternative 2 relative to the abrupt scale transition between the two neighborhoods. As noted in Alternative 1, one approach may be to address this potential issue by addressing the zoning of the two Urban Centers together rather than independently.

Unlike Alternative 1, podium heights associated with Alternative 2 would not vary with street width, but would remain relatively consistent – typically 45 feet. This would translate to a reduced building profile at the street edge. In turn, the scale of the 'urban room' formed by street and podium – and its sense of enclosure – would also be commensurately reduced.

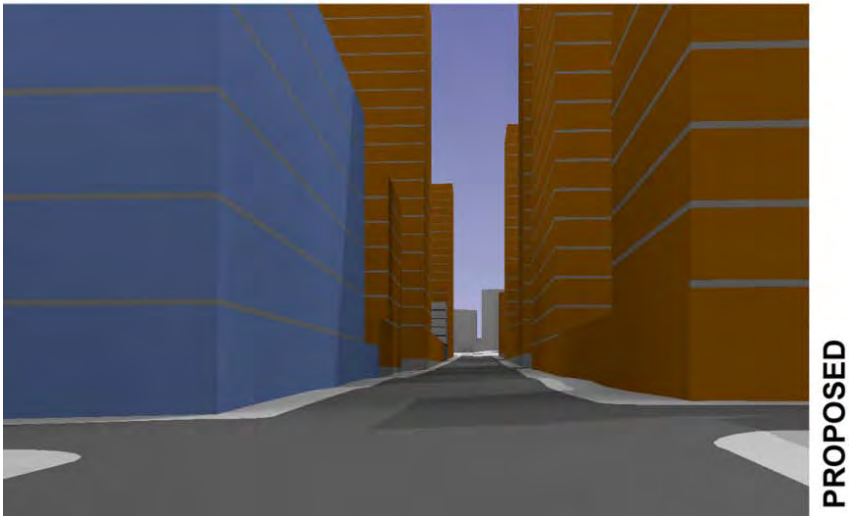
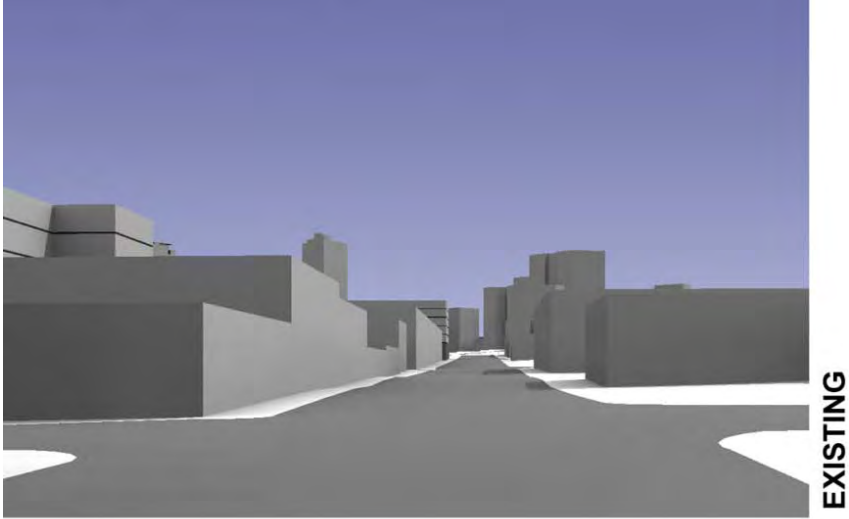
Focus Areas

For all practical purposes, the impacts of Alternative 2 would be the same as Alternative 1 within the designated Focus Areas. While a reduction in height could occur, no substantial differences in aesthetic impacts are anticipated.

8th Avenue Corridor

See **Figure 3.10-13** and the discussion under Alternative 1.

Figure 3.10-13
Street-Level View: Eighth looking South – Alternative 2

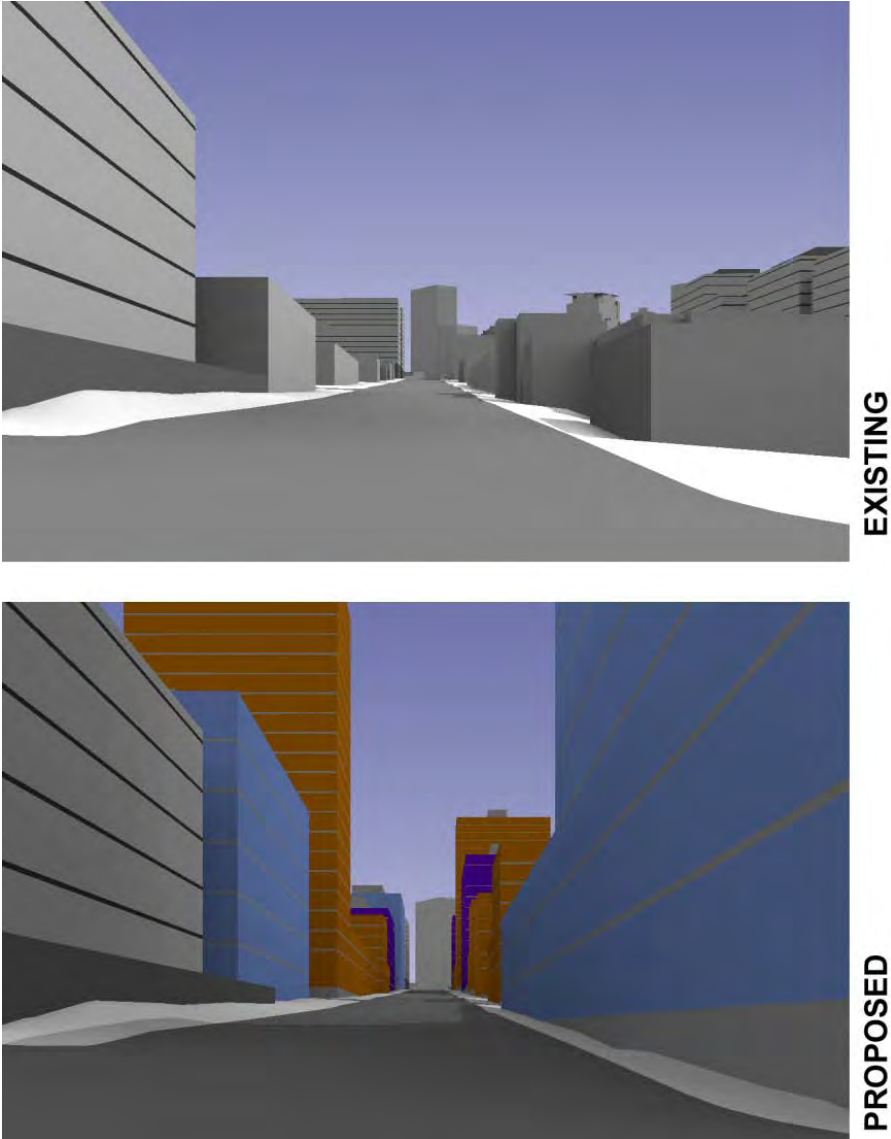


Source: NBBJ, 2010.

Fairview Avenue Corridor

See **Figure 3.10-14** and the discussion under Alternative 1.

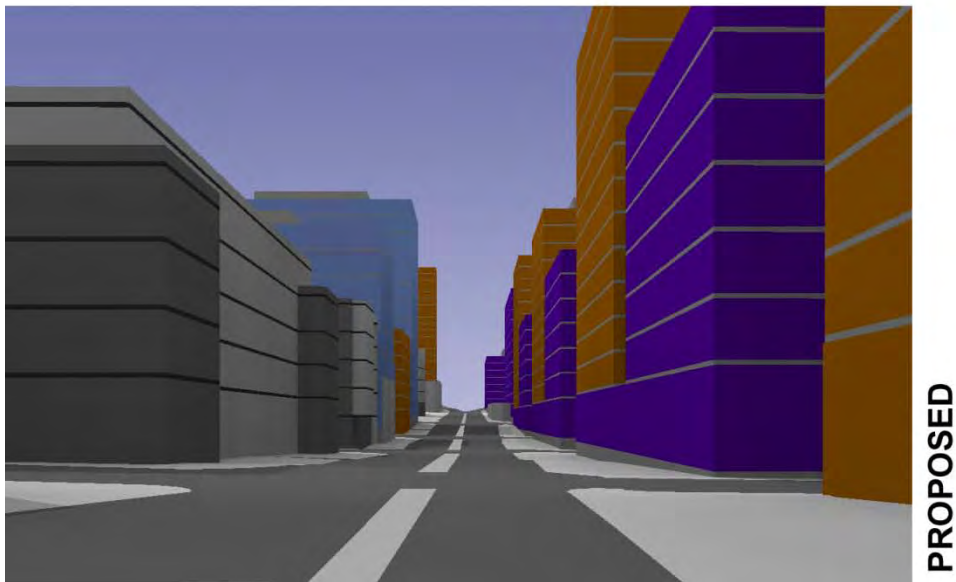
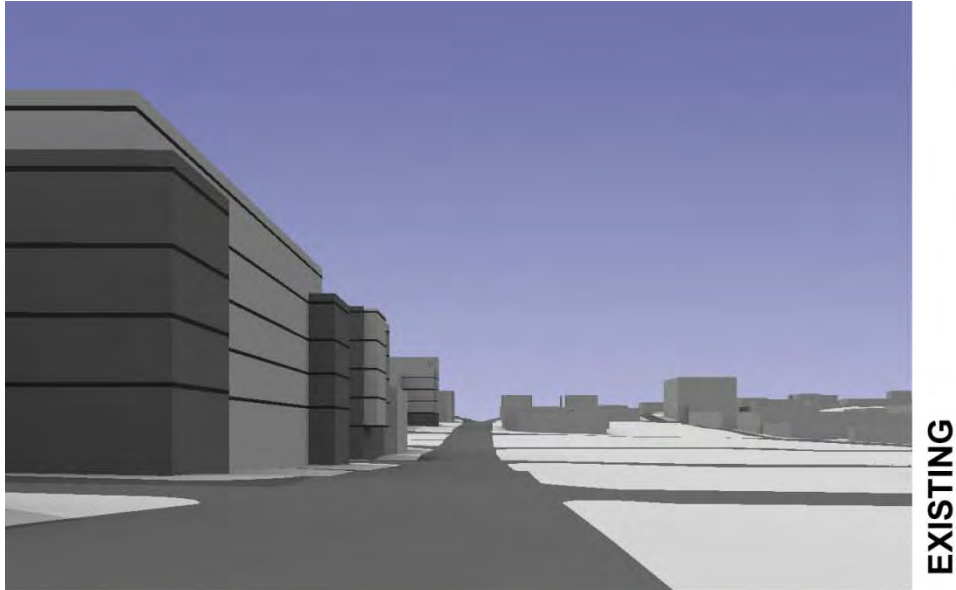
Figure 3.10-14
Street-Level View: Fairview Avenue N – Alternative 2



Source: NBBJ, 2010.

Valley/Mercer Blocks
See **Figure 3.10-15** and the discussion under Alternative 1.

Figure 3.10-15
Street-Level View: Mercer Street – Alternative 2



Source: NBBJ, 2010.

Alternative 3

Alternative 3 would envision a neighborhood with graduated heights from north to south – with the tallest buildings located closest to Denny Triangle and the lowest building heights proximate to Lake Union. The Cascade area would be an exception in that that area would retain existing zoning.

Area Context

The greatest difference to the surrounding context envisioned by Alternative 3 – like Alternative 1 and 2 – would be the visual expansion of the Downtown Seattle skyline to the shore of Lake Union as a result of potential new high-rise construction. As in Alternative 2, there may be a noticeable stepping down between the Denny Triangle and the South Lake Union neighborhood due to the reduction in allowable building heights north of Denny Way – from 400 feet in the Denny Triangle to 240 feet in South Lake Union. In Alternative 3, there would also be a graduated stepping down toward Lake Union that would be less abrupt than the transition between the Denny Triangle and the study area.

Also like the first and second alternative, development under Alternative 3 would create an abrupt transition with the Uptown neighborhood (see “Height, Bulk and Scale” below) and could affect some views from neighboring communities (see “Viewshed” later in this chapter).

Neighborhood Character

As is the case with Alternatives 1 and 2, the South Lake Union neighborhood would become more urban in its physical appearance with the changes envisioned by Alternative 3, but still maintain a distinct character commensurate with its unique community of uses and the retention of its historic structures. Compared to the other alternatives, future development under Alternative 3 would be lower in height and more likely to be residential in character. Since this alternative would also retain the existing SMR zoning in the Cascade area, Cascade would continue to stand apart with its combination of low-rise and mid-rise buildings and current residential character.

Similar to Alternatives 1 and 2, the 8th Avenue Corridor and Valley/Mercer Blocks Focus Areas would likely be the most changed portions of the study area. Both have an opportunity to create a more residential character with a concentration of housing synergistic relationship with their neighboring parks – a renovated historic Denny Park at the south-end of the 8th Avenue Corridor and the new Lake Union Park adjacent to the Valley/Mercer Blocks.

Height, Bulk and Scale

As in Alternative 2, the Cascade area would retain its existing zoning in this alternative. Other than that, Alternative 3 would substantially differ from Alternatives 1 and 2 in terms of the location and orientation of allowable building heights. With the exception of the Cascade area, allowable heights of residential buildings would transition down between Denny Way and South Lake Union. Except for a narrow band that would

allow 125-foot buildings along a portion of Denny Way and 65-foot buildings along the north-half of the Dexter and Westlake Avenue N corridors, commercial building height would be uniformly limited to 85 feet.

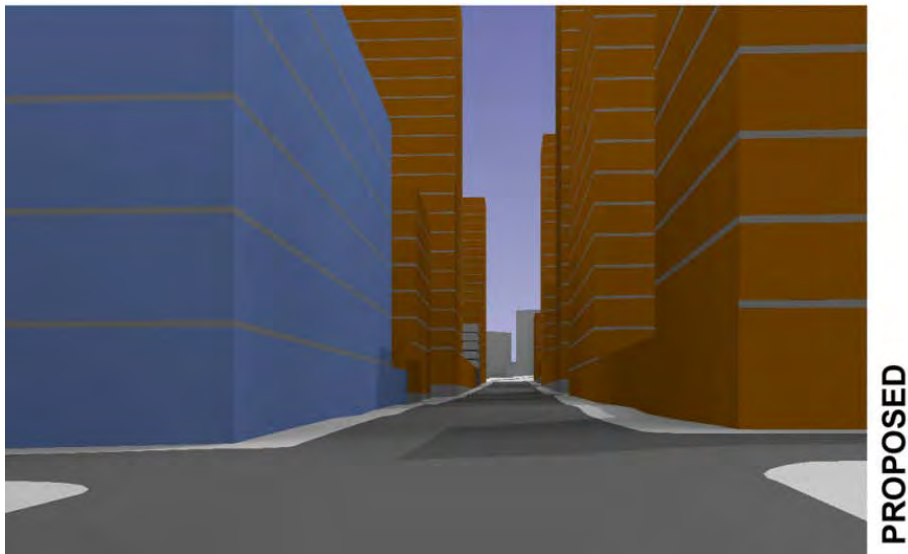
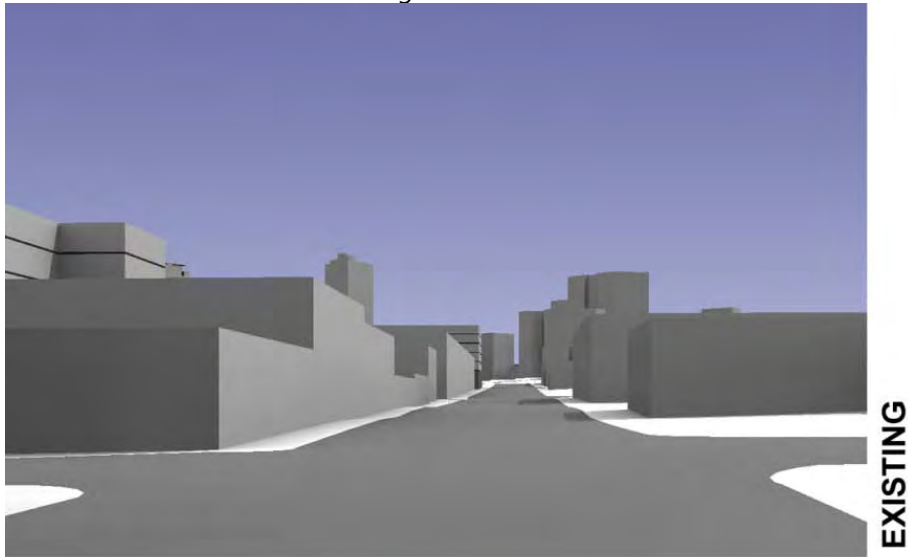
Although the graduated building height would differ from Alternative 1 and 2, Alternative 3 could also have a potential impact on development within the Uptown Urban Center relative to an abrupt scale transition between the two neighborhoods (see 'Height, Bulk and Scale' in Alternative 1); the difference, however, being between 65-foot or 85-foot buildings in Uptown and potentially 160-foot or 240-foot buildings in the South Lake Union neighborhood. As noted with regard to Alternative 1, one approach may be to address this potential height differential issue by zoning the two Urban Centers together rather than independently.

Focus Areas

For all practical purposes, the impacts of Alternative 3 would be the same as Alternative 1 within the designated Focus Areas. While a reduction in overall height would occur in conjunction with this alternative (compared to Alternative 1 and 2), the changes in aesthetic impacts are not expected to differ greatly.

8th Avenue Corridor
See **Figure 3.10-16** and discussion under Alternative 1.

Figure 3.10-16
Street-Level View: Eighth Avenue N – Alternative 3

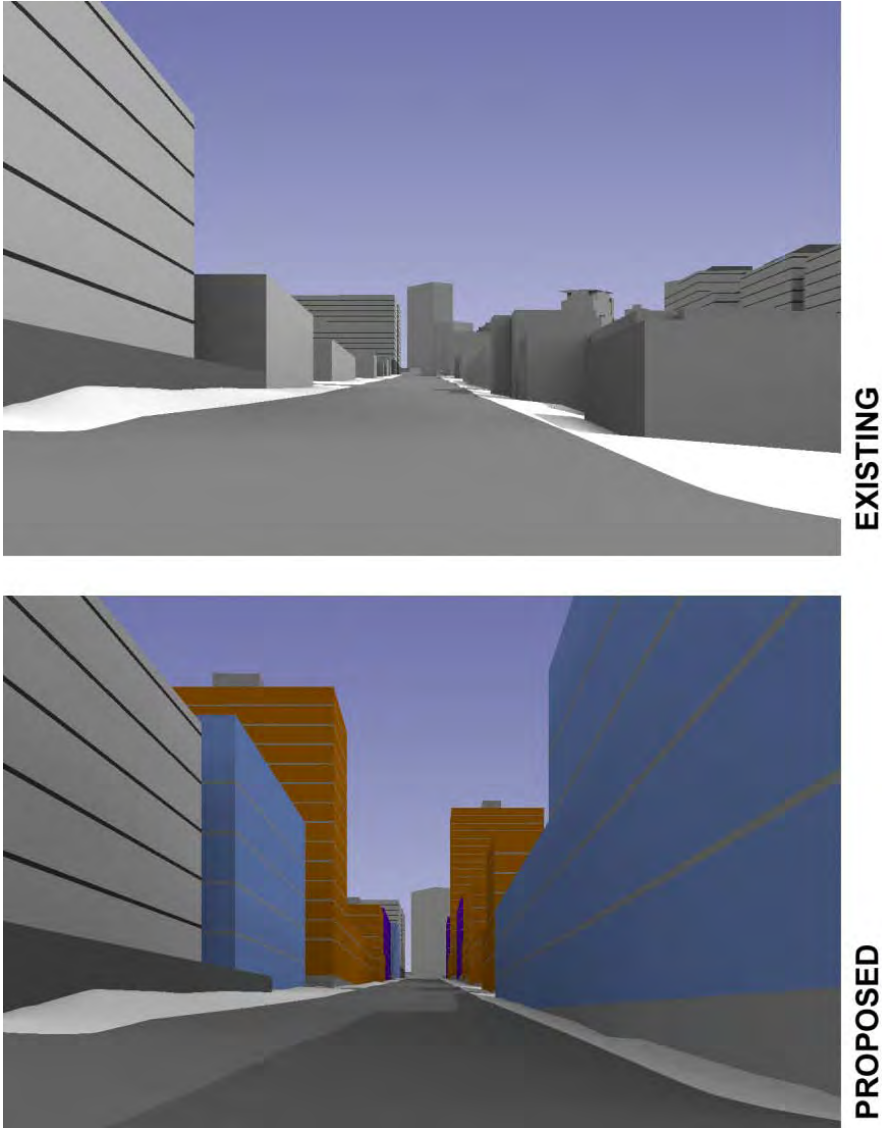


Source: NBBJ, 2010.

Fairview Avenue Corridor

See **Figure 3.10-17** and discussion under Alternative 1.

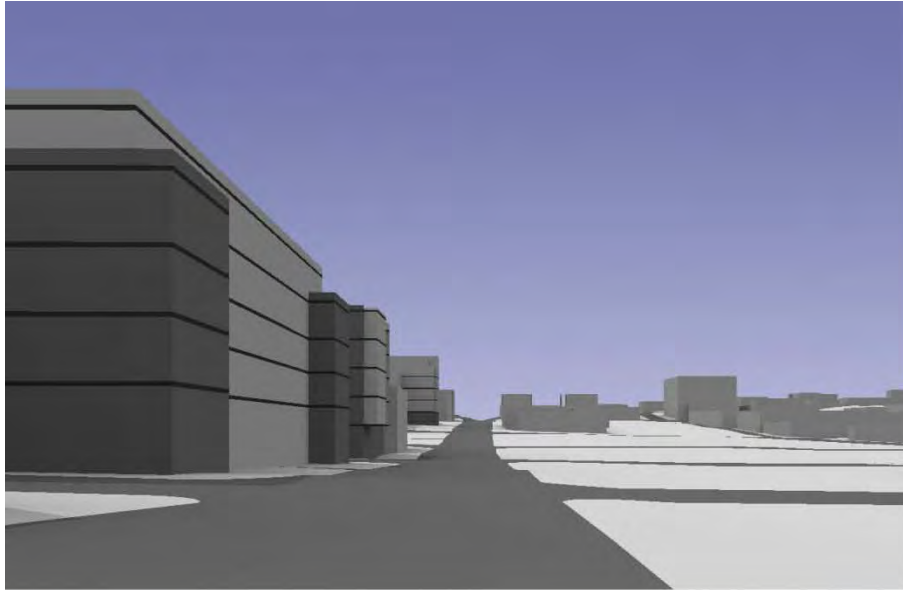
Figure 3.10-17
Street-Level View: Fairview Avenue N – Alternative 3



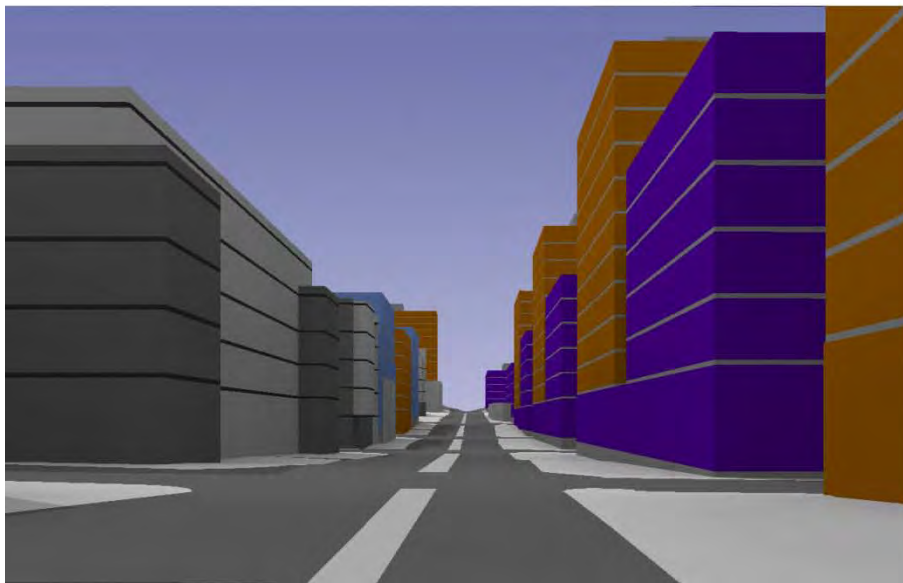
Source: NBBJ, 2010.

Valley/Mercer Blocks
See **Figure 3.10-18** and discussion under Alternative 1.

Figure 3.10-18
Street-Level View: Mercer Street – Alternative3



EXISTING



PROPOSED

Source: NBBJ, 2010.

Alternative 4 (No Action)

Alternative 4 would retain the existing zoning for the entire South Lake Union neighborhood.

Area Context

No significant change to the area context is anticipated with regard to future development of the neighborhood under current zoning.

Neighborhood Character

No significant change to neighborhood character is anticipated with future development under current zoning. In particular, the existing Industrial Commercial (IC) zone would continue as an employment area with residential development prohibited and the residential character of the SMR zoning would be maintained. Over time, the neighborhood would become more urban in character, but retain its current low- and mid-rise character.

Height, Bulk and Scale

Because the entire neighborhood would retain current zoning, Alternative 4 would have the least impact on neighboring communities compared to the other three alternatives. Heights of new buildings would be roughly equivalent to those in the Uptown Urban Center and would remain significantly less than those in Denny Triangle.

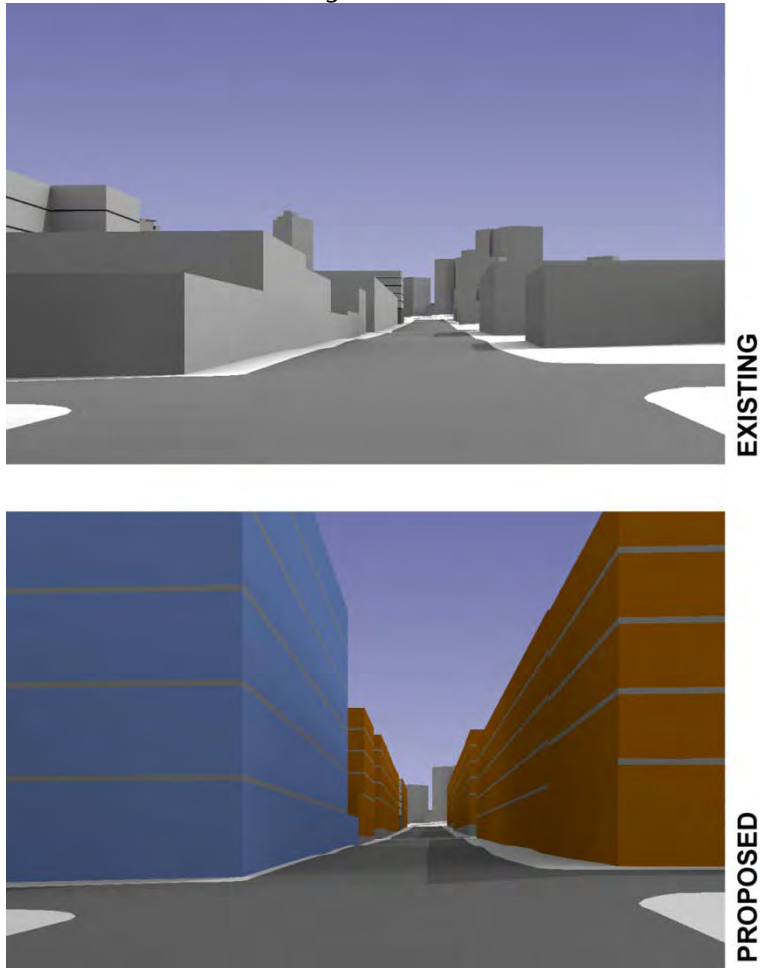
While height is not an issue with Alternative 4, bulk could be. Within the South Lake Union neighborhood, recent experience has shown that buildings built to the existing zoning typically fill their site from property line to property line and to the maximum height allowable. This has resulted in bulky buildings with a massive footprint and no mediating base or podium that would tend to dominate the immediate street environment. The best examples have carved out street level plazas and through-block connections that can significantly mitigate building bulk by introducing welcome interruptions in otherwise unrelieved street facades.

Focus Areas

Under Alternative 4, existing development regulations would be retained and no significant change to neighborhood character and height, bulk and scale are anticipated.

8th Avenue Corridor
See **Figure 3.10-19**.

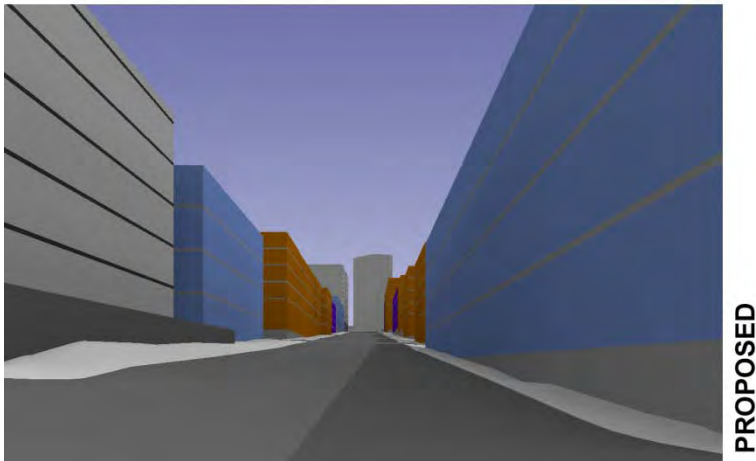
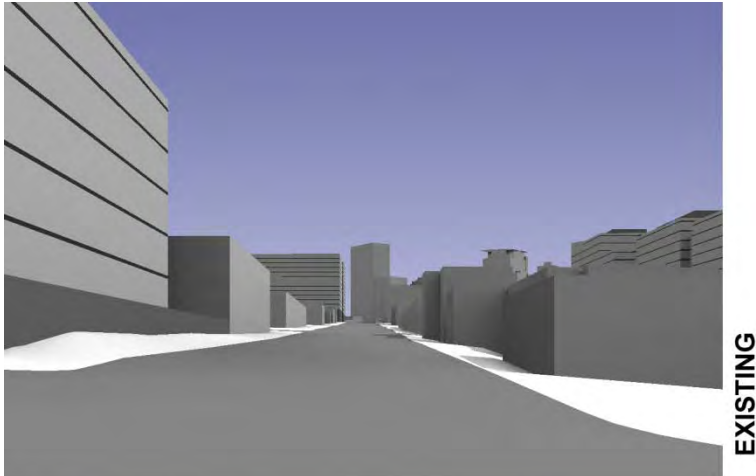
Figure 3.10-19
Street-Level View: Eighth Avenue N – Alternative 4



Source: NBBJ, 2010.

Fairview Avenue Corridor
See **Figure 3.10-20**.

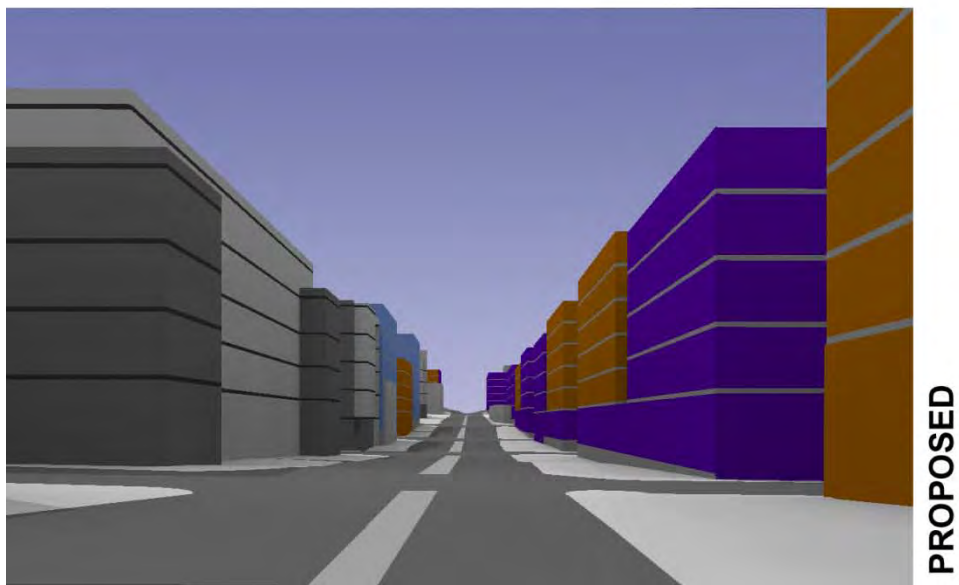
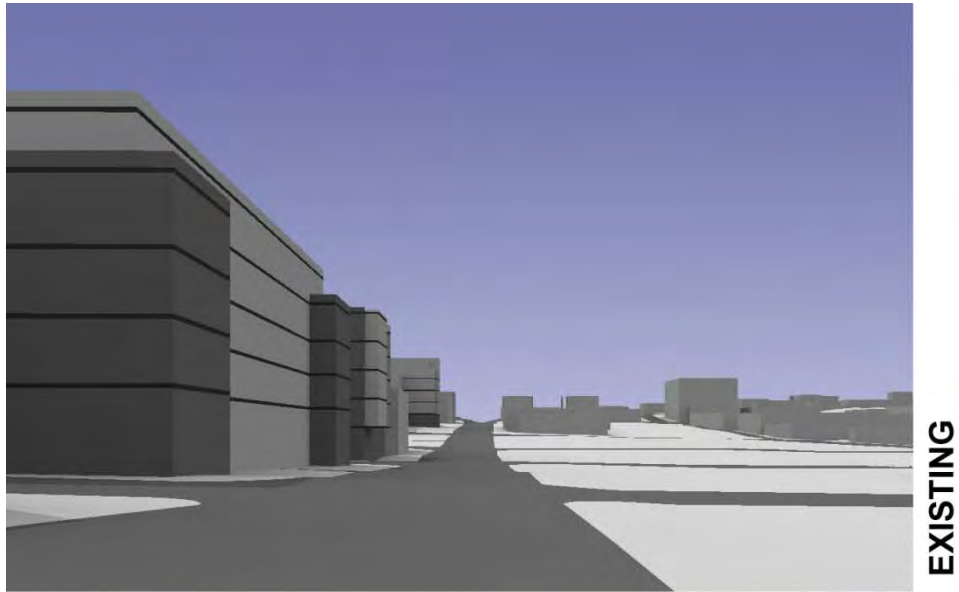
Figure 3.10-20
Street-Level View: Fairview Avenue N – Alternative 4



Source: NBBJ, 2010.

Valley/Mercer Blocks
See **Figure 3.10-21**.

Figure 3.10-21
Street-Level View: Mercer Street – Alternative 4



Source: NBBJ, 2010.

3.10.3 Mitigation Strategies

A number of potential approaches for mitigation are discussed below. See also mitigation recommendations contained in SMC 25.05.675, some of which are incorporated below.

Possible mitigation strategies to reduce the impact of height, bulk and scale that may apply to all alternatives include:

- a. Either limit the height of development or create additional zones that transition building heights down more gradually.
- b. Implement measures to modify the bulk of development.
- c. Modify building façades or envelopes through adjustments in building modulation, finish material, color, architectural detailing or fenestration (including type or percentage of glazing).
- d. Reduce, relocate or rearrange of accessory structures.
- e. Modify required building setbacks.
- f. Relocate buildings on-site.
- g. Modify building orientation.
- h. Redesign the building profile of a project.
- i. Create or modify on-site view corridors.
- j. Reduce or modify walls, fences, screening or landscaping.
- k. Require or encourage incorporation of open space or through-block pedestrian connections as part of development projects.
- l. Develop and adopt design guidelines to specifically address bulk impacts identified with each alternative.

3.10.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to height, bulk and scale are anticipated.

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable
Adverse Impacts*

*Affected
Environment
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*Mitigation
Strategies*
**Significant
Unavoidable
Adverse
Impacts**

Height, Bulk and Scale
 Viewshed
 Shadows
 Light and Glare

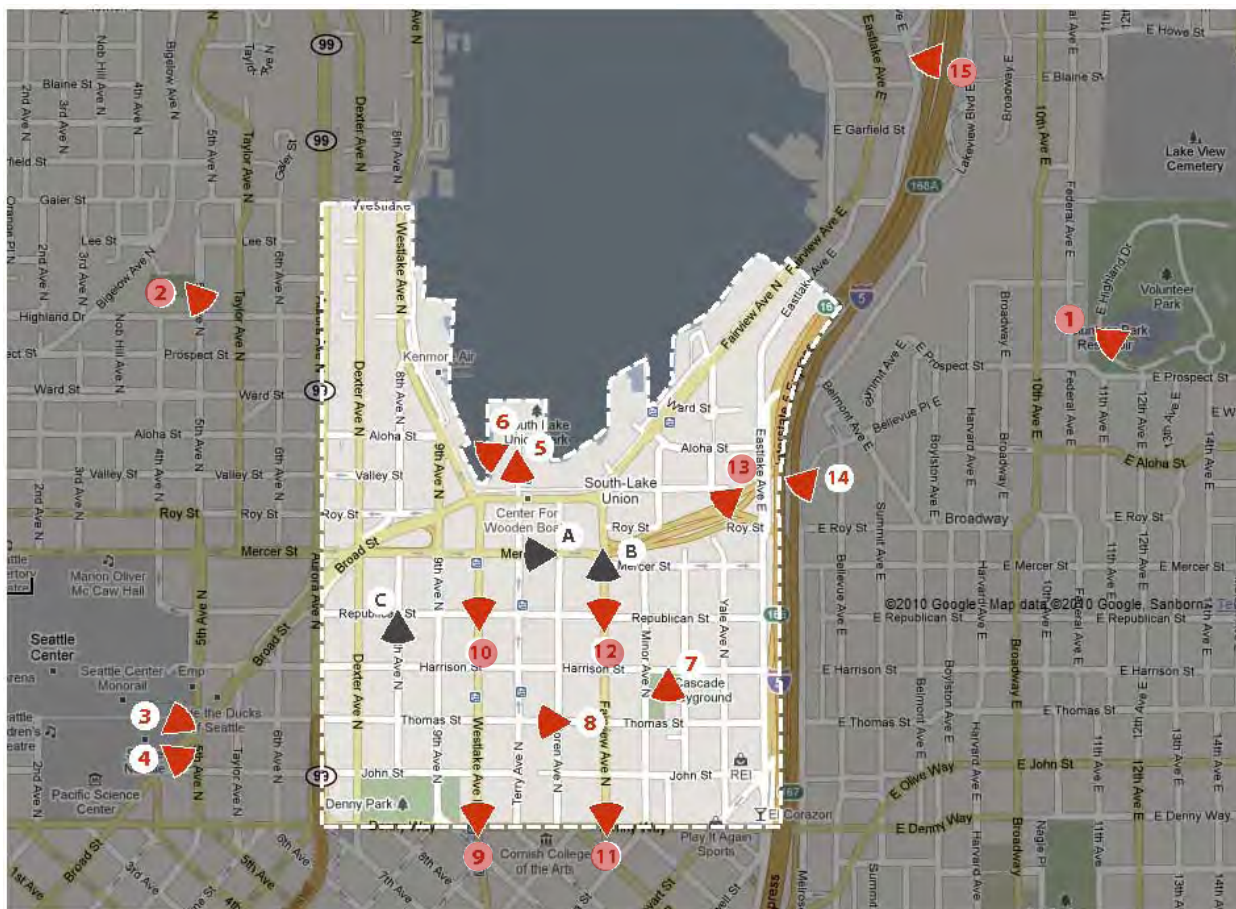
VIEWSHED

This section illustrates and describes the physical character of the South Lake Union neighborhood and its immediate surroundings using 3-D computer modeling and photographic simulations. These simulations provide representative views from selected viewpoints of both the existing neighborhood and each of the proposed alternatives.

3.10.5 Affected Environment

To evaluate the potential impact of the four alternatives relative to views, 15 viewpoints have been identified. Six of the viewpoints are officially-designated viewpoints (discussed below) and photosimulations for these are provided in this section of the Draft EIS. Photosimulations for non-designated viewpoints are contained in **Appendix D** of this Draft EIS. **Figure 3.10-22** depicts all 15 viewpoint locations; those that are color coded are included in this section of the Draft EIS.

Figure 3.10-22
 Viewshed Locations



Source: NBBJ, 2010.

Each of the simulations is based on a photograph that was taken at the viewpoint. To evaluate the impact of each alternative on the viewshed, a 3-D computer model for each alternative was inserted into Google Earth and view angles were set to match the viewpoints used for the photos. Since Google Earth does not typically show the height of plant material, trees and other growth that play a prominent role in specific views were added directly from the photos using Photoshop to provide as much realism as possible.

The City of Seattle Municipal Code Section 25.05.675 P contains SEPA policies related to public view protection. Specifically, "(i)t is the City's policy to protect public views of significant natural and human-made features: Mount Rainer, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of the specified viewpoints, parks, scenic routes, and view corridors ..." (SMC 25.05.675 P2a). Designated viewpoints are identified in Attachment 1 to that section of the code.

There are three City-designated **viewpoints**⁵ in the vicinity of the South Lake Union neighborhood – Volunteer Park, Bhy Kracke Park and Plymouth Pillars Park (formerly known as Four Columns Park/Boren-Pine-Pike Park). Views toward the South Lake Union neighborhood from Plymouth Pillars Park were analyzed and it was determined that the majority of the neighborhood is not visible from this viewpoint. The viewpoint analysis contained in this Draft EIS, therefore, addresses Volunteer Park and Bhy Kracke Park.

While not identified as City-designated viewpoints based on Attachment 1, there are additional locations in and proximate to the South Lake Union neighborhood that provide a public (or quasi-public) view of the this neighborhood, including: Lake Union Park, the Cascade Playground, Bellevue Place, and the Space Needle. Simulations associated with these viewpoints are contained in **Appendix D** of this Draft EIS.

The following is an overview of the existing viewsheds associated with Volunteer Park and Bhy Kracke Park.

⁵ Based on Seattle's SEPA Code 25.05.675, Attachment 1.

Volunteer Park

The park is located in the Capitol Hill neighborhood approximately three-quarters of a mile northeast of the South Lake Union neighborhood. The designated viewpoint is atop the cylindrical water tower near the reservoir in the southern portion of the park. This designated viewpoint provides southwesterly views toward the study area from the tower including views of the Space Needle, the Downtown Seattle skyline, the Olympic Mountains and Puget Sound. During part of the year, views of portions of the South Lake Union neighborhood from this location are obscured by mature deciduous and coniferous trees.

Bhy Kracke Park

This park is located on the southeast side of Queen Anne Hill, west of Lake Union (1215 - 5th Avenue N) and approximately one-half mile northwest of the South Lake Union neighborhood. This designated viewpoint provides southeasterly views toward the study area. The park is situated on a hillside and features a narrow pedestrian path that winds from the bottom to the top of the hill. From the outlook at its highest point, Bhy Kracke Park offers views of the Downtown Seattle skyline, Mount Rainier, the Space Needle and Lake Union. Only portions of the South Lake Union neighborhood are visible from the higher elevations in the park and even then, part of the view of the study area is obscured during portions of the year by mature deciduous trees.

In addition to City-designated public viewpoints of significant natural and human-made features, the City has identified 10 viewpoints from which views of the **Space Needle** are to be protected.⁶ Of these ten viewpoints, only one has a line of sight through the South Lake Union neighborhood – Volunteer Park.

City policy also protects public views of **historic landmarks** that have been officially designated by the City's Landmarks Preservation Board and, "which, because of their prominence of location or contrasts of siting, age, or scale are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City."⁷ Nine historic structures or objects have been designated as Landmarks in the South Lake Union neighborhood.⁸ Each of

⁶ Seattle Municipal Code Chap. 25.05.675 P2c. and Seattle DCLU, 2001,

⁷ Seattle Municipal Code Chap. 25.05.675 P.2.b.i.

⁸ The South Lake Union, Eastlake and Fremont areas are combined as part of the City's Lake Union region.

these is at least 25 years old and each meets one or more of the City's designation criteria.⁹

Lastly, City ordinances¹⁰ identify specific **scenic routes** throughout the City from which view protection is to be encouraged. Portions of several streets within the study area are designated as scenic routes, including: Westlake Ave. N, Fairview Avenue N, the Mercer St. off-ramp from I-5, I-5 and portions of Aurora Avenue N and Dexter Avenue N,

While not identified as a City-designated scenic route, Thomas Street provides a public westerly view through the South Lake Union neighborhood toward the Space Needle. Simulations associated with this route are contained in **Appendix D** of this Draft EIS.

The following is an overview of four key scenic routes: Westlake Avenue N., Fairview Avenue N, the I-5/Mercer off-ramp, and I-5 (southbound).

Westlake Avenue N and Fairview Avenue N

Northerly views from Westlake Avenue N and Fairview Avenue N toward Lake Union improve as the viewer moves closer to the water and the view corridor widens. Due to the fact that Seattle city blocks are typically longer in the north-south dimension, many east-west views are already obscured by buildings. However, some east-west views are still possible from these corridors in conjunction with streets that intersect Westlake Avenue N and Fairview Avenue N. Especially notable are westerly views toward the Space Needle along John and Thomas Streets (see **Appendix D**).

I-5 and the Mercer Street Off-ramp

Southbound I-5 and a segment of the Mercer Street Off-ramp are elevated and each provides scenic views of the South Lake Union area, the Space Needle, the Downtown skyline, Elliott Bay and the Olympic Mountains beyond.

⁹ Refer to Seattle Municipal Code Chap. 25.12.350 for the specific standards associated with designation.

¹⁰ Ord. #97025 (Scenic Routes Identified by the Seattle Engineering Department's Traffic Division) and Ord. #114057 (Seattle Mayor's Recommended Open Space Policies).

3.10.6 Environmental Impacts

This section describes changes to the aesthetic character of the built environment relative to existing views that could be affected under the four alternatives.

Impacts Common to All Alternatives

All of the alternatives assume that every vacant or underdeveloped site is built out to its maximum potential. Therefore, all alternatives – even No Action – envision a significantly more dense urban environment. The following discussion pertains to designated viewpoints and scenic routes relative to the four alternatives. As noted previously, simulations for non-designated viewpoints are contained in **Appendix D**.

Alternative 1

A number of views inside and outside the South Lake Union neighborhood will be potentially impacted by Alternative 1 at full build-out, although none of the protected views are significantly impacted. The most significant changes are to Views #6, #8 and #13. Less significant but notable changes occur to Views #1, #5 and #14.

View #1 – Volunteer Park (**Figure 3.10-23**)

New high-rise buildings within the study area would be prominent in the view Volunteer Park. However, the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. Conceivably, the base of the Space Needle may be screened to about one-third of the tower height. As noted previously, the view of the Space Needle from Volunteer Park is a protected view per SMC 25.05.675 P2c. Views of Elliott Bay from this location would be affected by the new high-rise buildings.

*Affected
Environment*
**Environmental
Impacts**
*Mitigation
Strategies*
*Significant
Unavoidable
Adverse Impacts*

Figure 3.10-23
Volunteer Park – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #2 – Bhy Kracke Park (**Figure 3.10-24**)

New high-rise buildings within the study area would be prominent in the view from Bhy Kracke Park. Views of the Seattle Downtown skyline, the Cascade Mountains and Capitol Hill, however, would remain. Although the new buildings do not significantly change the profile of the skyline, individual high-rises could obscure portions of Capitol Hill and would dominate the foreground.

Figure 3.10-24
Bhy Kracke Park – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #9 – Westlake Avenue N (Figure 3.10-25)

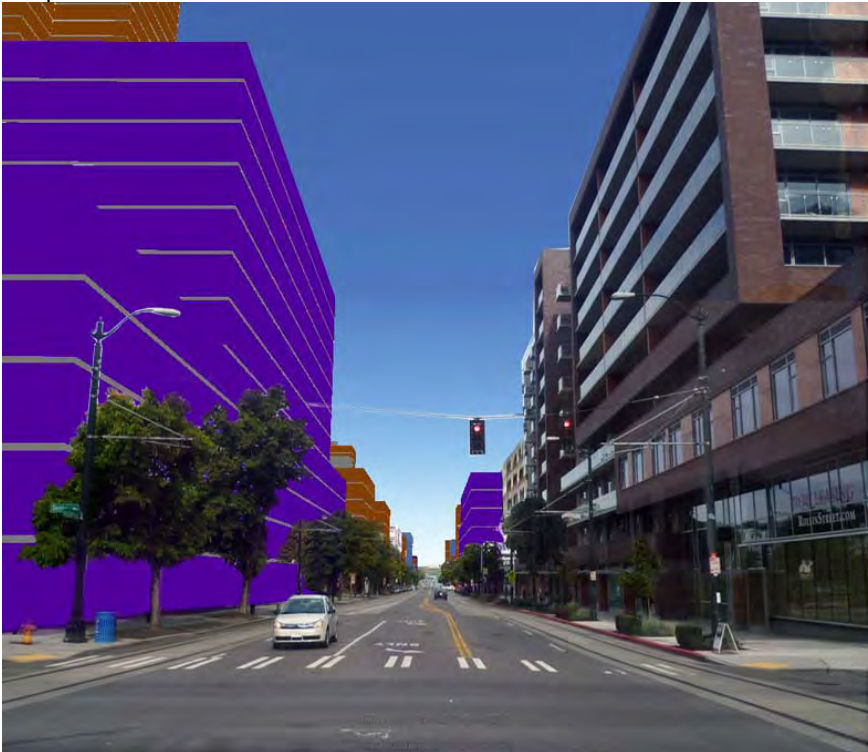
New high-rise buildings would frame the north-facing viewshed down the Westlake Avenue N view corridor from the intersection of Westlake Avenue N and Denny Way. Lake Union would remain visible in the distance and the focal point of the view. Mature street trees are prominent in the foreground and, because of perspective, would continue to be a determining factor concerning the width of the water view.

Figure 3.10-25
Westlake Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #10 – Westlake Avenue N (**Figure 3.10-26**)

New high-rise buildings would frame this north-facing view down the Westlake Avenue N view corridor from the intersection of Westlake Avenue N and Republican Street. Lake Union would remain visible in the distance and the focal point of the view, but the width of the water view may be diminished by as much as 25%. However, the anticipated view reduction would be entirely the result of a new building being built to the property lines on the currently vacant Valley Mercer blocks. This view reduction would occur with development under current zoning and is, therefore, not considered significant.

Figure 3.10-26
Westlake Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #11 – Fairview Avenue N (**Figure 3.10-27**)

New high-rise buildings would frame this north-facing view down the Fairview Avenue N view corridor from the intersection of Fairview Avenue and Denny Way. Lake Union would remain visible in the distance and the focal point of the view. As with Westlake Avenue N, mature street trees are prominent in the foreground and would be the determining factor concerning the width of the water view.

Figure 3.10-27
Fairview Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #12 – Fairview Avenue N (**Figure 3.10-28**)

New high-rise buildings would frame the north-facing vista down the Fairview Avenue view corridor from a viewpoint at the intersection of Fairview Avenue and Republican Street. If preserved, mature street trees would remain prominent in the foreground and determine the width of the water view from this perspective. Lake Union would remain visible in the distance and the focal point of the view.

Figure 3.10-28
Fairview Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.10-29**)

New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to completely block some views of the Space Needle from the Mercer Street exit off I-5. Although the selected view offers a glimpse of the Space Needle and not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or fully obscured from other points-of-view along this off-ramp.

Figure 3.10-29
Mercer Street Off-ramp – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #15 – I-5 (Figure 3.10-30)

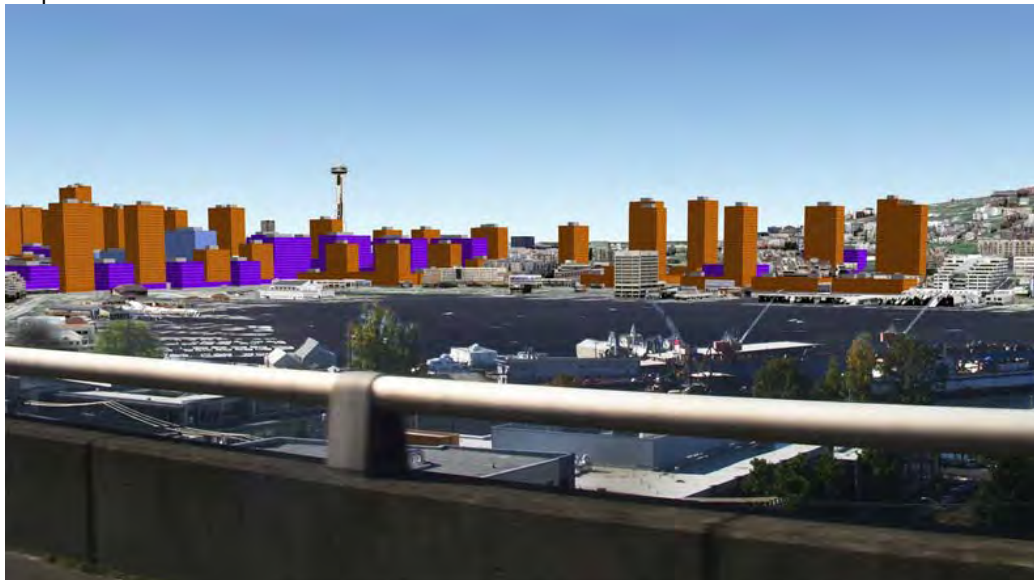
New high-rise buildings within the study area would dominate the view from southbound lanes of I-5 in the vicinity of Boylston Avenue E. Lake Union and the Space Needle would remain prominent, but the lower third of the Space Needle could be screened by future development. This scenic route is not an official Space Needle protected view.

Figure 3.10-30
I-5 – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

Alternative 1 could result in the greatest amount of development and result in the greatest change to existing designated viewsheds. Street-level changes would be most pronounced in the Fairview Avenue N and the Eighth Avenue N Corridors. Street-level views for the Eighth Avenue N and the Mercer Street Corridors were discussed earlier in this section under Height, Bulk, and Scale. Views along Fairview Avenue, which is a City-designated scenic route, are discussed under Views 11 and 12.

Alternative 2

Although some tower heights would be reduced with this alternative, compared to those of Alternative 1, the view impacts of Alternative 2 would be very similar to those of Alternative 1. The following is a discussion of viewshed changes that could occur relative to Alternative 2.

View #1 – Volunteer Park (Figure 3.10-31)

New high-rise buildings within the study area would be prominent as viewed from Volunteer Park. As noted with regard to Alternative 1, the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. Conceivably, the base of the Space Needle may be screened to about one-third of the tower height and views of Elliott Bay would be affected by the new high-rise buildings.

Impacts from other designated viewpoints (e.g., #2, 9, 10, 11, 12 and 15) would not differ significantly from those noted with regard to Alternative 1. See **Figure 3.10-32** through **36** and **3.10-38**).

Figure 3.10-31
Volunteer Park – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-312
Bhy KrackePark – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-33
Westlake Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-34
Westlake Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-35
Fairview Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-36
Fairview Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.10-37**)

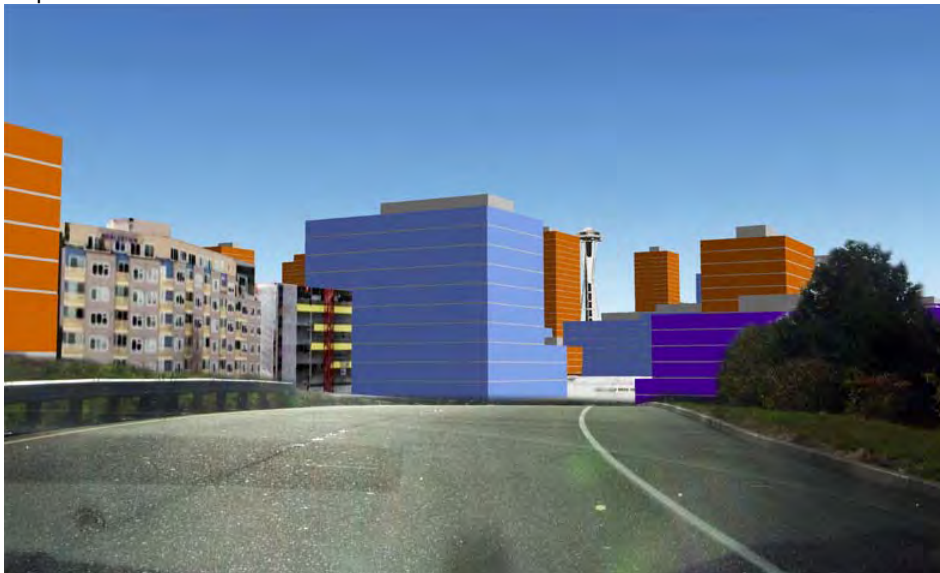
New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to completely block some views of the Space Needle from the Mercer Street Off-ramp from I-5. As noted with regard to Alternative 1, although the selected view offers a glimpse of the Space Needle and is not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or fully obscured from other points-of-view along this off-ramp.

Figure 3.10-37
Mercer Street Off-ramp – Alternative 2

Existing



Proposed



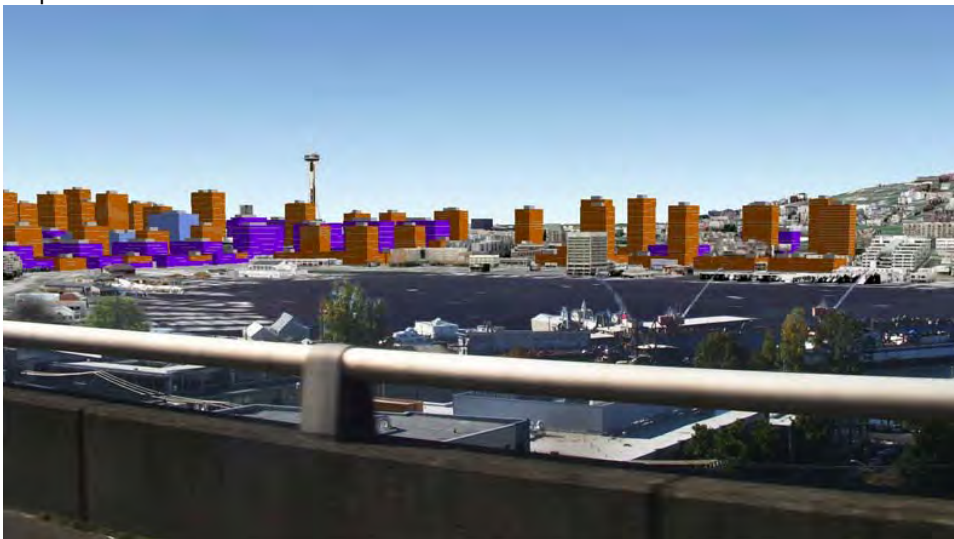
Source: NBBJ, 2010.

Figure 3.10-38
I-5 – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

For all practical purposes, viewshed impacts associated with Alternative 2 would be the same as Alternative 1 relative to the designated Focus Areas. There would be an important reduction in overall height, but the changes are not expected to significantly change the overall street-level impacts from those identified under Alternative 1. Street-level views for the Eighth Avenue N and the Mercer Street Corridors were discussed earlier in this section under Height, Bulk, and Scale for each alternative. Views along Fairview Avenue, a City-designated scenic route, are discussed in Alternative 1 relative to Views 11 and 12.

Alternative 3

Although tower heights are further reduced with this alternative compared with Alternatives 1 and 2, the view impacts of Alternative 3 would be similar to the previous alternatives. The following is a discussion of viewshed changes that could occur relative to Alternative 3.

View #1 – Volunteer Park (**Figure 3.10-39**)

New high-rise buildings in the study area would be prominent in the view from Volunteer Park, but the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. The base of the Space Needle may be screened slightly less than that associated with Alternative 1 and 2 – to about one-quarter of the tower height. Views of Elliott Bay would be affected by the new high-rise buildings.

Impacts from other designated viewpoints (e.g., #2, 9, 10, 11, 12 and 15) would not differ significantly from those noted with regard to Alternatives 1 and 2. See **Figure 3.10-40** through **3.10-44** and **3.10-46**.

Figure 3.10-39
Volunteer Park – Alternative 3

Existing



Proposed



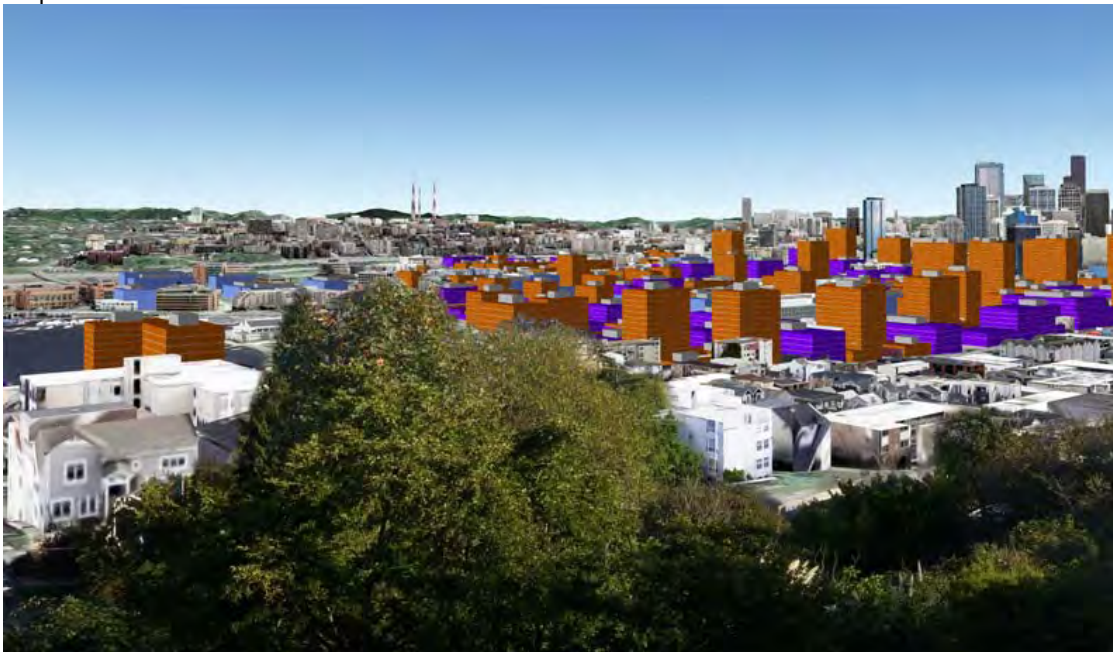
Source: NBBJ, 2010.

Figure 3.10-40
Bhy Kracke Park – Alternative 3

Existing



Proposed



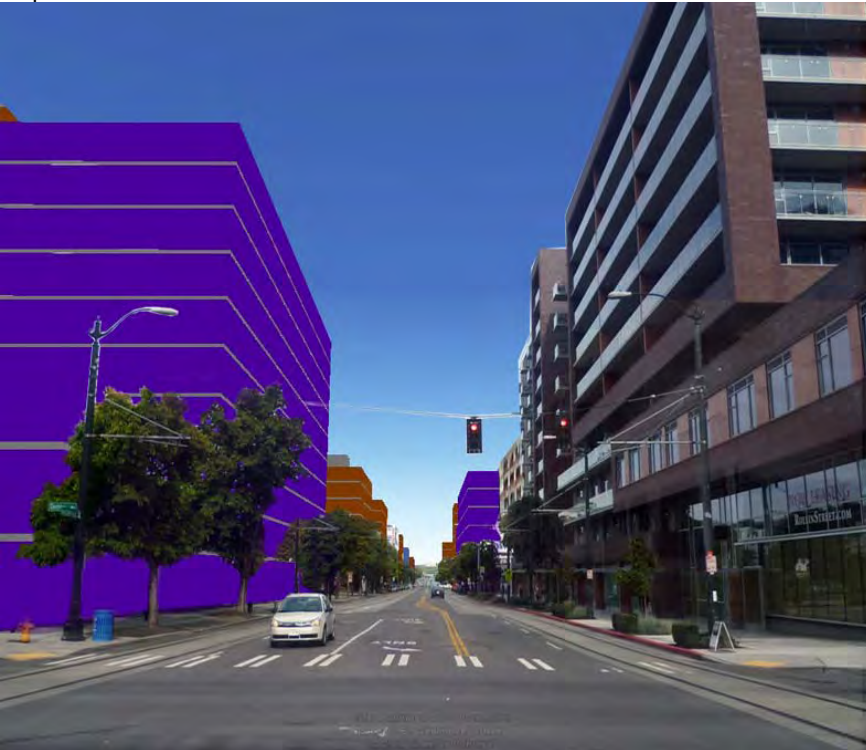
Source: NBBJ, 2010.

Figure 3.10-41
Westlake Avenue N - Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-42
Westlake Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-43
Fairview Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-44
Fairview Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.10-45**)

New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to partially block some views of the Space Needle from the Mercer Street Off-ramp from I-5. As noted with regard to Alternative 1 and 2, although the selected view offers a glimpse of the Space Needle and is not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or substantially obscured from other points-of-view along this off-ramp.

Figure 3.10-45
Mercer Street Off-ramp – Alternative 3

Existing



Proposed



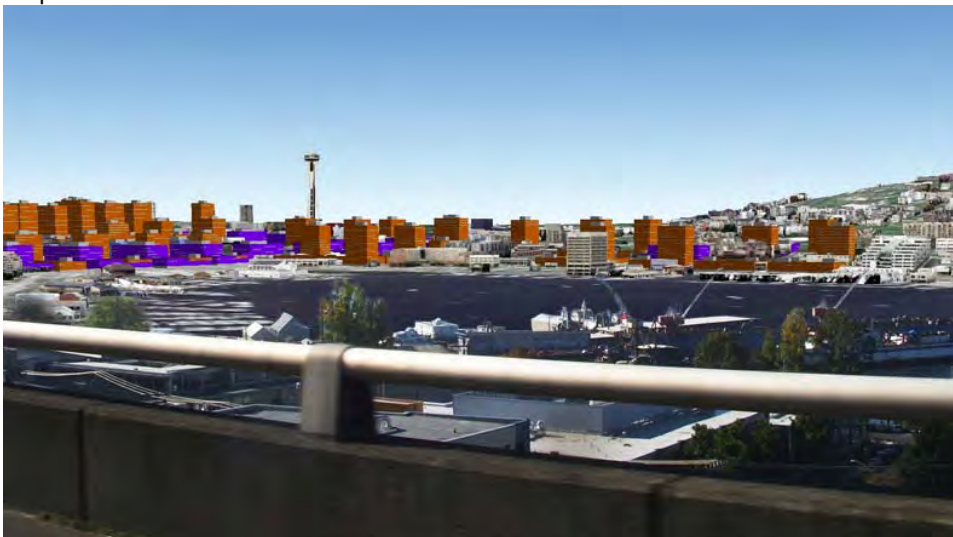
Source: NBBJ, 2010.

Figure 3.10-46
I-5 – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

Viewshed impacts associated with Alternative 3 would be the same as Alternative 1 relative to the designated Focus Areas. The reduction in building heights is not expected to result in substantially different street-level view impacts from those noted previously for Alternative 1.

Alternative 4 (No Action)

This alternative assumes that underdeveloped properties within the study area would be developed to the extent allowed by existing zoning. As such, views could be expected to change from what currently exists.

However, no significant impacts to views are anticipated as a result of development under current zoning. Simulations associated with views from designated viewpoints are depicted in **Figures 3.10-47** through **3.10-54**).

Figure 3.10-47
Volunteer Park – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-48
Bhy Kracke Park – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-49
Westlake Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-50
Westlake Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-51
Fairview Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-52
Fairview Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.10-53
Mercer Street Off-ramp – Alternative 4

Existing



Proposed



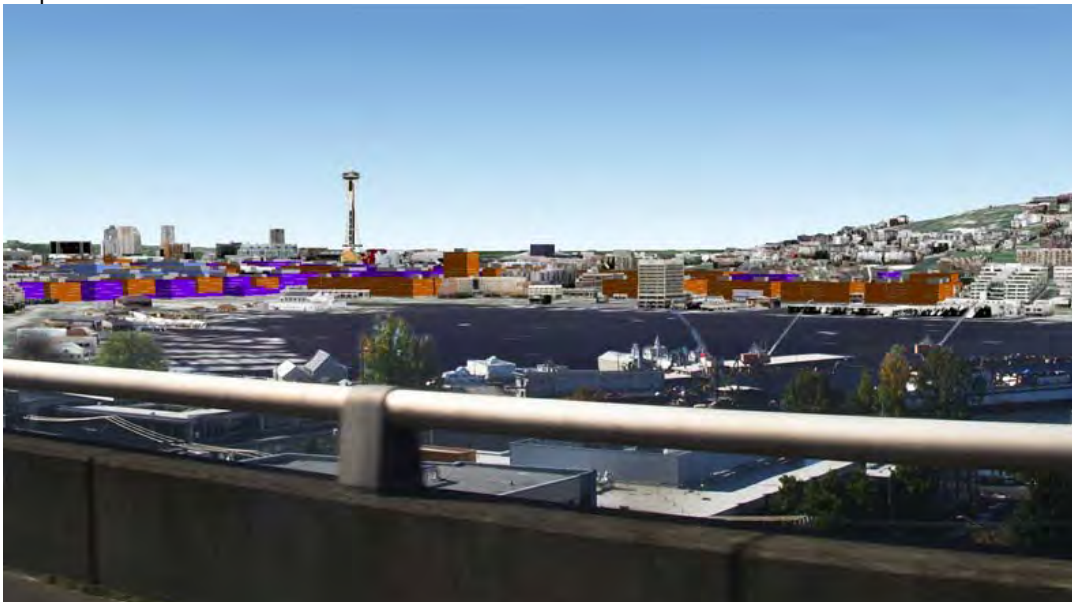
Source: NBBJ, 2010.

Figure 3.10-54
I-5 – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

3.10.7 Mitigation Strategies

No significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis and, therefore, no mitigation is necessary.

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable
Adverse Impacts*

Viewshed

At such time site-specific development occurs, detailed viewshed analysis should be performed relative to any development that would be within the view corridor between Volunteer Park and the Space Needle.

3.10.8 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to views are anticipated.

*Affected
Environment
Environmental
Impacts
Mitigation
Strategies*
**Significant
Unavoidable
Adverse
Impacts**

Viewshed

SHADOWS

3.10.9 Affected Environment

Seattle's SEPA policies aim to "minimize or prevent light blockage and the creation of shadows on open spaces most used by the public". Of particular concern is the amount and the timing of shading that occurs to key public places. Besides weather conditions, the relative amount of shadow and sun available at the pedestrian level depends upon multiple factors; the most important of these for this study area include: topography, the built environment (structures and street grid orientation) and vegetation.

In terms of topography, the South Lake Union neighborhood is shaped like half of a shallow bowl with the landform sloping downward and inward from the neighborhood boundaries on the east, south and west – with the low point being the shoreline of Lake Union. Furthermore, the surrounding neighborhoods are much higher in elevation. Portions of Capitol Hill on the east casts shadows the neighborhood in the early morning hours and portions of Queen Anne Hill on the west does the same in the late afternoon and early evening. Due to a lower sun angle, the effect of this shading is more noticeable in the winter than at other seasons. The elevation differential between the study area and the landform to the south is not significant enough to create shadows in the study area, but the shadows of a few recently constructed high-rise buildings built in the Denny Triangle neighborhood penetrate the South Lake Union neighborhood in late morning and early afternoon hours during the winter months.

Shadows cast by buildings create a striped or stepped pattern of alternating sunny and shady areas at street level. These patterns are constantly changing with the sun angle and vary according to the season. The orientation of the street grid in the South Lake Union neighborhood closely follows the cardinal directions, so that the north-south streets typically experience full sun near midday – the specific time of day changing during the period when daylight savings time is in effect. Streets with an east-west orientation receive full sunlight in the early morning and late afternoon. At all other times of the day, both streets and avenues are affected, to varying degrees, by shadows from neighboring structures.

Generally speaking, greater building heights extend the length of the shadow cast, and increased mass (or cross-sectional width) widens the shadow cast by a building. The shadows of tall buildings extend farther from a building, but their effects on more distant locations are of shorter duration, because the sun's motion translates into faster movement of the shadow over the ground. Buildings with greater mass would create wider

*Height, Bulk and
Scale*

Viewshed

Shadows

Light and Glare

shadows and an increased amount of shaded area on the immediately adjacent streets and public spaces, but the reach of the shadow would be limited by the building's height.

The amount and impact of shadows cast by a group of buildings depends upon their relative location, spacing and orientation (e.g., some building arrangements may result in overlapping shadows, or cast shadows in patterns that are not detrimental to public areas where solar access is desirable).

Building height and bulk are the main factors with regard to shadow analyses, but other characteristics – such as street level and/or upper level setbacks, the location of highrises within a block, spacing between buildings, roof overhangs, rooftop appurtenances, street level canopies and marquees – can significantly modify the total amount and pattern of sun and shadow on the streetscape.

In areas of the City outside Downtown City policy¹¹ indicates that the following areas are to be protected:

- Publically owned parks;
- Public schoolyards;
- Private schools which allow public use of schoolyards during non-school hours; and
- Publically owned street-ends in shoreline areas.

Within the South Lake Union neighborhood, the particular areas that could meet the City's criteria for minimizing or preventing light blockage and the creation of shadows include:

Denny Park

Denny Park is in the southwest corner of the South Lake Union neighborhood and is bordered by major roadways on three sides: Denny Way to the south, Dexter Avenue N on the west and 9th Avenue N on the east. John Street on the north is a less busy street, but traffic is expected to increase once John Street is reconnected across Aurora Avenue N as part of the SR 99 Bored Tunnel Project.

Dedicated in 1883, Denny Park is one of Seattle oldest public parks. The park is shaded by mature trees (both evergreen and deciduous) and

¹¹ SMC 25.05.675 Q2b

features generous lawns and broad pathways leading to a central circle. A one-story Parks and Recreation Building is located on the west side of the park. In 2009, a children's playground was completed on the east side of the park.

Cascade Park and Playground

Centrally located in the Cascade subarea, Cascade Park and Playground is surrounded by relatively quiet streets on all four sides. After decades of minimal use, the park has recently undergone a major resurgence due to the surrounding growth of residential construction and a successful park renovation.

The park has a strong residential focus and features the Cascade People's Center in its southeast quadrant; an active P-Patch in the southwest quadrant, a children's play area in the northeast quadrant and permanent public restrooms in the northeast quadrant. Most of the middle of the block is occupied by a large recreational lawn area.

The park is well used during daylight hours; the playground, in particular, is activated by school and pre-school children. While not striped or set up for any particular sport, the open lawn area is occasionally used for informal recreational activities and is popular with dog owners at all hours of the day. The growing season sees the P-Patch well utilized by nearby residents. Both residents and office workers can be found strolling in and around the park on sunny days – regardless of season –but especially over the noon hour.

Lake Union Park

Located at the south end of Lake Union and bordering on Valley Street, this 12-acre Lake Union Park was just completed in September 2010. The park features a lawn with sculpted land forms and boat-shaped planters, a waterfront promenade and steps, a model boat pond, interactive fountains, a beach for hand-launched boats, a tree grove, and interpretive History Trail. A new pedestrian bridge connects the east and west segments of the park.

The park is a stop on the Seattle Streetcar South Lake Union Line and is part of larger complex of public amenities that currently includes the Center for Wooden Boats. The former Naval Reserve Center, which is located at this park, is in the process of being renovated as the new home of the Museum of History and Industry (MOHAI). Other 'public' activities that occur proximate to this park include the Northwest Native Canoe Center by the United Indians of All Tribes

Lake Union Park has excellent solar exposure and is used by strollers and pet owners during all daylight hours, but especially the noon hour and at the beginning and end of the workday. Once MOHAI is complete, the most intense usage is likely to be during museum hours, but especially schools hours.

Per the Municipal Code, "(t)he analysis of sunlight blockage and shadow impacts shall include an assessment of the extent of shadows, including times of the year, hours of the day, anticipated seasonal use of open spaces, availability of other open spaces in the area, and the number of people affected" (25.05.675 Q2c).

In areas outside Downtown, if analysis indicates that a proposed project would substantially block sunlight from protected open spaces "at a time when the public most frequently uses that space, ...(the City) ... may condition or deny the project to mitigate the adverse impacts of sunlight blockage."

Appendix D contains 15 shadow diagrams. Collectively, they depict probable shading from each of the proposed alternatives (assuming weather conditions are conducive) for the four key solar days of the year: vernal equinox (approx. March 21st), summer solstice (approx. June 21st), autumnal equinox (approx. Sept. 21st), and winter solstice (approx. December 21st). The analysis depicts shadows cast by proposed development for three specific times during each day - 9 AM, noon, and 3 PM; shadow impacts are indicated in the right column of each shadow diagram). The maximum allowable heights and bulk including height exceptions for rooftop equipment were modeled to identify the 'worst case' impacts. In addition to shading resulting from possible development associated with each alternative, the figures also depict shadow impacts resulting from existing buildings within and proximate to the study area (shown in the left column of each figure).

These key days of the solar year and times of the day depict worst-case impacts. Shadow-related impacts, however, can also occur at other times of the day throughout the year. Because of the earth's rotation, the duration of shadow-related impacts varies for a stationary observer¹² based on season, depending upon the width of the shadow. The shadow

¹² The rate of change of the sun's angle relative to the earth varies widely by season – from about 5 degrees horizontally and 2 degrees vertically every 15 minutes in June to 3 degrees horizontally and 1 degree vertically every 15 minutes in December.

graphics have been adjusted to compensate for topography and, in the case of vernal equinox, summer solstice and autumnal equinox, daylight savings time.¹³

3.10.10 Environmental Impacts

This section describes changes to the aesthetic character of the built environment related to shadow impacts that could occur under the four EIS alternatives.

Impacts Common to All Alternatives

Cumulative shadow impacts would result from all alternatives due to the increased amount of development in the South Lake Union neighborhood. Generally, the infill development on undeveloped or under-developed sites would increase the local shadows on streets and adjacent properties.

Shadows would generally be longest during winter afternoons when the sun is less likely to be out under clear skies. At noon on winter solstice, when the sun angle is low on the horizon, shadow impacts could extend great distances and result from each alternative. Conversely, at noon on summer solstice, when the sun is at its greatest height above the horizon shadow impacts would be shorter and would be less likely to cause impacts.

Each of the alternatives could shade portions of the water area of Lake Union in the winter morning (southeast lake shore) and in the winter afternoon (southwest lake shore) hours. See Section 3.4 for discussion of potential shadow impacts on marine habitat.

Comparison of the alternatives reveals slight differences in the impacts to the noted public parks and SEPA protected places. The location and extent of shadows vary and are described in each alternative. However, overall, the shadow impacts are not expected to result in significant adverse environmental impacts. The impacts are typical of an urbanizing area changing from lower intensity development to that of more intensive development.

*Affected
Environment*
**Environmental
Impacts**
*Mitigation
Strategies*
*Significant
Unavoidable
Adverse Impacts*

¹³ Pacific Daylight Savings Time (PDST) applies to shadow impacts associated with spring equinox, summer solstice and autumnal equinox.

Alternative 1

At full build-out, Alternative 1 could result in the greatest potential impact of the alternatives due to the fact this alternative would allow the tallest buildings heights and could result in the greatest increase in population (residents and employees) that may utilize the parks/open spaces. The difference between this alternative and Alternative 2, however, is largely a matter of scale.

The taller buildings along the Denny and Mercer corridors would cast the longest shadows impacting neighborhood parks at the times of the day when usage may be at its highest (e.g., noon [all seasons], summer morning and summer afternoon). At noon, shadows may just touch the corners of Denny Park and Cascade Park and Playground in all seasons except winter. Mid-morning shadows may cover up to 20 percent of Denny Park and Cascade Park and Playground during the summer. Shadows may cover between 30 percent to approximately one-half of these parks at mid-morning during the spring and fall. The eastern and northern portions of these parks would be most affected by the shadows of new buildings.

At Lake Union Park, because of the scale of the existing building the largest shadows are those cast within the park by the former Naval Reserve Center. It does not appear that the park would be significantly impacted by the alternative's development during spring, summer or autumn. (Note: This finding assumes that new towers on the Mercer Blocks would be located on the southern-half of the blocks. Allowing tower construction on the northern-half of the blocks could result in a more significant impacts.)

During the winter months, building shadows would cover all or a majority of the three parks in the morning and Lake Union and Cascade Parks in the afternoon. Shadows at noon in winter are expected to have minimal impact on Denny and Lake Union Parks, but may cover up to 60 percent of Cascade Park and Playground. Although this is the season when sunlight is typically obscured by clouds/poor weather in our region, the noontime shadows could impact the children's play area on the west side of the block.

Focus Areas

Alternative 1 would allow the greatest degree of development and envisions the greatest degree of change on the designated Focus Areas. The changes would be most apparent in the Fairview and 8th Avenue Corridors.

Alternative 2

Denny Park and Cascade Park and Playground could experience morning shadow impacts during all seasons. Portions of Lake Union Park would periodically be shaded in the morning and afternoon in winter.

Focus Areas

For all practical purposes, the impacts of Alternative 2 would be the same as Alternative 1 on the designated Focus Areas. While this alternative would result in a reduction in overall height, the changes in shadow impacts would not differ substantially from those noted with regard to Alternative 1.

Alternative 3

Small portions of Denny Park and Cascade Park and Playground could be affected by morning shadows in spring and autumn. Winter morning shadows would periodically affect portions of Denny Park and Cascade Park and Playground. Winter noontime and afternoon shadows would periodically shade portions of all three open spaces.

Focus Areas

The impacts of Alternative 3 would be the same as Alternative 1 in the focus areas. As with Alternative 2, while height reduction would occur, but the changes in shadow impacts would not differ substantially from those noted with regard to Alternative 1.

Alternative 4 (No Action)

Portions of Denny Park could periodically be affected by morning shadows during each season. Winter morning, noon and afternoon shadows could affect all three open spaces.

Focus Areas

Alternative 4 anticipates no significant change.

3.10.11 Mitigation Strategies

At such time site-specific development occurs, detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground or Lake Union Park with attention to times of the year and hours of the day the open space could be affected, the geographical area(s) of the open space affected, anticipated seasonal use of the open space, availability of other open spaces in the area, and the number of people affected.

SMC 25.05.675Q2e authorizes the City to employ measures to mitigate adverse shadow impacts to key open spaces, including:

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable
Adverse Impacts*

- a. limiting the height of development;
- b. limiting the bulk of the development;
- c. redesigning the profile of the development;
- d. limiting or rearranging walls, fences or plant material;
- e. limiting or rearranging accessory structures, i.e., towers, railings, antennae; and
- f. relocating the project on the site.

3.10.12 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to shade and shadow are anticipated.

*Affected
Environment
Environmental
Impacts
Mitigation
Strategies*
**Significant
Unavoidable
Adverse
Impacts**

LIGHT & GLARE

3.10.13 Affected Environment

The major sources of artificial illumination in the South Lake Union neighborhood include street lights, building lighting, vehicle headlights, signage, security lighting and other lighting typical of an urban setting.

There are no major sources of unusually bright artificial lighting, such as sports field illumination. Major arterials are particularly well lighted corridors, including Denny Way, Mercer Street, Fairview Avenue N, Westlake Avenue N, and Aurora Avenue N. The mixture of commercial and residential uses does not appear to create any significant sensitivity to nighttime light exposure.

Natural daylight is also typical of an urbanized area with expanded exposures due to the north-south orientation of the topographic basin. The rising elevations along the east side (Eastlake Avenue E and Capitol Hill) and along the west side (Aurora Avenue N and Queen Anne Hill) reduce local morning and afternoon daylight exposures respectively.

There is high visibility and light exposure of the taller buildings in South Lake Union because of the natural basin setting. The I-5 freeway extends along the eastern edge of South Lake Union and SR-99 extends along the western edge and there is high visibility and possible glare exposure as a result of vehicular traffic. While the water surface of the lake can, at times, become a potentially reflective surface, currently there are no highly reflective building surfaces that could at times present light and glare hazards to motorists or pedestrians.

Air traffic from the Lake Union Seaplane Airport generally takes off and lands facing south or south west and could be a sensitive receptor for light and glare impacts.

Focus Areas

Existing light and glare in the three focus areas is typical of an urban environment.

3.10.14 Environmental Impacts

This section describes changes to the aesthetic character of the built environment including light and glare impacts that could occur under the four EIS alternatives.

*Height, Bulk and
Scale*

Viewshed

Shadows

Light and Glare

Aesthetics Contents

*Affected
Environment*

***Environmental
Impacts***

*Mitigation
Strategies*

*Significant
Unavoidable
Adverse Impacts*

Light and Glare

Impacts Common to All Alternatives

The increased amount of buildings would increase the cumulative level of artificial illumination in South Lake Union. The level of building and site lighting would be greater than current conditions, incrementally expanding with the density of development. The new buildings will include towers that may potentially incorporate reflective surfaces that could on occasion create glare impacts. The exposure may extend to adjacent hillsides and the freeway because of the topographic basin location.

Potential increases in building heights in this area and specular surfaces on buildings could, at times, generate increased light and glare impacts that may affect seaplane approaches to the south.

Focus Areas

Future development under any of the action alternatives would likely result in a significant increase in the cumulative level of artificial illumination in the focus areas.

Alternative 1

Glare impacts may occur from new tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The distant visibility from Capitol Hill and Gas Works Park of artificial illumination of the towers is high because of their currently unobstructed location. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

Because Alternative 1 allows the greatest degree of development and the potential for increased light and glare is greatest. However, light and glare would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 2

As in Alternative 1, glare impacts may occur from tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The towers and buildings of Alternative 2 are generally shorter than those in Alternative 1, so potential glare impacts may be slightly less because of the reduced surface area.

Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

For all practical purposes, the impacts of Alternative 2 are relatively less, but similar to Alternative 1 in the Focus Areas. Light and glare would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 3

As in Alternatives 1 and 2, glare impacts may occur from tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The towers and buildings of Alternative 3 are generally shorter than those in both Alternative 1 and 2 so potential glare impacts should be less because of the reduced surface area. The exposure is different – especially adjacent to Lake Union – due to the graduated concept. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

For all practical purposes, the impacts of Alternative 3 are relatively less, but similar to Alternatives 1 and 2 in the Focus Areas. Light and glare would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 4 (No Action)

Glare impacts may occur from the lower scaled development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. With no towers, there would not be any distinctive sources for possible glare.

Artificial illumination from new buildings will still be visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area, but will be less a factor due their reduced height.

Focus Areas

Alternative 4 anticipates no significant change.

3.10.15 Mitigation Strategies

SMC 25.05.675K2d authorizes the City to employ measures to mitigate adverse light and glare impacts, including the following:

- a. "limiting the reflective qualities of surface materials that can be used in the development;
- b. limiting the area and intensity of illumination;
- c. limiting the location or angle of illumination;
- d. limiting the hours of illumination; and
- e. Providing landscaping."

Other measures that may be also employed include:

- f. install screening, overhangs, or shielding to minimize spillover lighting impacts – particularly near sensitive residential receivers;
- g. shield exterior lighting fixtures and directing site security lighting away from nearby residential uses;
- h. include pedestrian-scaled and pedestrian-oriented lighting for safety along sidewalks, parking areas, street crossings and building access points;
- i. employ timers or motion sensors for lighting to reduce spillover lighting and generally reduce ambient light levels;
- j. avoid large expanses of smooth, uniform, reflective building surfaces;
- k. incorporate architectural relief and detail, such as exterior sun shades, deep spandrels, mullions or other features of façade articulation, that reduce reflectivity; and
- l. as necessary, undertake project-specific solar impact analysis studies to determine the extent of light and/or glare impacts and to identify specific mitigation measures.

3.10.16 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to light and glare are anticipated.

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable
Adverse Impacts*

Light and Glare

*Affected
Environment
Environmental
Impacts*
*Mitigation
Strategies*
**Significant
Unavoidable
Adverse
Impacts**

Light and Glare

3.11 HISTORIC RESOURCES

This chapter characterizes existing historic resources within the South Lake Union neighborhood. It identifies potential impacts of possible future development patterns under the proposed height and density alternatives and identifies potential mitigation measures.

3.11.1 Affected Environment

Designated landmarks are those properties that have been recognized locally, regionally, or nationally as significant resources to the community, city, state or nation. Recognition may be provided by listing in the National Register of Historic Places (NRHP) or the Washington Heritage Register (WHR), through a nomination process managed by the Washington State Department of Archaeology and Historic Preservation (DAHP) or by listing as a local landmark. Typically, a property is not eligible for consideration for listing in the NRHP or WHR until it is at least 50 years old. For City of Seattle Landmarks properties are eligible when they are at least 25 years old.

SEPA and Cultural Resource Regulations

SEPA refers to the State Environmental Policy Act (Chapter 43.21C RCW), which addresses effects of proposed actions on certain environmental elements, including Historic Resources. The City of Seattle has adopted SEPA and established policies and procedures in SMC 25.05. SMC 25.05.675.H sets forth Policies and Procedures for Historic Preservation, excerpted below.

Policy Background

- a. Historic buildings, special historic districts, and sites of archaeological significance are found within Seattle. The preservation of these buildings, districts, and sites is important to the retention of a living sense and appreciation of the past.
- b. Historic sites, structures, districts, and archaeological sites may be directly or indirectly threatened by development or redevelopment projects.
- c. Historic buildings are protected by the Landmarks Preservation Ordinance as administered by the Landmarks Preservation Board. However, not all sites and structures meeting the criteria for historic landmark status have been designated yet.
- d. Special districts have been established to protect certain areas, which are unique in their historical and cultural significance, including for example Pike Place Market, Pioneer Square, and the

<i>Affected Environment 1</i>
<i>Environmental Impacts ... 11</i>
<i>Mitigation Strategies ... 12</i>
<i>Significant Unavoidable Adverse Impacts ... 13</i>



Naval Reserve Building at Lake Union Park

National Register Criteria:

- A. Association with events that have made a significant contribution to the broad patterns of our history; or
- B. Association with the lives of significant persons in our past; or
- C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded or may be likely to yield, information important in history or prehistory.

International District. These areas are subject to development controls and project review by special district review boards.

- e. Archaeologically significant sites present a unique problem because protection of their integrity may, in some cases, eliminate any economic opportunity on the site.

Policies

- a. It is the City's policy to maintain and preserve significant historic sites and structures and to provide the opportunity for analysis of archaeological sites.
- b. For projects involving structures or sites, which have been designated as historic landmarks, compliance with the Landmarks Preservation Ordinance shall constitute compliance with the policy set forth...above.
- c. For projects involving structures or sites which are not yet designated as historical landmarks but which appear to meet the criteria for designation, the decision maker or any interested person may refer the site or structure to the Landmarks Preservation Board for consideration. If the Board approves the site or structure for nomination as an historic landmark, consideration of the site or structure for designation as an historic landmark and application of controls and incentives shall proceed as provided by the Landmarks Preservation Ordinance. If the project is rejected for nomination, the project shall not be conditioned or denied for historical preservation purposes, except pursuant to paragraphs d or e of this subsection.
- d. When a project is proposed adjacent to or across the street from a designated site or structure, the decision maker shall refer the proposal to the City's Historic Preservation Officer for an assessment of any adverse impacts on the designated landmark and for comments on possible mitigating measures. Mitigation may be required to insure the compatibility of the proposed project with the color, material and architectural character of the designated landmark and to reduce impacts on the character of the landmark's site. Subject to the Overview Policy set forth in SMC Section 25.05.665 mitigating measures may be required.
- e. On sites with potential archaeological significance, the decision maker may require an assessment of the archaeological potential of the site. Subject to the criteria of the Overview Policy set forth in SMC Section 25.05.665 mitigating measures ... may be required to mitigate adverse impacts to an archaeological site ...

National Register of Historic Places

The National Park Service administers the National Register of Historic Places (National Register or NRHP). The National Register is the official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archeology, engineering and culture. National Register properties have significance to the history of their community, state or the nation. Nominations for listing historic properties come from State Historic Preservation Officers, from Federal Preservation Officers for properties owned or controlled by the United States Government, and from Tribal Historic Preservation Officers for properties on tribal lands. Private individuals and organizations, local governments, and American Indian tribes often initiate this process and prepare the necessary documentation. In Washington State, the Washington State Advisory Council on Historic Preservation, organized and staffed by the Department of Archaeology and Historic Preservation (DAHP), considers each property proposed for listing and makes a recommendation on its eligibility.

To be eligible for listing, a property must normally be at least 50 years of age and possess significance in American history and culture, architecture, or archaeology to meet one or more of four established criteria.

Historic resources eligible for listing in the National Register may include buildings, sites, structures, objects, and historic districts. A resource less than 50 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historic importance or if the resource is determined to have 'exceptional' importance. To be eligible for listing in the National Register, a property must also have integrity, which is defined in the NRHP listing criteria as "the ability of a property to convey its significance." Within the concept of integrity, the NRHP recognizes seven aspects or qualities that in various combinations define integrity. These are feeling, association, workmanship, location, design, setting and materials.

Washington Heritage Register

The Washington Heritage Register (WHR) is an official listing of historically significant sites and properties found throughout the state. The list is maintained by DAHP and includes districts, sites, buildings, structures, and objects that have been identified and documented as being significant in local or state history, architecture, archaeology, engineering or culture. Sites which are listed in the NRHP are automatically added to the WHR.

Anyone may prepare and submit a nomination to DAHP. Complete nominations are scheduled for consideration by the State Advisory Council. To be eligible for listing in the WHR, a property must qualify under the following:

- A building, site, structure, or object must be at least 50 years old. If newer, the resource should have documented exceptional significance.
- The resource should have a high to medium level of integrity, i.e. it should retain important character defining features from its historic period of construction.
- The resource should have documented historical significance at the local, state or federal level.

City of Seattle Landmarks Process

Local recognition of historical significance in Seattle is provided through the process of designation of the property as a Seattle Landmark. The process consists of three sequential steps involving the Landmarks Preservation Board: submission of a nomination and its review and approval by the Board; designation by the Board; and negotiation of controls and incentives by the property owner and the Board staff, which is then forwarded to the Board for approval at a public meeting. A final step in Seattle's landmarks process is approval of the designation by an ordinance passed by City Council.

The City of Seattle's Landmarks Preservation Ordinance (SMC 25.12) requires that a property, object or site be more than 25 years old and "have significant character, interest or value as part of the development, heritage or cultural characteristics of the City, state or nation." It must also have integrity or the ability to convey its significance. Seattle's landmarks ordinance also requires a property meet one or more of six designation criteria.

Existing Conditions

The consultant reviewed previously existing studies in order to determine the presence of historic resources and potentially historic resources within the study area. New research and fieldwork was not undertaken for this analysis

Development of Seattle's South Lake Union Area

Lake Union became an early transportation route for shipments of logs and coal, which were cut or extracted east of Lake Washington. Sawmills and shingle mills were predominant early industrial uses along the lake. In 1883, Seattle annexed what had been David Denny's original claim.

SMC 25.12.350 Standards for Designation

- A. It is the location of, or is associated in a significant way with, an historic event with a significant effect upon the community, City, state, or nation; or
- B. It is associated in a significant way with the life of a person important in the history of the City, state, or nation; or
- C. It is associated in a significant way with a significant aspect of the cultural, political, or economic heritage of the community, City, state or nation; or
- D. It embodies the distinctive visible characteristics of an architectural style, or period, or of a method of construction; or
- E. It is an outstanding work of a designer or builder; or
- F. Because of its prominence of spatial location, contrasts of siting, age, or scale, it is an easily identifiable visual feature of its neighborhood or the City and contributes to the distinctive quality or identity of such neighborhood or the City.

Gradually, both the South Lake Union and Cascade neighborhood to the east of it developed as mixed-use urban communities with industries and commercial buildings, wood-frame apartment buildings, boarding houses and single family houses, seven separate churches, several breweries and at least five commercial laundries, several clothing manufacturing plants, and a public school. Wharves were constructed along the lake, and commercial service businesses developed along the main north-south access, Westlake Avenue N.

The construction of electric streetcars in the 1880s and 1890s connected passengers from downtown to South Lake Union and beyond. The streetcars ran along the west and east sides of the lake and to "streetcar suburbs" like Fremont, Edgewater, Latona, and Wallingford.

In 1909, the Northern Pacific Railway was granted a franchise by the City to extend a spur line to the neighborhood, by way of Fremont and along the western shoreline of Lake Union. The line split at Valley Street, with one portion continuing south on Terry Avenue N and another continuing eastward to Fairview Avenue N. This line was used by the 1913 Ford Assembly Plant, located at the southeast edge of the lake, for delivery of vehicle parts. Ford operated the assembly plant from 1913 to 1932. Another vehicle manufacturer in the area, the Kenworth Truck Company at Yale Avenue North and Mercer, may also have benefited from the railroad's transportation link.

When the Lake Washington Ship Canal finally opened July 4, 1917, it dramatically transformed Lake Union, industrializing and eventually militarizing the lake. The small tanneries and cooperages along the southern shoreline disappeared or declined and were displaced by fishing vessel fleets, asphalt plants, the auto assembly plant, sawmills, and boatyards and shipyards. Bill Boeing began to fly his experimental seaplanes in 1916, using a boatyard on the east side of Lake Union and the skills of local boatwrights.

The large Naval Reserve Armory was completed at the lake's south end in 1942, and during World War II Lake Union served military ship repair needs. After the war, the South Lake Union industrial base contracted and much of the older housing stock and residential population in the community declined. Meanwhile, commercial and manufacturing uses continued to increase. Auto-related businesses such as garages, service shops, and retail showrooms became common along Westlake Avenue from the late teens and continued through the post-World War II era.

In 1952, the Battery Street tunnel was built beneath the Denny Regrade and southern portion of the South Lake Union area. This tunnel served to connect Aurora Avenue N to the new viaduct for Highway 99 along the city's central waterfront. The area north of the tunnel (north of Thomas Street) was bisected into east and west halves, with only Broad and Mercer Streets providing access across Aurora in the South Lake Union neighborhood. In this way, Aurora Avenue N established the western edge of the neighborhood.

In the early 1960s, the construction of I-5 further defined the identity of the nearby Cascade and Eastlake neighborhoods, linking them with Lake Union as a result. The freeway's Mercer Street access ramps also divided the northeastern part of the South Lake Union neighborhood, placing several blocks of it in the Eastlake area.

Vehicle traffic on Mercer Street continued to increase in recent decades, effectively separating the area south of Mercer Street from the nearby lakeside amenities. At the same time, the proximity to I-5 and downtown made the South Lake Union area increasingly attractive for business development. Maps dating from after the 1960s show increasingly large-scale parcels and development, alley vacations, and replacement of small-scale buildings by empty sites, typically with parking lots.

In an urban survey from 1975, the neighborhood was described as "a collection of auto showrooms, small businesses and manufacturing enterprises, and parking lots supplementary to, rather than integral with downtown" (Nyberg and Steinbrueck). Those neighborhood industries persisted into the late 1980s. They included older auto repair shops and retail showrooms near Westlake Avenue N, headquarters for general contractors, construction supply distributors, and floral and furniture warehouses. Businesses that moved into the area in the 1980s included printing/photography, childcare facilities, and telecom concerns. The northeast portion of the neighborhood, north of Mercer Street, was redeveloped extensively during this period by two new high-tech medical interests—the Fred Hutchinson Cancer Research Center and Zymogenetics.

Development in the South Lake Union area over 2000–2010 has consisted mainly of five- and six-story buildings as well as apartment buildings and condominiums of up to six and seven stories on consolidated, full- and half-block parcels. The character of the area has largely shifted from lower-scale light industrial and manufacturing buildings and warehouses to these more dense commercial and mixed uses. The South Lake Union Streetcar line was completed in 2007. Amazon's new South Lake Union



Old and new multi-family development

campus is currently under construction and includes several blocks of new buildings of up to 12 stories.

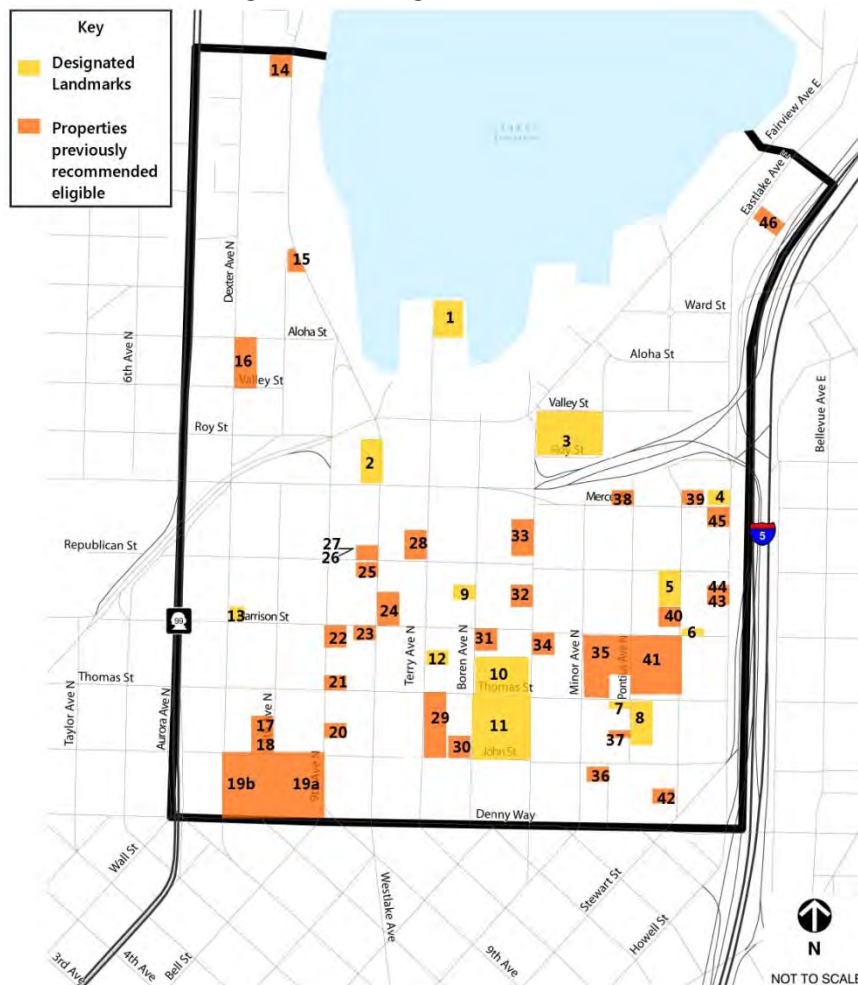
Historic Resources

Thirteen properties within the study area are designated City of Seattle Landmarks, two of which are also listed in the National Register of Historic Places. (See **Table 3.11-1**) Another 34 properties within the study area have been identified in earlier studies as potentially eligible for listing as local landmarks or in the National Register and are still extant. (See **Table 3.11-2** and **Figure 3.11-1**)

Designated Properties

The following 13 properties within the study area are designated Seattle Landmarks. Two are also National Register-listed, noted with an asterisk (*).

Figure 3.11-1
Eligible and Designated Historic Sites



Source: City of Seattle, BOLA Architecture + Planning, 2010

Table 3.11-1
Designated Landmarks

Site no.	Parcel no.	Name	Address
1	4088803210	Naval Reserve Armory* (1942)	860 Terry Ave N
2	4088803385	Ford McKay & Pacific McKay Buildings (1922 & 1925)	600–615 Westlake Ave N
3	1984200035	Ford Assembly Plant (1913)	1155 Valley Street / 700 Fairview Ave N
4	2925049097	Jensen Block Apts.(1906)	601 Eastlake Ave E
5	6849200110	Supply Laundry (ca. 1906)	1265 Republican St
6	6847700030	St. Spiridon Russian Orthodox Cathedral (1938)	400 Yale Ave N
7	2467400455	Immanuel Lutheran Church*	1215 Thomas St
8	6849700100	New Richmond Laundry (1917, 1927, 1944)	224 Pontius Ave N
9	1983200270	Van Vorst Building (1909–1915)	413–421 Boren Ave N
10	1986200480	Troy Laundry (1927)	311–329 Fairview Ave N
11		Seattle Times Building (1931)	1120 John St
12	1986200450	Terry Avenue Building (1914)	310–320 Terry Ave N
13		West Earth Co. Street Clock (1915)	406 Dexter Ave N

Source: City of Seattle Department of Neighborhoods, 2010

Properties Previously as Potentially Eligible for Historic Designation

In addition to the designated properties, 34 properties have been identified in earlier studies as potentially eligible for local and/or National Register listing. Both Washington State and City of Seattle historic property inventory forms were also searched for properties within the study area.

The properties cited in this section are those within the present study area that were identified in one or more of the earlier studies as potentially eligible for designation. Some buildings that were identified in earlier reports as potentially eligible have since been demolished; these properties are not included in the following list.



St Spiridon Orthodox Cathedral

Table 3.11-2
Properties Previously Identified as Potentially Eligible for Historic Designation

Site no.	Parcel no.	Name (constr. date)	Address	Source
14	3025049003, 3025049004	National Sign Corp. (1920 and 1922)	1247–1255 Westlake Ave N	1995 Commons
15	2249500180	Christie Building/American Meter & Appliance (1926)	1001 Westlake Ave N	1995 Commons
16	2249000330	Seattle School District Warehouse (1920–21, remodeled 1934)	810 Dexter Ave N	1995 Commons
17	1991201100	J. Lister Holmes Architectural Office/Holly Press (1954)	215 8th Ave N	2008 DAHP (Nifty from the Last 50)
18	1991201110	Denny Park Lutheran Church (1939, 1955–56 addn.)	766 John Street	1995 Commons / 2005 City Inventory
19A	1991201077	Denny Park (1884)	Denny Wy, Dexter Ave N, John St, & 9th Ave N	1995 Commons / 1970 WHR
19B	1991201077	Seattle Parks Dept. Headquarters (1948)	118 Dexter Ave N	1995 Commons / 2005 City Inventory
20	1986200105	A-One Ornamental Iron Works	216 9th Ave N	2005 City Inventory
21	1986200155	Garage/Brian Uttig School of Massage (1920)	900 Thomas St	1995 Commons
22	1986200175	City Hardware (1927)	901 Harrison St	1995 Commons
23	1986200125	Durant Motor Co./Pande Cameron (1928)	333 Westlake Ave N	1995 Commons / 2005 Streetcar EIS
24	1983200230	Firestone Tire (1929)	400 Westlake Ave N	1995 Commons / 2005 Streetcar EIS
25	1983200005	(1920)	425 Westlake Ave N	1995 Commons
26	1983200095	Antique Liquidators (1919)	503 Westlake Ave N	1995 Commons / 2005 Streetcar EIS
27	1983200090	MBI Seattle (1925)	507 Westlake Ave N	1995 Seattle Commons
28	1983200160	(1924, altered)	964 Republican St	1995 Commons *greatly altered
29	1986200380	Fred Rogers Building (1954)	200 Terry Ave N	2005 Streetcar EIS *SHPO det. not eligible (7/14/2005)
30	1986200370	Taskett Agency Office Bldg. (1954)	201 Boren Ave N	2010 DAHP (Nifty from the Last 50) *denied Seattle Landmark designation (May 7, 2008)

Site no.	Parcel no.	Name (constr. date)	Address	Source
31	1986200515	US Radiator/David Smith & Co. (1925)	334 Boren Ave N	1995 Commons / 2005 DAHP (Streetcar)
32	1983200615	Wold Building (1924)	413 Fairview Ave N	1995 Commons
33	1983200545	Washington State Dept. of Game (1948)	509 Fairview Ave N	2005 DAHP (Mercer Corridor)
34	2467400065	Bricklayers' Building	318 Fairview Ave N	2003 City Inventory
35	2467003335	Cascade Playground & Comfort Station (ca. 1936)	Harrison St & Pontius Ave N	
36	2468400070	Brewster Apts (1916)	133 Pontius Ave N	1995 Commons / 2003 City Inventory
37	2467400455	Single-family res. (ca. 1911)	223 Pontius Ave N	2003 City Inventory
38	2467400190	Carlton Apts (1926, alt. 1942)	603 Pontius Ave N	1995 Commons / 2003 City Inventory
39	2925049034	Mercer Building (1959)	1310 Mercer St/600–610 Yale Ave N	2003 City Inventory
40	6849200100	Fuller Brush Building (ca. 1907)	409 Yale Ave N	2003 City Inventory
41	6849200005	Seattle School District Warehouse (1955)	1255 Harrison Street	2003 City Inventory / 2006 DAHP *denied Seattle Landmark designation (Jan 4, 2006)
42	6849700075	Feathered Friends & 911 Media Arts Center (1927)	117 Yale Ave N	1995 Commons / 2003 City Inventory
43	6847700050	Foreign Auto Rebuild (1926)	421 Eastlake Ave E	1995 Commons / 2003 City Inventory
44	6847700055	Apartments/offices (1910)	425 Eastlake Ave E	1995 Commons / 2003 City Inventory
45	0209000075	Carolina Court Apts (1916)	527 Eastlake Ave E	1995 Commons / 2003 City Inventory
46	2163901095	Buffalo Shoe Factory/commercial (1917)	1124 Eastlake Ave E	1995 Commons

Source: City of Seattle Department of Neighborhoods, 2010

Focus Areas¹

8th Avenue Corridor

The 8th Avenue Corridor contains no designated landmarks. The Denny Park Lutheran Church (#18) and Holly Press (#17) on 8th Avenue N just north of Denny Park are located at the southwest end of the corridor and have been inventoried as potentially eligible for historic designation in previous reports. Denny Park and the Parks Department Headquarters (#19A & B) are located adjacent to the south end of the corridor, across John Street.

Fairview Avenue Corridor

The Fairview Avenue Corridor contains two designated Seattle Landmarks—the Troy Laundry and the Seattle Times Building. In addition, David Smith & Co. (334 Boren Avenue, #31), Wold Building (413 Fairview Avenue N, #32), Washington State Dept. of Game (509 Fairview Ave N, #33), and Bricklayers' Building (318 Fairview Ave N, #34) were inventoried as potentially eligible for historic designation in previous reports.

Valley/Mercer Blocks

The Valley/Mercer Blocks contain one designated Seattle Landmark at the west end—the Ford McKay and Pacific McKay Buildings. Currently the site is vacant, as the historic building elements have been salvaged, catalogued, and stored in anticipation of the Mercer Corridor project. These building elements are required to be reinstalled on a new frame, in a manner approved by the Seattle Landmarks Preservation Board, as a condition of construction on the subject block. Additionally, the Ford Assembly Plant is located immediately east of the Valley/Mercer Blocks, across the street from the east end of the focus area.

3.11.2 Environmental Impacts

When zoning allows for increases in building heights and density, there is increased potential for greater growth, development and land values than prior to the change. Where there is increased demand for development, there may be greater pressure on parcels with low-scale, smaller buildings to redevelop. Under these circumstances, the operation and maintenance

¹ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.



of small historic buildings may be perceived as being infeasible from an economic perspective.

Smaller-scale, one- and two-story buildings tend to be particularly vulnerable to demolition for redevelopment, including structures that are not already recognized by listing in a historic register but which may be eligible for local designation and the protection that it affords.

Impacts Common to All Alternatives

In all of the action alternatives, zoning would allow denser future development patterns than that represented by the historic neighborhood fabric. The alternatives could encourage the aggregation of parcels to form half- or full-block sites on which larger buildings may be constructed, which could result in conversion of low-scale existing buildings and also significantly change their context.

In all alternatives, higher buildings could be constructed directly across the street to the north of historic Denny Park. See Section 3.10, **Aesthetics**, for further discussion of potential shading issues at Denny Park.

Alternative 1

Alternative 1 allows for the greatest amount of development, which could also result in the greatest amount of development pressure on existing small scale structures that may be eligible for historic designation.

Alternative 1 also allows for the greatest relative bulk and scale of development compared to all alternatives. If new development occurs adjacent to a designated historic structure or a structure that is potentially eligible for historic designation, the difference in character, height, and bulk could negatively impact the historic value of the existing structure.

Alternative 2

While increased bulk and scale of allowed buildings would be somewhat less in Alternative 2 than in Alternative 1, the impacts on historic resources are likely to be similar.

Alternative 3

While increased bulk and scale of allowed buildings would be somewhat less in Alternative 3 than in Alternatives 1 or 2, the impacts on historic resources are likely to be similar.

Alternative 4 (No Action)

Maintaining the existing zoning in the study area would not change the development pressure on historic resources.

Focus Areas

Impacts associated with any of the focus areas are not expected to be substantively different from those described for the study area as a whole. The mitigating measures described below for the study area as a whole would also apply to sites within the focus areas.

3.11.3 Mitigation Strategies

In order to comprehensively assess existing resources and identify historic preservation priorities, potentially undertake a new inventory of historic resources in the South Lake Union neighborhood. Up-to-date information will allow proper assessment of potentially eligible properties. A new survey would address buildings such as 501 Dexter Avenue N, which appears to have architectural significance yet has not been cited in earlier surveys.

If higher-density alternatives (1, 2, or 3) are chosen, funding to the Department of Neighborhoods Historic Preservation Office for preparation of landmark nominations should be considered as mitigation. The work would allow the properties to be taken through the nomination process to clarify the status of potentially significant properties.

The *South Lake Union Urban Center Neighborhood Plan* of September 2007 identifies goals and policies that specifically relate to historic or older buildings in the neighborhood. The plan identifies the following policies, which would be appropriate as mitigation measures for increased height and density allowed in the neighborhood (under Alternatives 1, 2, or 3).

- Establish incentives to encourage preservation, adaptive use, and rehabilitation of historically significant structures in the neighborhood.
- Explore incentives to encourage the adaptive use of older, character-providing buildings in the neighborhood.
- Provide incentives to support property owners who wish to maintain existing buildings.

A zoning capacity and financial feasibility model should be created and analyzed to determine whether an expanded transfer of development rights (TDR) program would be an effective financial incentive and

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable Adverse
Impacts*

Historic Resources Contents

Goal 2: A neighborhood that recognizes its history as a maritime and industrial community and embraces its future as a growing urban center that provides for a wide range of uses.

Source: South Lake Union Urban Center Neighborhood Plan, 2007.

mitigation tool for preservation of local landmark properties in the South Lake Union neighborhood.

A certified arborist should undertake a conditions analysis of the trees in Denny Park, including an assessment of their need for seasonal sunlight from the north. Design standards should be modified accordingly to allow ample light.

3.11.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to historic resources are anticipated under any of the proposed alternatives.

<i>Affected Environment Environmental Impacts Mitigation Strategies</i>	Historic Resources Contents
Significant Unavoidable Adverse Impacts	

3.12 CULTURAL RESOURCES

This section describes existing cultural resources in the South Lake Union neighborhood and identifies potential impacts of the proposed alternatives, together with potential mitigating measures. This section summarizes key information from a more detailed cultural resources assessment contained in **Appendix C**.

Assessment methods included a review of previous ethnographic and archaeological investigations in the local area; an online search of records maintained by the Washington Department of Archaeology and Historic Preservation (WA DAHP) for known sites in the immediate area; a review of relevant background literature and maps (including General Land Office (GLO), Sanborn, and Kroll maps); and the preparation of this report. This assessment utilized research design that considered previous studies, the magnitude and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the study area, as well as other applicable laws, standards, and guidelines (per 36 CFR 800.4 (b)(1); WA DAHP 2010b).

3.12.1 Affected Environment

Forty-three cultural resource assessments have previously been prepared within approximately one mile of the study area. Many of these were conducted within the study area. Of note are recent assessments that included subsurface archaeological investigations within the boundaries of the current study area. Durio and Bard (2008:4-10–4-11) conducted archaeological testing near Broad Avenue and Mercer Street in the vicinity of a Duwamish camp or longhouse and did not recover any archaeological evidence of pre-contact or historic-period habitation. Dellert and Larson (2004) reported archaeological monitoring of excavations to remove a tunnel boring machine north of Valley Street. Deposits observed consisted of fill up to 18 feet below surface, lakebed sands, and underlying peat; no archaeological sites were identified.

As a result of these assessments, one historic-period archaeological site has been recorded within the study area (**Table 3.12-1**). Site 45KI502 is a historic-period railroad segment east of Westlake Avenue from Aloha Street north to the Fremont Bridge (Cole 2000; Nelson 2001). It was supported on a wooden trestle built in 1911 over the steeply sloped margins of Lake Union. Because the site has been altered and lacks integrity, it is not eligible for inclusion in the National Register of Historic

<i>Affected Environment</i>	1
<i>Environmental Impacts</i>	7
<i>Mitigation Strategies</i> ...	10
<i>Significant Unavoidable Adverse Impacts</i> ...	10

Places (NRHP). Subsequent archaeological monitoring of construction excavations in and adjacent to the site did not identify any pre-contact archaeological materials. Historic-period and/or recent refuse items (e.g., bottle glass, wood debris) were observed during monitoring but their age could not confidently be assessed at 50 years or older; therefore, they were not considered archaeological or potentially eligible for the NRHP (Shong and Miss 2004).

Table 3.12-1

Archaeological sites recorded within an approximately 1-mile radius of the study area (WA DAHP 2010a).

Site Number	Site Name	Site Type	Location Relative to Study Area	Evaluation Status	Potential Impacts due to Proposal	Recommended Mitigation
45KI405	--	Historic Maritime Properties, Pre Contact and Historic Components	1 mile west-southwest	Site has not been evaluated for NRHP.	None.	N/A
45KI456	Baba'k ^w ob Site	Historic Object(s), Pre Contact Camp; Pre Contact Shell Midden	0.6 miles south-southwest	Site recommended not eligible for NRHP.	None.	N/A
45KI482	World Trade Center North Historic Site	Historic Object(s), Pre Contact Burial	0.5 miles southwest	Site recommended not eligible for NRHP.	None.	N/A
45KI502	Northern Pacific Railroad Belt Line	Historic Railroad Properties	Within the study area along the east side of Westlake Avenue between Galer Street and Aloha Street (Cole 2000:4)	Site recommended not eligible for NRHP.	None. Prior construction has compromised this site. Construction in the site area under the current proposal not anticipated to generate additional impacts to this site.	None.

Site Number	Site Name	Site Type	Location Relative to Study Area	Evaluation Status	Potential Impacts due to Proposal	Recommended Mitigation
45KI737	Old Pine Street Stub Tunnel Site	Historic Commercial Properties, Historic Object(s), Historic Road, Historic Structures Not Specified	0.2 miles south	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A
45KI809	Great Northern Railroad Tunnel	Historic Railroad Properties	0.75 miles south	Determined eligible for NRHP.	None.	N/A
45KI946	--	Historic Commercial Properties, Historic Residential Structures	0.3 miles east	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A
45KI958	SDOT Maintenance Yard	Historic Commercial Properties, Historic Object(s), Historic Residential Structures, Pre Contact and Historic Components, Pre Contact Lithic Material	100 feet west	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A

Source: Cultural Resources Consultants, 2010

No pre-contact archaeological sites have been identified within the study area. The nearest recorded pre-contact archaeological site is the Baba'k^wob site (45KI456) on Elliott Bay in Belltown (Lewarch 1998). The site was first identified as human skeletal elements encountered in construction excavations (Larson and Lewarch 1998). Archaeological testing and monitoring identified additional archaeological materials including shell midden, wood planks, charcoal, and a variety of historic-period personal, domestic, and commercial items (Lewarch 1998; Lewarch, et al. 2002:Table 4). Examination of stratigraphy in archaeological test units and construction trench exposures, along with artifacts dating from the 1830s to 1860s, indicated that the archaeological materials were contained within historic-period (1880s to 1912) and recent fill and

landslide deposits, and dated to the historic period. Because the site did not retain depositional or locational integrity, it was recommended not eligible for the NRHP (Lewarch, et al. 2002:123).

Archaeological Context

The study area is located on what were formerly a seasonally wet meadow, a ravine and stream, the northeastern flank of Denny Hill, and steeply sloped forested uplands adjacent to the Lake Union shoreline. Native American villages in this region were typically located very near or adjacent to water bodies (Suttles and Lane 1990). It is probable that the main pre-contact human activities in the study area were hunting and plant gathering based in associated seasonal camps. Historic-period Lakes Duwamish people continued to obtain resources from Lake Union and lived in the area southwest of the study area. Over the last approximately 130 years, activity in the study area has included logging, construction and demolition of residential and commercial structures, construction of manufacturing and other industrial facilities, shoreline filling and construction of artificial waterways, construction and regrading of roadways, and construction of buried water lines and other utilities. This suggests that undisturbed evidence of earlier human occupation is unlikely to be present in the study area. Archaeological materials that could potentially be found in the study area would most likely date to the historic period.

Potential for Discovery of Archaeological Sites in the Study Area

Forsman, et al. (1997) identified two locations within the current study area that have higher archaeological potential than other portions of the study area. The first is a ravine south of Republican Street, centered roughly between Westlake Avenue and Terry Avenue (Tobin 1987:46, in Lewarch, et al. 1999:8). This low-elevation area, identifiable using contour lines on historical maps (e.g., USC&GS 1875, 1899; USGS 1897), would have contained a seasonally wet meadow or prairie with numerous valuable plant and animal resources (Forsman, et al. 1997; Waterman 1922). Located just east of the eastern boundary of the Denny Regrade, it was filled with regrade spoils and other refuse and debris materials. The second is the pre-industrial shoreline of Lake Union. Lakes Duwamish and other Coast Salish peoples used the lakeshore and margins of Lake Union for hunting, fishing, and other resource extraction and processing activities. This part of the study area has also been heavily modified by emplacement of large volumes of fill including sawdust, regrade spoils, household refuse, and demolition debris. A third formerly low-elevation area is present in the vicinity of the Fairview Avenue Corridor (USC&GS

1899; USGS 1897; USSG 1856). In all three areas, archaeological sites could potentially be buried beneath the fill in intact native soils. Archaeological materials such as stone tools and flaking debris, shell midden deposits, faunal and botanical remains, fire-modified rock, charcoal, and postmolds, depressions, or other features could be present, reflecting a range of subsistence, domestic, and ceremonial activities. Such materials, if present, could be pre-contact or historic in age, and could potentially be eligible for the NRHP.

Historic-period archaeological sites could also be present in the study area. These could include domestic, commercial, and industrial materials such as personal ornamentation, food scraps and packaging, structural, mechanical, or manufacturing waste items. However, historic-period archaeological materials would be expected to be contained within historic and recent fill deposits and not in intact native soils. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

The long history of industrial and public works activities in the study area has disturbed most natural land surfaces. As a result of more than a century of urban development, undisturbed landforms are not available for inspection within the study area. Therefore, archaeological survey was not conducted as a part of this assessment.

8th Avenue Corridor

The 8th Avenue Corridor, covering the area one-half block east and west of 8th Avenue between Republican and John Streets, is within the area cut during the Denny Regrade (Corley 1969; Forsman, et al. 1997: **Figure 3.12-1**; Seattle Engineering Department 1907, 1910). Up to 60 vertical feet of soils were removed in this area, just north of Denny Park (Corley 1969). Natural land surfaces that were exposed and available for human occupation from the end of the Pleistocene to 1907 are no longer extant in this area. As a result, the 8th Avenue Corridor is considered to have no potential to contain pre-contact archaeological sites or historic-period archaeological sites from before 1907. The area is considered to have a low potential to contain intact historic-period archaeological sites postdating the Denny Regrade due to impacts of subsequent urban development. Historic-period debris items are expected to be contained within deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

Figure 3.12-1
Intersection of 9th Avenue and Harrison Street



Source: King County, 2010.

Fairview Avenue Corridor

The Fairview Avenue Corridor, covering the area one-half block east and west of Fairview Avenue between Mercer Street and Denny Way, is in a formerly low-elevation area with a stream that entered Lake Union near the present-day intersection of Valley Street and Fairview Avenue (USC&GS 1899; USSG 1856).

This environment would have supported resources attractive to humans from deglaciation to the historic era. If land surfaces exposed from the end of the Pleistocene to the pre-urban historic era are preserved beneath fill deposits, then pre-contact and early historic-period archaeological sites could be present. Pre-contact archaeological sites could include the remains of fish weirs, basketry, stone implements, and other evidence of resource procurement and processing or domestic activities. Historic-period archaeological sites buried beneath fill could include remains of logging operations or deposits related to the residence of W. P. Smith, which was east of the corridor. Historic-period debris items are expected to be contained within fill and other deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

Valley/Mercer Blocks

The Valley/Mercer Blocks are located atop filled lakeshore. The pre-industrial Lake Union shoreline extended to approximately Republican Street near Terry Avenue (Chrzastowski 1983; Durio and Bard 2008:Exhibit 4-1; USC&GS 1875). The former shoreline and its margins would have contained a variety of plant and animal resources used by Coast Salish peoples. Archaeological sites in this part of the study area would likely be low-density, diffuse concentrations of materials lost or discarded in

hunting, fishing, and other resource extraction and processing activities in the lake, such as fish weirs, basketry, stone tools, and wood or bone implements. This part of the study area now contains large volumes of fill including sawdust, regrade spoils, household refuse, and demolition debris, and has been affected by subsequent urban development. It is estimated that fill in the area containing the Valley/Mercer Blocks is 25 feet thick (Durio and Bard 2008:4-5). Historic-period debris items are expected to be contained within fill and other deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

3.12.2 Environmental Impacts

Because the study area is considered to have a low potential to contain intact archaeological deposits, no significant impacts to archaeological sites are anticipated. No pre-contact archaeological sites have been identified within the study area. One historic-period archaeological site (45KI502) has been recorded within the study area and was previously impacted by sewer line and trail construction. Further development is not anticipated to generate additional impacts to this site.

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to the earth element of the environment. Although unlikely, as noted above, future site-specific development proposals under any of the alternatives, however, could result in impacts to cultural resources. Potential impacts that could be associated with future site-specific development under any alternative are briefly discussed below.

Impacts Common to All Alternatives

The potential for the study area to contain archaeological sites is generally considered to be low. This is due primarily to the long history of disturbance including construction and demolition of buildings, transportation developments, major earthmoving projects (i.e. Denny Regrade), and installation of buried utilities. While the area could have potentially been the location of repeated or regular pre-contact and early historic-period activities, extensive construction and landform modifications since the 1880s have most likely destroyed the integrity of any archaeological evidence of these activities that may have been present, seriously compromising their potential significance. There appears to be a low probability for intact pre-contact or historic-period archaeological deposits to be present within the study area.

<i>Affected Environment</i>	Cultural Resources Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

Based on existing archaeological data for this region, pre-contact archaeological sites that might potentially have been present in the general vicinity prior to urbanization could have included the remains of habitation sites, lithic scatters, fish weirs, trails, or similar features, which could represent a range of domestic, subsistence, and ceremonial activities. Site significance could potentially be related to changes in site types and use of environmental resources over time (Lewarch et al. 2002:16-17). Additionally, pre-contact sites may potentially have significance as Traditional Cultural Properties to one or more tribal and/or ethnic groups (Parker and King 1990).

The area may have been used by Lakes Duwamish people as a habitation site repeatedly or consistently for centuries or it may have been first occupied in the nineteenth century. However, any physical evidence of this occupation is not likely to have been preserved due to its location in the Denny Regrade area and the vicinity of the present-day Broad Street and Mercer Street roadways, where road construction has disturbed soils from 6 to 30 feet or more below surface (Durio and Bard 2008:Exhibit 4-1). The trail connecting Lake Union and Belltown (Thrush and Thompson 2007; USSG 1856) most likely passed through the southwestern portion of the study area, but any physical evidence of this route also would have been removed by urban development.

Historic uses of the study area have included logging, transportation, and domestic, industrial, and commercial activities. These activities could potentially have resulted in deposition of archaeological materials; such deposits could arguably be significant if they retained depositional integrity and could result in data that would inform research questions regarding ethnicity, domestic behavior, or other facets of historical life relevant to the social, economic, or cultural development of Seattle (Weaver 1989). Frequencies of materials found at domestic artifact scatters may provide economic data relevant to larger historical trends, and potentially may be suggestive of relative economic status and possibly ethnicity. Structures may provide data on occupational specialization, construction styles, and agricultural/subsistence practices. Pre-structural remains could suggest early settlers' domestic, social, and commercial activities (Weaver 1989). However, such activities are unlikely to leave a distinctive archaeological signature that would be recognizable following major construction excavation and building episodes within the current study area over more than a century of urban development. Physical evidence of the residences of W. P. Smith and Thomas Mercer is not expected to persist due to the effects of earthmoving and construction activities in these locations.

Alternative 1

Under Alternative 1, construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area. Any as-yet unknown potentially NRHP-eligible archaeological sites, if discovered in construction, would be subject to mitigation.

Alternative 2

Although the proposed changes to building heights and densities are different under Alternative 2, their potential impacts to cultural resources are the same as for Alternative 1. Construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

Alternative 3

Under Alternative 3, although the specifics of height and density changes are different, potential impacts to cultural resources are expected to be the same as for Alternatives 1 and 2. Construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

Alternative 4 (No Action)

Continued development of South Lake Union within current zoning regulations is not anticipated to affect any recorded archaeological sites. As for Alternatives 1, 2, and 3, construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

Focus Areas¹

Impacts associated with any of the focus areas are not expected to be substantively different from those described for the study area as a whole. The mitigation strategies described below for the study area as a whole would also apply to sites within the focus areas.

3.12.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the location and nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Mitigation measures could potentially include archaeological monitoring, testing, or data recovery excavations; development of interpretive signs, markers, or exhibits; and/or minimization or avoidance of further impacts through redesign.

3.12.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to cultural resources are anticipated.

<i>Affected Environment Environmental Impacts</i>	Cultural Resources Contents
Mitigation Strategies	
<i>Significant Unavoidable Adverse Impacts</i>	

<i>Affected Environment Environmental Impacts</i>	Cultural Resources Contents
<i>Mitigation Strategies</i>	
Significant Unavoidable Adverse Impacts	

¹ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

Affected Environment 4
Planning ... Scenarios ... 42
Environmental Impacts ... 57
Mitigation Strategies ... 78
Significant Unavoidable Adverse Impacts ... 94

3.13 TRANSPORTATION

This section presents a multi-modal transportation analysis prepared for proposed height and density increases that could result from incentive zoning provisions in the South Lake Union neighborhood. It presents existing transportation conditions in South Lake Union, as well as future transportation conditions (2031) under three future alternatives. Significant transportation impacts and potential mitigation measures are identified for each future alternative based on the policies and recommendations established in state and local plans. Below is an executive summary of significant impacts and potential mitigation measures.

As shown in the following table and described fully in the transportation analysis chapter, there will be significant impacts to the future year transportation system with any of the proposed height and density alternatives.

Table 3.13-ES1
 Summary of Signification Impacts to the Transportation System

Type of Impact	Future Year Height and Density Alternative (2031)		
	Alternative 1	Alternative 2	Alternative 3
Traffic Operations (congestion)	✓	✓	✓
Transit (capacity)	✓	✓	✓
Pedestrian and Bicycle Circulation			
Parking	See note below on parking impacts		
Freight Mobility	✓	✓	✓
Traffic Safety	✓	✓	✓

Note: The analysis indicated that there could be significant short-term parking impacts as individual projects in South Lake Union build out. However, over time parking prices will adjust to meet demand and travelers will shift to other modes, thus reducing the demand for parking.

Source: Fehr & Peers, 2010

The table above indicates that all three alternatives have similar overall impacts on the transportation system. However, as described more fully in the transportation chapter, the magnitude of the impacts varies based on the total trip generation of the alternatives. **Table 3.13-ES2** summarizes the PM peak hour trip generation of each alternative.

Table 3.13-ES2
PM Peak Hour Trip Generation by Alternative

Alternative	Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)

Note: See Appendix E for details on the mode split calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Source: Fehr & Peers 2010

To mitigate the impacts of the three Action Alternatives, a comprehensive strategy for potential mitigation measures was developed in close coordination with the City of Seattle. Because each of the three Action Alternatives have similar impacts, a single mitigation strategy was developed that could be applied to all alternatives. The transportation chapter gives a full description of the potential mitigation strategy, however, a brief summary is provided below:

- Improve the bicycle and pedestrian network:* Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust bicycle and pedestrian system is provided. Potential mitigation measures to provide this system include the implementation of bicycle and pedestrian improvements identified in plans and documents such as the *Seattle Pedestrian Master Plan*, *Bicycle Master Plan*, and *South Lake Union Urban Design Guidelines*. Specific projects include sidewalk gap closures, new bikeways, new hill-climbs, and marked/signalized pedestrian crossings.



Neighborhood bicycle storage

- *Expand travel demand management strategies:* This potential mitigation measure looks to expand on the existing Commute Trip Reduction program and Transportation Management Program in the South Lake Union area. Specifically, parking management strategies such as maximum parking limits and unbundled parking pricing have been shown by research to reduce demand for parking, vehicle trip generation, and traffic congestion. An expansion of the City's GTEC program could further support the goal to reduce vehicle trip generation and traffic congestion in the area.
- *Transit Service Expansion:* Traffic congestion, transit load factor, and transit frequency impacts could be reduced through expanded transit service in the area. The City of Seattle and King County Metro should work together to identify capital and operations funding for additional transit service and increased frequencies on key routes.
- *Roadway Capacity Enhancements:* A potential mitigation measure to reduce traffic congestion and improve freight mobility would be the implementation of the planned Mercer West Corridor Project.



Seattle Streetcar in the South Lake Union neighborhood

The potential mitigation measures above reduce transportation impacts of the proposed Action Alternatives. However, even with the potential mitigations implemented, significant unavoidable transportation impacts to traffic congestion, transit capacity, and freight mobility are likely to remain. It should be noted that the potential mitigation strategy identified in the transportation chapter is expected to substantially reduce vehicle trip generation in South Lake Union. As shown in **Table 3.13-ES3**, the three Action Alternatives with mitigation are expected to have lower PM peak hour vehicle trip generation than the less dense No Action alternative.

Table 3.13-ES3
PM Peak Hour Trip Generation by Mitigated Alternative

Alternative	Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 With Mitigation	12,244 (37.5%)	11,835 (36.2%)	8,606 (26.3%)
Alternative 2 With Mitigation	12,236 (37.4%)	11,844 (36.2%)	8,606 (26.3%)
Alternative 3 With Mitigation	10,715 (37.4%)	10,435 (36.4%)	7,526 (26.2%)

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Source: Fehr & Peers 2010

3.13.1 Affected Environment

This section describes the existing conditions of the area that would be affected by the proposed height and density alternatives.

The South Lake Union neighborhood is located in the center of the City of Seattle. The study area is adjacent to many neighborhoods, including Downtown, First Hill, Capitol Hill, Eastlake, and Uptown. South Lake Union is a neighborhood in transition with a mix of older industrial buildings and new medical research buildings, office buildings, and residential developments.

As shown in **Figure 3.13-1**, the South Lake Union neighborhood is bounded by Lake Union to the north, Aurora Avenue to the west, Denny Way to the south, and I-5 to the east.

Existing Transportation Network

This section describes the existing transportation system in South Lake Union for all modes, including bicyclists, pedestrians, transit riders, and drivers.

Affected Environment	<p>Affected Environment</p> <p><i>Planning Scenarios</i></p> <p><i>Environmental Impacts</i></p> <p><i>Mitigation Strategies</i></p> <p><i>Significant Unavoidable Adverse Impacts</i></p>	Transportation Contents
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Existing Transportation Network	<p>Existing Transportation Network</p> <p><i>Analysis Methodology</i></p> <p><i>Analysis Results</i></p>	Affected Environment
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Pedestrian System

Accessing the Neighborhood

Lake Union (to the north), SR 99 (to the west), and I-5 (to the east) limit pedestrian access to the study area. Listed below are specific routes that pedestrians can use to access the South Lake Union neighborhood from other parts of Seattle.

Figure 3.13-1
South Lake Union Neighborhood Map



Source: Fehr & Peers, 2010

From the west: SR 99 underpasses at Mercer and Broad Streets with sidewalks on both sides.

From the south: pedestrians and bicyclists can cross SR 99 at Denny Way.

From the north: a pedestrian bridge over SR 99 at Galer Street.

From the east: Denny Way and Lakeview Boulevard E I-5 overpasses. The Denny Way overpass over I-5 has a sidewalk on the south side only. The Lakeview Boulevard E overpass is a somewhat indirect connection because it runs parallel to I-5 for approximately one-third of a mile, but has sidewalks on both sides.

Sidewalk Facilities within South Lake Union

In general, sidewalk coverage in the South Lake Union neighborhood is complete, and most sidewalks are in good condition. However, there are areas where sidewalks are missing or need repair as described below.

Figure 3.13-2 shows the pedestrian facilities in the study area.

Gaps in the Pedestrian System. Terry Avenue N has no sidewalks from Denny Way to Thomas Street and limited sidewalks from Thomas Street to Harrison Street. In addition, there are gaps in the sidewalk system on Roy Street near Minor Avenue and on Valley Street near Yale Avenue.

Pedestrian Facilities in Poor Condition. There are damaged sidewalks at some locations such as on Westlake Avenue N south of Broad and Valley Streets.

Sidewalk condition varies significantly from new sidewalks at recent developments to cracked and overgrown sidewalks in older areas. The general sidewalk width tends to be 5.5 to 6 feet with wider sidewalks along some new developments. Wide planting strips along new developments provide a buffer between pedestrians and vehicles. Some newer planting strips match the width of the walkway while older planting strips are narrower: between 1.5 and 2.5 feet.

Figure 3.13-2
Pedestrian Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Pedestrian Crossings

Some intersections have missing or inconveniently located marked crosswalks. For example, there is no marked crosswalk on the west side of the 9th Avenue N/Broad Street intersection. One block south, at the 9th Avenue N/Mercer Street intersection, there is no marked crosswalk across the ramp from Broad Street to Mercer Street. A pedestrian traveling along the north side of Mercer Street would have to walk a block north to reach a marked crosswalk in order to cross the curved ramp and then rejoin the sidewalk on Mercer Street. John Street does not go through the block east of Terry Avenue N so all traffic (pedestrians, bicycles, and vehicles) must travel around the block via Thomas Street or Denny Way.

There are two unsignalized mid-block crossings along Boren Avenue N; one between Mercer and Republican Streets and the other between John Street and Denny Way. Another unsignalized mid-block crossing is provided on Eastlake Avenue E north of E Nelson Place.

Multi-Use Paths

Several paths or plazas cut through city blocks in the east/west direction. Two plazas connect Terry Avenue N to Boren Avenue N in the blocks between Mercer and Republican Streets and between Republican and Harrison Streets. A path connects Yale Avenue N and Pontius Avenue N between Thomas and John Streets. On the Yale Avenue N end of the walkway, mid-block ramps are provided to access the REI store to the east, but there is no marked crosswalk. The Cheshiahud Lake Union Loop is a multi-use path that circles Lake Union and serves as a connection within South Lake Union as well as to other neighborhoods such as Fremont, Wallingford, University District, Capitol Hill, and Queen Anne. The Lake to Bay Loop is a planned multi-use connection between Elliot Bay at the Olympic Sculpture Park and South Lake Union Park. Within the South Lake Union neighborhood, the proposed Lake to Bay Loop would traverse Thomas Street, Terry Avenue, and Mercer Street.



Alley 24

Bicycle System

South Lake Union has three north/south bicycle routes, consisting of either striped lanes, sharrow pavement markings¹ or shared parking/bicycle lanes.

- Eastlake Avenue E has bicycle facilities throughout the South Lake Union neighborhood. From Denny Way to approximately Mercer Street, sharrows are provided, and from Mercer Street to Fairview Avenue N, bicycle lanes are provided. Field observations indicate that idling busses often occupy the outside northbound lane on Eastlake Avenue E between Stewart Street and Lakeview Boulevard E. These busses block the path of travel indicated by the sharrows, forcing cyclists to travel in the general purpose lane in this section.
- 9th Avenue N has bicycle lanes from Denny Way to approximately Republican Street.

¹ A sharrow is a pavement marking indicating the recommended path for bicycle travel in a shared-use lane. Sharrows are often used to notify drivers about the potential for bicycles in the lane.

- Dexter Avenue N has bicycle lanes from Denny Way to Mercer Street. North of Mercer Street, there are signs for the “Interurban North” bicycle facility which is a shared parking and bicycle lane. Field observations indicate that this is a heavily traveled bicycle route.

There are no east/west bicycle facilities except for the portion of the Cheshiahud Lake Union Loop that runs along the south shore of Lake Union. The I-5 overpass at Lakeview Boulevard E, which connects South Lake Union to Capitol Hill, has a bicycle lane followed by sharrows in the north/east direction and sharrows in the south/west direction; however, the grade between South Lake Union and Capitol Hill is steep. **Figure 3.13-3** shows the bicycle facilities in the South Lake Union neighborhood.

The Seattle Bicycle Master Plan identifies existing bicycle issues in the South Lake Union neighborhood, including the need to improve bicycle facilities along Westlake Avenue N.

Existing Transit Services

The project area is served by the South Lake Union Streetcar and several King County Metro bus routes. The streetcar runs from Westlake Center in Downtown Seattle through the South Lake Union neighborhood and terminates at the Fred Hutchinson Cancer Research Center located at Fairview Avenue N and Ward Street. Within the study area, the streetcar runs along Westlake Avenue N, Terry Avenue N, Valley Street, Fairview Avenue N, and a one-block segment of Thomas Street. Along these streets, the streetcar runs in the outside travel lane with no lane restrictions when the streetcar is not present. The primary bus connections reach north, central and southeast Seattle.

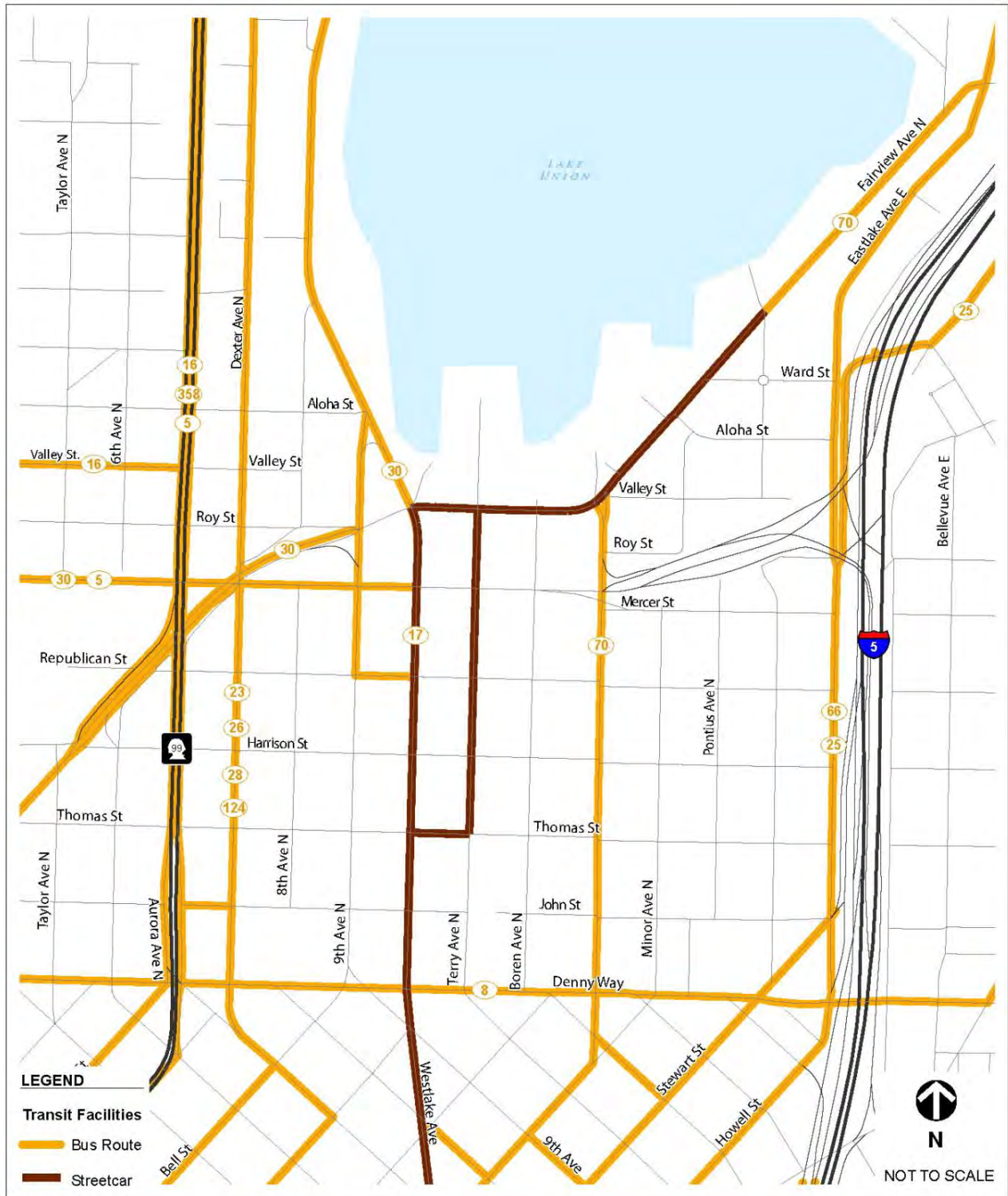
Figure 3.13-4 shows the transit routes in the South Lake Union neighborhood.

Figure 3.13-3
Bicycle Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Figure 3.13-4
 Transit Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Table 3.13-1 summarizes the transit routes that serve the South Lake Union neighborhood. The table includes average headways for the AM peak period, PM peak period and mid-day period. The average headways were calculated as the ratio of minutes to number of busses in the period. These headways give a general indication of frequencies, but route times vary substantially on some routes. For instance, Route 17 runs anywhere from every nine to thirty minutes in the afternoon peak period.

Existing Roadway Network

Interstate 5 (I-5) and State Route (SR) 99 form the eastern and western boundaries of the South Lake Union neighborhood and also serve as the major roadways providing regional access. The local street network is a combination of one-way and two-way streets that serve multiple travel modes. Most local streets have multiple lanes, on-street parking, and sidewalks. Some arterial streets include bicycle lanes or sharrows. Arterial streets have speed limits of 30 miles per hour (mph) unless otherwise posted. Exceptions include local commercial and residential streets which generally have speed limits of 25 mph. **Figure 3.13-5** shows the roadway facilities in the South Lake Union study area.

Regional Access

I-5 is a north/south freeway that serves both local and regional traffic. Adjacent to the South Lake Union neighborhood, I-5 experiences congestion during a substantial portion of the day due to the intense land uses in Downtown Seattle, the limited crossings of the Ship Canal, and the lack of ramp capacity at the SR 520 interchange. The primary access to the South Lake Union area from I-5 is at the Mercer Street interchange.

SR 99 is a north/south highway located immediately west of the South Lake Union neighborhood. Northbound SR 99 can be accessed from various east/west streets in the project area, including Valley Street, Roy Street, Republican Street, Harrison Street, and Thomas Street. Southbound SR 99 is only accessible from the west side of the highway.

Table 3.13-1
King County Metro Routes in South Lake Union

Route	Destinations	Average Headways		
		Peak Periods (6-9 AM & 3-6 PM)		Midday (9 AM-3 PM)
		Peak Direction	Off-peak Direction	
5	Downtown Seattle, Fremont, Woodland Park Zoo, Greenwood, North Seattle Community College, Northgate Transit Center, Northgate Mall, Shoreline Community College	11	15	15
8	Rainier Beach, Rainier Beach Station, Othello Station, Columbia City Station, Rainier Valley, Mt. Baker Transit Center, Central District, Capitol Hill, Group Health Hospital, Seattle Center, Lower Queen Anne	15	15	15
16	Colman Dock-Ferry Terminal, Downtown Seattle, Seattle Center, Wallingford, East Green Lake, North Seattle Community College, Northgate Mall, Northgate Transit Center	20	23	20
17	Downtown Seattle, Westlake, Seattle Pacific University, Ballard, Sunset Hill, Loyal Heights	20	26	30
25	Downtown Seattle, Eastlake, Montlake, University Village, Children's Hospital, Laurelhurst	26	36	65
26	Downtown Seattle, Fremont, Wallingford, East Green Lake	23	30	29
28	Stadium Station, Downtown Seattle, Fremont, Ballard, Whittier Heights, Broadview	20	26	30
30	Seattle Center, Fremont, Wallingford, University District, Ravenna, Sand Point, NOAA	30	36	31
66	Colman Dock-Ferry Terminal, Downtown Seattle, Eastlake, University District, Maple Leaf, Northgate Transit Center	30	30	30
70	Downtown Seattle, Eastlake, University District	15	20	15
358	Downtown Seattle, West Green Lake, Aurora Ave N, Shoreline P&R, Aurora Village Transit Ctr	9	15	15

Source: King County Metro, 2010.

Figure 3.13-5
Roadway Functional Class – Existing Conditions



Source: Fehr & Peers, 2010

Arterial and Local Access

Dexter Avenue N is a north/south street classified as a minor arterial located just east of SR 99. South of Aloha Street, there are four travel lanes, parking, and sidewalks on both sides of the street. Dexter Avenue N does not have a center turn lane in this area, with the exception of a southbound left-turn lane at Denny Way. North of Aloha Street, Dexter Avenue N transitions to one through lane in each direction with a center turn lane, parking, and sidewalks. Bicycle lanes are provided from Denny Way to Mercer Street; north of Mercer Street, bicycles are allowed in the wide parking lane signed as part of the "Interurban North" trail. Dexter Avenue N is a heavily-traveled bicycle route between Downtown Seattle and the Fremont Bridge.

8th Avenue N runs north-south, but is not contiguous through the study area. 8th Avenue N has two sections, one from Mercer Street to John Street and the second from Roy Street to Westlake Avenue N. Each section has one lane in each direction, on-street parking, and sidewalks. Some intersections are stop-controlled while others are uncontrolled.

9th Avenue N is a two-way principal arterial between Broad Street and Denny Way. South of Mercer Street, 9th Avenue N has one lane in each direction with parking on one or both sides of the street. Sidewalks are provided on both sides of the street, and there are bicycle lanes southbound between Harrison Street and Denny Way and northbound between Republican Street and Denny Way. Major intersections are signalized and minor intersections are stop-controlled.

Westlake Avenue N is a two-way arterial between Broad Street and Denny Way. The street has two travel lanes in each direction, provides turn pockets at some locations, and has sidewalks on both sides. Parking is generally on one or both sides of the street although some blocks have no parking provided. The South Lake Union Streetcar travels in the outside lane southbound along Westlake Avenue N from Broad Street to Denny Way and northbound from Denny Way to Thomas Street. Major intersections are signalized and minor streets are stop-controlled at other intersections. Westlake Avenue N continues north around Lake Union, eventually connecting to the Fremont Bridge.

Terry Avenue N is a north/south street that varies between one-way and two-way operations through the study area. Terry Avenue N is a two-way street from Denny Way to Thomas Street, a one-way street from Thomas Street to Mercer Street, and transitions back to two-way operations between Mercer Street and Valley Street. Along the entire stretch of Terry Avenue N, there are two travel lanes (one lane in each direction for the

areas with two-way operations). There is generally parking on both sides of the street. Some sections of Terry Avenue N have sidewalks on both sides of the street while other sections have none. The South Lake Union Streetcar travels northbound on Terry Avenue N from Thomas Street to Valley Street. Major intersections are signalized and minor intersections are stop-controlled.

Fairview Avenue N is a two-way north/south principal arterial with one to two travel lanes in each direction. In addition, there are either turn pockets or a center left-turn lane throughout the South Lake Union neighborhood. Sidewalks are provided on both sides of Fairview Avenue N. Parking is generally allowed on both sides of the street between Mercer Street and Denny Way; however, there are restrictions during peak periods. Parking is prohibited on the east side of Fairview Avenue N (northbound direction) between 4 and 6 PM and on the west side (southbound direction) between 7 and 9 AM. The empty parking lane provides an extra travel lane in the peak direction. There is no parking provided on Fairview Avenue N north of Mercer Street. The South Lake Union Streetcar travels in both directions of Fairview Avenue N from Valley Street to Yale Avenue N.

Valley Street is a two-way east/west street stretching from Westlake Ave N to Yale Avenue N. It is a principal arterial connecting Westlake Ave N and Broad Street to the I-5 interchange at Mercer Street, and a local access street for the remaining eastern portion. Along the arterial segment, there are three westbound lanes, and two eastbound lanes with turn pockets. Intersections are signalized and no parking is provided. Sidewalks are provided on the south side of the street, while a multi-use trail is provided on the north side of the street.

Mercer Street is an east/west principal arterial with four eastbound travel lanes extending west of Fairview Avenue N. From Dexter Avenue N to 9th Avenue N, one westbound lane is also provided as a connection from Broad Street to Dexter Avenue N. Sidewalks are provided on both sides of the street; however some of the sidewalks on the southern side of the street have been temporarily closed due to building construction. Mercer Street provides the main access to I-5 at Fairview Avenue N. Mercer Street continues eastward as a two-lane one-way minor arterial to Eastlake Avenue E with parking and sidewalks on both sides. During our field visits the buildings on the north side of Mercer Street were being demolished to make way for the upcoming conversion of Mercer Street into a two-way six-lane arterial between I-5 and Broad Street.

Republican Street is a lightly traveled two-way east/west minor arterial with two travel lanes extending from SR 99 to Eastlake Avenue E. Parking and sidewalks are provided on both sides of the street.

Denny Way is a two-way principal arterial with two lanes in each direction. Sidewalks are provided on both sides, but there is no on-street parking. Major intersections are signalized and there are left-turn bays provided at the Fairview Avenue N intersection. Left turns are prohibited at all other signalized intersections in the study area. Denny Way is a major east/west connector between the Seattle Center and waterfront areas to the west, and First Hill and Capitol Hill to the east.

Parking

This section summarizes the existing on-street and off-street parking supply and utilization in South Lake Union. Most of the source data for this analysis is based on the *2006 Parking Inventory* (Puget Sound Regional Council) and the *2006 South Lake Union On-Street Parking Study* (Seattle Department of Transportation). The parking conditions are substantially different today when compared to 2006 conditions. Between 2006 and 2010 several major office buildings were completed that increased off-street supply while also increasing overall parking demand. Additionally, the City of Seattle expanded the paid parking program throughout most of South Lake Union and a Restricted Parking Zone (RPZ) program was also established in the more residential portions of the neighborhood. While more recent data from a 2010 study has also been included, this data covers a small portion of South Lake Union, and many of the findings of the 2006 surveys are still valid. More information may be found in **Appendix E**.

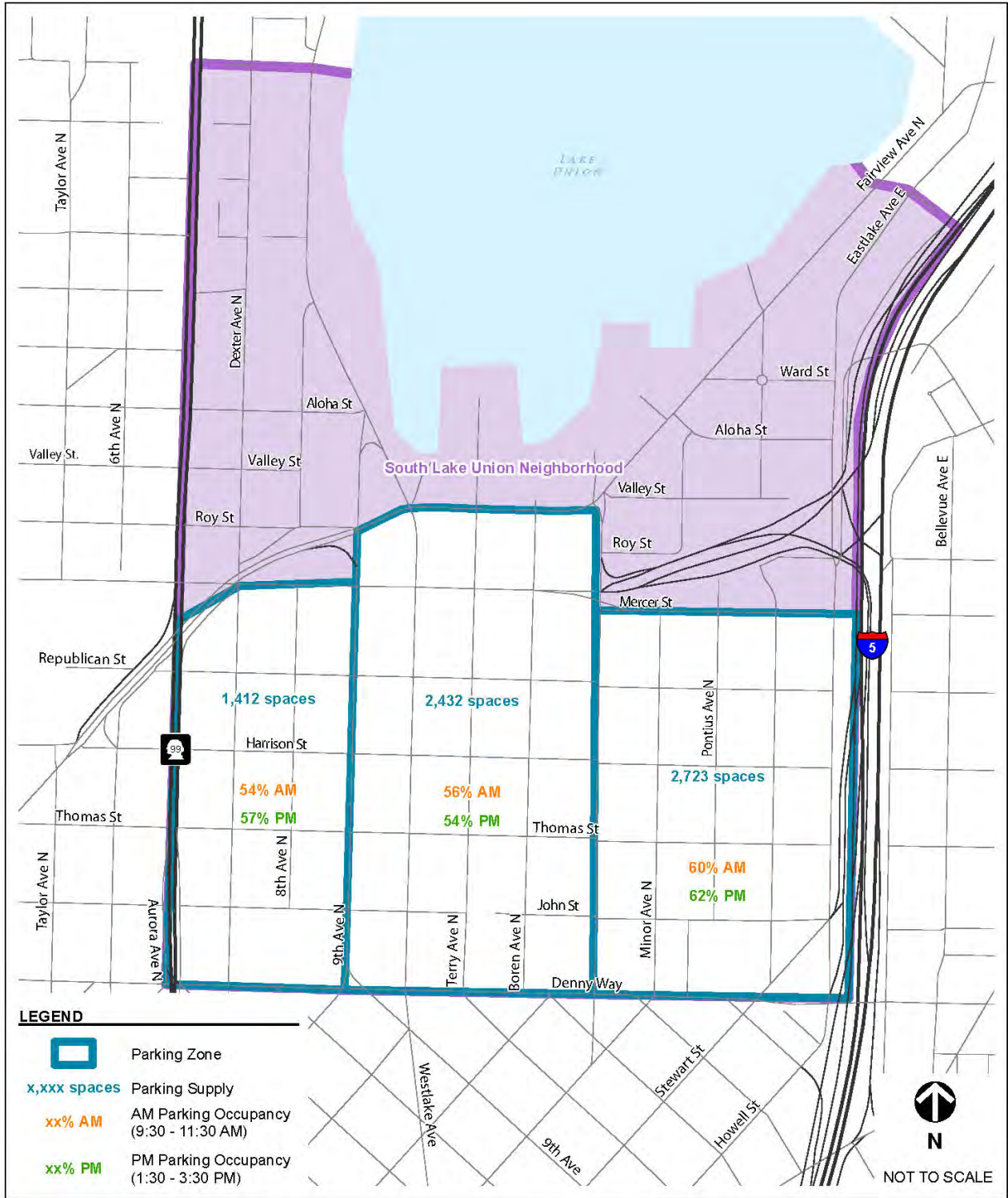
Off-Street Parking

The 2006 Puget Sound Regional Council (PSRC) off-street parking inventory included most of the study area; those areas excluded were primarily north of Mercer. Results were aggregated into three subareas:

- Denny Park area bounded by Mercer Street/Broad Street, Denny Way, 9th Avenue N, and Aurora Avenue N
- South Waterfront/Westlake area bounded by Valley Street, Denny Way, Fairview Avenue N, and 9th Avenue N
- Cascade area bounded by Mercer Street, Denny Way, I-5 and Fairview Avenue N

Figure 3.13-6 summarizes the parking supply, morning occupancy, and afternoon occupancy within each subarea in 2006.

Figure 3.13-6
Off-Street Parking Supply and Occupancy (2006)



Source: Fehr & Peers, 2010

As indicated in **Figure 3.13-6**, occupancy was relatively uniform between the morning and afternoon periods. The highest occupancies (60 percent in the morning and 62 percent in the afternoon) were observed east of Fairview Avenue N in the Cascade neighborhood where most of South Lake Union's residences are located. West of Fairview Avenue N, occupancies were slightly lower, ranging from 54 to 57 percent.

Recent field observations generally confirm the results from the 2006 PSRC study; however, discussions with property managers and field observations suggest that off-street facilities are often full in the vicinity of the Amazon headquarters along Terry and Boren Avenues.

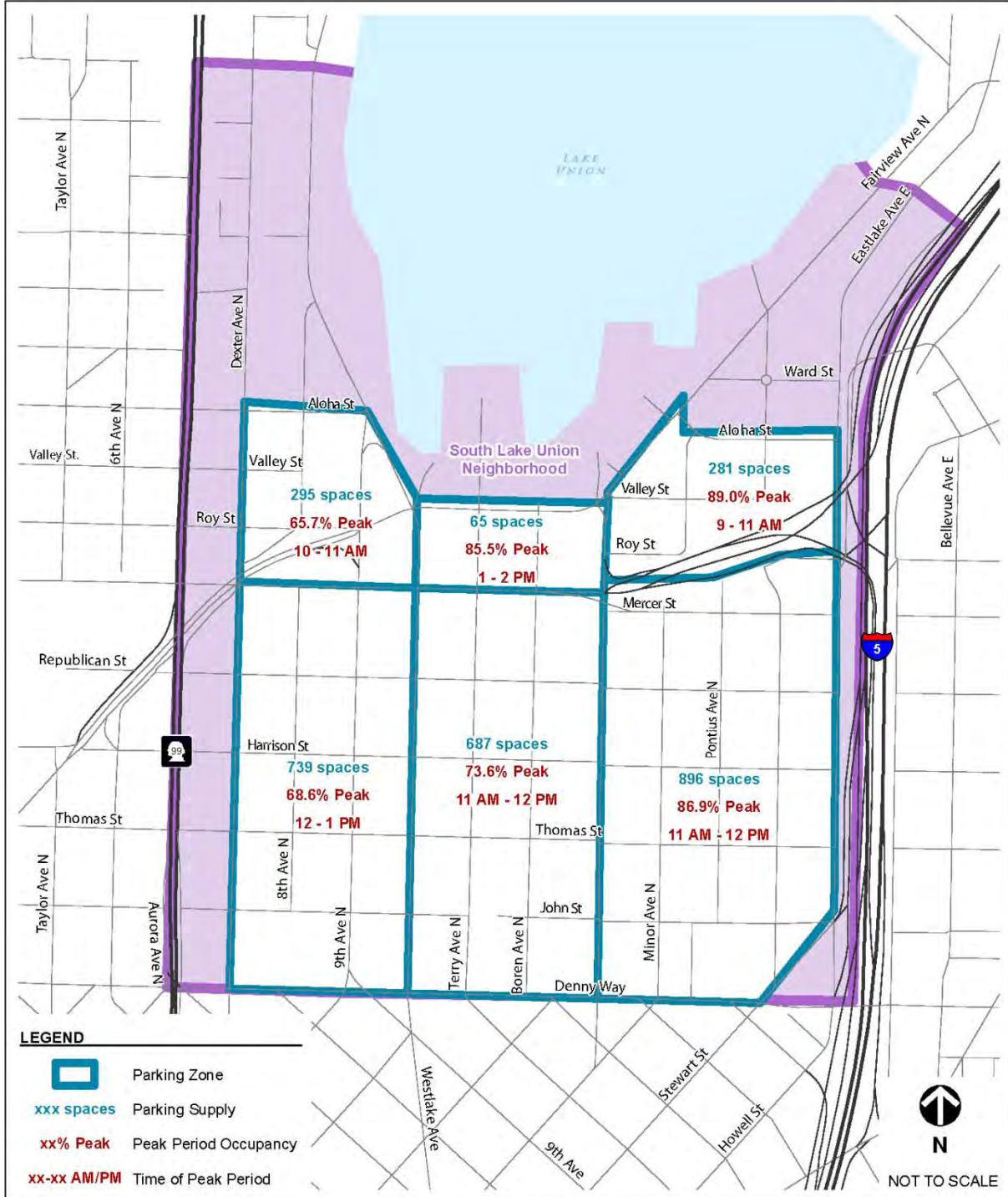
On-Street Parking

The *2006 South Lake Union On-Street Parking Study* counted nearly 3,000 on-street parking spaces in the South Lake Union neighborhood. The study provides the supply and utilization data presented in **Figure 3.13-7**. The study sampled approximately 40 percent of the spaces between the hours of 8 AM and 6 PM. Note that this study was completed when most parking spaces were unrestricted in terms of time limits, and there was no Restricted Parking Zone. When the survey was completed, only 76 spaces were metered.

Following the completion of the 2006 study, pay stations were implemented in the South Lake Union area. The time limits and prices are as follows:

- Two-hour parking at a rate of \$1.50 per hour, which is geared towards higher demand areas such as along Westlake Avenue N
- Ten-hour parking at a rate of \$1.25 per hour, tailored for long-term users, such as local employees

Figure 3.13-7
Off-Street Parking Supply and Occupancy (2006)



Source: Fehr & Peers, 2010

In addition, a Restricted Parking Zone (RPZ) with the following boundaries was created: Mercer Street to the north, John Street to the south, Fairview Avenue N to the west, and Eastlake Avenue E to the east. Eligible residents within these boundaries may purchase RPZ permits that allow them free parking not subject to the two-hour time limit on RPZ signed streets (not all block faces within the RPZ are subject to the restrictions). Non-permitted vehicles are prohibited from long-term parking in this RPZ (Zone 24) from 8 AM to 6 PM, Monday through Sunday.

Figure 3.13-8 shows the type of on-street parking currently available on each block within South Lake Union.

In November 2010, the Seattle Department of Transportation conducted a parking study that included parts of South Lake Union. The results are summarized in **Figure 3.13-9**. The areas included in the study were:

- The area bounded by Republican Street to the north, John Street to the south, Dexter Avenue N to the west, and Westlake Avenue to the east
- The area bounded by Republican Street to the north, John Street to the south, Fairview Avenue N to the west, and Yale Avenue N to the east

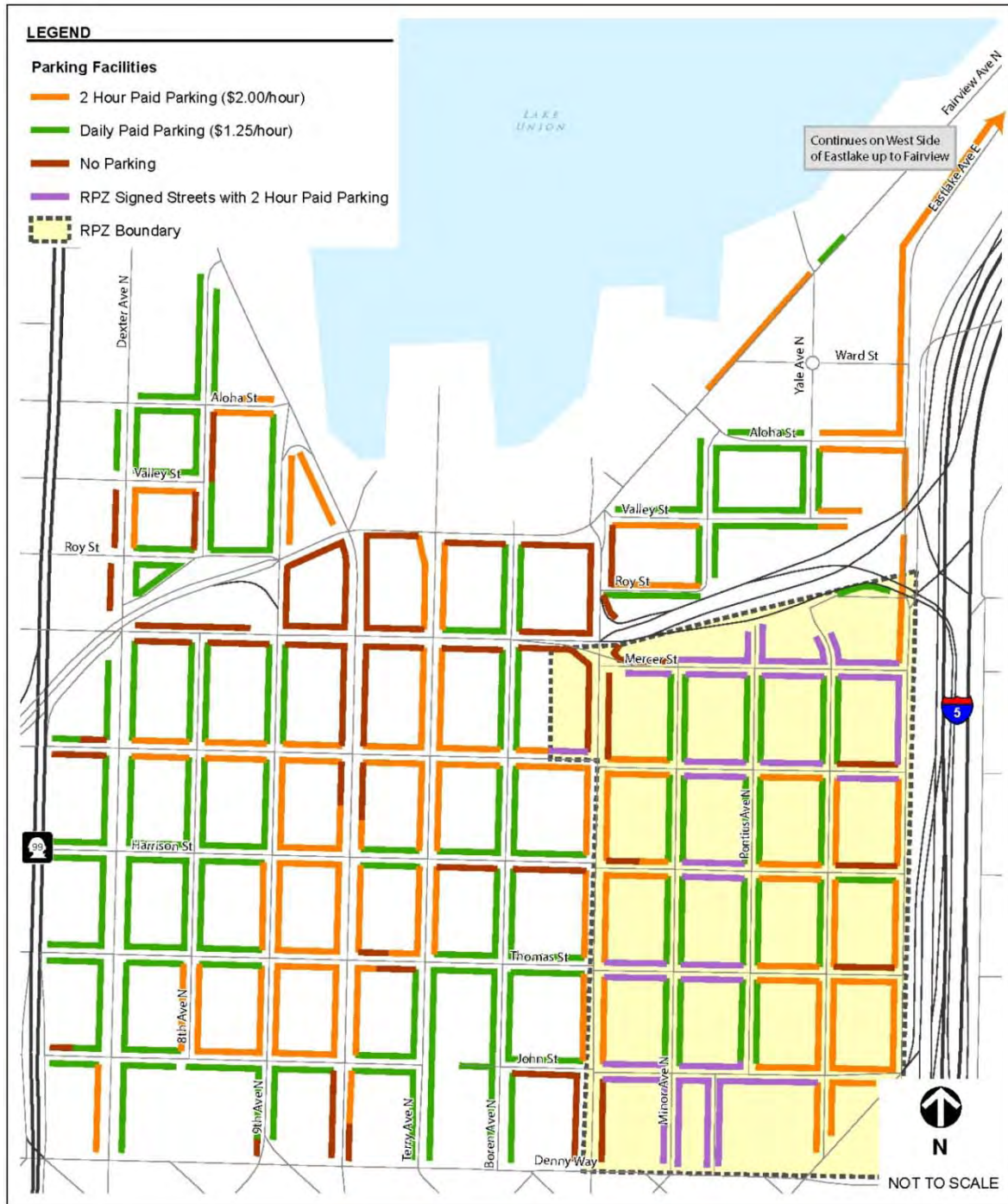
The eastern subarea, which lies within the RPZ, experienced its peak occupancy of 82 percent from 7 to 8 PM. The western subarea experienced its peak occupancy of 51 percent from 11 AM to 12 PM. Overall, the ten-hour spaces had higher occupancy rates than the two-hour spaces from 10 AM to 5 PM, after which the two-hour spaces had higher occupancy.

As was the case with off-street parking, recent field observations indicate that the ten-hour parking spaces are full in the vicinity of the Amazon headquarters along Terry and Boren Avenues. Outside of that area, there are usually 10-hour parking spaces available.

The 2006 and 2010 on-street parking studies both indicate high occupancy in the Cascade area east of Fairview Avenue N and south of the I-5 ramps, however the peak time of day differed. In 2006, the occupancy peaked at 86.9 percent between 11 AM and 12 PM, while in 2010 the occupancy peaked at 82 percent between 7 and 8 PM. The 2006 study found similarly high occupancy rates (peaking at 85.5 to 89 percent) in the area east of Westlake Avenue N and north of Mercer Street. The other area of comparison between the two studies is the southwest corner of South Lake Union. In 2006, occupancy peaked at 68.6 percent between

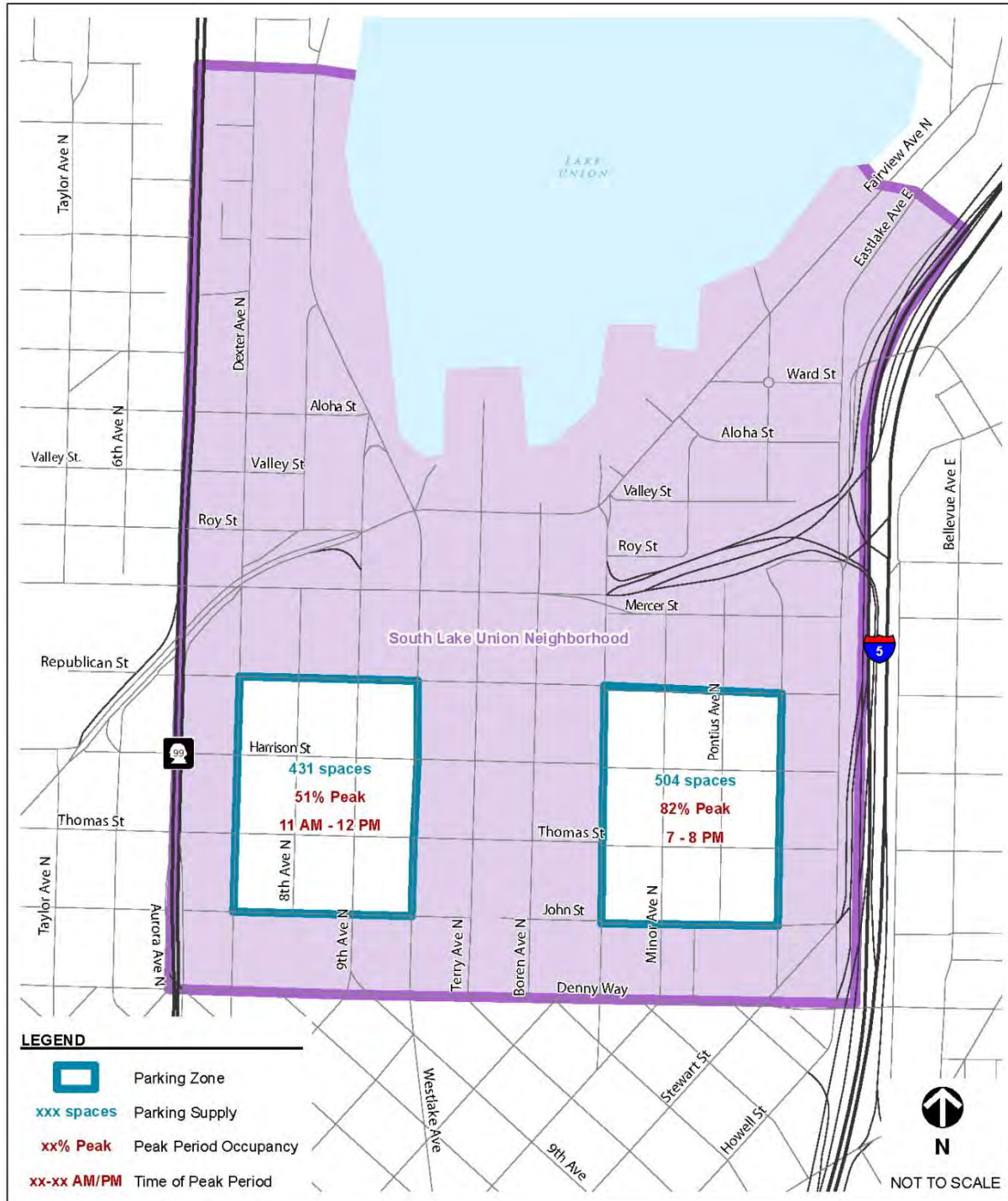
12 and 1 PM, but in 2010 the peak dropped to 51 percent between 11 AM and 12 PM. These changes in occupancy may be due to different economic conditions between 2006 and 2010, and also due to the introduction of paid parking and the subsequent rate increase in 2009.

Figure 3.13-8
On-Street Parking Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Figure 3.13-9
On-Street Parking Supply and Occupancy (2010)



Source: Fehr & Peers, 2010

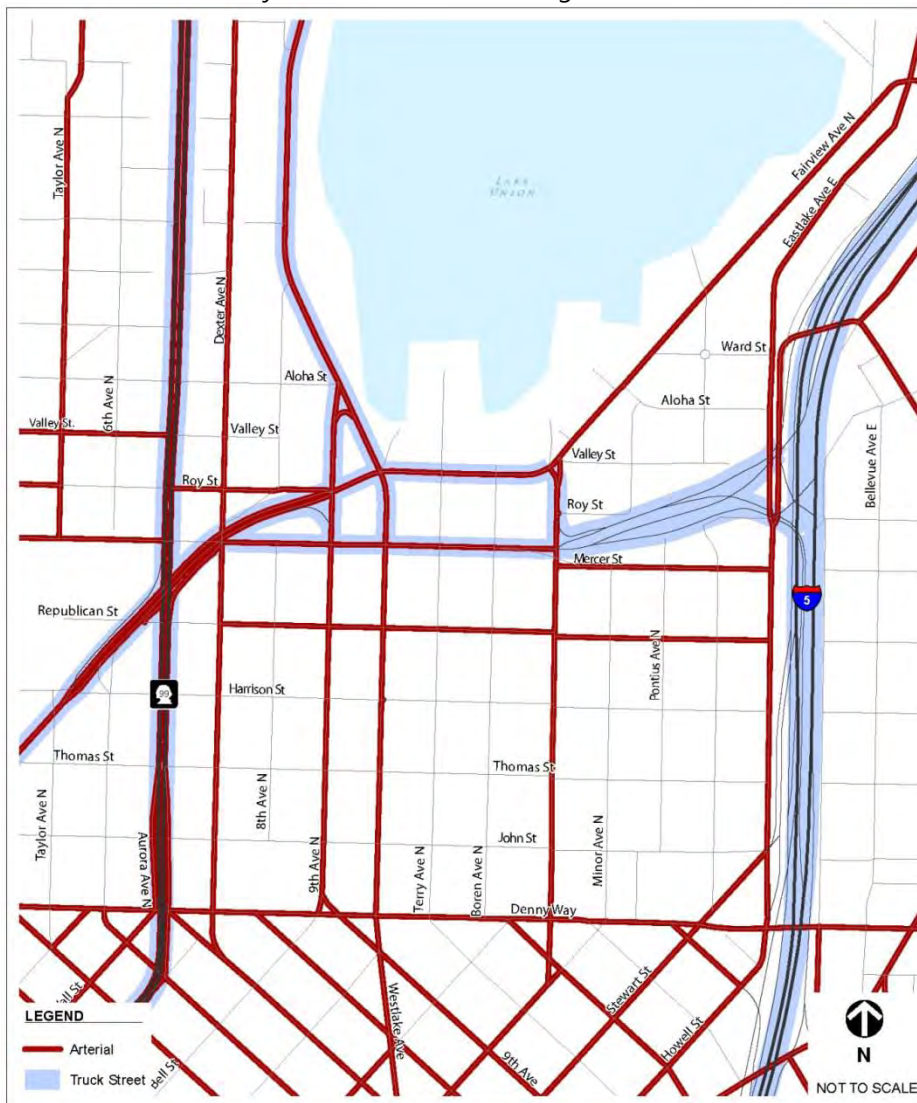
Freight

While South Lake Union is continuing to transition from a light industrial center to a mixed-use neighborhood with service employment and

residential uses, freight movement is an important consideration in the area. In particular, Mercer Street, Valley Street, and Broad Street provide an important connection between the industrial uses in the Interbay area and I-5. Westlake Avenue N north of Mercer Street also provides an important freight connection to the Fremont neighborhood north of the Ship Canal.

While the City of Seattle allows truck traffic on all arterials in the City, a specific set of "major truck streets" has been defined to serve as primary routes focused on moving trucks through the City. Major truck streets within and in the vicinity of South Lake Union are shown in **Figure 3.13-10**.

Figure 3.13-10
Major Truck Streets – Existing Conditions



Source: Fehr & Peers, 2010

Analysis Methodology

This section describes the methodology used to analyze the existing conditions of the South Lake Union neighborhood transportation network.

Roadway Network

Level of Service

Level of Service (LOS) is a common metric used to assess the level of congestion of the roadway network and average driver delay. Historically, transportation impact analyses in the City of Seattle have used intersection LOS, which purely measures a road's performance for autos. The measure does not reflect the performance of the network for other users such as bicyclists and pedestrians.

Further, while intersection-level analysis may be appropriate for assessing the effects of individual parcels or block development, a more broad-based assessment is typical for the analysis of larger scale zoning or comprehensive planning efforts. The following reasons describe why a corridor analysis is appropriate for the South Lake Union height and density alternatives analysis:

- 1) Single intersection analysis will not provide a systematic, area-wide impact assessment for a neighborhood like South Lake Union where complex transportation facilities and services are inter-related. A "pin map" approach might give some information about individual intersections in a vacuum, but it would not portray the effects of long queues, side-street diversions, and the spill back effect of congestion on regional roads such as I-5.
- 2) Intersection analysis measured purely from the driver's perspective ignores other potential effects of development; in particular, impacts on bicyclists and pedestrians. This approach is not able to effectively evaluate improvement projects (including pedestrian and bicycle projects) as mitigation measures that are not part of, or immediately adjacent to an intersection.

Measuring delay and congestion on a corridor or roadway segment basis effectively addresses the first issue. The *Highway Capacity Manual* (HCM) defines how LOS is calculated for many types of transportation facilities, including urban roadway segments and corridors.

Many agencies and departments of transportation have translated the corridor congestion levels defined above into a series of volume-to-capacity ratios. As further discussed below, this type of analysis provides

the opportunity to consider mobility in the area from a multi-modal perspective, not only the driver's perspective. One of the most commonly accepted set of thresholds is defined by the Florida Department of Transportation², and is summarized in **Table 3.13-2**, along with definitions for each level of service³.

Table 3.13-2
Levels of Service

LOS	Description	Percentage of Free Flow Speed	Volume-to-Capacity Ratio ¹
A	Primarily free-flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream and average driver delay at signalized intersections is minimal.	90	<0.40 ²
B	Reasonably unimpeded operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and average driver delays at signalized intersections are not significant.	70	<0.40 ²
C	Stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than at LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds.	50	<0.40 ²
D	Borders on substantial delay and decreases in travel speed. May be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.	40	0.40-0.89
E	Characterized by significant delays. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	33	0.90-0.99 ³

² In the *2009 FDOT Quality/Level of Service Handbook*, the Florida Department of Transportation applied the methodologies described in Chapter 10 of HCM for a variety of rural, suburban, and urban roadway facilities to simplify the definition of roadway segment operations.

³ *Highway Capacity Manual 2000*, p. 10-5.

LOS	Description	Percentage of Free Flow Speed	Volume-to-Capacity Ratio ¹
F	Characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.	<33	>1.00

Notes:

¹ Valid for one-way roads/two-way roads with turn lanes at major intersections, which is representative of the South Lake Union street network

² Based on the HCM definition, there is no distinction between LOS A, B, or C for urban roadway segments since speed limits are low for these streets

³ The HCM defines roadway capacity as LOS E. Any roadway that has a volume or traffic demand that exceeds 1.0 is defined as operating at LOS F conditions

Source: Highway Capacity Manual, Transportation Research Board, 2000; 2009 FDOT Quality/Level of Service Handbook, Florida Department of Transportation, 2009.

Corridor LOS Analysis

To assess the level of vehicle congestion in the vicinity of South Lake Union, a set of study corridors were selected based primarily on the average volume of traffic and speed of the roadway and the proportion of traffic related to the South Lake Union neighborhood. All road segments within the traffic impact analysis area were considered for inclusion as a study corridor. In general, corridors satisfying both of the following conditions were selected.

- Classification as a principal or minor arterial (generally higher volume streets)
- Carries at least five percent of traffic generated within the South Lake Union neighborhood (as estimated by the City's travel model for 2031)

Ten corridors satisfied both criteria. Exceptions to the basic criteria were made to better capture the traffic operations in the traffic impact analysis area. For example, less than five percent of South Lake Union related traffic travels on E Pine Street, but of arterials accessing First Hill, it carries the highest percentage of such traffic. Therefore, E Pine Street was included as a study corridor. Likewise, the Lakeview Boulevard E and Denny Way I-5 overpasses were selected to capture the traffic impacts of the main Capitol Hill access points. Another exception was made to ensure that an east-west connection within the South Lake Union neighborhood would be studied. Thomas and Harrison Streets are study corridors despite being classified as access streets. Republican Street was not selected as a study corridor since, despite being classified as minor

arterial, the traffic conditions on Thomas and Harrison Streets are similar based on existing traffic counts and any development-related impacts are expected to be similar on all three streets. Some corridors were broken into multiple segments to reflect the differing characteristics along a single route. For example, Fairview Avenue N was split at Yale Avenue N and Harrison Street to reflect the congestion that occurs on both sides of the intersection with Mercer Street. **Table 3.13-3** lists the selected study segments and **Figure 3.13-11** displays them on a map of the area.

Demand-to-Capacity Ratios. For each study segment, demand-to-capacity (d/c) ratios were calculated using traffic count data provided by the City of Seattle and roadway capacity estimates described below. D/C ratios give an indication of the level of congestion that exists today. The d/c ratios are very similar to the v/c ratios described earlier; however the d/c ratio has a slightly broader definition:

Under existing conditions, the d/c ratio is equal to the volume of traffic traveling along a segment during a set period, plus the vehicles that are waiting in a queue to traverse the segment.

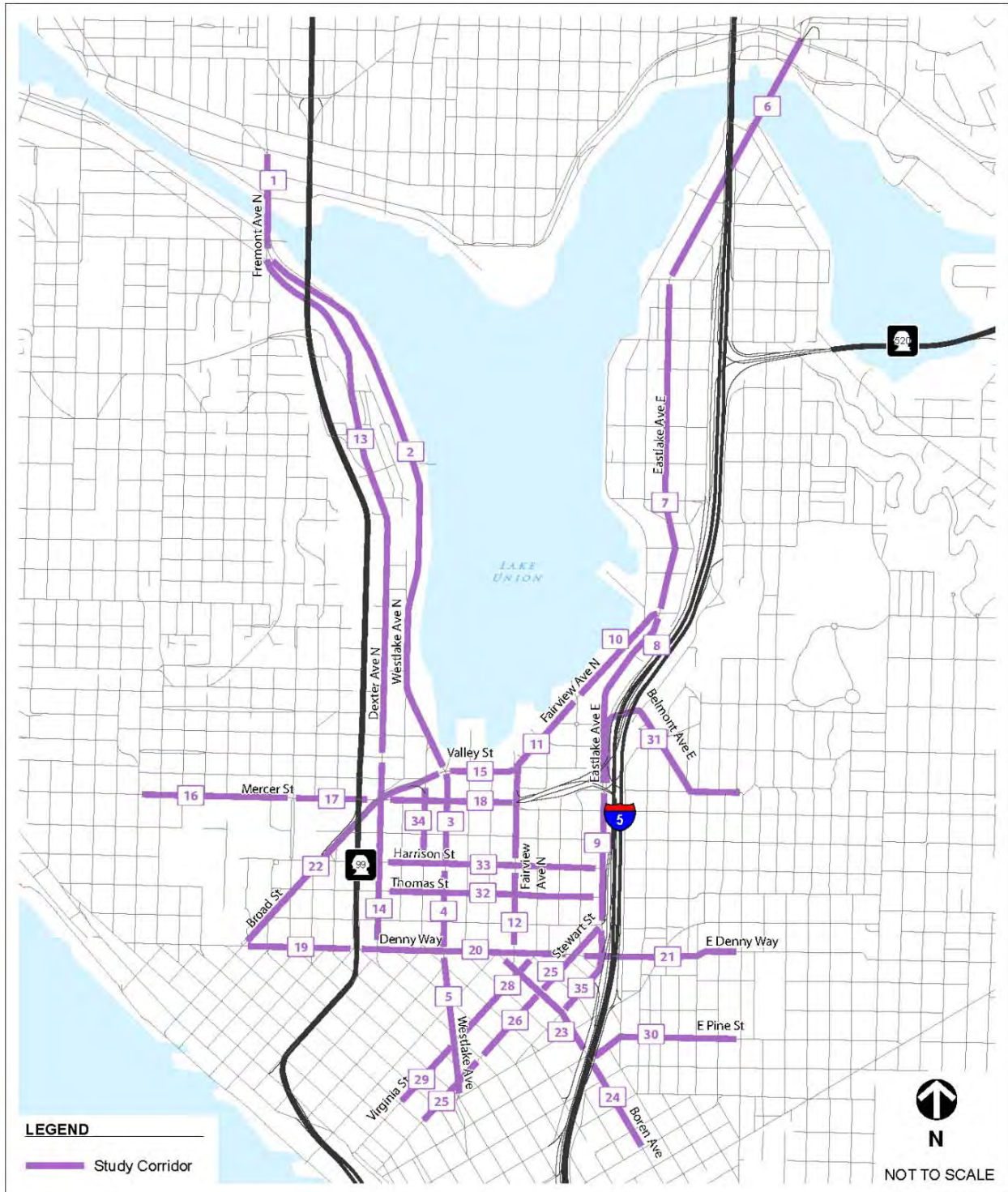
For most of the corridors in the South Lake Union neighborhood, the d/c ratio is equivalent to the v/c ratio. However for congested corridors like Mercer Street and Fairview Avenue N, the d/c ratio is higher because of the queues waiting to access these streets.

Table 3.13-3
Study Corridors

Road	Segment
Fremont Bridge	1) N 35th Street to Westlake Avenue N
Westlake Avenue N	2) Fremont Bridge to Valley Street 3) Valley Street to Harrison Street 4) Harrison Street to Denny Way 5) Denny Way to Stewart Street
Eastlake Avenue E	6) N 40th Street to E Hamlin Street 7) E Hamlin Street to Fairview Avenue N 8) Fairview Avenue to Lakeview Blvd E 9) Lakeview Blvd E to Stewart Street
Fairview Avenue N	10) Eastlake Avenue to Yale Avenue N 11) Yale Avenue N to Harrison Street 12) Harrison Street to Denny Way
Dexter Avenue N	13) Fremont Bridge to Valley Street 14) Valley Street to Denny Way
Valley Street	15) Westlake Avenue N to Fairview Avenue N
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N 17) 5th Avenue N to Dexter Avenue N 18) Dexter Avenue N to Fairview Avenue N
Denny Way	19) Broad Street to Aurora Avenue N 20) Aurora Avenue N to Stewart Street 21) Stewart Street to Broadway E
Broad Street	22) Denny Way to Westlake Avenue N
Boren Avenue	23) Denny Way to Pine Street 24) Pine Street to University Street
Stewart Street	25) Eastlake Avenue E to Boren Avenue 26) Boren Avenue to 7th Avenue 27) 7th Avenue to 3rd Avenue
Virginia Street	28) Denny Way to Westlake Avenue N 29) Westlake Avenue N to 3rd Avenue
E Pine Street	30) Boren Avenue to Broadway
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E
9th Avenue N	34) Roy Street to Republican Street
Howell/Eastlake	35) Stewart Street to Boren Avenue

Source: Fehr & Peers, 2010

Figure 3.13-11
Study Corridors – Existing Conditions



Source: Fehr & Peers, 2010

The d/c ratio measures the typical observed peak period queue and adds those queued vehicles to the congested segments. The advantage of this approach is that it more accurately captures the total traffic demand and the inter-related nature of the roadways in South Lake Union.

For example, Mercer Street is congested for a considerable portion of the afternoon peak period due to congestion at the Mercer Street/Fairview Avenue N intersection. Based on several field visits, the queue typically extended back from this intersection approximately a half mile. Based on this level of queuing and the location of the bottleneck, the d/c ratio of the segment of Mercer Street was calculated by adding the observed traffic counts and the estimated number of vehicles waiting in the queue. This type of calculation better captures the level of traffic congestion on the roadway network than v/c ratios, which only measure the number of vehicles that pass through the count location (which ignores the vehicles in queue due to congestion).

As described in the HCM, LOS definitions above, a d/c ratio exceeding 0.9 (corresponding to LOS E and F conditions) suggests that drivers, transit vehicles (and their passengers) likely experience undesirable delays and queues at key intersections along the corridor. Therefore, this analysis methodology speaks to both roadway and intersection congestion on the study corridors for drivers and transit passengers.

A key consideration in measuring d/c ratios was determining the lane capacity of each segment. Lane capacity is a measurement of how many vehicles per hour can travel within the travel lanes on various streets. Lane capacity was determined by starting with the assumptions in the City of Seattle travel model, which were then adjusted, based on each segment's location and operational characteristics, such as whether it was one-way or two-way or had turn pockets. In general, these capacity adjustments are consistent with those listed in the *2009 FDOT Quality/Level of Service Handbook*. Based on these considerations, the following base lane capacities were assigned.

Principal and Minor Arterials: Principal and Minor Arterials are streets that generally carry the highest number of vehicles on an average weekday.

- Downtown— lane capacity is 600 vehicles per hour (vph)
- South Lake Union—lane capacity is 700 vehicles per hour
- Outside South Lake Union and Downtown—lane capacity is 800 vehicles per hour

Non-Arterials: Non-Arterials are access roads and other streets that carry fewer vehicles per day.

- Harrison and Thomas Streets—lane capacity is 600 vehicles per hour

As shown above, the lane capacity of arterial streets is assumed to be lowest in Downtown, slightly higher in South Lake Union, and highest in areas outside of South Lake Union and Downtown. The reason for this difference in capacity has to do with how fast vehicles can travel along a stretch of roadway.

Downtown has the lowest base lane capacity since this portion of the study area has the greatest number of traffic signals per mile and the greatest level of pedestrian and transit activity. Research in the HCM indicates that closely spaced traffic signals generally degrade the vehicle capacity of roadway corridors; however, short blocks and frequent crossing opportunities are better for pedestrians. The high level of pedestrian and bus activity in Downtown reduces the lane capacity further since busses can block travel lanes when loading and heavy pedestrian traffic can block turning vehicles. We verified these lane capacities with field observations, which indicated that pedestrian activity and queue spillback between signalized intersections reduced roadway capacities in Downtown and portions South Lake Union.

Base lane capacities were increased by 20 percent for one-way streets since they operate more efficiently than two-way streets due to reduced turning conflicts and more efficient traffic signal operations. In addition, a 20 percent adjustment was made in some locations to account for turn lanes, which further increase the capacity of a street, since vehicles waiting for a gap in traffic to execute a turn are not blocking through traffic. Some additional adjustments were made at select locations to reflect actual lane capacities. For example, although E Pine Street has no turn lane, the road is wide enough to allow through traffic to pass turning cars so it was treated as if it had a turn lane. These increases in base capacity for one-way streets and streets with turn lanes is consistent with the methodology recommended by the Florida Department of Transportation (see **Appendix E**).

Certain streets have unique circumstances that affect their lane capacities. For instance, on Mercer Street there are four through lanes, but only three of them lead onto the I-5 ramps. Because the vast majority of motorists are accessing the ramps, the fourth lane is underutilized. Counting it as a full lane would overestimate the capacity of the street. In this case, the

number of through lanes was adjusted to 3.5 to accurately represent the traffic operations on Mercer Street. A similar lane adjustment was used on Westlake Avenue N where the streetcar tracks run in the outside lane. Motorists tend to avoid driving in that lane resulting in a reduced capacity. Some streets like Eastlake Avenue N have parking allowed in certain directions during portions of the day. The capacity analysis took into account the variations in the number of lanes on these streets.

Transit

Based on correspondence with King County Metro, which owns and operates the transit system, passenger load factor of bus service was selected as the key performance measure for transit in the study area. Information about transit frequency and span of service was also described, but since the Height and Density alternatives do not affect these factors, an impact analysis was not performed.

While documents like the *Urban Village Transit Network*, and the *2005 Transit Master Plan* identify transit reliability as another important service measure, reliability is difficult to measure and forecast without a detailed traffic/transit simulation model and this measure was not considered as part of this study.

Load factor is the ratio of passengers to seating capacity on a bus line during the peak hour. King County Metro provided data from Spring 2010 for routes serving the South Lake Union neighborhood. Details of the transit analysis methodology may be found in **Appendix E**.

Traffic Safety

The traffic safety analysis is based on previous transportation analyses prepared in the South Lake Union area. These earlier studies have used the concept of High Accident Locations, which the City of Seattle defines as follows:

- Signalized intersections with an average of ten or more traffic collisions per year
- Unsignalized intersections with an average of five or more collisions per year

High Accident Locations will be targeted for future safety improvements in an effort to reduce the number of collisions.

While the previous studies evaluated High Accident Locations in general, they did not specifically define any High Accident Location standards for pedestrian or bicycle collisions. Given the substantial increase in new land uses (and therefore additional demand for pedestrian and bicycle travel in

the area) associated with the height and density alternatives, a pedestrian/bicycle intersection of interest is identified if *either* of the criteria below are met:

- Any intersection with an average of 1.7 or more pedestrian **or** bicycle collisions per year (which equates to five or more collisions in a three-year period),
- Or any intersection with average of 2.3 or more pedestrian **and** bicycle collisions per year (which equates to seven or more collisions in a three-year period).

The first criteria treats pedestrian and bicycle collisions separately, while the second combines the two measures.

Analysis Results

This section presents the results of the existing traffic conditions analysis.

Existing Study Corridor Demand-to-Capacity Ratios

Table 3.13-4 and **Figure 3.13-12** display the results of the d/c ratio analysis. In some instances, a road segment may operate with standing queues despite having a d/c ratio well below 1.0. Such instances are noted below with an asterisk to indicate that standing queues were observed in the field. As described earlier, the intersection of Mercer Street and Fairview Avenue N is congested and causes queue spillbacks onto adjacent streets like 9th Avenue N, Westlake Avenue N, and Fairview Avenue N. While the d/c ratio technique takes into account congestion on the street with the main bottleneck, it does not account for intersection queues on minor streets as traffic attempts to merge into the major-street queue. The following facilities have d/c ratios greater than 1.0:

- Valley Street from Westlake Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street

Existing
Transportation
Network
Analysis
Methodology

**Analysis
Results**

Affected Environment

Table 3.13-4
Existing Condition Demand-to-Capacity Ratios of Study Corridors

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,424	PM	N	2	1,600	0.89/D
Westlake Avenue N	2) Fremont Bridge to Valley Avenue	1,169	PM	N	2	1,600	0.73/D
	3) Valley Street to Harrison Street	1,093	PM	N	2	1,400	0.78*/D
Eastlake Avenue E	4) Harrison Street to Denny Way	685	PM	N	2	1,400	0.49/D
	5) Denny Way to Stewart Street	357	PM	N	1.5	900	0.40/D
	6) N 40th Street to E Hamlin Street	890	PM	NE	2	1,920	0.46/D
Fairview Avenue N.	7) E Hamlin Street to Fairview Avenue N	871	PM	N	2	1,920	0.45/D
	8) Fairview Avenue to Lakeview Blvd E	549	PM	S	1	700	0.78/D
	9) Lakeview Blvd E to Stewart Street	802	PM	N	2	1,400	0.57/D
Dexter Avenue N	10) Eastlake Avenue to Yale Avenue N	479	PM	SW	1	700	0.68/D
	11) Yale Avenue N to Harrison Street	1,186	AM	S	2	1,680	0.78*/D
	12) Harrison Street to Denny Way	745	PM	N	2	1,680	0.44/D
Valley Street	13) Fremont Bridge to Valley Street	848	AM	S	1	960	0.88/D
	14) Valley Street to Denny Way	848	AM	S	2	1,400	0.61/D
Mercer Street	15) Westlake Avenue N to Fairview Avenue N	2,372	PM	W	3	2,100	1.13/F
	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM	E	2	1,680	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM	E	3.5	3,185	0.45*/D
Denny Way	18) Dexter Avenue N to Fairview Avenue N	2,929	PM	E	3.5	3,185	0.99*/E
	19) Broad Street to Aurora Avenue N	1,031	PM	W	2	1,680	0.61/D
	20) Aurora Avenue N to Stewart Street	1,233	PM	E	1.5	1,050	1.17/F
Broad Street	21) Stewart Street to Broadway E	864	PM	W	2	1,600	0.54/D
	22) Denny Way to Westlake Avenue N	1,643	PM	SW	2	1,820	0.90/E

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Boren Avenue	23) Denny Way to Pine Street	1,136	PM	NW	2	1,200	0.95/E
	24) Pine Street to University Street	862	PM	NW	2	1,200	0.72/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	1,894	AM	SW	3.5	2,100	0.90*/E
	26) Boren Avenue to 7th Avenue	1,278	AM	SW	3	1,800	0.71/D
	27) 7th Avenue to 3rd Avenue	729	AM	SW	2	1,200	0.61/D
Virginia Street	28) Denny Way to Westlake Avenue N	603	PM	NE	2	1,200	0.50/D
	29) Westlake Avenue N to 3rd Avenue	832	PM	NE	3	1,800	0.46/D
E Pine Street	30) Boren Avenue to Broadway	530	PM	W	1	720	0.74/D
Lakeview/Belmont/ Roy	31) Eastlake Avenue to Broadway E	415	PM	E	1	800	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	260	PM	W	1	600	0.43/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	300	PM	W	1	600	0.50/D
9th Avenue N	34) Roy Street to Republican Street	1,214	PM	S	3	700	0.58/D
Howell/Eastlake	35) Stewart Street to Boren Avenue	424	AM	S	1	600	0.71/D

Source: City of Seattle count data, 2004-2010.

* Standing queues observed. As a result, actual LOS may be worse.

Figure 3.13-12
Demand to Capacity Ratios – Existing Conditions



Source: Fehr & Peers, 2010

In addition, queue spillbacks were observed on the following segments:

- 9th Avenue N from Westlake Avenue N to Mercer Street (because of the queues on Mercer Street)
- Westlake Avenue N from Valley Street to Harrison Street (because of the queues on Mercer Street)
- Fairview Avenue N from Yale Avenue N to Harrison Street (because of the queues on Mercer Street)
- Mercer Street from 5th Avenue N to Dexter Avenue N
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Stewart Street from Eastlake Avenue E to Boren Avenue

Transit

Tables 3.13-5 and 3.13-6 summarize the load factors for transit routes serving the South Lake Union neighborhood in 2010. **Table 3.13-1** summarizes the AM peak period, PM peak period, and Midday period transit frequencies for the bus lines serving the area. The AM peak hour load factor is calculated based on the highest one-hour ridership on the route between 6 to 9 AM. The PM peak hour load factor is based on the highest one-hour ridership between 3:15 to 6:30 PM. For each route, the peak hour load factors for both directions are shown.

According to King County Metro, load factor is based on the highest ridership along the route. Therefore, the maximum load does not necessarily occur in the South Lake Union neighborhood. King County Metro aims for an aggregate load factor of 0.5 to 0.8 for each peak period. A load factor below 0.5 indicates too much capacity and a load factor above 0.8 indicates that some trips will have standing passengers. As described above, since King County Metro owns and operates the transit system, their load factor criteria is used to identify impacts; a peak hour load factor exceeding 1.25 is considered by King County Metro to be deficient.

Table 3.13-5
South Lake Union Transit AM Peak Hour Load Factors

Route	Termini Locations	Peak Hour Load Factor	
		NB	SB
5/54/55	Shoreline, West Seattle	0.41	0.86
8	Uptown, Rainier Valley	0.70	0.81
16	Downtown, Northgate	0.67	0.93
17/27	Loyal Heights, Leschi	0.52	0.86
25/37	Laurelhurst, West Seattle	0.47	0.63
26/124	Green Lake, Tukwila	0.46	0.71
23/28	Broadview, White Center	0.45	0.81
30	Sandpoint, Seattle Center	0.83	0.84
66	Downtown, Northgate	0.69	1.17
70	Downtown, University District	0.73	0.89
358	Downtown, Aurora Village Transit Center	0.66	0.81

Source: King County Metro, Spring, 2010.

Table 3.13-6
South Lake Union Transit PM Peak Hour Load Factors

Route	Termini Locations	Peak Hour Load Factor	
		NB	SB
5/54/55	Shoreline, West Seattle	0.76	0.45
8	Uptown, Rainier Valley	0.56	0.97
16	Downtown, Northgate	0.80	1.08
17/27	Loyal Heights, Leschi	0.87	0.71
25/37	Laurelhurst, West Seattle	0.43	0.40
26/124	Green Lake, Tukwila	0.63	0.63
23/28	Broadview, White Center	0.70	0.55
30	Sandpoint, Seattle Center	0.96	1.08
66	Downtown, Northgate	0.83	0.63
70	Downtown, University District	0.63	0.67
358	Downtown, Aurora Village Transit Center	0.84	0.87

Source: King County Metro, Spring 2010.

Travel Demand Management

In 2004, the City Council directed the Seattle Department of Transportation to create a transportation demand management (TDM) program for South Lake Union. That report suggested strategies for the neighborhood to minimize the negative travel effects brought on by substantial growth. Those strategies included increased management of on-street and off-street parking, expansion of transit service, and the creation of a single transportation management organization that would conduct marketing and customer service to promote alternatives to driving alone.

Two types of travel demand management programs affect South Lake Union. The State's Commute Trip Reduction Law applies to larger

employers. The City's Transportation Management Program applies to larger buildings (even if those buildings are occupied by small employers). Both programs are aimed at encouraging employees to reduce their drive-alone rate by implementing TDM programs and progress is monitored periodically.

Surveys are conducted every two years to measure the progress of companies affected by the State's Commute Trip Reduction Law. In a recent evaluation of these surveys, sixteen participating South Lake Union companies produced varied results. Each employer has its own mode split and VMT goals, based on a targeted reduction to its past rates. Nine companies achieved their single-occupant vehicle (SOV) mode-split goal, four reduced their SOV rate but did not reach their goal, while three increased their SOV rate. These results represent roughly 8,750 South Lake Union commuters. Of companies who have reached their mode-split goals, SOV rates range from 30 to 61 percent. The complete table may be found in **Appendix E**.

More detailed mode-split information was available for eight South Lake Union companies. That data is summarized in **Table 3.13-7**.

Table 3.13-7
Sample Mode-Split of South Lake Union CTR Participants

Company	Most Recent		Mode Split (%)			
	SOV Goal*	SOV	HOV	Transit	Bicycle	Walk
Alley 24 East & West	63	58	9	18	2	8
Gates Foundation	56	62	10	8	4	7
Group Health	47	37	14	38	2	3
Microsoft	34	37	15	23	2	14
Pemco	50	49	13	25	0	2
REI	39	39	4	20	16	5
Seattle Cancer Care Alliance	39	39	20	23	3	3
Tommy Bahama	50	45	19	25	2	5

Source: CTR Survey Reports, 2007-2010.

Freight

For the purposes of this study, the quality of freight mobility within South Lake Union will be assessed using the roadway segment d/c ratios on major truck streets. As described earlier, d/c ratios are correlated with traffic congestion and truck streets with high d/c ratios will be more difficult for trucks to navigate and have lower travel speeds, which can lead to delays.

As shown in **Table 3.13-4**, with the exception of Westlake Avenue N and Mercer Street west of Dexter Avenue N, all the major truck streets in the South Lake Union area (Mercer Street, Valley Street, and Broad Street) currently operate at LOS E or F conditions, with d/c ratios of 0.90 or greater.

Traffic Safety

The most recent (January 2007-December 2009) three-year collision records from the Seattle Department of Transportation were analyzed to determine if there were any High Accident Locations within the South Lake Union study area. The collision records identified only one High Accident Location at the intersection of Mercer Street and Taylor Avenue N. This unsignalized intersection experienced an average of five collisions per year over the last three years. A closer inspection of the collision data indicates that 40 percent of the collisions involved left turning vehicles while another 20 percent were right angle collisions. Most of the other collisions (33 percent) were sideswipes. These types of collisions are typical of unsignalized side-street intersections and often involve failure of a driver to properly yield right of way.

Previous studies in the area have identified other High Accident Locations within the South Lake Union study area, particularly at the intersections of Mercer Street and Fairview Avenue N, Mercer Street and Westlake Avenue N, Mercer Street and Dexter Avenue N, and Mercer Street and 5th Avenue N. These locations were reviewed for the average annual number of collisions over the three-year analysis period, but none of these locations met the City threshold defining a High Accident Location, with the highest collision rate of 8.7 occurring at Mercer Street and Fairview Avenue N.

The January 2007-December 2009 collision records from the Seattle Department of Transportation were also reviewed for pedestrian and bicycle collisions within the study area. Using the criteria defined in Analysis Methodology Section, the following two intersections were identified:

- Mercer Street and Dexter Avenue N – 1.7 bicycle collisions per year
- Eastlake Avenue and Fuhrman Avenue (south end of University Bridge) – 2.3 bicycle collisions per year

These two intersections correspond with intersections of major bicycle routes. Dexter Avenue N is also signed as the Interurban North bikeway and Eastlake Avenue near the University Bridge serves as a link on the Cheshiahud Lake Union Loop.

While this section identified several intersections with a relatively high number of collisions per year, the High Accident Location analysis methodology does not calculate a collision rate. Collision rates are often reported by state departments of transportation to identify locations that have a high number of collisions relative to the total traffic flow through the area.

3.13.2 Planning Scenarios Evaluated

This section describes the planning scenarios that will be evaluated in this document and presents the methodology and assumptions used to analyze the alternatives.

Four alternatives are evaluated under future year 2031 conditions. These include a No Action scenario that maintains South Lake Union's current zoning and three Action alternatives, which would increase the neighborhood's height and density zoning by varying degrees. Specifically, Alternatives 1 and 2 allow for increases to both residential and commercial development. Alternative 1 has higher allowable heights and densities, and Alternative 2 has more moderate standards. Alternative 3 allows commercial height and density focused primarily on residential development.

Transportation Network and Land Use Assumptions

This chapter assesses transportation system operations under 2031 conditions for all four future year scenarios. In general, the City of Seattle travel model forecast future background vehicle and transit volumes. For the South Lake Union area, we used a more refined method to project traffic volumes.

Per the direction of the Seattle Department of Transportation, the version of the City travel model used for this analysis was developed as a part of the Alaskan Way Viaduct (AWV) Replacement study and was used for the *AWV Supplemental Draft Environmental Impact Statement* (WSDOT, FHWA, and City of Seattle, July 2006). The following is a description of some of the travel model's key features.

- **Analysis Years:** This version of the model has a base year of 2008 and a horizon year of 2030. 2031 transportation forecasts for South Lake Union were developed by updating the land use forecasts and trip generation rates within the study area.
- **Network Representation:** The highway and major street systems (Westlake Avenue N, Fairview Avenue N, Mercer Street etc.) within South Lake Union are fully represented in the model.

Affected Environment
Planning Scenarios
Environmental Impacts
Mitigation Strategies
Significant Unavoidable Adverse Impacts

Transportation Contents

Transportation Network and Land Use Assumptions
Trip Generation Methodology
Trip Distribution

Planning Scenarios

- Land Use: The City of Seattle developed the estimates of citywide land use (residential, commercial, and industrial) for base and horizon year conditions.
- Transit: The travel model has a full representation of the transit system under base year conditions. The horizon year transit system is based on assumptions of service from the City of Seattle and the Puget Sound Regional Council.
- Travel Costs: The model accounts for the effects of auto operating costs, parking, transit fares, and tolls (on SR 520) on travel demand.
- Travel Demand: The model predicts travel demand for seven modes of travel: drive alone, carpool (2 person), carpool (3 plus), transit, trucks, walking, and bicycling. Travel demand is estimated for five time periods, morning (6 to 9 AM), midday (9 AM to 3 PM), afternoon (3 to 6 PM), evening (6 to 10 PM), and overnight (10 PM to 6 AM).

This chapter assumes several modifications to the transportation network in the Seattle travel model to better represent 2031 conditions. These modifications were to ensure that only “reasonably foreseeable” transportation improvement projects were included in the future year analysis. The definition of reasonably foreseeable is based on the following criteria:

- Projects that have full funding commitments
- Projects with partial funding commitments but with a well-defined strategy in place to raise the remaining funds

Figure 3.13-13 shows the reasonably foreseeable projects in the study area. The bulk of the projects are related to the Mercer East and Mercer West projects, which will convert Mercer Street to two-way operations between I-5 and 1st Avenue N. This project affects several adjacent streets. The North Portal portion of the Alaskan Way Viaduct Replacement project is also assumed. This project will affect the southwestern corner of the South Lake Union neighborhood by completing the street grid across Aurora Avenue at John, Thomas, and Harrison Streets. The north portal of the bored tunnel will also require Broad Street to be vacated between 5th and 9th Avenues N.

Transportation projects that do not meet the definition for reasonably foreseeable are shown in **Figure 3.13-14** (roadway improvements) and

Figure 3.13-15 (pedestrian and bicycle improvements)⁴. These projects are not assumed to be completed by 2031 and were not included in the travel model. Note that the full Mercer West project includes widening the Mercer Street underpass between Dexter Avenue N and 5th Avenue N to three lanes in each direction with left-turn lanes, wider sidewalks, and a bicycle path. Due to an expected funding shortfall, this part of the Mercer West project is not considered to be reasonably foreseeable. Instead, it is assumed that the Mercer Street underpass would operate with two lanes in each direction and no improvements to pedestrian or bicycle facilities. All other components of the Mercer West project are assumed to be reasonably foreseeable.

No changes were made to the travel model's horizon year transit network, since the region has a proven record of increasing transit service to keep up with population growth over the long-term. The current financial troubles faced by transit agencies would be speculative to assume for 2031 since there is no precedent for a long-term stagnation of transit funding.

A close review of the travel model indicated several bus route changes expected by 2031. Route 30 will no longer serve the study area⁵. The following new bus routes are expected to serve South Lake Union:

- Rapid Ride Line D: Ballard to Downtown Seattle
- Rapid Ride Line E: Aurora Avenue - Shoreline to Downtown Seattle
- Route 21: Arbor Heights to Downtown Seattle
- Route 29: Woodland Park to Downtown Seattle
- Route 56: Alki/West Seattle to South Lake Union
- Route 121: Burien to Downtown Seattle
- Route 308: Lake Forest Park to Downtown Seattle
- Route 313: Bothell to Uptown
- Route 316: Shoreline to Uptown

⁴ The PMP identifies locations where improvements are desirable, but does not identify specific projects. In those instances when it was reasonably clear what the general improvement would be, such as building a sidewalk where one was missing or adding a crosswalk, the location is shown in **Figure 3.13-15**.

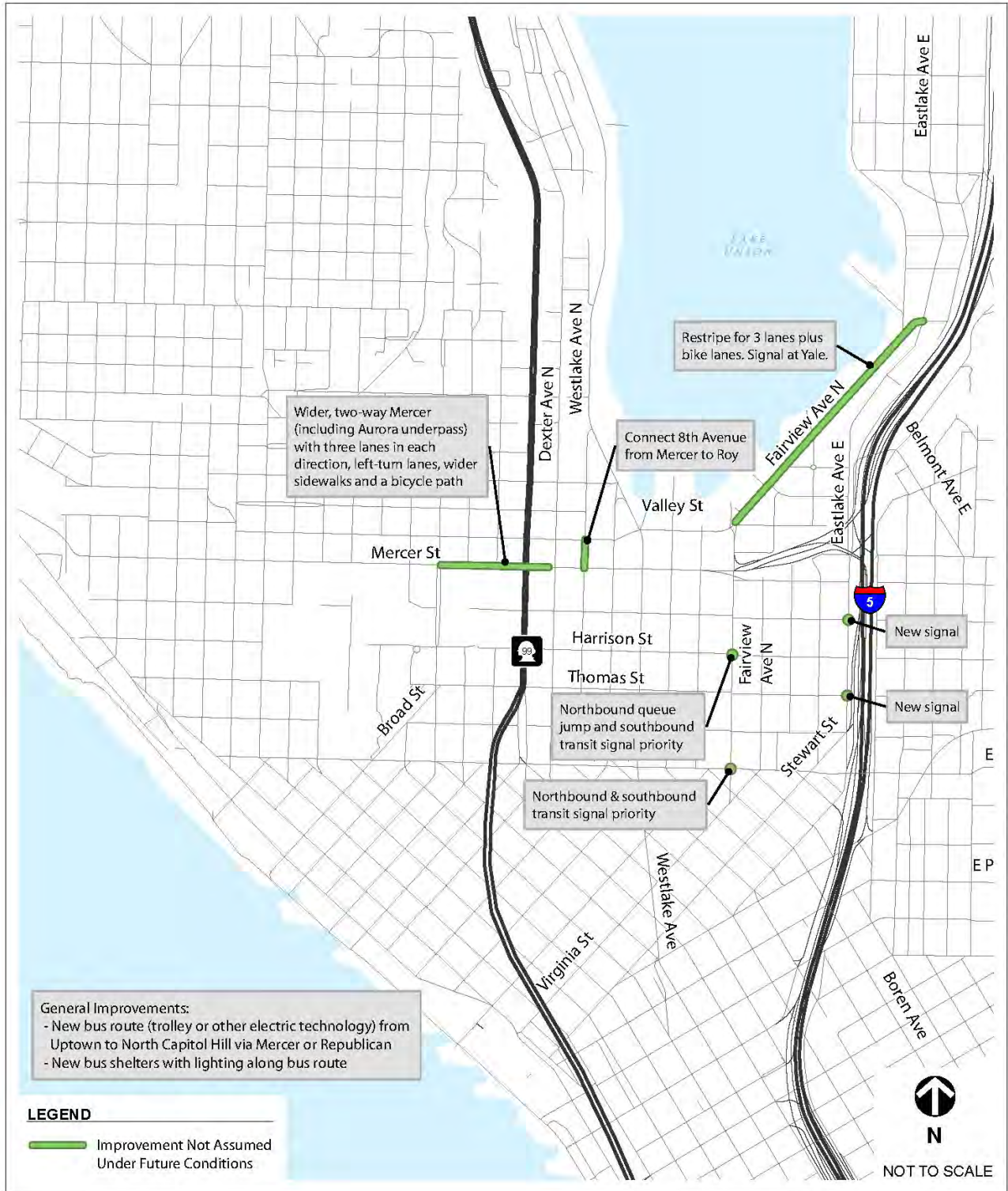
⁵ The Seattle travel model does not describe why Route 30 would no longer serve the study area (it would run only between Sand Point and the University District rather than continuing south to South Lake Union/Lower Queen Anne). However, it is likely the southern portion of this route will be unnecessary when the University Link of Light Rail is completed.

Figure 3.13-13
Reasonably Foreseeable Transportation Improvements



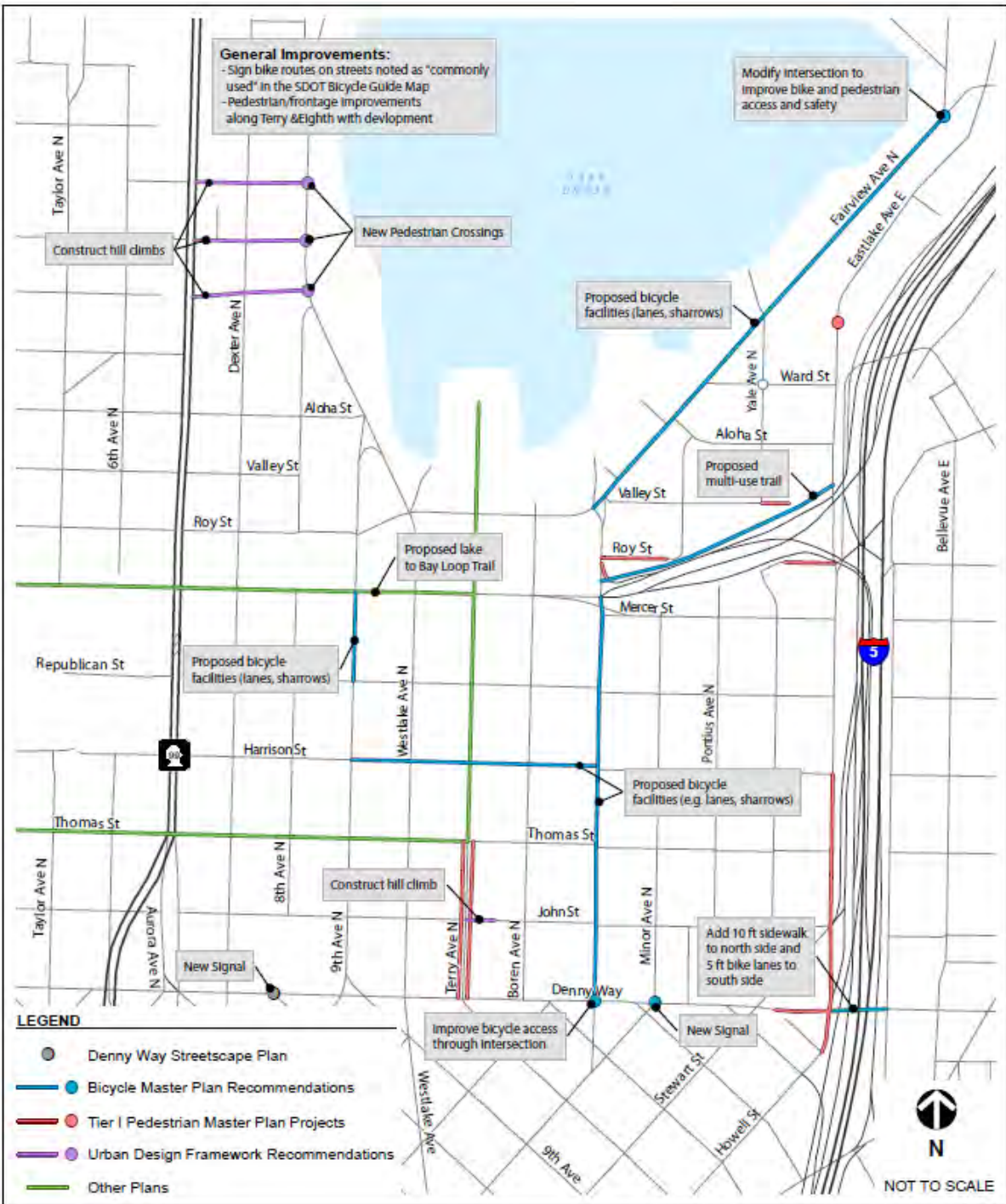
Source: Fehr & Peers, 2010

Figure 3.13-14
 Roadway Improvement Not Assumed Under Future Conditions



Source: Fehr & Peers, 2010

Figure 3.13-15
 Pedestrian and Bicycle Improvements Not Assumed Under Future Conditions



Source: Fehr & Peers, 2010

Trip Generation Methodology

The project team used an innovative trip generation analysis technique, known as the mixed-use development (MXD) model, to analyze the future year land use scenarios. The MXD model is based on a growing body of research, which focuses on the relationship between travel and the built environment. This method supplements conventional trip generation methods to capture effects related to built environment variables (known as the Ds) like **d**ensity, **d**iversity of land uses, **d**estinations (accessibility), **d**evelopment scale, pedestrian and bicycle **d**esign, and **d**istance to transit services, and **d**emographics. The proposed height and density alternatives in the South Lake Union area incorporate changes in a number of these variables that, in turn, would influence the neighborhood's travel characteristics. In short, projects with higher densities, a rich variety of land uses close to one another, and high quality bicycle, pedestrian, and transit environments have a lower vehicle trip generation rate. Travelers have more choices in terms of both the travel mode they choose and the distance they must travel to reach various destinations. When these projects are located in urban areas, this effect intensifies. This method avoids overestimating the number of vehicle trips that infill projects generate and provides a more reasonable picture of how travel characteristics change over time.

Traditional trip generation methodologies are not well suited to analyze the proposed height and density alternatives. These methods often take trip generation estimates from the Institute of Transportation Engineers (ITE) and factor the results using mode split data from the City's travel model, US Census Bureau, or engineering judgment.

While traditional trip generation methods can account for the high share of non-auto modes in the City, they have limited ability to consider shifts in mode choice caused by major land use changes like those considered in South Lake Union for the following reasons:

- Typical mode split adjustments tend to assume continuation of current trends and have limited responsiveness to changes in the land use and the built environment (e.g., increased density, increased mix of uses) or transportation system (e.g., improved pedestrian and bicycle connectivity, improved transit service).
- Mode split data are often derived from the US Census Bureau. As time passes the, mode split estimates may not be applicable given changes in development patterns and socioeconomic conditions. This may be the case for the current study, as the Census results were ten years old at the time of this analysis.

The MXD model overcomes many of these shortcomings and explicitly accounts for how built environment variables, such as building forms, the mix of land uses (jobs/housing balance), densities, transit accessibility, and neighborhood connectivity, affect travel behavior and mode choice.

The MXD model was developed in cooperation with the US Environmental Protection Agency (EPA) and ITE. Over 200 mixed-use development sites across the United States were surveyed as part of the model development process and the model was validated using data from 16 independent mixed use sites. Additional details regarding the model development, validation, and statistical performance can be found in **Appendix E**.

Figure 3.13-16 compares the traditional trip generation methodology to the enhanced MXD model applied for this analysis.

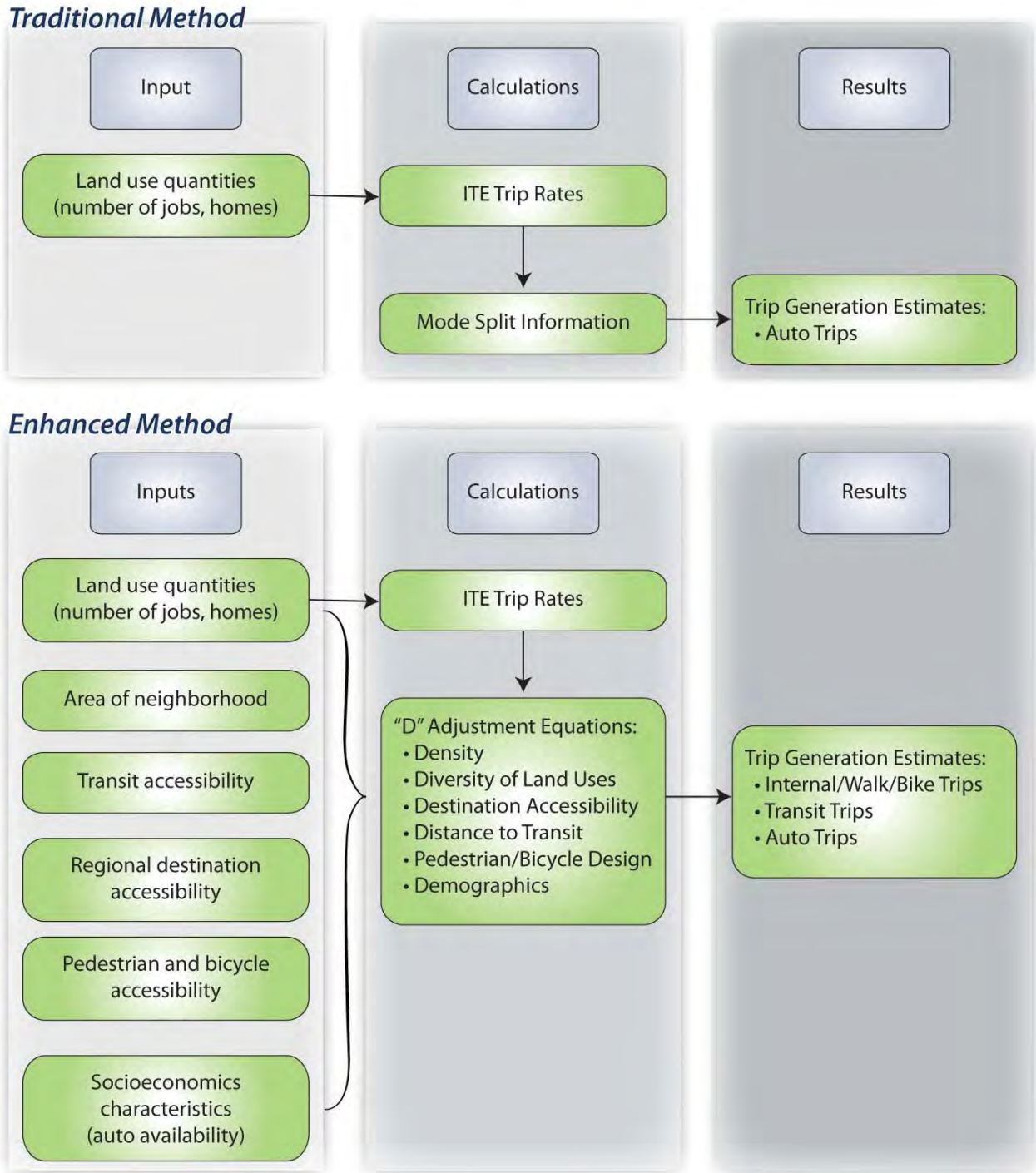
2031 South Lake Union Land Uses

The City of Seattle provided 2031 land use data (number of new housing units and jobs) for each of the four height and density alternatives:

- No Action Alternative – Development under Current Zoning
- Alternative 1 – Maximum Increases to Allowed Height and Density
- Alternative 2 – Mid-Range Increases to Allowed Height and Density
- Alternative 3 – Modest Increases to Allowed Height and Density

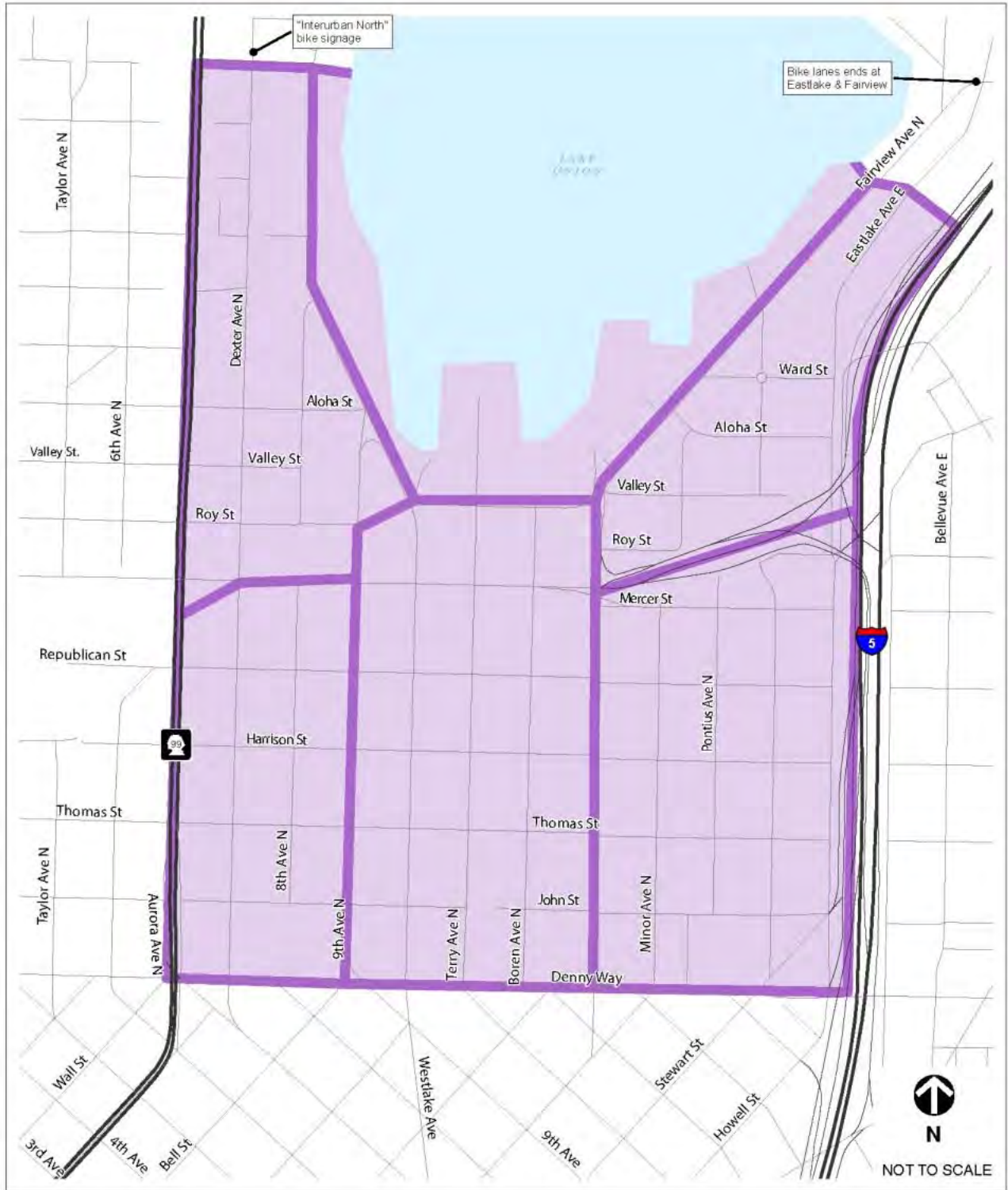
The 2031 land use data were developed according to the neighborhoods shown in **Figure 3.13-17**. The neighborhood boundaries were determined based on a number of factors, including the location of barriers (such as South Lake Union) and the clustering of land uses.

Figure 3.13-16
 Comparison of Traditional and Enhanced Trip Generation Methods



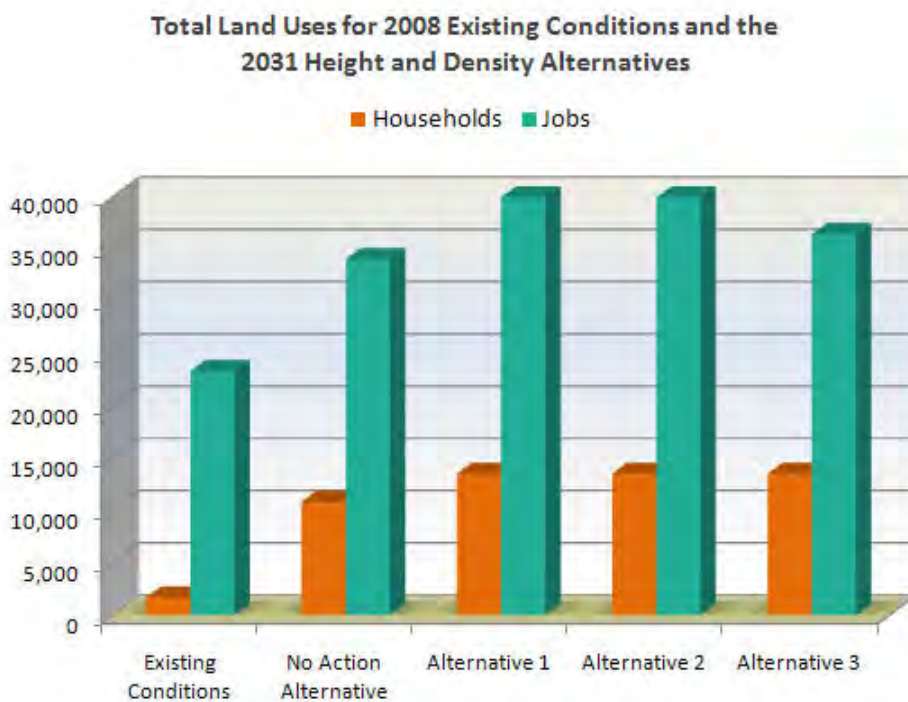
Source: Fehr & Peers, 2010

Figure 3.13-17
 Neighborhood Boundaries Used for Trip Generation



Source: Fehr & Peers, 2010

The chart below compares the 2031 land use totals (for housing units and jobs) for each of the height and density alternatives. The totals for each alternative take into account existing uses, those that will be lost when parcels are redeveloped, and new development. For comparison purposes, the 2008 existing conditions land use totals from the latest version of the City of Seattle travel model are also summarized. The development totals shown below represent total land uses (number of households and jobs) for each of the time periods shown below and should not be confused with the growth targets or development capacities described in Chapter 2. The growth shown below is consistent with both the growth targets and development capacities.



As shown in the above chart, the No Action Alternative would have the fewest jobs and households under 2031 conditions (10,800 households and 34,047 jobs). Among the three height and density alternatives, all have the same number of households assumed under 2031 (13,500), and Alternatives 1 and 2 have the same number of jobs assumed (39,945). Alternative 3 has slightly fewer jobs assumed (36,449) since, as described earlier, this alternative has lower densities and a residential focus.

The chart above shows that Alternatives 1 and 2 have an identical level of development expected over the next 20 years despite different allowable densities and tower heights. This similarity is related to the assumption that only a limited amount (11,900 households and 21,900 jobs) of

development is expected to be built over the next 20 years, despite the differing zoning capacities. This is because Alternatives 1 and 2 will allow densities in excess of market demand for both housing and jobs. Alternative 3 will allow densities in excess of housing demand but not job demand, while the No Action Alternative will not provide enough density to meet market demand for housing or jobs.

Based on the land use totals described above, a GIS analysis was prepared for each of the future year alternatives (No Action, and Alternatives 1-3). This analysis measured key changes (as shown in **Figure 3.13-16**) such as the density of each neighborhood, the quality of the pedestrian environment (as measured by the frequency of crossing opportunities and block size), the mix of housing, retail, and employment, and other factors. **Table 3.13-8** presents the results of the trip generation estimate by mode for Daily and PM peak hour conditions. AM peak hour conditions were also calculated and those results, along with details of the calculations are presented in **Appendix E**.

As the table shows, the level of vehicle trip generation reflects the amount of land use development assumed under each future year alternative. For example, under PM peak hour conditions, Alternative 1 generates about 23 percent more vehicle trips when compared to the No Action Alternative. This result is reasonable considering that Alternative 1 contains about 25 percent more homes and 17 percent more employment than the No Action Alternative. Alternatives 1 and 2 generate about the same number of vehicle trips, and Alternative 3 generates trips at a level between Alternatives 1 and 2 and the No Action Alternative.

Table 3.13-8 also shows that the mode share predicted by the MXD model is relatively similar for each of the future year alternatives. This result is a reflection of several factors:

- The density of all the alternatives is relatively high
- The mix of land uses for all the alternatives is similar
- The roadway, pedestrian, bicycle, and transit networks are the same for all alternatives
- All the alternatives have the same proximity to major employment centers like Downtown Seattle and the University of Washington

Table 3.13-8 illustrates the gross ITE trip rates, followed by the breakdown by mode predicted by the MXD model.

Table 3.13-8
Trip Generation by Alternative

Alternative	Daily			PM Peak		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	108,946 (49.4%)	70,540 (29.1%)	52,337 (21.6%)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	136,973 (48.3%)	93,828 (30.1%)	67,509 (21.6%)	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)
Alternative 2 - Mid-Range Increases to Height and Density	136,888 (48.3%)	93,908 (30.1%)	67,509 (21.6%)	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)
Alternative 3 - Moderate Increases to Height and Density	117,326 (48.1%)	81,403 (30.3%)	57,855 (21.6%)	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)

Source: Fehr & Peers, 2010.

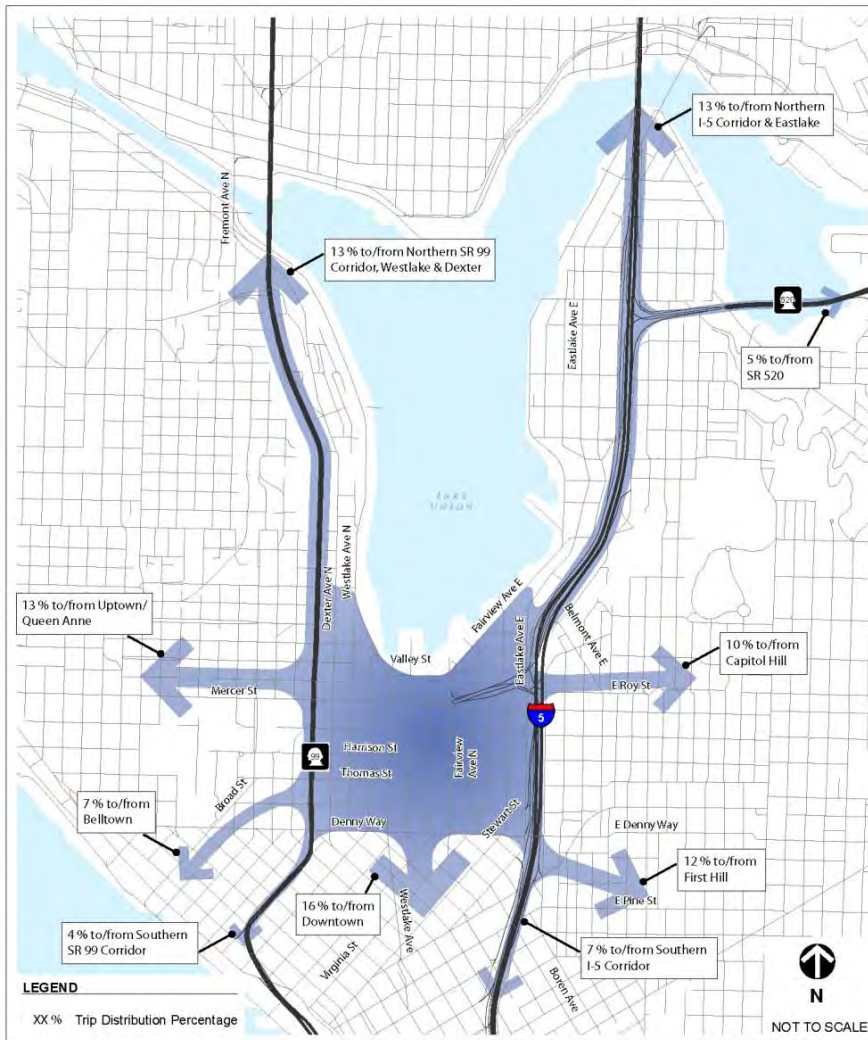
Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Trip Distribution

The City of Seattle model distributed the vehicle and transit trips presented in **Table 3.13-8** to the transportation system. The City of Seattle travel model indicated the following general distribution pattern for vehicle trips to and from the South Lake Union neighborhood in the PM peak period in 2031 (shown in **Figure 3.13-18**):

- 26% north via SR 99, I-5, or city streets
- 23% to Downtown/Belltown
- 22% east via city streets to Capitol Hill or First Hill
- 13% west via city streets to Queen Anne
- 11% south via SR 99 or I-5
- 5% east via SR 520

Figure 3.13-18
External Vehicle Trip Distribution



Source: Fehr & Peers, 2010

Affected Environment
Planning Scenarios
Environmental Impacts
Mitigation Strategies
Significant Unavoidable Adverse Impacts

3.13.3 Environmental Impact – Deficiencies of the No Action Alternative

Analysis results and environmental deficiencies of the No Action Alternative are summarized in this section. Deficiencies are defined as:

- A study corridor operating at a d/c ratio of 0.90 or greater (LOS E or F conditions)
- A transit line operating at a load factor of 1.25 or greater
- An increase in pedestrian or vehicle traffic in an area experiencing pedestrian safety concerns
- An increase in pedestrian delay at signalized intersections
- An increase in bicycle or vehicle traffic in an area experiencing bicycle safety concerns

As defined above, deficiencies are future transportation operations that do not meet existing service standards. These deficiencies would be caused by future development and individual project-level mitigation could reduce the magnitude of the deficiency; however, this level of detail is not known and cannot be considered in this EIS. In this case, the term deficiency does not refer to an existing transportation system issue is the responsibility of the City to address.

The No Action Alternative serves as the baseline for the impact analysis. It represents the operations of the transportation system if no actions were taken by the City Council and no zoning changes are made in the South Lake Union neighborhood. As mentioned previously, all reasonably foreseeable⁶ transportation improvements (see **Figure 3.13-13**) are assumed to be in place in 2031. The same transportation network is assumed for the No Action and all three height and density alternatives.

AM and PM peak period traffic volume and transit ridership estimates were generated using the City’s travel model. The City travel model accounts for background growth in traffic and transit ridership associated with increases in city and regional land uses anticipated over the next 20 years.

Analysis Results

The following section describes the results of the evaluation of transportation conditions under the 2031 No Action Alternative. Transportation deficiencies are identified according to the criteria outlined in Section 3.13.4.

⁶ As defined in Section 3.13.2, reasonably foreseeable improvements include projects that have full funding commitments and projects with partial funding commitments but with a strategy in place to raise the remaining funds.

Study Corridors

Table 3.13-9 and **Figure 3.13-19** summarize the d/c ratios of the study corridors under the No Action Alternative. The following study corridors would operate at LOS E or F, exceeding the City's LOS standard, which constitutes a traffic operations deficiency:

- Fremont Bridge from N 35th Street to Westlake Avenue N
- Westlake Avenue N from Valley Street to Harrison Street
- Westlake Avenue N from Harrison Street to Denny Way
- Fairview Avenue N from Eastlake Avenue to Yale Avenue N
- Dexter Avenue N from Fremont Bridge to Valley Street
- Dexter Avenue N from Valley Street to Denny Way
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street
- Boren Avenue from Denny Way to Pine Street
- Stewart Street from Eastlake Avenue E to Boren Avenue
- E Pine Street from Boren Avenue to Broadway
- Harrison Street from Aurora Avenue N to Eastlake Avenue N
- 9th Avenue N from Roy Street to Republican Street
- Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue

Table 3.13-9
No Action Alternative: Demand-to-Capacity Ratios of Study Corridors

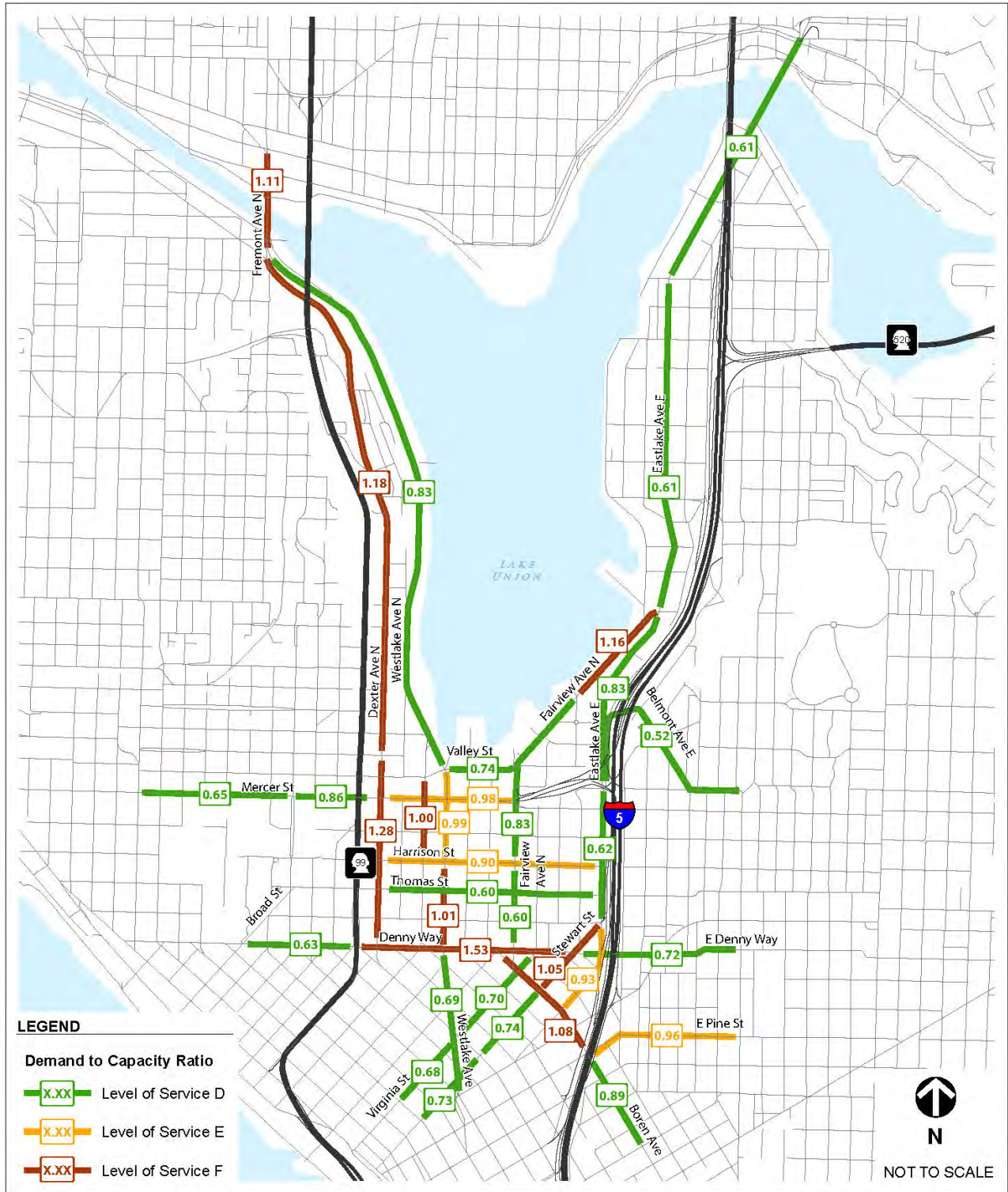
Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM	N	2	1,600	1.11/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM	N	2	1,600	0.83/D*
	3) Valley Street to Harrison Street	1,040	PM	S	1.5	1,050	0.99/E
	4) Harrison Street to Denny Way	1,061	PM	S	1.5	1,050	1.01/F
Eastlake Avenue E	5) Denny Way to Stewart Street	624	PM	N	1.5	900	0.69/D*
	6) N 40th Street to E Hamlin Street	1,166	AM	SW	2	1,920	0.61/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM	S	2	1,920	0.61/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM	N	1	700	0.83/D*
Fairview Avenue N.	9) Lakeview Blvd E to Stewart Street	867	PM	S	2	1,400	0.62/D*
	10) Eastlake Avenue to Yale Avenue N	810	AM	SW	1	700	1.16/F
	11) Yale Avenue N to Harrison Street	1,389	PM	N	2	1,680	0.83/D
Dexter Avenue N	12) Harrison Street to Denny Way	1,009	PM	N	2	1,680	0.60/D*
	13) Fremont Bridge to Valley Street	1,132	AM	S	1	960	1.18/F*
Valley Street	14) Valley Street to Denny Way	1,787	PM	N	2	1,400	1.28/F
	15) Westlake Avenue N to Fairview Avenue N	624	PM	E	1	840	0.74/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM	E	2	1,680	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM	E	2	1,680	0.86/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM	W	3	2,100	0.98/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM	W	2	1,680	0.63/D
	20) Aurora Avenue N to Stewart Street	1,607	PM	E	1.5	1,050	1.53/F*
	21) Stewart Street to Broadway E	1,151	AM	W	2	1,600	0.72/D

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Broad Street	22) Denny Way to Westlake Avenue N						Segment does not exist under future conditions
Boren Avenue	23) Denny Way to Pine Street	1,297	AM	NW	2	1,200	1.08/F*
	24) Pine Street to University Street	1,068	PM	SE	2	1,200	0.89/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM	SW	3.5	2,100	1.05/F
	26) Boren Avenue to 7th Avenue	1,334	AM	SW	3	1,800	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM	SW	2	1,200	0.73/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM	NE	2	1,200	0.70/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM	NE	3	1,800	0.68/D
E Pine Street	30) Boren Avenue to Broadway	691	PM	W	1	720	0.96/E
Lakeview/Belmont/Ro y	31) Eastlake Avenue to Broadway E	415	PM	E	1	800	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM	E	1	720	0.60/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM	E	1	600	0.90/E
9th Avenue N	34) Roy Street to Republican Street	698	PM	N	1	700	1.00/F
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM	N	2	600	0.93/E

Source: Fehr & Peers, 2010

Note: * These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing. Corridors that do not meet the City LOS standard are shown in bold.

Figure 3.13-19
 Demand-to-Capacity Ratios – No Action Alternative



Source: Fehr & Peers, 2010

As defined by the HCM, the poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.

Transit

As was the case under the existing conditions analysis, transit operations are assessed using load factors. Ridership, frequency, and capacity will change by 2031, so the City of Seattle travel model was used to predict future load factors. Details of the calculations and assumptions can be found in **Appendix E**.

The 2031 No Action Alternative AM peak hour load factors are shown in **Table 3.13-10**. Since the Seattle travel model does not explicitly model PM peak period transit trips (they are modeled as the reverse of the AM trips), these load factors would also apply to PM peak hour conditions.

Table 3.13-10
No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Load Factors

Route	Termini Locations	Northbound	Southbound
5	Downtown, Shoreline	0.64	0.84
8	Uptown, Rainier Valley	0.89	0.88
16	Downtown, Northgate	0.53	0.77
17	Downtown, Loyal Heights	0.77	0.68
21	Downtown, Arbor Heights	1.17	-
25	Downtown, Laurelhurst	0.65	1.00
26	Downtown, Green Lake	0.83	0.77
28	Downtown, Broadview	1.19	0.84
29	Downtown, Woodland Park	1.19	1.49
56	South Lake Union, West Seattle	1.38	-
66	Downtown, Northgate	0.53	0.76
70	Downtown, University District	0.65	0.62
121	Downtown, Burien	0.67	-
308	Downtown, Lake Forest Park	-	0.97
313	Uptown, Bothell	-	0.45
316	Uptown, Shoreline	-	0.82
Rapid Ride	Downtown, Aurora Village Transit Center	0.62	0.80

Source: Fehr & Peers, 2010

Note: Dashes indicate either that the route does not serve South Lake Union or does not exist in the travel model in that direction.

Based upon the results above, two transit routes serving South Lake Union will not operate with acceptable load factors under the No Action Alternative.

- Route 29 (southbound in the AM peak hour and northbound in the PM peak hour)
- Route 56 (northbound in the AM peak hour and southbound in the PM peak hour)

Table 3.13-11 displays the estimated AM peak hour headways under 2031 conditions. Lines with headways greater than 15 minutes in at least one direction are noted in bold since they do not meet the UVTN transit frequency standards. Since the Action Alternatives themselves do not affect transit frequency, the headways in **Table 3.13-11** also apply to the Action Alternatives. The table highlights which routes do not meet the UVTN frequency goal; however, overall transit delay on these routes (caused by infrequent service) will increase with the additional ridership generated by each of 2031 development alternatives.

Based on the results, eight transit lines do not meet the UVTN frequency goal of 15 minute headways during the AM peak hour⁷. Those lines include Routes 16, 25, 28, 29, 66, 308, 313, and 316. The UVTN calls for 15 minute frequencies 18 hours of the day, every day of the week. The travel model does not provide transit information for that length of time. Therefore, the travel model's expected frequency improvements within the peak period along with current midday and weekend schedules were considered (see **Appendix E** for details). It appears likely that all routes with the exception of Aurora RapidRide would not meet the UVTN frequency goal. Although service within the weekday peak periods, as well as the midday period for many routes, would conform to the UVTN standards, it is unlikely that weekend schedules would change enough to meet the frequency goal.

⁷ Since the Seattle travel model does not explicitly model PM peak hour conditions, similar conditions are also assumed in the evening peak hour.

Table 3.13-11

No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Headways

Route	Termini Locations	Northbound	Southbound
5	Downtown, Shoreline	12	11
8	Uptown, Rainier Valley	7	7
16	Downtown, Northgate	17	17
17	Downtown, Loyal Heights	15	15
21	Downtown, Arbor Heights	9	-
25	Downtown, Laurelhurst	24	26
26	Downtown, Green Lake	15	12
28	Downtown, Broadview	12	16
29	Downtown, Woodland Park	26	26
56	South Lake Union, West Seattle	13	-
66	Downtown, Northgate	26	26
70	Downtown, University District	14	14
121	Downtown, Burien	13	-
308	Downtown, Lake Forest Park	-	20
313	Uptown, Bothell	-	20
316	Uptown, Shoreline	-	20
Rapid Ride	Downtown, Aurora Village Transit Center	6	6

Source: Fehr & Peers, 2010

Note: Headways were determined by applying the change between base and future year model headways to existing headways when possible. For new transit lines, the headways provided are direct model outputs. Actual headways will vary when transit lines are implemented.

Pedestrian and Bicycle System

As shown in the trip generation table (**Table 3.13-8**), the land use development anticipated to occur under the No Action Alternative will result in a substantial number of pedestrian and bicycle trips within the study area. Typically, pedestrian and bicycle travel demand-to-capacity analyses are not performed since commonly accepted analysis methodologies, like the HCM, would not identify any capacity shortages outside of exceptional cases like Manhattan or Downtown Chicago. Further, bicycle and pedestrian environments are more often measured by the quality of experience they provide rather than by their levels of congestion.

While pedestrian and bicycle demand/capacity issues are not likely, buildout under the No Action Alternative could lead to consequences such as:

- Additional pedestrian and vehicle travel at major intersections could lead to increased pedestrian delays if the City retimes traffic signals to facilitate vehicle flow.
- Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection.

Parking

Although it is unknown how many off-street parking spaces will be provided by 2031, parking code requirements, typical market demand, and expected growth can give some indication of future supply, as shown in **Table 3.13-12**. Current parking code requirements were assumed for retail and non-retail commercial land uses. No parking is required for multifamily residential uses in urban centers, which applies to most of the study area; however, parking is still usually provided. It was assumed that one parking space per dwelling unit would be supplied for residential uses. The growth in households and jobs was used to estimate future additional off-street parking spaces under the No Action Alternative. Details of the calculation may be found in **Appendix E**.

Table 3.13-12
No Action Alternative: Estimated Additional Off-Street Parking Supply

Alternative	Residential	Retail	Non-Retail	Total
Assumed Supply	1 space/ dwelling unit	2 spaces /ksf ¹	1 space/ksf ¹	
No Action	9,200	2,087	4,870	16,157

Source: City of Seattle Municipal Code 23.54.015, 2010

Note: Basic retail and office requirements published in the City Code were used for this analysis, and mirror the assumptions used in the Downtown Height & Density EIS. Residential parking was assumed to be provided based on market demand at one space per unit.

1. ksf – 1,000 square feet

The City and King County Metro are currently considering locations to be used as bus layover areas, which has the potential to remove on-street parking from the South Lake Union neighborhood. If current parking demand trends continue as highlighted by the existing peak period parking shortages near the Amazon campus, there will likely be at least temporary shortages for both on-street and off-street parking under the No Action Alternative, particularly around office uses. The relationship between parking supply and cost will cause prices to climb as demand approaches or exceeds supply. In turn, this will cause some travelers to switch to modes such as transit, thereby freeing up some parking.

Off-street parking shortages often result in spillover to adjacent neighborhoods, but this may not be a problem in South Lake Union. The adjacent areas in Capitol Hill, Lower Queen Anne, and Downtown are either difficult to access or offer paid parking only, making them inconvenient parking locations.

Freight

As described in the Existing Conditions analysis section, the quality of freight movement is assessed based on the d/c ratios on major truck streets. As shown in **Table 3.13-9**, traffic congestion on Mercer Street between Dexter Avenue and Fairview Avenue N would increase substantially when compared to existing conditions. This increase in traffic congestion will lead increased difficulty for trucks to maneuver and increased travel times, which could delay trucking operations. This is considered a freight mobility deficiency in the area.

Note that the increase in traffic congestion is caused by both additional development in South Lake Union and regional traffic growth. While Valley Street would operate at an acceptable level of congestion under the No Action Alternative; however, it is unlikely that this would remain a major truck street after the Mercer East Corridor project is complete.

Additionally, as the South Lake Union neighborhood develops under the No Action Alternative, there could be localized freight deficiencies related to the lack of loading areas and small curb radii that trucks cannot navigate.

The removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street will leave a gap in the City of Seattle Major Truck Street network. This gap does not constitute a freight mobility deficiency since freight traffic can use arterial streets. However, the City should update its Major Truck Street system to identify a replacement for Broad Street.

Traffic Safety

As described earlier, the City of Seattle evaluates traffic safety concerns based on the definition of High Accident Locations. Since High Accident Locations calculate the average rate of collisions per year at intersections without any regard to the traffic flow through the intersection, the increased traffic volumes anticipated under the No Action Alternative could lead to the identification of additional High Accident Locations. While there may be more High Accident Locations under future conditions with the No Action Alternative, there is no data available to suggest that a volume-based collision rate (e.g., collisions per million entering vehicles) will increase with buildout of the No Action Alternative.

3.13.4 Environmental Impact – Identification

The 2031 No Action Alternative serves as the baseline for identifying impacts to transportation facilities in 2031 caused by the Action Alternative. This section describes the methodology used to identify impacts under each of the height and density alternatives.

A *significant* transportation impact is said to occur if any of the proposed alternatives would:

- Cause an increase in traffic demand that results in a study corridor, that operates acceptably under the 2031 No Action Alternative, to operate unacceptably (d/c ratio of 0.9, which equates to LOS E or F conditions)
- Cause an increase in traffic on a study corridor that operates unacceptably (as measured by d/c ratios and LOS) under the 2031 No Action scenario that results in the d/c ratio increasing by at least .01 (increases in d/c ratios of less than .01 are less than typical daily fluctuations and are not noticeable by drivers – see **Appendix E** for clarification)
- Lead to an increase in the peak hour load factor on a transit line which exceeds King County Metro’s standard of 1.25

A transportation impact is said to occur if any of the proposed alternatives would:

- Increase pedestrian or vehicle traffic in an area experiencing pedestrian safety concerns
- Increase pedestrian delay at signalized intersections
- Increase bicycle or vehicle traffic in an area experiencing bicycle safety concerns

3.13.5 Environmental Impacts – Action Alternatives

This section provides the evaluation of each of the height and density alternatives in year 2031. Due to the similarities among the alternatives, they are all addressed in the same section to minimize redundancy. The impacts and potential mitigation measures for all alternatives are described in the following section.

Traffic volume estimates for each of the three height and density alternatives uses the same methodology as described for the No Action Alternative. See the trip generation discussion in Sections 3.13.1 and 3.13.3 for the full details.

Analysis Results

The following section describes the results of the evaluation of transportation conditions under each of the project alternatives in 2031.

Study Corridors

Table 3.13-13 and **Figures 3.13-20, 3.13-21 and 3.13-22** summarize the demand-to-capacity ratios of the study corridors under the action alternatives. Significant transportation operations impacts, which are based on the criteria and thresholds described in Section 3.13.4, are noted in bold and highlighted below.

Under all three height and density alternatives, the following study corridors experience significant impacts to traffic operations:

- Westlake Avenue N from Valley Street to Harrison Street
- Westlake Avenue N from Harrison Street to Denny Way
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street
- Boren Avenue from Denny Way to Pine Street
- Boren Avenue from Pine Street to University Street
- Stewart Street from Eastlake Avenue E to Boren Avenue
- Harrison Street from Aurora Avenue N to Eastlake Avenue E
- 9th Avenue N from Roy Street to Republican Street

In addition to those previously listed, the following study corridors are significantly impacted under Alternatives 1 and 2:

- Fremont Bridge
- Eastlake Avenue E from Fairview Avenue to Lakeview Blvd E
- Dexter Avenue N from Valley Street to Denny Way
- E Pine Street from Boren Avenue to Broadway
- Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue

As defined by the HCM, the poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.

Table 3.13-13
Demand-to-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,813	PM/N	1.13/F	1,805	PM/N	1.13/F	1,779	PM/N	1.11/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,336	PM/N	0.84/D	1,336	PM/N	0.84/D	1,332	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	1,130	PM/S	1.08/F	1,123	PM/S	1.07/F	1,071	PM/S	1.02/F
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,137	PM/S	1.08/F	1,135	PM/S	1.08/F	1,090	PM/S	1.04/F
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	657	PM/N	0.73/D	649	PM/N	0.72/D	640	PM/N	0.71/D
Eastlake Avenue E	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,210	AM/SW	0.63/D	1,208	PM/NE	0.63/D	1,177	AM/SW	0.61/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,224	PM/N	0.64/D	1,221	PM/N	0.64/D	1,175	AM/S	0.61/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	641	PM/N	0.92/E	628	PM/N	0.90/E	608	PM/N	0.87/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	921	PM/S	0.66/D	922	PM/S	0.66/D	888	PM/S	0.63/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	801	AM/SW	1.14/F	808	AM/SW	1.15/F	792	AM/SW	1.13/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,392	PM/N	0.83/D	1,418	PM/N	0.84/D	1,388	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,033	PM/N	0.61/D	1,030	PM/N	0.61/D	1,014	PM/N	0.60/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,115	AM/S	1.16/F	1,102	AM/S	1.15/F	1,127	AM/S	1.17/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,810	PM/N	1.29/F	1,807	PM/N	1.29/F	1,795	PM/N	1.28/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	657	PM/E	0.78/D	664	PM/E	0.79/D	646	PM/E	0.77/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,097	AM/W	1.00/F	2,109	AM/W	1.00/F	2,078	AM/W	0.99/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,058	AM/W	0.63/D	1,084	PM/E	0.65/D	1,057	AM/W	0.63/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,642	PM/E	1.56/F	1,648	PM/E	1.57/F	1,616	PM/E	1.54/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,195	AM/W	0.75/D	1,193	AM/W	0.75/D	1,161	AM/W	0.73/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,329	AM/NW	1.11/F	1,333	AM/NW	1.11/F	1,309	AM/NW	1.09/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,095	PM/SE	0.91/E	1,097	PM/SE	0.91/E	1,080	PM/SE	0.90/E
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,262	AM/SW	1.08/F	2,283	AM/SW	1.09/F	2,232	AM/SW	1.06/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,347	AM/SW	0.75/D	1,356	AM/SW	0.75/D	1,335	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	898	AM/SW	0.75/D	898	AM/SW	0.75/D	884	AM/SW	0.74/D

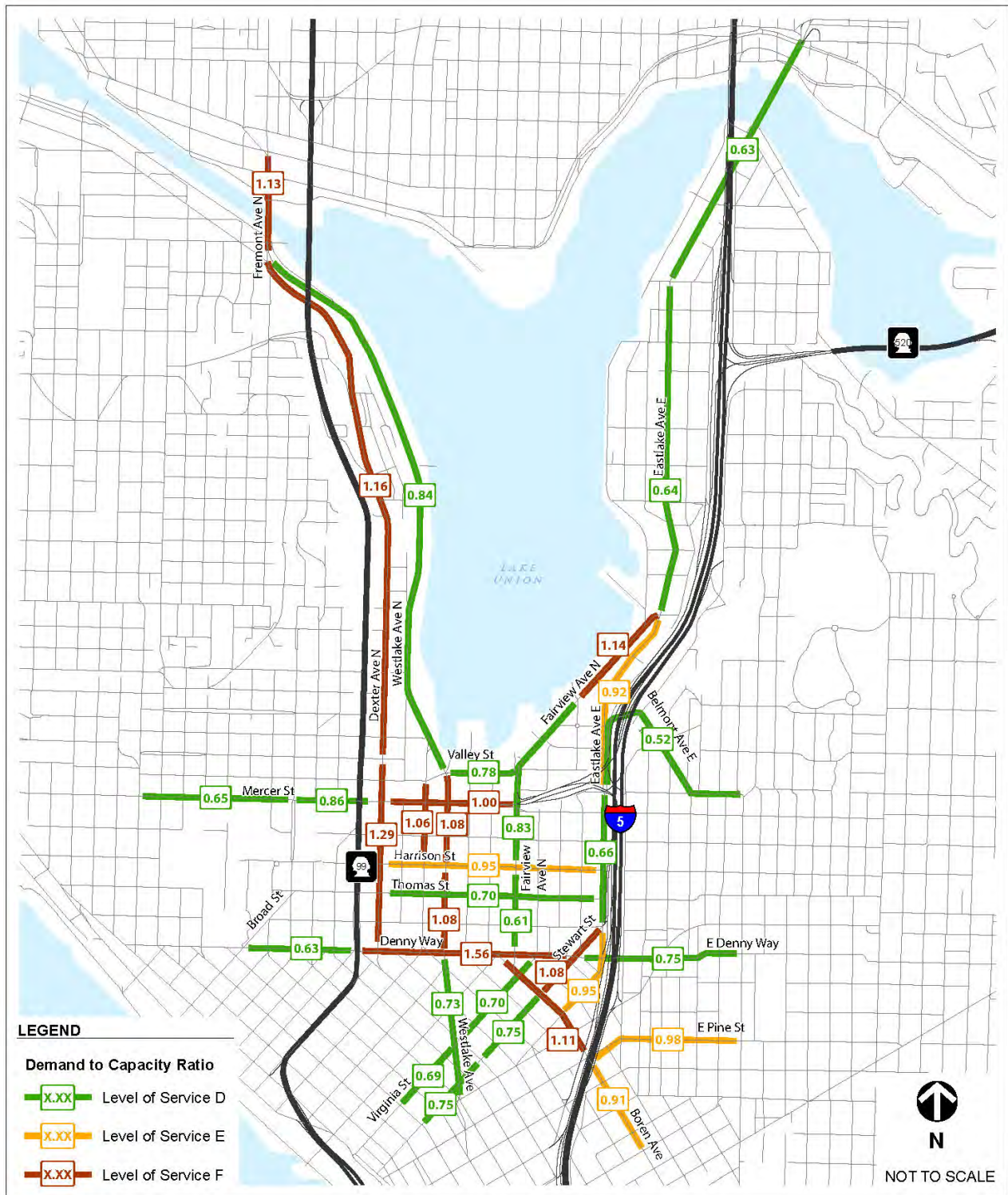
Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3			
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	834	PM/NE	0.70/D	835	PM/NE	0.70/D	839	PM/NE	0.70/D	*
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,233	PM/NE	0.69/D	1,230	PM/NE	0.68/D	1,222	PM/NE	0.68/D	
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	705	AM/W	0.98/E	705	PM/W	0.98/E	692	AM/W	0.96/E	
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	505	PM/E	0.70/D	505	PM/E	0.70/D	459	PM/E	0.64/D	*
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	569	PM/E	0.95/E	588	PM/E	0.98/E	549	PM/E	0.92/E	*
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	741	PM/N	1.06/F	753	PM/N	1.08/F	713	PM/N	1.02/F	
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/E	1,140	PM/N	0.95/E	1,130	PM/N	0.94/E	1,115	PM/N	0.93/E	

Note: Bold text signifies a significant impact.

*These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Source: *Fehr & Peers, 2010*

Figure 3.13-20
Demand-to-Capacity Ratios – Alternative 1



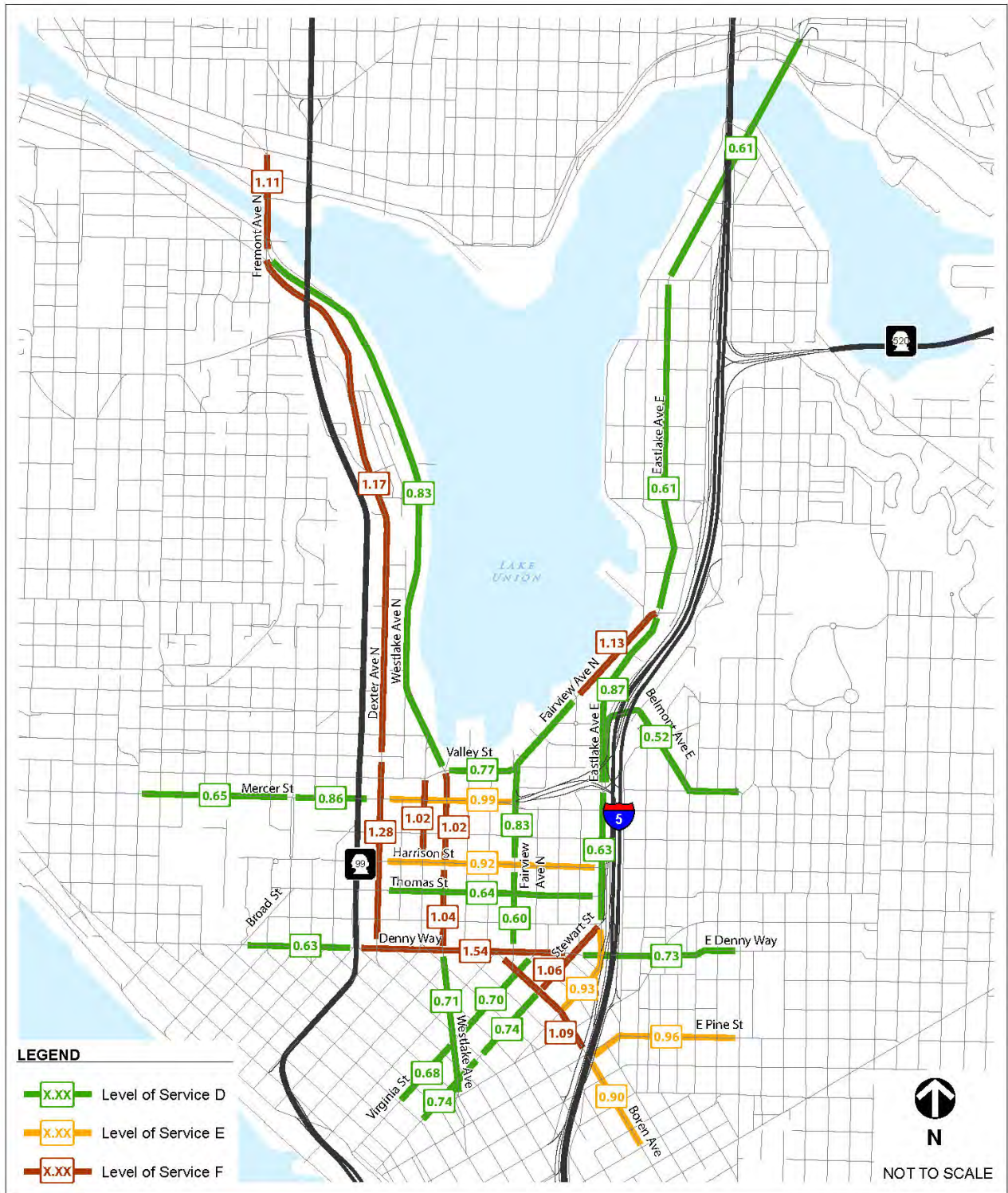
Source: Fehr & Peers, 2010

Figure 3.13-21
Demand-to-Capacity Ratios – Alternative 2



Source: Fehr & Peers, 2010

Figure 3.13-22
Demand-to-Capacity Ratios – Alternative 3



Source: Fehr & Peers, 2010

Transit

Transit ridership among the three height and density alternatives is very similar and the Action results shown in **Table 3.13-14** are representative of the load factors expected under all three height and density alternatives. The results from the No Action Alternative are included for comparison.

Table 3.13-14
Action and No Action Comparison: 2031 South Lake Union Transit Route AM
Load Factors

Route	Termini Locations	No Action		Action	
		NB	SB	NB	SB
5	Downtown, Shoreline	0.64	0.84	0.68	0.84
8	Uptown, Rainier Valley	0.89	0.88	1.01	0.95
16	Downtown, Northgate	0.53	0.77	0.53	0.77
17	Downtown, Loyal Heights	0.77	0.68	0.93	0.86
21	Downtown, Arbor Heights	1.17	-	1.35	-
25	Downtown, Laurelhurst	1.19	0.84	0.65	1.19
26	Downtown, Green Lake	0.65	1.00	1.04	0.88
28	Downtown, Broadview	0.83	0.77	1.40	0.97
29	Downtown, Woodland Park	1.19	1.49	1.49	1.79
56	South Lake Union, West Seattle	1.38	-	1.53	-
66	Downtown, Northgate	0.53	0.76	0.53	0.76
70	Downtown, University District	0.65	0.62	0.81	0.92
121	Downtown, Burien	0.67	-	0.87	-
308	Downtown, Lake Forest Park	-	0.97	-	1.05
313	Uptown, Bothell	-	0.45	-	0.60
316	Uptown, Shoreline	-	0.82	-	0.93
Rapid Ride	Downtown, Aurora Village Transit Center	0.62	0.80	0.68	0.80

Source: Fehr & Peers, 2010

Note: Dashes indicate either that the route does not serve South Lake Union or does not exist in the travel model in that direction.

Transit lines that would operate unacceptably under the Action Alternatives include:

- Route 21 (northbound AM and southbound PM)
- Route 28 (northbound AM and southbound PM)
- Route 29 in both directions (AM and PM peak hours)
- Route 56 (northbound AM and southbound PM)

The transit lines above are considered to be significantly impacted by the three height and density alternatives.

The load factor of the South Lake Union Streetcar was also analyzed. The streetcar seats 29, but has a total capacity of 140. Ridership data from 2010 indicates the current load factor is 0.27 (assuming total capacity rather than seating capacity). The City of Seattle travel model assumes headways will decrease from 15 minutes to 10 minutes by 2031⁸, resulting in a 50 percent increase in capacity. This capacity increase will keep pace with the future ridership estimates from the City's travel model, causing the load factor to remain at 0.27 in 2031.

Since the Action Alternatives do not include any changes to transit headways in the area, transit frequency is the same as under the No Action Alternatives (see **Table 3.13-11**). As described in the previous section, only the Aurora Rapid Ride Line is expected to meet the frequency goals outlined in the UVTN.

Pedestrian and Bicycle System

As described in the No Action Alternative analysis, the increased land uses associated with the height and density alternatives will lead to a substantial increase in the number of bicycle and pedestrian trips within the study area. However, because of the exceptional levels of pedestrian and bicycle activity required to trigger poor LOS conditions as defined by the HCM, no pedestrian or bicycle demand/capacity impacts are anticipated under the three height and density alternatives.

While no bicycle or pedestrian demand/capacity impacts are anticipated, there are several adverse impacts to the pedestrian and bicycle system based on the impact identification criteria listed in Section 3.13.4:

- The increased heights and densities associated with each of the alternatives will lead to additional traffic demand on area

⁸ This reduction in headways assumes that a fourth car is purchased.

roadways, which could result in longer traffic signal cycle lengths. Longer cycle lengths are associated with increased pedestrian delay, which discourages pedestrian travel. Any increases in pedestrian delay at intersections would be an impact to pedestrian mobility.

- Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection.

Parking

The growth in households and jobs for each action alternative was used to estimate future additional parking spaces given current parking code requirements for commercial uses. Despite no minimum requirements for multifamily residential uses in the study area, parking is usually provided. The assumption for this analysis is that one parking space per dwelling unit would be built, as shown in **Table 3.13-15**. Details of the calculation may be found in **Appendix E**.

Table 3.13-15
No Action and Action Alternatives Comparison: Estimated Additional Parking Supply

Alternative	Residential	Retail	Non-Retail	Total
Assumed Supply	1 space/ dwelling unit	2 spaces /ksf ¹	1 space/ksf ¹	
No Action	9,200	2,087	4,870	16,157
Alternative 1	11,900	2,856	6,664	21,420
Alternative 2	11,900	2,856	6,664	21,420
Alternative 3	11,900	2,400	5,600	19,900

Source: City of Seattle Municipal Code 23.54.015, 2010

Note: Parking codes vary depending on specific use. Basic retail and office requirements were used for this analysis, and mirror the assumptions used in the Downtown Height & Density EIS.

1. ksf – 1,000 square feet

As was noted in the No Action Alternative parking discussion, if current parking demand trends continue as highlighted by the existing peak period parking shortages near the Amazon campus, there will likely be shortages of both on-street and off-street parking in the future particularly around office uses. The level of impact will vary depending on the intensity of land use. The balance between parking supply, parking cost, and alternative mode use will cause some travelers to change modes. Therefore, the parking impact may not be long-term since

travelers will shift to other modes in response to limited parking supply and higher parking cost.

Although Alternatives 1 and 2 would have the most demand, they would also provide more supply based on market trends. Likewise, the No Action Alternative would have less demand, but also less supply. Because of the relationship between development intensity, parking supply, and parking demand, all Action alternatives are expected to have short-term parking impacts.

Parking shortages typically result in spillover to adjacent neighborhoods, but this may not be a problem in South Lake Union. The adjacent areas in Capitol Hill, Lower Queen Anne, and Downtown are either difficult to access or offer only paid parking, making them unattractive places to park.

Freight

As shown in **Table 3.13-13**, d/c ratios on Mercer Street between Dexter Avenue and Fairview Avenue N would increase under the three height and density alternatives. This increase in traffic will exacerbate LOS E and F conditions, which will increase delay and reduce mobility for freight vehicles on these routes. This is considered a significant impact to freight mobility.

As was the case under the No Project Alternative, the increase in traffic congestion along the Major Truck Streets is caused by both additional development in South Lake Union and regional traffic growth. Also, with the removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street to accommodate the SR 99 bored tunnel, the City should update its Major Truck Street system to identify a replacement route.

In addition to the area-wide issues described above, there are also potential localized freight impacts that could occur as the South Lake Union neighborhood develops. As was the case under the No Action Alternative, impacts to freight mobility could be caused by lack of loading areas and small curb radii that cannot be navigated by trucks.

Traffic Safety

As described under the No Action Alternative analysis, while it is likely that the total number of vehicle collisions will increase proportionally with the increase in traffic in the South Lake Union area, there is nothing to suggest that the volume-based rate of vehicle-to-vehicle collisions will increase with the implementation of the height and density alternatives. Therefore, no significant traffic safety impacts are anticipated.

*Affected
Environment
Planning Scenarios
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable Adverse*

3.13.6 Mitigation Strategies

This section identifies potential mitigation measures that could be implemented to lessen the magnitude of the impacts identified in the previous section.

Mitigation strategies to address traffic impacts can take one of two approaches: increase the supply of facilities, which usually takes the form of projects that increase roadway capacity, or decrease the demand for roadway capacity by reducing the number of vehicle trips. The MXD trip generation measures the reduction in demand that results from improving the bicycle, transit, and pedestrian environment. Other proven strategies to decrease vehicle demand include incentives to take transit (such as employer-subsidized transit passes) and disincentives to drive (such as parking management strategies). From both a policy and feasibility perspective, increasing roadway capacity is undesirable and cost-prohibitive. Therefore, the mitigation strategy for South Lake Union focused on methods to decrease the number of vehicle trips and maximize the number of bicycle, pedestrian, and transit trips, in order to impact mode splits.

Given the large scale of the height and density alternatives, the mitigation strategy focused on four main themes:

- 1) Improving the pedestrian and bicycle network. Projects listed in various plans/documents including the *Pedestrian Master Plan*⁹, *Bicycle Master Plan*, and *South Lake Union Urban Design Framework* were considered as mitigation measures to address roadway corridor impacts and pedestrian and bicycle safety impacts. As described earlier, there is a well documented link between improved bicycle and pedestrian accessibility and reduced demand for vehicle travel.
- 2) Expanding travel demand management strategies. Given cost, right-of-way, and environmental constraints, it was deemed infeasible to provide additional roadway and intersection capacity beyond what is currently planned to reduce impacts to traffic congestion and freight mobility. Therefore managing demand for auto travel is a critical element to reducing traffic

⁹ The Pedestrian Master Plan identifies locations where sidewalk or crossing improvements are desirable, but does not propose specific solutions. The project team assumed sidewalks and crossings would be added where it was reasonably clear that was the relevant improvement.

congestion and freight impacts. The City has well established Commute Trip Reduction and Transportation Management Programs in the area. This mitigation strategy looks to expand on the travel demand management strategies proposed as part of the CTR and TMP programs to include new parking-related strategies.

- 3) City of Seattle and King County Metro should work together to identify capital and operational funding options to support increased transit service. Provide capital improvement funding support for new transit vehicles to reduce headways and decrease the passenger load on key routes and to free resources for other potential transit service expansion.
- 4) Increasing roadway capacity through limited roadway and intersection improvement projects identified in existing plans. No currently unplanned roadway or intersection widening projects were considered because of limited right-of-way and "induced vehicle travel¹⁰" impacts that are counter to the mode share goals in the *Seattle Comprehensive Plan* and the *South Lake Union Neighborhood Plan*. Moreover, City policies limit the ability to consider additional capacity expansion that is not in existing plans.

Using the framework described above, four packages of potential mitigation measures were developed to lessen the transportation impacts in the South Lake Union area. The packages are: bicycle and pedestrian system improvements, travel demand management measures, transit system enhancements, and roadway capacity enhancements. This packaged approach is different from the mitigation strategy that is typically used for smaller block or parcel-sized development projects. For smaller projects, discrete mitigation measures are typically identified for each impact. Because of the widespread land use changes associated with the height and density alternatives, a larger-scale mitigation approach aimed at reducing the demand for roadway capacity is appropriate in this case. For example, implementation of Alternative 1 will cause significant traffic operations impacts to many study roadway corridors. This impact

¹⁰ Induced travel is a well documented phenomenon where the addition of roadway capacity leads to a temporary reduction in travel congestion on a route. The decreased congestion attracts other drivers to the route that would have otherwise used a different mode, traveled at a different time, or not made the trip. Induced travel has the effect of encouraging more driving and increasing the mode share of automobiles.

can be lessened by implementing a well connected and integrated bicycle and pedestrian network, which will encourage some travelers to switch modes. An isolated signalized crossing or bicycle lane will not substantially improve the pedestrian and bicycle environment at a level that will encourage travelers to consider other modes. A robust, well-connected network is necessary to the mitigation strategy.

The four potential mitigation packages are listed below; many of the potential individual mitigation measures are also shown in **Figure 3.13-23**.

It is important to note that the baseline condition already includes major roadway projects like the Mercer East and Bored Tunnel projects, increased transit frequency on several bus routes and the Aurora and Ballard Rapid Ride services per the Seattle travel demand model. The baseline condition also already includes the employer-based travel demand management programs (required by the CTR Law and TMP program) currently in place in South Lake Union¹¹.

¹¹ The City of Seattle travel demand model has built in trip generation and mode-split assumptions that are consistent with the existing level of implementation of CTR/TMP programs in South Lake Union. The model does not forecast that the CTR/TMP program will be more or less effective under 2031 conditions.

Figure 3.13-23
Mitigation Measures



Source: Fehr & Peers, 2010

Bicycle and Pedestrian System

Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust pedestrian system is provided.

Based on a review of the Pedestrian Master Plan, several improvements could be implemented in South Lake Union. Some of the improvements related to Tier 1 Pedestrian mobility issues in the South Lake Union neighborhood include, but are not limited to:

- Complete missing sidewalks along Terry Avenue consistent with the *Terry Avenue Street Design Guidelines*
- Add sidewalk to north side of Denny Way between Stewart Street and Melrose Avenue consistent with the proposed *Denny Way Streetscape Concept Plan*¹²
- Add sidewalk along the east side of Eastlake Avenue from Denny Way to Harrison Street and add a signalized¹³ crossing at the Eastlake Avenue/Republican Street intersection
- Close pedestrian system gaps on Roy Street between Fairview Avenue and Minor Avenue and on Valley Street between Minor Avenue and Yale Avenue

The Bicycle Master Plan identifies the following relevant actions in the South Lake Union neighborhood including but not limited to:

- Add bikeways along Fairview Avenue from Valley Street to Eastlake Avenue E to connect to facilities provided as part of Mercer East and West projects on Valley and Roy Streets
- Add bikeways along Harrison or Thomas street between Fifth N and Eastlake and along Fairview Avenue between Denny Way and Valley Street
- Improve bicycle access through the Fairview Avenue/Denny Way intersection
- Signalize intersection at Minor Avenue N and Denny Way consistent with the *Denny Way Streetscape Concept Plan*

All Bicycle Master Plan improvements were considered for this analysis. However, before implementation, SDOT would review the projects during

¹² The *Denny Way Streetscape Concept Plan* has not yet been adopted.

¹³ To be implemented, a signal must meet warrants and be approved by SDOT.

the design stage to address any potential concerns, such as safety. Other pedestrian and bicycle network projects include the following:

- Implement the planned Lake to Bay Loop
- Repair facilities in poor condition
- Require that projects which develop above the “base height” implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework
- Provide additional signalized crossings on Thomas Street at the Dexter Avenue, 9th Avenue, and Westlake Avenue N intersections¹⁴
- Provide additional signalized crossings on John Street at the Dexter Avenue and Westlake Avenue N intersections¹⁵
- Evaluate opportunity to provide enhanced, marked crossing locations across Westlake Avenue N, between Galer Street and 9th Avenue N¹⁶, and implement improvement as appropriate
- Implement the hill climbs defined in the Urban Design Framework
- Improve street lighting and way finding

Travel Demand Management and Parking Strategies

Implement best management practices for travel demand management including maximum parking limits and unbundled parking costs for residential and commercial properties. Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state has shown that implementation of travel demand management programs can substantially reduce vehicle trip generation (see **Appendix E** for details), which, in turn, reduces traffic congestion impacts. Parking maximums would limit the number of parking spaces which can be built with new development. Unbundled parking separates parking costs from total property cost, allowing buyers or tenants to forego buying or leasing parking spaces. These types of potential mitigation measures would tend to reduce the number of work-

¹⁴ Given the multi-lane nature of these streets, a pedestrian signal or half-signal is necessary to provide a safe crossing. The signal is required because of the adjacent land uses and likely pedestrian desire lines.

¹⁵ To be implemented, a signal must meet warrants and be approved by SDOT..

¹⁶ The frequency of marked crossings is a key component of the pedestrian network. The exact location of each crossing is not known at this time. In the future, the City would evaluate pedestrian desire lines to determine the precise location and treatment for each crossing.

based commute trips and all types of home-based trips. Shopping-based trips would also decrease, but at a lower level since these types of trips are less sensitive to parking costs and limited supply for short-term use.

The parking-based travel demand management strategies described above could be further supported by implementing the car sharing incentives identified in the Seattle Municipal Code¹⁷ and through the development of a parking management program like the recently deployed e-park system in Downtown Seattle to better utilize private parking resources.

Note that the parking analysis in the previous sections identified potential short-term parking impacts related to an imbalance between supply and demand. Any reductions to the parking supply in the South Lake Union area would exacerbate this short-term impact. However, as described in the previous sections, while reduced supply will create a short-term shortage in parking spaces, over time prices will adjust and some drivers will switch to other modes. This shift to other modes is the primary goal of the potential travel demand management mitigation measures since it will reduce the impacts to traffic congestion and freight mobility.

In addition to the parking management strategies described above, the City of Seattle could also seek to expand the Downtown Growth and Transportation Efficiency Center (GTEC) program to include the South Lake Union area, or institute a separate GTEC for South Lake Union. As described in *Growth and Transportation Efficiency Center Program 2009 Report to the Legislature*, WSDOT describes the GTEC program as an extension of the existing CTR program. The GTEC program engages employers of all sizes in vehicle trip reduction programs through an area-wide approach. GTECs must also include an evaluation of transportation and land use policies to determine the extent to which they complement and support trip reduction goals. The South Lake Union Height and Density land use changes along with the potential mitigation packages conform well to the general goals of the GTEC program.

Transit Service Expansion

Impacts to transit load factors could be reduced and frequencies could increase by providing capital and/or operational support existing and planned transit service between Uptown and Capitol Hill. King County Metro should consider options to increase the frequency and capacity on

¹⁷ SMC – 23.54.020.J

the impacted routes by running additional busses. A South Lake Union shuttle service connecting destinations along Eastlake, the streetcar line, and the Aurora Rapid Ride line would provide additional transit service opportunities in the area, while supporting the shift to other modes caused by the potential travel demand management mitigation measures.

Additional improvements to the transit network are shown on **Figure 3.13-23**, including transit signal priority at the Fairview Avenue N./Denny Way intersection, and a northbound queue jump lane and southbound transit signal priority at the Fairview Avenue N./Harrison Street intersection.

Roadway Capacity Enhancements

Impacts to traffic congestion and freight mobility along the Mercer Street corridor could be reduced by the completion of the Mercer West Corridor Project. The roadway changes include:

- Widen the Mercer Street underpass between Dexter and 5th Avenues N to include three lanes in each direction, left-turn lanes, wider sidewalks, and a bicycle path
- Connect 8th Avenue N between Mercer and Roy Streets
- Consider separating southbound left turn phase at 9th Avenue/Denny Way/Bell Street intersection

Potential Mitigation Measure Implementation

Implementation of the potential mitigation measures described above is anticipated to be achieved through an update of the South Lake Union Voluntary Impact Fee Program and updates to the City Code to support the potential travel demand management/parking mitigation measures. As the South Lake Union neighborhood builds out, the Seattle Department of Transportation will monitor the transportation system, prioritize projects, and use the fees collected to construct projects, much as the current Voluntary Impact Fee Program is operated.

Projects that develop within the South Lake Union neighborhood may pay the voluntary mitigation fee in order to receive a Master Use Permit. Alternatively, if a project applicant does not wish to pay the voluntary impact fee, project applicants must perform a supplemental environmental analysis to determine transportation impacts and appropriate measures to mitigate project impacts.

Specific Mitigation Measures

This section summarizes each impact along with potential mitigation measures.

Impact 1: Under all three alternatives, there will be significant impacts to study corridor traffic operations.

Potential Mitigation 1: The Roadway Capacity Enhancement mitigation measure, which includes the completion of the Mercer West Corridor Project, will reduce the impact on Mercer Street corridor and improve overall pedestrian and bicycle circulation in the area by implementing a key section of the Lake to Bay Loop.

Since no other roadway capacity expansion projects are planned or considered feasible, many of the remaining impacts can be lessened by implementing the Bicycle and Pedestrian System and Travel Demand Management mitigation measures, as described below.

Based on the output from the MXD model, the Bicycle and Pedestrian System mitigation measures will reduce vehicle trip generation by approximately 7 percent (for PM peak hour trips, see **Appendix E** for other time periods). The MXD trip generation tool predicts mode share based primarily on land use and demographic information, and does not take additional travel demand management into account. To estimate the reduction in trips prompted by travel demand management programs, research summarized by CAPCOA¹⁸ was consulted. According to this research, the travel demand management strategies will reduce vehicle trip generation by 15 percent¹⁹. Combined, these two measures would reduce overall PM vehicle trip generation by about 21 percent for all three height and density alternatives²⁰. Additional information regarding these calculations and the CAPCOA research are available in **Appendix E**.

¹⁸ *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from GHG Mitigation Measures*, CAPCOA, August, 2010.

¹⁹ 15 percent reduction in trip generation assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative. Unbundled parking is assumed to cost an average of \$100 per month per space.

²⁰ As noted in Appendix E, the combined effects of two trip reduction strategies are not additive since there are diminishing returns when multiple strategies are implemented.

As shown in **Table 3.13-16**, these trip generation rates would be lower than what is anticipated under the No Action Alternative and the impact on many study roadway segments would be reduced to a less-than-significant level. However, because the change in traffic congestion would affect drivers' behavior, some roadway segments would continue to be impacted, as described in the next section.

The Transit Service Expansion mitigation measure is also recommended. Based on the CAPCOA research, providing capital support that would lead to increased transit frequency would lead to an additional two percent reduction in vehicle trip generation. CAPCOA estimates an additional five percent reduction in vehicle trip generation could be achieved by providing new transit service (e.g., new service between Queen Anne, South Lake Union, and Capitol Hill via Mercer Street; South Lake Union shuttle service connecting the neighborhood with the Streetcar and the Aurora Rapid Ride). However, additional studies would need to be conducted to determine the exact level of ridership on new transit lines.

Any additional transit would also support and enhance the pedestrian, bicycle, and travel demand management mitigation measures described above. However, since the City of Seattle does not generally own and operate the transit service in South Lake Union, there is no guarantee that expanded transit service (beyond what is assumed in the Seattle travel model) will occur. Therefore, this mitigation measure was not assumed when reporting the results with mitigation in **Table 3.13-17**.

Impact 2: Under all three height and density alternatives, there will be impacts to bicycle and pedestrian mobility.

Potential Mitigation 2: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System mitigation measures be implemented.

Impact 3: Under all three height and density alternatives, freight mobility is significantly impacted.

Potential Mitigation 3: As discussed, the Roadway Capacity Enhancements will not address congestion on Mercer Street between Dexter Avenue and Fairview Avenue N. Therefore it is recommended that the Bicycle and Pedestrian System and Travel Demand Management mitigation measures also be implemented to reduce the automobile trip generation from residents and employees of South Lake Union. These measures will free up more capacity on the Mercer Street corridor for freight traffic.

It is also recommended that the City update the Major Truck Street network to identify a replacement for Broad Street. Further, improvements to major truck streets and arterials expected to carry heavy vehicles on a regular basis will continue to be considered pursuant to the City's adopted Complete Streets policy which guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users. For example, the need for wider corner radii to accommodate turning trucks must be balanced with the need to shorten pedestrian crossings and slow regular passenger vehicles. The City will evaluate these trade-offs on a case-by-case basis.

Also, as specific projects seek a Master Use Permit, the City should review the applications to ensure that adequate loading and truck circulation facilities are provided based on the proposed use.

Impact 4: Under all three height and density alternatives, there will be significant impacts to transit in terms of load factors.

Potential Mitigation 4: To reduce the significance of this impact, it is recommended that King County Metro increase the frequency and capacity on the impacted routes by running additional busses.

Impact 5: Under all three height and density alternatives, there will be significant short-term impacts to parking. The impacts would be felt by employees who must pay more for parking, and building owners who must maintain active TDM programs to accommodate all the tenants.

Potential Mitigation 5: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System, Travel Demand Management, and Transit Service Expansion mitigation measures be implemented. There is a strong relationship between parking supply, parking cost, and mode share. Although there may be short-term impacts as individual developments are completed (causing parking demand to exceed supply), over the long-term the situation will reach equilibrium as drivers shift to other modes.

The City may have to review its on-street parking policies and consider implementing variable parking pricing to maintain supply. The shift from driving to transit may also require more transit service from King County Metro. The parking maximum limits suggested as mitigation for Impact 1 would also reduce supply and shift travelers to other modes.

Mitigation Results

The potential mitigation measures were taken into account and analysis was repeated on the three height and density alternatives. The Pedestrian and Bicycle System and Travel Demand Management mitigation packages were factored in at the trip generation level. The Roadway Capacity Enhancement mitigation measures were integrated into the travel model. The trip generation results of the mitigated height and density alternatives are summarized in **Table 3.13-16** (more details may be found in **Appendix E**). The d/c ratios of the three action alternatives with mitigation are shown in **Table 3.13-17**, along with the No Action Alternative for comparison.

Table 3.13-16
PM Peak Hour Trip Generation with and without Mitigation

Alternative	No Mitigation			Mitigation		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning (Mitigation Not Applicable)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	12,648 (51.4%)	7,279 (26.9%)	5,871 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)

Source: Fehr & Peers, 2010

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Table 3.13-17
Mitigated Action Alternatives: Demand-to-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,754	PM/N	1.10/F	1,755	PM/N	1.10/F	1,733	PM/N	1.08/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,316	PM/N	0.82/D	1,316	PM/N	0.82/D	1,320	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	988	PM/S	0.94/E	991	PM/S	0.94/E	946	PM/S	0.90/E
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,029	PM/S	0.98/E	1,030	PM/S	0.98/E	994	PM/S	0.95/E
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	610	PM/N	0.68/D	616	PM/N	0.68/D	598	PM/N	0.66/D
	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,130	AM/SW	0.59/D	1,129	PM/NE	0.59/D	1,108	AM/SW	0.58/D
Eastlake Avenue E	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,130	AM/S	0.59/D	1,127	AM/S	0.59/D	1,109	AM/S	0.58/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	547	PM/N	0.78/D	544	PM/N	0.78/D	549	PM/S	0.78/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	849	PM/N	0.61/D	851	PM/N	0.61/D	858	PM/N	0.61/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	781	AM/SW	1.12/F	766	AM/SW	1.09/F	774	AM/SW	1.11/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,381	PM/N	0.82/D	1,384	PM/N	0.82/D	1,396	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,000	PM/N	0.60/D	1,000	PM/N	0.60/D	985	PM/N	0.59/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,140	AM/S	1.19/F	1,134	AM/S	1.18/F	1,151	AM/S	1.20/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,737	PM/N	1.24/F	1,734	PM/N	1.24/F	1,709	PM/N	1.22/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	636	PM/E	0.76/D	633	PM/E	0.75/D	611	PM/E	0.73/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,980	PM/W	0.79/D	1,983	PM/W	0.79/D	1,970	AM/W	0.78/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,054	AM/W	0.98/E	2,072	AM/W	0.99/E	2,040	AM/W	0.97/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,031	PM/W	0.61/D	1,031	PM/W	0.61/D	1,032	AM/W	0.61/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,591	PM/E	1.52/F	1,586	PM/E	1.51/F	1,573	PM/E	1.50/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,126	AM/W	0.70/D	1,122	PM/W	0.70/D	1,102	AM/W	0.69/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,289	AM/NW	1.07/F	1,282	AM/NW	1.07/F	1,270	AM/NW	1.06/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,063	PM/SE	0.89/D	1,068	PM/SE	0.89/D	1,051	PM/SE	0.88/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,194	AM/SW	1.04/F	2,208	AM/SW	1.05/F	2,163	AM/SW	1.03/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,344	AM/SW	0.75/D	1,347	AM/SW	0.75/D	1,340	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	860	AM/SW	0.72/D	862	AM/SW	0.72/D	840	AM/SW	0.70/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	854	PM/NE	0.71/D	851	PM/NE	0.71/D	856	PM/NE	0.71/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,195	PM/NE	0.66/D	1,203	PM/NE	0.67/D	1,177	PM/NE	0.65/D
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	676	AM/W	0.94/E	689	PM/W	0.96/E	678	AM/W	0.94/E
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	419	PM/E	0.58/D	436	PM/E	0.61/D	390	PM/E	0.54/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	522	PM/E	0.87/D	515	PM/E	0.86/D	502	PM/E	0.84/D
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	661	PM/N	0.94/E	667	PM/N	0.95/E	648	PM/N	0.93/E
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/F	1,099	PM/N	0.92/E	1,093	PM/N	0.91/E	1,095	PM/N	0.91/E

Source: **Fehr & Peers, 2010**

Note: Bold text signifies a significant impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Potential transit mitigation calculations were completed independently of the other potential mitigation measures. **Table 3.13-18** shows the number of additional busses that would need to run during the peak hour to reduce the load factor to acceptable levels. Details of the calculations may be found in **Appendix E**.

Table 3.13-18
South Lake Union Peak Hour Transit Mitigation

Route	Termini Locations	No Action Load Factor	Action Load Factor	Peak Hour Ridership	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	1.17	1.35	520	1	1.18
28 NB	Downtown, Broadview	1.19	1.40	240	1	1.06
29 NB	Downtown, Woodland Park	1.19	1.49	120	1	1.04
29 SB	Downtown, Woodland Park	1.49	1.79	144	1	1.25
56 NB	South Lake Union, West Seattle	1.38	1.53	396	2	1.07

Source: Fehr & Peers, 2010

Affected Environment
Planning Scenarios
Environmental Impacts
Mitigation Strategies
Significant Unavoidable Adverse Impacts

3.13.7 Significant Unavoidable Adverse Impacts

This section describes the significant and unavoidable adverse impacts to transportation that would occur as a result of implementation of the height and density alternatives.

As shown in **Table 3.13-16** the potential Pedestrian and Bicycle System and Travel Demand Management mitigation packages substantially reduce the trip generation of each of the height and density alternatives. However, **Table 3.13-17** shows that even with this lower trip generation, several study corridors would continue to have traffic operations and freight mobility impacts:

- Dexter Avenue N from the Fremont Bridge to Valley Street – Alternatives 1 and 3
- Mercer Street from Dexter Avenue N to Fairview Avenue N – Alternative 2

The above impacts could be mitigated through additional roadway corridor widening. However, as described earlier, the City has no additional roadway widening plans and additional roadway widening would have right-of-way, cost, and environmental consequences. Additionally roadway widening would tend to induce more vehicle trips in the South Lake Union neighborhood, which could conflict with the transportation goals outlined in the Seattle Comprehensive Plan. Therefore, additional widening is considered infeasible.

In addition to the traffic operations impacts described above, the impacts to transit load factors may remain. Although transit service expansion was identified as a potential mitigation measure, the City of Seattle does not generally own and operate the transit service in South Lake Union. Therefore, expanded transit service cannot be guaranteed by the City and no expansion was assumed in the analysis.

All other impacts were reduced to a less-than-significant level with mitigation.

Affected Environment.....1
Environmental Impacts.....9
Mitigation Strategies.....12
Significant Unavoidable Adverse Impacts.....12

3.14 PUBLIC SERVICES

This section of the Draft EIS describes the existing status of City of Seattle entities that provide public services to the South Lake Union Neighborhood and evaluates the impacts of added demand on such services from redevelopment under the alternatives. Public services considered in this section include fire and emergency services and police services.

3.14.1 Affected Environment

Fire and Emergency Services

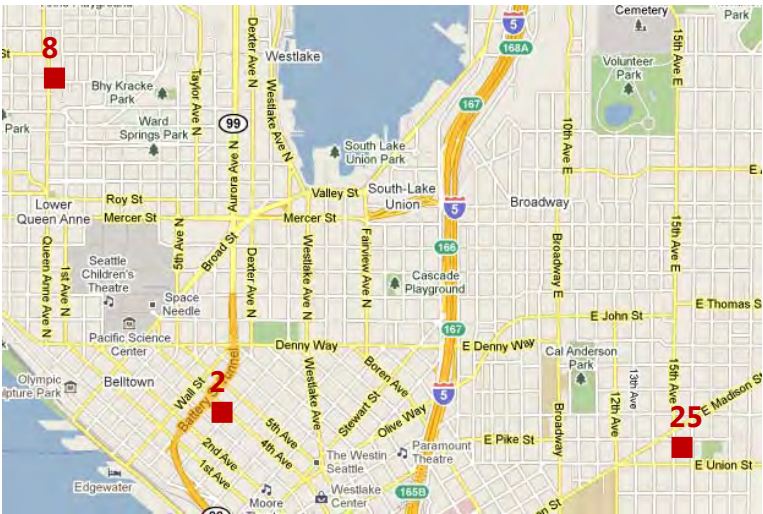
The City of Seattle Fire Department provides fire protection, Basic Life Support (BLS) and Advanced Life Support (ALS) throughout the City, including the South Lake Union Neighborhood, from 33 fire stations. Fire Department apparatus is distributed amongst each of the 33 fire stations and includes 33 fire engines, 12 ladder trucks, 7 medic units (ALS), 4 aid units (BLS), 4 fire boats, 2 air trucks and 2 hose wagons.

BLS is used for patients with life-threatening injuries until full medical care can be given. Generally no drugs or invasive skills are utilized.

Three fire stations are located in proximity to the South Lake Union Neighborhood, including Fire Station 2 (2334 4th Avenue), Fire Station 8 (110 Lee Street), and Fire Station 25 (1300 E Pine Street). Harborview Medical Center is also located to the south of the neighborhood and is the Medic One headquarters for the Department. See **Figure 3.14-1** for the location of these fire stations in relation to the South Lake Union Neighborhood.

ALS includes advanced procedures involving invasive methods such as defibrillation, medication, and intravenous cannulation (IVs).

Figure 3.14-1
Seattle Fire Station Locations



Source: Seattle Fire Department, 2010.

The Department employs 1,020 uniformed personnel, with an on-duty strength of 208 firefighters. The three fire stations in the vicinity of the South Lake Union Neighborhood have a minimum of 29 on-duty personnel available each day. Fire Apparatus at these stations include fire engines, ladder trucks, aid units, a power unit, and a hose wagon¹ **Table 3.14-1** provides a summary of equipment and minimum staffing at each fire station in the vicinity of the South Lake Union Neighborhood.

Table 3.14-1
Seattle Fire Department Staffing and Equipment

Station	Staffing	Equipment
Fire Station 2	Minimum of 10 on-duty personnel.	- Fire Engine (Engine 2) - Ladder Truck (Ladder 4) - Aid Unit (Aid 2)
Fire Station 8	Minimum of 8 on-duty personnel.	- Fire Engine (Engine 8) - Ladder Truck (Ladder 6) - Fire Engine (Engine 25)
Fire Station 25	Minimum of 11 on-duty personnel.	- Ladder Truck (Ladder 10) - Aid Unit (Aid 25) - Power Unit - Hose Wagon

Source: Seattle Fire Department Chief Paul Fletcher, 2010.

Fire and Emergency Incidents

Between 2005 and 2009, Seattle Fire Department incident responses ranged from 77,000 to 80,000. During this time frame, incident responses by the Department have increased by less than one percent. **Table 3.14-2** provides a summary of incident responses from 2005 to 2009.

¹ Personal communication with Chief Paul Fletcher. Seattle Fire Department. September 2010.

Table 3.14-2
2005-2009 Seattle Fire Department Incident Responses

Year	BLS Incidents	ALS Incidents	Fire Incidents	Total Incidents
2005	41,848	20,010	15,260	77,118
2006	43,476	20,330	16,717	80,523
2007	43,488	20,330	15,292	79,070
2008	44,598	19,829	14,840	79,267
2009	44,373	18,866	14,551	77,790

Source: Seattle Fire Department Emergency Response Report, 2009.

In contrast with the overall Department, Fire Stations 2, 8, and 25 in the vicinity of the South Lake Union Neighborhood have all experienced a decrease in incident responses from 2005 to 2009. Incident responses at Station 2 have declined by approximately 10 percent since 2005; responses at Station 8 have declined by approximately two percent; and, responses at Station 24 have decline by approximately 12 percent. **Table 3.14-3** summarizes the incident responses for each station.

Table 3.14-3
2005-2009 Incident Responses – Station 2, Station 8, and Station 25

	2005	2006	2007	2008	2009
Station 2					
EMS	7,326	7,937	8,243	8,269	6,779
Fire	2,718	2,870	2,651	2,567	2,253
Total	10,044	10,807	10,894	10,836	9,032
Station 8					
EMS	1,234	1,217	1,272	1,520	1,219
Fire	713	811	738	809	692
Total	1,947	2,028	2,010	2,329	1,911
Station 25					
EMS	6,943	6,947	7,107	6,929	6,305
Fire	2,582	2,723	2,378	2,417	2,176
Total	9,525	9,670	9,485	9,346	8,481

Source: Leonard Roberts, Seattle Fire Department. 2010.

Level of Service

The Seattle Fire Department has established a response time goal of four minutes (to be achievable 90 percent of the time) for the first engine company to arrive at the scene of a reported fire or BLS medical emergency. Between 2006 and 2009, the Department achieved this goal 83 to 87 percent of the time. The Department has also established a response time goal of eight minutes for full first alarm assignment (15 firefighters) and ALS medical emergencies (two Paramedics). Between

2006 and 2009, the Department achieved this goal 80 to 88 percent of the time.

Between 2005 and 2008, fire stations in the vicinity of the South Lake Union Neighborhood have generally met the Department’s response time goals for BLS, ALS and fire emergencies. Aid Units 2 and 25 have consistently met the response time goal of eight minutes for ALS emergencies. Engines 2 and 25 have consistently met the response time goal of four minutes for BLS and fire emergencies; however, Engine 8 has been slightly over the response time goal for fire emergencies (ranging from 4.53 to 4.93 minutes). **Table 3.14-4** summarizes the response times (minutes) for each company associated with Fire Station 2, Fire Station 8 and Fire Station 25.

Table 3.14-4
2005-2008 Response Times – Station 2, Station 8, and Station 25

Company	2005	2006	2007	2008
<u>Aid Unit 2</u> – BLS	3.33	3.40	3.41	3.39
ALS	3.45	3.50	3.51	3.56
Fire	6.12	6.03	5.52	5.62
<u>Aid Unit 25</u> – BLS	3.46	3.41	3.55	3.58
ALS	3.50	3.43	3.61	3.67
Fire	6.25	6.36	5.91	6.40
<u>Engine 2</u> – BLS	3.20	3.28	3.18	3.34
ALS	3.11	3.10	3.13	3.22
Fire	3.79	3.79	3.68	3.77
<u>Engine 8</u> – BLS	3.82	3.61	3.73	3.68
ALS	3.77	3.66	3.77	3.81
Fire	4.93	4.60	4.62	4.53
<u>Engine 25</u> – BLS	3.27	3.19	3.12	3.30
ALS	3.28	3.15	3.04	3.31
Fire	3.85	3.73	3.84	3.84

Source: Seattle Fire Department Website, 2010.

Fire Department Planning

In 2003, a Fire Facilities and Emergency Response Levy was approved by the Seattle voters to improve and upgrade the Department’s fire facilities and emergency response system. All of the Department’s fire stations were evaluated as needing major upgrades, renovation or replacement in order to provide service. The Levy provided approximately \$167 million for multiple projects including upgrades, renovations or replacement of 32 neighborhood fire stations.

Funds from this Levy facilitated the renovation of Fire Station 2, Fire Station 8 and Fire Station 25. The major renovation and expansion of Fire Station 2 was completed in July 2010. The renovation included seismic upgrades and a remodeled interior space to provide more room for fire operations, space for one of the City's fragmentation caches, and a new occupational health center; the renovations were also intended to maintain the integrity of the building's historic character.

Fire Station 8 is scheduled for renovation in 2010, which would include seismic upgrades and an expansion that would include space for decontamination and emergency medical service (EMS) equipment and vehicle maintenance. The renovation is tentatively scheduled to be completed by 2012.

Fire Station 25 is also scheduled for renovation in 2010 and would primarily include seismic and safety upgrades. Additional work would include a reconfiguration of apparatus support space and the addition of storage space. The Plan would also move the existing battalion chief and reserve battalion chief unit to Station 2. The renovation of Fire Station 25 is tentatively scheduled to be completed in 2012.

The City of Seattle *Comprehensive Plan* also identifies potential needs for the Fire Department to serve future growth in the City. It is anticipated that additional EMS capabilities would be needed near the South Lake Union, SODO, Northgate, and Central District Neighborhoods. Additional fire stations in South Lake Union and Northgate could also be needed within the next 20 years.

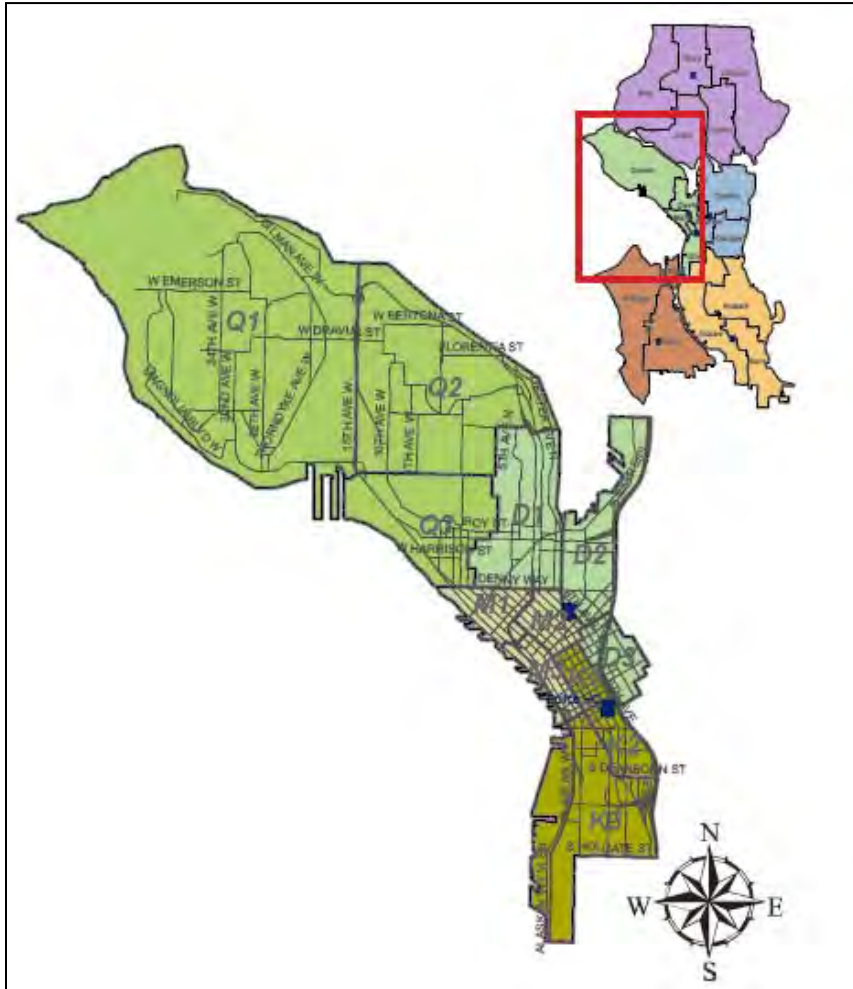
Police Services

The Seattle Police Department provides police protection service to the City of Seattle, including the South Lake Union Neighborhood. The Department includes approximately 1,860 authorized personnel, including 868 officers. Personnel are divided amongst five precincts: north, west, east, south and southwest. Each precinct is further divided into sectors and beats which are dependent on the geographic area of each precinct. The South Lake Union Neighborhood is located in the West Precinct area.

The West Precinct headquarters are located at 810 Virginia Street (approximately 0.2 miles south of the South Lake Union Neighborhood). In 2008, the West Precinct boundaries were shifted from 14 beats to 12 beats; the number of sectors remained the same but their boundaries were changed as well. The Precinct is currently comprised of four sectors and each sector includes three beats. The South Lake Union Neighborhood is located in the David sector and is generally comprised

of beats D1 and D2. Staffing at the West Precinct currently includes: 176 officers, 23 sergeants, 4 lieutenants, 1 captain, and 6 civilians². Refer to **Figure 3.14-2** for a map of the West Precinct area.

Figure 3.14-2
Seattle Police Department West Precinct



Source: Seattle Police Department, 2010.

Calls for Service and Incidents

In 2009, the Seattle Police Department received approximately 339,000 calls for service, including 201,700 dispatched calls and 137,300 on-views (events that officers log during routine patrols). Total calls for service represented an 11 percent decrease from the previous year and a 20

² Personal Communication with Mimi Walsh. Seattle Police Department. September 2010.

percent decrease from 2005. **Table 3.14-5** summarizes the Department's call volumes between 2005 and 2009.

Table 3.14-5
2005 – 2009 Seattle Police Department Calls for Service

Year	Dispatched Calls	On-Views	Total
2005	251,582	173,487	425,069
2006	249,033	175,470	424,503
2007	233,948	167,944	401,892
2008	223,976	154,907	378,883
2009	201,704	137,307	339,011

Source: Seattle Police Department, 2010.

Following the pattern of the City of Seattle in general, the West Precinct area received approximately 109,000 incoming calls in 2009, which represented an approximately five percent decline since 2005³. A majority of the calls for the West Precinct typically involved traffic offenses, theft, suspicious circumstances, premise checks, narcotics, and disturbances.

Table 3.14-6 summarizes the total number of calls to the West Precinct between 2005 and 2009.

Table 3.14-6
2005-2009 West Precinct Calls for Service

Year	Incoming Calls
2005	115,040
2006	115,134
2007	110,954
2008	103,723
2009	109,681

Source: Seattle Police Department, 2010.

The West Precinct also experienced a decline in major crimes from 2004 to 2007. During this time frame, major crimes in the West Precinct area decreased by approximately 18 percent. In 2008, major crimes increased by two percent from the previous year; however, this can be attributed in part to a shift in Precinct boundary areas as part of the Department's *Neighborhood Policing Staffing Plan*. This shift in boundary areas resulted in an overall increase in the size of the West Precinct boundaries. **Table**

³ It should be noted that data from 2009 is not strictly comparable with data from 2005-2008 due to the fact that the Department implemented changes to the Computer Aided Dispatch coding system.

3.14-7 summarizes the total major crimes in the West Precinct between 2004 and 2008.

Table 3.14-7
2004-2008 West Precinct Major Crimes

	2004	2005	2006	2007	2008
West Precinct	12,381	11,683	10,618	10,144	10,409

Source: Seattle Police Department, 2010.

Level of Service

The Seattle Police Department does not have adopted level of service standards for police service, but does have an emergency response time guideline of seven minutes. On average, the Department currently meets or exceeds this goal Citywide; however, performance is geographically uneven and can be slower at certain times of day and during certain days of the week.

Police Department Planning

In 2007, the Seattle Police Department published the *Neighborhood Policing Staffing Plan 2008-2012* that called for a net increase of 105 patrol officers between 2008 and 2012. The Department proceeded with its recruitment efforts in 2008 and 65 patrol officers have been added to the Department thus far. However, the City's present budget issues have caused a delay in the hiring plan for 2010 and 2011.

The City of Seattle *Comprehensive Plan* also identifies potential facility needs for the Department to serve potential future growth in the City. The North Precinct is currently overcrowded and it has been determined by the Department that it does not meet the needs of precinct personnel. It is anticipated that the North Precinct would need to be renovated and expanded within the next 20 years. No additional facility needs are identified at this time; however, as the City further considers neighborhood-based policing options, the long-range plans for police facilities may change.

The *Neighborhood Policing Staffing Plan* also revised officer work shifts to match the workload and reconfigured Department patrol shifts to allow for more balanced and effective deployment of officers.

8th Avenue Corridor

The nearest fire station to the 8th Avenue Corridor is Fire Station 2, which is located approximately 0.35 miles from the Corridor. The 8th Avenue Corridor is also located approximately 0.35 miles from the West Precinct headquarters and is situated in the D1 beat area.

Fairview Avenue Corridor

The nearest fire station to the Fairview Avenue Corridor is Fire Station 2, which is located approximately 0.55 miles away. The Fairview Avenue

Corridor is located approximately 0.20 miles from the West Precinct headquarters and is covered by the D2 beat area.

Valley/Mercer Blocks

Fire Station 2 is also the closest station to the Valley/Mercer Blocks and is located approximately 0.70 miles away. The Valley/Mercer Blocks are located approximately 0.60 miles from the West Precinct headquarters and straddle the D1 and D2 beat areas. The area west of Westlake Avenue is located in the D1 beat and the area east of Westlake Avenue is located in the D2 beat.

3.14.2 Environmental Impacts

The proposed action would adopt new or maintain existing zoning regulations. By itself, this action would not directly result in impacts to the public services. However, zoning regulations would allow for potential future development at increased heights and densities and an associated increase in population and employment, which could result in a subsequent impact to public services and utilities. The impacts described below relate to the development that could result from the adoption of any of the proposed zoning alternatives.

Impacts Common to All Alternatives

Fire and Emergency Services

Construction activities associated with potential development under the proposed alternatives could result in an increase in demand for fire services. Fire Department service calls related to inspection of specific construction projects and calls to respond to potential construction-related accidents could increase as a result of construction. Existing Fire Department staffing and equipment are anticipated to be sufficient to handle increased service needed for construction activities.

Potential increases in population and employment in the South Lake Union Neighborhood would be incremental and would be accompanied by subsequent incremental increases in demand for Fire Department services, including fire protection and EMS service (BLS and ALS). EMS service typically generates the highest demand for the Fire Department. Potential impacts on EMS services were projected by the Fire Department using a trend line projection based on past demand for the area. Potential development in the South Lake Union Neighborhood under the Action Alternatives could result in an increase in EMS calls of approximately 15 percent by 2031. **Table 3.14-8** summarizes the potential increases in EMS calls for each Alternative.

<i>Affected Environment</i>	Public Services Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

Table 3.14-8
 Projected EMS Service Calls – Alternatives 1-4

	Projected EMS Calls	Percent Increase ²
Projected 2031 Baseline Condition ¹	9,498	
Action Alternatives	10,967	15%
No Action Alternative	10,781	13%

Source: Leonard Roberts, Seattle Fire Department, 2010.

¹ Represents the projected EMS calls that would occur in 2031 without development under any of the Alternatives.

² Represents the percent increase of EMS calls under each alternative when compared to the baseline condition.

Potential development in the South Lake Union Neighborhood under the Action Alternatives would result in an associated increase in EMS calls of approximately 15 percent; the No Action Alternative would result in an increase of approximately 13 percent. The Fire Department would attempt to maintain response times consistent with current performance levels and an additional one or two EMS companies could be required over the next 10 years in order to maintain performance levels. However, given that Station 2 and Station 25 are two of the busiest stations in the Department, additional EMS companies could be required in this area even without potential development under Alternative 1-4⁴.

As described under the Affected Environment, all fire stations in the vicinity of the South Lake Union Neighborhood have been recently renovated or are in the process of being renovated as part of the *Fire Facilities and Emergency Response Levy* and would not be anticipated to need renovations in the near future. Any potential future facility needs of the Fire Department could be included as part of the City's annual Capital Improvement Program process.

All potential new development in the South Lake Union Neighborhood would be constructed in compliance with the *2006 City of Seattle Fire Code*, which is comprised of the *2006 International Fire Code* with Seattle Amendments. Adequate fire flow to serve potential development would be provided as required by the Fire Code. Potential development would also be required to comply with code requirements for emergency access to structures.

⁴ Personal communication with Leonard Roberts, MIS Director. Seattle Fire Department. October 2010

Police Services

Potential construction under the alternatives could result in an increase in demand for police services. Service calls to the Seattle Police Department could increase during construction due to construction site theft and vandalism. Existing Department staff and equipment are anticipated to be sufficient to handle the potential increase in service from construction activities.

Potential increases in onsite population and employment associated with development in the South Lake Union Neighborhood would be incremental and would result in associated incremental increases in demand for police services. It is expected that call volumes to the Police Department would increase under all of the proposed alternatives.

It is anticipated that the Police Department would have sufficient staffing and facilities to accommodate the increased demand for service from the South Lake Union Neighborhood and no additional safety problems would occur. Part of this can be attributed to the Department's ability to deliver proactive police-community project solving services to the area and the City of Seattle in general through the implementation of the *Neighborhood Policing Staffing Plan*. As described under the Affected Environment, although the hiring of new officers under the *Neighborhood Policing Staffing Plan* has been delayed due to recent City of Seattle budget issues, it is anticipated that the remaining officers would be hired prior to 2031. Any potential future facility needs for the Police Department could be included in the future as part of the City's annual Capital Improvement Program process.

The potential increase in residential and employment density that could occur under the alternatives would result in a more consistent and increased level of activity in the South Lake Union Neighborhood. Such an increase in activity would contribute to safety improvements and potentially reduce criminal activity. In addition, potential development in the area could include design features to help reduce criminal activity and calls for service such as orienting buildings towards the street, providing public connections between buildings, and providing adequate lighting and visibility.

3.14.3 Mitigation Strategies

Future population and employment increases associated with potential development in the South Lake Union Neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for fire and emergency services and police services in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenue generated from potential redevelopment in the Neighborhood – including construction sales tax, business and operation tax, property tax and other fees, licenses and permits – would accrue to the City of Seattle and could help offset demand for police and fire services.
2. All new buildings would be constructed in accordance with the 2006 Fire Code which is comprised of the 2006 International Fire Code with Seattle amendments or the applicable fire code in effect at the time of permit submittal.
3. Design features could be incorporated into potential development in the South Lake Union Neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility.

3.14.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to fire and emergency services or police services are anticipated.

<i>Affected Environment</i>	Public Services Contents
<i>Environmental Impacts</i>	
Mitigation Strategies	
<i>Significant Unavoidable Adverse Impacts</i>	

<i>Affected Environment</i>	Public Services Contents
<i>Environmental Impacts</i>	
<i>Mitigation Strategies</i>	
Significant Unavoidable Adverse Impacts	

3.15 UTILITIES

This section will address the affect of the alternatives on the existing utility infrastructure in the study area. Affected public utilities include water, sewer, stormwater, and electric power. Natural gas and communications are franchise utilities; each private provider is responsible for upgrades and improvements to their systems in response to development.

3.15.1 Affected Environment

Water

Water for domestic use and fire fighting is provided to the area by Seattle Public Utilities (SPU). A 30-inch water main from Lincoln Reservoir (on Capitol Hill), entering the study area near I-5 and Denny Way, is the principal source of water supply to the neighborhood. A 24-inch water main from the Volunteer Park Reservoir enters the neighborhood near I-5 and Valley Street and continues west and north through the study area to serve Queen Anne Hill. The water supply network shows a reasonably strong grid of interconnected pipes (see **Figure 3.15-1**). The network of local water mains in the streets distributes water to the properties in the study area.

Most of the water distribution system in this area was installed in the early 1900s; many portions of the pipe network are 100 or more years old. The expected design life of these pipes is 100 to 120-years. Pipe sizes vary from 6-inches to 24-inches in diameter. Most of the local distribution piping is 8-inch. Older pipes are cast-iron, newer pipes (since the 1960s) are ductile-iron.

The network is maintained by SPU and repaired or replaced as needed. SPU has adopted a triple bottom line asset management approach for managing its infrastructure. A triple bottom line evaluation considers the economic, social, and environmental benefits of capital needs, as well as the ability to meet customer service levels¹. This framework determines which pipes are scheduled for replacement. Age alone is not a factor in the replacement cycle of pipes within the distribution network. Break history, soil conditions, and reliability also play an important part in the

¹http://www.seattle.gov/financedepartment/0914proposedcip/Water_narrative.pdf
Accessed 1/13/11

Affected Environment	1
Environmental Impacts	9
Mitigation Strategies ...	11
Significant Unavoidable Adverse Impacts ...	12

Figure 3.15-1
Water System



Source: Coughlin Porter Lundeen, 2010

process. In some instances, developers are asked to make replacements or improvements to the system near their properties as a development condition.

The entire study area is in the same pressure zone (326), water availability and adequate pressure for domestic use and firefighting are generally not a problem. High-rise buildings will usually need on-site facilities to provide for adequate domestic and fire fighting water pressure.

Sanitary Sewer

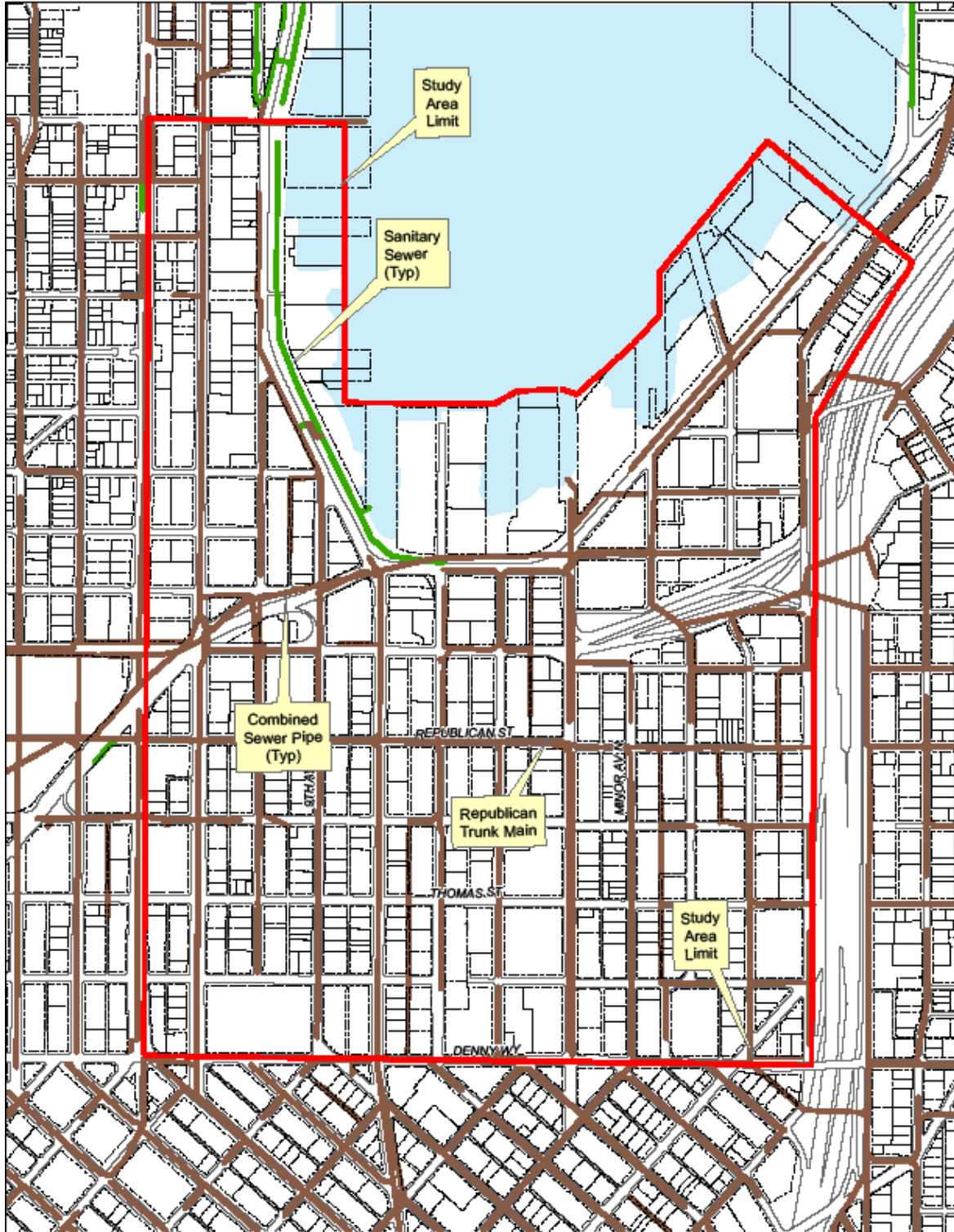
Sanitary sewer service in the area is provided in most of the study area by a combined sewer system. A network of pipes in the area collects both stormwater and sanitary waste water from properties and streets and routes it to a large trunk main under Republican Street (see **Figure 3.15-2**). At the west end of Republican Street, the trunk main joins the King County Metro Mains that flow to the West Point Treatment Plant, prior to discharge to Puget Sound from a deep-water pipe.

As the combined sewer system was designed to convey both waste and storm water, during dry weather, there is not a capacity issue for wastewater flow alone. For storm conveyance, system capacity varies considerably. There are several known trouble spots in the local collector systems; the areas around Mercer and Valley streets have very some very flat pipes, which can cause local back-ups during even small storm events. Other collection pipes in the basin have similar issues. Sewers in Boren and Westlake have good capacity, and tend not to show any trouble until large events (25-year or greater storm)

During major storm events the combined system can over flow untreated water into Lake Union through one or more Combined Sewer Overflow (CSO) facilities. CSOs to the lake and other water bodies from regulated outfalls are allowed at times, when the system reaches capacity, and as permitted by agreements with the Washington Department of Ecology. The City and King County have made significant up-grades to the conveyance and detention capacity of the combined sewer system to limit these overflows but, some storms and other circumstances will still exceed the limit of the system. See the discussion of CSO in section 3.3 for greater detail.

Water pressure zones are areas in which a certain maximum water pressure can be expected from the potable water distribution network.

Figure 3.15-2
Combined Sewer System



Source: Coughlin Porter Lundeen, 2010

Sewer system installations in the neighborhood date back to the late 1800s, significant portions of this system are over 100-years old.

Brick sewers built starting in the late 1890s make up most of the larger transmission pipes in the combined sewer system. The expected life span of these sewers is indeterminate. With lining or other rehabilitation methods, regular inspection and spot maintenance they could last for an indefinite period of time.

Clay pipe was used in the smaller sewers during the original construction. These pipes are usually considered to have a 100-year life span.

Portions of the pipe network built in the last 75-years are concrete. Concrete pipe is generally considered to have a 100-year life span.

In the *Seattle Public Utilities 2006 Waste Water Systems Plan*, the combined sewer portions of this neighborhood were identified (along with 18 other areas of the city) as being Priority 1 for sewer pipe capacity. Priority 1 areas are described as areas with the highest risk for having sewer capacity deficiencies.²This finding was based on hydraulic analysis, past history of capacity-related sewer backups or claims, the area's growth potential, and the association of the area with a major project. The 2006 report made the finding, but did not identify a plan or time line for resolution of this problem.

The Mercer Corridor project, currently underway, will replace the combined sewer in 9th Avenue, north of Republican Street, and make other improvements to the combined and separated storm sewers in Mercer, Valley and other streets. No significant diversion of surface water from the combined sewer system is expected to occur as a result of this project.

The pipe network is maintained by SPU and repaired or replaced as needed. In some instances, developers are asked to make replacements or improvements to the system near their properties as a condition of development. This is done on a case-by-case basis.

Stormwater Sewer

For the majority of this study area, stormwater is collected from streets and properties in the combined sewer system as described above (see **Figure 3.15-2**). About 25% of the study area, mainly in the east portion, near the freeway, and the properties immediately along the lake shore,



Typical storm drain

²Seattle Public Utilities. 2006 Wastewater Systems Plan. 2006.

collected surface water discharges directly to Lake Union (see **Figure 3.15-3**). This runoff includes water from both buildings and streets. A large 72-inch main under the east side of the study area conveys water from Capitol Hill and the I-5 Freeway for discharge to Lake Union. The complete basin for this discharge pipe is about 500-acres, the portion in the study area that drains to it is about 75-acres. A second system on the west side of the study area collects water from Broad Street and discharges it to the lake at the west side of Lake Union Park. Little if any water from private parcels is collected and discharged by this pipe.

Separated stormwater pipes in this neighborhood are relatively new; most are concrete or plastic pipe and have been installed in the last 60-years. All the public storm drainage facilities in the neighborhood are inspected and maintained by SPU.

See **Chapter 3.3** for a discussion of the water quality issues of surface water discharged directly to Lake Union.

Electric Power

Power in the neighborhood is provided and maintained by Seattle City Light. Much of the area has over-head power poles. Overhead poles carry both power and communications. Recently developed areas tend to have undergrounded power and communications infrastructure.

The power infrastructure in this area is updated as needed for current development, the required infrastructure upgrades are usually paid for by the developer.

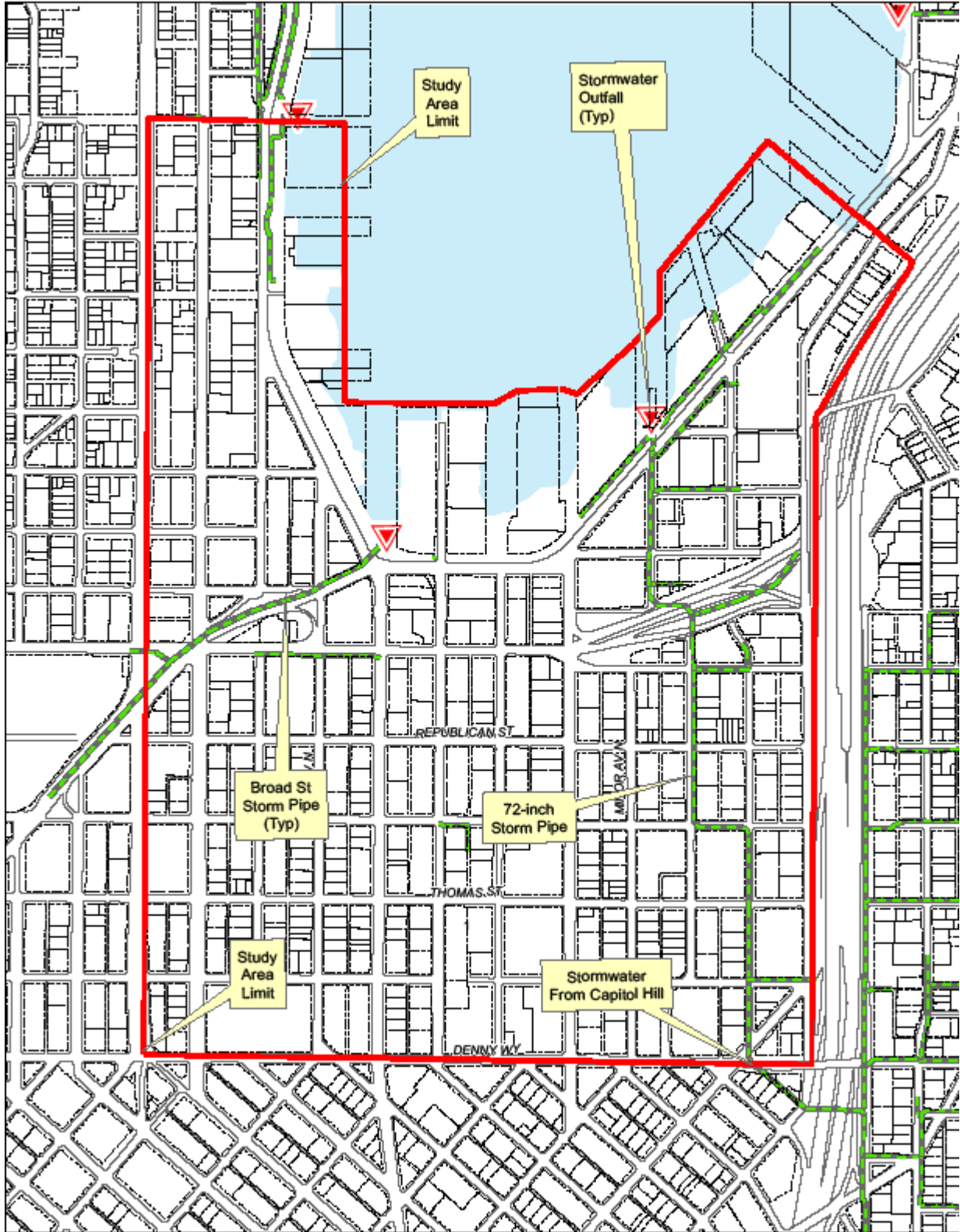
Gas

Puget Sound Energy (PSE) serves the planning area for natural gas. They manage the distribution of natural gas to customers, which involves pressure regulation and the development and maintenance of a network of gas mains. There is an extensive network of gas mains in the planning area, with pipes under most streets or alleys to serve most properties.

Telecommunications

Qwest is the principal provider of wired telephone and communications infrastructure to the study area. Other providers have moved in to certain areas of the neighborhood. With wireless solutions becoming more common, Qwest and other telecommunications service providers are expanding the options available to businesses and residents.

Figure 3.15-3
Stormwater Systems



Source: Coughlin Porter Lundeen, 2010

Focus Areas³

8th Avenue Corridor

Water pipes in 8th Avenue are 12-inch diameter cast iron and were installed in 1912 and 1925, per city records.

Stormwater runoff and sanitary sewage from the 8th Avenue Corridor is routed to a 12 and 15-inch diameter combined sewer system in 8th Avenue. This sewer joins the main trunk sewer at Republican Street and 9th Avenue. This sewer appears to have been installed in 1910.

Electric power is available from overhead wires in the alleys to the east and west of 8th Avenue.

Natural gas is available from a PSE main in 8th Avenue.

Telecommunications is available from Qwest and other providers in this area.

Fairview Avenue Corridor

Water distribution is from a 12-inch cast-iron main installed in 1930, per city records.

Stormwater runoff from most of the Fairview Avenue Corridor is routed to a combined sewer system in Fairview Avenue. The system in Fairview consists of two parallel pipes, one 8-inch and one 12-inch in diameter. Both pipes join the main trunk sewer at the intersection with Republican Street. Surface water from the west portion of this area (between Harrison and John Streets) enters the combined sewer system at the 8-inch sewer in Boren Avenue. This sewer connects to the main trunk sewer in Republican Street. The mains in Fairview date back to at least the 1920s.

Electric power is available from underground conduit in Fairview Avenue.

Natural gas is available from a PSE main in Fairview Avenue.

Telecommunications is available from Qwest and other providers in this area.

³Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.

Valley/Mercer Blocks

Water distribution is from 8 to 24 inch diameter mains in the streets within this area. Pipes are primarily cast iron, installed from the 1910s to the 1930s.

Stormwater runoff from the Valley and Mercer Blocks is routed to the combined sewer system. Local sewer mains in Fairview, Boren, Terry, Westlake and 9th Avenues all convey collected surface water to the main trunk sewer in Republican Street. Sewer pipes vary in age around this block, the pipes in Terry Avenue were replaced in the 1960s, the older sewers in this area date to the 1920s.

Electric power is available from overhead wires and underground conduits in the area. Recent developments in the blocks bounded by Republican, Terry, Mercer and Boren have installed underground power and telecom. Older areas still have overhead wires.

Natural gas is available from a PSE main in Mercer Street.

Telecommunications is available from Qwest and other providers in this area.

3.15.2 Environmental Impacts

The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to utilities.

In addition, as described above, many of the water, sewer and storm systems in this neighborhood are at or near the end of their expected life. Increased failure rates in these systems can be expected with or without future development. While this is an issue of concern, it is not an impact associated with the proposal. Therefore, the need of replacement of aging systems is not discussed below.

Future site-specific development proposals under any of the alternatives would create additional load on the utility infrastructure in this area and is briefly discussed below.

Impacts Common to All Alternatives

Water System

The increased density and intensity of development that would be permitted by the action alternatives could result in greater demands on the water supply and distribution system. There will be an overall greater

<i>Affected Environment</i>	Utilities Contents
Environmental Impacts	
<i>Mitigation Strategies</i>	
<i>Significant Unavoidable Adverse Impacts</i>	

demand for water with increased density. However, new development will be required to include practices which will incorporate efficient plumbing fixtures, water conserving landscape, and water reuse opportunities that can reduce per capita water demand. These practices will reduce the overall impact to water use within the area of the proposed alternatives.

Combined Sewer System

The increased density and intensity of development that would be permitted by the action alternatives could result in greater demands on the local sewer collection system and on the downstream conveyance and treatment facilities. Although there will be a greater overall need for sewage facilities with increased density, new development can reduce per capita demand, as newer, low flow or no-flow plumbing fixtures and equipment replaces older, less efficient, installations. This could help reduce this overall impact.

Potential development under any of the alternatives is not expected to result in increased demand on the stormwater component of combined sewer systems in the neighborhood. Current drainage code will require re-developed sites that discharge to the combined sewers to provide stormwater detention with either Green Stormwater Infrastructure (GSI) that allows some water to infiltrate, and be kept on site, or traditional underground tanks and vaults that temporarily hold the water and slowly release it to the sewer. Either of these methods will help control peak rates of stormwater through the local combined sewer systems, limiting the frequency of street flooding from the local collector pipes and reducing the risk of CSOs from the trunk mains.

Storm Sewer System

Potential development under any of the alternatives is not expected to result in increased demand on the storm water systems of the neighborhood. Current drainage code will require re-developed sites that discharge to the storm sewers to provide stormwater detention with Green Stormwater Infrastructure (GSI) that allows some water to infiltrate, and be kept on site, before the rest is released to the storm sewer. Many of the GSI detention systems double as water quality treatment systems. See also Water Quality (Section 3.3) for additional discussion.

Electric Power

The increased density and intensity of development that would be permitted by the action alternatives could result in greater demands on electrical energy. However, when new development and modern power consuming equipment is installed, there can be a reduction in per-capita demand, which will help reduce this impact. It is anticipated that power

infrastructure will need to be upgraded and capacity increased to support development. Specific improvements will need to be addressed on a project by project basis.

3.15.3 Mitigation Strategies

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Leadership in Energy and Environmental Design (LEED) provides a framework and ranking system to reduce the impact of development on the environment including the utility infrastructure. By using LEED methods to reduce energy and other resources, projects can reduce the overall effects of new or re-development. Encouraging the use of the LEED or a similar standard score card (such as Built Green) for resource use reduction with some type of development incentives would help to reduce the effects on the utility infrastructure.

Water

1. The use of low or no-flow fixtures and water saving devices in new construction and renovations.
2. Collection and re-use of storm water for non-potable uses (irrigation, toilet flushing, mechanical make up water, etc.) would reduce demand on the public water supply.
3. A replacement or rehabilitation plan for the oldest water mains in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.

Combined Sewer & Storm Sewers

1. Modern low flow or no-flow plumbing will reduce the per capita waste water volume discharged to the combined sewer pipes and sent to the treatment facility.
2. New development in the area will be required to meet the 2009 City of Seattle Stormwater Code. Stormwater collected on site will be required to be held on site with Green Stormwater Infrastructure (GSI) methods, or detained before discharge to the city storm system. These measures will reduce the peak rate of water discharged to the combined and storm sewer systems.

*Affected
Environment
Environmental
Impacts*

**Mitigation
Strategies**

*Significant
Unavoidable Adverse
Impacts*

3. A replacement or rehabilitation plan for the oldest sewer pipes in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.
4. Installation of a separated storm sewer system in this area, sized for the approved level of development, would reduce the load of storm water sent to the treatment plant, and nearly eliminate combined sewer over flows in this area. The existing combined sewer system would be retained for use as a sanitary sewer.

Electric Power

1. The installation of photovoltaic and other local generating technologies will reduce the demand on the public generating and distribution facilities.
2. Construction and operation of LEED compliant (or similar ranking system) buildings will reduce the level of increase required in power systems.
3. Reduce the use of power in building heating and cooling with passive systems and modern power saving units.

3.15.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to utilities are anticipated.

<p><i>Affected Environment Environmental Impacts Mitigation Strategies</i></p> <p>Significant Unavoidable Adverse Impacts</p>	<p>Utilities Contents</p>
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3.16 OPEN SPACE AND RECREATION

This section of the Draft EIS describes the existing open space and recreation opportunities in the South Lake Union neighborhood and surrounding site vicinity, and evaluates how each of the alternatives would affect open space and recreation opportunities.

3.16.1 Affected Environment

The South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown. The area contains several existing open space and recreation areas; additional areas are located in the site vicinity. The following provides a summary of existing open space and recreation areas on the site and site vicinity, and summarizes existing parks and recreation plans for the area.

Open Space and Recreation Areas

The South Lake Union neighborhood currently contains four City of Seattle Parks, including: Lake Union Park, Denny Park and Playfield, Cascade Playground, and the Eastlake Triangle.

- Lake Union Park is an approximately 9-acre park located at the north portion of the South Lake Union neighborhood, on the shore of Lake Union. The park is currently undergoing a renovation that is scheduled to be completed in September 2010. Park features include an interactive water fountain, model boat pond, views of Lake Union, and a history trail; the Center for Wooden Boats is also located in the park.
- Denny Park is an approximately 5-acre park located at the southwest portion of the South Lake Union neighborhood. The park features pedestrian pathways, seating areas, mature landscaping, and a play area. Denny Playfield is also located adjacent to Denny Park and contains basketball courts; however, Denny Playfield is a privately owned facility that is proposed for potential commercial development in the future.
- Cascade Playground is an approximately 2-acre park located at the western portion of the South Lake Union neighborhood. The park includes basketball courts, a play area, a p-patch garden, picnic areas, and restrooms.
- Eastlake Triangle is a less than 1-acre park located in the northeast portion of the South Lake Union neighborhood. The park includes small gathering and seating areas.

Open Space and Recreation Contents	Affected Environment 1
	Environmental Impacts 7
	Mitigation Strategies 9
	Significant Unavoidable Adverse Impacts ...10



Lake Union Park



Denny Park



Cascade Playground

Open Space and Recreation Areas – Site Vicinity

The City of Seattle parks and recreation system is comprised of a variety of parks, open space, boulevards and trails, lakes and creeks, recreational, cultural, environmental and educational facilities, and a broad variety of programs. The Parks and Recreation Department is responsible for the operation and maintenance of 430 parks, 185 athletic fields, 151 outdoor tennis courts, 112, neighborhood play areas, 26 community centers, 11 off-leash areas, 10 swimming pools, and 4 golf courses. **Table 3.16-1** identifies the City of Seattle parks and open space within the site vicinity of the South Lake Union neighborhood (less than 0.5 miles from the South Lake Union neighborhood).

Table 3.16-1
Existing Parks and Open Space in the South Lake Union Neighborhood Vicinity

Park	Acres	Facilities/Features	Distance
Bellevue Place	1.4	Walking paths, open space, and views.	Adjacent to east border.
Thomas Street Mini-Park	0.25	Open space.	Adjacent to east border.
Tashkent Park	0.5	Open space, picnic tables, and benches.	0.25 miles east
Belmont Place	0.02	Open space.	0.25 mile east
Summit Place	0.02	Open space.	0.10 miles east
St. Marks Greenbelt	2.9	Green space, creek, and trails.	0.20 miles northeast
Volunteer Park	48.3	Play area, tennis courts, walking paths, wading pool, views, Volunteer Park Conservatory, and Seattle Asian Art Museum.	0.40 miles northeast
I-5 Colonnade	7.5	Walking paths, bike trail, off-leash area, and views.	0.45 miles northeast
Bhy Kracke Park	1.5	Play area, walking paths, benches, and views.	0.20 miles west
Ward Springs Park	0.34	Play area, walking paths, open space, rental facility, and views.	0.25 miles west
Tilikum Place	0.01	Decorative fountain and historic landmark.	0.20 miles west
Northeast Queen Anne Greenbelt	10.5	Green space and trails.	0.10 miles northwest
Trolley Hill Park	0.9	Play area, p-patch, picnic tables, and views.	0.20 miles northwest
Maclean Park	1.0	Walking paths, open space, and views.	0.25 miles northwest
Cal Anderson Park	7.37	Play area, historic landmark, tennis courts, wading pool, fountain, walking paths, and athletic fields.	0.40 miles southeast
Plymouth Pillars Park	0.6	Off-leash area and views.	0.35 miles south
Regrade Park	0.3	Play area, picnic tables, basketball court, off-leash area.	0.30 miles southwest

Source: City of Seattle Parks and Recreation, 2010.

City of Seattle Parks Planning

Park Distribution Guidelines

The *City of Seattle Comprehensive Plan – Capital Facilities Element* provides an inventory of existing parks and recreation facilities in the City of Seattle; however, it does not include adopted level of service standards relative to parks and recreation opportunities. The Comprehensive Plan indicates that while additions to the existing parks and recreation facilities would enhance the City's quality of life, such additions are not necessary to accommodate new households.

In 2006, the City of Seattle adopted the *Parks and Recreation 2006 Development Plan*, which replaced the *Parks and Recreation Plan 2000*. The *2006 Development Plan* identifies goals, objectives and policies for the Parks and Recreation system, identifies distribution guidelines for parks and open space, and provides an analysis of gaps in areas of the City where parks and open space distribution guidelines remain to be met.

As it relates to the South Lake Union neighborhood, distribution guidelines are broken up into two categories: Total Open Space (Breathing Room) and Usable Open Space.

- Total Open Space (Breathing Room) – The combined acreage of all dedicated open spaces (parks, greenspaces, trails, and boulevards), but not including tidelands and shorelands. One acre per 100 residents is desirable; one-third acre per 100 resident or community approved offset is acceptable.
- Usable Open Space – Relatively level and open, easily accessible, primarily green open space available for drop-in use. Publicly owned or dedicated open space that is easily accessible and intended to serve the immediate urban village. This encompasses various types of open space for passive enjoyment as well as activity and includes green areas and hard-surfaced plazas, street parks and pocket parks. One acre per 1,000 households, one acre of urban space per 10,000 jobs in the Downtown urban and one-quarter acre within 1/8 mile of all locations in urban villages density areas is desirable. One-quarter acre within one-half mile or community approved offset is acceptable.

The South Lake Union neighborhood contains approximately 15.7 acres of usable open space (Lake Union Park, Cascade Playground, and Denny Park/Playfield). The *2006 Development Plan* and associated gap analysis identifies the South Lake Union neighborhood as an area that has

exceeded the existing and projected distribution guideline goals for urban centers. **Table 3.16-2** summarizes the distribution goals for the South Lake Union neighborhood based on existing and projected households and employment from the *Comprehensive Plan*.

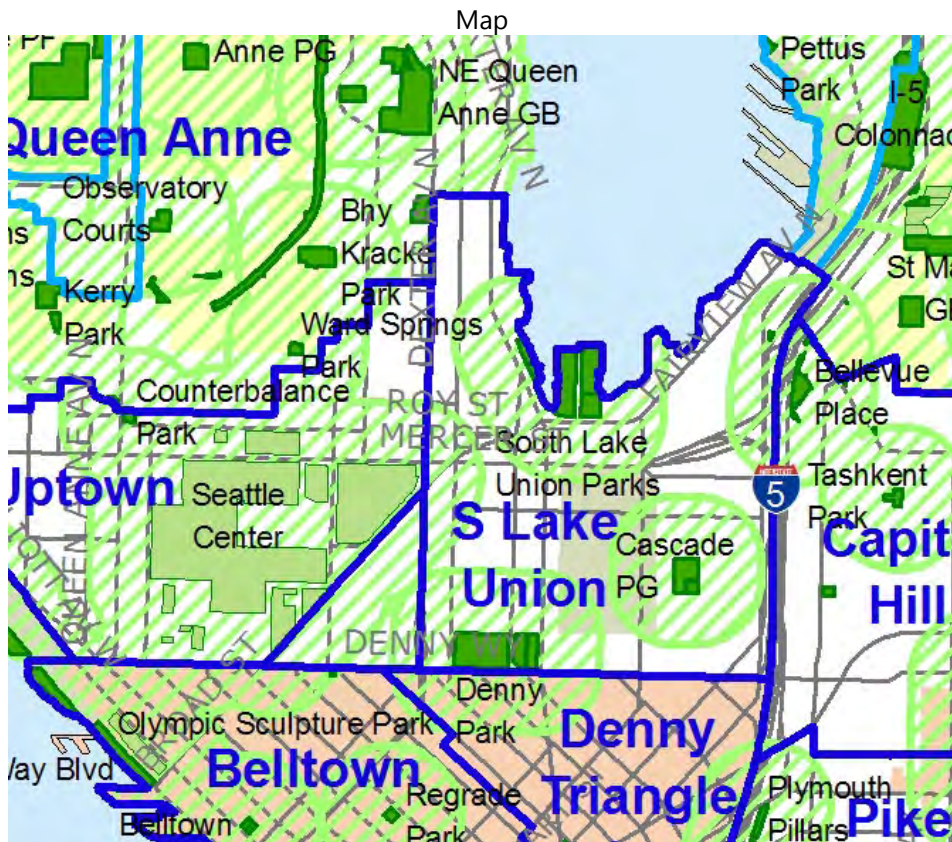
Table 3.16-2
South Lake Union Neighborhood Parks and Open Space Goals

Guideline	Goal	Existing Open Space	Status
Usable Open Space to meet 2024 Open Space Household Goal	9.21 acres	15.7 acres	Goal Met
Usable Open Space to meet 2024 Household and Jobs Goal	12.78 acres	15.7 acres	Goal Met

Source: *City of Seattle, 2006 Gap Report Update.*

Although the *2006 Development Plan* and associated gap analysis identifies the South Lake Union neighborhood as an area that has exceeded the existing and projected distribution guideline goals for urban centers, certain parts of the neighborhood, (e. g., the area north of Mercer Street, generally in the Fairview subarea and the northwest portion of the study area, generally in the northern portion of the Dexter subarea) fall outside of the 1/8 Mile Service Areas of Usable Open Space for this Urban Center.

Figure 3.16-1
Parks and Open Space Gap Analysis



Source: City of Seattle 2006 Gap Report Update.

 1/8 Mile Service Area of Usable Open Space over 10,000 sf

North Downtown Park Plan

In addition to the city-wide parks development plan, the City of Seattle also adopted a park plan for the North Downtown area (Denny Triangle and South Lake Union neighborhoods) in 2004. The *North Downtown Park Plan* includes an analysis of existing and future parks and open space needs in the North Downtown area and provides recommendations to address park and open space goals and deficiencies. As stated previously, the South Lake Union neighborhood would have a surplus of parks and open space in 2024; however, the Denny Triangle Neighborhood, located immediately south of the South Lake Union neighborhood, would have a deficit of approximately 10 acres by 2024. Therefore, the combined North Downtown area would need approximately 8 acres of parks and open space by 2024 to meet future needs.

Improvements to Denny Park are identified as one of the highest priority actions in the *North Downtown Park Plan*, due to the high potential to fulfill a variety of open space functions and the cost-effective nature of

such improvements. Potential improvements to Denny Park could include a plaza area, sport courts, children's play area, an off-leash area, and a community center. These potential improvements would be further analyzed in future site programming and planning for Denny Park. Other priorities identified in *North Downtown Park Plan* for the South Lake Union neighborhood include new sport courts, off-leash areas, play areas, and a community garden. Additional recommendations to address park and recreation needs for the North Downtown area include:

- Seek opportunities to acquire and develop park and recreational facilities in North Downtown, especially within Denny Triangle.
- Incorporate public open space and/or recreation facilities into the development of Convention Place.
- Consider developing a large, active open space on SDOT's maintenance site between Broad and Harrison Streets.
- Consider park and recreational opportunities associated with proposed substation improvements in the area.
- Consider purchasing or leasing a portion of a new development for community and recreation facilities.

Parks Capital Facilities Planning

The City of Seattle Parks and Recreation Department uses a three-step process to identify specific maintenance and development projects for funding: (1) project identification, (2) project selection, and (3) project budgeting and scheduling. The process is based on the latest department assessments of its parks and recreation facilities and an assessment of the demand for new, renovation or replacement projects. Park and recreational facility needs for the City are reviewed annually and are reflected in the City's Capital Improvement Program. The 2010-2015 Capital Improvement Program identifies two projects in the South Lake Union neighborhood, including the completion of the Lake Union Park Renovation and the replacement of lighting facilities at Denny Park.

8th Avenue Corridor

The 8th Avenue Corridor is located directly north of Denny Park/Playfield. A portion of the 8th Avenue Corridor is located more than 1/8 of a mile from Denny Park and is identified in the City of Seattle *Gaps in Useable Open Space in the Southwest Sector* (2005) as a gap area for useable open space.

Fairview Avenue Corridor

The Fairview Avenue Corridor is located one block west of Cascade Playground. According to the City of Seattle *Gaps in Useable Open Space in the Southwest Sector* (2005), the northern and southern portions of the

Fairview Avenue Corridor are outside of the Cascade Playground service area and are in a gap area.

Valley/Mercer Blocks

The Valley/Mercer Blocks are located immediately south of Lake Union Park. The entire Valley/Mercer Blocks area is within 1/8 of a mile from Lake Union Park and contains no identified gaps in useable open space service.

3.16.2 Environmental Impacts

This section focuses on the probable significant impacts on parks, open space, and recreation facilities in the South Lake Union neighborhood and site vicinity with redevelopment under Alternatives 1-4. Impacts that would be common to Alternatives 1-4, such as construction impacts and impacts to City-owned parks and recreation facilities are discussed at the beginning of this section. Impacts that would be unique to each alternative are discussed later in the section.

Potential increases in height and density associated with Alternatives 1-4 would subsequently result in an increase in population and employment when future development occurs in the South Lake Union neighborhood. Increases in population and employment in the area would result in an associated increase in demand for parks, open space and recreation facilities in the area.

Due to the programmatic nature of this proposal, no specific parks, open space, or recreation facilities are proposed within the South Lake Union neighborhood at this time; however, such features could be included as part of future development in South Lake Union neighborhood.

Impacts Common to All Alternatives

Construction

Construction activities that would be associated with potential redevelopment under the alternatives would result in temporary and periodic increases in dust and noise levels which could affect users of existing parks in the South Lake Union neighborhood, including Lake Union Park, Denny Park and Cascade Playground. These impacts would be temporary in nature and would not be anticipated to be significant.

Impacts from Potential Redevelopment

Potential redevelopment in the South Lake Union neighborhood under the action alternatives would result in an increase in population due to new permanent residents and employees that could exceed the growth

Affected Environment
Environmental Impacts
Mitigation Strategies
Significant Unavoidable Adverse Impacts

Open Space and Recreation Contents

projections from the *Comprehensive Plan*. Such an increase in population would result in an associated incremental increase in demand for parks and recreation facilities during the 20-year growth period.

Based on current parks and recreation distribution guidelines outlined above and the estimated 2031 household and employment targets for South Lake Union, the total estimated park and recreation demand under any of the alternatives would be approximately 14.1 acres. This is an increase over the total 2024 estimated demand of 12.78 acres, but still less than the existing 15.7 acres of open space.

However, when compared against the North Downtown area (Denny Triangle and South Lake Union neighborhoods) the estimated deficit of parks and open space will increase by approximately 1.5 acres.

Table 3.16-3
Potential Increase in Park and Recreation Demand
Estimated Jobs and Housing Targets

	Estimated 2031 Targets for South Lake Union*	Park and Recreation Demand Guidelines	Estimated Demand	Total Demand
Households	11,900	1 acre/1000 housing units	11.9 acres	14.085 acres
Jobs	21,850	1 acre/10,000 jobs	2.185 acres	

Source: Blumen Consulting Group, City of Seattle, 2010.

Note that these targets are estimated for the purpose of this EIS analysis and have not been adopted by the City. Please see discussion in Chapter 2, Section 2.2.2.

Existing gaps in service described previously, including those in the 8th Avenue Corridor and Fairview Avenue Corridor focus areas, would remain and, with additional population, would become more significant.

Increased Demand for Existing Facilities

Future residential and employment growth under Alternatives 1-4 would tend to increase the overall use and activity levels of existing parks and recreation facilities in the South Lake Union neighborhood and site vicinity. In some circumstances this could better activate and improve the safety of public spaces. However, with a large increase in population, there could be volumes of use at some parks or recreation facilities that could represent overuse.

Passive park and recreation areas that would likely receive increased demand would include existing facilities in the South Lake Union neighborhood and adjacent areas. Such facilities would include Denny

Passive recreation areas emphasize the open space aspect of a park and involve a low level of development, such as trails, walking areas and picnic areas.

Park, Eastlake Triangle, Thomas Street Mini-Park, Summit Place, Bellevue Place, Tashkent Park, St Marks Greenbelt, I-5 Colonade, NE Queen Anne Greenbelt, Maclean Park, and Tilicum Place. While these facilities are anticipated to experience increases in use associated with the alternatives, due to the variety of passive recreation areas in proximity to the South Lake Union neighborhood, such increases in use would likely be distributed amongst the numerous facilities and significant impacts would not be expected.

Demand for active park and recreation areas, such as athletic fields, basketball and tennis courts, swimming and wading pools, and play areas would also increase under Alternatives 1-4. The most likely parks and recreation facilities to experience increased use would include Lake Union Park, Denny Playfield, Cascade Playfield, Volunteer Park, Bhy Kracke Park, Ward Springs Park, Trolley Hill Park, Cal Anderson Park, and Regrade Park. These facilities are also anticipated to experience an increase in use associated with the alternatives; however, due to the variety of active recreation facilities in proximity to the South Lake Union neighborhood, such increases in use would likely be distributed amongst the numerous facilities and significant impacts would not be anticipated.

Potential Park and Recreation Facilities under the Alternatives
Although no specific park and recreation facilities are proposed under the alternatives, Alternatives 1-3 include an incentive program that offers development bonuses for projects (typically an allowance for additional height or floor area). Potential public benefits that could be considered as part of a development incentive program include new park and recreation facilities such as a new center for community, arts, and culture, pocket plazas, and/or children's play areas.

3.16.3 Mitigation Strategies

Future population and employment increases in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for park and recreation facilities in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenues generated from potential future development in the South Lake Union neighborhood would accrue to the City of Seattle and could help offset demands for park and recreation facilities.
2. Future increases in population and employment in the South Lake Union neighborhood could be planned for through the City's ongoing capital facilities planning process.

Active recreation areas are those which involve more intensive levels of development and often involve cooperative or team activities.

*Affected
Environment
Environmental
Impacts*
**Mitigation
Strategies**
*Significant
Unavoidable Adverse
Impacts*

Open Space and Recreation Contents

3. New park and recreation facilities could be provided in conjunction with potential future development as part of the development bonus process under Alternatives 1-3.
4. New open space facilities could be provided in the Fairview and Dexter subareas in conjunction with potential future development.
5. Consider facilities to address the identified gaps in service in the 8th Avenue Corridor and the Fairview Corridor focus areas in conjunction with potential future development.

3.16.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to parks, open space and recreation facilities are anticipated.

<p><i>Affected Environment Environmental Impacts Mitigation Strategies</i></p> <p>Significant Unavoidable Adverse Impacts</p>	Open Space and Recreation Contents
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Puget Sound Clean Air Agency
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Attn: Paul Carr

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Target/Capacity Methodology

Growth Targets and Zoned Development Capacity

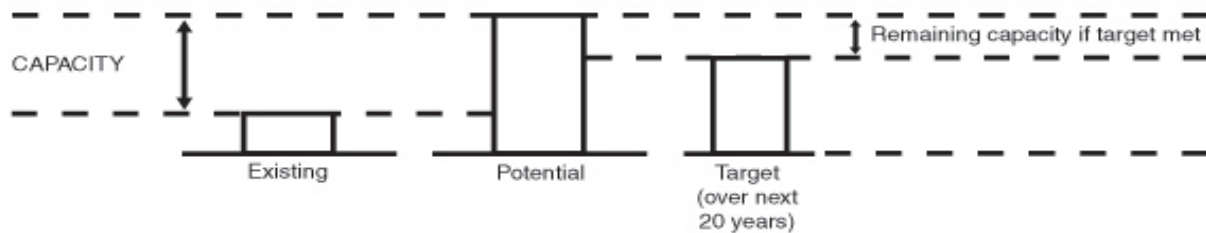
The Department of Planning and Development uses a development capacity model. This model estimates the amount of new development that could be built in the City by comparing existing land uses, housing units and commercial square feet to what could be built under current or proposed zoning. The difference between potential and existing development yields the capacity for new development. This capacity is measured as the number of housing units, the amount of commercial square feet and the number of potential jobs that could be added.

Evaluation of each of the EIS alternatives and their potential impacts references two distinct measures – growth targets and development capacity. The Growth target represents the assumed level of growth that will occur in the South Lake Union neighborhood by the year 2031 and is based on allocating a share of citywide growth that is expected by the year 2031. Development Capacity represents the maximum level of development possible under each alternative with no effort to estimate the likely level of development that will actually occur. Growth targets are based on actual growth projections prepared by the State of Washington Department of Finance. Development capacity is based on assumptions about how much land is redevelopable and the type of projects that could be developed under existing zoning. Below is a brief description of how capacity estimates are achieved and their relationship to growth targets.

Indefinite Time Period Covered by the Estimates

Development capacity is not a prediction that a certain amount of development will occur in some fixed time period. The capacity estimates do not include a time dimension because they do not incorporate any direct measurement of demand, which would help determine when parcels would be developed. Many parcels in the city today have zoning that allows for more development than currently exists on them, but not all of them are available or have a demand for development. Consider a single-family house in a commercial zone that is occupied by an owner who has no plans to sell. Some day that land will change hands and the new owner may be more willing to develop the parcel to its full development potential.

Aside from the relatively small number of parcels that have either active or pending development permits, there is no way to know when actual redevelopment will happen. For the purposes of determining development capacity, though, it is assumed within the model that development will eventually occur regardless of market forces. Therefore, development capacity is not a forecast and has no planning horizon. It is simply an estimate of the additional development that could occur under the current zoning regulations. This additional development could happen all in one year or not at all depending on the economy, attractiveness to development, or other market conditions. Capacity represents the amount of new growth that could be accommodated. The amount of growth that is expected to occur and that City policy intends to accommodate is established as the 20-year growth targets in the Comprehensive Plan.



Comparison of existing development to potential to expected, or target.

Development Capacity Analysis

The actual level of development activity that occurs is controlled by a variety of future factors, many of which are beyond our ability to predict or influence. These factors include such things as the future demand for a particular type of development (such as for townhouses, high-amenity multifamily or small-unit multifamily), whether the owner of any particular land is willing to sell or redevelop it, the financial feasibility of developing the land, and the intensity of development when it does occur. Other factors, such as the relative attractiveness of certain areas for living and commerce, and the relative densities allowed by the existing zoning, can cause some areas to be developed earlier or later than others. No one can predict with certainty the total effect of all these factors on the choices made by land developers.

These limitations notwithstanding, the City has created a model that identifies parcels that have the potential to develop and to estimate the amount of development that could occur. The two key determinants in this model are: 1) available land and 2) zoning. Available land refers to land that is either vacant or developed sufficiently below the potential allowed by the zoning to allow a significant increase in density if it were redeveloped. Zoning represents the rules to which new development must adhere including the uses and densities that are allowed.

In its simplest form, an estimate of capacity is the product of: 1) determining what land is available; 2) multiplying the area of that land by the future expected densities of development zoning allows; and 3) subtracting the existing development. The formulas below summarize the model process.

$$\text{Potential Development} = \text{Developable Land Area} \times \text{Future Density Assumption}$$

$$\text{Development Capacity} = \text{Potential Development} - \text{Existing Development}$$

The City's development capacity estimate is the difference between the amount of development on the land today and the amount that could be built under the current zoning. On vacant land, we only need to estimate what the zoning would permit. For a parcel that already contains one or more buildings, the amount of development in those buildings is subtracted from the total that zoning would allow.

Availability of Land for Development

The first task is to determine the land that is available for development. Seattle's capacity model excludes a number of parcels from the calculations based on ownership, use or zoning. For instance, all parcels owned by a public entity—federal, state, county, city, school district, port district—are excluded from the calculations. Parcels used for cemeteries, public and private schools, churches, nursing homes,

boarding houses, military bases, public utilities, railroads, hospitals, libraries, law enforcement and that contain landmark structures are excluded. All of the land within the major institution overlay (MIO) is excluded; the jobs and housing units that institutions may provide are determined by each institution’s master plan and are counted over and above the capacity. In addition, some parcels are excluded based on specific knowledge of unique circumstances.

No land is excluded to represent additional rights-of-way or other public purposes because Seattle’s street system is nearly completely laid out, and most facilities to satisfy public purposes are already in place to the point that no significant quantity of land now within private parcels will be needed for these uses. Nor was land excluded from the calculations because of critical area designations (except for parcels that are shown as creeks or streams) since the City’s critical areas ordinance does not prohibit development on critical areas and allows clustering to enable the property developer to achieve the same densities on the developable portion of the parcel as would be allowed on the entire parcel.

Parcels not in the categories listed above are considered available for development. Subsequently their development status is determined through a comparison of existing development to potential future development and classified as developed, vacant, or redevelopable.

Future Density Assumptions

To determine the number of potential housing units or commercial floor area that could be developed on each parcel, two assumptions are made: 1) the density of housing units to be built, and 2) a floor area ratio (FAR) to determine the commercial floor area that could be built. Table 1 below shows the equations for calculating potential housing and floor area using the density assumptions.

Residential	Commercial
Potential Housing Units = Developable Land Area ÷ Expected Square Feet per Unit	Potential Building Floor Area = Developable Land Area x Expected Floor Area Ratio

Table 1.

For those zones where the Land Use Code defines maximum density limits, the capacity estimates have, in past practice, assumed that those maximums would be achieved on the parcels that developed. However, examination of historical permitting data has shown that those maximums are not actually being achieved in all zones. Moreover, not all of Seattle’s zones have prescribed minimum or maximum density limits, requiring an analysis to make a best-guess of what densities would be achieved.

An analysis of the actual densities that have resulted from development in each different zone from 1996-2005 has led to the creation of a set of “expected” density assumptions. These density assumptions are revised every five years as part of the City’s reporting under the Buildable Lands program mandated by the Growth Management Act and are used in capacity analysis related to the Comprehensive Plan. Alternatively, maximum density assumptions, or the maximum densities a zoning category allows, can be used to examine “build-out” scenarios where appropriate.

Determination of What Land Will Redevelop

In a built city such as Seattle, where nearly every parcel already has some building or improvement on it, new buildings often come as redevelopment i.e., expansion or replacement of existing buildings. A developer’s decision to demolish and replace an existing building - one that may be generating revenue

for its owner - involves many considerations, such as whether the land is owned outright, how much revenue the current building brings in, how much it would cost to demolish and replace it, and how much revenue a new structure could generate. There is no way to know about these considerations for all the parcels in the city today, let alone for five or 20 years into the future.

In place of such detailed knowledge, the City uses three different measures to identify parcels likely to redevelop depending on the type of zone: 1) *residential development ratio* - the existing residential units compared to potential residential units, 2) *commercial development ratio* - existing building floor area compared to potential floor area; and 3) *improvement to land value ratio* - the value of buildings and other improvements on a parcel compared to its land value.

The assumption for assessing developability is that the value of the ratio measure is inversely proportional to the tendency to develop - that is the lower the ratio the higher the probability that the parcel will redevelop. In practice for capacity determination, developability of a parcel is determined by comparison of the appropriate ratios with a predetermined threshold value.

The *residential development ratio* is a straightforward indication of whether a parcel will redevelop. The basic assumption is that over time property owners will attempt to maximize the value of their property by maximizing the number of residential units that can be rented or sold on that property. However, if the number of units currently on-site is close to the total number of potential units that could be developed on the site, the cost of building additional units would exceed the revenue that can be generated by building new units. Therefore in residential zones, a ratio of existing units to total potential units is used to determine if a site is likely to be redeveloped at some point in the future. This measure is called the Development Ratio using Units (DR:UNITS in the model) and is used for single-family and multi-family zones.

The number of potential units on a site is based on the assumed densities. See the discussion labeled “Future Density Assumptions” below for a description of how these densities are selected.

$$\text{Development Ratio:Units} = \frac{\text{Existing Units}}{\text{Potential Housing Units}}$$

The *commercial development ratio* is similar to residential except that it compares the above-ground building square footage of the existing buildings to the potential floor area. This ratio is called the Development Ratio using Square Feet (DR:SQFT) and is used for commercial, neighborhood commercial and Seattle-mixed zones.

$$\text{Development Ratio:Sqft} = \frac{\text{Existing Building Square Feet}}{\text{Potential Building Square Feet}}$$

To determine the *improvement to land value ratio* (ILR), the City relies on data from the King County Assessor. Appraisers in the Assessor’s office assign two monetary values to a given parcel – one for the land and one for the improvement (structures) on the site. The value of land is an indication of the demand for that land in its “highest and best” use. For vacant land, different values may be assigned to different parcels for a variety of reasons, including that those parcels are inherently more desirable because of location or physical features, or because they are zoned for higher development potential. Similarly, in the case of developed parcels, a land value that is higher than the structure value often indicates that more intense use of the land is possible. This measure is used for downtown and industrial zones.

**Improvement to Land Value Ratio =
Existing Building Values / Parcel Land Value**

Again, one cannot know precisely at what point a particular parcel is likely to redevelop, but an analysis of parcels that have been redeveloped in Seattle over the past ten years has provided guidance for the development of thresholds of existing development compared to potential development below which parcels are more likely to redevelop. These thresholds are outlined in the Assumptions section below. The development ratios are compared to the appropriate thresholds (depending on the zone), and a development status is determined for each parcel - developed, redevelopable, or vacant.

Residential/Commercial Split in Mixed-Use Zones

Seattle's commercial zones are primarily intended to provide locations for commercial uses, e.g., retail shops, offices and restaurants. However, the Land Use Code also allows residential uses in these zones. Analysis of permitting data has informed assumptions about the "split" between residential and commercial development in a mixed-use project in the commercial zones. These splits are represented as percentages of the type of use that, in aggregate for a zone, actually occurred. For example, in a C2-40 zone about 80% of development is commercial and 20% is residential, as opposed to an NC3/R-40 zone where development is about 80% residential.

It is important to note that the split of residential and commercial space applies across a broad area, and may not be relevant on a site-by-site basis. Any particular site or small area may be developed with residential, mixed-use or commercial uses, depending on the market. For the capacity estimates, results derived from the following three assumptions are provided to present a range of potential development in these zones: 1) all development is commercial, 2) all development is residential and 3) all development is mixed according to observed proportions expressed as the following:

$$\begin{aligned} &\textbf{Total Development in Mixed-Use Zones =} \\ &\textbf{(Potential Housing Units x Percent Residential) +} \\ &\textbf{(Potential Building Floor Area x Percent Commercial)} \end{aligned}$$

South Lake Union Development Capacity Assumptions

Development of capacity estimates for the four EIS alternatives required several assumptions:

- 1) Residential density estimates assume an average residential unit size of 1,000 gross square feet. This assumption is consistent with recent trends in the neighborhood.
- 2) One parking space per unit would be provided in residential structures and an equal amounts of parking would be below and above grade.
- 3) Employment density is assumed to be one employee for every 350 square feet.
- 4) The mix of residential and commercial development is assumed to be approximately 55% residential and 45% commercial.

Residential Densities by Height

Tower Height	45 foot podium	65 foot podium	85 foot podium
400 Feet	720 units/acre	890 units/acre	n/a
300 Feet	562 units/acre	596 units/acre	655 units/acre
240 Feet	465 units/acre	490 units/acre	535 units/acre
160 Feet	327 units/acre	353 units/acre	385 units/acre

Cultural Resources

3.1 CULTURAL RESOURCES

Blumen Consulting Group (BCG) retained Cultural Resource Consultants, Inc. (CRC) to evaluate potential impacts to cultural resources for the South Lake Union Height and Density EIS in accordance with the Washington State Environmental Policy Act (SEPA). The goal of this assessment was to identify any previously recorded archaeological resources within the study area, determine the potential for any as-yet unrecorded archaeological resources within the study area, and evaluate potential impacts of the proposal to archaeological resources. Assessment methods included a review of previous ethnographic and archaeological investigations in the local area; an online search of records maintained by the Washington Department of Archaeology and Historic Preservation (WA DAHP) for known sites in the immediate area; a review of relevant background literature and maps (including General Land Office (GLO), Sanborn, and Kroll maps); and the preparation of this report. This assessment utilized research design that considered previous studies, the magnitude and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the study area, as well as other applicable laws, standards, and guidelines (per 36 CFR 800.4 (b)(1); WA DAHP 2010b).

3.1.1 Affected Environment

The South Lake Union neighborhood is located in the center of the City of Seattle, located immediately north of the Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east. Consisting of about 340 acres, the study area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way, and on the north by the Lake Union shoreline in the City of Seattle, King County, Washington (see **Figure 2-1**). The legal description for the study area encompasses numerous parcels located in E½ Sec. 30 and W½ Sec. 29, T. 25 N., R. 4 E., W. M. (**Figure 3.1-1**).

Four alternatives (three action alternatives and one no action alternative) are proposed as described in **Chapter 2**. Within the study area, three opportunity areas are addressed in further detail. For the purposes of this assessment, the area of potential impacts to cultural resources is considered to be the study area as described above. All proposed actions would occur within the boundaries of the study area.

Forty-three cultural resource assessments have previously been prepared within approximately one mile of the current project (**Table 3.1-1**). Many

of these were conducted within the study area. Of note are recent assessments that included subsurface archaeological investigations within the boundaries of the current study area. Durio and Bard (2008:4-10-4-11) conducted archaeological testing near Broad Avenue and Mercer Street in the vicinity of a Duwamish camp or longhouse (see **Ethnohistoric Context** below) and did not recover any archaeological evidence of pre-contact or historic-period habitation. Dellert and Larson (2004) reported archaeological monitoring of excavations to remove a tunnel boring machine north of Valley Street. Deposits observed consisted of fill up to 18 feet below surface, lakebed sands, and underlying peat; no archaeological sites were identified.

As a result of these assessments, one historic-period archaeological site has been recorded within the study area (**Table 3.1-2**). Site 45KI502 is a historic-period railroad segment east of Westlake Avenue from Aloha Street north to the Fremont Bridge (Cole 2000; Nelson 2001). It was supported on a wooden trestle built in 1911 over the steeply sloped margins of Lake Union. The site was recommended not eligible for the National Register of Historic Places (NRHP). Subsequent archaeological monitoring of construction excavations in and adjacent to the site did not identify any pre-contact archaeological materials. Historic-period and/or recent refuse items (e.g., bottle glass, wood debris) were observed during monitoring but their age could not confidently be assessed at 50 years or older; therefore, they were not considered archaeological or potentially eligible for the NRHP (Shong and Miss 2004).

No pre-contact archaeological sites have been identified within the study area (see **Table 3.1-2**). The nearest recorded pre-contact archaeological site is the Baba'k^wob site (45KI456) on Elliott Bay in Belltown (Lewarch 1998). The site was first identified as human skeletal elements encountered in construction excavations (Larson and Lewarch 1998). Archaeological testing and monitoring identified additional archaeological materials including shell midden, wood planks, charcoal, and a variety of historic-period personal, domestic, and commercial items (Lewarch 1998; Lewarch, et al. 2002:Table 4). Examination of stratigraphy in archaeological test units and construction trench exposures, along with artifacts dating from the 1830s to 1860s, indicated that the archaeological materials were contained within historic-period (1880s to 1912) and recent fill and landslide deposits, and dated to the historic period. Because the site did not retain depositional or locational integrity, it was recommended not eligible for the NRHP (Lewarch, et al. 2002:123).

Environmental and cultural information for the study area is presented here as context for evaluating the proposal's potential impacts to cultural

resources. The study area's geological setting and past human activities have shaped the potential for the proposal to impact cultural resources.

Geological Context

Archaeological evidence suggests human occupation in the Puget Sound region began following the last glacial retreat at the end of the Pleistocene, approximately 14,000-10,000 years ago. The environmental changes produced by deglaciation, including alterations to landscapes, climate, and vegetation significantly influenced the spatial distribution of human activities, based on the availability of resources and the suitability of certain landforms for occupation. The potential distribution of archaeological resources in the vicinity of the property, and the identification of conditions that may have affected contemporaneous preservation of these resources, are informed by understanding changes to the local environment over time.

The study area is geographically situated in the Puget Lowland south of Lake Union, in a depression between Capitol Hill to the east and Queen Anne Hill to the west. Denny Hill was formerly present southwest of the Lake Union Depression (Galster and Laprade 1991). Elevation within the study area ranges from approximately 25 to 95 feet above sea level. The western portion of the Lake Union Depression, between Seattle Center and the southwestern end of the lake, was a seasonally wet meadow in the early historic era (Waterman 1922). There was a stream that flowed roughly north-south for a short distance in the vicinity of present-day Fairview Avenue, entering Lake Union near the present-day intersection of Valley and Fairview. Forsman, et al. (1997:20) speculate that this stream may have supported salmon runs. In addition to salmon, a number of freshwater fish species were available in Lake Union.

The topography and geology of the area were formed during the Late Pleistocene, following the advance of several glaciations that originated from Canada and extended between the Cascade and Olympic mountain ranges into the Puget Lowland (Kruckeberg 1991:12). The most recent glacial event in the Puget Sound, termed the Vashon Stade, is largely responsible for the region's contemporary landscape; glacial advance and retreat scoured and compacted underlying geology while meltwaters carved drainage channels into glacial outwash deposits (Downing 1983; Booth, et al. 2003). Following rising temperatures, the glacier retreated rapidly to the north and left the regional landscape ice-free and suitable for inhabitants by approximately 11,000 years ago (Kruckeberg 1991:22). Lake Union formed in a glacial basin exposed after glacial retreat.

Following glacial retreat, land surfaces that had been covered by ice uplifted. This isostatic rebound varied locally and was much more subtle in the southern Puget Lowland than in the north (Thorson 1989). Marine waters began to fill Puget Sound once the Strait of Juan de Fuca and Admiralty Inlet were no longer blocked by ice. In southern and central Puget Sound, sea levels began to rise rapidly after 8,000 years ago (Eronen, et al. 1987) and then rates of increase slowed around 5,000 years ago (Booth, et al. 2003:26). Eustatic sea levels were within one meter of present-day levels by about 1,000 years ago (Eronen, et al. 1987). Prior to construction of Lake Washington Ship Canal, the elevation of Lake Union was 21 feet (6.4 meters) above sea level (Troost and Booth 2008:29), comparable to its present-day elevation. However, the mean level of Lake Union and Lake Washington previously fluctuated by as much as seven feet over time due to changes in hydrology and tectonic events that affected the lakes' outflow near Renton. Earthquakes throughout the past 7,000 years triggered underwater slumping, landslides, ground elevation changes, and tsunamis. Seiches associated with seismic activity in the twentieth century have been documented in Lake Union (Troost and Booth 2008:16-17); similar events likely affected the Lake Union shoreline in the past. A massive earthquake on the Seattle Fault 1,100 years ago caused slides and subsidence in the study area (Bucknam, et al. 1992; Jacoby, et al. 1992; Karlin and Abella 1992; Nelson, et al. 2002).

While sedimentation during glacial times was widespread and voluminous, active deposition in nonglacial periods including the present day has been more restricted, occurring in river valleys and at the base of steep slopes (Booth, et al. 2003:20-21). In the study area and environs, bedrock was eroded by the advancing and retreating late Pleistocene glaciers and was capped by glacial till. The Lake Union Depression was created by Vashon Stade ice flow and filled with a variety of sediments in the Holocene (Morgenstein and Blukis Onat 2003:23).

Surface geologic deposits mapped in the study area are composed of pre-Fraser glaciation age deposits in the vicinity of Terry Avenue between Denny Way and Harrison Street; landslide deposits north of Aloha Street between Aurora Avenue and Westlake Avenue; Vashon recessional lacustrine deposits and Holocene lake deposits north of Republican Street; Vashon till in the area bounded roughly by Republican, Aurora, Aloha, and Westlake, and in a small area near the intersection of Minor and Valley; and Vashon recessional outwash deposits in a narrow north-trending trough in the vicinity of Fairview Avenue (Troost, et al. 2005; WA DNR 2010). Large-scale landscape alterations since the 1880s have obscured and/or removed portions of these natural deposits as demonstrated by the presence of regraded land in most of the study area

south of Republican Street; artificial fill over Vashon and Holocene lacustrine deposits north of Valley Street; and modified land over Vashon lacustrine and ice-contact deposits in areas east of Fairview and between Republican and Valley Streets west of Fairview (Troost, et al. 2005; WA DNR 2010). These areas have been affected by human activities including cutting, filling, grading, leveling, regrading, sluicing, construction of artificial waterways, and shoreline protection. Fill as thick as 30 feet has been logged in geotechnical borings in the area south of Lake Union (Gillis, et al. 2005:3-2; Link EIS Team 1999:7). South of the former Lake Union shoreline, fill deposits are estimated to be about five feet thick in the area between about 9th Avenue on the west and Fairview Avenue on the east (Durio and Bard 2008:Exhibit 4-1; Lewarch, et al. 1999:Figure 3). The Denny Regrade projects begun in 1907 and 1927 removed soils from the southwestern portion of the study area, south of Valley Street and west of 9th Avenue North (Forsman, et al. 1997:Figure 2). As much as the upper 60 feet of earth was removed in high-elevation areas (Corley 1969). In present-day Denny Park, the maximum elevation was 155 feet (Hall 1927); it is now approximately 95 feet above sea level. Industrial development and construction of urban residential and commercial zones following the 1907 and 1927 regrades have also disturbed former natural land surfaces.

The current local soil survey does not map soil units in the study area (USDA NRCS 2010). In general, soil formation on uplands in the Seattle area has been slow, and undisturbed surfaces typically cap a poorly- to well-developed A horizon underlain by silty weathered Vashon till parent material within a meter of ground surface (Troost and Booth 2008:28). Although sedimentary profiles specific to conditions immediately preceding Euro-American settlement and logging of this location by the 1880s are not available, the hills and valleys in the study area were likely to have been composed of soils having a relatively limited potential for soil development, with steeper slopes subject to occasional, perhaps seasonal colluvial action. Archaeological deposits in such soils would be subjected to the same geophysical forces; preservation of the depositional integrity of archaeological deposits or anthropogenic sediments would vary based upon their specific physical characteristics.

Intact native soils are generally not expected to be present within the study area due to the long record of historic-period and modern disturbances. However, fill deposits may cap native soils in formerly low-elevation portions of the study area. There may be buried wetland soils under the filled southern shore of Lake Union and formerly low-elevation areas to the south (Blukis Onat 2009:19). There may be buried wetland soils under the filled southern shore of Lake Union and filled areas to the

south (Blukis Onat 2009:19). Specifically, the former stream in the vicinity of Fairview Avenue, a ravine centered near Westlake, and the former lake bed north of Republican Street could potentially contain pre-contact and early historic-period archaeological sites if intact former land surfaces are buried beneath historic-period and more recent fill.

Archaeological Context

Regional and local studies have provided an archaeological and historical synthesis of approximately the last 10,000 years of human occupation in Puget Sound (Nelson 1990). Upland terraces and ridges would have been available for occupation earlier than lower-elevation areas due to the effects of deglaciation described above; archaeological materials in the study area and similar settings could range in age from the early Holocene to the historic-period. The study is located on what were formerly a seasonally wet meadow, a ravine and stream, the northeastern flank of Denny Hill, and steeply sloped forested uplands adjacent to the Lake Union shoreline. Native American villages in this region were typically located very near or adjacent to water bodies (Suttles and Lane 1990). It is probable that the main pre-contact human activities in the study area were hunting and plant gathering based in associated seasonal camps. Historic-period Lakes Duwamish people continued to obtain resources from Lake Union and lived in the area southwest of the study area. Over the last approximately 130 years, activity in the study area has included logging, construction and demolition of residential and commercial structures, construction of manufacturing and other industrial facilities, shoreline filling and construction of artificial waterways, construction and regrading of roadways, and construction of buried water lines and other utilities. This suggests that undisturbed evidence of earlier human occupation is unlikely to be present in the study area.

Archaeological materials that could potentially be found in the study area would most likely date to the historic period.

Several previous cultural resource studies and overviews provide background information applicable to the study area (e.g., Blukis Onat 2009; Courtois, et al. 1999; Larson and Lewarch 1995; Miller and Blukis Onat 2004; Nelson 1990). Characteristic of the ethnographic pattern in Puget Sound, seasonal residence and logistical mobility occurred from about 3000 BP. Organic materials, including basketry, wood and foodstuffs, are more likely to be preserved in sites of this late pre-contact period, both in submerged, anaerobic sites and in sealed storage pits. Sites dating from this period represent specialized seasonal spring and summer fishing and root-gathering campsites and winter village locations. These kinds of sites have been identified in the Puget Sound lowlands, typically located adjacent to, or near, rivers or marine transportation

routes. Fish weirs and other permanent constructions are often associated with large occupation sites. Common artifact assemblages consist of a range of hunting, fishing and food processing tools, bone and shell implements and midden deposits. Similar economic and occupational trends persisted throughout the Puget Sound region until the arrival of European explorers.

Ethnohistoric Context

Ethnohistoric economies of people in the southern Puget Sound were structured upon a variable rotation of seasonally available resources. Permanent villages provided a central hub from which seasonal activities radiated. During the spring, summer and fall, temporary camps were utilized while traveling to obtain resources that included foodstuffs such as fish, shellfish, waterfowl, deer, roots and berries. Salmon was the single most important food source and was caught in weirs, traps, nets and other fashioned implements (Smith 1940). Local Indian people shared many broadly defined traditions with their inland Puget Sound neighbors, including subsistence emphasis on salmon and other fish, land game, and a wide variety of abundant vegetable foods, and household and village communities linked by family and exchange relations (Suttles and Lane 1990).

The South Lake Union Height and Density EIS study area is within the traditional territory of the Duwamish Tribe, a group of Coast Salish Southern Lushootseed speakers; historically, members of the Suquamish and Muckleshoot Tribes also utilized this vicinity (Suttles and Lane 1990; Waterman 2001). The Muckleshoot Indian Tribe is recognized as successors to the Duwamish for fishing and certain other treaty rights. The Suquamish Tribe also considers the local vicinity as a usual and accustomed place, but was denied recognition as successor of the Duwamish by District Court (Tulalip Tribes, et al. 1990). The Duwamish tribal organization does not currently have federal recognition.

The Suquamish occupied Kitsap Peninsula (Spier 1936:34), as well as Bainbridge and Whidbey Islands prior to implementation of the Point Elliot Treaty of 1855 (Ruby and Brown 1992:226). Pre-contact Suquamish settlements were often located on major waterways, and heads of bays or inlets. In the winter, the Suquamish lived at large permanent village settlements and they spent the summer hunting, fishing, and gathering at specialized, temporary camps. The Muckleshoot Tribe comprises groups who traditionally lived and used resources in the Green and White River valleys and adjacent plateaus (Suttles and Lane 1990:Figure 1, Table 1). A network of trails and waterways connected Muckleshoot villages on inland river valleys to the Puget Sound shoreline (Noel 1980:29).

Major Duwamish winter villages were formerly located on the Cedar, Duwamish, Sammamish, and Black Rivers, Lake Sammamish, Lake Washington, Lake Union, Elliott Bay, and Salmon Bay (Miller 1999; Smith 1941:207; Waterman ca. 1920, 1922), outside the current study area. Duwamish people who lived around Lake Union, Lake Washington, and Lake Sammamish were known as xa'tcoabc, "Lakes Duwamish." The Lakes Duwamish were more reliant on resources in the area's freshwater lakes, basins, and drainages, as well as wetlands and forests. Local streams and lakes provided habitat for anadromous fish. Travel by canoe and overland trails connected Lakes Duwamish groups to each other and to people throughout the Puget Sound region.

The Lakes people had several permanent and temporary settlements on all of the lakes. Ethnographic sources reviewed in this assessment (e.g., Smith 1940; U.S. Court of Claims 1927; Waterman ca. 1920, 1922, 2001) indicate that the winter village nearest to the study area was Baba'k^wob in present-day Belltown, named for a prairie and ravine between Belltown and Lake Union (Forsman, et al. 1997:Figure 3; Waterman 1922:188).

At the south end of Lake Union, ethnographers Harrington (ca. 1909) and Waterman (ca. 1920, 1922, 2001) recorded two place names: Cta'q^wcld and TL³pe'lgw1L (Miller and Onat 2004:69). The former refers to "where a trail descends to the water" at the southern end of Lake Union. From this point, a trail from the Seattle harbor descended the hill to Lake Union at the location of David Denny's sawmill (Waterman 1922:179). The latter is translated as "deep for canoes" and refers to a bluff at the foot of Lake Union on the southern shore (Waterman 2001:102-103).

According to Lane (1987:13, in Forsman, et al. 1997), there was likely a Lakes Duwamish camp or seasonal village southwest of Lake Union near the western border of the study area in the vicinity of Dexter Avenue and Mercer Street (Durio and Bard 2008:Exhibit 4-1). Thrush and Thompson (2007:225) identify the home of an indigenous man named Tsetseguis and his family at the south end of Lake Union near this location in the late 1800s; earlier Lakes Duwamish may also have made their homes in this area. The place was called scHákWsHud, translated as "the foot end of the beach," referring to its position at the end of a trail from Baba'k^wob. Tsetseguis was a close acquaintance of David Denny and his family. He lived at scHákWsHud when Denny's sawmill dominated the south end of Lake Union (Newell 1977, in Thrush and Thompson 2007:225). Bass (1937, in Nelson 2001:7) also describes an Indian settlement with a longhouse for several families on Lake Union near Westlake Avenue in the nineteenth century. Dorpat (1984:60) identifies the location of David Denny's house, west of the study area in what is now Seattle Center, as having been used

by Coast Salish peoples as a gathering place.

Historic Context

The first exploration and mapping of the Puget Sound is credited to Captain George Vancouver in 1792, under the auspices of the British Royal Navy. Vancouver surveyed much of the Sound, but the exploration did not extend inland and failed to recognize several waterways including the Puyallup, Nisqually and Fraser rivers (Morgan 1979:16). Decades later, in 1841, the Wilkes Expedition traveled to chart what was then called Oregon Territory. The territory was jointly occupied by the United States and Britain, particularly the British Hudson Bay Company, which established Fort Nisqually in 1834. In an attempt to increase American presence in Oregon Territory, the Wilkes Expedition produced the first detailed map of the area and promoted the region's potential for economic development (Morgan 1979). Four years after the arrival of the Wilkes party, more Americans began to settle in the Territory.

Euro-American settlement in Oregon Territory was further encouraged by the passage of the Donation Land Claims Act in 1850. In 1851, David Denny, John Low, and Lee Terry arrived at the mouth of the Duwamish River; Low and Terry soon filed land claims at Alki Point in West Seattle (Crowley 2003). Within a few years, more Euro-Americans had arrived in Seattle and filed Donation Land Claims (DLCs) between Elliott Bay and Lake Union. The earliest recorded Euro-American activity in the study area is the filing of DLCs by David Denny (DLCs 38 and 39; 323 acres in Sec. 25, T. 25 N., R. 3 E., and Sec. 30, T. 25 N., R. 4 E., W. M.) and Thomas Mercer (DLC 37; 160 acres in Sec. 30, T. 25 N., R. 4 E., W. M.) (BLM 2010; USSG 1861:535-544) (**Figure 3.1-2**). Denny's claim extended from the south end of Lake Union west to Elliott Bay between present-day Denny Way and Mercer Street. Mercer's claim was immediately to the north, including the area between Lake Union and 6th Avenue North between Highland Drive and Mercer Street (United States Surveyor General [USSG] 1863).

One GLO map (USSG 1856) shows two Euro-American residences within the study area (**Figure 3.1-3**). Thomas Mercer's residence is shown north of present-day Broad Street, in the vicinity of the block between Dexter Avenue and Aurora Avenue. Another residence is labeled "W. P. Smith" east of Fairview Avenue near Republican Street. Review of GLO notes and historical land patent data did not identify a DLC or other land claim by a W. P. Smith in the vicinity of the study area (BLM 2010; USSG 1861). Other cultural features mapped by the GLO in the study area consist of a trail west of Lake Union and a road from the south end of Lake Union to Elliott Bay (see **Figures 3.1-2 and 3.1-3**).

By the mid-1850s, British and American settlement on Puget Sound and the entire Northwest had drastically impacted local Native American groups and their traditions. In 1853, the United States organized Washington Territory and appointed Isaac I. Stevens as its governor. In 1855, the Duwamish and other Puget Sound tribes signed the Point Elliot Treaty, which forced local tribes onto reservations. The treaty called for cession of lands to the United States and the maintenance of fishing rights and annuities, as well as the concentration of Indian people living in western Washington upon reservation lands (Marino 1990). Individuals considered of the Suquamish Tribe were relocated to the Port Madison Indian Reservation, and the Muckleshoot reservation was established for people living in the White River valley and surrounding areas (Ruby and Brown 1992). The Duwamish were not assigned their own reservation, but rather were required to live on either the Port Madison Indian Reservation on the Kitsap Peninsula or the Muckleshoot Indian Reservation between Auburn and Enumclaw. Some Duwamish moved to the reservations but others remained in their homeland.

The treaty period was marked by heightened tension and violence between tribes and white settlers throughout Puget Sound. By 1855-1856, the federal government was using military force to contain Indian people dissatisfied with the poor quality of reservation lands. Many Indian groups in the Puget Sound area were relocated and interned during this period. Raids, attacks, and violent conflict occurred during this time throughout the Puget Sound region as Indian people attempted to discourage Euro-American settlement. The U.S. Marine Corps and U.S. Navy provided military support during attacks on Seattle (Phelps ca. 1856).

As Seattle expanded northward in the late 1800s, lands in the Lakes Duwamish territory were developed. The newly incorporated town of Seattle banned native urban residence in 1865, though Indians continued to live and work in the city. The Indian Homestead Act of 1875 allowed Indians to own land, provided they renounced tribal allegiance and adopted a Euro-American lifestyle (Blukis Onat, et al. 2005:25; Miller and Blukis Onat 2004:Table 1).

The study area is included in the area incorporated as the City of Seattle by act of the Territorial Legislature on December 2, 1869 (City of Seattle 2010). Denny allowed a 5-acre portion of his land claim to be used as a cemetery, Seattle City Cemetery, in the location of present-day Denny Park, in 1864. In 1884, burials were disinterred and some were moved to Lake View Cemetery on Capitol Hill and the land was repurposed for use as Seattle's first park (Corley 1969; Crowley 1998).

Comparison of historical and present-day maps (USC&GS 1875, 1899; USGS 1897, 1983; USSG 1856) illustrates patterns of urban development and changes in the position of the lakeshore over time (Chrzastowski 1983; PSRHP 2003a, 2003b) (**Figure 3.1-4**). In 1875 the southernmost extent of Lake Union was at the present-day intersection of Republican and Terry, where there was a ferry stop (Chrzastowski 1983; USC&GS 1875). A map from 1890 (Anderson 1890) shows the southern tip of Lake Union near the present-day intersection of Harrison Street and Boren Avenue. A landing for coal barges was present on the south end of the lake near the intersection of Westlake Avenue and Valley Street in the 1870s before the Seattle & Walla Walla Railroad was built to transport coal from Newcastle and Renton to Elliott Bay (Reinartz 1993:55, in Nelson 2001:10). The south end of Lake Union was shallow to begin with, and was filled to accommodate boat mooring (Chrzastowski 1983).

The study area saw an increase in development in the 1880s. By 1882, the west side of Lake Union had been logged and the Lake Union Lumber and Manufacturing Company sawmill had been built on pilings at the south end of the lake (Reinartz 1993, in Nelson, et al. 2001:9). Denny and other investors purchased the mill in 1884 and, until 1893, operated it as the Western Mill. In 1895, the mill changed hands again and became the Brace and Hergert Mill (Sanborn Map Company 1905). Industry and commerce in the study area were largely centered on the Lake Union shoreline during this period. Sparse single-family residences were present to the south (Sanborn Map Company 1888, 1893).

By 1884, the South Lake Union neighborhood was populated enough to create demand for a streetcar line. The Lake Union Road was built by Frank Osgood to connect Elliott Bay and the south end of Lake Union. This electric street railway was extended northward to Fremont in 1890 via a wooden trestle over the marshy slopes along the west side of the lake, in the present-day location of Westlake Avenue (Dorpat 1984:64). Growth, residential development in particular, continued through the 1890s and into the early twentieth century (Sanborn Map Company 1888, 1893, 1905). By the end of the nineteenth century, the neighborhood was served by a network of water mains (Seattle Engineering Department 1899). Elements of the present-day street grid had been established (Seattle Engineering Department 1900; USGS 1897) (**Figure 3.1-5**).

Public infrastructure improvements in the early twentieth century, including regrading and paving streets, made the study area more attractive to residents and businesses. By 1906, Lake Union's southernmost point was just south of Westlake Avenue and Mercer Street (Durio and Bard 2008:Exhibit 4-1). Along the eastern and western margins

of the south end of the lake, the shoreline had a naturally steep slope; filling at the toe of the slope made waterfront development possible in these areas (Weitkamp, et al. 2000). In 1909, the City of Seattle filled a portion of Lake Union with wood waste to create artificial peninsulas extending northward into the lake, providing land for new docking facilities on the south shore of Lake Union. The Northern Pacific Railroad (NPRR) built a belt line through the study area along the east side of Westlake Avenue in 1911-1912 (Cole 2000). South Lake Union was home to numerous industrial and commercial ventures including lumber mills, glass factories, an asphalt plant, and a floatplane service between the 1910s and 1950s. Multiple breweries, woodworking and furniture companies, automobile repair shops and a Ford manufacturing plant, laundries, bakeries, hardware stores, metalworkers, a NPRR freight yard, and public utility yards (e.g., Seattle Lighting Co. and Seattle Disposal Co.) were fixtures in the study area (Sanborn Map Company 1917, 1950). Residential neighborhoods dominated the area south of Mercer Street. Among the many single-family homes, duplexes, and an increasing number of apartment buildings stood shops (e.g., grocers and drugstores), churches, and Cascade Public School (Kroll Map Company 1920; King County 2010; Metsker Map Company 1936; Sanborn Map Company 1905, 1917, 1950) (**Figure 3.1-6**).

The military had a significant presence in South Lake Union in the mid- to late-twentieth century. In 1941, a Naval Reserve Center was built and designated by the federal government as a National Defense Project at the beginning of World War II (Moore, et al. 1998:10-11; Sanborn Map Company 1950). The facility remained in use for reserve training and community service activities until the 1990s.

Current land use along the Lake Union shoreline is still predominantly water-dependent, with a mix of commercial and industrial uses including marinas, commercial shipyards, and drydocks. Other businesses and a number of single and multi-family residences also border the shoreline (Weitkamp, et al. 2000). Inland from the lakefront, the South Lake Union neighborhood is characterized by urban residential and commercial development (**Figures 3.1-7 and 3.1-8**).

Potential for Discovery of Archaeological Sites in the Study Area

Forsman, et al. (1997) identified two locations within the current study area that have higher archaeological potential than other portions of the study area. The first is a ravine south of Republican Street, centered roughly between Westlake Avenue and Terry Avenue (Tobin 1987:46, in Lewarch, et al. 1999:8). This low-elevation area, identifiable using contour

lines on historical maps (e.g., USC&GS 1875, 1899; USGS 1897), would have contained a seasonally wet meadow or prairie with numerous valuable plant and animal resources (Forsman, et al. 1997; Waterman 1922). Located just east of the eastern boundary of the Denny Regrade, it was filled with regrade spoils and other refuse and debris materials. The second is the pre-industrial shoreline of Lake Union. Lakes Duwamish and other Coast Salish peoples used the lakeshore and margins of Lake Union for hunting, fishing, and other resource extraction and processing activities. This part of the study area has also been heavily modified by emplacement of large volumes of fill including sawdust, regrade spoils, household refuse, and demolition debris. A third formerly low-elevation area is present in the vicinity of the Fairview Avenue Corridor (USC&GS 1899; USGS 1897; USSG 1856). In all three areas, archaeological sites could potentially be buried beneath the fill in intact native soils. Archaeological materials such as stone tools and flaking debris, shell midden deposits, faunal and botanical remains, fire-modified rock, charcoal, and postmolds, depressions, or other features could be present, reflecting a range of subsistence, domestic, and ceremonial activities. Such materials, if present, could be pre-contact or historic in age, and could potentially be eligible for the NRHP.

Historic-period archaeological sites could also be present in the study area. These could include domestic, commercial, and industrial materials such as personal ornamentation, food scraps and packaging, structural, mechanical, or manufacturing waste items. However, historic-period archaeological materials would be expected to be contained within historic and recent fill deposits and not in intact native soils. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

The long history of industrial and public works activities in the study area has disturbed most natural land surfaces. As a result of more than a century of urban development, undisturbed landforms are not available for inspection within the study area (see **Figures 3.1-7 and 3.1-8**). Therefore, archaeological survey was not conducted as a part of this assessment.

8th Avenue Corridor

The 8th Avenue Corridor, covering the area one-half block east and west of 8th Avenue between Republican and John Streets, is within the area cut during the Denny Regrade (Corley 1969; Forsman, et al. 1997:Figure 2; Seattle Engineering Department 1907, 1910). Up to 60 vertical feet of soils were removed in this area, just north of Denny Park (Corley 1969). Natural land surfaces that were exposed and available for human occupation from

the end of the Pleistocene to 1907 are no longer extant in this area. As a result, the 8th Avenue Corridor is considered to have no potential to contain pre-contact archaeological sites or historic-period archaeological sites from before 1907. The area is considered to have a low potential to contain intact historic-period archaeological sites postdating the Denny Regrade due to impacts of subsequent urban development. Historic-period debris items are expected to be contained within deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

Fairview Avenue Corridor

The Fairview Avenue Corridor, covering the area one-half block east and west of Fairview Avenue between Mercer Street and Denny Way, is in a formerly low-elevation area with a stream that entered Lake Union near the present-day intersection of Valley Street and Fairview Avenue (USC&GS 1899; USSG 1856). This area was mapped as containing Vashon recessional outwash deposits in a narrow north-trending trough that curves to the northwest near Valley Street at the former Lake Union shoreline (Troost, et al. 2005). This is in approximately the same location as the stream mapped by the GLO (USSG 1856) (see **Figure 3.1-2**). The stream appears to be a relict outwash channel. This environment would have supported resources attractive to humans from deglaciation to the historic era. If land surfaces exposed from the end of the Pleistocene to the pre-urban historic era are preserved beneath fill deposits, then pre-contact and early historic-period archaeological sites could be present. Pre-contact archaeological sites could include the remains of fish weirs, basketry, stone implements, and other evidence of resource procurement and processing or domestic activities. Historic-period archaeological sites buried beneath fill could include remains of logging operations or deposits related to the residence of W. P. Smith, which was east of the corridor. Historic-period debris items are expected to be contained within fill and other deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

Valley/Mercer Blocks

The Valley/Mercer Blocks, bounded by Valley Street on the north, 9th Avenue on the west, Mercer Street on the south, and Fairview Avenue on the east, is located atop filled lakeshore. The pre-industrial Lake Union shoreline extended to approximately Republican Street near Terry Avenue (Chrzastowski 1983; Durio and Bard 2008:Exhibit 4-1; USC&GS 1875). The

former shoreline and its margins would have contained a variety of plant and animal resources used by Coast Salish peoples. Archaeological sites in this part of the study area would likely be low-density, diffuse concentrations of materials lost or discarded in hunting, fishing, and other resource extraction and processing activities in the lake, such as fish weirs, basketry, stone tools, and wood or bone implements. This part of the study area now contains large volumes of fill including sawdust, regrade spoils, household refuse, and demolition debris, and has been affected by subsequent urban development. It is estimated that fill in the area containing the Valley/Mercer Blocks is 25 feet thick (Durio and Bard 2008:4-5). Historic-period debris items are expected to be contained within fill and other deposits previously impacted by construction and earthmoving activities. Such materials would lack aspects of integrity (e.g., association and location) and would not likely be eligible for the NRHP (NRHP 1991).

3.1.2 Significant Impacts

Because the study area is considered to have a low potential to contain intact archaeological deposits, no significant impacts to archaeological sites are anticipated. No pre-contact archaeological sites have been identified within the study area. One historic-period archaeological site (45KI502) has been recorded within the study area and was previously impacted by sewer line and trail construction. Further development is not anticipated to generate additional impacts to this site.

Impacts Common to All Alternatives

The potential for the South Lake Union Height and Density EIS study area to contain archaeological sites is generally considered to be low. This is due primarily to the long history of disturbance including construction and demolition of buildings, transportation developments, major earthmoving projects (i.e. Denny Regrade), and installation of buried utilities. While the area could have potentially been the location of repeated or regular pre-contact and early historic-period activities, extensive construction and landform modifications since the 1880s have most likely destroyed the integrity of any archaeological evidence of these activities that may have been present, seriously compromising their potential significance. There appears to be a low probability for intact pre-contact or historic-period archaeological deposits to be present within the study area.

Based on existing archaeological data for this region, pre-contact archaeological sites that might potentially have been present in the general vicinity prior to urbanization could have included the remains of

habitation sites, lithic scatters, fish weirs, trails, or similar features, which could represent a range of domestic, subsistence, and ceremonial activities. Site significance could potentially be related to changes in site types and use of environmental resources over time (Lewarch et al. 2002:16-17). Additionally, pre-contact sites may potentially have significance as Traditional Cultural Properties to one or more tribal and/or ethnic groups (Parker and King 1990).

The vicinity of the home of Tsetseguis may have been used by Lakes Duwamish people as a habitation site repeatedly or consistently for centuries or it may have been first occupied in the nineteenth century. However, any physical evidence of this occupation is not likely to have been preserved due to its location in the Denny Regrade area and the vicinity of the present-day Broad Street and Mercer Street roadways, where road construction has disturbed soils from 6 to 30 feet or more below surface (Durio and Bard 2008:Exhibit 4-1) . The trail connecting Lake Union and Belltown (Thrush and Thompson 2007; USSG 1856) most likely passed through the southwestern portion of the study area, but any physical evidence of this route also would have been removed by urban development.

Historic uses of the study area have included logging, transportation, and domestic, industrial, and commercial activities. These activities could potentially have resulted in deposition of archaeological materials; such deposits could arguably be significant if they retained depositional integrity and could result in data that would inform research questions regarding ethnicity, domestic behavior, or other facets of historical life relevant to the social, economic, or cultural development of Seattle (Weaver 1989). Frequencies of materials found at domestic artifact scatters may provide economic data relevant to larger historical trends, and potentially may be suggestive of relative economic status and possibly ethnicity. Structures may provide data on occupational specialization, construction styles, and agricultural/subsistence practices. Pre-structural remains could suggest early settlers' domestic, social, and commercial activities (Weaver 1989). However, such activities are unlikely to leave a distinctive archaeological signature that would be recognizable following major construction excavation and building episodes within the current study area over more than a century of urban development. Physical evidence of the residences of W. P. Smith and Thomas Mercer is not expected to persist due to the effects of earthmoving and construction activities in these locations.

Alternative 1

Under Alternative 1, construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area. Any as-yet unknown potentially NRHP-eligible archaeological sites, if discovered in construction, would be subject to mitigation.

Alternative 2

Although the proposed changes to building heights and densities are different under Alternative 2, their potential impacts to cultural resources are the same as for Alternative 1. Construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

Alternative 3

Under Alternative 3, although the specifics of height and density changes are different, potential impacts to cultural resources are expected to be the same as for Alternatives 1 and 2. Construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

Alternative 4 (No Action)

Because no action is proposed under Alternative 4, no impacts to cultural resources would be generated. Continued development of South Lake Union within current zoning regulations is not anticipated to affect any recorded archaeological sites. As for Alternatives 1, 2, and 3, construction excavations that reach buried native intact terminal Pleistocene or Holocene deposits may have the potential to disturb archaeological sites. However, the contact between near-surface fill deposits and underlying natural deposits has been previously disturbed by prior construction in most of the study area.

3.1.3 Mitigation Measures

Should any potentially significant archaeological sites be encountered in implementation of the proposal and it is not possible to avoid them, impacts would be generated. These impacts could potentially be minimized through development and implementation of mitigation

measures appropriate to the nature and extent of discovered sites. Mitigation measures could potentially include archaeological monitoring, testing, or data recovery excavations; development of interpretive signs, markers, or exhibits; and/or minimization or avoidance of further impacts through redesign.

3.1.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to cultural resources are anticipated to be generated by the proposal. One historic-period archaeological site (45KI502) has previously been recorded in the study area. Its integrity has been affected by prior construction activities and it has been recommended not eligible for the NRHP. As a result, further development in the site area generated by the current proposal would not cause significant unavoidable adverse impacts.

Should any potentially significant archaeological sites be discovered in construction and it is not possible to avoid them, significant unavoidable adverse impacts would be generated. These impacts could potentially be minimized through development and implementation of mitigation measures appropriate to the nature and extent of discovered sites.

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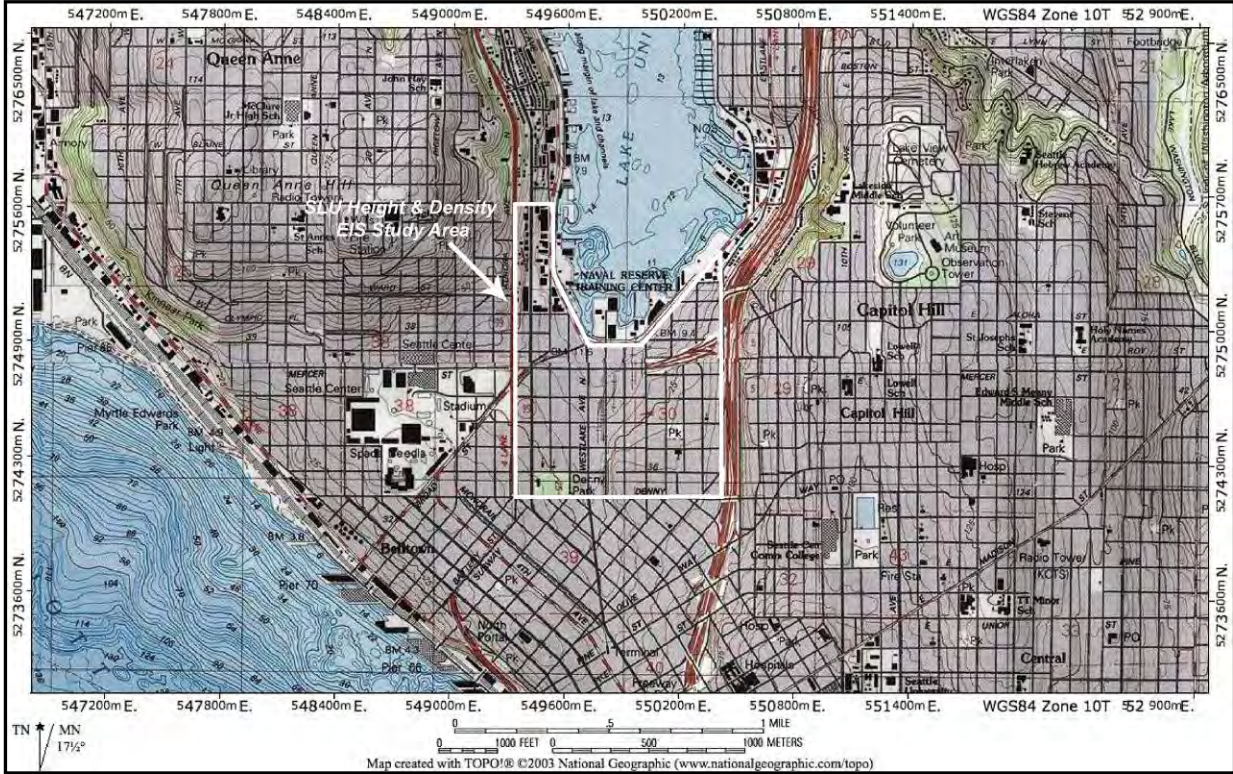


Figure 3.1-1. Portion of Seattle South, WA (USGS 1983) topographic quadrangle showing the boundaries of the study area (white outline).

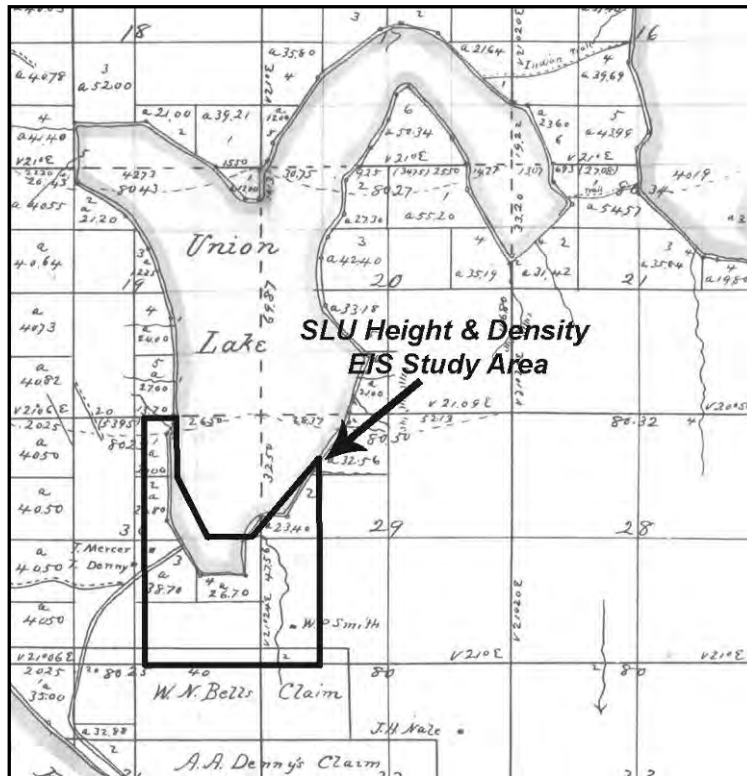


Figure 3.1-2. Portion of GLO map (USSG 1856) showing the study area. The road from the south end of Lake Union towards Elliott Bay is in the approximate alignment of present-day Broad Street. It joined an Indian trail connecting Elliott Bay and Lake Union. The residence of "D. Denny" was located just west of the study area. A small stream is shown in the eastern portion of the study area near present-day Fairview Avenue. The residence of "W. P. Smith" is mapped near the intersection of Minor and Harrison, and the residence of and "T. Mercer" is present north of Broad Street between Dexter and Aurora.

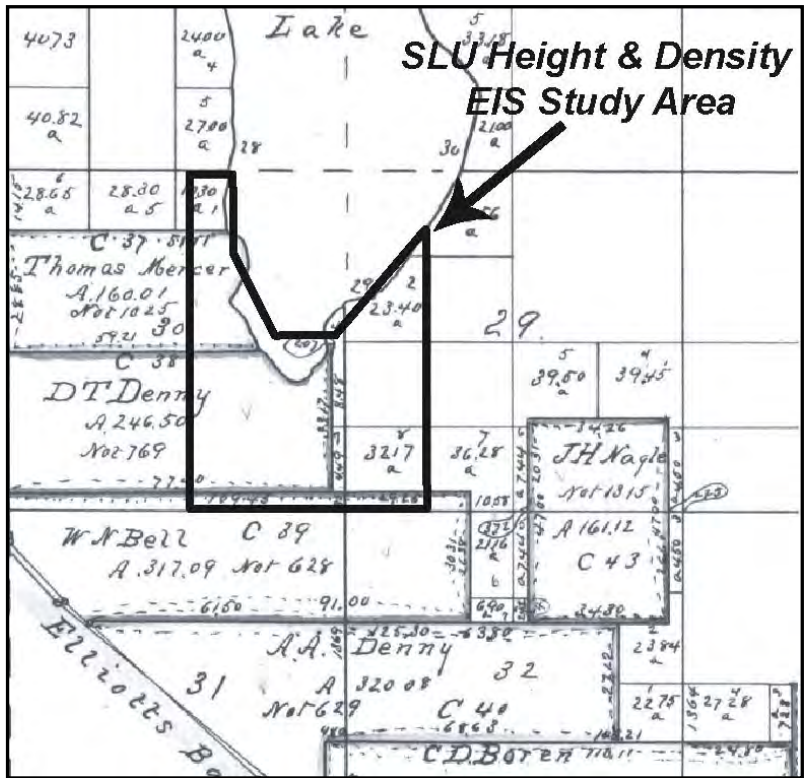


Figure 3.1-3. Portion of GLO map (USSG 1863) showing DLCs in the study area and vicinity.

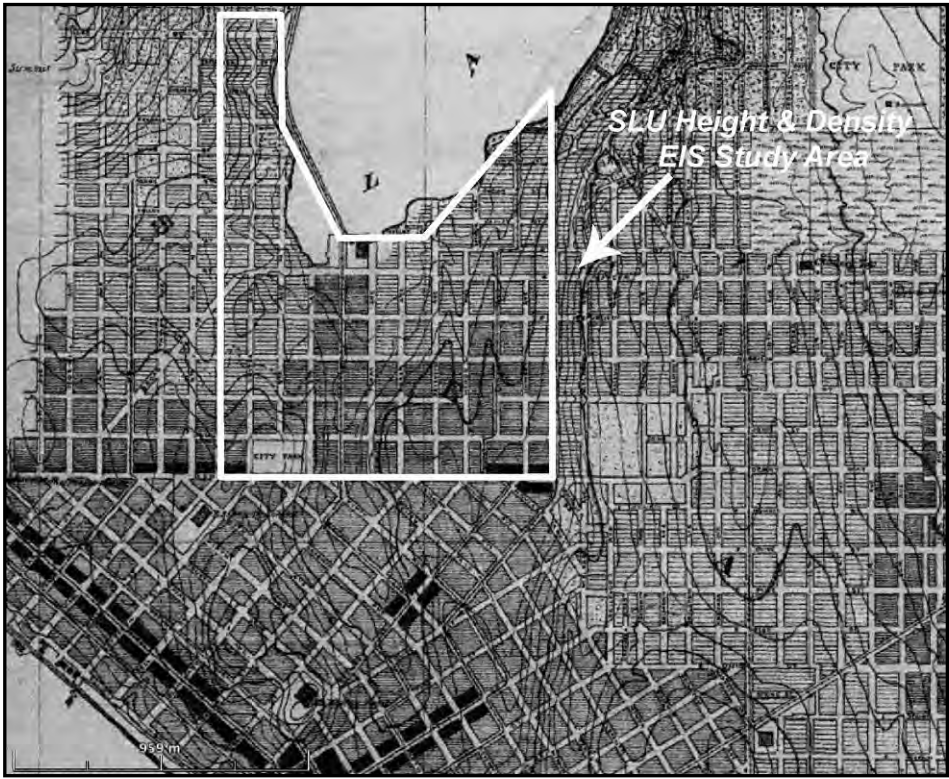


Figure 3.1-4. Portion of coast survey chart (Fox 2009; USC&GS 1899) marked with the study area.



Figure 3.1-5. Portion of historical land classification map (USGS 1897) marked with the study area.

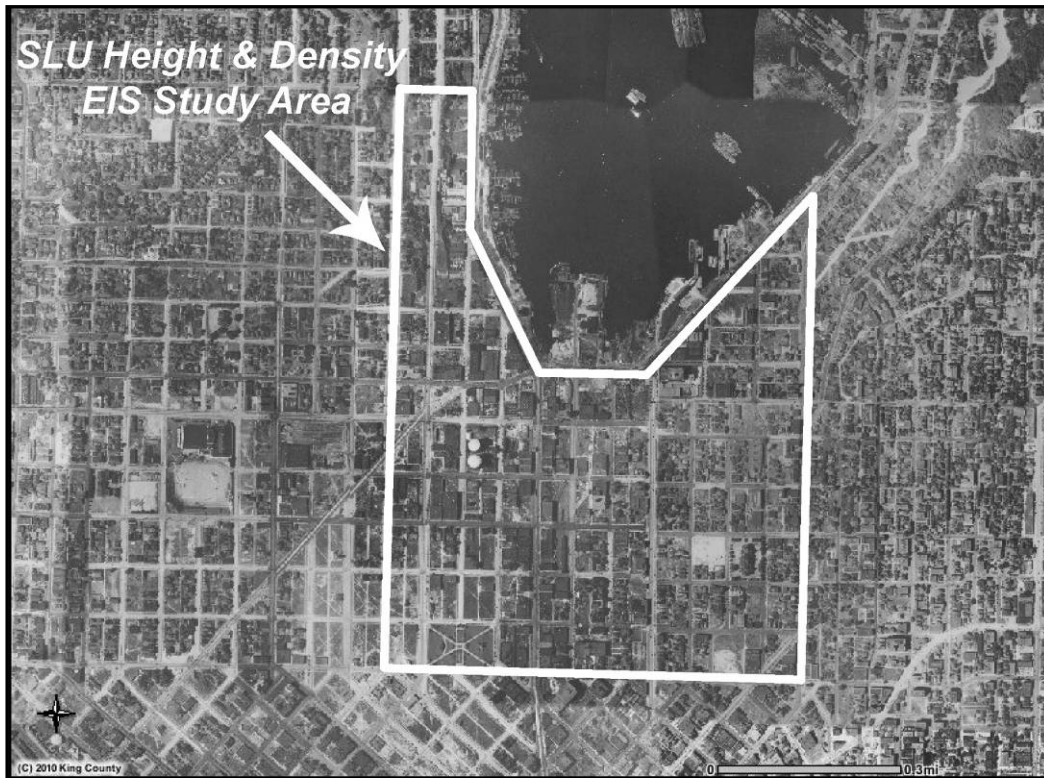


Figure 3.1-6. Aerial imagery from 1936 (King County 2010) marked with the study area. Urban development characterized the area and few lots remained vacant.



Figure 3.1-7. Aerial imagery from 2007 (King County 2010) marked with the study area.



Figure 3.1-8. Typical conditions in the South Lake Union Height and Density EIS study area. Photograph views north from intersection of 9th Avenue and Harrison Street.

Table 3.1-1. Cultural resources assessments previously conducted within an approximately 1-mile radius of the study area (WA DAHP 2010a).

Author	Date	Title	Results and Recommendations
Kelly	1987	Cultural Resources Survey for the U.S. Sprint Fiber Optic Cable Project Seattle, Washington to Spokane, Washington	Found four historic sites and one archaeological site in proposed cable route. Recommended additional historical research to assess potential impacts to one site. Recommended monitoring at select locations along proposed route. Did not identify any cultural resources in vicinity of current study area.
Nelson, et al.	1996	Report on the Cultural Resources Inventory Completed for the Proposed WorldCom Seattle to Salt Lake City Fiber Optic Line, Part 4, Washington	Identified six historic sites and 19 historic-period archaeological sites in proposed cable route. Recommended confining construction to previously disturbed sediments or routing cable around sites potentially eligible for NRHP to avoid effects. Recommended monitoring in vicinity of recorded sites. No cultural resources identified in vicinity of current study area.
Forsman, et al.	1997	Denny Way/Lake Union Combined Sewer Overflow Control Project Seattle, King County Cultural Resources Assessment	Identified areas of high probability for archaeological resources and assessed potential project impacts to archaeological sites. No archaeological sites were identified. Within the current study area, the Lake Union shoreline and a former ravine have higher potential to contain archaeological sites. Recommended archaeological monitoring during construction excavations in the current study area between Dexter Avenue and Fairview Avenue.
Courtois, et al.	1998	Sound Transit Central Link Light Rail Draft Environmental Impact Statement: Historic and Archaeological Technical Report	Assessed potential impacts to cultural resources for light rail route, station, and maintenance alternatives. No archaeological sites identified near current Project, but Portage Bay shorelines identified as high-sensitivity areas for archaeology. Recommended review of preferred alternative plans, when available, to identify locations for additional subsurface testing and/or monitoring.

Author	Date	Title	Results and Recommendations
Forsman, et al.	1998	Wall Street Project Cultural Resource Overview, Seattle	Provided archaeological, historical, and ethnographic overview of proposed construction location. Archaeological testing was not possible due to complete coverage by pavement. Recommended archaeological monitoring of construction due to high probability for archaeological sites to be present in project location.
Larson and Lewarch	1998	Letter to Doug Hotchkiss Re: A burial site within a construction job site for the World Trade Center complex on Alaskan Way between Bell and Lenora Streets	Described discovery of an archaeological site during construction. Recorded site (45KI456) and obtained archaeological excavation recovery permit from WA DAHP for testing to evaluate site significance. Recommended archaeological monitoring of further construction excavations in proximity to the discovery.
Moore, et al.	1998	Cultural Resources Survey and Assessment of Naval Reserve Readiness Center, Seattle	Evaluated potential significance of Naval Reserve Readiness Center (NRRC) at 860 Terry Avenue. Described history of land use in NRRC Seattle property, design and construction of buildings, and purpose and use of NRRC Seattle facility. Recommended property as eligible for the NRHP. No further investigations recommended.
Courtois, et al.	1999	Sound Transit Central Link Light Rail Final Environmental Impact Statement Final Technical Report: Historic and Prehistoric Archaeological Sites, Historic Resources, Native American Traditional Cultural Properties, Paleontological Sites	Identified potential impacts to cultural resources including historic buildings and archaeological sites. Identified high probability for archaeology on margins of Portage Bay southwest of current Project, buried beneath fill. Recommended archaeological monitoring of construction excavations.

Author	Date	Title	Results and Recommendations
Lewarch, et al.	1999	Denny/Lake Union Combined Sewer Overflow Control Project Seattle, King County Archaeological Resources Treatment and Monitoring Plans	Proposed treatment and monitoring plans to guide mitigation (i.e., archaeological evaluation and recovery) in the event that archaeological sites were encountered by the project. Included list of known NRHP-eligible archaeological sites and expected adverse effects; a proposed research design; and recommended methods of treatment and data recovery for kinds of archaeological resources expected in project area.
Liddle	1999	Letter to Hamilton Hazelhurst Regarding Results of Cultural Resource Monitoring for the World Trade Center North	Described methods and results of archaeological monitoring of construction excavations on property near a recorded site (45KI456). Identified historic-period archaeological materials (e.g., bottle glass, ceramics, metal items) in a layer of fill. Recorded the identified historic debris as archaeological site 45KI482. No further investigations recommended.
Forsman, et al.	2000	Proposed Aspen Murray Hotel/Condominium Project Archaeological and Traditional Cultural Places Overview, Seattle, King County, Washington	Provided archaeological, historical, and ethnographic overview of proposed construction location. Archaeological testing was not possible due to coverage by structures. Project area considered to have a low probability for intact pre-contact archaeological sites. Recommended archaeological monitoring of construction excavations due to moderate probability for intact historic-period archaeological sites to be present in project location.
Juell, et al.	2000	Cultural Resources Inventory of the Proposed Washington Light Lanes Project, Route 2 Backbone: Downtown Seattle to Interstate-5 (MP 164), Interstate-5 Seattle to Blaine (MP 164 to MP 276), and Blaine to the Canadian Border	Background research did not locate any previously recorded cultural resources in proposed cable route. Survey did not identify any historic or archaeological sites in vicinity of current Project. Because route avoided cultural resources and construction would occur predominantly in the interstate and previously disturbed urban areas, no further investigations recommended.

Author	Date	Title	Results and Recommendations
Dugas and Robbins	2001	Letter to Wade Metz Regarding Cultural Resource Monitoring for the Bellora Condominium Project, Seattle	Described results of archaeological monitoring of construction excavations on property near a recorded archaeological site (45KI456). Shell midden and fire-modified rock identified in exposure adjacent to Bellora project. No potentially significant cultural resources recommended. No further investigations recommended.
Nelson	2001	Cultural Resource Investigations for the West Lake Union Improvement Project, Seattle, Washington	Evaluated potential effects of project to cultural resources. Identified two ethnographic place names and historic sites (i.e. structures) on west shore of Lake Union. Conducted aboveground survey and recorded a segment of Northern Pacific railroad as historic-period archaeological site 45KI502; recommended site not eligible for NRHP. Recommended archaeological monitoring of construction excavations in the current study area (between Highland and Aloha) if native soils would be impacted.
Lewarch, et al.	2002	Archaeological Evaluation and Construction Excavation Monitoring At The World Trade Center, Baba'k ^w ob Site (45KI456), Seattle	Described results of archaeological monitoring of construction excavations and archaeological test excavations to evaluate archaeological site (45KI456) discovered during construction. Due to compromised depositional integrity and absence of temporally diagnostic artifacts, site recommended not eligible for NRHP.
Rooke	2002	Letter report describing the procedures and results of a cultural resources survey of Cingular Wireless tower site WA-482 (Cowden Building)	Conducted cultural resources survey for proposed cell tower atop a building 1 mile east-northeast of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.
Rooke	2002	Letter Report: Procedures and results of a cultural resources survey of Cingular Wireless Project Site WA-799 (Nettleton)	Conducted cultural resources survey for proposed cell tower atop a building 0.7 miles south of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.

Author	Date	Title	Results and Recommendations
Rooke	2002	Letter Report: Procedures and results of a cultural resources survey of Cingular Wireless project site WA-795 (Gatewood)	Conducted cultural resources survey for proposed cell tower atop a building 0.6 miles southwest of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.
Rooke	2002	Letter Report: Procedures and results of a cultural resources survey of Cingular Wireless project site WA-792-06 (Broadway Associates)	Conducted cultural resources survey for proposed cell tower atop a building 0.5 miles southeast of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.
Rooke	2002	Letter to Jay Grenfell Regarding WA-794 (Securities Bldg)	Conducted cultural resources survey for proposed cell tower atop a building 0.5 miles south of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.
Billat	2004	Letter to Greg Griffith Regarding Request for Consultation and Concurrence Regarding a Proposed Collocation of a Wireless Telecommunication Service Facility to be Located on the Roof of a Building at 904 Elliott Avenue West, in Seattle	Conducted cultural resources survey for proposed installation of wireless telecommunication facility atop a building 1 mile west of study area. No archaeological sites identified in vicinity of study area. No further investigations recommended.
Dellert and Larson	2004	Letter to Joe Claire Re: Valley Street Tunnel, South Lake Union Pipelines Phase 3/4, Denny Way/Lake Union Combined Sewer Overflow Project Archaeological Resources Construction Monitoring	Described results of archaeological monitoring of construction excavations. No archaeological sites identified during monitoring. No further investigations recommended.

Author	Date	Title	Results and Recommendations
Miller and Blukis Onat	2004	Winds, Waterways, and Weirs: Ethnographic Study of the Central Link Light Rail Corridor	Reviewed historical and ethnographic reports and archival materials, and conducted interviews to provide ethnographic background and cultural landscape model for area that includes the study area. Included information about Lakes Duwamish use of Lake Union, particularly Portage Bay. Documented one TCP on the Duwamish River.
Shong and Miss	2004	Results of Cultural Resources Monitoring for the City of Seattle West Lake Union Trail Improvement Project King County, Washington	Described results of archaeological monitoring of construction excavations. Historic-period and/or recent debris items observed. No archaeological sites identified. No further investigations recommended.
Gillis, et al.	2005	SR 99 Alaskan Way Viaduct & Seawall Replacement Project, Archaeological Monitoring and Review of Geotechnical Borings from South Spokane Street to Battery Street Tunnel	Described results of archaeological monitoring of geotechnical testing. No archaeological sites identified, but eight locations with possible pre-contact archaeological materials and six locations with possible historic-period archaeological materials were observed. Recommended further monitoring if geotechnical testing anticipated to intersect possible archaeological deposits.
Gillis, et al.	2005	Archaeological Resources Monitoring and Review of Geotechnical Borings from Harrison Street to Valley Street, SR 99: Alaskan Way Viaduct & Seawall Replacement Project	Described results of archaeological monitoring of geotechnical testing. No archaeological sites identified. Location considered to have low probability for intact archaeological sites due to prior grading activities. No further investigations recommended.
Gillis, et al.	2005	South Lake Union Park Development Cultural Resources and Traditional Cultural Places Overview	Provided cultural resources overview, identified potentially significant historic sites, and updated literature review prepared for an existing EIS. Identified former lakeshore and adjacent marsh covered by fill as high-probability area for pre-contact archaeological sites. Archaeological monitoring recommended in the event that construction required excavation in native soils.

Author	Date	Title	Results and Recommendations
Lewarch, et al.	2005	Seattle Monorail Project Green Line, Seattle, King County, Washington Archaeological Resources Treatment and Monitoring Plans	Provided cultural resources overview and proposed treatment and monitoring plans to guide mitigation (i.e., archaeological evaluation and recovery) in the event that archaeological sites were encountered by the project. Included a proposed research design and recommended methods of treatment and data recovery for kinds of archaeological resources expected in project area No archaeological sites identified in the vicinity of the current study area.
Juell	2006	Archaeological Site Assessment of Sound Transit's Sounder: Everett to Seattle Commuter Rail System, King and Snohomish Counties	Conducted archaeological assessment of proposed rail improvements. No archaeological sites identified in vicinity of current study area. Archaeological testing and monitoring recommended in high-probability areas for archaeological sites. No high-probability areas identified in vicinity of study area.
NWAA	2006	Geoarchaeological Examination of Solid-Core Geoprobes: Alaskan Way Viaduct and Seawall Replacement Project	Described results of analysis of geoprobe cores. Goal of analysis was to identify and characterize fill deposits along the Seattle waterfront, and locate contact between fill material and underlying intact native soils. No archaeological sites identified.
Flathman, et al.	2007	Archaeological and Historical Resources Survey of 635 Elliott Avenue West, Seattle	Provided cultural resources overview, conducted archaeological reconnaissance, and evaluated one historic building for potential listing as a Seattle City Landmark. Building determined not eligible for SCL listing. No archaeological sites identified. Recommended archaeological monitoring of construction excavations anticipated to intersect native soils due to proximity of Elliott Bay shoreline and previously recorded archaeological sites (45KI456 and 45KI482).
Gilpin	2007	Draft: Archaeological Monitoring at the South Lake Union Streetcar Maintenance Facility, Seattle	Described the results of archaeological monitoring of construction activities on property at intersection of Harrison Street and Fairview Avenue. No archaeological sites identified. No further investigations recommended.

Author	Date	Title	Results and Recommendations
Schumacher	2007	Archaeological Monitoring for 333 Elliott Avenue W, Seattle	Described results of archaeological monitoring of construction excavations. No archaeological sites identified. No further investigations recommended.
Bundy and Walker Gray	2008	Cultural Resources Assessment, Alaskan Way Viaduct & Seawall Replacement Program, Battery Street Tunnel Fire and Safety Upgrades Project	Reviewed historical and archaeological information and monitored geotechnical testing to evaluate potential impacts to archaeological sites. No archaeological sites identified. Project expected to be contained within limits of deposits disturbed by regrading and filling. No further investigations recommended.
Durio and Bard	2008	Mercer Corridor Improvements Environmental Assessment Historic, Cultural, and Archaeological Resources Discipline Report	Provided cultural resources overview and conducted archaeological and historic resource survey for a portion of current study area, between Dexter Avenue and Fairview Avenue from Republican Street north to Valley Street. Archaeological testing was conducted within the current study area and did not identify any archaeological sites. Project considered to have low potential to affect pre-contact archaeological sites because construction not anticipated to intersect undisturbed native soils. Archaeological monitoring of geotechnical testing in fill zones recommended.
Gillespie, et al.	2008	Historical Resources Assessment for the Queen Anne Post Office at 415 1st Avenue North, Seattle	Assessed project's potential effects to historic and archaeological sites. Inventoried one historic site and recommended it not eligible for NRHP. Location considered to have low potential for archaeological sites due to past landscape alterations. No archaeological sites identified. No further investigations recommended.
Hamilton, et al.	2008	Cultural Resources Monitoring of Mass Excavation at 635 Elliott Avenue West	Described results of archaeological monitoring of construction excavations. No archaeological sites identified. No further investigations recommended.

Author	Date	Title	Results and Recommendations
Miss, et al.	2008	The Alaskan Way Viaduct & Seawall Replacement Project, Results of the Archaeological Core Collection Program: Phase 1	Examined drilled sonicore samples to examine subsurface stratigraphy in the project corridor, identify archaeological materials, and gain information about past land use, landscape setting, and archaeological preservation and site formation processes in the corridor. No archaeological sites identified. Continued monitoring of geotechnical testing and construction excavations recommended in all areas of the corridor except those known to contain mass deposits of historic-period or recent fill.
Witt	2008	Letter to William E. Hogg RE: Cultural Resources Review of 2500 Block of First Avenue, Seattle for the KeyBank National Real Estate Transaction and Modernization Program	Provided cultural resources overview of proposed construction site. Evaluated potential effects to archaeological and historic sites. No archaeological sites identified. No further investigations recommended.
Blukis Onat	2009	University Link Archaeological Resources Monitoring and Treatment Plan	Described archaeological monitoring methods for high-probability areas and provided protocol for actions in event of discovery of archaeological resources and human remains.
CH2M Hill	2009	Supplemental Draft EIS and Section 4(f) Evaluation, SR 520 Bridge Replacement and HOV Program, SR 520: I-5 to Medina Bridge Replacement and HOV Project Cultural Resources Discipline Report.	Identified one recorded archaeological site (45KI760), one TCP (Foster Island), and over 200 historic sites. Made NRHP eligibility recommendations and evaluated potential effects of design alternatives to archaeological sites, traditional cultural properties, and historic properties. Provided options for mitigating, minimizing, and avoiding effects.
Valentino and Rinck	2009	Assessment for the West Thomas Street Pedestrian Overpass Project, Seattle, King County, Washington	Reviewed archaeological and historical background information and monitored geotechnical testing to evaluate project's potential effects to archaeological and historic sites. No archaeological sites identified. Archaeological monitoring of select construction activities recommended.

Author	Date	Title	Results and Recommendations
Gallacci	2010	Letter to Greg Griffith RE: Wireless Proposal #SA1209 1904 3rd Avenue, Seattle (Stewart and 4th)	Assessed project's potential effects to historic sites. Inventoried one historic site and recommended it eligible for NRHP. No archaeological sites identified. No further investigations recommended.

Table 3.1-2. Archaeological sites recorded within an approximately 1-mile radius of the study area (WA DHP 2010a).

Site Number	Site Name	Site Type	Location Relative to Study Area	Evaluation Status	Potential Impacts due to Proposal	Recommended Mitigation
45KI405	--	Historic Maritime Properties, Pre Contact and Historic Components	1 mile west-southwest	Site has not been evaluated for NRHP.	None.	N/A
45KI456	Baba'k ^w ob Site	Historic Object(s), Pre Contact Camp; Pre Contact Shell Midden	0.6 miles south-southwest	Site recommended not eligible for NRHP.	None.	N/A
45KI482	World Trade Center North Historic Site	Historic Object(s), Pre Contact Burial	0.5 miles southwest	Site recommended not eligible for NRHP.	None.	N/A

Site Number	Site Name	Site Type	Location Relative to Study Area	Evaluation Status	Potential Impacts due to Proposal	Recommended Mitigation
45KI502	Northern Pacific Railroad Belt Line	Historic Railroad Properties	Within the study area along the east side of Westlake Avenue between Galer Street and Aloha Street (Cole 2000:4)	Site recommended not eligible for NRHP.	None. Prior construction has compromised this site. Construction in the site area under the current proposal not anticipated to generate additional impacts to this site.	None.
45KI737	Old Pine Street Stub Tunnel Site	Historic Commercial Properties, Historic Object(s), Historic Road, Historic Structures Not Specified	0.2 miles south	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A
45KI809	Great Northern Railroad Tunnel	Historic Railroad Properties	0.75 miles south	Determined eligible for NRHP.	None.	N/A
45KI946	--	Historic Commercial Properties, Historic Residential Structures	0.3 miles east	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A

Site Number	Site Name	Site Type	Location Relative to Study Area	Evaluation Status	Potential Impacts due to Proposal	Recommended Mitigation
45KI958	SDOT Maintenance Yard	Historic Commercial Properties, Historic Object(s), Historic Residential Structures, Pre Contact and Historic Components, Pre Contact Lithic Material	100 feet west	Site has not been evaluated for NRHP but is considered potentially eligible.	None.	N/A

Aesthetics

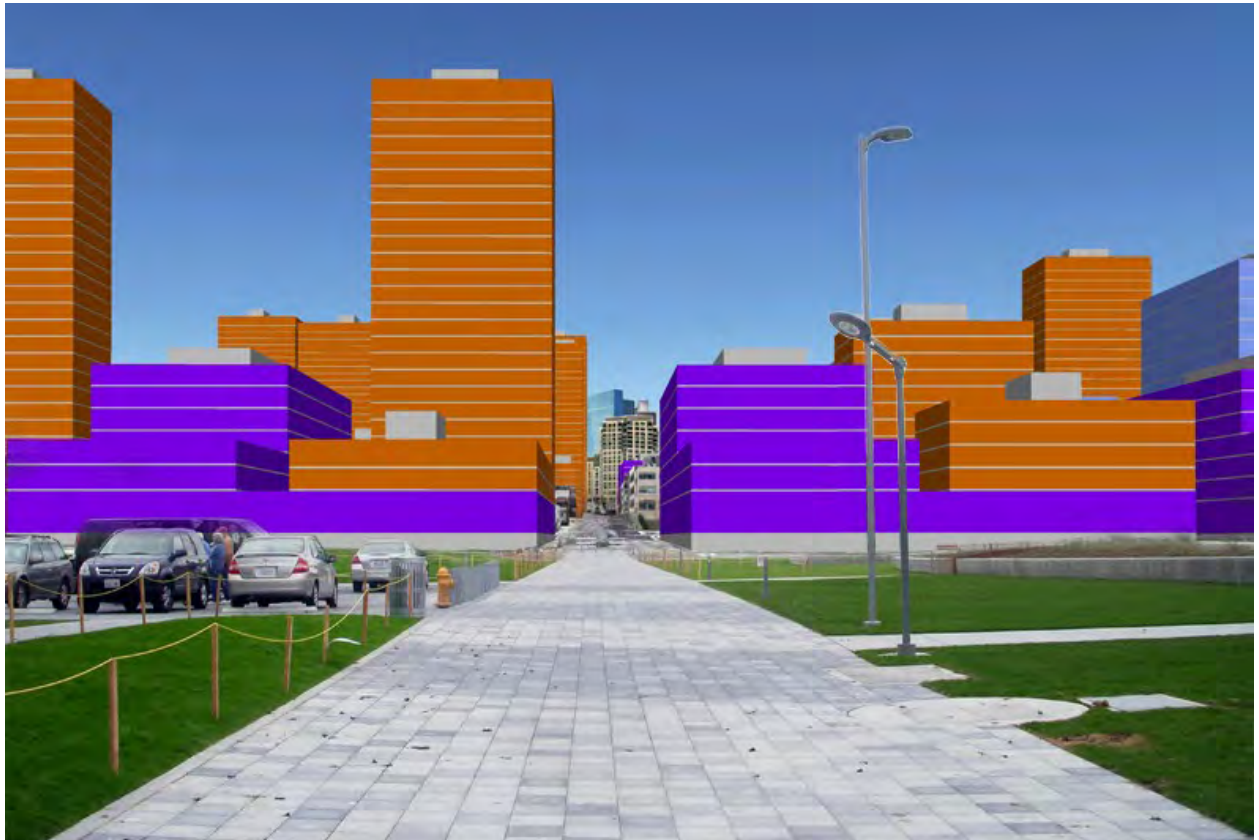
APPENDIX D AESTHETICS

Additional Viewshed Simulations Figures 1-28
Shadow Figures 29-44

Figure 1
Waterfront: South—Alternative 1



Existing



Proposed

Source: NBBJ, 2010

Figure 2
Waterfront: South—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 3
Waterfront: South—Alternative 3



Existing



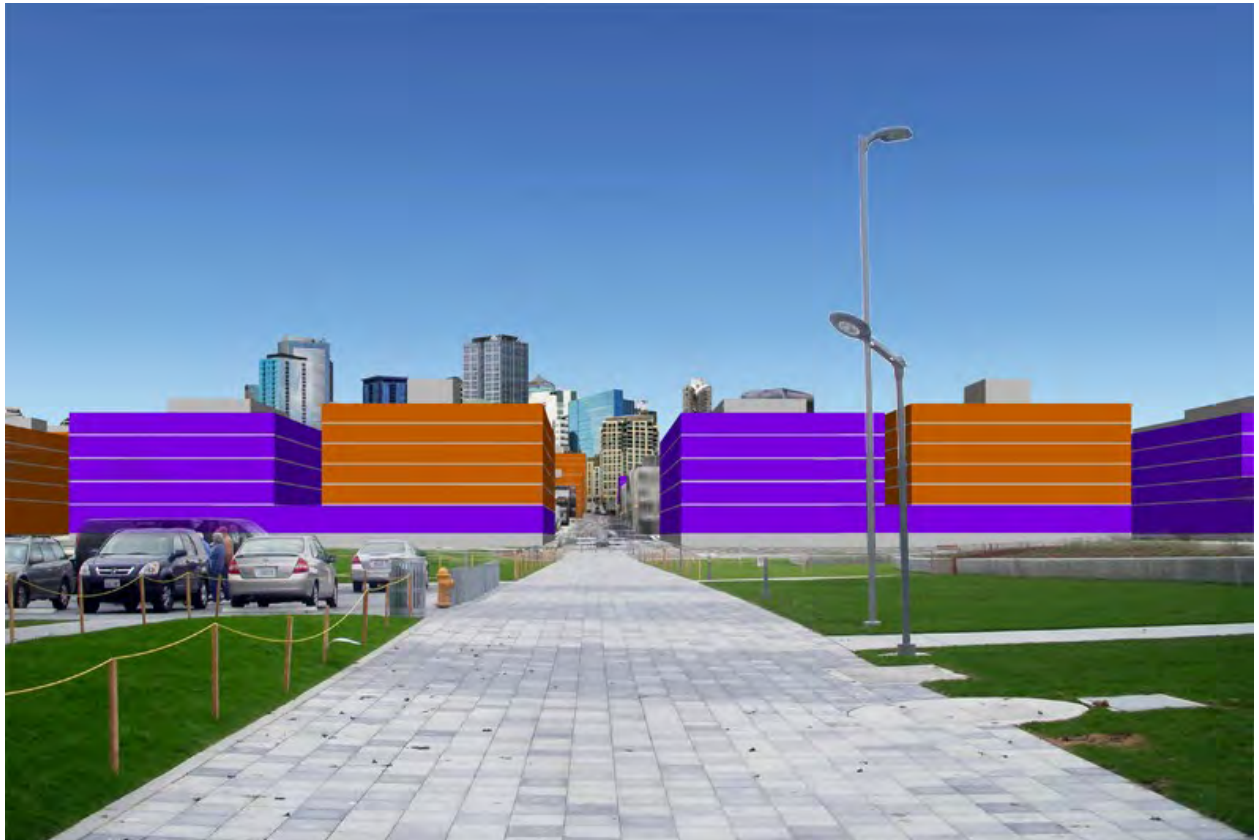
Proposed

Source: NBBJ, 2010

Figure 4
Waterfront: South—Alternative 4



Existing



Proposed

Source: NBBJ, 2010

Figure 5
Waterfront: Southeast—Alternative 1



Existing



Proposed

Source: NBBJ, 2010

Figure 6
Waterfront: Southeast—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 7
Waterfront: Southeast—Alternative 3



Existing



Proposed

Source: NBBJ, 2010

Figure 8
Waterfront: Southeast—Alternative 4



Existing



Proposed

Source: NBBJ, 2010

Figure 9
Playground—Alternative 1



Existing



Proposed

Source: NBBJ, 2010

Figure 10
Playground—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 11
Playground—Alternative 3



Existing



Proposed

Source: NBBJ, 2010

Figure 12
Playground—Alternative 4



Existing



Proposed

Source: NBBJ, 2010

Figure 13
Bellevue—Alternative 1



Existing



Proposed

Source: NBBJ, 2010

Figure 14
Bellevue—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 15
Bellevue—Alternative 3



Existing



Proposed

Source: NBBJ, 2010

Figure 16
Bellevue—Alternative 4



Existing



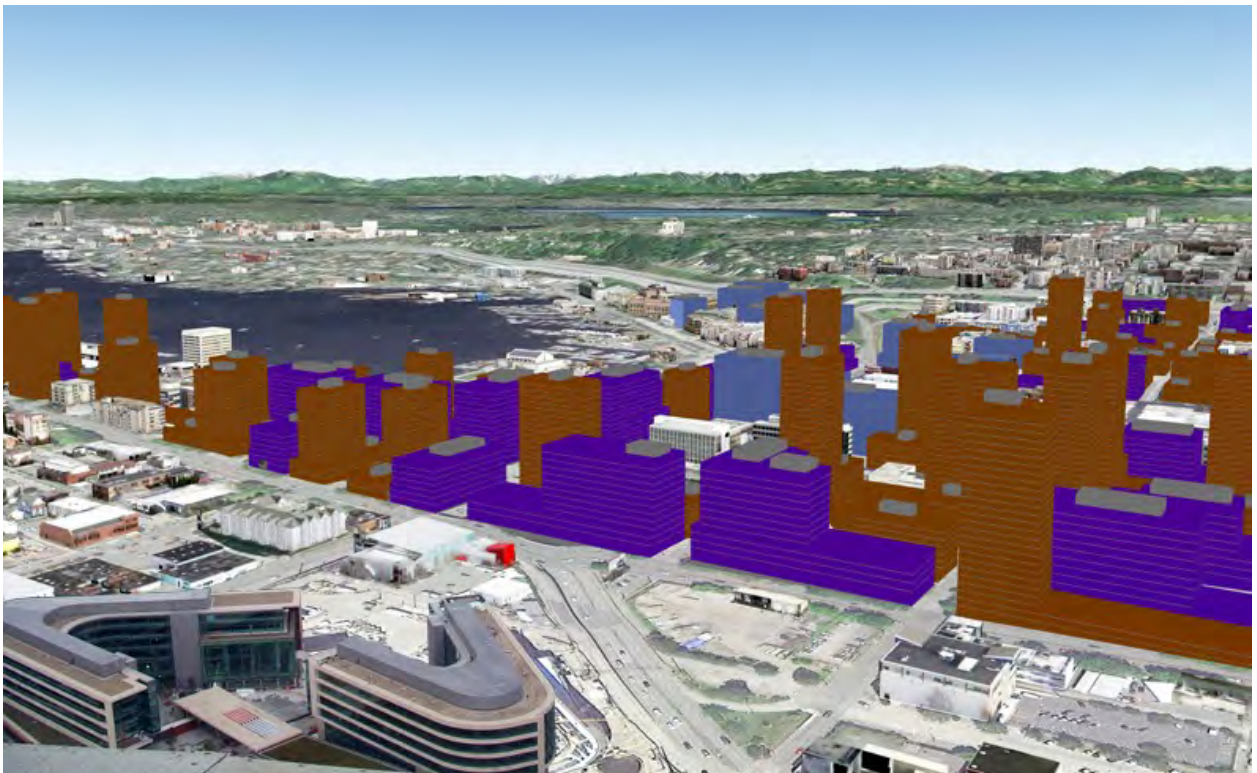
Proposed

Source: NBBJ, 2010

Figure 17
Space Needle 1—Alternative 1



Existing



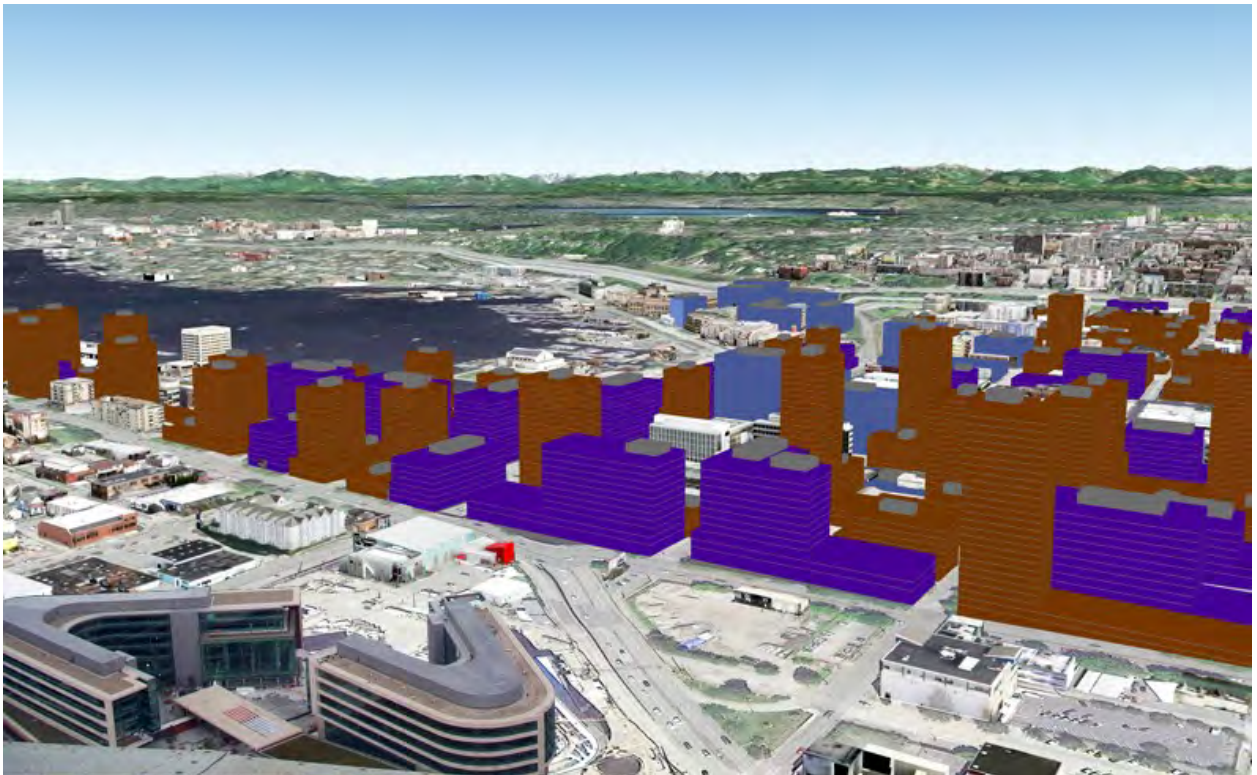
Proposed

Source: NBBJ, 2010

Figure 18
Space Needle 1—Alternative 2



Existing



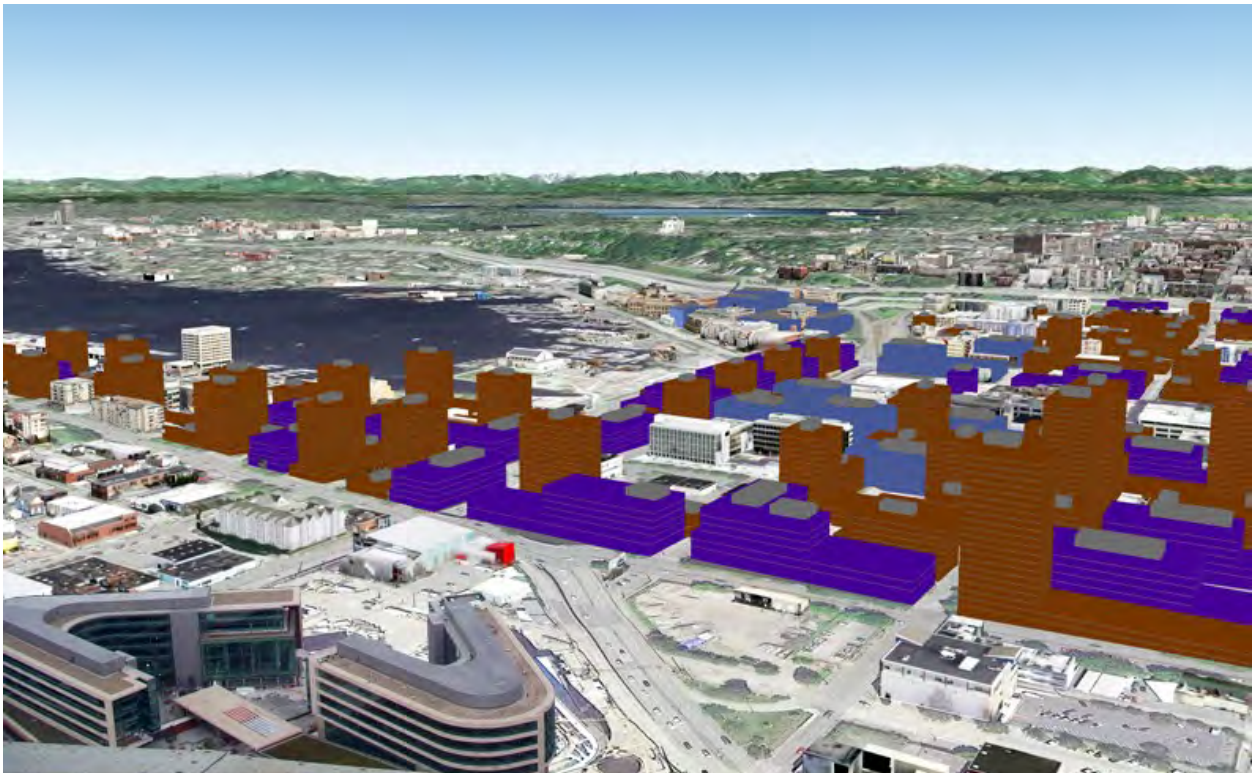
Proposed

Source: NBBJ, 2010

Figure 19
Space Needle 1—Alternative 3



Existing



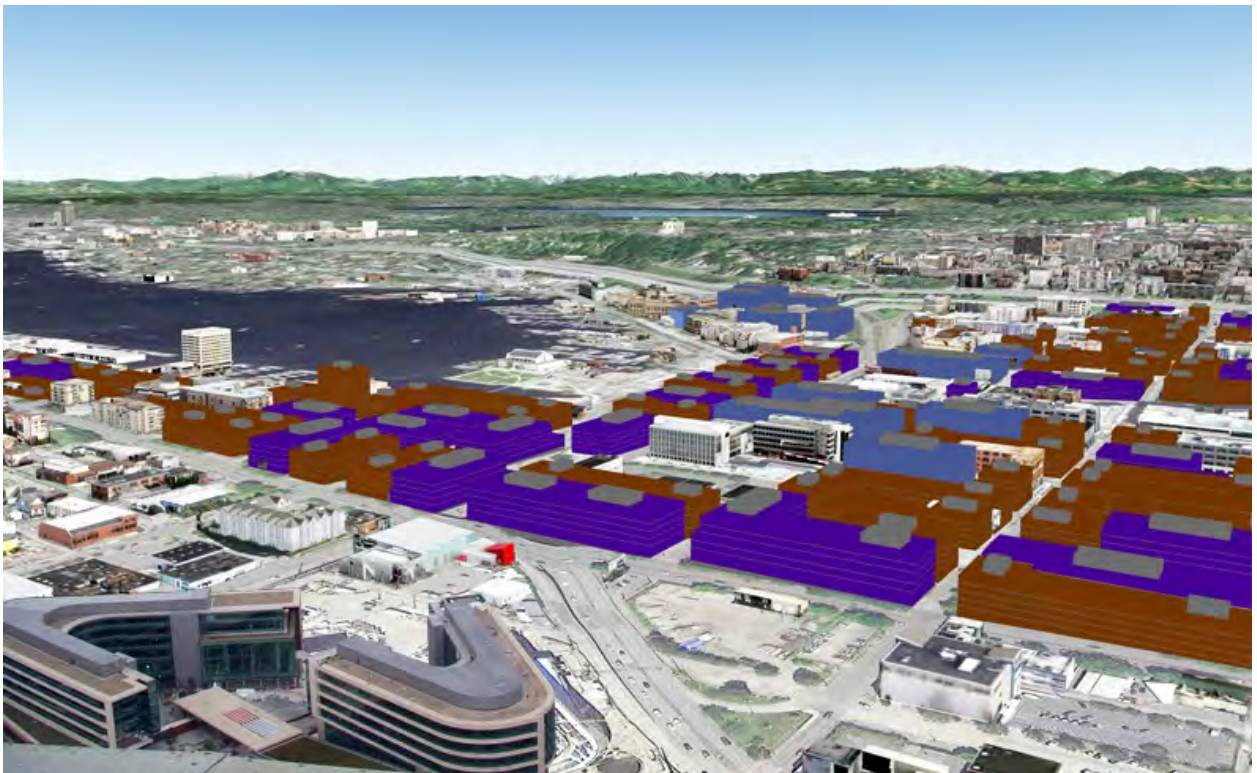
Proposed

Source: NBBJ, 2010

Figure 20
Space Needle 1—Alternative 4



Existing



Proposed

Source: NBBJ, 2010

Figure 21
Space Needle 2—Alternative 1



Existing



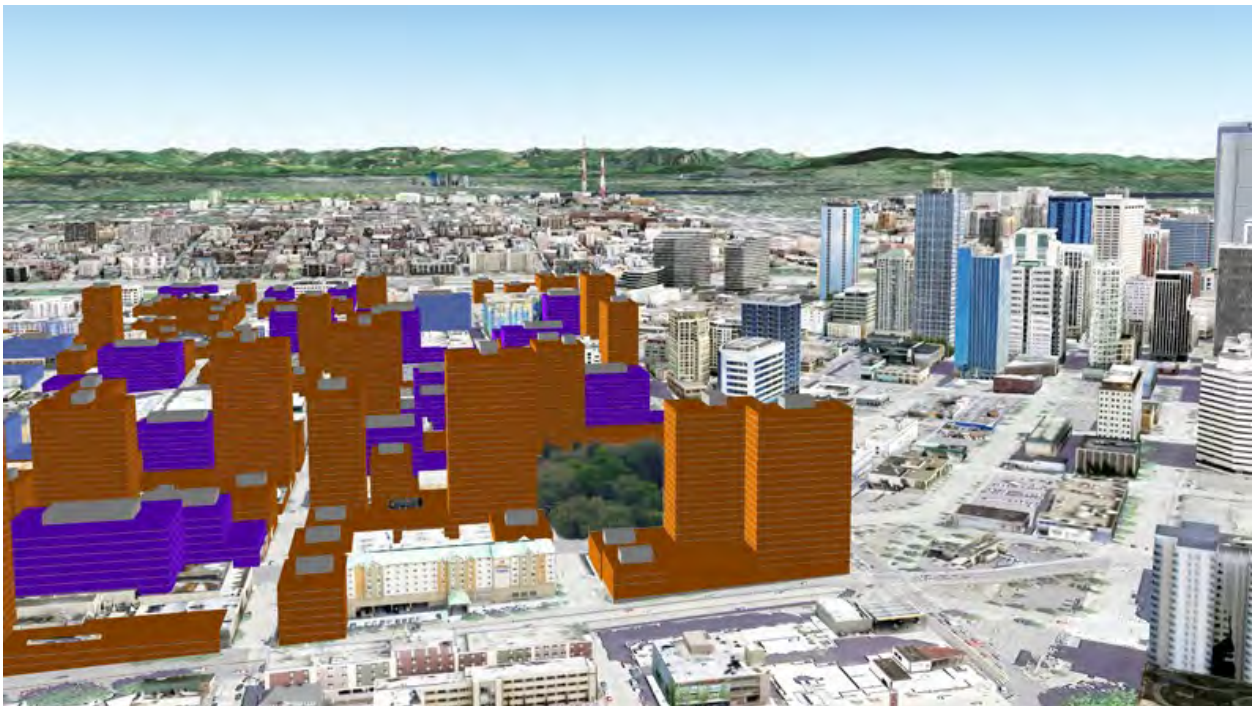
Proposed

Source: NBBJ, 2010

Figure 22
Space Needle 2—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 23
Space Needle 2—Alternative 3



Existing



Proposed

Source: NBBJ, 2010

Figure 24
Space Needle 2—Alternative 4



Existing



Proposed

Source: NBBJ, 2010

Figure 25
Thomas—Alternative 1



Existing



Proposed

Source: NBBJ, 2010

Figure 26
Thomas—Alternative 2



Existing



Proposed

Source: NBBJ, 2010

Figure 27
Thomas—Alternative 3



Existing



Proposed

Source: NBBJ, 2010

Figure 28
Thomas—Alternative 4



Existing



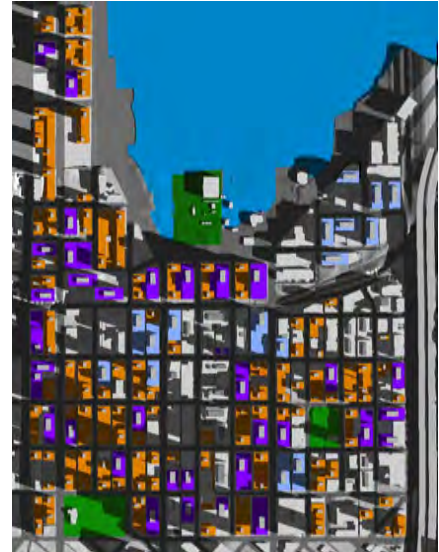
Proposed

Source: NBBJ, 2010

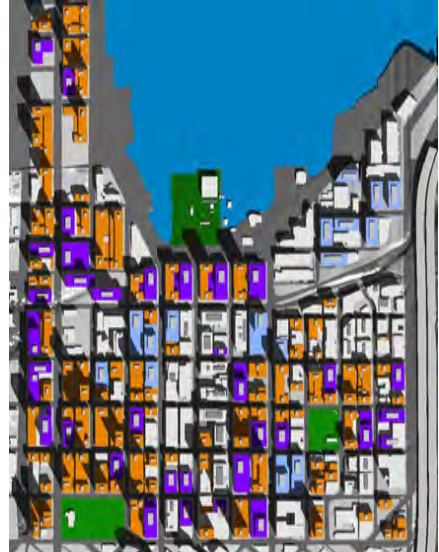
Figure 29
March 21—Alternative 1



9 AM



12 PM



3 PM



Existing

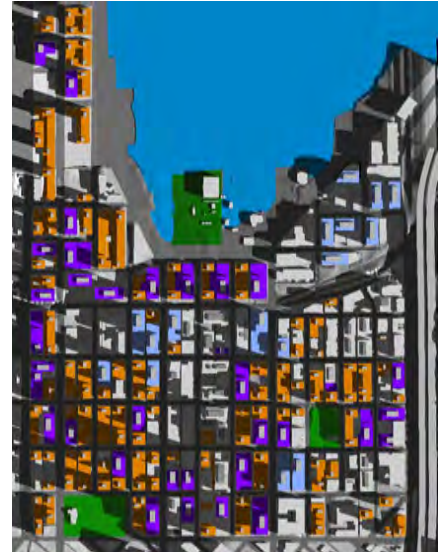
Proposed

Source: NBBJ, 2010

Figure 30
March 21—Alternative 2



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

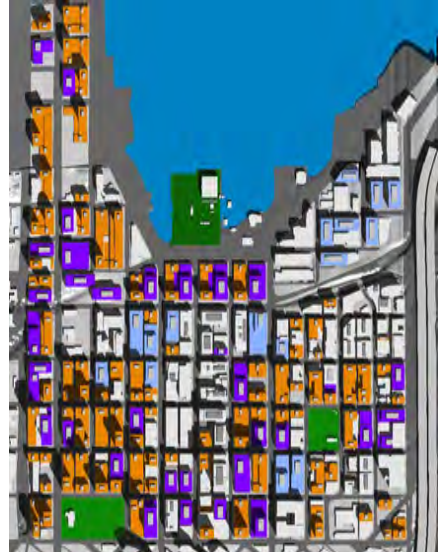
Figure 31
March 21—Alternative 3



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Figure 32
March 21—Alternative 4



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

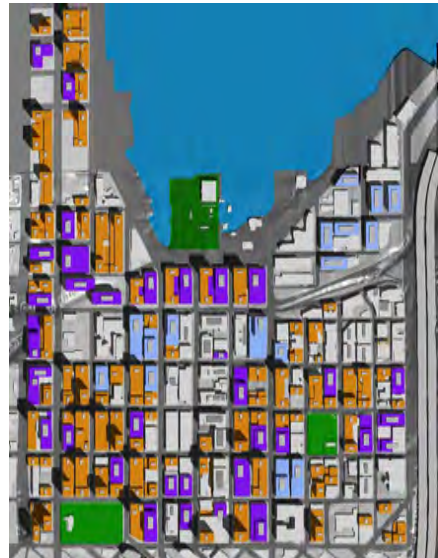
Figure 33
June 21—Alternative 1



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

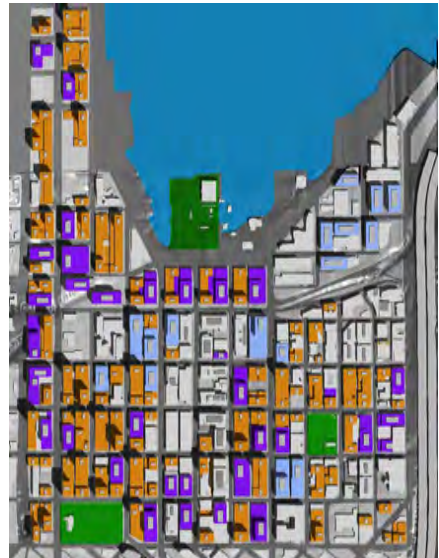
Figure 34
June 21—Alternative 2



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

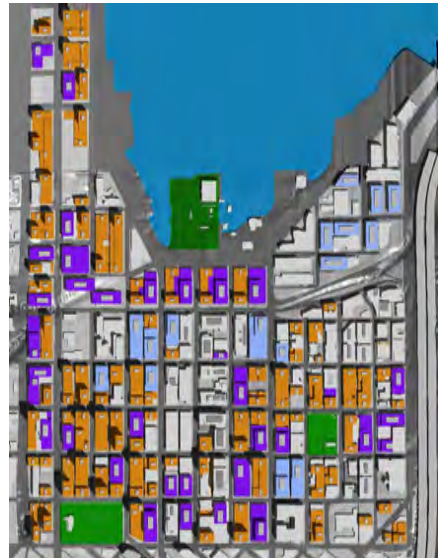
Figure 35
June 21—Alternative 3



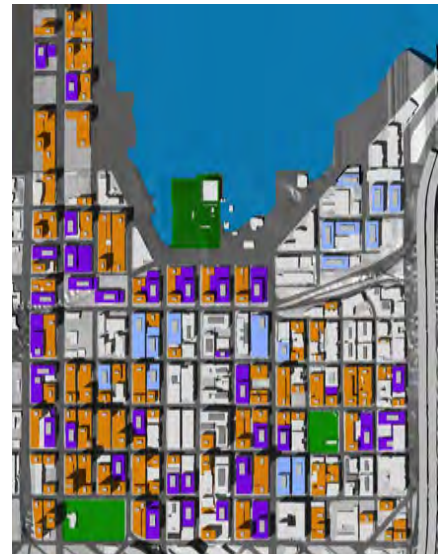
9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

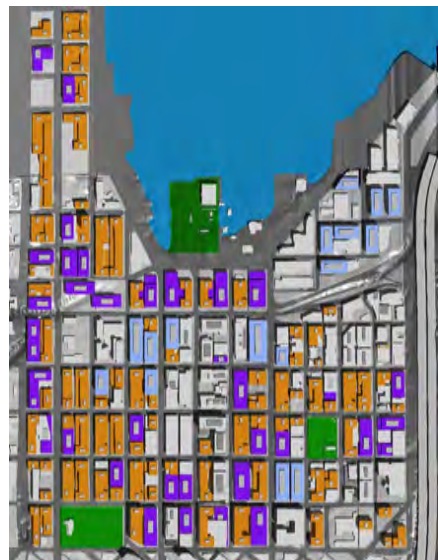
Figure 36
June 21—Alternative 4



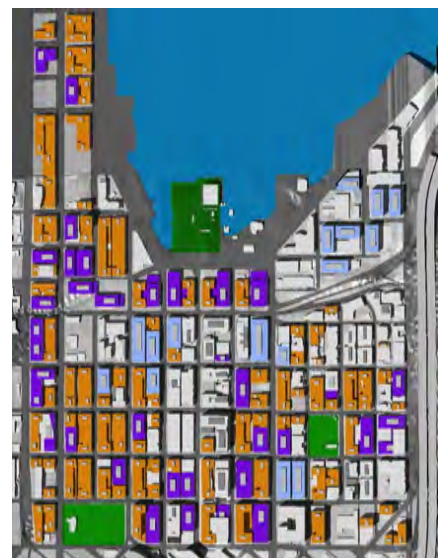
9 AM



12 PM



3 PM

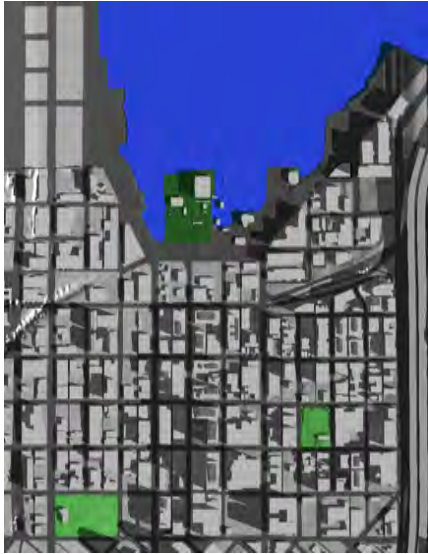


Existing

Proposed

Source: NBBJ, 2010

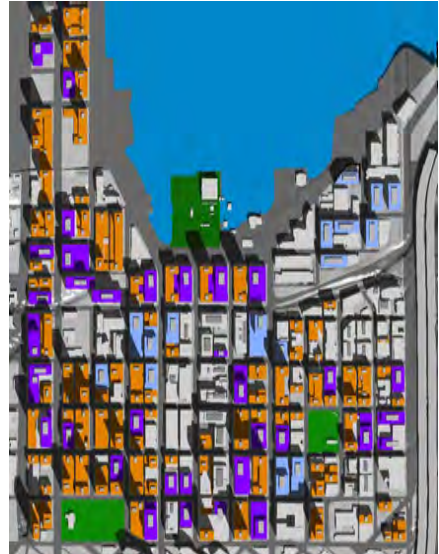
Figure 37
September 21—Alternative 1



9 AM



12 PM



3 PM

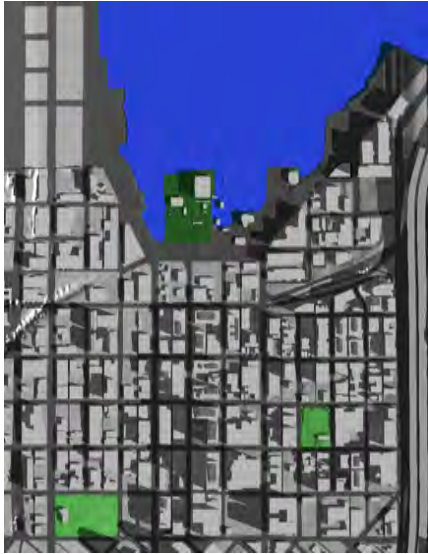


Existing

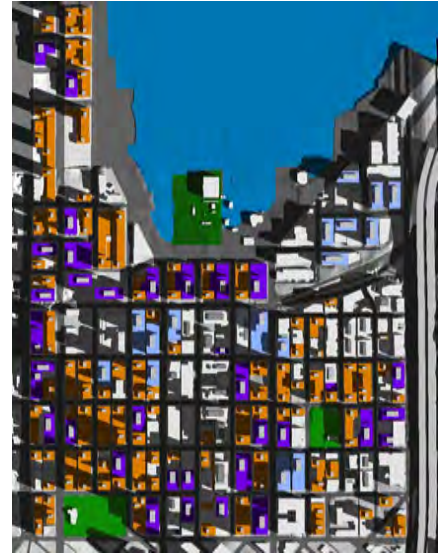
Proposed

Source: NBBJ, 2010

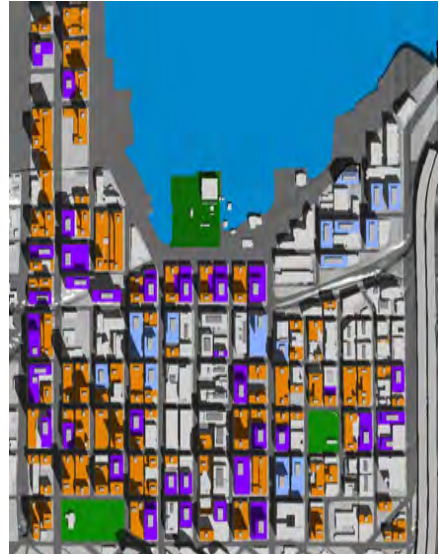
Figure 38
September 21—Alternative 2



9 AM



12 PM



3 PM

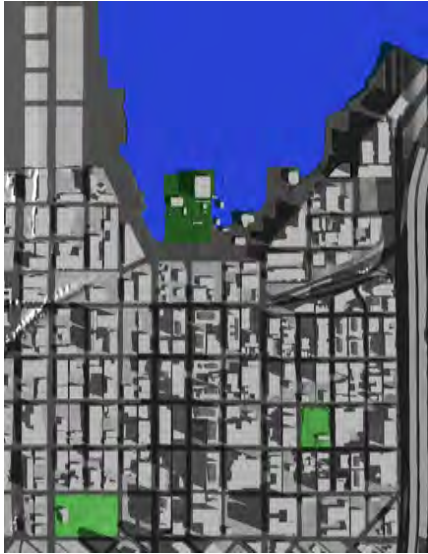


Existing

Proposed

Source: NBBJ, 2010

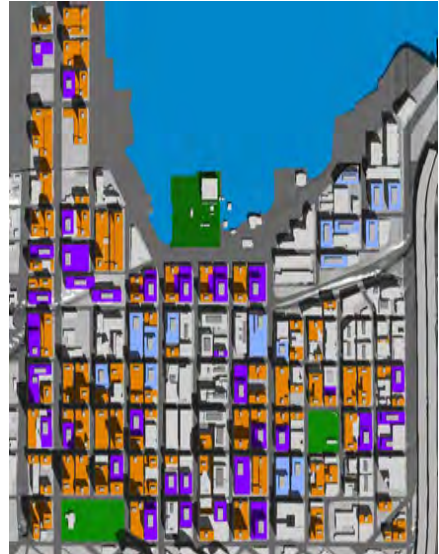
Figure 39
September 21—Alternative 3



9 AM



12 PM



3 PM

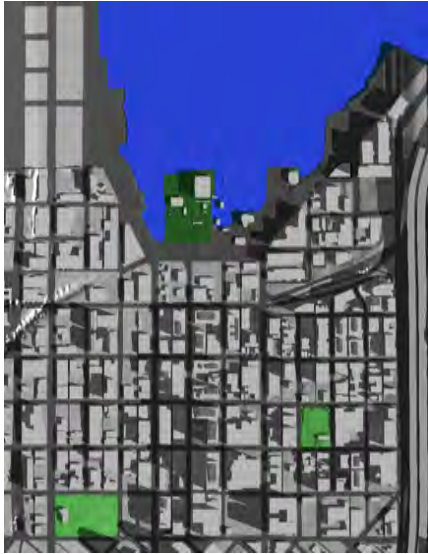


Existing

Proposed

Source: NBBJ, 2010

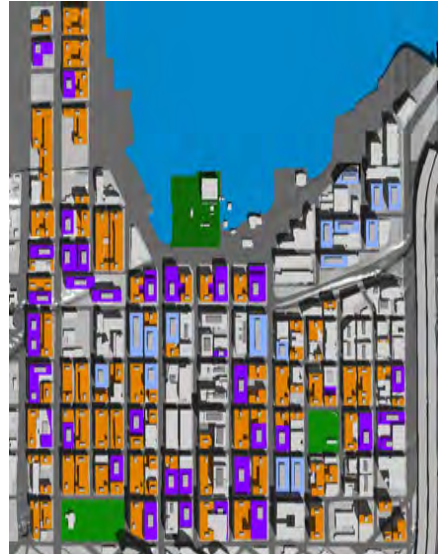
Figure 40
September 21—Alternative 4



9 AM



12 PM



3 PM



Existing

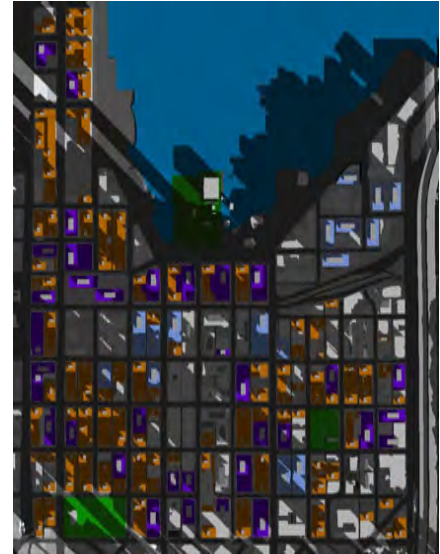
Proposed

Source: NBBJ, 2010

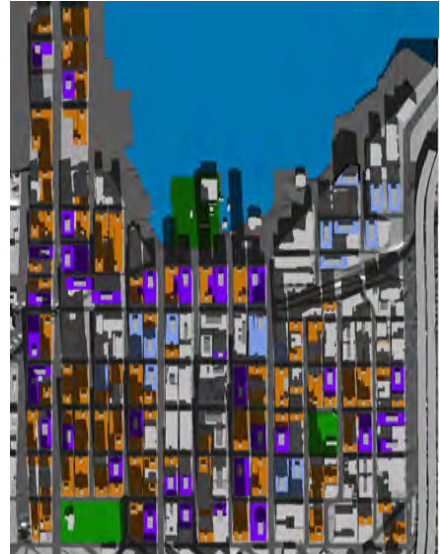
Figure 41
December 21—Alternative 1



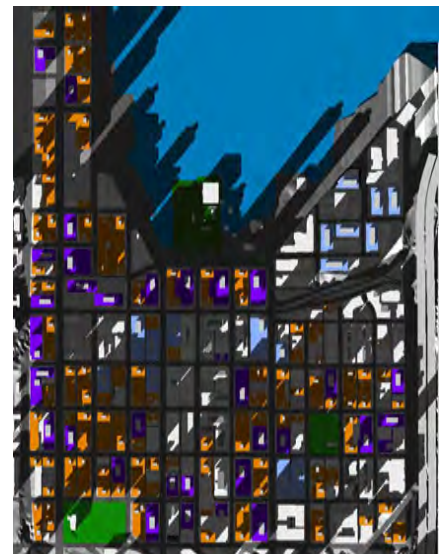
9 AM



12 PM



3 PM

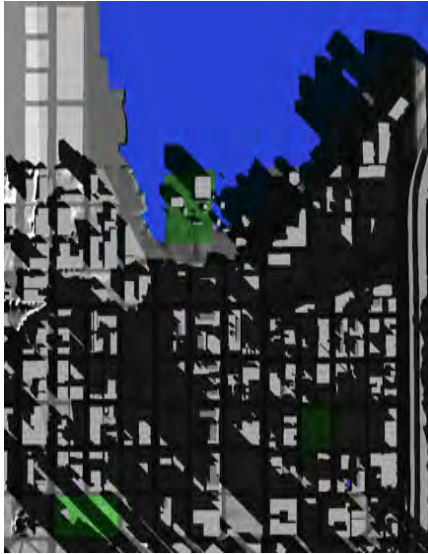


Existing

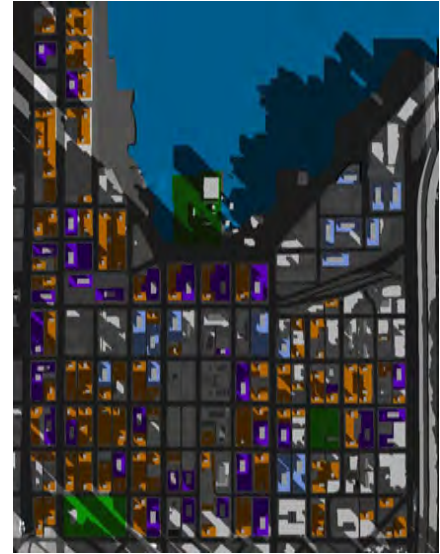
Proposed

Source: NBBJ, 2010

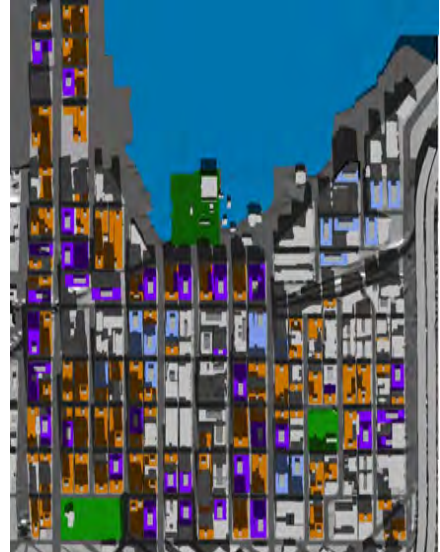
Figure 42
December 21—Alternative 2



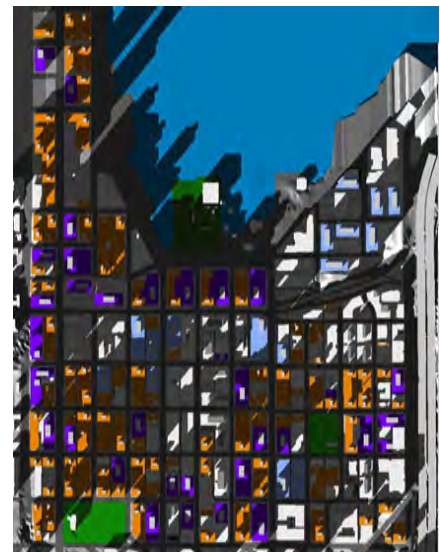
9 AM



12 PM



3 PM

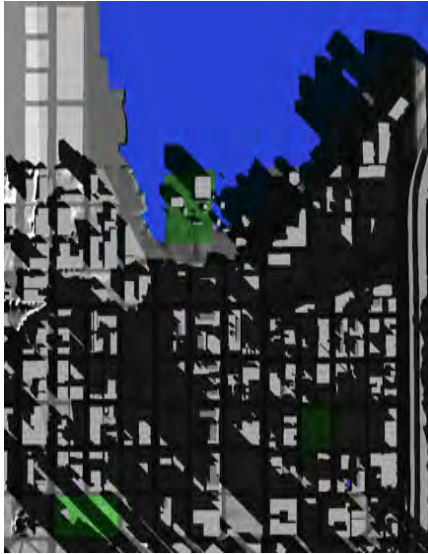


Existing

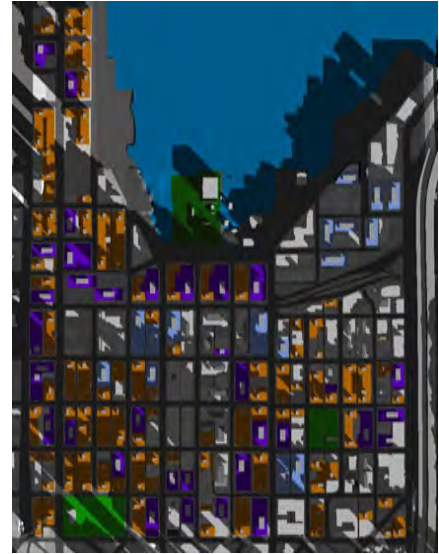
Proposed

Source: NBBJ, 2010

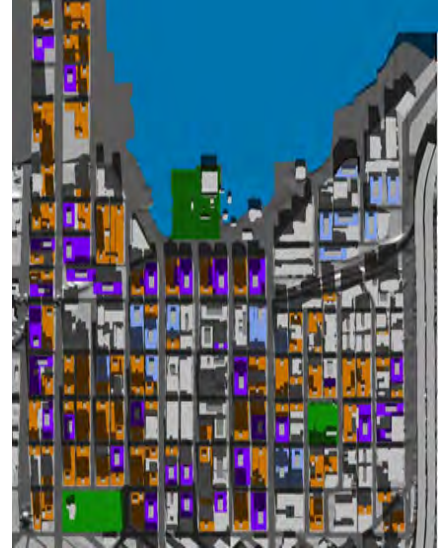
Figure 43
December 21—Alternative 3



9 AM



12 PM



3 PM



Existing

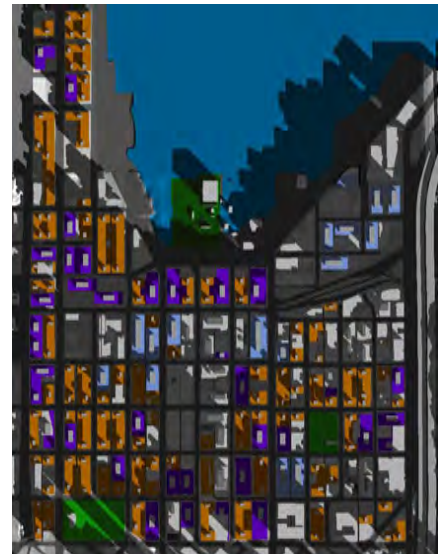
Proposed

Source: NBBJ, 2010

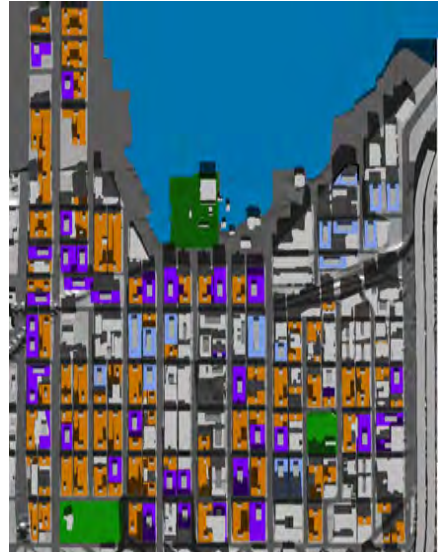
Figure 44
December 21—Alternative 4



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Transportation

Appendix E-1: Parking

This appendix provides more information on the parking analysis completed for this document.

Existing Conditions Parking Analysis

The data used for the existing conditions parking analysis is included as Attachments 1, 2, and 3.

Future Year Parking Estimates

The future year parking estimates use the expected growth under each alternative to forecast the spaces that are required by the current City of Seattle Municipal Code (Section 23.54.015) for commercial uses. As discussed in the text, no parking is required for multifamily residential uses in commercial zones in urban centers, which applies to most of the study area; however, parking is still usually provided. It was assumed that one parking space per dwelling unit would be supplied. Since the code regarding commercial uses is complex, and varies depending on specific land use, the following assumptions were made:

- 1 space per dwelling unit for residences
- 2 spaces per 1,000 square feet (ksf) of retail space
- 1 space per 1,000 square feet (ksf) of office (non-retail) space

Future growth was provided as jobs, rather than as square footage. Therefore, the assumptions used in the MXD tool were used to convert jobs to square footage. The conversion factors are:

- 500 square feet per retail employee
- 350 square feet per office (non-retail) employee

The following table shows the household and job growth and resulting parking spaces.

Table A3.13-1
ESTIMATED ADDITIONAL PARKING SPACES IN 2031

Alternative	Households	Retail Jobs	Non-retail Jobs	Total
	Expected Growth			
No Action	9,200	2,087	13,913	25,200
Alternative 1	11,900	2,856	19,040	33,796
Alternative 2	11,900	2,856	19,040	33,796
Alternative 3	11,900	2,400	16,000	30,300
	Expected New Parking Spaces			
No Action	9,200	2,087	4,870	16,157
Alternative 1	11,900	2,856	6,664	21,420
Alternative 2	11,900	2,856	6,664	21,420
Alternative 3	11,900	2,400	5,600	19,900

Source: Fehr & Peers, 2010

Appendix E-2: Roadway Operations Analysis

This appendix provides additional information on the methods used for roadway impact assessment.

Threshold of Significance

The threshold of significance for an impact on the roadway is defined as “an increase in traffic on a study corridor that operates unacceptably (as measured by d/c ratios and LOS) under the 2031 No Action scenario that results in the d/c ratio increasing by at least .01 (increases in d/c ratios of less than .01 are less than typical daily fluctuations and are not noticeable by drivers).”

The following analysis was completed to give show that an increase of less than 0.01 would not be noticeable by drivers. A Synchro network showing the intersection of Mercer Street and Fairview Avenue N was created with turning volumes for the PM peak hour. The Highway Capacity Manual LOS report determines the average delay experienced by drivers to be 85.9 seconds.

The d/c ratio on eastbound Mercer Street increasing by 0.01 equates to an additional 32 cars (i.e. one-hundredth of the total capacity). Therefore, 32 cars were added proportionally to the eastbound movements. The same growth factor (1.24 percent) was applied to the other approaches as well. The resulting Highway Capacity Manual LOS report determines the new average delay experienced by drivers to be 89.7 seconds, an increase of 3.8 seconds. Additional delay of this length would not be noticeable to drivers, and is within typical daily fluctuations. The HCM reports are included as Attachment 4.

The Difference Method

To reduce model error, a technique known as the difference method was applied for traffic volumes. Rather than take the direct output from the 2031 model, the difference method calculates the growth between the base year and 2031 models, and adds that growth to an existing count. For example, assume a road has an existing count of 450 vehicles. If the base year model showed a volume of 400 vehicles and the future year model showed a volume of 550 vehicles, then 150 cars would be added to the existing count for a total of 600 cars.

Capacity Adjustments

The increase in capacity for one-way streets is consistent with methodology recommended by the Florida Department of Transportation (FDOT). Attachment 5 from FDOT’s 2009 Quality/Level of Service Handbook shows the relevant table.

Appendix E-3: Transit Analysis

This appendix summarizes the transit analysis. All future year transit information comes from the City of Seattle travel model.

Existing Conditions

The existing average headways reported in **Table 3.13-1** were calculated using current King County Metro (KCM) schedules. Average headways are the ratio of the number of minutes in the time period to the number of busses expected over the time period. Note that within each time period, the actual headway will often vary.

The existing load factors reported in **Tables 3.13-5** and **3.13-6** were provided by KCM (see Attachment 6). The peak hour for each route in each direction was chosen to reflect the highest load factor experienced over the peak period. Therefore, the time periods vary between routes as well as between directions of the same routes.

Future Year Analysis

Future year analysis was conducted the same way for both the No Action and the Action Alternatives. Future transit operations are assessed using peak hour load factors. The City of Seattle travel model uses three hour peak periods, rather than one peak hour, so assumptions were made to factor the results to represent the peak hour. These assumptions are described below.

Since load factors are based on the number of seats available on the transit route during the peak commute hour, the capacity will change under 2031 conditions as headways change. The Seattle travel model does not explicitly model PM peak period transit trips (they are modeled as the reverse of the AM trips).

Table A.13-2 displays AM peak period transit route headways from the City of Seattle travel model for the base year and 2031 conditions. Since headways can vary over the course of the peak period, weighted headways were estimated. The travel model breaks routes into multiple pieces, for example some with 15 minute headways and others with 30 minute headways. Headways are weighted based upon the ridership volume for each piece so if the 15 minute headway busses have higher ridership, the headway will be weighted more heavily toward the 15 minute headway than the 30 minute headway. An example (using Route 5 SB) is provided below to illustrate. There are 298 passengers at 20 minute headways, 1,234 passengers at 30 minute headways, and 103 passengers at 120 minute headways.

$$\text{Weighted Headway} = \frac{(20 * 298) + (30 * 1234) + (120 * 103)}{(298 + 1234 + 103)} = 34$$

These weighted headways are assumed to remain constant over the entire peak period for this analysis. The following table shows that all headways are expected to decrease between the base year and 2031, with the exception of the Aurora RapidRide (replacing existing Route 358) SB which will remain constant at 6 minute headways.

Table A3.13-2
NO ACTION ALTERNATIVE: SOUTH LAKE UNION AM PEAK PERIOD TRANSIT
WEIGHTED HEADWAYS

Route	Termini Locations	Base Year Headway		2031 Headway	
		NB	SB	NB	SB
5	Downtown, Shoreline	33	34	26	32
8	Uptown, Rainier Valley	30	30	14	16
16	Downtown, Northgate	20	20	17	17
17	Downtown, Loyal Heights	23	21	17	15
25	Downtown, Laurelhurst	49	45	26	26
26	Green Lake, Tukwila	26	27	17	14
28	Downtown, Broadview	30	30	17	24
66	Downtown, Northgate	30	30	26	26
70	Downtown, University District	15	15	10	10
Rapid Ride	Downtown, Aurora Village Transit Center	15	6	6	6

Source: Fehr & Peers, 2010

The underlying principle used to estimate capacity is that the change in headways has an inverse relationship to the change in capacity. For example, a bus route running 35-seat busses on 30 minute headways offers 70 seats per hour. The same bus route running on 15 minute headways offers 140 seats per hour.

$$2031 \text{ Capacity} = \frac{\text{Base Year Headway}}{2031 \text{ Headway}} * \text{Existing Capacity}$$

To reduce model error, a technique known as the difference method was applied for transit ridership. Rather than take the direct output from the 2031 model, the difference method calculates the growth between the base year and 2031 models, and adds that growth to an existing count.

Forecasted Ridership

$$= \text{Existing Ridership} + (\text{2031 Model Ridership} - \text{Base Year Model Ridership})$$

Ridership in the City of Seattle travel model is available for the peak period only. The peak hour of transit is often assumed to contain approximately 40 percent of peak period ridership. This figure was confirmed as a reasonable average, given that KCM data indicates 44 percent of AM peak period (6-9 AM) ridership and 35 percent of PM peak period (3:15-6:30 PM) ridership occurs within the respective peak hours. Therefore, peak period ridership was multiplied by 0.4 to arrive at peak hour ridership.

$$\text{Peak Hour Ridership} = \text{Peak Period Ridership} * 0.4$$

The previous methods were used for all transit lines that appear in both the base year and future year travel models. Ridership for new routes was estimated using direct model output since the difference method correction cannot be applied to routes that do not have existing conditions ridership estimates. The same peak factor of 40 percent was used to calculate peak hour ridership. The new lines are listed below:

- Route 21: Arbor Heights to Downtown Seattle
- Route 29: Woodland Park to Downtown Seattle
- Route 56: Alki/West Seattle to South Lake Union
- Route 121: Burien to Downtown Seattle
- Route 308: Lake Forest Park to Downtown Seattle
- Route 313: Bothell to Uptown
- Route 316: Shoreline to Uptown

Capacities for the future lines were not available from KCM. Therefore, the project team made assumptions about the size of the busses that would run based upon the estimated ridership. Bus capacity does vary among the KCM fleet, but KCM plans to purchase only low-floor busses in the future. The articulated busses have 56 seats and the standard busses have 35 seats. Lines with at least 700 riders per peak period are assumed to run 56-seat busses, while lines with fewer than 700 riders per peak period are assumed to run 35-seat busses. These assumptions are based on the types of busses that serve existing routes with higher and lower ridership. Using these assumptions and future headways, capacity was estimated for the new lines, as follows.

$$\text{Peak Hour Capacity} = \frac{60 \text{ minutes}}{\text{Weighted Headway}} * \text{Number of seats on bus}$$

Off-Peak Headways

The UVTN calls for 15 minute frequencies 18 hours a day, every day of the week. Since the travel model only provides headway information for the AM peak hour, headways were extrapolated for other times of the day. The change in headway between the base year and 2030 was applied to existing midday headways.

Table A3.13-3
NO ACTION ALTERNATIVE: SOUTH LAKE UNION MIDDAY TRANSIT WEIGHTED HEADWAYS

Route	Termini Locations	Base Year Midday Headway		Change in Headway Between Base Year and 2031		2031 Estimated Headway	
		NB	SB	NB	SB	NB	SB
5	Downtown, Shoreline	15	15	0.80	0.96	12	14
8	Uptown, Rainier Valley	15	15	0.47	0.52	7	8
16	Downtown, Northgate	20	20	0.87	0.87	17	17
17	Downtown, Loyal Heights	30	30	0.76	0.73	23	22
25	Downtown, Laurelhurst	65	65	0.53	0.58	35	38
26	Green Lake, Tukwila	29	29	0.67	0.54	19	16
28	Downtown, Broadview	30	30	0.58	0.78	17	23
66	Downtown, Northgate	30	30	0.87	0.87	26	26
70	Downtown, University District	15	15	0.69	0.69	10	10
Rapid Ride	Downtown, Aurora Village Transit Center	9	9	0.40	1.00	4	9

Source: Fehr & Peers, 2010

This analysis indicated that Routes 16, 17, 25, 26, 28, and 66 would not meet the UVTN frequency goals due to their midday schedules. Of the remaining routes, the following indicated that they would not meet other UVTN frequency goals:

- Route 70 does not operate on Sundays.
- Route 5 currently has approximately 30 minute headways on Sundays. The expected decrease in headway (0.80 NB and 0.96 SB) would not bring the headway to 15 minutes.
- Route 8 very narrowly misses the goals. It currently has approximately 30 minute headways on Sundays. The expected

decrease in SB headway (0.52) would not bring the headway to 15 minutes.

Mitigation

Transit mitigation was considered independently of any changes in trip generation and mode share. If the transit ridership remained the same as is expected under the Action Alternatives, then one to two busses per peak hour could be added to the routes with unacceptable load factors to bring them to an acceptable level. The following table details the calculations. The size of bus assumed for each route is the same as was assumed for the original Action Alternatives analysis.

Table A3.13-4
SOUTH LAKE UNION TRANSIT MITIGATION

Route	Termini Locations	Peak Hour Ridership	Peak Hour Capacity	Unmitigated Peak Hour Factor	Minimum Required Capacity	Assumed bus size	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	520	386	1.35	416	56	1	1.18
21 SB	Downtown, Arbor Heights	520	386	1.35	416	56	1	1.18
28 NB	Downtown, Broadview	240	171	1.40	192	56	1	1.06
29 NB	Downtown, Woodland Park	120	80	1.49	96	35	1	1.04
29 SB	Downtown, Woodland Park	144	80	1.79	115	35	1	1.25
56 NB	South Lake Union, West Seattle	396	258	1.53	317	56	2	1.07

Source: Fehr & Peers, 2010

Appendix E-4: MXD Tool Trip Generation

This appendix contains detailed background information on the enhanced trip generation tool used for this analysis. The complete MXD report is included as Attachment 7.

Model Validation

To ensure the accuracy of the MXD model, a set of 16 independent mixed use sites that were not included in the 239 initial model development MXD sites were tested to validate the model. Among the validation sites, use of the MXD model produced superior statistical performance when comparing the model results to observed data than are found when using traditional ITE methods. Specifically, the MXD model had a significantly lower root mean squared error (RMSE) and higher pseudo-R squared than traditional ITE methods when comparing estimated to observed external vehicle trips. Estimates from the ITE *Trip Generation Handbook* had an RMSE of 40% and pseudo-R squared of 0.58 (i.e., the ITE method only explains about 58 percent of the variability in external vehicle trips), modified estimates using ITE's traditional trip internalization techniques had an RMSE of 32% and pseudo-R squared of 0.73, whereas modified estimates using the MXD model had an RMSE of only 26% and pseudo-R squared of 0.82.

Trip Generation Tables

Table A3.13-5 summarizes the daily, AM, and PM trip generation for all four alternatives. Mitigated trip generation is also shown for the three action alternatives. The following table is a more detailed version of **Tables 3.13-8** and **3.13-16**

ITE gross trips are generally based on vehicle trip generation data from suburban development projects with very little transit, pedestrian, or bicycle trip generation. In this case, gross trips were estimated using the "High Rise Condo – ITE 232," "Shopping Center – ITE 820," and "General Office – ITE 710" land use types. The MXD model estimates the number of internal trips and external trips made by auto, pedestrian, bicycle, and transit by calculating the probability that a gross ITE trip will use one of these alternative modes.

When this calculation is made, the vehicle-trip is converted into a person-trip. The MXD model assumed an ITE average vehicle occupancy of 1.1 persons per vehicle. This means that one vehicle trip shifted to another mode becomes 1.1 person-trips. Therefore, the sum of the auto and non-auto trips will be greater than the ITE gross trips.

Mode share must be calculated using the same unit of trips (i.e. vehicle-trips or person-trips). Therefore, the mode share is calculated before the conversion factor is applied to internal, bicycle, pedestrian, and transit trips.

Table A3.13-5
TRIP GENERATION BY ALTERNATIVE

Alternative	Daily			PM Peak			AM Peak			
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)		
		Internal, Bike & Pedestrian	Transit		Internal, Bike & Pedestrian	Transit		Internal, Bike & Pedestrian	Transit	
No Action Alternative - Current Zoning	108,946 (49.4%)	70,540 (29.1%)	52,337 (21.6%)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	11,285 (56.2%)	4,688 (21.2%)	4,991 (22.6%)	
UNMITIGATED	Alternative 1 - Maximum Increases to Height and Density	136,973 (48.3%)	93,828 (30.1%)	67,509 (21.6%)	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	13,262 (55.6%)	5,722 (21.8%)	5,945 (22.6%)
	Alternative 2 - Mid-Range Increases to Height and Density	136,888 (48.3%)	93,908 (30.1%)	67,509 (21.6%)	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	13,257 (55.5%)	5,728 (21.8%)	5,944 (22.6%)
	Alternative 3 - Moderate Increases to Height and Density	117,326 (48.1%)	81,403 (30.3%)	57,855 (21.6%)	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	12,239 (55.2%)	5,411 (22.2%)	5,501 (22.6%)
MITIGATED	Alternative 1 - Maximum Increases to Height and Density	108,027 (38.1%)	115,933 (37.2%)	77,236 (24.8%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)	10,787 (45.2%)	6,947 (26.5%)	7,443 (28.3%)
	Alternative 2 - Mid-Range Increases to Height and Density	107,936 (38.1%)	116,030 (37.2%)	77,235 (24.8%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)	10,782 (45.2%)	6,953 (26.5%)	7,442 (28.3%)
	Alternative 3 - Moderate Increases to Height and Density	92,607 (38.0%)	100,310 (37.4%)	66,139 (24.6%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)	9,951 (44.9%)	6,556 (26.9%)	6,873 (28.2%)

Appendix E-5: CAPCOA Research

This appendix contains background information on the CAPCOA research used as a basis for mitigation. The MXD trip generation tool predicts mode share based primarily on land use and demographic information. It does not take additional travel demand management measures into account. The CAPCOA research provides guidance on the mode share shift expected when various travel demand management (TDM) programs are enacted. This appendix summarizes the process used to apply both types of measures. Attachment 8 contains the parking section from the CAPCOA research report. The full report, *Quantifying Greenhouse Gas Mitigation Measures*, is available online.

The pedestrian and bicycle system mitigation measures were factored into the MXD model to produce the mitigated trip generation based on land use changes alone. The results are shown in the following table.

Table A3.13-6
LAND USE MITIGATION REDUCTION RATE CALCULATIONS

Alternative	Unmitigated Net Trips			Mitigated Net Trips (Increased intersection density taken into account)			MXD (Land Use) Reduction Rate		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Alternative 1	13,262	15,554	136,973	12,691	14,404	127,090	4.3%	7.4%	7.2%
Alternative 2	13,257	15,548	136,888	12,684	14,395	126,984	4.3%	7.4%	7.2%
Alternative 3	12,239	13,605	117,326	11,707	12,606	108,949	4.3%	7.3%	7.1%

Source: Fehr & Peers, 2010

The CAPCOA research provides estimates on the amount of trip reduction that may take place given certain TDM measures. The 15 percent reduction in trip generation used for this analysis assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative and that unbundled parking costs an average of \$100 per month per space. See the attached CAPCOA report for details.

The land use reductions and TDM reductions should be multiplicative, rather than additive, meaning that the reduction rate to be applied to the

mitigated net trips should be less than 15 percent. The following formula was used to identify the final TDM reduction percentage:

$$1 - (1 - MXD \text{ reduction rate}) * (1 - TDM \text{ reduction rate}) - MXD \text{ reduction rate}$$

The following table shows the results. These reduction rates were applied to the unmitigated net trips above to identify the additional trips that should be subtracted from the mitigated net trips.

Table A3.13-7TDM MITIGATION REDUCTION RATE CALCULATIONS

Alternative	TDM Reduction Rate per CAPCOA Research			Additional Trip Reductions			Final Number of Trips		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Alternative 1	14.4%	13.9%	13.9%	1,904	2,161	19,064	10,787	12,244	108,027
Alternative 2	14.4%	13.9%	13.9%	1,903	2,159	19,048	10,782	12,236	107,936
Alternative 3	14.3%	13.9%	13.9%	1,756	1,891	16,342	9,951	10,715	92,607

Source: Fehr & Peers, 2010

Appendix E-6: Commute Trip Reduction Surveys

This appendix contains background information on the CTR programs in place in South Lake Union.

Attachment 9 contains the table of 16 companies with SOV rates and goals. Green indicates the company met their goal, yellow indicates they reduced their but did not meet their goal, and red indicates the rate increased.

Attachment 10 contains the detailed reports used to create **Table 3.13-7**.

Appendix E-7: Comprehensive Plan Mode Share Goal Consistency

This section describes the evaluation to determine consistency with the Seattle Comprehensive Plan mode split goals. The Comprehensive Plan sets the following two goals:

- South Lake Union work trips mode split: 50% non-SOV
- South Lake Union resident trips mode split: 75% non-SOV

The trip generation analysis shown in **Table 3.13-8** and the Seattle travel model’s estimate of SOV and HOV mode shares were used to determine the expected mode splits in 2031.

Under all three height and density alternatives, the project meets the first goal of at least 50 percent of South Lake Union work trips being made by non-SOV modes. However, the goal of 75 percent of all trips by South Lake Union residents being made by non-SOV modes is not met, as shown in **Table A3.13-17**. The mode shares of the three action alternative are closer to the goal than that of the No Action Alternative.

Table A3.13-17
SOUTH LAKE UNION RESIDENTS 2031 MODE SHARE

Alternative	Total Auto Mode Share (SOV & HOV)	SOV Mode Share
No Action Alternative	49.4%	27.6%
Alternative 1	48.3%	27.0%
Alternative 2	48.3%	27.0%
Alternative 3	48.1%	26.9%

Source: Fehr & Peers, 2010

Applying auto trip reduction rates correlated to the mitigation measures, the SOV mode share is reduced from approximately 27 percent to approximately 21 percent, which meets the Comprehensive Plan goal. Therefore, all three mitigated alternatives would meet the City’s mode share goals while the No Action Alternative would not. Details of these calculations are provided in the remainder of this appendix.

The Seattle travel model trip tables break trips down by type including home based work (HBW), home based non-work (HBNW), and non-home based (NHB). The model also breaks trips down by mode. The HBW trips were used to determine the mode share for the goal of at least 50 percent

non-SOV work trips into South Lake Union (Goal 1). All three trip types were used to determine mode share for the goal of at least 75 percent non-SOV total trips by South Lake Union residents (Goal 2). The mode shares were used to approximate SOV and HOV use, since the MXD model does not distinguish between the two.

Comprehensive Plan Goal 1

The following table shows the number of person-trips made by SOV, HOV2 (2 passengers), and HOV3+ (3 or more passengers). Since the MXD results do not distinguish SOV from HOV trips, these proportions were applied to the MXD projection of total auto share. All alternatives have less than 50 percent SOV mode share so the first goal from the Comprehensive Plan is met.

Table A3.13-8
 COMPREHENSIVE PLAN MODE SHARE GOAL 1: AUTO OCCUPANCY CALCULATION

Mode	Work Trips to SLU	Percentage of Total Auto Trips
SOV	28,105	86.1%
HOV2	3,159	9.7%
HOV3+	1,368	4.2%
Total	32,632	100.0%

Source: City of Seattle travel model, 2010

Table A3.13-9
 COMPREHENSIVE PLAN MODE SHARE GOAL 1: SOV CALCULATION

Mode	Total Auto Trips per MXD	SOV Trips
No Action	49.4%	42.5%
Alternative 1	48.3%	41.6%
Alternative 2	48.3%	41.6%
Alternative 3	48.1%	41.4%

Source: City of Seattle travel model, 2010

Comprehensive Plan Goal 2

A similar method to that used for Goal 1 is used here. The sum of all three trip types originating in South Lake Union is calculated. This is an approximation of the trips made by South Lake Union residents.

Table A3.13-10
 COMPREHENSIVE PLAN MODE SHARE GOAL 2: AUTO OCCUPANCY
 CALCULATION

Mode	HBW Trips from SLU	HBNW Trips from SLU	NHB Trips from SLU	Total Trips from SLU	Percentage of Total Auto Trips
SOV	2,736	10,436	21,467	34,639	55.9%
HOV2	594	5,304	10,667	16,565	26.8%
HOV3+	340	3,086	7,284	10,710	17.3%
Total	3,670	18,826	39,418	61,914	100.0%

Source: Fehr & Peers, 2010

The breakdown of SOV and HOV types was then applied to the MXD auto mode share for both the mitigated and unmitigated alternatives. The 75 percent non-SOV goal is not met under the unmitigated alternatives, but is met under the mitigated alternatives.

Table A3.13-11
 COMPREHENSIVE PLAN MODE SHARE GOAL 2: SOV CALCULATION
 (UNMITIGATED AND MITIGATED)

Alternative	Unmitigated		Mitigated	
	Total Auto Trips per MXD	SOV Trips	Total Auto Trips per MXD	SOV Trips
No Action	49.4%	27.6%		
Alternative 1	48.3%	27.0%	38.1%	21.3%
Alternative 2	48.3%	27.0%	38.1%	21.3%
Alternative 3	48.1%	26.9%	38.0%	21.3%

Source: Fehr & Peers, 2010

Appendix E-8: Growth Management Act Concurrency

This section describes the evaluation to determine concurrency with Growth Management Act concurrency standards.

Methodology

The Seattle Comprehensive Plan uses peak hour volume-to-capacity (v/c) ratios across designated screenlines to assess arterial LOS for GMA Concurrency assessment. The v/c ratio is defined as the ratio of measured traffic volumes to calculated roadway capacity¹. Since busses (the primary transit mode) operate in the same roadways as general traffic, the City uses the same screenline analysis for transit. Within the traffic impact analysis area (bounded by S King Street to the south, the ship canal to the north, Elliott Avenue to the west and Broadway to the east), screenlines run along four corridors: the Ship Canal, Fairview Avenue, S Jackson Street and I-5. **Figure 3.13-24** shows the traffic impact analysis area and the screenlines it contains.

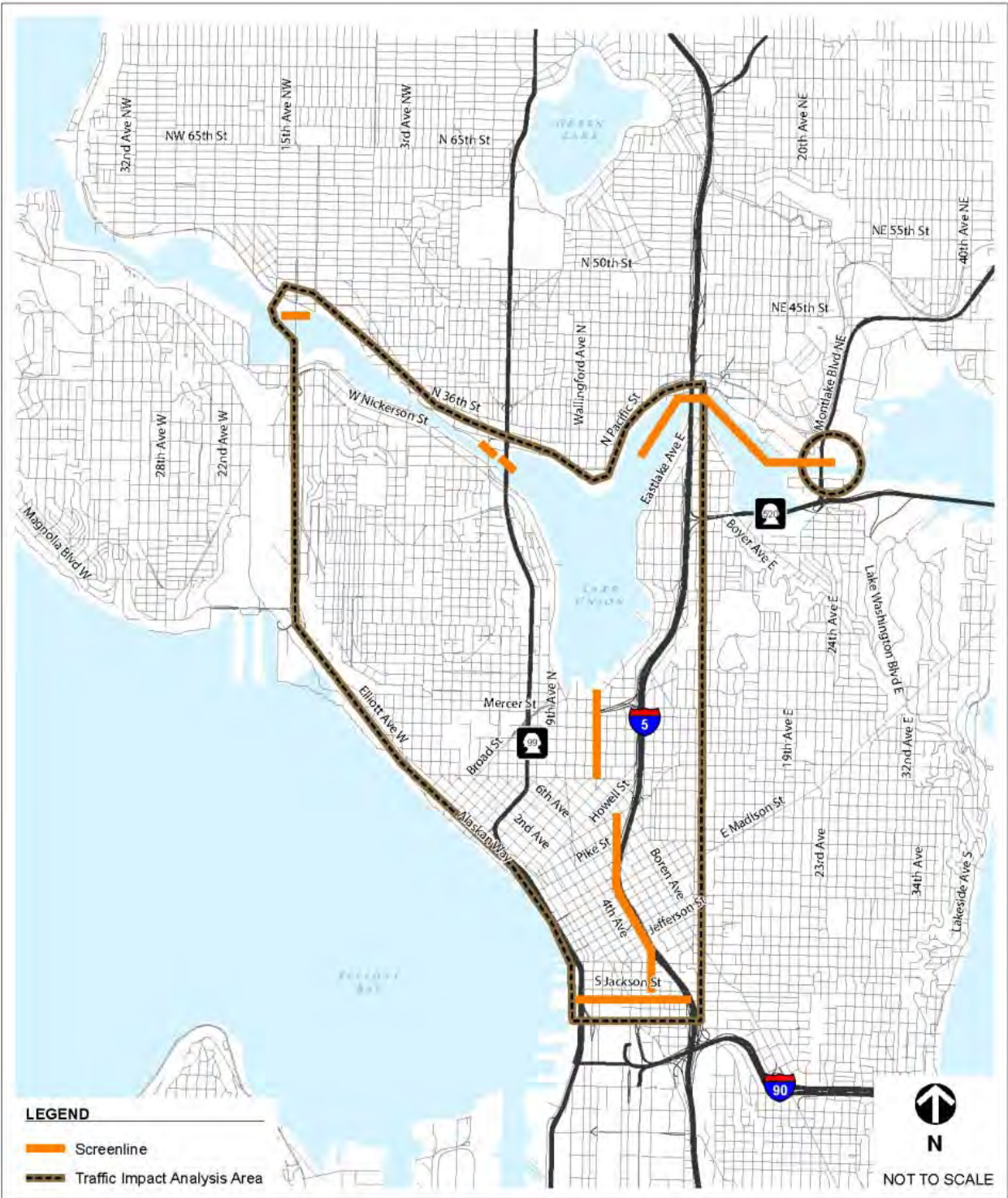
The screenline analysis was based upon methods outlined in the *Department of Planning and Development Director's Rule 5-2009* which summarizes the 2008 traffic volumes and capacities at each of the City's screenlines. From this document, the capacities of the key facilities were determined and the v/c ratio was calculated using the most recent traffic counts available from the City of Seattle.

Concurrency Standard

As previously described, the Seattle Comprehensive Plan uses v/c ratios across designated screenlines to assess arterial LOS. Each screenline is assigned a maximum acceptable v/c threshold. In the event a screenline's measurement approaches this threshold, the Comprehensive Plan calls for vehicular demand reduction strategies to be pursued before increasing capacity. **Table A3.13-12** displays the screenlines and their respective v/c thresholds in detail.

¹ As noted above, v/c ratios measure vehicles that pass a given point during the peak hour and do not consider queuing. Demand/capacity ratios were not used for GMA concurrency analysis since the Comprehensive Plan specifies the use of v/c ratios.

Figure3.13-2
 Traffic Impact Analysis Area Screenlines - Existing Conditions



Source: Fehr & Peers, 2011

Table A3.13-12
TRAFFIC IMPACT ANALYSIS AREA SCREENLINES

Screenline Number	Screenline Location Segment	LOS Standard (v/c ratio)
5.11	Ship Canal—Ballard Bridge	1.20
5.12	Ship Canal—Fremont Bridge	1.20
5.13	Ship Canal—Aurora Bridge	1.20
5.16	Ship Canal—University & Montlake Bridges	1.20
8	Fairview Avenue N—Denny Way to Valley Street	1.20
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	1.00
12.12	East of CBD—S Jackson Street to E Pine Street	1.20

Source: City of Seattle Comprehensive Plan, 2005.

Existing Screenline Results

Table A3.13-13 displays the peak hour v/c ratios for the relevant screenlines. The peak hour count for each direction was used to calculate the v/c ratio. The *Department of Planning and Development Director's Rule 5-2009* document provided the capacity for each screenline. None of the screenlines currently exceed the GMA Concurrency LOS standard stated in the Comprehensive Plan.

Table A3.13-13
EXISTING SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.09	0.94
5.12	Ship Canal—Fremont Bridge	0.89	0.71
5.13	Ship Canal—Aurora Bridge	0.89	0.82
5.16	Ship Canal—University & Montlake Bridges	0.91	0.87
8	Fairview Avenue N—Denny Way to Valley Street	0.86	0.75
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.35	0.41
12.12	East of CBD—S Jackson Street to E Pine Street	0.50	0.60

Source: City of Seattle count data, 2005-2010.

No Action Alternative Screenline Results

Table A3.13-14 displays the v/c ratios for the relevant screenlines. As shown, the Ballard Bridge screenline exceeds the Comprehensive Plan standard in both directions. The Fairview Avenue N screenline exceeds the threshold of significance in the westbound direction only.

Table A3.13-14
NO ACTION ALTERNATIVE: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24
5.12	Ship Canal—Fremont Bridge	1.11	0.96
5.13	Ship Canal—Aurora Bridge	1.08	0.98
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64

Source: Fehr & Peers, 2010

Action Alternatives Screenline Results

Table A3.13-15 displays the v/c ratios for the screenlines within the traffic impact analysis area for all four alternatives. The 2031 travel model provided the volumes and capacities for all four future year scenarios.

As shown in the bold text, two screenlines exceed the Comprehensive Plan's v/c ratios under the three height and density rezone alternatives. These are the same two screenlines that exceeded the v/c ratio under the No Action Alternative. The screenline analysis indicates that the GMA concurrency requirements will not be met under 2031 conditions with or without the height and density rezone.

Table A3.13-15
ACTION ALTERNATIVES COMPARISON: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	No Action Alternative		Alternative 1		Alternative 2		Alternative 3	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24	1.37	1.25	1.38	1.26	1.36	1.24
5.12	Ship Canal—Fremont Bridge	1.11	0.96	1.13	0.99	1.13	0.98	1.11	0.98
5.13	Ship Canal—Aurora Bridge	1.08	0.98	1.10	0.99	1.10	0.99	1.09	0.98
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07	1.16	1.09	1.16	1.09	1.15	1.08
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21	1.05	1.22	1.05	1.22	1.03	1.21
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72	0.52	0.73	0.52	0.73	0.52	0.72
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64	0.46	0.66	0.46	0.66	0.45	0.65

Source: Fehr & Peers, 2010

Mitigated Action Alternatives Screenline Results

Following the mitigation measures discussed in Chapter 3.13, the screenlines were re-evaluated. The results are shown in **Table A3.13-16**. The Ballard Bridge screenline continues to exceed the standard under all three mitigated alternatives. However, the v/c ratios under the mitigated scenarios are all less than or equal to the v/c ratios under the No Action Alternative. Therefore, the mitigated alternatives (in particular, Alternative 3) perform better than the No Action Alternative in terms of GMA concurrency.

The Fairview Avenue N screenline exceeds the Comprehensive Plan standard in the westbound direction under the No Action Alternative and Alternative 1. Alternatives 2 and 3 meet GMA concurrency requirements since they equal the maximum acceptable threshold.

Table A3.13-16
MITIGATED ACTION ALTERNATIVES COMPARISON: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	No Action Alternative		Alternative 1		Alternative 2		Alternative 3	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24	1.35	1.23	1.35	1.23	1.34	1.22
5.12	Ship Canal—Fremont Bridge	1.11	0.96	1.10	0.96	1.10	0.95	1.08	0.94
5.13	Ship Canal—Aurora Bridge	1.08	0.98	1.07	0.97	1.07	0.97	1.06	0.97
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07	1.13	1.06	1.13	1.06	1.12	1.05
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21	1.02	1.21	1.02	1.20	1.02	1.20
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72	0.51	0.71	0.51	0.71	0.51	0.70
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64	0.44	0.64	0.44	0.64	0.44	0.63

Source: Fehr & Peers, 2010

Greenhouse Gas

South Lake Union Height and Density EIS
Existing Conditions - Original

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	792	0
Multi-Family Unit in Large Building	1686		33	357	766	1948501
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home.....	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other Than Mall).....		1,225.0	39	577	247	1056876
Office		6,942.0	39	723	588	9367155
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

12372531

South Lake Union Height and Density EIS
No Action Alternative - Original

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	792	0
Multi-Family Unit in Large Building	9686		33	357	766	11194056
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home.....	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other Than Mall).....		2,065.0	39	577	247	1781591
Office		11,702.0	39	723	588	15790038
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

28765685

South Lake Union Height and Density EIS
Alternative 1-3 - Original

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	792	0
Multi-Family Unit in Large Building	13586		33	357	766	15701265
Multi-Family Unit in Small Building	0		54	681	766	0
Mobile Home.....	0		41	475	709	0
Education		0.0	39	646	361	0
Food Sales		0.0	39	1,541	282	0
Food Service		0.0	39	1,994	561	0
Health Care Inpatient		0.0	39	1,938	582	0
Health Care Outpatient		0.0	39	737	571	0
Lodging		0.0	39	777	117	0
Retail (Other Than Mall).....		2,375.0	39	577	247	2049045
Office		13,458.0	39	723	588	18159488
Public Assembly		0.0	39	733	150	0
Public Order and Safety		0.0	39	899	374	0
Religious Worship		0.0	39	339	129	0
Service		0.0	39	599	266	0
Warehouse and Storage		0.0	39	352	181	0
Other		0.0	39	1,278	257	0
Vacant		0.0	39	162	47	0

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

35909798

South Lake Union Height and Density EIS
Existing Conditions - VMT

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO2e)			Lifespan Emissions (MTCO2e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	0	0
Multi-Family Unit in Large Building	1686		33	357	0	657753
Multi-Family Unit in Small Building	0		54	681	0	0
Mobile Home.....	0		41	475	0	0
Education		0.0	39	646	0	0
Food Sales		0.0	39	1,541	0	0
Food Service		0.0	39	1,994	0	0
Health Care Inpatient		0.0	39	1,938	0	0
Health Care Outpatient		0.0	39	737	0	0
Lodging		0.0	39	777	0	0
Retail (Other Than Mall).....		1,225.0	39	577	0	754560
Office		6,942.0	39	723	0	5288094
Public Assembly		0.0	39	733	0	0
Public Order and Safety		0.0	39	899	0	0
Religious Worship		0.0	39	339	0	0
Service		0.0	39	599	0	0
Warehouse and Storage		0.0	39	352	0	0
Other		0.0	39	1,278	0	0
Vacant		0.0	39	162	0	0
Transportation						8910451

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

15610858

South Lake Union Height and Density EIS
No Action Alternative - VMT

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	0	0
Multi-Family Unit in Large Building	9686		33	357	0	3778763
Multi-Family Unit in Small Building	0		54	681	0	0
Mobile Home.....	0		41	475	0	0
Education		0.0	39	646	0	0
Food Sales		0.0	39	1,541	0	0
Food Service		0.0	39	1,994	0	0
Health Care Inpatient		0.0	39	1,938	0	0
Health Care Outpatient		0.0	39	737	0	0
Lodging		0.0	39	777	0	0
Retail (Other Than Mall).....		2,065.0	39	577	0	1271972
Office		11,702.0	39	723	0	8914041
Public Assembly		0.0	39	733	0	0
Public Order and Safety		0.0	39	899	0	0
Religious Worship		0.0	39	339	0	0
Service		0.0	39	599	0	0
Warehouse and Storage		0.0	39	352	0	0
Other		0.0	39	1,278	0	0
Vacant		0.0	39	162	0	0
Transportation						19709284

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

33674061

South Lake Union Height and Density EIS
Alternative 1 - VMT

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	0	0
Multi-Family Unit in Large Building	13586		33	357	0	5300255
Multi-Family Unit in Small Building	0		54	681	0	0
Mobile Home.....	0		41	475	0	0
Education		0.0	39	646	0	0
Food Sales		0.0	39	1,541	0	0
Food Service		0.0	39	1,994	0	0
Health Care Inpatient		0.0	39	1,938	0	0
Health Care Outpatient		0.0	39	737	0	0
Lodging		0.0	39	777	0	0
Retail (Other Than Mall).....		2,375.0	39	577	0	1462922
Office		13,458.0	39	723	0	10251681
Public Assembly		0.0	39	733	0	0
Public Order and Safety		0.0	39	899	0	0
Religious Worship		0.0	39	339	0	0
Service		0.0	39	599	0	0
Warehouse and Storage		0.0	39	352	0	0
Other		0.0	39	1,278	0	0
Vacant		0.0	39	162	0	0
Transportation						22756080

South Lake Union Height and Density EIS
No Action Alternative - VMT

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

39770938

South Lake Union Height and Density EIS
Alternative 2 - VMT

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	0	0
Multi-Family Unit in Large Building	13586		33	357	0	5300255
Multi-Family Unit in Small Building	0		54	681	0	0
Mobile Home.....	0		41	475	0	0
Education		0.0	39	646	0	0
Food Sales		0.0	39	1,541	0	0
Food Service		0.0	39	1,994	0	0
Health Care Inpatient		0.0	39	1,938	0	0
Health Care Outpatient		0.0	39	737	0	0
Lodging		0.0	39	777	0	0
Retail (Other Than Mall).....		2,375.0	39	577	0	1462922
Office		13,458.0	39	723	0	10251681
Public Assembly		0.0	39	733	0	0
Public Order and Safety		0.0	39	899	0	0
Religious Worship		0.0	39	339	0	0
Service		0.0	39	599	0	0
Warehouse and Storage		0.0	39	352	0	0
Other		0.0	39	1,278	0	0
Vacant		0.0	39	162	0	0
Transportation						22740150

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

39755008

South Lake Union Height and Density EIS
Alternative 3 - VMT

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# Units	Square Feet (in thousands of square feet)	Emissions Per Unit or Per Thousand Square Feet (MTCO ₂ e)			Lifespan Emissions (MTCO ₂ e)
			Embodied	Energy	Transportation	
Single-Family Home.....	0		98	672	0	0
Multi-Family Unit in Large Building	13586		33	357	0	5300255
Multi-Family Unit in Small Building	0		54	681	0	0
Mobile Home.....	0		41	475	0	0
Education		0.0	39	646	0	0
Food Sales		0.0	39	1,541	0	0
Food Service		0.0	39	1,994	0	0
Health Care Inpatient		0.0	39	1,938	0	0
Health Care Outpatient		0.0	39	737	0	0
Lodging		0.0	39	777	0	0
Retail (Other Than Mall).....		2,375.0	39	577	0	1462922
Office		13,458.0	39	723	0	10251681
Public Assembly		0.0	39	733	0	0
Public Order and Safety		0.0	39	899	0	0
Religious Worship		0.0	39	339	0	0
Service		0.0	39	599	0	0
Warehouse and Storage		0.0	39	352	0	0
Other		0.0	39	1,278	0	0
Vacant		0.0	39	162	0	0
Transportation						21282472

Section II: Pavement.....

Pavement.....		0.00				0
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Total Project Emissions:

38297330

King County Department of Development and Environmental Services
SEPA GHG Emissions Worksheet
Version 1.7 12/26/07

Introduction

The Washington State Environmental Policy Act (SEPA) requires environmental review of development proposals that may have a significant adverse impact on the environment. If a proposed development is subject to SEPA, the project proponent is required to complete the SEPA Checklist. The Checklist includes questions relating to the development's air emissions. The emissions that have traditionally been considered cover smoke, dust, and industrial and automobile emissions. With our understanding of the climate change impacts of GHG emissions, King County requires the applicant to also estimate these emissions.

Emissions created by Development

GHG emissions associated with development come from multiple sources:

- The extraction, processing, transportation, construction and disposal of materials and landscape disturbance (Embodied Emissions)
- Energy demands created by the development after it is completed (Energy Emissions)
- Transportation demands created by the development after it is completed (Transportation Emissions)

GHG Emissions Worksheet

King County has developed a GHG Emissions Worksheet that can assist applicants in answering the SEPA Checklist question relating to GHG emissions.

The SEPA GHG Emissions worksheet estimates all GHG emissions that will be created over the life span of a project. This includes emissions associated with obtaining construction materials, fuel used during construction, energy consumed during a buildings operation, and transportation by building occupants.

Using the Worksheet

1. Descriptions of the different residential and commercial building types can be found on the second tabbed worksheet ("Definition of Building Types"). If a development proposal consists of multiple projects, e.g. both single family and multi-family residential structures or a commercial development that consists of more than one type of commercial activity, the appropriate information should be estimated for each type of building or activity.

2. For paving, estimate the total amount of paving (in thousands of square feet) of the project.
3. The Worksheet will calculate the amount of GHG emissions associated with the project and display the amount in the "Total Emissions" column on the worksheet. The applicant should use this information when completing the SEPA checklist.
4. The last three worksheets in the Excel file provide the background information that is used to calculate the total GHG emissions.
5. The methodology of creating the estimates is transparent; if there is reason to believe that a better estimate can be obtained by changing specific values, this can and should be done. Changes to the values should be documented with an explanation of why and the sources relied upon.
6. Print out the "Total Emissions" worksheet and attach it to the SEPA checklist. If the applicant has made changes to the calculations or the values, the documentation supporting those changes should also be attached to the SEPA checklist.

Definition of Building Types

Type (Residential) or Principal Activity (Commercial)	Description
Single-Family Home.....	Unless otherwise specified, this includes both attached and detached buildings
Multi-Family Unit in Large Building	Apartments in buildings with more than 5 units
Multi-Family Unit in Small Building	Apartments in building with 2-4 units
Mobile Home.....	
Education	Buildings used for academic or technical classroom instruction, such as elementary, middle, or high schools, and classroom buildings on college or university campuses. Buildings on education campuses for which the main use is not classroom are included in the category relating to their use. For example, administration buildings are part of "Office," dormitories are "Lodging," and libraries are "Public Assembly."
Food Sales	Buildings used for retail or wholesale of food.
Food Service	Buildings used for preparation and sale of food and beverages for consumption.
Health Care Inpatient	Buildings used as diagnostic and treatment facilities for inpatient care.
Health Care Outpatient	Buildings used as diagnostic and treatment facilities for outpatient care. Doctor's or dentist's office are included here if they use any type of diagnostic medical equipment (if they do not, they are categorized as an office building).
Lodging	Buildings used to offer multiple accommodations for short-term or long-term residents, including skilled nursing and other residential care buildings.
Retail (Other Than Mall).....	Buildings used for the sale and display of goods other than food.
Office	Buildings used for general office space, professional office, or administrative offices. Doctor's or dentist's office are included here if they do not use any type of diagnostic medical equipment (if they do, they are categorized as an outpatient health care building).
Public Assembly	Buildings in which people gather for social or recreational activities, whether in private or non-private meeting halls.
Public Order and Safety	Buildings used for the preservation of law and order or public safety.
Religious Worship	Buildings in which people gather for religious activities, (such as chapels, churches, mosques, synagogues, and temples).
Service	Buildings in which some type of service is provided, other than food service or retail sales of goods
Warehouse and Storage	Buildings used to store goods, manufactured products, merchandise, raw materials, or personal belongings (such as self-storage).
Other	Buildings that are industrial or agricultural with some retail space; buildings having several different commercial activities that, together, comprise 50 percent or more of the floorspace, but whose largest single activity is agricultural, industrial/ manufacturing, or residential; and all other miscellaneous buildings that do not fit into any other category.
Vacant	Buildings in which more floorspace was vacant than was used for any single commercial activity at the time of interview. Therefore, a vacant building may have some occupied floorspace.

Sources:

Residential 2001 Residential Energy Consumption Survey
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

Commercial Commercial Buildings Energy Consumption Survey (CBECS),
 Description of CBECS Building Types
<http://www.eia.doe.gov/emeu/cbeecs/pba99/bldgtypes.html>

Embodied Emissions Worksheet

Section I: Buildings

Type (Residential) or Principal Activity (Commercial)	# thousand sq feet/ unit or building	Life span related embodied GHG missions (MTCO2e/ unit)	Life span related embodied GHG missions (MTCO2e/ thousand square feet) - See calculations in table below
Single-Family Home.....	2.53	98	39
Multi-Family Unit in Large Building	0.85	33	39
Multi-Family Unit in Small Building	1.39	54	39
Mobile Home.....	1.06	41	39
Education	25.6	991	39
Food Sales	5.6	217	39
Food Service	5.6	217	39
Health Care Inpatient	241.4	9,346	39
Health Care Outpatient	10.4	403	39
Lodging	35.8	1,386	39
Retail (Other Than Mall).....	9.7	376	39
Office	14.8	573	39
Public Assembly	14.2	550	39
Public Order and Safety	15.5	600	39
Religious Worship	10.1	391	39
Service	6.5	252	39
Warehouse and Storage	16.9	654	39
Other	21.9	848	39
Vacant	14.1	546	39

Section II: Pavement.....

All Types of Pavement.....			50
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	Columns and Beams	Intermediate Floors	Exterior Walls	Windows	Interior Walls	Roofs	Total Embodied Emissions (MTCO2e)	Total Embodied Emissions (MTCO2e/ thousand sq feet)
Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building	5.3	7.8	19.1	51.2	5.7	21.3		
Average Materials in a 2,272-square foot single family home	0.0	2269.0	3206.0	285.0	6050.0	3103.0	88.0	38.7
MTCO2e	0.0	8.0	27.8	6.6	15.6	30.0		

Sources

All data in black text King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Residential floorspace per unit 2001 Residential Energy Consumption Survey (National Average, 2001)
Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

Floorspace per building EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Average GWP (lbs CO2e/sq ft): Vancouver, Low Rise Building
Athena EcoCalculator
Athena Assembly Evaluation Tool v2.3- Vancouver Low Rise Building
Assembly Average GWP (kg) per square meter
<http://www.athenasmi.ca/tools/ecoCalculator/index.html>
Lbs per kg 2.20
Square feet per square meter 10.76

Average Materials in a 2,272-square foot single family home
Buildings Energy Data Book: 7.3 Typical/Average Household
Materials Used in the Construction of a 2,272-Square-Foot Single-Family Home, 2000
http://buildingsdatabook.eren.doe.gov/?id=view_book_table&TableID=2036&t=xls
See also: NAHB, 2004 Housing Facts, Figures and Trends, Feb. 2004, p. 7.

Average window size Energy Information Administration/Housing Characteristics 1993
Appendix B, Quality of the Data, Pg. 5.
<ftp://ftp.eia.doe.gov/pub/consumption/residential/rx93hct.pdf>

Embodied GHG Emissions.....Worksheet Background Information

Buildings

Embodied GHG emissions are emissions that are created through the extraction, processing, transportation, construction and disposal of building materials as well as emissions created through landscape disturbance (by both soil disturbance and changes in above ground biomass).

Estimating embodied GHG emissions is new field of analysis; the estimates are rapidly improving and becoming more inclusive of all elements of construction and development.

The estimate included in this worksheet is calculated using average values for the main construction materials that are used to create a typical family home. In 2004, the National Association of Home Builders calculated the average materials that are used in a typical 2,272 square foot single-family household. The quantity of materials used is then multiplied by the average GHG emissions associated with the life-cycle GHG emissions for each material.

This estimate is a rough and conservative estimate; the actual embodied emissions for a project are likely to be higher. For example, at this stage, due to a lack of comprehensive data, the estimate does not include important factors such as landscape disturbance or the emissions associated with the interior components of a building (such as furniture).

King County realizes that the calculations for embodied emissions in this worksheet are rough. For example, the emissions associated with building 1,000 square feet of a residential building will not be the same as 1,000 square feet of a commercial building. However, discussions with the construction community indicate that while there are significant differences between the different types of structures, this method of estimation is reasonable; it will be improved as more data become available.

Additionally, if more specific information about the project is known, King County recommends two online embodied emissions calculators that can be used to obtain a more tailored estimate for embodied emissions: www.buildcarbonneutral.org and www.athenasmi.ca/tools/ecoCalculator/.

Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle. For specifics, see the worksheet.

Special Section: Estimating the Embodied Emissions for Pavement

Four recent life cycle assessments of the environmental impacts of roads form the basis for the per unit embodied emissions of pavement. Each study is constructed in slightly different ways; however, the aggregate results of the reports represent a reasonable estimate of the GHG emissions that are created from the manufacture of paving materials, construction related emissions, and maintenance of the pavement over its expected life cycle.

The results of the studies are presented in different units and measures; considerable effort was undertaken to be able to compare the results of the studies in a reasonable way. For more details about the below methodology, contact matt.kuharic@kingcounty.gov.

The four studies, Meil (2001), Park (2003), Stripple (2001) and Treolar (2001) produced total GHG emissions of 4-34 MTCO₂e per thousand square feet of finished paving (for similar asphalt and concrete based pavements). This estimate does not including downstream maintenance and repair of the highway. The average (for all concrete and asphalt pavements in the studies, assuming each study gets one data point) is ~17 MTCO₂e/thousand square feet.

Three of the studies attempted to thoroughly account for the emissions associated with long term maintenance (40 years) of the roads. Stripple (2001), Park et al. (2003) and Treolar (2001) report 17, 81, and 68 MTCO₂e/thousand square feet, respectively, after accounting for maintenance of the roads.

Based on the above discussion, King County makes the conservative estimate that 50 MTCO₂e/thousand square feet of pavement (over the development's life cycle) will be used as the embodied emission factor for pavement until better estimates can be obtained. This is roughly equivalent to 3,500 MTCO₂e per lane mile of road (assuming the lane is 13 feet wide).

It is important to note that these studies estimate the embodied emissions for roads. Paving that does not need to stand up to the rigors of heavy use (such as parking lots or driveways) would likely use less materials and hence have lower embodied emissions.

Sources:

Meil, J. A Life Cycle Perspective on Concrete and Asphalt Roadways: Embodied Primary Energy and Global Warming Potential. 2006. Available: [http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/\\$FILE/ATTKOWE3/athena%20report%20Feb.%202%202007.pdf](http://www.cement.ca/cement.nsf/eee9ec7bbd630126852566c40052107b/6ec79dc8ae03a782852572b90061b914/$FILE/ATTKOWE3/athena%20report%20Feb.%202%202007.pdf)

Park, K, Hwang, Y., Seo, S., M.ASCE, and Seo, H. , "Quantitative Assessment of Environmental Impacts on Life Cycle of Highways," Journal of Construction Engineering and Management , Vol 129, January/February 2003, pp 25-31, (DOI: 10.1061/(ASCE)0733-9364(2003)129:1(25)).

Stripple, H. Life Cycle Assessment of Road. A Pilot Study for Inventory Analysis. Second Revised Edition. IVL Swedish Environmental Research Institute Ltd. 2001. Available: <http://www.ivl.se/rapporter/pdf/B1210E.pdf>

Treolar, G., Love, P.E.D., and Crawford, R.H. Hybrid Life-Cycle Inventory for Road Construction and Use. Journal of Construction Engineering and Management. P. 43-49. January/February 2004.

Energy Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	Energy consumption per building per year (million Btu)	Carbon Coefficient for Buildings	MTCO2e per building per year	Floorspace per Building (thousand square feet)	MTCE per thousand square feet per year	MTCO2e per thousand square feet per year	Average Building Life Span	Lifespan Energy Related MTCO2e emissions per unit	Lifespan Energy Related MTCO2e emissions per thousand square feet
Single-Family Home.....	107.3	0.108	11.61	2.53	4.6	16.8	57.9	672	266
Multi-Family Unit in Large Building	41.0	0.108	4.44	0.85	5.2	19.2	80.5	357	422
Multi-Family Unit in Small Building	78.1	0.108	8.45	1.39	6.1	22.2	80.5	681	489
Mobile Home.....	75.9	0.108	8.21	1.06	7.7	28.4	57.9	475	448
Education	2,125.0	0.124	264.2	25.6	10.3	37.8	62.5	16,526	646
Food Sales	1,110.0	0.124	138.0	5.6	24.6	90.4	62.5	8,632	1,541
Food Service	1,436.0	0.124	178.5	5.6	31.9	116.9	62.5	11,168	1,994
Health Care Inpatient	60,152.0	0.124	7,479.1	241.4	31.0	113.6	62.5	467,794	1,938
Health Care Outpatient	985.0	0.124	122.5	10.4	11.8	43.2	62.5	7,660	737
Lodging	3,578.0	0.124	444.9	35.8	12.4	45.6	62.5	27,826	777
Retail (Other Than Mall).....	720.0	0.124	89.5	9.7	9.2	33.8	62.5	5,599	577
Office	1,376.0	0.124	171.1	14.8	11.6	42.4	62.5	10,701	723
Public Assembly	1,338.0	0.124	166.4	14.2	11.7	43.0	62.5	10,405	733
Public Order and Safety	1,791.0	0.124	222.7	15.5	14.4	52.7	62.5	13,928	899
Religious Worship	440.0	0.124	54.7	10.1	5.4	19.9	62.5	3,422	339
Service	501.0	0.124	62.3	6.5	9.6	35.1	62.5	3,896	599
Warehouse and Storage	764.0	0.124	95.0	16.9	5.6	20.6	62.5	5,942	352
Other	3,600.0	0.124	447.6	21.9	20.4	74.9	62.5	27,997	1,278
Vacant	294.0	0.124	36.6	14.1	2.6	9.5	62.5	2,286	162

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

Energy consumption for residential buildings

2007 Buildings Energy Data Book: 6.1 Quad Definitions and Comparisons (National Average, 2001)
 Table 6.1.4: Average Annual Carbon Dioxide Emissions for Various Functions
<http://buildingsdatabook.eren.doe.gov/>
 Data also at: http://www.eia.doe.gov/emeu/recs/recs2001_ce/ce1-4c_housingunits2001.html

Energy consumption for commercial buildings and Floorspace per building

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)
 Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Note: Data in plum color is found in both of the above sources (buildings energy data book and commercial buildings energy consumption survey).

Carbon Coefficient for Buildings

Buildings Energy Data Book (National average, 2005)
 Table 3.1.7. 2005 Carbon Dioxide Emission Coefficients for Buildings (MMTCE per Quadrillion Btu)
http://buildingsdatabook.eere.energy.gov/?id=view_book_table&TableID=2057
 Note: Carbon coefficient in the Energy Data book is in MTCE per Quadrillion Btu.
 To convert to MTCO2e per million Btu, this factor was divided by 1000 and multiplied by 44/12.

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/sqft-measure.html>

average life span of buildings,
estimated by replacement time method

	Single Family Homes	Multi-Family Units in Large and Small Buildings	All Residential Buildings
New Housing Construction, 2001	1,273,000	329,000	1,602,000
Existing Housing Stock, 2001	73,700,000	26,500,000	100,200,000
Replacement time:	57.9	80.5	62.5

(national average, 2001)

Note: Single family homes calculation is used for mobile homes as a best estimate life span.

Note: At this time, KC staff could find no reliable data for the average life span of commercial buildings.

Therefore, the average life span of residential buildings is being used until a better approximation can be ascertained.

Sources:

New Housing Construction,

2001 Quarterly Starts and Completions by Purpose and Design - US and Regions (Excel)
http://www.census.gov/const/quarterly_starts_completions_cust.xls
 See also: <http://www.census.gov/const/www/newresconstindex.html>

Existing Housing Stock,

2001 Residential Energy Consumption Survey (RECS) 2001
 Tables HC1:Housing Unit Characteristics, Million U.S. Households 2001
 Table HC1-4a. Housing Unit Characteristics by Type of Housing Unit, Million U.S. Households, 2001
 Million U.S. Households, 2001
http://www.eia.doe.gov/emeu/recs/recs2001/hc_pdf/housunits/hc1-4a_housingunits2001.pdf

Transportation Emissions Worksheet

Type (Residential) or Principal Activity (Commercial)	# people/ unit or building	# thousand sq feet/ unit or building	# people or employees/ thousand square feet	vehicle related GHG emissions (metric tonnes CO2e per person per year)	MTCO2e/ year/ unit	MTCO2e/ year/ thousand square feet	Average Building Life Span	Life span transportation related GHG emissions (MTCO2e/ per unit)	Life span transportation related GHG emissions (MTCO2e/ thousand sq feet)
Single-Family Home.....	2.8	2.53	1.1	4.9	13.7	5.4	57.9	792	313
Multi-Family Unit in Large Building	1.9	0.85	2.3	4.9	9.5	11.2	80.5	766	904
Multi-Family Unit in Small Building	1.9	1.39	1.4	4.9	9.5	6.8	80.5	766	550
Mobile Home.....	2.5	1.06	2.3	4.9	12.2	11.5	57.9	709	668
Education	30.0	25.6	1.2	4.9	147.8	5.8	62.5	9247	361
Food Sales	5.1	5.6	0.9	4.9	25.2	4.5	62.5	1579	282
Food Service	10.2	5.6	1.8	4.9	50.2	9.0	62.5	3141	561
Health Care Inpatient	455.5	241.4	1.9	4.9	2246.4	9.3	62.5	140506	582
Health Care Outpatient	19.3	10.4	1.9	4.9	95.0	9.1	62.5	5941	571
Lodging	13.6	35.8	0.4	4.9	67.1	1.9	62.5	4194	117
Retail (Other Than Mall).....	7.8	9.7	0.8	4.9	38.3	3.9	62.5	2394	247
Office	28.2	14.8	1.9	4.9	139.0	9.4	62.5	8696	588
Public Assembly	6.9	14.2	0.5	4.9	34.2	2.4	62.5	2137	150
Public Order and Safety	18.8	15.5	1.2	4.9	92.7	6.0	62.5	5796	374
Religious Worship	4.2	10.1	0.4	4.9	20.8	2.1	62.5	1298	129
Service	5.6	6.5	0.9	4.9	27.6	4.3	62.5	1729	266
Warehouse and Storage	9.9	16.9	0.6	4.9	49.0	2.9	62.5	3067	181
Other	18.3	21.9	0.8	4.9	90.0	4.1	62.5	5630	257
Vacant	2.1	14.1	0.2	4.9	10.5	0.7	62.5	657	47

Sources

All data in black text

King County, DNRP. Contact: Matt Kuharic, matt.kuharic@kingcounty.gov

people/ unit

Estimating Household Size for Use in Population Estimates (WA state, 2000 average)
 Washington State Office of Financial Management
 Kimpel, T. and Lowe, T. Research Brief No. 47. August 2007
<http://www.ofm.wa.gov/researchbriefs/brief047.pdf>

Note: This analysis combines Multi Unit Structures in both large and small units into one category; the average is used in this case although there is likely a difference

Residential floorspace per unit

2001 Residential Energy Consumption Survey (National Average, 2001)
 Square footage measurements and comparisons
<http://www.eia.doe.gov/emeu/recs/recs/sqft-measure.html>

employees/thousand square feet

Commercial Buildings Energy Consumption Survey commercial energy uses and costs (National Median, 2003)
 Table B2 Totals and Medians of Floorspace, Number of Workers, and Hours of Operation for Non-Mall Buildings, 2003
http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set1/2003excel/b2.xls

Note: Data for # employees/thousand square feet is presented by CBECS as square feet/employee.

In this analysis employees/thousand square feet is calculated by taking the inverse of the CBECS number and multiplying by 1000.

vehicle related GHG emissions

Estimate calculated as follows (Washington state, 2006)_

56,531,930,000 2006 Annual WA State Vehicle Miles Traveled

Data was daily VMT. Annual VMT was 365*daily VMT.

<http://www.wsdot.wa.gov/mapsdata/tdo/annualmileage.htm>

6,395,798 2006 WA state population

<http://quickfacts.census.gov/qfd/states/53000.html>

8839 vehicle miles per person per year

0.0506 gallon gasoline/mile

This is the weighted national average fuel efficiency for all cars and 2 axle, 4 wheel light trucks in 2005. This includes pickup trucks, vans and SUVs. The 0.051 gallons/mile used here is the inverse of the more commonly known term "miles/per gallon" (which is 19.75 for these cars and light trucks).

Transportation Energy Data Book. 26th Edition. 2006. Chapter 4: Light Vehicles and Characteristics. Calculations based on weighted average MPG efficiency of cars and light trucks.

http://cta.oml.gov/data/tebd26/Edition26_Chapter04.pdf

Note: This report states that in 2005, 92.3% of all highway VMT were driven by the above described vehicles.

http://cta.oml.gov/data/tebd26/Spreadsheets/Table3_04.xls

24.3 lbs CO2e/gallon gasoline

The CO2 emissions estimates for gasoline and diesel include the extraction, transport, and refinement of petroleum as well as their combustion.

Life-Cycle CO2 Emissions for Various New Vehicles. RENew Northfield.

Available: <http://renewnorthfield.org/wpcontent/uploads/2006/04/CO2%20emissions.pdf>

Note: This is a conservative estimate of emissions by fuel consumption because diesel fuel, with a emissions factor of 26.55 lbs CO2e/gallon was not estimated.

2205

4.93 lbs/metric tonne

vehicle related GHG emissions (metric tonnes CO2e per person per year)

average life span of buildings, estimated
by replacement time method

See Energy Emissions Worksheet for Calculations

Commercial floorspace per unit

EIA, 2003 Commercial Buildings Energy Consumption Survey (National Average, 2003)

Table C3. Consumption and Gross Energy Intensity for Sum of Major Fuels for Non-Mall Buildings, 2003

http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/2003set9/2003excel/c3.xls

Final Environmental Impact Statement

SOUTH LAKE UNION Height and Density Alternatives



City of Seattle

2012

Prepared by:
City of Seattle
Department of Planning and Development

FINAL
ENVIRONMENTAL IMPACT STATEMENT

for the

SOUTH LAKE UNION
HEIGHT AND DENSITY
ALTERNATIVES

City of Seattle
Department of Planning & Development

This Final Environmental Impact Statement (Final EIS) considering **South Lake Union Height & Density** alternatives has been prepared in compliance with the State Environmental Policy Act (SEPA) of 1971 (Chapter 43.21C, Revised Code of Washington); the SEPA Rules (Chapter 197-11, Washington Administrative Code); and rules adopted by the City of Seattle implementing SEPA – Seattle’s Environmental Policies and Procedures Code (Chapter 25.05, Seattle Municipal Code). Preparation of this EIS is the responsibility of the City of Seattle. As Lead Agency, the City is responsible for SEPA compliance and based on the scoping process has directed the areas of research and analysis that were undertaken in preparation of this EIS. This document is not an authorization for an action, nor does it constitute a decision or a recommendation for an action. In its final form – as a Final EIS – it will accompany the *Proposed Action* and will be considered in making final decisions concerning proposed options for **South Lake Union Height & Density**.

Date of Draft EIS Issuance **February 24, 2011**
Date of Draft EIS Public Meeting: **March 28, 2011**
Date Comments were Due on the Draft EIS **April 11, 2011**
Date of Final EIS Issuance **April 5, 2012**



City of Seattle

Department of Planning & Development
Diane M. Sugimura, Director

April 5, 2012

Dear Affected Agencies, Organizations and Interested Parties:

Enclosed is the Final Environmental Impact Statement (Final EIS) for proposed South Lake Union Height & Density Alternatives in the South Lake Union neighborhood.

Three site alternatives representing varying height and density configurations, as well as geographic locations, are evaluated in this EIS, together with a No Action Alternative. The site alternatives include:

- Alternative 1 – Greatest potential increase in height and density;
- Alternative 2 – Moderate potential increase in height and density;
- Alternative 3 – Least amount of potential increase in height and density; and
- Alternative 4 – No Action – current zoning.

The Final EIS responds to comments offered by the public during the Draft EIS comment period and includes some modification and revisions to the analysis provided in the Draft EIS as appropriate.

The appeal period associated with this Final EIS is: April 5, 2012 through April 18, 2012.

Thank you for your interest in the South Lake Union Height and Density FEIS.

Sincerely,

A handwritten signature in black ink that reads "Diane M. Sugimura".

Diane M. Sugimura
Director

FACT SHEET

Name of Proposal

South Lake Union Height and Density Alternatives

Proponent

City of Seattle

Location

The area represented by this Final EIS is the South Lake Union neighborhood of downtown Seattle. This is approximately a 340-acre area that is generally bounded by Denny Way on the south, Aurora Avenue N. on the west, Eastlake Avenue E. on the east and Galer Street and E. Nelson Place on the north.

Proposed Alternatives

This Final EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

- **Alternative 1** – This alternative would allow the greatest increases in height and density relative to the other alternatives. Height and density increases apply both to proposed commercial and residential development. In general, greatest building height would be located along the south boundary of the neighborhood.
- **Alternative 2** – This alternative would allow moderate increases in height and density relative to the three action alternatives. In general, greatest building heights would be located in the southwest portion of the neighborhood.
- **Alternative 3** – This alternative would allow the least amount of height and density increases relative to the three action alternatives. In general, greatest building heights would be allowed in the southwest portion of the neighborhood.
- **Alternative 4** – This alternative would retain existing zoning designations and associated development standards within the neighborhood.

Lead Agency

City of Seattle
Department of Planning and Development

SEPA Responsible Official

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Seattle, WA 98124-4019

Final Action

Adoption of code amendments that would provide incentive zoning provisions to allow increased height and density in the South Lake Union neighborhood

Required Approvals and/or Permits

Approval of amendments by the Seattle City Council.

Authors and Principal Contributors to this EIS

This ***South Lake Union Height and Density*** EIS has been prepared under the direction of the City of Seattle Department of Planning and Development. Research and analysis associated with this EIS were provided by the following consulting firms:

- **EA|Blumen** – lead EIS consultant; document preparation; environmental analysis – land use – relationship to plans/policies & regulations, energy (greenhouse gas emissions), housing, and public services
- **NBBJ** – aesthetics, light/glare, shadow, viewshed
- **Fehr & Peers** – transportation, circulation, parking; greenhouse gas emissions
- **Shannon & Wilson** – earth, plants/animals, environmental health
- **ENVIRON International Corp.** – air quality, noise
- **BOLA Architecture & Planning, Inc.** – historic/resources
- **Cultural Resources Consultants** – archaeology
- **Coughlin Porter Lundeen** – utilities
- **RWDI** – wind

Location of Background Data

City of Seattle, Department of Planning and Development

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Kirkland, WA 98034-6927

Date of Issuance of the Draft EIS

February 24, 2011

Date Draft EIS Comments Were Due

April 11, 2011

Date of Draft EIS Open House and Public Hearing

An open house and public hearing regarding the Draft EIS was held on March 28, 2011

Date of Issuance of the Final EIS

April 5, 2011

Availability of this Final EIS

Copies of this Final EIS have been distributed to agencies, organizations and individuals noted on the Distribution List (Appendix A). Notice of Availability of the Final EIS has been provided to organizations and individuals that requested to become parties of record.

The Final EIS can be reviewed at the following public libraries:

- **Seattle Public Library – Central Library** (1000 Fourth Avenue)
- **Seattle Public Library – Queen Anne Branch** (400 W Garfield Street)
- **Seattle Public Library – Capitol Hill Branch** (425 Harvard Ave. E.)

A limited number of complimentary copies of this Final EIS are available – while the supply lasts – either as a CD or hardcopy from the Seattle Department of Planning and Development Public Resource Center, which is located in Suite 2000, 700 Fifth Avenue, in Downtown Seattle. Additional copies may be purchased at the Public Resource Center for the cost of reproduction.

This Final EIS and the appendices are also available online at:
http://www.seattle.gov/dpd/Planning/South_Lake_Union/Overview/default.asp

TABLE OF CONTENTS

1.	ENVIRONMENTAL SUMMARY	1-1
1.1	Proposal	1-1
1.2	Location.....	1-2
1.3	Objectives of the Proposal.....	1-2
1.4	Alternatives	1-3
1.5	Summary of Potential Impacts and Mitigation Strategies.....	1-8
1.6	Mitigation Strategies.....	1-30
1.7	Significant Unavoidable Adverse Impacts.....	1-62
1.8	Major Issues to be Resolved	1-63
2.	DESCRIPTION of the PROPOSAL and ALTERNATIVES	2-1
2.1	Introduction.....	2-1
2.2	Planning Context	2-6
2.3	Proposed Action and Alternatives	2-17
2.4	Environmental Review	2-33
2.5	Benefits and Disadvantages of Delaying the Proposed Action	2-35
3.	CLARIFICATIONS, CORRECTIONS and EXPANDED DISCUSSION	3-1
3.1	Draft EIS 3.4 Plants and Animals Clarifications or Corrections...	3-1
3.2	Draft EIS 3.8 Land Use Clarifications or Corrections	3-2
3.3	Draft EIS 3.9 Housing Clarifications or Corrections	3-11
3.4	Draft EIS 3.10 Aesthetics Clarifications or Corrections.....	3-13
3.5	Draft EIS 3.13 Transportation Clarifications or Corrections....	3-108
3.6	Draft EIS 3.14 Public Services Clarifications or Corrections....	3-203
3.7	Draft EIS 3.15 Utilities Clarifications or Corrections	3-211
4.	COMMENTS and RESPONSES	4-1
4.1	Public Comments	4-1
4.2	Responses to Comments.....	4-8
5.	PUBLIC HEARING RESPONSES	5-1
5.1	Public Hearing	5-1

APPENDICES

Distribution List	Appendix A
Aesthetics	Appendix D
Transportation	Appendix E
Additional Flight Path Analysis.....	Appendix F

LIST OF TABLES

1-1	Alternatives Overview	1-4
1-2	Summary of Impacts	1-9
1-3	PM Peak Hour Trip Generation with and without Mitigation..	1-57
1-4	Mitigated Action Alternative: Demand-to-Capacity Ratios of Study Corridors	1-58
1-5	South Lake Union Peak Hour Transit Mitigation.....	1-59
2-1	City of Seattle Growth Targets	2-8
2-2	Development Capacity	2-9
2-3	Alternatives Overview	2-17
3.3-1	Multi-Family Apartment Buildings within the South Lake Union Neighborhood	3-11
3.5-ES1	Summary of Impacts to the Transportation System	3-108
3.5-ES2	PM Peak Hour Trip Generation by Alternative.....	3-109
3.5-ES3	PM Peak Hour Trip Generation by Mitigated Alternative	3-111
3.5-1	King County Metro Routes in South Lake Union	3-120
3.5-2	Levels of Service.....	3-134
3.5-3	Study Corridors	3-137
3.5-4	Existing Condition Demand-to-Capacity Ratios of Study Corridors.....	3-143
3.5-5	South Lake Union Transit AM Peak Hour Load Factors.....	3-147
3.5-6	South Lake Union Transit PM Peak Hour Load Factors	3-147
3.5-7	Sample Mode-Split of South Lake Union CTR Participants....	3-149
3.5-8	Trip Generation by Alternative	3-163
3.5-9	No Action Alternative: Demand-to-Capacity Ratios of Study Corridors	3-167
3.5-10	No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Load Factors.....	3-170
3.5-11	No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Headways.....	3-172
3.5-12	No Action Alternative: Estimated Additional Off-Street Parking Supply.....	3-173
3.5-13	Demand-To-Capacity Ratios of Study Corridors.....	3-177
3.5-14	Action and No Action Comparison: 2031 South Lake Union Transit Route AM Load Factors	3-182
3.5-15	No Action and Action Alternatives Comparison: Estimated Additional Parking Supply.....	3-184

3.5-16	PM Peak Hour Trip Generation with and without Mitigation.....	3-199
3.5-17	Mitigated Action Alternatives: Demand-To-Capacity Ratios Of Study Corridors.....	3-200
3.5-18	South Lake Union Peak Hour Transit Mitigation.....	3-202
3.6-1	Seattle School District Total Enrollment – 2004-2009.....	3-207
3.6-2	Attendance Area School Enrollment – 2009-2010.....	3-207
3.6-3	Projected Seattle School District Functional Capacity and Enrollment – 2015	3-206
3.6-4	Projected Student Generation for the South Lake Union Neighborhood.....	3-208
3.6-5	Projected Student Generation and Forecasted Functional Capacity – Action Alternatives.....	3-209
3.6-6	Projected Student Generation and Forecasted Functional Capacity – No Action Alternative	3-210
4-1	Public Comments Received During the Comment Period.....	4-1
4-2	Responses to Public Comments Received During the Comment Period.....	4-11
5-1	Public Comments Received During the Comment Period.....	5-3

LIST OF FIGURES

1-1	South Lake Union Neighborhood.....	1-2
2-1	Vicinity Map.....	2-3
2-2	Neighborhood Plan.....	2-4
2-3	Focus Areas.....	2-5
2-4	Draft EIS Lake Union Seaport Airport Flight Path	2-10
2-4(A)	Draft EIS Lake Union Seaport Airport Flight Path	2-11
2-4(B)	Draft EIS Lake Union Seaport Airport Flight Path	2-12
2-5	Existing Zoning Designations	2-14
2-6	Alternative 1 UPDATED WITH REVISED FLIGHT PATH	2-20
2-7	Alternative 2 UPDATED WITH REVISED FLIGHT PATH	2-23
2-8	Alternative 3 UPDATED WITH REVISED FLIGHT PATH	2-26
2-9	Alternative 4 UPDATED WITH REVISED FLIGHT PATH	2-29
2-10	Upper Level Setback Requirements	2-31
3.2-1	Revised Lake Union Airport Seaport Flight Path	3-7
3.2-2	Revised Lake Union Airport Seaport Flight Path	3-8
3.4-1	Lake Union Seaport Airport Flight Path.....	3-18
3.4-2	Birds-eye View – Alternative 1.....	3-20
3.4-3	Gasworks Park View – Alternative 1	3-21
3.4-3	Gasworks Park View – Alternative 1	3-22
3.4-5	Gasworks Park View – Alternative 2	3-23
3.4-6	Birds-eye View – Alternative 3.....	3-24
3.4-7	Gasworks Park View – Alternative 3	3-25

3.4-8	Birds-eye View – Alternative 4.....	3-26
3.4-9	Gasworks Park View – Alternative 4	3-27
3.4-10	Street-Level View: Eighth looking South – Alternative 1.....	3-33
3.4-11	Street-Level View: Fairview Avenue N – Alternative 1.....	3-34
3.4-12	Street-Level View: Mercer Street – Alternative 1.....	3-36
3.4-13	Street-Level View: Eighth looking South – Alternative 2.....	3-39
3.4-14	Street-Level View: Fairview Avenue N – Alternative 2.....	3-40
3.4-15	Street-Level View: Mercer Street – Alternative 2.....	3-41
3.4-16	Street-Level View: Eighth Avenue N – Alternative 3	3-44
3.4-17	Street-Level View: Fairview Avenue N – Alternative 3.....	3-45
3.4-18	Street-Level View: Mercer Street – Alternative3	3-46
3.4-19	Street-Level View: Eighth Avenue N – Alternative 4	3-48
3.4-20	Street-Level View: Fairview Avenue N – Alternative 4.....	3-49
3.4-21	Street-Level View: Mercer Street – Alternative 4.....	3-50
3.4-22	Viewshed Locations.....	3-53
3.4-23	Volunteer Park – Alternative 1.....	3-58
3.4-24	Bhy Kracke Park – Alternative 1	3-59
3.4-25	Westlake Avenue N – Alternative 1	3-60
3.4-26	Westlake Avenue N – Alternative 1	3-61
3.4-27	Fairview Avenue N – Alternative 1	3-62
3.4-28	Fairview Avenue N – Alternative 1	3-63
3.4-29	Mercer Street Off-ramp – Alternative 1.....	3-64
3.4-30	I-5 – Alternative 1.....	3-65
3.4-31	Volunteer Park – Alternative 2.....	3-67
3.4-32	Bhy KrackePark – Alternative 2.....	3-68
3.4-33	Westlake Avenue N – Alternative 2.....	3-69
3.4-34	Westlake Avenue N – Alternative 2	3-70
3.4-35	Fairview Avenue N – Alternative 2.....	3-71
3.4-36	Fairview Avenue N – Alternative 2.....	3-72
3.4-37	Mercer Street Off-ramp – Alternative 2.....	3-73
3.4-38	I-5 – Alternative 2.....	3-74
3.4-39	Volunteer Park – Alternative 3.....	3-75
3.4-40	Bhy Kracke Park – Alternative 3	3-76
3.4-41	Westlake Avenue N - Alternative 3.....	3-77
3.4-42	Westlake Avenue N – Alternative 3.....	3-78
3.4-43	Fairview Avenue N – Alternative 3.....	3-79
3.4-44	Fairview Avenue N – Alternative 3.....	3-80
3.4-45	Mercer Street Off-ramp – Alternative 3.....	3-81
3.4-46	I-5 – Alternative 3.....	3-82
3.4-47	Volunteer Park – Alternative 4.....	3-83
3.4-48	Bhy Kracke Park – Alternative 4	3-84
3.4-49	Westlake Avenue N – Alternative 4.....	3-85
3.4-50	Westlake Avenue N – Alternative 4.....	3-86

3.4-51	Fairview Avenue N – Alternative 4	3-87
3.4-52	Fairview Avenue N – Alternative 4	3-88
3.4-53	Mercer Street Off-ramp – Alternative 4	3-89
3.4-54	I-5 – Alternative 4	3-90
3.5-1	South Lake Union Neighborhood Map.....	3-112
3.5-2	Pedestrian Facilities – Existing Conditions.....	3-114
3.5-3	Bicycle Facilities – Existing Conditions.....	3-117
3.5-4	Transit Facilities – Existing Conditions.....	3-118
3.5-5	Roadway Functional Class – Existing Conditions.....	3-121
3.5-6	Off-Street Parking Supply and Occupancy (2006)	3-125
3.5-7	Off-Street Parking Supply and Occupancy (2006)	3-127
3.5-8	On-Street Parking Facilities – Existing Conditions.....	3-129
3.5-9	On-Street Parking Supply and Occupancy (2010)	3-130
3.5-10	Major Truck Streets – Existing Conditions	3-131
3.5-11	Study Corridors – Existing Conditions.....	3-138
3.5-12	Demand to Capacity Ratios – Existing Conditions.....	3-145
3.5-13	Reasonably Foreseeable Transportation Improvements.....	3-154
3.5-14	Roadway Improvement Not Assumed Under Future Conditions.....	3-155
3.5-15	Pedestrian and Bicycle Improvements Not Assumed Under Future Conditions.....	3-155
3.5-16	Comparison of Traditional and Enhanced Trip Generation Methods.....	3-159
3.5-17	Neighborhood Boundaries Used for Trip Generation.....	3-160
3.5-18	External Vehicle Trip Distribution.....	3-164
3.5-19	Demand-to-Capacity Ratios – No Action Alternative.....	3-169
3.5-20	Demand-to-Capacity Ratios – Alternative 1.....	3-179
3.5-21	Demand-to-Capacity Ratios – Alternative 2.....	3-180
3.5-22	Demand-to-Capacity Ratios – Alternative 3.....	3-181
3.5-23	Mitigation Measures	3-189
3.6-1	Seattle Public School Locations	3-204

Environmental Summary

CHAPTER 1 ENVIRONMENTAL SUMMARY

This chapter summarizes environmental impacts, mitigation strategies and significant unavoidable adverse impacts for four alternatives to height and density in the South Lake Union Neighborhood that are evaluated in this Environmental Impact Statement (EIS). This summary provides a brief overview of the information considered in this EIS. The reader should consult Chapter 2 for a detailed description of the alternatives and Chapter 3 of the Draft EIS for more information concerning the affected environment, environmental impacts and mitigation strategies for each element of the environment.

1.1 Proposal

This EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

Among the action alternatives, Alternative 1 would provide the greatest potential for increases in height and density, Alternative 3 the least, and Alternative 2 falls between Alternatives 1 and 3. Alternative 1 would allow for building heights of 240 to 300 feet in much of the neighborhood, with maximum heights of 400 feet between John Street and Denny Way. Alternative 2 would allow for maximum heights of 300 feet in the area between Aurora and Westlake avenues north, with much of the rest of the neighborhood at maximum heights of 160 to 240 feet. Under Alternative 3, the majority of the neighborhood would have maximum building heights of 160 feet to 240 feet. Under Alternatives 2 and 3, existing zoning, with no provision for increased height through zoning incentives, would be retained in the majority of the Cascade neighborhood, with changes limited to areas near the western and southern boundaries in Alternative 2 and along the western boundary in Alternative 3. Similarly, under Alternative 3, the majority of the Fairview neighborhood would also retain existing zoning, with no provision for increased height through incentive zoning.

Alternatives 1 and 2 would provide for height and density increases for both commercial and residential development while Alternative 3 is focused primarily on residential development.

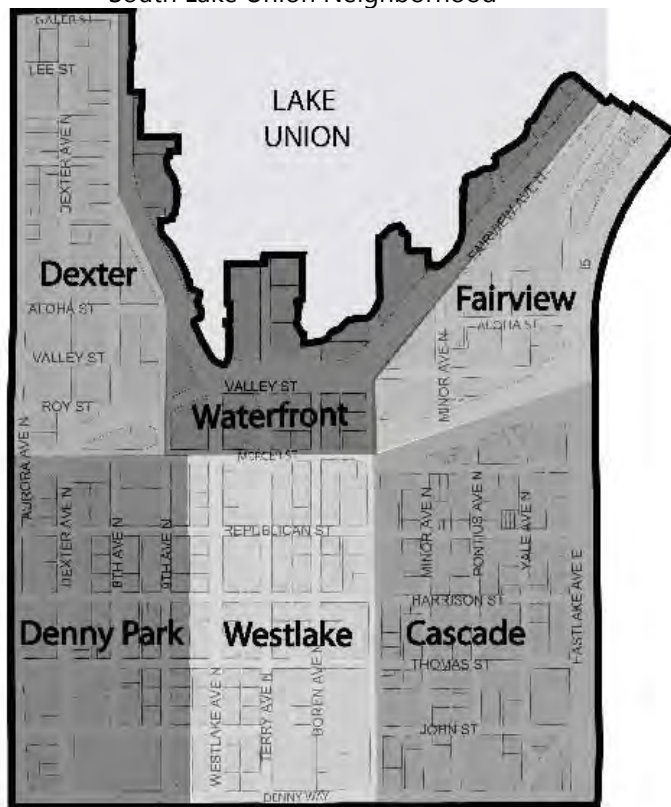
<i>Proposal</i>	1
<i>Location</i>	2
<i>Objectives of the Proposal</i>	2
<i>Alternatives</i>	3
<i>Summary of Potential Impacts and Mitigation Strategies</i>	8
<i>Mitigation Strategies</i> ...	30
<i>Significant Unavoidable Adverse Impacts</i> ...	62
<i>Major Issues to be Resolved</i> ...	63

1.2 Location

The South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east, respectively. Consisting of about 340 acres, the area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way and on the north by the Lake Union shoreline.

For planning purposes, the City has identified six neighborhoods in the neighborhood, known as the Dexter, Denny Park, Waterfront, Westlake, Fairview and Cascade neighborhoods. See Figure 1-1.

Figure 1-1
South Lake Union Neighborhood



Source: South Lake Union Urban Center Neighborhood Plan, 2007

1.3 Objectives of the Proposal

The City has identified the following specific objectives of the proposal:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.

- Ensure adequate zoned development capacity for long-term growth consistent with the designation of South Lake Union as one of the City’s six urban centers.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Promote a land use pattern that provides for a balanced mix of residential and employment opportunities.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.
- Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems.

1.4 Alternatives

In order to meet the goals of the Comprehensive Plan, the City is considering adoption of incentive zoning provisions to allow increased height and density in certain areas of the South Lake Union neighborhood. The City has identified four alternatives, each of which describes a different pattern of height and density in the neighborhood. In general, Alternative 1 would provide for the greatest increases in building height and corresponding residential density. Similarly, Alternative 2 provides for height and density increases, but relatively less than Alternative 1. Alternative 3 provides for the least amount of height and density increase relative to the action alternatives. Alternative 4 would retain the existing zoning standards and height limits. **Table 1-1** summarizes the key features of the alternatives.

*Proposal
Location
Objectives of the
Proposal*

Alternatives

*Summary of
Potential
Impacts and
Mitigation
Strategies
Mitigation
Strategies
Significant
Unavoidable
Adverse Impacts
Major Issues to
be Resolved*

Table 1-1
Alternatives Overview

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Podium Height	45' – 85'	30 – 45'	20 – 45'	Not applicable
Incentive Zoning Height Limits	85' – 400'	85' – 300'	85' – 240'	Not applicable
Floor Plate Size	Commercial - 24,000 sf above podium height for commercial Residential - 10,500 sf average/11,500 sf maximum above podium height			Not applicable
Commercial Floor Area Ratio	Base of 4.5 or 5; up to 7 with bonuses Varies according to building height and podium size. The range of densities at different heights is shown below. Note that not all alternatives include all of the heights listed.			4.5 to 5
Residential Densities	400' height limit: 720 – 890 units/acre 300' height limit: 562 – 655 units/acre 240' height limit: 465 – 535 units/acre 160' height limit: 327 – 385 units/acre Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See Draft EIS Appendix B for complete methodology.			Not applicable
Minimum Lot Size for Towers	22,000 sf (2 towers/block), 60,000 sf (1 tower/block)			Not applicable

Source: City of Seattle, 2010

Incentives

An incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities. As shown in **Table 1-1**, the three action alternatives include the potential for an FAR bonus and increased height through the provision of public benefits as defined by incentive zoning.

Seattle Municipal Code Section 23.58A establishes conditions and process for development incentives. As described in this Section, buildings less than 85 feet in height may gain increased floor area only through the provision of affordable housing as established by the provisions of Section 23.58A.014. For buildings greater than 85 feet in height, other City

A podium is the base of a building that supports a tower.

A floor plate is the horizontal plane of the floor of a building, measured to the inside surface of exterior walls.

Floor area ratio is the ratio of the total square feet of a building to the total square feet of the property on which it is located.

approved bonus options may be used for up to 40% of their increased floor area, as long as at least 60% of the increased floor area is supported by the provision of affordable housing through the process established in Section 23.58A.014.

Although not currently applicable in South Lake Union, future development under any of the action alternatives would be able to seek floor area bonuses consistent with the requirements of Seattle Municipal Code 23.58A. For buildings taller than 85 feet in height, potential public benefits that could be included as a future development incentive, in addition to the affordable housing requirement, will be specifically identified following public comment and City review of EIS findings.

Alternatives 1 – 3 (Action Alternatives)

The following features are common to all of the action alternatives.

- **Shoreline Designations.** No changes to the existing shoreline designations are proposed under any of the alternatives.
- **Permitted Uses.** No change to the permitted uses in the Seattle Mixed zone is proposed under any of the alternatives.
- **Floor Plate Size.** In all alternatives, commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.
- **Floor Area Ratio.** In all alternatives, the commercial floor area ratio is limited to a base of 4.5 or five, with potential of increasing to a maximum of seven through use of incentives or transfer of development rights (TDR).
- **Tower Location.** In all alternatives, a maximum of one tower per block (equivalent to a minimum 60,000 sf lot size) near Lake Union, but outside of the designated shoreline area, is permitted. In all other areas, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.
- **Lake Union Seaport Airport.** In all alternatives, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements.

Key unique features associated with each of the action alternatives are described below:

Alternative 1

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Building Heights. Greatest heights are permitted along the southern edge of the neighborhood, between Denny Way and John Street. In this area, residential towers could be 400 feet and commercial towers 240 feet in height.

Lowest heights continue in the east central part of the neighborhood, roughly corresponding to the Cascade neighborhood. In this area, maximum heights of 160 feet for residential towers and 85 feet for commercial uses are established.

In the balance of the neighborhood, maximum heights range between 240 to 300 feet for residential towers. Commercial uses in mixed use buildings are limited to 20 feet along the 8th Avenue corridor, between John and Republican Streets and to 85 feet in the blocks bounded by Mercer, Valley and Roy streets and 9th Avenue. In the remaining areas, commercial height limits vary from 160 feet to 240 feet.

Podium Heights. Podium heights of up to 85 feet are allowed along the Mercer Street corridor. Along the Dexter, Westlake, Fairview and Denny Way corridors, maximum podium height is 65 feet. Podium heights are limited to 45 feet in the balance of the area.

Alternative 2

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Greatest heights are permitted in the southwestern portion of the neighborhood, corresponding to the Denny Park subarea. In this area, residential towers could be 300 feet and commercial towers 160 feet in height. Within this area, height limits are reduced along the 8th Avenue corridor, with commercial development limited to 20 feet and residential to 240 feet in height.

Height limits are lowest in the northern part of the neighborhood. In the blocks bounded by Mercer, Valley and Roy Streets and 9th Avenue North, commercial uses are limited to 85 feet and residential uses to 160 feet in

height. Immediately to the east, in the Fairview neighborhood, building heights are limited to 125 feet. In the balance of the neighborhood, maximum height for residential towers is 240 feet and for commercial buildings 160 feet.

Podium Heights. Podium heights are limited to 30 feet along the 8th Avenue corridor and 45 feet in all other parts of the neighborhood.

Alternative 3

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Building Heights. Alternative 3 allows building heights up to 240 feet for residential development and 125 feet for commercial uses between Denny Way, John Street, 9th Avenue North and the east side of Fairview Avenue.

Commercial use height limits vary between 65 feet to 85 feet in the rest of the area. In the central part of the neighborhood, residential height limits decrease from 240 feet along John Street to 125 feet in the blocks between Mercer and Valley Streets. West of 9th Avenue and north of Mercer Street (Dexter neighborhood), residential building heights are limited to 240 feet.

Podium Heights. Podium heights are limited to 20 feet along the 8th and 9th Avenue corridors. West and north of this corridor, podium heights are limited to 30 feet. In the remaining area, podium heights are limited to 45 feet.

No Action Alternative

Zoning Designations. The majority of the neighborhood would remain Seattle Mixed at varying heights, ranging from SM-125" along Denny Way, down to SM-40 in the north central part of the neighborhood. The Fairview area would retain the existing Commercial (C2) zoning. The central portion of the neighborhood would remain in an Industrial Commercial (IC) zone.

Shoreline Designations. No changes to the existing shoreline designations are proposed.

Building Heights. In general, height limits are lowest near Lake Union and in the Cascade Subarea, with height limits ranging between 40 and 75 feet in these areas. Greatest heights (up to 125 feet) are permitted along the southern edge of the neighborhood, along Denny Way and John Street. In this area, a maximum of 125 feet is permitted.

Podium Heights. Existing zoning standards do not specifically define podium heights, but do require upper level setbacks in certain areas. To some extent, these upper level setbacks define a podium for the development. In general, the area along Denny Way in the SM-125' zone requires an upper level setback for any portion of a structure greater than 75 feet in height. Similarly, along portions of Thomas and Harrison Streets, upper level setbacks are required for structures greater than 25 feet (in residential areas) and 45 feet in height.

1.5 Summary of Potential Impacts and Mitigation Strategies

Table 1-2 summarizes the potential environmental impacts for each element of the environment evaluated in Chapter 3 of the Draft EIS.

*Proposal
Location
Objectives of the
Proposal
Alternatives
**Summary of
Potential
Impacts and
Mitigation
Strategies**
Mitigation
Strategies
Significant
Unavoidable
Adverse Impacts
Major Issues to
be Resolved*

Table 1-2
Summary of Impacts

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Geology and Soils			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to geology and soils. Future site-specific development proposals under any of the alternatives, however, could result in impacts to geology and soils. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p> <ul style="list-style-type: none"> • Native soils unsuitable for construction, particularly artificial fill and soft compressible soils near the waterfront may be removed and replaced with structural fill and/or other suitable material. • Excavation near existing slopes and/or landslides could result in slope instability. • Surface water and groundwater flow will likely be impacted by new construction. • Steep slopes, landslides, and liquefaction have the potential to impact existing development and new construction. 			
<ul style="list-style-type: none"> • Excavation, grading, soil removal, placement of structural fill, and construction of new foundations could have direct impacts on soils and groundwater. 	<ul style="list-style-type: none"> • Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations. 	<ul style="list-style-type: none"> • Similar to Alternative 1, however impacts would be less in areas where building height limits are less, thereby requiring shallower building foundations. 	<ul style="list-style-type: none"> • Impacts under this alternative would be much less than those discussed under Alternative 1 since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Air Quality			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to air quality. Future site-specific development proposals under any of the alternatives, however, could result in impacts to air quality. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p>			
<i>Construction</i>			
<ul style="list-style-type: none"> • Construction activities could result in temporary, localized increases in particulate concentrations due to emissions from construction-related sources. • Demolition of existing structures would require removal and disposal of building materials that could possibly contain asbestos and lead based paint. • Emissions from construction equipment, especially from diesel-fueled engines, could result in a temporary degradation of local air quality. • Construction activities, such as paving operations using tar and asphalt, could result in short-term localized odors. 			
<i>Operation</i>			
<ul style="list-style-type: none"> • Predicted PM peak hour auto trips are expected to be the highest under this alternative. Traffic sources would not cause an increase in ambient CO concentrations at receptors near two of the three intersections studied. Even with CO concentration increases at the Mercer Street/Fairview Avenue intersection, ambient concentrations would remain well below the NAAQS. Because increased traffic resulting from new development near the most congested intersections would not likely cause an impact to air quality, impacts are also unlikely at other less congested intersections. Therefore, Alternative 1 would be unlikely to affect air quality in the South Lake Union study area. 	<ul style="list-style-type: none"> • Traffic generated under this alternative is predicted to be the same as Alternative 1. Therefore, ambient concentrations with Alternative 2 would likely be the same as that under Alternative 1. No impacts to air quality are expected 	<ul style="list-style-type: none"> • Under this alternative, approx. 3,000 fewer vehicular trips would occur than under Alternatives 1 and 2, therefore it is likely that fewer trips would result in less traffic at the most congested intersections. Therefore, CO concentrations would likely be similar to or less than those predicted for Alternatives 1 or 2. No impacts to air quality are expected. 	<ul style="list-style-type: none"> • Under this alternative trips generated would be slightly fewer than under Alternative 3, therefore maximum-predicted CO concentrations in 2031 would be less than the ambient air quality standards, so no impacts to air quality are anticipated.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Water Quality			
Impacts common to all alternatives			
<p>Construction activities associated with new development or redevelopment under any of the alternatives would be accompanied by ground disturbing activities such as clearing and grading. These activities could result in minor erosion and sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union). In addition to sediment transport, runoff may also carry other contaminants such as fuel or oil, from construction vehicles and machinery used on-site. The risk of these effects would be of short duration (limited to the length of each project construction period) and can largely be minimized or eliminated with the proper use of construction best management practices (BMPs).</p>			
<i>Construction Stormwater Runoff</i>			
<ul style="list-style-type: none"> • Construction activities could cause minor erosion, sedimentation that might result in short-term turbidity increases to local receiving waters (Lake Union), as well as possible fuel/oil contamination from construction vehicles. • Implementation of construction best management practices, and compliance with applicable permit requirements and conditions would help to ensure that any impacts would be temporary and minor. 			
<i>Urban Stormwater Runoff</i>			
<ul style="list-style-type: none"> • It is expected that the majority of future development within South Lake Union will exceed the Pollution Generating Impervious Surfaces (PGIS) 5,000 sq. ft. threshold, which will require provision of water quality treatment. Smaller redevelopment projects may not reach this threshold, and multiple, independent small-scale developments in an area could create new PGIS areas without any individual project tripping the 5,000 sq. ft. treatment requirement. • Per city code water quality treatment facilities are designed based on surface area and not on traffic volumes. Under the current stormwater code, increases in density do not require increased stormwater treatment, although increased pollution would likely be generated as a result of increased vehicle traffic to support this level of development. 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Plants and Animals			
Impacts common to all alternatives			
<p>By itself, this proposal would not directly result in impacts to plant and animal habitat. Future site-specific development proposals under any of the alternatives, however, could result in impacts to plant and animal habitat. Potential impacts that could be associated with future site-specific development under any alternative are briefly listed below.</p>			
<ul style="list-style-type: none"> • Urban wildlife may be displaced on lots that currently provide urban habitat (such as blackberry thickets, debris piles, and landscaped areas) by future construction/development. • Development of increased building height could indirectly result in increased bird strikes for migratory birds flying through the study area. However, the net effect on northward migrations of birds would likely be low since downtown buildings would still present the first obstacle to migratory birds. • Increasing vehicle use in the study area by allowing increased density may contribute to adverse effects on juvenile salmonids associated with poor water quality. • Potential increases in water quantity associated with increases in the amount of impervious surfaces are not expected to impact fish habitat in Lake Union or downstream waters. • This alternative is not expected to result in increased predation of juvenile salmonids due to changes in shade or shoreline development. 			
Environmental Health			
Impacts common to all alternatives			
<p>The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union neighborhood. By itself, this proposal would not directly result in impacts to environmental health. Future site-specific development proposals under any of the alternatives, however, could result in impacts to environmental health. Development activities could include excavation associated with demolition of existing foundations and construction of new foundations. Potential indirect and cumulative impacts for all alternatives associated with property redevelopment include:</p>			
<ul style="list-style-type: none"> • Contaminated soil and/or groundwater may be encountered during excavation when properties in the study area are redeveloped. • Asbestos Containing Material (ACM) and lead-based paint may be encountered during building demolition when properties in the study area are redeveloped. • Contamination may be cleaned up as properties are redeveloped, resulting in less contamination in the study area. • Contaminated materials may be uncovered during property redevelopment, allowing more direct exposure to the public. • Contamination may be spread as a result of property redevelopment (for example, a new utility corridor could provide a new conduit for contamination to spread through; dewatering activities could pull contaminated groundwater into areas that were initially clean). 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Noise			
Impacts common to all alternatives			
<p>The proposal analyzed in this EIS considers the use of incentive zoning to increase height and density in the South Lake Union subarea. By itself, this proposal would not directly result in noise impacts in the subarea. Future site-specific development proposals under any of the alternatives, however, could result in impacts to noise. Depending on the nature of these site-specific actions, noise impacts could occur to existing, adjacent land uses in. Construction, parking, and mechanical equipment related to new developments have the potential to cause noise impacts to sensitive receivers (e.g., residences, schools, churches, parks, etc.). Larger residential and commercial structures could result in an increase in traffic volumes and traffic-related noise on local streets. Potential impacts that may be associated with future site-specific development under any of the alternatives are discussed below.</p>			
<p><i>Construction</i></p>			
<ul style="list-style-type: none"> Noise from demolition and construction activities has the potential to temporarily affect nearby receivers, particularly sensitive uses such as residences. 			
<p><i>Operation</i></p>			
<ul style="list-style-type: none"> Increased building heights within the flight path for the Lake Union Seaport Airport could result in increased noise impacts to residences and/or offices in upper portions of new buildings from aircraft overflights. HVAC/mechanical equipment could result in increased noise impacts to nearby residences and/or commercial buildings. Increases in population density and commercial activity could add more traffic to local streets, which would increase noise levels in South Lake Union area. 			

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Energy (GHG)			
Impacts common to all alternatives			
<i>Climate Change</i>			
<ul style="list-style-type: none"> The assumed impacts of climate change would not be anticipated to have a disproportionate impact on the South Lake Union Neighborhood as compared to other sites in Seattle. 			
<i>Greenhouse Gas Emissions</i>			
<ul style="list-style-type: none"> Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 23,537,267 MTCO₂e additional GHG emissions over existing conditions during the lifespan of future development. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Based upon the calculations from the King County SEPA GHG Emissions worksheet, this alternative would generate roughly 16,393,154 MTCO₂e additional GHG emissions over existing conditions during the lifespan of future development.
<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,160,080 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 24,144,150 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 22,686,472 MTCO₂e additional GHG emissions during the lifespan of future development. 	<ul style="list-style-type: none"> Based on the calculations from the SEPA Greenhouse Gas Emissions Inventory Worksheets and the VMT GHG Tool, this alternative would generate roughly 18,063,203 MTCO₂e additional GHG emissions during the lifespan of future development.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Land Use			
<i>Plans, Policies, and Regulations</i>			
<ul style="list-style-type: none"> This section of the EIS contains an analysis of the consistency of each alternative with existing state, regional and local planning policies. The proposed action is generally consistent with adopted City plans, policies and regulations. 			
<i>Wind Analysis</i>			
<p>The addition of significantly taller buildings directly south of Lake Union could generally increase the potential for:</p> <ul style="list-style-type: none"> increased height of vertical and leeward wind wake zones and consequently shear layers; introduction of wake effects extending into Lake Union; increase in turbulence intensity north of the subarea; and; change in local wind speed patterns. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.
<ul style="list-style-type: none"> Under this alternative, the maximum height of buildings is higher than the anticipated elevation of float planes travelling over/through this area. Apart from the risk of physical impact, small aircraft flying through a “canyon” or “corridor” of tall structures can be significantly affected by turbulent, local winds channeling and accelerating between buildings 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> Impacts are not anticipated under this alternative since building height limits would remain as they currently exist.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing			
<ul style="list-style-type: none"> Increases in population and employment would result in an associated increase in demand for diverse housing opportunities, and public facilities within the subarea. With capacity for 21,000 units, Alternative 1 provides the greatest housing capacity. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. Alternative 2 would have capacity for 19,000 units, 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. Alternative 3 would have capacity for 15,000 units. 	<ul style="list-style-type: none"> Similar to but less than Alternative 3. Alternative 4 would have capacity for 11,500 units.
<ul style="list-style-type: none"> Increased residential capacity due to incentive zoning under this alternative has the potential to result in an increased number of affordable housing units. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> This alternative has the largest development potential, therefore it would have the potential through incentive zoning programs to generate the greatest amount of developer financial contributions for affordable housing for lower wage workers. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> Alternative 1 may also provide market-driven opportunities for new construction of affordable housing separate from the residential towers. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
<ul style="list-style-type: none"> Redevelopment under this alternative has the potential to reduce the existing inventory of affordable housing due to displacement of existing wood frame buildings and older single family residences in the subarea. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Housing (con't)			
<ul style="list-style-type: none"> Under this alternative, height and density increases in the focus areas could result in increased residential development within these corridors. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative; no existing area-wide incentive zoning in place.
Aesthetics			
<i>Area Context</i>			
<ul style="list-style-type: none"> As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.
<i>Neighborhood Character</i>			
<ul style="list-style-type: none"> As infill occurs in the South Lake Union Neighborhood, the greatest aesthetic difference resulting from the development under this alternative will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Height, Bulk and Scale</i>			
<ul style="list-style-type: none"> This alternative proposes a relatively new building typology for the neighborhood, which would feature a high-rise tower positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line. <u>These lower podium structures are intended to provide a stepped transition between new and existing development and create a more consistent street wall.</u> 	<ul style="list-style-type: none"> Similar to but less than Alternative 1. 	<ul style="list-style-type: none"> Similar to but less than Alternative 2. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.
<ul style="list-style-type: none"> This alternative would generally gradually transition down in height from the south boundary of the neighborhood toward Mercer Street on the north. Building heights increase slightly in the block north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street. 	<ul style="list-style-type: none"> Same as Alternative 1, except that the transition downward in height extends north toward Lake Union, with no increase in proposed building height north of Mercer Street.
<ul style="list-style-type: none"> Tower bulk (length and width) and podium bulk are not expected to create significant impacts given the restrictions on floor plate size for the towers and restrictions on podium height. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> Same as Alternative 1. 	<ul style="list-style-type: none"> This impact would not occur relative to development under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Viewshed</i>			
<u>Designated Viewpoints</u>			
<ul style="list-style-type: none"> New high-rise buildings within the study area would be prominent in these views. However, the Space Needle, Elliott Bay, Seattle Downtown skyline, Bainbridge Island, the Cascade Mountains, and the Olympic Peninsula would still be visible. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1
<u>Scenic Routes</u>			
<ul style="list-style-type: none"> New high-rise buildings within the study area would frame route corridors and would have the potential to screen/block some existing views of the Space Needle from these routes. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Shadows</i>			
<ul style="list-style-type: none"> Cumulative shadow impacts would result due to the increased amount of development under this alternative. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Generally, the infill development on undeveloped or under-developed sites would increase the local shadows on streets, public parks, and adjacent properties 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Shadows from this alternative could shade portions of the water area of Lake Union in the winter morning (southeast lake shore) and in the winter afternoon (southwest lake shore) hours. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.
<ul style="list-style-type: none"> Overall, the shadow impacts are not expected to result in significant adverse environmental impacts. The impacts are typical of an urbanizing area changing from lower intensity development to that of more intensive development. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Aesthetics (con't)			
<i>Light and Glare</i>			
<ul style="list-style-type: none"> The increased amount of buildings would increase the cumulative level of artificial illumination in South Lake Union. The new buildings will include towers that may potentially incorporate reflective surfaces that could on occasion create glare impacts. The exposure may extend to adjacent hillsides and the freeway because of the topographic basin location. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.
<ul style="list-style-type: none"> Potential increases in building heights in this area and specular surfaces on buildings could, at times, generate increased light and glare impacts that may affect seaplane approaches to the south. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.
<ul style="list-style-type: none"> The distant visibility from Capitol Hill and Gas Works Park of artificial illumination of the towers is high because of their currently unobstructed location. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1, although highrise towers would not be built under this alternative.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Historic Resources			
<ul style="list-style-type: none"> This alternative allows for the greatest amount of development, which could also result in the greatest amount of development pressure on existing small scale structures that may be eligible for historic designation. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Maintaining the existing zoning in the study area would not change the development pressure on historic resources.
<ul style="list-style-type: none"> Differences in character, height, and bulk of new development adjacent to a designated historic structure or a structure that is potentially eligible for historic designation, could negatively impact the historic value of the existing structure. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Not anticipated under this alternative.
Cultural Resources			
Impacts common to all alternatives			
<ul style="list-style-type: none"> Because the study area is considered to have a low potential to contain intact archaeological deposits, no significant impacts to archaeological sites are anticipated. No pre-contact archaeological sites have been identified within the study area. One historic-period archaeological site has been recorded within the study area and was previously impacted by sewer line and trail construction. Further development is not anticipated to generate additional impacts to this site. 			
Transportation			
Impacts Common to the Action Alternatives			
<p>Study Corridors. Under all three action alternatives, the following study corridors experience significant impacts to traffic operations:</p> <ul style="list-style-type: none"> Westlake Avenue N from Valley Street to Harrison Street Westlake Avenue N from Harrison Street to Denny Way Mercer Street from Dexter Avenue N to Fairview Avenue N 		<p>Study Corridors. The following study corridors would operate at LOS E or F, exceeding the City's LOS standard, which constitutes a traffic operations deficiency (note that these facilities will also experience deficient</p>	

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
<ul style="list-style-type: none"> • Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Boren Avenue from Pine Street to University Street • Stewart Street from Eastlake Avenue E to Boren Avenue • Harrison Street from Aurora Avenue N to Eastlake Avenue E • 9th Avenue N from Roy Street to Republican Street <p>In addition to those previously listed, the following study corridors are significantly impacted under Alternatives 1 and 2:</p> <ul style="list-style-type: none"> • Fremont Bridge • Eastlake Avenue E from Fairview Avenue to Lakeview Blvd E • Dexter Avenue N from Valley Street to Denny Way • E Pine Street from Boren Avenue to Broadway • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue <p>Poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.</p> <p>Transit. Transit lines that would operate unacceptably under the action alternatives include:</p> <ul style="list-style-type: none"> • Route 21 (northbound AM and southbound PM) • Route 28 (northbound AM and southbound PM) • Route 29 in both directions (AM and PM peak hours) • Route 56 (northbound AM and southbound PM) <p>Planned capacity increases for the Seattle Streetcar will keep pace with the future ridership estimates from the City's travel model. Transit frequency is the same as under the No Action Alternatives and would not meet the frequency goals outlined in the Urban Village Transit Network (UVTN).</p> <p>Bicycle and Pedestrian System. No pedestrian or bicycle demand/capacity impacts are anticipated under the three action alternatives. While no bicycle or pedestrian demand/capacity impacts are anticipated, there are several adverse impacts to the pedestrian and bicycle system:</p> <ul style="list-style-type: none"> • The increased heights and densities associated with each of the alternatives will lead to additional traffic demand on area roadways, which could result in longer traffic signal cycle lengths. Longer cycle lengths are associated with increased pedestrian delay, which discourages pedestrian travel. Any increases in pedestrian delay at intersections would be an impact to pedestrian mobility. 			<p>operations under the three Action Alternatives):</p> <ul style="list-style-type: none"> • Fremont Bridge from N 35th Street to Westlake Avenue N • Westlake Avenue N from Valley Street to Harrison Street • Westlake Avenue N from Harrison Street to Denny Way • Fairview Avenue N from Eastlake Avenue to Yale Avenue N • Dexter Avenue N from Fremont Bridge to Valley Street • Dexter Avenue N from Valley Street to Denny Way • Mercer Street from Dexter Avenue N to Fairview Avenue N • Denny Way from Aurora Avenue N to Stewart Street • Boren Avenue from Denny Way to Pine Street • Stewart Street from Eastlake Avenue E to Boren Avenue • E Pine Street from Boren Avenue to Broadway • Harrison Street from Aurora Avenue N to Eastlake Avenue N • 9th Avenue N from Roy Street to Republican Street • Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue <p>Transit. Two transit routes serving South Lake Union will not operate with acceptable load factors – Route 29 and Route 56. Eight transit lines do</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
<ul style="list-style-type: none"> Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. <p>Parking. If current parking demand trends continue, short-term shortages are likely for both on-street and off-street parking, particularly around office uses. The level of impact will vary depending on the intensity of land use. The balance between parking supply, parking cost, and alternative mode use will cause some travelers to change modes. Therefore, the parking impact may not be long-term since travelers will shift to other modes in response to limited parking supply and higher parking cost.</p> <p>Although Alternatives 1 and 2 would have the most demand, they would also provide more supply based on market trends. Because of the relationship between development intensity, parking supply, and parking demand, all action alternatives are expected to have short-term parking impacts.</p> <p>Freight. The increase in traffic congestion along the Major Truck Streets is caused by both additional development in South Lake Union and regional traffic. There are also potential localized freight impacts that could occur as the neighborhood develops. Impacts to freight mobility could be caused by lack of loading areas and small curb radii that cannot be navigated by trucks.</p> <p>Traffic Safety. While it is likely that the total number of vehicle collisions will increase proportionally with the increase in traffic in the South Lake Union area, there is nothing to suggest that the volume-based rate of vehicle-to-vehicle collisions will increase with the implementation of the height and density alternatives.</p>			<p>not meet the UVTN frequency goal of peak hour -- Routes 16, 25, 28, 29, 66, 15 minute headways during the AM 308, 313, and 316. Since the Height and Density alternatives do not affect transit frequency, these routes will also fail to meet frequency goals under the Action Alternatives.</p> <p>Pedestrian and Bicycle System.</p> <ul style="list-style-type: none"> Anticipated development will result in a substantial number of pedestrian and bicycle trips within the study area. Pedestrian and bicycle demand/capacity issues not likely, but could lead to consequences such as: Additional pedestrian and vehicle travel at major intersections could lead to increased pedestrian delays if the City retimes traffic signals to facilitate vehicle flow. Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection. <p>Parking. If current parking demand trends continue, there will likely be at least temporary shortages for both on-street and off-street parking, particularly around office uses. The</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Transportation (cont.)			
			<p>relationship between parking supply and cost will cause prices to climb as demand approaches or exceeds supply. In turn, this will cause some travelers to switch to modes such as transit, thereby freeing up some parking.</p> <p>Freight. Increase in traffic congestion on Mercer Street between Dexter Avenue and Fairview Avenue N will lead to increased difficulty for trucks to maneuver and increased travel times, which could delay trucking operations. This is considered a freight mobility deficiency in the area. With future development there could be localized freight deficiencies related to the lack of loading areas and small curb radii that trucks cannot navigate. The removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street will leave a gap in the City of Seattle Major Truck Street network.</p> <p>Traffic Safety. Increased traffic volumes could lead to the identification of additional High Accident Locations. While there may be more High Accident Locations there is no data available to suggest that a volume-based collision rate (e.g., collisions per million entering vehicles) will increase.</p>

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Public Services			
Impacts common to all alternatives			
<i>Fire and Emergency Services</i>			
<ul style="list-style-type: none"> Construction activities associated with potential development under the proposed alternatives could result in an increase in demand for fire services. The Fire Department would attempt to maintain response times consistent with current performance levels. An additional 1-2 EMS companies could be required over the next 10 years in order to maintain performance levels. However, given that Stations 2 and 25 are two of the busiest stations in the Department, additional EMS companies could be required in SLU even without potential development under this alternative 			
<i>Police Services</i>			
<ul style="list-style-type: none"> Potential construction under this alternative could result in an increase in demand for police services. Potential increases in onsite population and employment associated with development under this alternative would be incremental and would result in associated incremental increases in demand for police services. Sufficient staffing and facilities exist to accommodate the increased demand for service under this alternative and no additional safety problems are anticipated. 			
<i>Public Schools</i>			
<ul style="list-style-type: none"> Potential increases in population in the South Lake Union Neighborhood would be incremental and would be accompanied by subsequent incremental increases in demand for public schools. 			
<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 18 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 17 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 15 percent by 2031. 	<ul style="list-style-type: none"> Requests for fire department services could result in an increase of approximately 14 percent by 2031.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Public Services (con't)			
<ul style="list-style-type: none"> Under the Action Alternatives, approximately 697 students would be generated by potential development at full buildout. It is estimated that new students would include approximately 175 elementary students, 123 middle school students, and 399 high school students. 			<ul style="list-style-type: none"> Approximately 118 elementary students, 82 middle school students, and 268 high school students would be generated under this alternative.
<ul style="list-style-type: none"> Excess functional capacity is anticipated to be available at all school levels within the Seattle School District to serve the projected students that would be generated under the Action Alternatives. Attendance area middle schools (McClure MS and Washington MS) are also anticipated to have excess functional capacity to serve the projected students. <p>However, projected elementary student and high school student generation is anticipated to exceed the available functional capacity at the elementary (John Hay ES and Lowell ES) and high school (Ballard and Garfield) level. It is anticipated that a portion of these students would need to be accommodated at other schools outside of the existing attendance area boundary. This could result in the need for the District to adjust the attendance area boundaries, provide transportation service for the students, and/or other measures to accommodate the number of students in excess of the forecasted functional capacity..</p>			<ul style="list-style-type: none"> Similar to the Action Alternatives, however, the number of students would be lower under this alternative.

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Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Utilities			
<p><i>Water System</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on the water supply and distribution system. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Combined Sewer System</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on the local sewer collection system and on the downstream conveyance and treatment facilities. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Storm Sewer System</i></p> <ul style="list-style-type: none"> Potential development under any of the alternatives is not expected to result in increased demand on the storm water systems of the neighborhood. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.
<p><i>Electric Power</i></p> <ul style="list-style-type: none"> The increased density and intensity of development under this alternative could result in greater demands on electrical energy. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to Alternative 1. 	<ul style="list-style-type: none"> Similar to but much less than Alternative 1.

Alternative 1	Alternative 2	Alternative 3	Alternative 4 (No Action)
Open Space and Recreation			
Impacts common to all alternatives			
<ul style="list-style-type: none"> <li>• Potential increases in height and density associated with this alternative would subsequently result in an increase in population and employment in the SLU Neighborhood, which would result in an associated increase in demand for parks, open space and recreation facilities in the area. <li>• Based on current parks and recreation distribution guidelines and the estimated 2031 household and employment targets for SLU, the total estimated park and recreation demand under this alternative would be approximately 14.1 acres, which is an increase over the total 2024 estimated demand of 12.78 acres, but still less than the existing 15.7 acres of open space. <li>• Future residential and employment growth under this alternative would tend to increase the overall use and activity levels of existing parks and recreation facilities in the SLU Neighborhood and site vicinity. <li>• This alternative could include an incentive program that offers development bonuses for projects (typically an allowance for additional height or floor area). Potential public benefits that could be considered as part of a development incentive program include new park and recreation facilities such as a new center for community, arts, and culture, pocket plazas, and/or children’s play areas. 			

1.6 Mitigation Strategies

Mitigation Strategies

All mitigation strategies listed in the EIS are organized by element of the environment and presented below. As described in the EIS, many of the strategies are intended to address future site-specific development that could occur under any of the alternatives. Other strategies focus on area-wide mitigation that is intended to directly address potential impacts associated with the increased height and density associated with the alternatives.

Geology and Soils

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur with development under any of the alternatives. Site specific measures may include reducing the size of the project, placing limits on project timing and schedule, or requiring additional practices during construction to avoid adverse impacts (SMC 25.05.675(D)). Additional practices might include landscaping, supplemental drainage measures, water quality control, erosion control, and stabilization measures.

Air Quality

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. These are briefly described below.

Although significant air quality impacts are not anticipated due to construction activities, construction contractors would be required to comply with all relevant federal, state, and local air quality rules. In addition, implementation of best management practices would reduce emissions related to the construction of the developments.

Possible management practices for reducing the potential for air quality impacts during construction address measures for reducing exhaust emissions and fugitive dust. The Washington Associated General Contractors brochure Guide to Handling Fugitive Dust from Construction Projects and the PSCAA suggest a number of methods for controlling dust and reducing the potential exposure of people to emissions from diesel

<i>Proposal</i>
<i>Location</i>
<i>Objectives of the Proposal</i>
<i>Alternatives</i>
<i>Summary of Potential Impacts and Mitigation Strategies</i>
Mitigation Strategies
<i>Significant Unavoidable Adverse Impacts</i>
<i>Major Issues to be Resolved</i>

equipment. A list of some of the possible control measures that could be implemented to reduce potential air quality impacts from construction activities include:

- use only equipment and trucks that are maintained in optimal operational condition;
- require all off-road equipment to have emission reduction equipment (e.g., require participation in Puget Sound Region Diesel Solutions, a program designed to reduce air pollution from diesel, by project sponsors and contractors);
- use car-pooling or other trip-reduction strategies for construction workers;
- implement restrictions on construction truck and other vehicle idling (e.g., limit idling to a maximum of 5 minutes);
- spray exposed soil with water or other suppressant to reduce emissions of PM and deposition of particulate matter;
- pave or use gravel on staging areas and roads that would be exposed for long periods;
- cover all trucks transporting materials, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM emissions and deposition during transport;
- provide wheel washers to remove particulate matter that would otherwise be carried off site by vehicles to decrease deposition of particulate matter on area roadways;
- cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris; and
- stage construction to minimize overall transportation system congestion and delays to reduce regional emissions of pollutants during construction.

Operation

No impacts have been identified and no mitigation is proposed or necessary.

Water Quality

Although current City Stormwater Code provisions would not require additional mitigation for increased height or density within the study area, increased pollution would likely be generated as a result of increased vehicle traffic to support increased development under any of the alternatives. In addition to requiring water quality treatment in storm water basins and flow control in CSO basins for certain levels of

development, the Stormwater Code requires the use of green stormwater infrastructure (GSI) to the maximum extent feasible on all projects. These GSI techniques can provide additional water quality and/or flow control benefits.

Sustainable Drainage Strategies

The alternatives to increase height and density within the study area would not require additional water quality or flow control measures; however, several strategies are provided below that could further mitigate impacts from urban road runoff.

- Water quality treatment best management practices (BMPs) are facilities that remove pollutants by some combination of the following: gravity settling of particulate pollutants, filtration, plant Uptake, biological processes, and/or adsorption. Examples include bio-filtration swales, sand filtration systems, raingardens and stormwater wet ponds.

Urban settings are challenging to provide water quality facilities since the space needed to provide these systems is typically not readily available. Incorporating the water quality facility into the streetscape design is an option designers can use to ensure roadway runoff is properly treated. Typical examples of integrated water quality BMPs into streetscape design include: roadside raingardens, porous paving, bio-filtration swales, filter strips and ecology embankments.

Planning of streetscape improvements could consider incorporating water quality design features as noted above to treat runoff prior to discharging to the storm system. The City's Stormwater Code requires use of these and other Green Stormwater Infrastructure (GSI) methods as part of stormwater design.

- As noted, significant portions of the pollution generating surfaces are comprised of public rights-of-way. As such, the development of a regional or neighborhood treatment facility could become an alternative to individual solutions. Redevelopment of the area provides the opportunity for partnering to install regional stormwater treatment facilities. An example of this is the Swale on Yale/Capitol Hill Water Quality Facility which is the project being jointly developed through a public/private partnership with SPU to provide stormwater quality treatment via biofiltration for a large

portion of the approximately 500-acre basin draining through the 72-inch storm drain.

Plants and Animals

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives, such as adverse impacts to vegetation, the avian patterns of use in the study area, and fish habitat in Lake Union. Potential impacts will be assessed in future project-level SEPA review associated with any specific development proposal to determine whether adverse impacts are significant. The mitigating measures described below address potential site-specific mitigation that may be associated with future site-specific actions.

When project-specific environmental review occurs in the future for development projects located within the South Lake Union neighborhood, an inventory of all non-native and native trees six inches or greater in diameter (measured 4.5 feet above the ground) would be required for the site-specific proposal. City staff would determine which trees qualify as exceptional and would determine protection requirements at that time. If exceptional trees or trees with a diameter of 2 ft. or greater are located within the site area of a new building, the project would be required to comply with the provisions of the City's code, as described above. In addition, Seattle Municipal Code 23.47A.016 requires landscaping and screening for most commercial developments, which would likely mitigate any vegetation loss in the study area.

City permitting of proposed redevelopment under all alternatives would generally require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. General measures could include open space for vegetation, migrating animals, and human enjoyment. Other more specific mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a "lights out" program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.

Environmental Health

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

- Further site investigations to determine the potential for contamination to be present on the property.
- Soil and groundwater investigations to evaluate the type, concentration, and extent of contamination, if present.
- Cleanup of contamination sources (e.g. removal of underground storage tanks, excavation of contaminated soil).
- Handling and disposing of contaminated soil and groundwater according to local and state regulations.

Noise

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives. Mitigation measures that could be required during future property redevelopment include:

Construction

Practices which can reduce the extent to which people are affected by construction noise and ensure that construction noise levels stay within the applicable daytime sound level limits include:

- Use properly sized and maintained mufflers, engine intake silencers, engine enclosures, and turn off idle equipment.
- Construction contracts can specify that mufflers be in good working order and that engine enclosures be used on equipment when the engine is the dominant source of noise.
- Stationary equipment should be placed as far away from sensitive receiving locations as possible. Where this is infeasible, or where noise impacts are still significant, portable noise barriers could be placed around the equipment with the opening directed away from the sensitive receiving property. These measures are especially effective for engines used in pumps, compressors,

welding machines, and similar equipment that operate continuously and contribute to high, steady background noise levels. In addition to providing about a 10-dBA reduction in equivalent sound levels, the use of portable barriers demonstrates to the public the contractor's commitment to minimizing noise impacts during construction.

- Substitute hydraulic or electric models for impact tools such as jack hammers, rock drills and pavement breakers could also reduce construction and demolition noise. And electric pumps could be specified if pumps are required.
- Although as a safety warning device, back-up alarms are exempt from noise ordinances, these devices emit some of the most annoying sounds from a construction site. One mitigation measure would be to ensure that all equipment required to use backup alarms utilize ambient-sensing alarms that broadcast a warning sound loud enough to be heard over background noise – but without using a preset, maximum volume. Another alternative would be to use broadband backup alarms instead of typical pure tone alarms. Such devices have been found to be very effective in reducing annoying noise from construction sites. Requiring operators to lift rather than drag materials wherever feasible can also minimize noise from material handling.
- Construction staging areas expected to be in use for more than a few weeks should be placed as far as possible from sensitive receivers, particularly residences. Likewise, in areas where construction would occur within about 200 feet of existing uses (e.g., residences, schools/classrooms, and noise-sensitive businesses), effective noise control measures (possibly outlined in a construction noise management plan) should be employed to minimize the potential for noise impacts. In addition to placing noise-producing equipment as far as possible from homes and businesses, such control could include using quiet equipment and temporary noise barriers to shield sensitive uses, and orienting the work areas to minimize noise transmission to sensitive off-site locations. Although overall construction sound levels would vary with the type of equipment used, common sense distance attenuation should be applied.

Operation

To minimize the potential for noise impacts, HVAC units should be located away from residences – or other sensitive receptors, whenever possible and/or shielded to comply with applicable noise limits. No other

specific impacts have been identified and, therefore, no other specific mitigation measures are necessary.

Energy (Greenhouse Gas Emissions)

The following potential mitigation strategies would address potential impacts to climate change, energy use and greenhouse gas emissions from future development in the South Lake Union neighborhood:

- **Natural Drainage and Green Roofs.** Green roofs can provide additional open space, opportunities for urban agriculture, and decreased energy demands by reducing the cooling load for the building. Green Stormwater Infrastructure (GSI) could also be used for flow control and water quality treatment.
- **Tree Protection.** The City of Seattle has aggressive urban forest goals in order to help restore tree cover which has been lost due to development. Trees can provide stormwater management, habitat value, noise buffering, air purification, carbon sequestration, and mitigation of the urban heat island effect. Trees also have a positive effect on property values and neighborhood quality. Protection of existing trees, as feasible, and careful attention to new tree planting could help meet the Seattle Comprehensive Urban Forest Management Plan Goals for multi-family residential and commercial office development by achieving 15-20 percent overall tree canopy within 30 years.
- **Urban Agriculture.** New P-patch Community Gardens and rooftop gardens could be provided or encouraged within the neighborhood for residents to grow food. Balconies, decks, and right-of-way planting strips could also be utilized for individual residents' agriculture needs. A farmer's market could be established for residents to sell locally grown food.
- **Native Plants.** Native plants are adapted to the local climate and do not depend upon irrigation after plant establishment for ultimate survival. Landscaping with native plants, beyond that required by City code, could be planted to reduce water demand and integrate with the local urban ecosystem.
- **District Infrastructure Systems for Energy, Water and Waste.** District Infrastructure Systems aggregate enough service demands to make local neighborhood utility solutions feasible, and may reduce greenhouse gases by utilizing renewable sources of energy and increasing the use of local resources, materials and supplies. District parking solutions and car sharing are designed to reduce vehicle trips. Water reuse and anaerobic digesters may reduce sewer flows. Rainwater capture may reduce stormwater flows.

Water reuse and rainwater capture could also reduce potable water demands. District systems for the South Lake Union neighborhood could potentially include energy, potable water, wastewater, and solid waste.

- **Waste Management and Deconstruction.** When existing buildings need to be demolished, there are often opportunities to reduce the amount of waste being sent to the landfill with sustainable waste management strategies. In the Seattle area, standard practice for building construction and demolition results in fairly high recycling rates of over 50 to 60 percent. However, these rates can be increased by implementing aggressive demolition recycling. Such efforts can require considerable additional effort on the part of the contractor.
- **Building Design.** Green building encompasses energy and water conservation, waste reduction, and good indoor environmental quality. Tools and standards that are used to measure green building performance, such as Built Green, LEED, and the Evergreen Sustainable Development Criteria, could be encouraged or required for development within the South Lake Union neighborhood.

Land Use

Plans, Policies and Regulations

- In order to ensure that buildings do not obstruct the flight path and airspace established by FAR 77, maximum building heights in this area of South Lake Union will be adjusted to ensure that buildings do not penetrate the airspace.
- A vertical safety buffer – below the approach surface – should be considered to ensure adequate separation between the airspace and building rooftops.
- Consideration should be given to limiting the height of rooftop appurtenances (e.g., antennae, flag poles, etc.) proximate to the flight path that could penetrate the airspace or the associated safety buffer.
- Consideration should also be given as part of the City's design review process to limiting rooftop specular surfaces that can act as a distraction for pilots.
- Proximate to the flight path, consideration should be given to limiting electrical interference on frequencies used by aircraft.

Wind Analysis

In order to provide more specific direction for future project-level wind analysis at the project-level of environmental review, the following mitigation measure is recommended as a mitigation strategy in the Draft EIS Land Use element (Draft EIS Section 3.8).

Future development proposals within the flight path corridor that exceed the base height permitted in the underlying Seattle Mixed zoning should provide a wind analysis in accordance with the following methodology.

1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.)
2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project
3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path
4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions
5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results require an assessment of acceptability of specific results for the aircraft actually used at this location by an aviation specialist.

In addition, the City may consider requiring additional analyses to address the following questions:

- Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future)
- Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable)

Housing

Future population and employment increases in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for diverse housing opportunities within the subarea. In order to address the City's goals of providing

affordable housing, the following incentives and programs could be implemented in the South Lake Union subarea:

Existing Development Incentives

Multi-Family Property Tax Exemption

Seattle's Multifamily Tax Exemption (MFTE) program allows developers to receive a property tax exemption on the residential portion of a development for a specified number of years in exchange for providing a specified percentage of housing units in rental projects that are affordable for moderate-wage workers during the time the exemption is utilized. The current MFTE program expired on Dec. 31, 2010; however the Seattle City Council is currently reviewing the program for renewal. There may be changes to existing program requirements once the City Council renews the program. It is assumed that the MFTE Program will continue to be available in 39 target areas in Seattle, one of which is the South Lake Union Urban Center.

Incentive Zoning

Incentive zoning is a strategy to both encourage the desired density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits in the form of affordable housing and other amenities valued by communities. By helping to direct growth to areas targeted in the Comprehensive Plan, incentive zoning could also work to preserve the character of many of Seattle's neighborhoods. Incentive zoning is used to offer extra floor area for new development in exchange for community amenities. A baseline height limit or Floor Area Ratio (FAR) limit is created in a given neighborhood or a zone. Developers can then take advantage of additional height or FAR by purchasing TDR and/or acquiring bonus floor area in exchange for providing public benefits, which include low-income housing (defined as affordable to households making less than 80 or 100 percent of Area Median Income depending on tenure) and a long list of on-site public amenities (SMC 23.50.051).

The commercial/industrial bonus provision of Seattle's incentive zoning enables developers to achieve additional floor area ratio (FAR) in exchange for housing and childcare that is affordable to lower-wage workers. The housing and/or childcare can be provided by the developer or a contribution of \$18.75 per bonus square foot for housing and \$3.25 per bonus square foot for childcare facilities may be made to the City for those purposes. This bonus is currently available in high-rise downtown

commercial zones and on a few IC-zoned lots in the South Lake Union Urban Center (SMC 23.50.052).

The residential bonus provision of Seattle’s incentive zoning enables residential developers to achieve extra floor area above the base height limit when affordable housing is provided. Developers can build affordable housing as part of their development or, in certain zones, make a contribution of approximately \$19 per bonus square foot to the City to fund new affordable housing. The housing is intended to primarily serve Seattle’s modest-wage workers. The residential bonus is currently available in midrise and high-rise zones, in certain Downtown zones, and in certain areas of the Dravus neighborhood; this program is not presently available in the South Lake Union subarea.

Transferable Development Rights (TDR)

This option helps Seattle maintain a more variable scale of buildings in the South Lake Union neighborhood by allowing density to be moved from one site to another (SMC 23.50.053). Owners of certified TDR sites — ones with low-income housing, an arts facility, or a designated Landmark building— can sell excess development rights to developers in certain IC zones and use the proceeds for preservation of those priority uses. A TDR program is also in effect in downtown.

Other Strategies Specific to South Lake Union to Achieve Affordable Housing Objectives

Preservation

Structure incentive programs to allow use of TDR to preserve the following older residential buildings (all red brick buildings):

- Grandview Apartments (409 Eastlake East)
- Carolina Court (527 Eastlake North)
- Carlton Apartments (603 Pontius North)
- 502 Minor North
- Carolyn Manor Apartments (1309 Dexter North)
- Jensen Apartments

Employers Promoting Living near Work

Involve employers in identifying strategies to promote living near work.

- Create innovative ways for employers to help develop a “live and work” community.

- Explore ways for South lake Union employers to contribute to housing if employees live in South Lake Union through Transportation Management Plans.

Surplus Sites for Affordable Housing

- Inventory publicly owned property in South Lake Union suitable for development in affordable housing.
- Identify key community properties for particular uses, including affordable housing.

Family Housing

- Encourage affordable family sized homes through employer-developer partnerships and direct City funding.
- Use surplus property to achieve housing objectives not being met through private market, such as family housing.
- Use zoning and design guidelines to encourage ground-related housing in the six block area along 8th Avenue from John to Republican.
- Encourage ground-related housing units with good access to open space around Denny Park and Cascade Park.

Subsidized Housing Resources

- Leverage public funding to preserve existing and create new subsidized housing within South Lake Union.
- Use South Lake Union commercial/industrial bonus payment option funds for new low-income housing in the South Lake Union subarea.

Aesthetics

Height, Bulk and Scale

A number of potential approaches for mitigation are discussed below. See also mitigation recommendations contained in SMC 25.05.675, some of which are incorporated below.

Possible mitigation strategies to reduce the impact of height, bulk and scale that may apply to all alternatives include:

- a. Either limit the height of development or create additional zones that transition building heights down more gradually.
- b. Implement measures to modify the bulk of development.

- c. Modify building façades or envelopes through adjustments in building modulation, finish material, color, architectural detailing or fenestration (including type or percentage of glazing).
- d. Reduce, relocate or rearrange of accessory structures.
- e. Modify required building setbacks.
- f. Relocate buildings on-site.
- g. Modify building orientation.
- h. Redesign the building profile of a project.
- i. Create or modify on-site view corridors.
- j. Reduce or modify walls, fences, screening or landscaping.
- k. Require or encourage incorporation of open space or through-block pedestrian connections as part of development projects.
- l. Develop and adopt design guidelines to specifically address bulk impacts identified with each alternative.

For South Lake Union, recommendations for specific migration strategies to reduce the potential impacts of the height, bulk and scale include the following:

- a. Where multi-block development is anticipated, consider development agreements to achieve cohesive design solutions and appropriate site-specific mitigations for project height, bulk and scale.
- b. On sites allowing podium heights of 65 and 85 feet (Alternative 1 only) consider providing an incentive to create public open space, limit overall height and step (or otherwise modulate) the podium mass by limiting the podium area to a maximum of 3 FAR.
- c. In order to maintain a pedestrian character, street level uses and positive visual expression at the podium levels, discourage above-grade parking. Consider setting a maximum of one FAR for above-grade structured parking.
- d. As inspired by the UDF (see pages 14 and 15 of Final UDF), consider creating a sense of openness at designated street intersections by requiring a substantial percentage (i.e. 70%) of street level transparency (i.e. between 2 feet and 9 feet above street grade) for a distance of 40 feet from the corner in all directions. Proposed locations include all intersections of Dexter Avenue N, 9th Avenue N, Terry Avenue N and Fairview Avenue N, between John and Republican Streets, as well as Mercer Street between 9th and Boren Avenues N. Retail and other pedestrian-oriented uses could be encouraged in these locations through

incentives (but should not be a requirement lacking an established customer base).

- e. Per the UDF (see pages 18 and 19), consider incentivizing or otherwise encouraging mid-block pedestrian connections and public open space. Additional, small scale open spaces are recommended throughout the study area. Mid-block pedestrian connections should also be encouraged throughout the neighborhood, but these would be particularly beneficial on the residential blocks between Mercer and John Streets on either side of 8th Avenue N and on the west side of Yale Avenue N.
- f. As suggested by the language of the UDF (see page 37, Item 20), consider allowing TDRs (Transfer of Development Rights) for the older structures within the neighborhood that do not utilize their full development potential, in order to preserve neighborhood character, protect affordable housing and maintain a variety of building scales. This strategy could be applied to all structures over a certain age (i.e. 25 years) or to specific buildings identified through an inventory of South Lake Union's character-defining structures and affordable housing.
- g. Consider incentivizing ground-level housing with street setbacks (i.e. 15 feet) to create sufficient privacy separation to encourage entry at grade or near-grade (porches or stoops).

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described in the Viewshed Section under 3.4.7 Mitigation Strategies will also ameliorate the impacts of height, bulk and scale.

Viewshed

While no significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis, there are notable impacts to views valued within the neighborhood. These currently unprotected views include views toward the Space Needle from Lake Union Park, along Thomas and John Streets, and views toward the open sky above Lake Union looking north along Fairview Avenue N, Boren Avenue N and Westlake Avenue N.

These impacts can be partially mitigated by the setback provisions recommended in the Urban Design Framework (see discussion and diagram on pages 22 and 23 of Final UDF, dated December 31, 2010). In addition to the recommendations contained in the UDF, consider adding upper-level setbacks on:

- a. On the east-west rights-of-way north of Aloha Street between Westlake Avenue N and Aurora Avenue N in order to open up views toward Lake Union and Lake Union Park from Queen Anne Hill and Dexter Avenue
- b. On 8th Avenue N between Denny Park and Mercer Street in order to reduce shading and bring light and air to the street – and possible woonerf – targeted principally for future residential development.

At such time site-specific development occurs, detailed viewshed analysis should be performed relative to any development that would be within the view corridor between Volunteer Park and the Space Needle.

Shadows

At such time site-specific development occurs, detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground or Lake Union Park with attention to times of the year and hours of the day the open space could be affected, the geographical area(s) of the open space affected, anticipated seasonal use of the open space, availability of other open spaces in the area, and the number of people affected.

SMC 25.05.675Q2e authorizes the City to employ measures to mitigate adverse shadow impacts to key open spaces, including:

- a. limiting the height of development;
- b. limiting the bulk of the development;
- c. redesigning the profile of the development;
- d. limiting or rearranging walls, fences or plant material;
- e. limiting or rearranging accessory structures, i.e., towers, railings, antennae; and
- f. relocating the project on the site.

Specific recommendations for limiting shading follow:

- a. Throughout the study area, consider a requirement for a 60 foot separation (equivalent to a typical street separation) between a residential tower and any other high-rise tower (office or residential). This will contribute an added level of safety appropriate to the residential use, as well as improve privacy and diminish shadow impacts.
- b. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation, in addition to the width of

the Valley Street right-of-way, between towers on the Mercer Blocks and the park.

- c. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation in the east-west dimension, in addition to the width of the north-south street, between towers on adjacent Mercer Blocks
- d. On parcels bordering on the east and west edges of public parks, consider requiring that towers be located as far north as feasible within their lot lines in order to limit shadowing of the parks.

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described below will also ameliorate the impacts of shading and shadows on the public realm.

Per the UDF, consider upper level setbacks on the following streets (see also plan diagram, Fig.2-10):

- a. John Street between Eastlake Avenue N and Aurora Avenue N. A 30 foot setback on the south side of the street to improve solar exposure. A progressive setback on the north side starting at 15 feet between Fairview Avenue N and 9th Avenue N, and expanding to a 30 feet between 9th Avenue N and the Aurora Avenue N in order to open up street views toward the Space Needle.
- b. Thomas Street between Eastlake Avenue N and Aurora Avenue N. A progressive setback on the south side of the street starting at 30 feet between Eastlake Avenue N and 9th Avenue N, expanding to 40 feet between 9th and 8th Avenues N and then to 50 feet between 8th Avenue N and Aurora Avenues N in order to open up street views toward the Space Needle, as well as improve solar exposure to the street.
- c. Fairview Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on the east side of the street side to improve solar exposure as well as views to the landmarked Ford Motor Plant Building. A 30 foot setback on the west side of the street between John and Mercer Streets, plus a 50 foot setback between Mercer and Valley Streets, to improve solar exposure and views toward Lake Union.
- d. Boren Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on both the east and west sides of the street side to improve solar exposure as well as views toward Lake Union.

- e. Westlake Avenue N between Mercer and Valley Streets. A 50 foot setback on the east side of the street to improve views toward Lake Union.
- f. 8th Avenue between Denny Park and Mercer Street. A 15 foot setback on both sides of the street to allow more light and air to street-level.
- g. Valley Street between Fairview Avenue N and Westlake Avenue N. A progressive setback on the south side of the street, starting with 90 feet between Fairview and Boren Avenues N, expanding to 120 feet between Boren and Terry Avenues N and once more to 150 feet between Terry and Westlake Avenues N in order to reduce shadows on Lake Union Park and improve views toward the Space Needle from the Lake Union waterfront and trail system.
- h. All street bordering on the east, south and west sides of Denny Park and Cascade Park and Playground. A 15 foot setback would apply only where the streets – 9th Avenue N, Dexter Avenue N, Thomas Street, Pontius Avenue N. and Minor Avenue N. – border directly on the parks, so as to improve solar exposure and reduce shading.
- i. The remaining east-west rights-of-ways north of Aloha Street (aligned with Prospect, Highland, Comstock and Lee Streets) between Aurora and Westlake Avenues N. A 15 foot setback on both sides of the street to open up views from Aurora Avenue N and Queen Anne Hill toward Lake Union and the Cascades.

All proposed upper-level setbacks would be minimum dimensions measured from the property line and would start at the top of the podium structure.

As noted in the UDF, corresponding upper level setbacks should eventually be considered as well in the Uptown Triangle in order to fully realize the view benefits of the proposed setbacks along John and Thomas Streets.

Light and Glare

SMC 25.05.675K2d authorizes the City to employ measures to mitigate adverse light and glare impacts, including the following:

- a. "limiting the reflective qualities of surface materials that can be used in the development;
- b. limiting the area and intensity of illumination;
- c. limiting the location or angle of illumination;

- d. limiting the hours of illumination; and
- e. Providing landscaping.”

Other measures that may be also employed include:

- a. install screening, overhangs, or shielding to minimize spillover lighting impacts – particularly near sensitive residential receivers;
- b. shield exterior lighting fixtures and directing site security lighting away from nearby residential uses;
- c. include pedestrian-scaled and pedestrian-oriented lighting for safety along sidewalks, parking areas, street crossings and building access points;
- d. employ timers or motion sensors for lighting to reduce spillover lighting and generally reduce ambient light levels;
- e. avoid large expanses of smooth, uniform, reflective building surfaces;
- f. incorporate architectural relief and detail, such as exterior sun shades, deep spandrels, mullions or other features of façade articulation, that reduce reflectivity; and
- g. as necessary, undertake project-specific solar impact analysis studies to determine the extent of light and/or glare impacts and to identify specific mitigation measures.

Historic Resources

In order to comprehensively assess existing resources and identify historic preservation priorities, potentially undertake a new inventory of historic resources in the South Lake Union neighborhood. Up-to-date information will allow proper assessment of potentially eligible properties. A new survey would address buildings such as 501 Dexter Avenue N, which appears to have architectural significance yet has not been cited in earlier surveys.

If higher-density alternatives (1, 2, or 3) are chosen, funding to the Department of Neighborhoods Historic Preservation Office for preparation of landmark nominations should be considered as mitigation. The work would allow the properties to be taken through the nomination process to clarify the status of potentially significant properties.

The *South Lake Union Urban Center Neighborhood Plan* of September 2007 identifies goals and policies that specifically relate to historic or older buildings in the neighborhood. The plan identifies the following policies, which would be appropriate as mitigation measures for increased

height and density allowed in the neighborhood (under Alternatives 1, 2, or 3).

- Establish incentives to encourage preservation, adaptive use, and rehabilitation of historically significant structures in the neighborhood.
- Explore incentives to encourage the adaptive use of older, character-providing buildings in the neighborhood.
- Provide incentives to support property owners who wish to maintain existing buildings.

A zoning capacity and financial feasibility model should be created and analyzed to determine whether an expanded transfer of development rights (TDR) program would be an effective financial incentive and mitigation tool for preservation of local landmark properties in the South Lake Union neighborhood.

A certified arborist should undertake a conditions analysis of the trees in Denny Park, including an assessment of their need for seasonal sunlight from the north. Design standards should be modified accordingly to allow ample light.

Cultural Resources

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the location and nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Mitigation measures could potentially include archaeological monitoring, testing, or data recovery excavations; development of interpretive signs, markers, or exhibits; and/or minimization or avoidance of further impacts through redesign.

Transportation

Bicycle and Pedestrian System

Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust pedestrian system is provided.

Based on a review of the Pedestrian Master Plan, several improvements could be implemented in South Lake Union. Some of the improvements related to Tier 1 Pedestrian mobility issues in the South Lake Union neighborhood include, but are not limited to:

- Complete missing sidewalks along Terry Avenue consistent with the *Terry Avenue Street Design Guidelines*
- Add sidewalk to north side of Denny Way between Stewart Street and Melrose Avenue consistent with the proposed *Denny Way Streetscape Concept Plan*¹
- Add sidewalk along the east side of Eastlake Avenue from Denny Way to Harrison Street and add a signalized² crossing at the Eastlake Avenue/Republican Street intersection
- Close pedestrian system gaps on Roy Street between Fairview Avenue and Minor Avenue and on Valley Street between Minor Avenue and Yale Avenue

The Bicycle Master Plan identifies the following relevant actions in the South Lake Union neighborhood including but not limited to:

- Add bikeways along Fairview Avenue from Valley Street to Eastlake Avenue E to connect to facilities provided as part of Mercer East and West projects on Valley and Roy Streets
- Add bikeways along Harrison or Thomas street between Fifth N and Eastlake and along Fairview Avenue between Denny Way and Valley Street
- Improve bicycle access through the Fairview Avenue/Denny Way intersection
- Signalize intersection at Minor Avenue N and Denny Way consistent with the *Denny Way Streetscape Concept Plan*

All Bicycle Master Plan improvements were considered for this analysis. However, before implementation, SDOT would review the projects during the design stage to address any potential concerns, such as safety. Other pedestrian and bicycle network projects include the following:

- Implement the planned Lake to Bay Loop
- Repair facilities in poor condition
- Require that projects which develop above the “base height” implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework

¹The *Denny Way Streetscape Concept Plan* has not yet been adopted.

² To be implemented, a signal must meet warrants and be approved by SDOT.

- Provide additional signalized crossings on Thomas Street at the Dexter Avenue, 9th Avenue, and Westlake Avenue N intersections³
- Provide additional signalized crossings on John Street at the Dexter Avenue and Westlake Avenue N intersections⁴
- Evaluate opportunity to provide enhanced, marked crossing locations across Westlake Avenue N, between Galer Street and 9th Avenue N⁵, and implement improvement as appropriate
- Implement the hill climbs defined in the Urban Design Framework
- Improve street lighting and way finding

Travel Demand Management and Parking Strategies

Implement best management practices for travel demand management including maximum parking limits and unbundled parking costs for residential and commercial properties. Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state has shown that implementation of travel demand management programs can substantially reduce vehicle trip generation (see **Appendix E** for details), which, in turn, reduces traffic congestion impacts. Parking maximums would limit the number of parking spaces which can be built with new development. Unbundled parking separates parking costs from total property cost, allowing buyers or tenants to forego buying or leasing parking spaces. These types of potential mitigation measures would tend to reduce the number of work-based commute trips and all types of home-based trips. Shopping-based trips would also decrease, but at a lower level since these types of trips are less sensitive to parking costs and limited supply for short-term use.

The parking-based travel demand management strategies described above could be further supported by implementing the car sharing

³ Given the multi-lane nature of these streets, a pedestrian signal or half-signal is necessary to provide a safe crossing. The signal is required because of the adjacent land uses and likely pedestrian desire lines.

⁴ To be implemented, a signal must meet warrants and be approved by SDOT..

⁵ The frequency of marked crossings is a key component of the pedestrian network. The exact location of each crossing is not known at this time. In the future, the City would evaluate pedestrian desire lines to determine the precise location and treatment for each crossing.

incentives identified in the Seattle Municipal Code⁶ and through the development of a parking management program like the recently deployed e-park system in Downtown Seattle to better utilize private parking resources.

Note that the parking analysis in the previous sections identified potential short-term parking impacts related to an imbalance between supply and demand. Any reductions to the parking supply in the South Lake Union area would exacerbate this short-term impact. However, as described in the previous sections, while reduced supply will create a short-term shortage in parking spaces, over time prices will adjust and some drivers will switch to other modes. This shift to other modes is the primary goal of the potential travel demand management mitigation measures since it will reduce the impacts to traffic congestion and freight mobility.

In addition to the parking management strategies described above, the City of Seattle could also seek to expand the Downtown Growth and Transportation Efficiency Center (GTEC) program to include the South Lake Union area, or institute a separate GTEC for South Lake Union. As described in *Growth and Transportation Efficiency Center Program 2009 Report to the Legislature*, WSDOT describes the GTEC program as an extension of the existing CTR program. The GTEC program engages employers of all sizes in vehicle trip reduction programs through an area-wide approach. GTECs must also include an evaluation of transportation and land use policies to determine the extent to which they complement and support trip reduction goals. The South Lake Union Height and Density land use changes along with the potential mitigation packages conform well to the general goals of the GTEC program.

Transit Service Expansion

Impacts to transit load factors could be reduced and frequencies could increase by providing capital and/or operational support existing and planned transit service between Uptown and Capitol Hill. King County Metro should consider options to increase the frequency and capacity on the impacted routes by running additional busses. A South Lake Union shuttle service connecting destinations along Eastlake, the streetcar line, and the Aurora Rapid Ride line would provide additional transit service

⁶ SMC – 23.54.020.J

opportunities in the area, while supporting the shift to other modes caused by the potential travel demand management mitigation measures.

Additional improvements to the transit network include transit signal priority at the Fairview Avenue N./Denny Way intersection, and a northbound queue jump lane and southbound transit signal priority at the Fairview Avenue N./Harrison Street intersection.

Roadway Capacity Enhancements

Impacts to traffic congestion and freight mobility along the Mercer Street corridor could be reduced by the completion of the Mercer West Corridor Project. The roadway changes include:

- Widen the Mercer Street underpass between Dexter and 5th Avenues N to include three lanes in each direction, left-turn lanes, wider sidewalks, and a bicycle path
- Connect 8th Avenue N between Mercer and Roy Streets
- Consider separating southbound left turn phase at 9th Avenue/Denny Way/Bell Street intersection

Potential Mitigation Measure Implementation

Implementation of the potential mitigation measures described above is anticipated to be achieved through an update of the South Lake Union Voluntary Impact Fee Program and updates to the City Code to support the potential travel demand management/parking mitigation measures. As the South Lake Union neighborhood builds out, the Seattle Department of Transportation will monitor the transportation system, prioritize projects, and use the fees collected to construct projects, much as the current Voluntary Impact Fee Program is operated.

Projects that develop within the South Lake Union neighborhood may pay the voluntary mitigation fee in order to receive a Master Use Permit. Alternatively, if a project applicant does not wish to pay the voluntary impact fee, project applicants must perform a supplemental environmental analysis to determine transportation impacts and appropriate measures to mitigate project impacts.

Some of these mitigation measures may be implemented through the City's street or alley vacation process. If proposed projects within the South Lake Union Urban Center include street or alley vacations, the city may require contributions to the above mitigation measures as part of the public benefit required for approval of petitions to vacate public rights-of-way, where such contribution would exceed the projects mitigation obligations and provide amenities that are identified as public benefits.

Specific Mitigation Measures

This section summarizes each impact along with potential mitigation measures.

Impact 1: Under all three alternatives, there will be significant impacts to study corridor traffic operations.

Potential Mitigation 1: The Roadway Capacity Enhancement mitigation measure, which includes the completion of the Mercer West Corridor Project, will reduce the impact on Mercer Street corridor and improve overall pedestrian and bicycle circulation in the area by implementing a key section of the Lake to Bay Loop.

Since no other roadway capacity expansion projects are planned or considered feasible, many of the remaining impacts can be lessened by implementing the Bicycle and Pedestrian System and Travel Demand Management mitigation measures, as described below.

Based on the output from the Mixed Use Development (MXD) model, the Bicycle and Pedestrian System mitigation measures will reduce vehicle trip generation by approximately 7 percent (for PM peak hour trips, see **Appendix E** for other time periods). The MXD trip generation tool predicts mode share based primarily on land use and demographic information, and does not take additional travel demand management into account. To estimate the reduction in trips prompted by travel demand management programs, research summarized by CAPCOA⁷ was consulted. According to this research, the travel demand management strategies will reduce vehicle trip generation by 15 percent⁸. Combined, these two measures would reduce overall PM vehicle trip generation by about 21 percent for all three height and density alternatives⁹. Additional

⁷Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from GHG Mitigation Measures, CAPCOA, August, 2010.

⁸ 15 percent reduction in trip generation assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative. Unbundled parking is assumed to cost an average of \$100 per month per space.

⁹ As noted in Appendix E, the combined effects of two trip reduction strategies are not additive since there are diminishing returns when multiple strategies are implemented.

information regarding these calculations and the CAPCOA research are available in **Appendix E**.

As shown in **Table 1-3**, these trip generation rates would be lower than what is anticipated under the No Action Alternative and the impact on many study roadway segments would be reduced to a less-than-significant level. However, because the change in traffic congestion would affect drivers' behavior, some roadway segments would continue to be impacted, as described in the next section.

The Transit Service Expansion mitigation measure is also recommended. Based on the CAPCOA research, providing capital support that would lead to increased transit frequency would lead to an additional two percent reduction in vehicle trip generation. CAPCOA estimates an additional five percent reduction in vehicle trip generation could be achieved by providing new transit service (e.g., new service between Queen Anne, South Lake Union, and Capitol Hill via Mercer Street; South Lake Union shuttle service connecting the neighborhood with the Streetcar and the Aurora Rapid Ride). However, additional studies would need to be conducted to determine the exact level of ridership on new transit lines.

Any additional transit would also support and enhance the pedestrian, bicycle, and travel demand management mitigation measures described above. However, since the City of Seattle does not generally own and operate the transit service in South Lake Union, there is no guarantee that expanded transit service (beyond what is assumed in the Seattle travel model) will occur. Therefore, this mitigation measure was not assumed when reporting the results with mitigation in **Table 1-4**.

Impact 2: Under all three height and density alternatives, there will be impacts to bicycle and pedestrian mobility.

Potential Mitigation 2: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System mitigation measures be implemented.

Impact 3: Under all three height and density alternatives, freight mobility is significantly impacted.

Potential Mitigation 3: As discussed, the Roadway Capacity Enhancements will not address congestion on Mercer Street between Dexter Avenue and Fairview Avenue N. Therefore it is recommended that the Bicycle and Pedestrian System and Travel Demand Management mitigation measures also be implemented to reduce the automobile trip generation from

residents and employees of South Lake Union. These measures will free up more capacity on the Mercer Street corridor for freight traffic.

It is also recommended that the City update the Major Truck Street network to identify a replacement for Broad Street. Further, improvements to major truck streets and arterials expected to carry heavy vehicles on a regular basis will continue to be considered pursuant to the City's adopted Complete Streets policy which guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users. For example, the need for wider corner radii to accommodate turning trucks must be balanced with the need to shorten pedestrian crossings and slow regular passenger vehicles. The City will evaluate these trade-offs on a case-by-case basis.

Also, as specific projects seek a Master Use Permit, the City should review the applications to ensure that adequate loading and truck circulation facilities are provided based on the proposed use.

Impact 4: Under all three height and density alternatives, there will be significant impacts to transit in terms of load factors.

Potential Mitigation4: To reduce the significance of this impact, it is recommended that King County Metro increase the frequency and capacity on the impacted routes by running additional busses.

Impact 5: Under all three height and density alternatives, there will be significant short-term impacts to parking. The impacts would be felt by employees who must pay more for parking, and building owners who must maintain active TDM programs to accommodate all the tenants.

Potential Mitigation 5: To reduce the significance of this impact, it is recommended that the Bicycle and Pedestrian System, Travel Demand Management, and Transit Service Expansion mitigation measures be implemented. There is a strong relationship between parking supply, parking cost, and mode share. Although there may be short-term impacts as individual developments are completed (causing parking demand to exceed supply), over the long-term the situation will reach equilibrium as drivers shift to other modes.

The City may have to review its on-street parking policies and consider implementing variable parking pricing to maintain supply. The shift from driving to transit may also require more transit service from King County Metro. The parking maximum limits suggested as mitigation for Impact 1 would also reduce supply and shift travelers to other modes.

Mitigation Results

The potential mitigation measures were taken into account and analysis was repeated on the three height and density rezone alternatives. The Pedestrian and Bicycle System and Travel Demand Management mitigation packages were factored in at the trip generation level. The Roadway Capacity Enhancement mitigation measures were integrated into the travel model. The trip generation results of the mitigated height and density alternatives are summarized in **Table 1-3** (more details may be found in **Appendix E**). The d/c ratios of the three action alternatives with mitigation are shown in **Table 1-4**, along with the No Action Alternative for comparison.

Table 1-3
PM Peak Hour Trip Generation with and without Mitigation

Alternative	No Mitigation			Mitigation		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning (Mitigation Not Applicable)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	12,648 (51.4%)	7,279 (26.9%)	5,871 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)

Source: Fehr & Peers, 2010

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Table 1-4
Mitigated Action Alternative: Demand-to-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,754	PM/N	1.10/F	1,755	PM/N	1.10/F	1,733	PM/N	1.08/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,316	PM/N	0.82/D	1,316	PM/N	0.82/D	1,320	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	988	PM/S	0.94/E	991	PM/S	0.94/E	946	PM/S	0.90/E
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,029	PM/S	0.98/E	1,030	PM/S	0.98/E	994	PM/S	0.95/E
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	610	PM/N	0.68/D	616	PM/N	0.68/D	598	PM/N	0.66/D
Eastlake Avenue E	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,130	AM/SW	0.59/D	1,129	PM/NE	0.59/D	1,108	AM/SW	0.58/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,130	AM/S	0.59/D	1,127	AM/S	0.59/D	1,109	AM/S	0.58/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	547	PM/N	0.78/D	544	PM/N	0.78/D	549	PM/S	0.78/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	849	PM/N	0.61/D	851	PM/N	0.61/D	858	PM/N	0.61/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	781	AM/SW	1.12/F	766	AM/SW	1.09/F	774	AM/SW	1.11/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,381	PM/N	0.82/D	1,384	PM/N	0.82/D	1,396	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,000	PM/N	0.60/D	1,000	PM/N	0.60/D	985	PM/N	0.59/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,140	AM/S	1.19/F	1,134	AM/S	1.18/F	1,151	AM/S	1.20/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,737	PM/N	1.24/F	1,734	PM/N	1.24/F	1,709	PM/N	1.22/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	636	PM/E	0.76/D	633	PM/E	0.75/D	611	PM/E	0.73/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,980	PM/W	0.79/D	1,983	PM/W	0.79/D	1,970	AM/W	0.78/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,054	AM/W	0.98/E	2,072	AM/W	0.99/E	2,040	AM/W	0.97/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,031	PM/W	0.61/D	1,031	PM/W	0.61/D	1,032	AM/W	0.61/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,591	PM/E	1.52/F	1,586	PM/E	1.51/F	1,573	PM/E	1.50/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,126	AM/W	0.70/D	1,122	PM/W	0.70/D	1,102	AM/W	0.69/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,289	AM/NW	1.07/F	1,282	AM/NW	1.07/F	1,270	AM/NW	1.06/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,063	PM/SE	0.89/D	1,068	PM/SE	0.89/D	1,051	PM/SE	0.88/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,194	AM/SW	1.04/F	2,208	AM/SW	1.05/F	2,163	AM/SW	1.03/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,344	AM/SW	0.75/D	1,347	AM/SW	0.75/D	1,340	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	860	AM/SW	0.72/D	862	AM/SW	0.72/D	840	AM/SW	0.70/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	854	PM/NE	0.71/D	851	PM/NE	0.71/D	856	PM/NE	0.71/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,195	PM/NE	0.66/D	1,203	PM/NE	0.67/D	1,177	PM/NE	0.65/D
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	676	AM/W	0.94/E	689	PM/W	0.96/E	678	AM/W	0.94/E
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	419	PM/E	0.58/D	436	PM/E	0.61/D	390	PM/E	0.54/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	522	PM/E	0.87/D	515	PM/E	0.86/D	502	PM/E	0.84/D
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	661	PM/N	0.94/E	667	PM/N	0.95/E	648	PM/N	0.93/E
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/F	1,099	PM/N	0.92/E	1,093	PM/N	0.91/E	1,095	PM/N	0.91/E

Source: Fehr & Peers, 2010

Note: Bold text signifies a significant impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Potential transit mitigation calculations were completed independently of the other potential mitigation measures. **Table 1-5** shows the number of additional busses that would need to run during the peak hour to reduce the load factor to acceptable levels. Details of the calculations may be found in **Appendix E**.

Table 1-5
South Lake Union Peak Hour Transit Mitigation

Route	Termini Locations	No Action Load Factor	Action Load Factor	Peak Hour Ridership	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	1.17	1.35	520	1	1.18
28 NB	Downtown, Broadview	1.19	1.40	240	1	1.06
29 NB	Downtown, Woodland Park	1.19	1.49	120	1	1.04
29 SB	Downtown, Woodland Park	1.49	1.79	144	1	1.25
56 NB	South Lake Union, West Seattle	1.38	1.53	396	2	1.07

Source: Fehr & Peers, 2010

Public Services

Future population and employment increases associated with potential development in the South Lake Union neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for fire and emergency services, police services, and schools in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenue generated from potential redevelopment in the neighborhood – including construction sales tax, business and operation tax, property tax and other fees, licenses and permits – would accrue to the City of Seattle and Seattle School District and could help offset demand for police, fire, and services from the district.

2. All new buildings would be constructed in accordance with the 2006 Fire Code which is comprised of the 2006 International Fire Code with Seattle amendments or the applicable fire code in effect at the time of permit submittal.
3. Design features could be incorporated into potential development in the South Lake Union neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility.
4. It is anticipated that increases in student population over the buildout period would be addressed through the Seattle School District capital facilities capacity planning process (policy H13.00) to insure that no significant impacts would occur as a result of redevelopment in the South Lake Union Neighborhood. As stated previously, the Seattle School District could take any or a combination of the following actions to match capacity and enrollment as buildout occurs in the South Lake Union Neighborhood:
 - Adding, relocating or removing programs;
 - Adjusting school boundaries;
 - Adjusting geographic zones for option schools;
 - Adding or removing portables;
 - Adding to or renovating buildings; and/or,
 - Opening, reconstituting or closing buildings.

Utilities

No mitigation measures are necessary or proposed to address potential impacts associated with the proposal or alternatives.

Depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts that could occur under any of the alternatives.

Leadership in Energy and Environmental Design (LEED) provides a framework and ranking system to reduce the impact of development on the environment including the utility infrastructure. By using LEED methods to reduce energy and other resources, projects can reduce the overall effects of new or re-development. Encouraging the use of the LEED or a similar standard score card (such as Built Green) for resource

use reduction with some type of development incentives would help to reduce the effects on the utility infrastructure.

Water

1. The use of low or no-flow fixtures and water saving devices in new construction and renovations.
2. Collection and re-use of storm water for non-potable uses (irrigation, toilet flushing, mechanical make up water, etc.) would reduce demand on the public water supply.
3. A replacement or rehabilitation plan for the oldest water mains in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.

Combined Sewer & Storm Sewers

1. Modern low flow or no-flow plumbing will reduce the per capita waste water volume discharged to the combined sewer pipes and sent to the treatment facility.
2. New development in the area will be required to meet the 2009 City of Seattle Stormwater Code. Stormwater collected on site will be required to be held on site with Green Stormwater Infrastructure (GSI) methods, or detained before discharge to the city storm system. These measures will reduce the peak rate of water discharged to the combined and storm sewer systems.
3. A replacement or rehabilitation plan for the oldest sewer pipes in this neighborhood should be developed by SPU. Pipes adjacent to re-developed sites could be replaced as part of the related street improvements.
4. Installation of a separated storm sewer system in this area, sized for the approved level of development, would reduce the load of storm water sent to the treatment plant, and nearly eliminate combined sewer over flows in this area. The existing combined sewer system would be retained for use as a sanitary sewer.

Electric Power

1. The installation of photovoltaic and other local generating technologies will reduce the demand on the public generating and distribution facilities.
2. Construction and operation of LEED compliant (or similar ranking system) buildings will reduce the level of increase required in power systems.

3. Reduce the use of power in building heating and cooling with passive systems and modern power saving units.

Open Space and Recreation

Future population and employment increases in the South Lake Union Neighborhood under Alternatives 1-4 would be incremental and would result in associated increases in demand for park and recreation facilities in the area. These impacts could be addressed by the following mitigation measures.

1. A portion of the tax revenues generated from potential future development in the South Lake Union Neighborhood would accrue to the City of Seattle and could help offset demands for park and recreation facilities.
2. Future increases in population and employment in the South Lake Union Neighborhood could be planned for through the City's ongoing capital facilities planning process.
3. New park and recreation facilities could be provided in conjunction with potential future development as part of the development bonus process under Alternatives 1-3.
4. New open space facilities could be provided in the Fairview and Dexter Subareas in conjunction with potential future development.
5. Consider facilities to address the identified gaps in service in the 8th Avenue Corridor and the Fairview Corridor focus areas in conjunction with potential future development.

1.7 Significant Unavoidable Adverse Impacts

There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except transportation. Significant unavoidable adverse impacts associated with transportation are as described below.

Transportation

Even with the proposed mitigation strategies, two study corridors would continue to have unmitigated traffic operations impacts:

- Dexter Avenue N from the Fremont Bridge to Valley Street – Alternatives 1 and 3
- Mercer Street from Dexter Avenue N to Fairview Avenue N – Alternative 2

The above impacts could be mitigated through additional roadway corridor widening. However, as described earlier, the City has no

Proposal
Location
Objectives of the
Proposal
Alternatives
Summary of
Potential
Impacts and
Mitigation
Strategies
Mitigation
Strategies
Significant
Unavoidable
Adverse
Impacts
Major Issues to
be Resolved

additional roadway widening plans and additional roadway widening would have right-of-way, cost, and environmental consequences. Additionally, roadway widening would tend to induce more vehicle trips in the South Lake Union neighborhood, which could conflict with the transportation goals outlined in the Seattle Comprehensive Plan. Therefore, additional widening is considered infeasible.

In addition to the traffic operations impacts described above, the impacts to transit load factors may remain. Although transit service expansion was identified as a potential mitigation measure, the City of Seattle does not generally own and operate the transit service in South Lake Union. Therefore, expanded transit service cannot be guaranteed by the City and no expansion was assumed in the analysis.

All other impacts were reduced to a less-than-significant level with mitigation.

1.8 Major Issues to be Resolved

The key planning issue facing decision-makers is whether and how to change development regulations and standards for building height, bulk and scale in the South Lake Union neighborhood. Major environmental issues include potential impacts to the transportation system and to the aesthetic/visual character of the neighborhood.

Proposal
Location
Objectives of the
Proposal
Alternatives
Summary of
Potential
Impacts and
Mitigation
Strategies
Mitigation
Strategies
Significant
Unavoidable
Adverse Impacts
Major Issues to
be Resolved

Description of the Proposal and Alternatives

CHAPTER 2 DESCRIPTION OF THE ALTERNATIVES

2.1 Introduction

The City of Seattle Comprehensive Plan, *Toward a Sustainable Seattle*, establishes a framework for accommodating future growth in a manner that is sustainable and consistent with community values. The urban village strategy is a key component of the plan. The urban village strategy, as described in the Urban Village element, is a comprehensive approach to planning for future growth in a sustainable manner. The Urban Village element identifies four categories of urban villages, including urban centers, manufacturing/industrial centers, hub urban villages and residential urban villages. Urban centers are identified as the densest neighborhoods in the City, with a diverse mix of uses, housing, and employment. The South Lake Union neighborhood is identified as an urban center.

As an urban center, the Comprehensive Plan establishes that the South Lake Union neighborhood should contain a concentration of housing and employment and provide a regionally significant focus for housing and employment growth. Densities and mix of uses should support walking, transit use and cohesive community development.

Consistent with these goals, the Urban Center Neighborhood Plan for South Lake Union (Neighborhood Plan) establishes goals, policies and strategies supportive of the urban center designation. Strategy 2c specifically addresses the use of increased height and density to achieve Neighborhood Plan goals (see sidebar). Although the Neighborhood Plan notes that there was disagreement about this strategy, it is identified as a high priority, with implementation to start in the near term (defined as within a five-year period).

The City is considering the use of incentive zoning as a strategy to encourage increased density while ensuring growth contributes to livability and sustainability. The goal of incentive zoning is to link code flexibility, increased density and development potential with public benefits valued by the community. The City initiated an Environmental Impact Statement (EIS) process to study the potential impacts of increased height and density in the neighborhood. Over the course of 2008 and 2009, working in partnership with interested citizens and organizations, the City identified three alternative zoning scenarios, each providing a different configuration of height and density in the South Lake Union neighborhood.

Introduction	1
Planning Context	6
Proposed Action and Alternatives ...	17
Environmental Review ...	33
Benefits and Disadvantages of Delaying the Proposed Action ...	35

Urban villages ... enable the City to: deliver services more equitably, pursue a development pattern that is environmentally and economically sound, and provide better means of managing growth and change through collaboration with the community...

Toward a Sustainable Seattle, 2004.

Strategy 2c: Use additional height and density as an incentive for projects that implement multiple neighborhood plan policies where the additional height will not negatively affect the surrounding area, flight paths or key public view corridors
South Lake Union Neighborhood Plan, 2007

The City is testing these scenarios, along with a scenario that does not provide for height increases (No Action), through this EIS. Based on the analysis and public comment received during the Draft EIS comment period and future public comment on a specific proposal, the City will determine future actions, if any, associated with code updates to permit increased height and density in the South Lake Union neighborhood.

2.1.1 Overview of the Proposal

This EIS considers four alternatives to height and density in the South Lake Union neighborhood. Alternatives 1, 2 and 3 represent a range of potential height increases that could be achieved through incentive zoning and are collectively referred to as action alternatives. Alternative 4 would retain the existing zoning designations with no incentives for height increases and is referred to as the no-action alternative.

Among the action alternatives, Alternative 1 would provide the greatest potential for increases in height and density, Alternative 3 the least, and Alternative 2 falls between Alternatives 1 and 3. Alternative 1 would allow for building heights of 240 to 300 feet in much of the neighborhood, with maximum heights of 400 feet between John Street and Denny Way. Alternative 2 would allow for maximum heights of 300 feet in the area between Aurora and Westlake avenues north, with much of the rest of the neighborhood at maximum heights of 160 to 240 feet. Under Alternative 3, the majority of the neighborhood would have maximum building heights of 160 feet to 240 feet. Under Alternatives 2 and 3, existing zoning, with no provision for increased height through zoning incentives, would be retained in the majority of the Cascade neighborhood, with changes limited to areas near the western and southern boundaries in Alternative 2 and along the western boundary in Alternative 3. Similarly, under Alternative 3, the majority of the Fairview neighborhood would also retain existing zoning, with no provision for increased height through incentive zoning.

Alternatives 1 and 2 would provide for height and density increases for both commercial and residential development, while Alternative 3 is focused primarily on residential development.

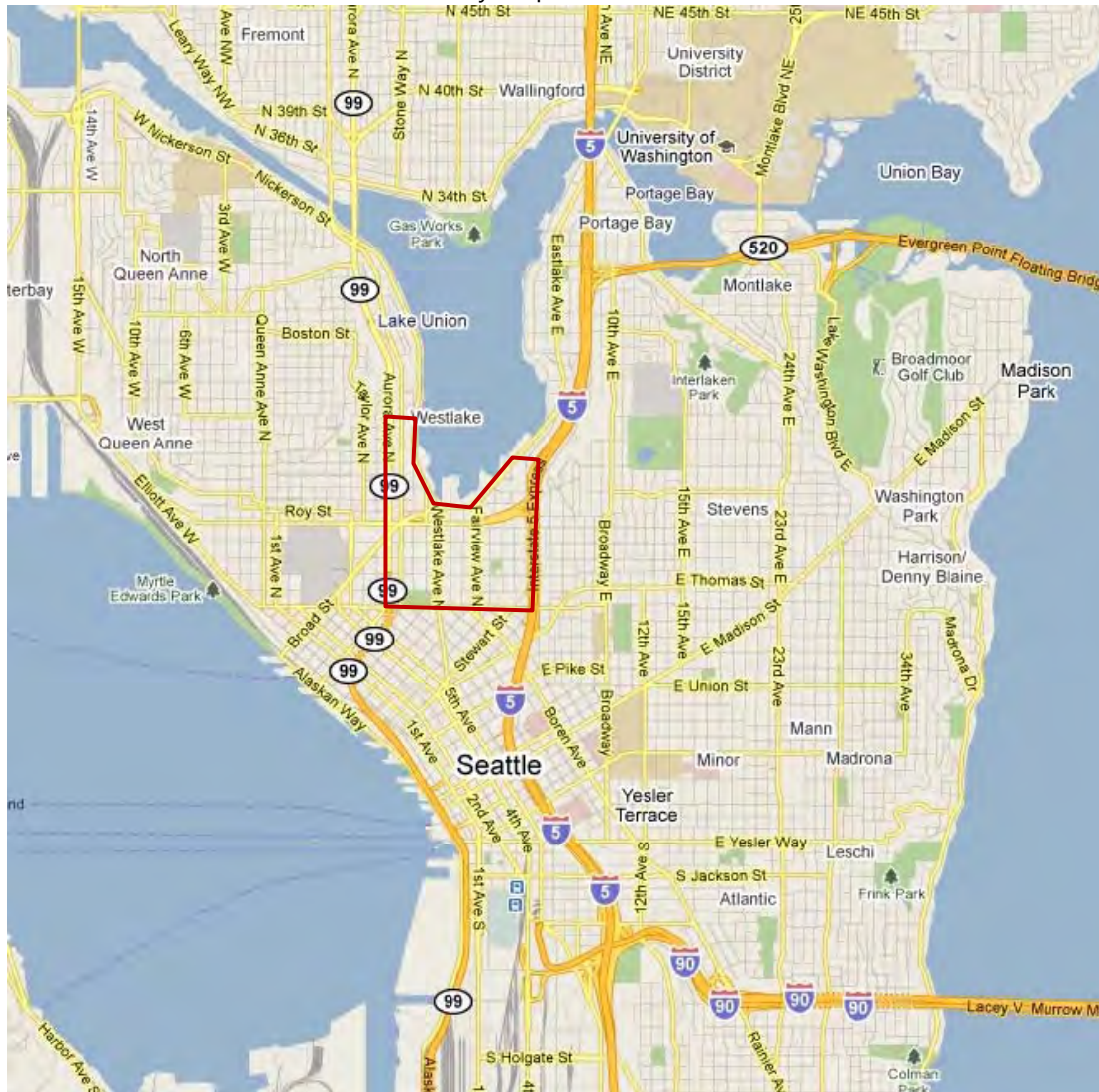
All of the alternatives are described in more detail in Section 2.3 and shown in Figures 2-5 through 2-8.

Study Area

The South Lake Union neighborhood is located in the center of the City of Seattle, located immediately north of the Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east. Consisting of about

340 acres, the area is generally bounded on the east by Interstate 5, on the west by Aurora Avenue, on the south by Denny Way and on the north by the Lake Union shoreline. See **Figure 2-1**.

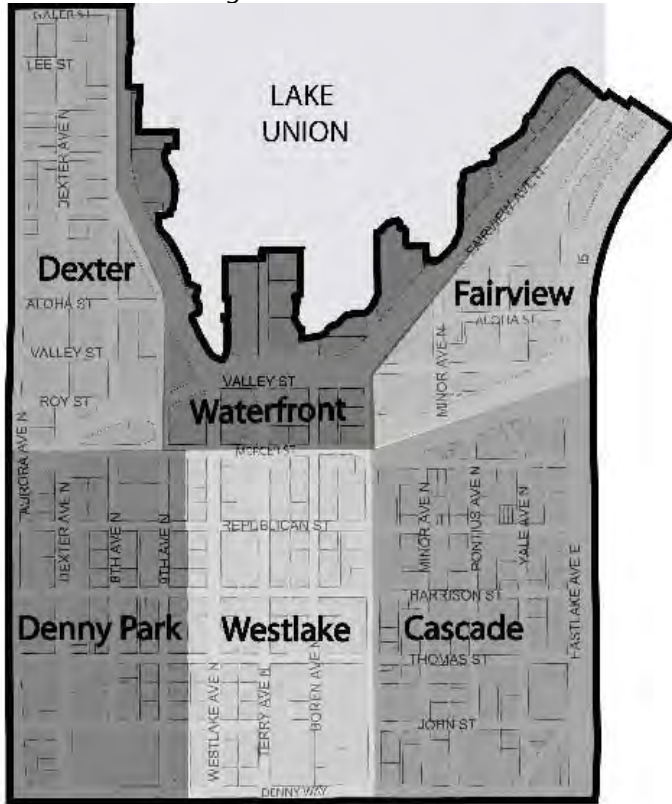
Figure 2-1
Vicinity Map



Source: Google Maps, 2010

For planning purposes, the City has identified six neighborhoods in the neighborhood, known as the Dexter, Denny Park, Waterfront, Westlake, Fairview and Cascade neighborhoods See **Figure 2-2**.

Figure 2-2
Neighborhood Plan



Source: South Lake Union Urban Center Neighborhood Plan, 2007.

Within the study area boundaries and where appropriate, this EIS considers in greater detail existing conditions and potential environmental impacts of the alternatives in three focus areas. Due to the area-wide cumulative nature of the analyses, the focus areas are not specifically called out in the transportation, energy (greenhouse gas), and air quality analyses.

Focus areas are shown in **Figure 2-3** and described below:

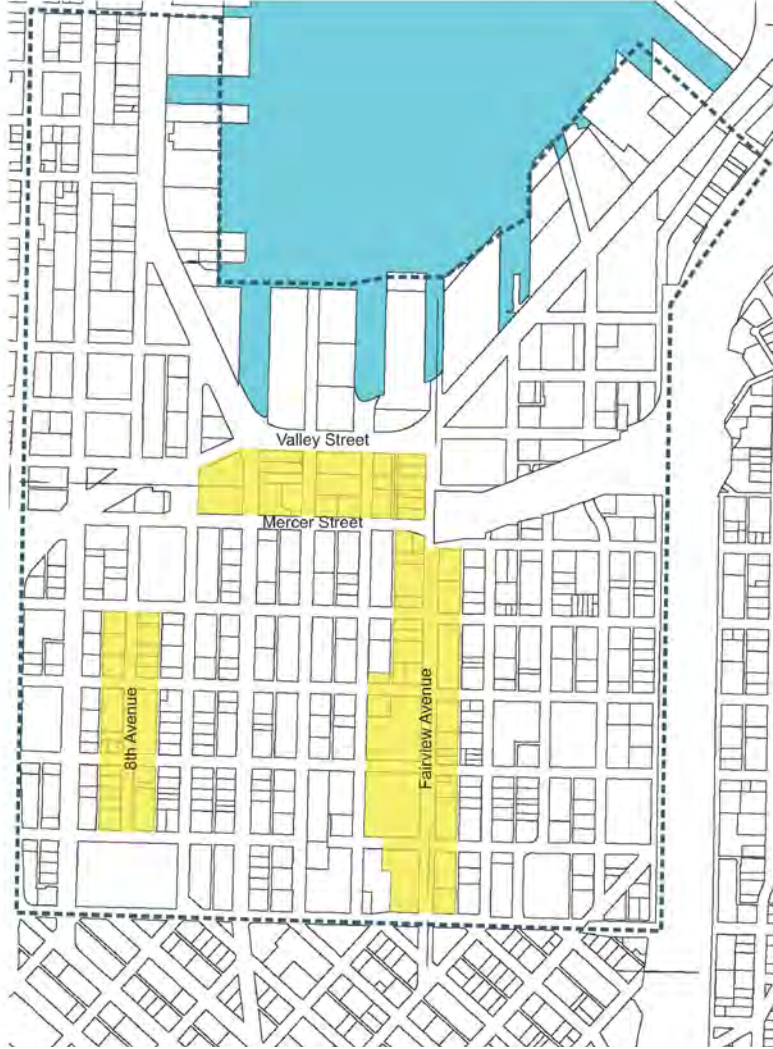
- 8th Avenue Corridor – Consisting of about 5.9 acres in the Denny Park area, this area is comprised of one-half block east and west of 8th Avenue between Republican and John Streets.
- Fairview Avenue Corridor – About 16.2 acres, generally consisting of one-half block east and west of Fairview Avenue between Mercer Street and Denny Way. This area straddles the boundary between the Westlake and Cascade neighborhoods.
- Valley/Mercer Blocks – Consisting of about 8 acres in the



8th Avenue at Harrison Street

Waterfront area, this area is bounded by Valley Street on the north, Mercer Street on the south, 9th Avenue on the west and Fairview Avenue on the west.

Figure 2-3
Focus Areas



Source: EA|Blumen, 2010.

Transportation Network

Due to its central location and proximity to the major regional north/south corridors of Aurora Avenue North and Interstate 5, South Lake Union is heavily affected by regional and local traffic. Major transportation projects in the neighborhood that would result in changes to right-of-way alignment and associated access and configuration of parcels adjacent to the affected rights of way include the Mercer Corridor-East Project and the Bored Tunnel Street Grid Reconnection. Because these projects are either funded or highly likely to be funded, they have

been assumed as part of the underlying street network for the neighborhood.

2.1.2 Objectives of the Proposal

The City has identified the following specific objectives of the proposal:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.
- Ensure adequate zoned development capacity for long-term growth consistent with the designation of South Lake Union as one of the City’s six urban centers.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Promote a land use pattern that provides for a balanced mix of residential and employment opportunities.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.
- Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems.

2.2 Planning Context

2.2.2 Seattle Comprehensive Plan

The Seattle Comprehensive Plan, *Toward a Sustainable Seattle*, is a GMA-compliant 20-year plan that provides guidance for how Seattle will accommodate growth in a way that is consistent with the vision of the citizens of the City. As a policy document, the Plan lays out general guidance for future City actions. In many cases, general guidance in the Plan is more specifically addressed in functional plans that focus on a particular aspect of City services, such as parks, transportation or

Introduction	Chapter 2 Contents
Planning Context	
Proposed Action and Alternatives	
Environmental Review	
Benefits and Disadvantages of Delaying the	

drainage. The City implements the Plan through development and other regulations, primarily found in the City's zoning map and Land Use Code.

The City adopted the current Plan in 1994. It has been updated in major and minor ways in subsequent years. The amendment processes for the Comprehensive Plan are defined under state law:

- Once a year, the City may amend the plan to address specific proposed changes initiated by the City and private parties.
- Every seven years, the City must review and consider amendments to ensure continued compliance with the Growth Management Act, reflect updated population projections and ensure capacity to accommodate projected population for the next 20-year time horizon.

Growth Targets

The Comprehensive Plan contains growth targets that establish how much residential and employment growth is anticipated through 2024 and where it will be located. Recently, King County and its cities have allocated new growth targets that extend the planning horizon to 2031. It is expected that this updated target will be the basis for the City's next 10-year comprehensive plan update, due in 2014. However, the City has not yet adopted those targets into the Comprehensive Plan or allocated portions of those targets to individual urban centers or urban villages.

In order to provide the City with an early opportunity to consider the fit of the alternatives relative to the future comprehensive plan update effort, this EIS assumes a 2031 South Lake Union growth estimate that is proportionate to the adopted South Lake Union 2024 target, see **Table 2-1** below. The estimate is for analysis purposes only and does not represent policy intent by the City.

It should be noted that the adopted 2024 growth target for the neighborhood allocated a relatively high share of citywide growth to South Lake Union. Because the current growth target is ambitious, it is unlikely that future planning would increase the proportion of citywide growth that is allocated to South Lake Union. It is more likely that future planning will match the current proportion or reduce it by distributing citywide growth to other areas of the City. Therefore, the 2031 growth is a conservative assumption; a future growth target is unlikely to be higher than the estimate.

Table 2-1
City of Seattle Growth Targets¹

	City		South Lake Union	
	2024	2031	2024	2031 ²
Residences	47,000	70,000	8,000	11,900
Jobs	84,000	115,000	16,000	21,900

Source: City of Seattle, EA|Blumen, 2010

- ¹ Growth targets for the City in 2024 and 2031 and for South Lake Union in 2024 represent adopted City policy. The growth target shown for South Lake Union in 2031 is an estimate developed for analysis in this EIS and has not been reviewed, recommended or adopted by the City. See Note 2, below.
- ² The City has not yet identified specific 2031 targets for neighborhoods within the City. For this analysis, the 2031 estimated for South Lake Union was determined by determining the ratio of the 2024 South Lake Union to City targets and applying this ratio to the 2031 citywide target (About 17% of the citywide total for residences and 19% of the citywide total for jobs)..

Development Capacity

Development capacity is a measure of the total amount of new development that could be added in an area. The City of Seattle calculates this measure by comparing existing land uses to what could be built under current or proposed zoning. The difference between the potential and existing development is the capacity for new development. Development capacity estimates are not a prediction that a certain amount of development will occur or when it may occur, but instead a measure of the maximum development that could occur in a given area. Development capacity is expressed in terms of housing units and the number of potential jobs that could be added.

The estimate of development capacity varies according to the amount and type of development that is permitted. Accordingly, the development capacity for South Lake Union has been calculated for each alternative, including No Action (Alternative 4). **Table 2-2**, below summarizes the development capacity for South Lake Union under each alternative. Please see **Appendix B** for complete description of the development capacity methodology used in this analysis.

Table 2-2
Development Capacity

	Employment Capacity¹ (jobs)	Residential² (dwelling units)
Alternative 1	31,500	21,000
Alternative 2	30,500	19,000
Alternative 3	23,000	15,000
Alternative 4 (No Action)	20,000	11,500

Source: City of Seattle, 2010

- ¹ Assumes one job/350 square feet of commercial development and 45% of new development will be for commercial use.
- ² Assumes recent residential development trends (see Appendix B) and 55% of new development will be for residential use

2.2.3 Lake Union Seaport Airport Flight Path

The Lake Union Seaport Airport is a public airport connecting downtown Seattle with regional destinations. Kenmore Air, the primary airport operating from Lake Union, provides daily service to the San Juan Islands and Canada. During its peak season, extending from late spring until fall, Kenmore Air provides up to 80 daily arrivals and departures from morning until dusk. The area between the south shore of Lake Union and extending over Seattle Center to Puget Sound is a primary flight path.



Seaplane on Lake Union

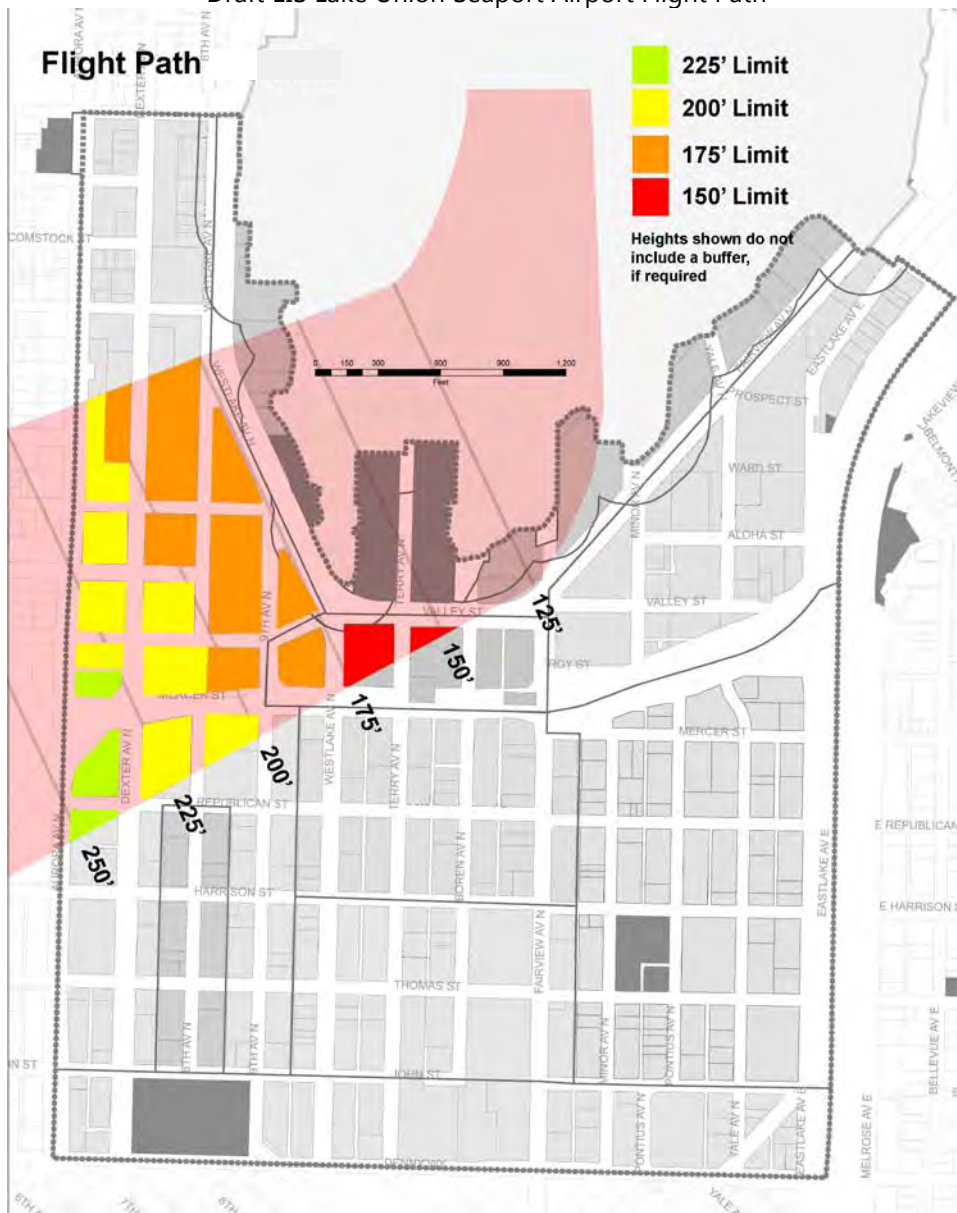
Figure 2-4 shows the Lake Union Seaport Airport flight path, as described in the Draft EIS and prepared by the Washington Department of Transportation, Aviation Division. This figure shows the flight path elevation as it rises over the South Lake Union neighborhood.

Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see **Appendix F**). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.

Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (**Figure 2.4(A)**). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than

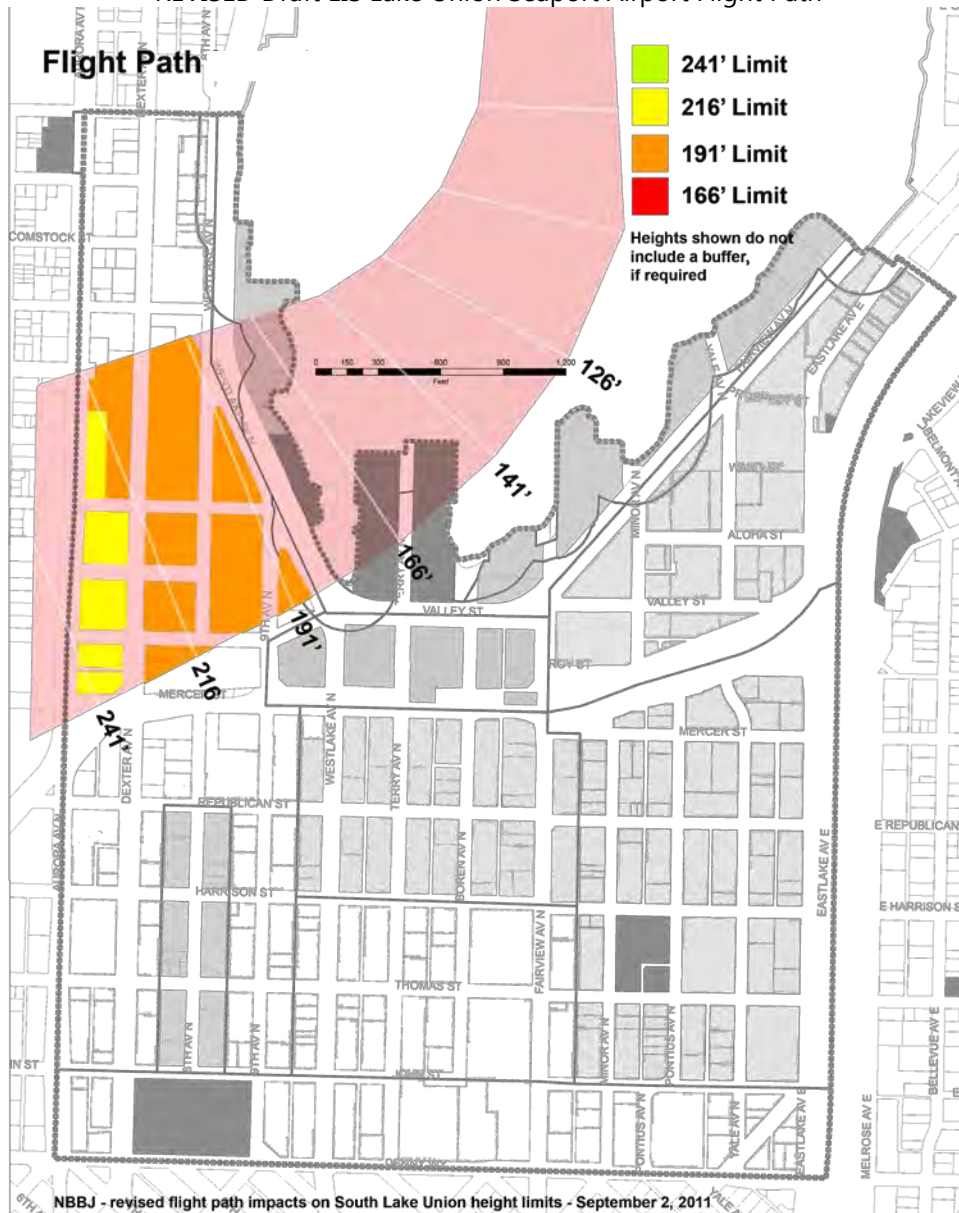
the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north (**Figure 2-4 (B)**). Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street.

Figure 2-4
Draft EIS Lake Union Seaport Airport Flight Path



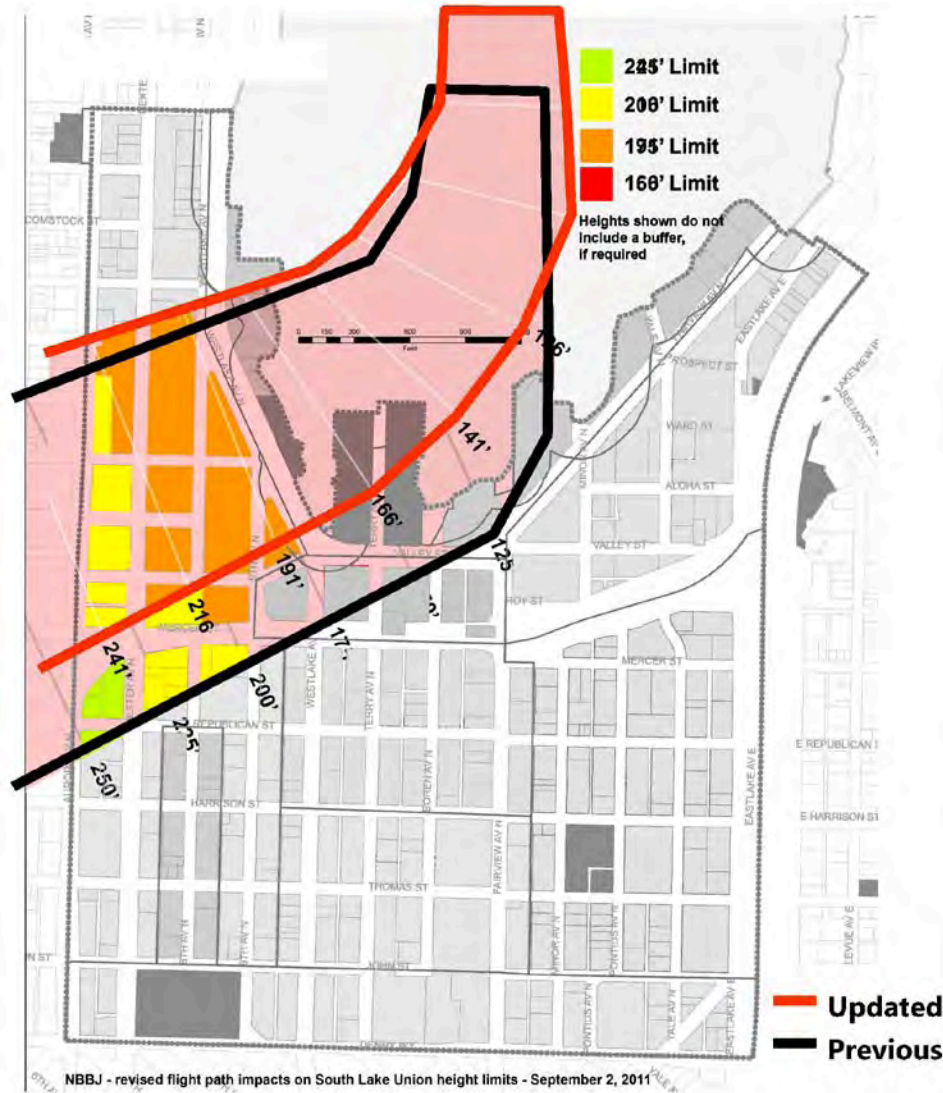
Source: WSDOT (Aviation Division), NBBJ, 2010.

Figure 2-4(A)
REVISED Draft EIS Lake Union Seaport Airport Flight Path



Source: Barnard Dunkelberg & Company, WSDOT (Aviation Division), NBBJ, 2010.

Figure 2-4(B)
 REVISED Draft EIS Lake Union Seaport Airport Flight Path



Source: Barnard Dunkelberg & Company, WSDOT (Aviation Division), NBBJ, 2010.

2.2.4 South Lake Union Urban Center Neighborhood Plan

In 2004, the City designated South Lake Union as an Urban Center. The City's Comprehensive Plan describes urban centers as the City's densest neighborhoods, providing a diverse mix of uses, housing and employment opportunities. Collectively, the City's six urban centers are intended to accommodate most of the City's targeted future growth. Accordingly, Plan policies focus on these areas to ensure their continued vitality and capacity for growth.

- City of Seattle Urban Centers**
- Northgate
 - University Community
 - Uptown
 - South Lake Union
 - First Hill/Capitol Hill
 - Downtown

The South Lake Union Urban Center Neighborhood Plan is a free-standing plan that establishes goals, policies and strategies supportive of the urban center designation. Portions of the Neighborhood Plan have been adopted as part of the Comprehensive Plan.

The Neighborhood Plan describes the future vision for the neighborhood:

The future of South Lake Union will be characterized by:

- *A pervasive human scale ambiance consistent with a vital aesthetically pleasing, safe and energetic neighborhood which embraces a dynamic intermixing of opportunities for working living and playing;*
- *Retention of a significant element of the area's commercial activities, including opportunities for business growth;*
- *A full spectrum of housing opportunities;*
- *Ecologically sound development and lifestyles and promotion of ecologically sound business practices consistent within the regulatory environment;*
- *Ease of transportation for all modes within and through the area;*
- *A variety of open spaces serving the needs of the area and the city, with emphasis on Lake Union, and its continued preservation for a wide range of uses;*
- *A sensitivity to the area's history and historical elements; and*
- *Coordination with plans of adjacent areas.*

Source: City of Seattle. South Lake Union Neighborhood Plan, 2007.

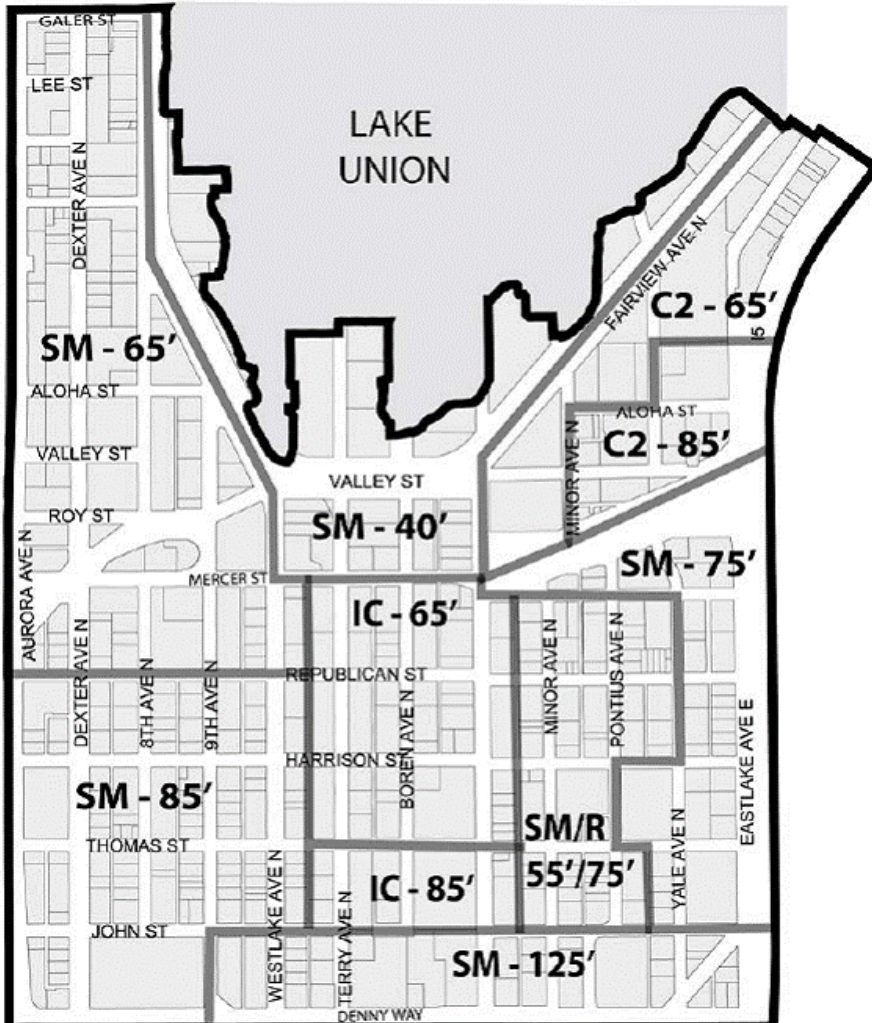
The Neighborhood Plan contains five chapters: Neighborhood Character, Transportation, Parks and Open Space, Housing and Sustainable Development. In each of these chapters, one or more goals for the neighborhood's future are identified. In order to meet those goals, the plan identifies policies, which provide broad direction for City and neighborhood action, and strategies, which are more specific actions to be implemented over the next twenty years.

2.2.5 Existing Zoning

Figure 2-5 shows the existing zoning designations in the neighborhood. Most of the neighborhood is currently zoned Seattle Mixed (SM) with varying height limits. The SM zone provides for a range of residential and commercial uses to support a pedestrian-oriented mixed-use neighborhood. An Industrial Commercial (IC) designation is located in the central part of the neighborhood. This designation allows for a mix of industrial and commercial uses and prohibits most types of residential development. To the northeast and near Lake Union, property is zoned Commercial 2 (C2), providing for auto-oriented, primarily non-retail

commercial uses. Height limits range from 40 feet adjacent to Lake Union to 125 feet along Denny Way.

Figure 2-5
Existing Zoning Designations



Source: South Lake Union Urban Center Neighborhood Plan, 2007

8th Avenue Corridor

This area is currently zoned Seattle Mixed (SM), with a height limit of 85 feet.

Fairview Avenue Corridor

The Fairview Avenue area is zoned Industrial Commercial (IC) between Mercer and John streets. North of Thomas Street, the IC zone has a height limit of 65 feet; while between Thomas and John streets, the height limit is 85 feet. Between John Street and Denny Way, existing zoning is Seattle Mixed (SM), with a height limit of 125 feet.

Valley/Mercer Blocks

This area is currently zoned Seattle Mixed (SM), with a height limit of 40 feet.

Development allowed under existing zoning represents the No Action Alternative in this EIS. Please see Section 2.3.6 for a description of the No Action Alternative.

2.2.4 Urban Design Framework

The Urban Design Framework (UDF) identifies strategies to guide zoning changes, amendments to the South Lake Union Design Guidelines and Right-of-Way Improvement Manual and other implementation actions. The UDF was developed over a multi-year process, beginning in 2008, and included participation from a range of constituents, including planners, urban designers, architects, landscape architects, and neighborhood residents and business owners. The UDF contains recommendations addressing the following elements:

Guiding Principles	Upper-level setbacks
Gateways, hearts and edges	Urban form
Street character	Lakefront
Residential and retail focus areas	Neighborhood connections
Residential open space strategies	Green stormwater infrastructure
Public space network	Incentive zoning priorities
Views	

The UDF will guide the work of the Seattle Department of Planning and Development and other departments within the City. Please see Section 2.3.2 for a discussion of the incentive zoning recommendations contained in the UDF and Section 3.4 of this Final EIS for additional discussion of potential mitigation identified in the UDF.

2.2.5 Public Outreach

An extensive public outreach effort was integral to preparation of the South Lake Union Neighborhood Plan. Community members and organizations were involved in shaping the Neighborhood Plan through provision of background information, meeting participation and/or feedback on draft plan recommendations. A summary of major public meetings is provided below, beginning with the most recent.

- Draft EIS Public Meeting. A public open house and meeting was conducted on March 28, 2011. Public comment received at this meeting, together with response to these comments, is included in Chapter 5 of this Final EIS.

- Urban Design Framework Public Meeting. Held January 26, 2010, to review and comment on draft South Lake Union Design Framework Principles and Actions
- Public Workshop. Held February 12, 2008 to review and comment on the results of a recent design charrette conducted as part of the South Lake Union Urban Form Study. At the charrette, several scenarios for future development of the South Lake Union neighborhood were produced. The open house was an opportunity to view the charrette results, offer comments, and learn how these alternative scenarios will be used in the Urban Form Study.
- Urban Form Study Scoping Meeting. Held November 19, 2008 to invite comments on the preliminary EIS scope.
- Kick-Off Meeting. Held January 9, 2008 to kick off the South Lake Union Urban Form Study, leading to recommendations for changes to height and density regulations that will help shape the character of South Lake Union for the next 20-30 years.
- Public Hearing. Held December 10, 2007, public hearing on proposed land use code amendments to the South Lake Union Industrial Commercial Zone.
- Open House. Held on October 29, 2007 as a celebration of the completion of the South Lake Union neighborhood plan.
- Open House. Held June 26, 2007 to discuss the priorities of the South Lake Union Neighborhood Plan recommendations.
- Open House. Held June 12, 2006 to present the updated South Lake Union Neighborhood Plan.
- Public Workshop. Held on April 4, 2006 to discuss key issues in the neighborhood plan update.
- Open House. Held on November 29, 2005 to gather feedback on draft goals and policies for a draft South Lake Union Neighborhood Plan.
- Open House. Held on June 7, 2005. University of Washington Master of Urban Planning students showcased 20 weeks of work on topics such as urban design, housing, sustainability, community identity, streetscapes, historic preservation, and more.

Public involvement continues to be an important element of the planning process. Future consideration of this proposal will include review by the Seattle Planning Commission and City Council. Prior to any action, public comment will be invited. Please see the project website at http://www.seattle.gov/dpd/Planning/South_Lake_Union/Overview/ for continuing updates to the planning process.

Introduction
Planning Context
Proposed Action and Alternatives
Environmental Review
Benefits and Disadvantages of Delaying the Proposed Action

2.3 Proposed Action and Alternatives

2.3.1 Overview

In order to meet the goals of the Comprehensive Plan, the City is considering adoption of incentive zoning provisions to allow increased height and density in certain areas of the South Lake Union neighborhood. The City has identified four alternatives, each of which describes a different pattern of height and density in the neighborhood. In general, Alternative 1 would provide for the greatest increases in building height and corresponding residential density. Similarly, Alternative 2 provides for height and density increases, but relatively less than Alternative 1. Alternative 3 provides for the least amount of height and density increase relative to the action alternatives. Alternative 4 would retain the existing zoning standards and height limits. **Table 2-3** summarizes the key features of the alternatives.

Table 2-3
Alternatives Overview

Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Podium Height	45' – 85'	30 – 45'	20 – 45'	Not applicable
Incentive Zoning Height Limits	85' – 400'	85' – 300'	85' – 240'	Not applicable
Floor Plate Size	Commercial - 24,000 sf above podium height for commercial Residential - 10,500 sf average/11,500 sf maximum above podium height			Not applicable
Floor Area Ratio Limits	Commercial: Base of 4.5 or 5; up to 7 with bonuses Residential: no FAR limits			4.5 to 5
Residential Densities	Varies according to building height and podium size. The range of densities at different heights is shown below. Note that not all alternatives include all of the heights listed. 400' height limit: 720 – 890 units/acre 300' height limit: 562 – 655 units/acre 240' height limit: 465 – 535 units/acre 160' height limit: 327 – 385 units/acre Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See Draft EIS Appendix B for complete methodology.			Not applicable
Minimum Lot Size for Towers	22,000 sf (2 towers/block), 60,000 sf (1 tower/block)			Not applicable

Source: City of Seattle, 2010

A podium is the base of a building that supports a tower.

A floor plate is the horizontal plane of the floor of a building, measured to the inside surface of exterior walls.

Floor area ratio is the ratio of the total square feet of a building to the total square feet of the property on which it is located.

2.3.2 Incentives

An incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities. As shown in **Table 2-2**, the three action alternatives include the potential for an FAR bonus and increased height through the provision of public benefits as defined by incentive zoning.

Seattle Municipal Code Section 23.58A establishes conditions and process for development incentives. As described in this Section, buildings less than 85 feet in height may gain increased floor area only through the provision of affordable housing as established by the provisions of Section 23.58A.014. For buildings greater than 85 feet in height, other City approved bonus options may be used for up to 40% of their increased floor area, as long as at least 60% of the increased floor area is supported by the provision of affordable housing through the process established in Section 23.58A.014.

Although not currently applicable in South Lake Union, future development under any of the action alternatives would be able to seek floor area bonuses consistent with the requirements of Seattle Municipal Code 23.58A. For buildings taller than 85 feet in height, potential public benefits that could be included as a future development incentive, in addition to the affordable housing requirement, will be specifically identified following public comment and City review of EIS findings.

The *South Lake Union Urban Design Framework* addresses strategies to support increased density and intensity of development while maintaining the neighborhood character described in the Neighborhood Plan. The document identifies the following list of public amenity priorities that could be incorporated into an incentive program for South Lake Union:

- **Renovation of 100 Dexter.** Convert the Parks office facility into a new center for community, arts, and culture.
- **Public Space and Streetscapes.** Develop pocket plaza, play area, or streetscape improvements consistent with Urban Design Framework. Improvements should focus in pedestrian corridors, such as Thomas, Terry and 8th Avenue. Streetscape improvements could include green stormwater facilities exceeding Stormwater Code requirements.
- **Landmark Preservation.** Use transfer of development rights to landmark buildings based on an updated inventory of South Lake Union.

A bonus is an incentive offered to developers, usually in the form of increased height or floor area, for providing a public benefit, such as affordable housing, energy efficiency, open space and others.

Transfer of development rights is a zoning tool that allows property owners in areas with constraints to development, such as significant environmental features or historical significance, to sell their development rights to property owners in areas more suitable for development.

- **Housing Preservation.** Use transfer of development rights to protect existing affordable housing, including red brick buildings (Carolina Ct, Grandview, Carlton Apts., 502 Minor N, Carolyn Manor Apts., Brewster, Jensen).
- **Reduced Overwater Coverage.** Use transfer of development rights to encourage removal of overwater buildings along the west shore of Lake Union to provide shoreline habitat and public access trail improvements consistent with Shoreline Master Program.

Source: *South Lake Union Urban Design Framework, 2010*

In addition to the measures identified in the UDF, the City has identified the following public priorities that could be incorporated into an incentive program for South Lake Union:

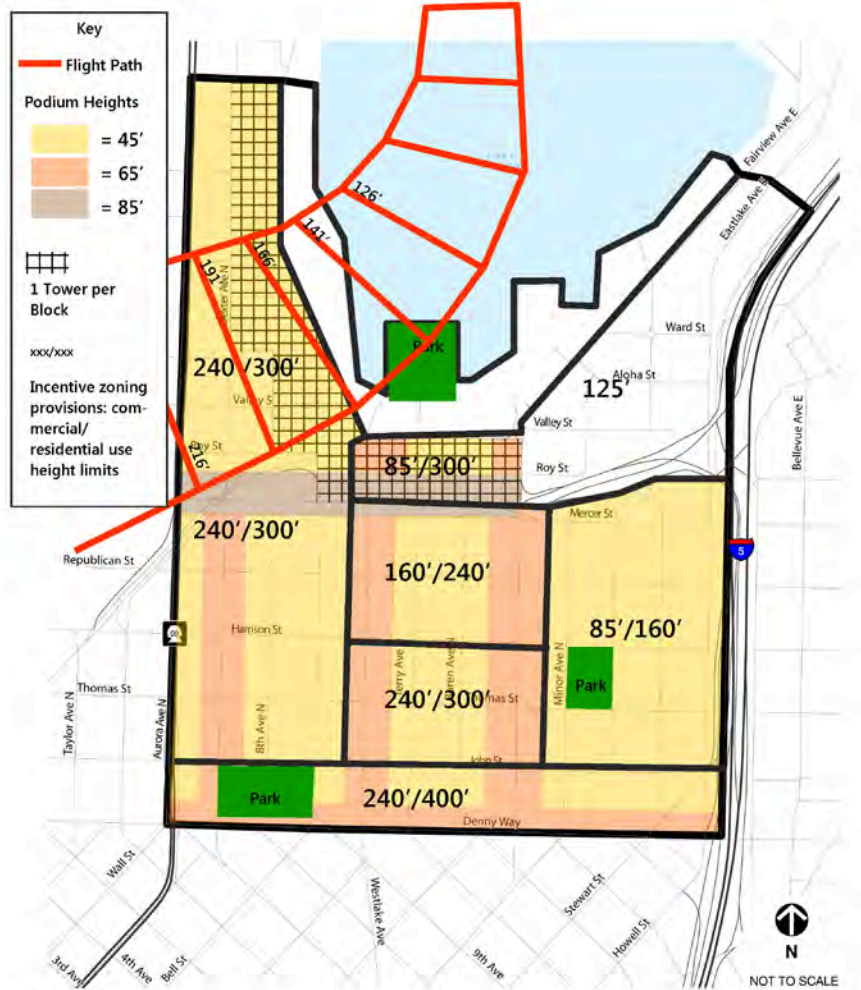
- **Regional TDR.** Through City of Seattle Resolution #31147, the City states support for a regional TDR program that promotes preservation of rural farms through a transfer of development rights to the urban area. Recent state legislation (ESSB 5253) provides the potential for receiving areas to benefit from increased intensity of development through a new infrastructure funding framework.
- **LEED for Neighborhood Development (ND).** LEED ND integrates the principles of smart growth, urbanism and green building into an established system for neighborhood design. Criteria address linkages, compact land use patterns, green infrastructure and buildings and innovation and design. LEED ND supports many of the City's sustainability goals and core values as established in the City's Comprehensive Plan.
- In addition, existing incentive programs in other zones in the City provide bonuses for meeting a specific LEED™ standard, provision or payment in lieu of childcare, provision of public amenities, such as open space, or some combination of these benefits.

LEED (Leadership in Energy and Environmental Design) is a building certification program focused on environmental and human health, energy efficiency, indoor environmental quality, materials selection, sustainable site development and water savings. Buildings can qualify for four levels of ratings: certified, silver, gold or platinum.

2.3.3 Alternative 1

Alternative 1 would permit the greatest increases in height and density, relative to the other alternatives. Key features of this alternative are described below and shown in **Figure 2-6**.

Figure 2-6
Alternative 1



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 1 provides the greatest potential for increased FAR and building height through the use of incentive zoning, relative to the action alternatives. Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Greatest heights are permitted along the southern edge of the neighborhood, between Denny Way and John Street. In this area, residential towers could be 400 feet and commercial towers 240 feet in height.

Lowest heights continue in the east central part of the neighborhood, roughly corresponding to the Cascade neighborhood. In this area, maximum heights of 160 feet for residential towers and 85 feet for commercial uses are established.

In the balance of the neighborhood, maximum heights range between 240 to 300 feet for residential towers. Commercial uses in mixed use buildings are limited to 20 feet along the 8th Avenue corridor, between John and Republican Streets and to 85 feet in the blocks bounded by Mercer, Valley and Roy streets and 9th Avenue. In the remaining areas, commercial height limits vary from 160 feet to 240 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights of up to 85 feet are allowed along the Mercer Street corridor. Along the Dexter, Westlake, Fairview and Denny Way corridors, maximum podium height is 65 feet. Podium heights are limited to 45 feet in the balance of the area.

Floor Area Ratio. Commercial floor area ratio is limited to a base of five, with the potential of increasing to a maximum of seven through use of incentives or TDR.

Floor Plate Size. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 400' height limit: 720 – 890 units/acre
- 300' height limit: 562 – 655 units/acre
- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots near Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Tower Location. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-6**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

8th Avenue Corridor. This area is zoned SM 20/300, allowing a maximum height of 20 for commercial uses and 300 feet for residential uses. The maximum podium height in this area is 45 feet. Two towers per block area permitted.

Fairview Avenue Corridor. This area is zoned SM, with varying building heights. In the blocks between Valley and Mercer streets, the height limit is 300'. In the area between Mercer and Harrison streets, height limits are 160 feet for commercial uses and 240 feet for residential uses, increasing to 240 feet for commercial uses and 300 feet for residential uses between Harrison and John streets and to 240 feet for commercial uses and 400 feet for residential uses between John Street and Denny Way. The maximum podium height is 65 feet. Two towers per block are permitted.

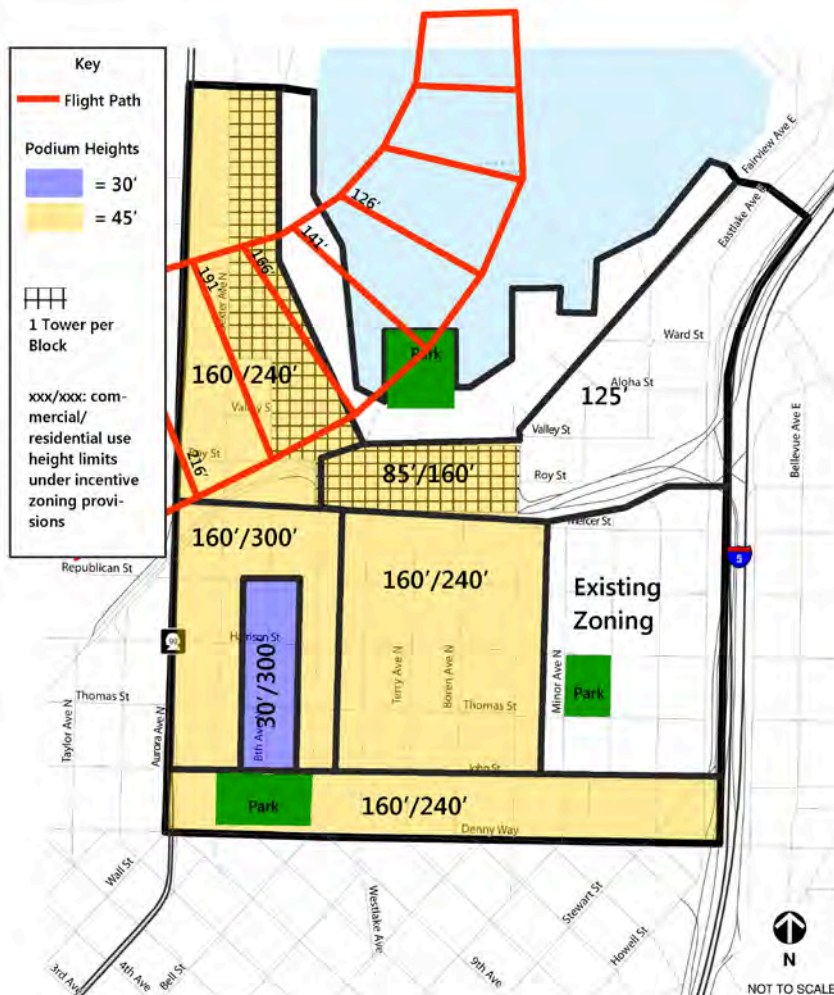
Valley/Mercer Blocks. This area is zoned SM 85/300, allowing a maximum building height of 85 feet for commercial uses and 300 feet for residential uses. Permitted podium heights vary between 45 and 85 feet within this area. A maximum of one tower per block is permitted in this area.

2.3.4 Alternative 2

Alternative 2 describes a development scenario that would allow increases in height and density that are generally between that of Alternatives 1 and

3. Key features of this alternative are described below and shown in **Figure 2-7**.

Figure 2-7
Alternative 2



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition

from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 2 provides for a mid-range of increased FAR and height bonuses through the use of incentive zoning, relative to the action alternatives. No incentives for increased height and FAR would be established in the eastern portion of the neighborhood (portions of the Cascade and Fairview neighborhoods). Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Greatest heights are permitted in the southwestern portion of the neighborhood, corresponding to the Denny Park subarea. In this area, residential towers could be 300 feet and commercial towers 160 feet in height. Within this area, height limits are reduced along the 8th Avenue corridor, with commercial development limited to 20 feet and residential to 240 feet in height.

Height limits are lowest in the northern part of the neighborhood. In the blocks bounded by Mercer, Valley and Roy Streets and 9th Avenue North, commercial uses are limited to 85 feet and residential uses to 160 feet in height. Immediately to the east, in the Fairview neighborhood, building heights are limited to 125 feet. In the balance of the neighborhood, maximum height for residential towers is 240 feet and for commercial buildings 160 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights are limited to 30 feet along the 8th Avenue corridor and 45 feet in all other parts of the neighborhood.

Floor Area Ratio. Same as Alternative 1. Commercial floor area ratio is limited to a base of five, with the potential of going up to a maximum of seven with incentives or TDR.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 300' height limit: 562 – 655 units/acre
- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots fronting Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Floor Plate Size. Same as Alternative 1. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Tower Location. Same as Alternative 1. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-7**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

8th Avenue Corridor. This area is zoned SM 20/240, allowing a maximum height of 20 feet for commercial uses and 240 feet for residential uses. The maximum podium height in this area is 20 feet. Two towers per block area permitted.

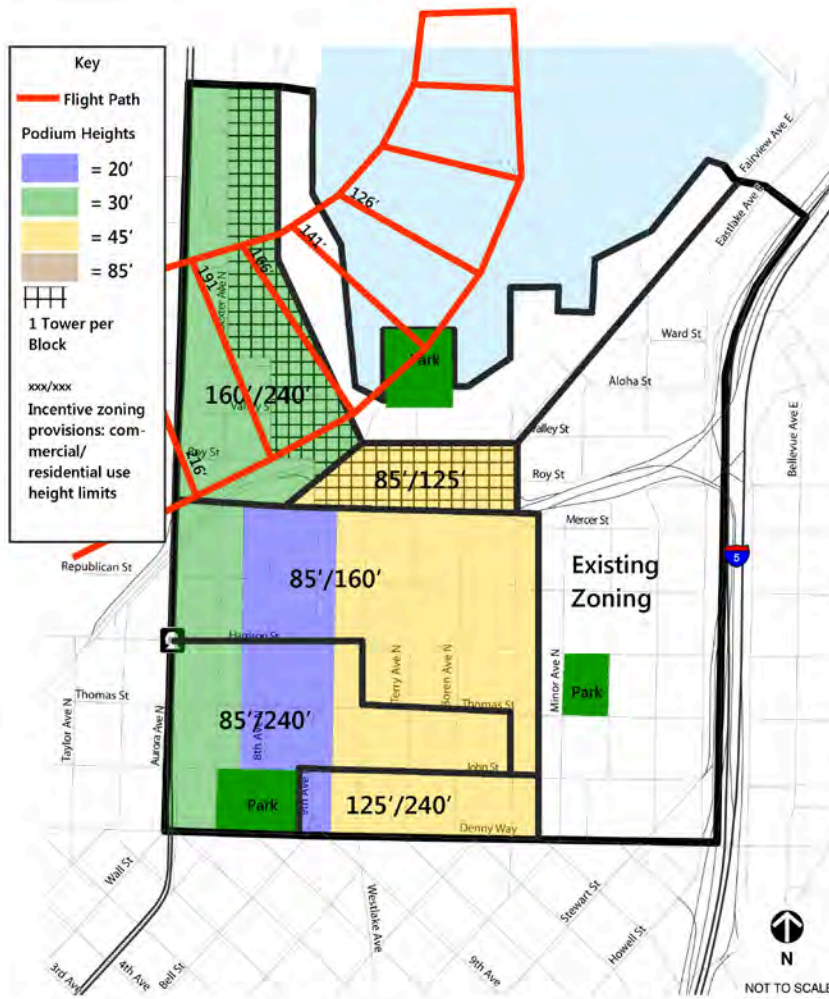
Fairview Avenue Corridor. This area is zoned SM, allowing a maximum building height of 160 feet for commercial uses and 240 feet for residential development. The maximum podium height is 45 feet. Two towers per block are permitted.

Valley/Mercer Blocks. This area is zoned SM 85/300, allowing a maximum building height of 85 feet for commercial uses and 300 feet for residential uses. Permitted podium heights vary between 45 and 85 feet within this area. A maximum of one tower per block is permitted in this area.

2.3.5 Alternative 3

Alternative 3 describes a development scenario that would permit the least amount of increase in height and density, relative to the other action alternatives. Potential height increases are focused on residential development. Key features of this alternative are described below and shown in **Figure 2-8**.

Figure 2-8
Alternative 3



Source: City of Seattle, 2010

Zoning Designations. The underlying Seattle Mixed zoning designation would be retained in all parts of the neighborhood. The existing Industrial Commercial (IC) designation would be rezoned to Seattle Mixed.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

Height and FAR Bonuses. Alternative 3 provides the least potential for increased FAR and height bonuses through the use of incentive zoning, relative to the action alternatives. No incentives for increased height and FAR would be established in the eastern portion of the neighborhood (portions of the Cascade and Fairview neighborhoods). Maximum building heights that could be achieved under incentive zoning provisions would vary throughout the neighborhood, as shown in **Figure 2-6** and described below.

Building Heights. Alternative 3 allows building heights up to 240 feet for residential development and 125 feet for commercial uses between Denny Way, John Street, 9th Avenue North and the east side of Fairview Avenue.

Commercial use height limits vary between 65 feet to 85 feet in the rest of the area. In the central part of the neighborhood, residential height limits decrease from 240 feet along John Street to 125 feet in the blocks between Mercer and Valley Streets. West of 9th Avenue and north of Mercer Street (Dexter neighborhood), residential building heights are limited to 240 feet.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Podium heights are limited to 20 feet along the 8th and 9th Avenue corridors. West and north of this corridor, podium heights are limited to 30 feet. In the remaining area, podium heights are limited to 45 feet.

Floor Area Ratio. Same as Alternatives 1 and 2. Commercial floor area ratio is limited to a base of five with the potential of going up to a maximum of seven with incentives or TDR.

Floor Plate Size. Same as Alternatives 1 and 2. Commercial floor plates are limited to a maximum of 24,000 sf. Residential floor plates are limited to an average of 10,500 sf for the entire tower, with a maximum of 11,500 sf above the podium.

Density. Density assumptions vary according to building height and podium size. In general, the range of densities assumed in this EIS are as follows:

- 240' height limit: 465 – 535 units/acre
- 160' height limit: 327 – 385 units/acre

Lower building heights and corresponding densities are assumed for lots near Lake Union. See **Appendix B** for a complete discussion of the methodology used to estimate residential densities.

Tower Location. Same as Alternatives 1 and 2. Near Lake Union, but outside of the 200' designated shoreline area, a maximum of one tower per block, (equivalent to a minimum 60,000 sf lot size) is permitted. This area is shown in a crosshatched pattern in **Figure 2-8**. For the balance of the area, a maximum of two towers per block (equivalent to a minimum 22,000 sf lot size) is permitted.

8th Avenue Corridor. This area is zoned SM, with increasing height allowed moving south from Republican Street. Between Republic and Harrison streets, building heights are limited to 85 feet for commercial uses and 160 feet for residential uses. South of Harrison, the maximum commercial use limit remains at 85 feet, but the height limit for residential uses increases to 240 feet. The maximum podium height in this area is 20 feet. Two towers per block area permitted.

Fairview Avenue Corridor. This area is zoned SM, with increasing heights allowed moving south from Mercer Street. In the area between Mercer and Thomas streets, buildings height limits are 85 feet for commercial uses and 160 feet for residential uses, remaining at 85 feet for commercial uses and increasing 240 feet for residential uses between Thomas and John streets, and to 125 feet for commercial uses and 240 feet for residential uses between John Street and Denny Way. The maximum podium height is 45 feet. Two towers per block are permitted.

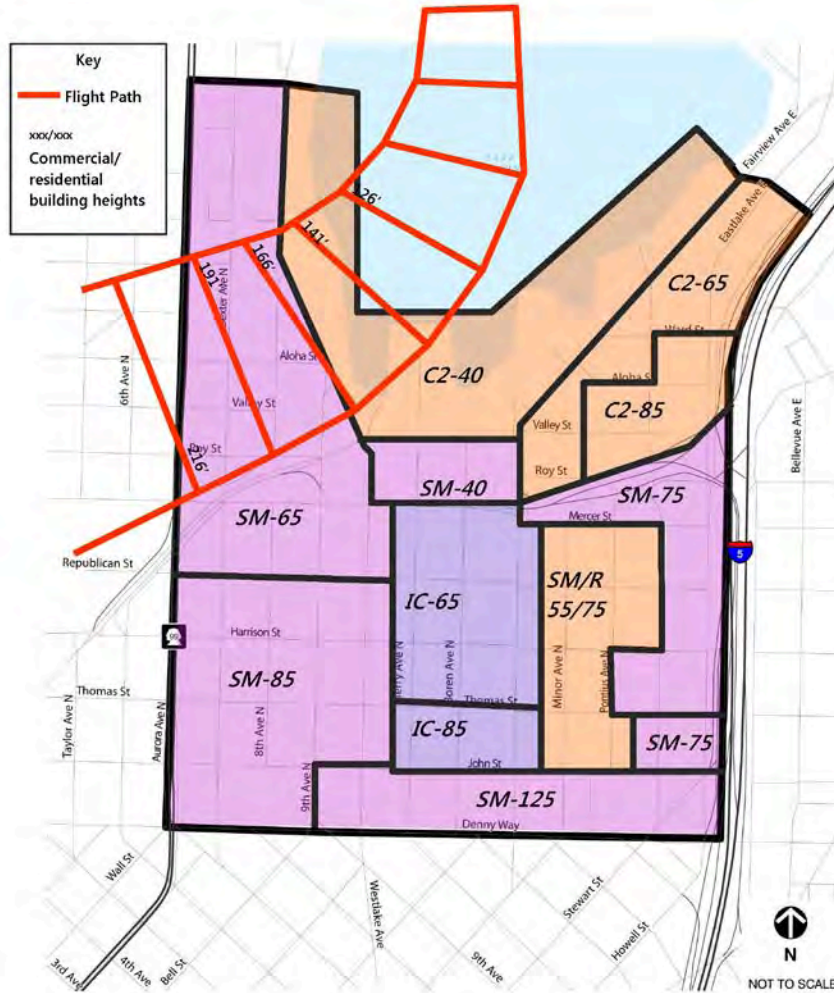
Valley/Mercer Blocks. This area is zoned SM, allowing a maximum building height of 85 feet for commercial uses and 125 feet for residential uses. Maximum podium height is 45 feet. A maximum of one tower per block is permitted in this area.

2.3.6 Alternative 4

Alternative 4 retains the existing zoning designations in the neighborhood, with no potential for height increases through incentive

zoning provisions. Key features of this alternative are described below and shown in **Figure 2-9**.

Figure 2-9
Alternative 4



Source: City of Seattle, 2010

Zoning Designations. The majority of the neighborhood would remain Seattle Mixed at varying heights, ranging from SM-125" along Denny Way, down to SM-40 in the central Waterfront area, as shown in **Figure 2-8**. The Fairview area would retain the existing Commercial (C2) zoning. The central portion of the neighborhood would remain in an Industrial Commercial (IC) zone.

Shoreline Designations. No changes to the existing shoreline designations are proposed under any of the alternatives.

Permitted Uses. The Seattle Mixed zone provides for a wide range of uses to encourage development of the area into a mixed-use

neighborhood with a pedestrian orientation or an area that is in transition from traditional manufacturing or commercial uses to one where residential use is also appropriate.

The C-2 zone provides for an auto-oriented, primarily non-retail commercial area that provides a wide range of commercial activities serving a community, citywide, or regional function, including uses such as manufacturing and warehousing that are less appropriate in more-retail-oriented commercial areas.

The IC zone is intended to promote development of businesses which incorporate a mix of industrial and commercial activities, including light manufacturing and research and development, while accommodating a wide range of other employment activities. Most residential development is not permitted in this zone.

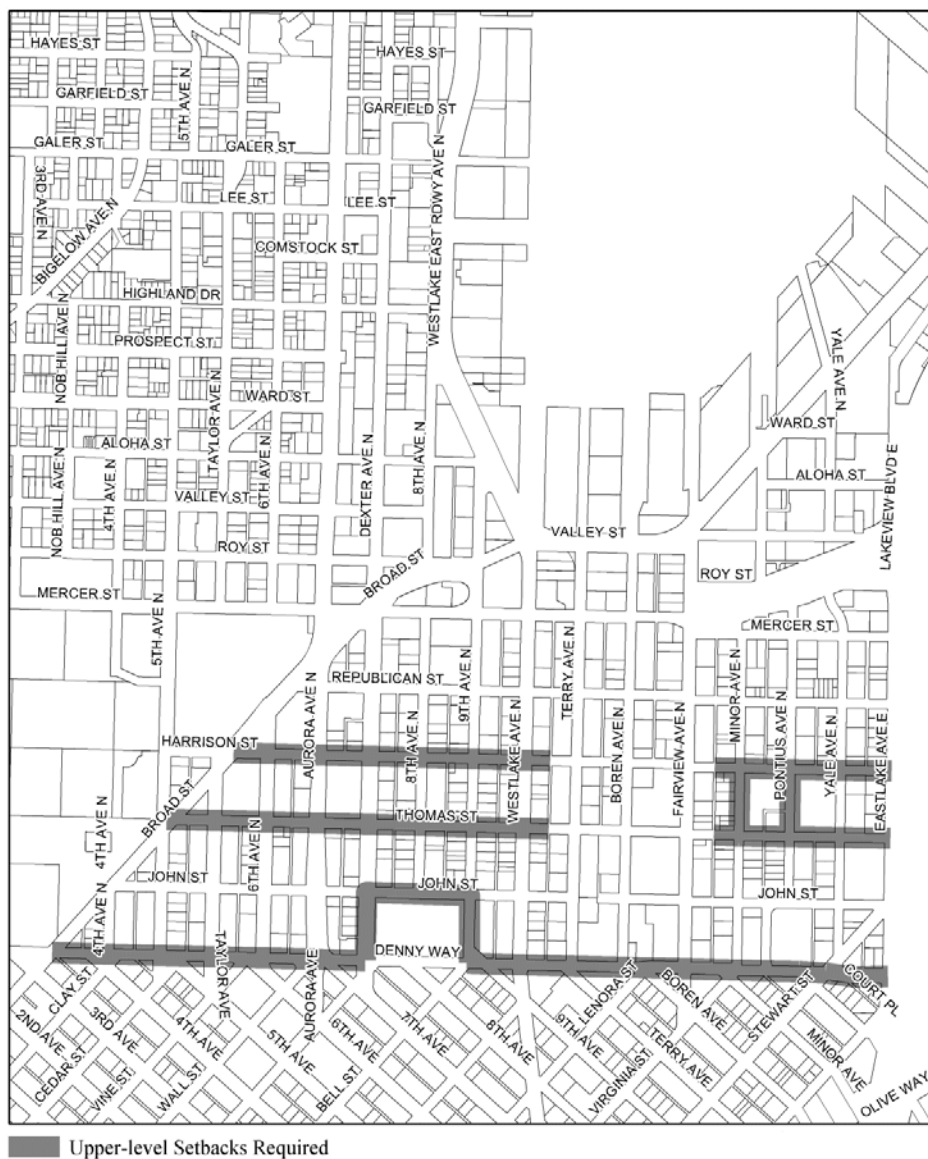
Height and FAR Bonuses. Alternative 4 does not propose any height or FAR bonuses through incentive zoning provisions.

Building Heights. In general, height limits are lowest near Lake Union and in the Cascade subarea, with height limits ranging between 40 and 75 feet in these areas. Greatest heights (up to 125 feet) are permitted along the southern edge of the neighborhood, along Denny Way and John Street. In this area, a maximum of 125 feet is permitted.

Lake Union Seaport Flight Path. Regardless of permitted building heights allowed by city zoning provisions, building heights in the approach/departure corridor for the Lake Union Seaport Airport would continue to be limited according to Federal Aviation Administration (FAA) requirements, as shown in **Figure 2-4**.

Podium Heights. Existing zoning standards do not specifically define podium heights, but do require upper level setbacks in certain areas. To some extent, these upper level setbacks define a podium for the development. In general, the area along Denny Way in the SM-125' zone requires an upper level setback for any portion of a structure greater than 75 feet in height. Similarly, along portions of Thomas and Harrison Streets, upper level setbacks are required for structures greater than 25 feet (in residential areas) and 45 feet in height. See **Figure 2-10** for the location of upper level setback requirements.

Figure 2-10
Upper Level Setback Requirements



Source: City of Seattle Land Use Code, 2010

Floor Area Ratio. In the SM 85 zone, the maximum commercial FAR is 4.5. In the SM-125' zone, the maximum commercial FAR is 5. There are no FAR limits for residential uses and the remaining zoning designations do not establish a maximum FAR standard.

Floor Plate Size. Existing zoning standards do not establish a minimum floor plate size.

Density. Densities are not limited under current zoning, except by existing height and bulk requirements.

Tower Location. Existing zoning standards do not establish a minimum lot size for towers.

8th Avenue Corridor. This area is currently zoned Seattle Mixed (SM), with a height limit of 85 feet.

Fairview Avenue Corridor. The Fairview Avenue area is zoned Industrial Commercial (IC) between Mercer and John streets. North of Thomas Street, the IC zone has a height limit of 65 feet; while between Thomas and John streets, the height limit is 85 feet. Between John Street and Denny Way, existing zoning is Seattle Mixed (SM), with a height limit of 125 feet.

Valley/Mercer Blocks. This area is currently zoned Seattle Mixed (SM), with a height limit of 40 feet.

2.3.7 Alternatives Eliminated from Consideration

The 2008 South Lake Union Urban Form Study resulted in initial alternatives that were described in the 2008 EIS Scoping Notice. These initial alternatives were similar to those currently proposed, but had substantive differences in terms of tower spacing and podium heights. As previously described, the current alternatives were developed as part of the 2009 Design Framework planning process and are intended to address concerns raised by the neighborhood about the initial alternatives. Specific changes made to the initial alternatives that led to the current alternatives include:

All Alternatives

- Residential floor plate size reduced from 12,500 sf below 160' to an average of 10,500 sf for the entire tower.
- Commercial floor plate size reduced from 35,000 sf to 24,000 sf.
- Commercial floor area ratio changed from unlimited to seven.
- Increase minimum lot size from 18,000 sf to 24,000 sf (2 towers per block); established minimum lot size of 60,000 sf for lots Lakefront lots.
- In most places where height of 400 feet had been proposed, reduced to no greater than 300 feet.

Alternative 1

- Podiums reduced to 45' in most areas, but higher on wider and more intensely used streets.

Alternative 2

- Maximum height between Valley and Mercer streets reduced from 240 to 160’.
- Commercial height in the area generally between Westlake and Fairview streets reduced from 240 to 160’.
- Residential focus changes from 8th and 9th avenues to only 8th Avenue.

Alternative 3

- Maximum height for commercial buildings between Valley and Mercer streets reduced to from 125’ to 85’.

2.4 Environmental Review

2.4.1 Purpose

The purpose of this EIS is to assist the public and agency decision-makers in considering the potential environmental effects of proposed changes to Zoning Code standards for height and density in the South Lake Union Neighborhood.

2.4.2 Programmatic Review

SEPA requires government officials to consider the environmental consequences of proposed actions, and to consider better or less damaging ways to accomplish the objectives of those proposed actions. They must consider whether the proposed action will have a probable significant adverse environmental impact on the elements of the natural and built environment.

This EIS provides qualitative and quantitative analysis of environmental impacts as appropriate to the general nature of the Proposed Action planning efforts. The adoption of development regulations is classified by SEPA as a non-project (i.e., programmatic) action. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. An EIS for a non-project proposal does not require site-specific analyses; instead, the EIS will discuss impacts and alternatives appropriate to the scope of the non-project proposal and to the level of planning for the proposal. (WAC 197-11-442)

Within the context of programmatic review, and as described in Section 2.1, this EIS will also consider three focus areas in greater detail. This increased level of detail will provide a basis for future environmental review, allowing for a more streamlined review of specific sites within these focus areas. (see **Figure 2-3**).

<i>Introduction</i>
<i>Planning Context</i>
<i>Proposed Action and Alternatives</i>
<i>Environmental Review</i>
<i>Benefits and Disadvantages of Delaying the</i>

2.4.3 Phased Review

SEPA encourages the use of phased environmental review to focus on issues that are ready for decision, and to exclude from consideration issues already decided or not yet ready for decision-making [WAC 197-11-060 (5)]. Phased review is appropriate where the sequence of a proposal is from a programmatic document, such as an EIS addressing a comprehensive plan, to other documents that are narrower in scope, such as for a site-specific, project-level analysis. The City of Seattle is using phased review, as authorized by SEPA, in this environmental review. The analysis in this EIS will be used to review the environmental impacts of the proposed height and density changes in the South Lake Union neighborhood.

This analysis will also provide a more specific review of potential development impacts within three focus areas. This analysis will allow for a future phase of SEPA review that may be able to incorporate the analysis in this EIS and streamline future project-level SEPA review.

2.4.4 EIS Scope of Analysis

The City issued a Determination of Significance and Scoping Notice on November 18, 2008. During the scoping comment period, which extended from November 18 to December 18, 2008, interested citizens, agencies, organization and affected tribes were invited to provide comments on the scope of the EIS. Comments received during the comment period raised issues related to specific environmental impacts proposed for study in the EIS, the alternatives proposed for study and the planning process that led to the proposed alternatives.

Subsequently, the City worked with neighborhood stakeholders to develop an Urban Design Framework. This Design Framework was developed in direct response to the concerns raised by stakeholders in their scoping comments and is intended to complement and inform the EIS alternatives, provide direction on potential impact mitigation, as well as serve as a tool to guide implementation of the Neighborhood Plan.

Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Environmental topics addressed in this EIS include:

Land Use Plans & Policies	Public Services & Utilities	Environmental Health
Housing	Soils/Geology	Noise
Aesthetics & Urban Design	Water	Plants & Animals
Transportation	Air Quality	Historic & Cultural Resources
Open Space & Recreation	Greenhouse Gas	

2.4.5 Prior Environmental Review

The South Lake Union neighborhood has experienced a significant amount of public and private development in the past several years. The documentation of the SEPA review process for many of these projects is a source of valuable data and have been consulted in preparing this EIS. Whenever used in this EIS, prior documents have been cited as a source of information. Consulted documents include:

Amazon World Headquarters SEPA Review (multiple processes and documents)

Group Health Headquarters/Westlake Terry Building Expanded SEPA Checklist

Fred Hutchison Cancer Research Center EIS,

UW School of Medicine Phase II and III EIS

Museum of History & Industry (MOHAI) Expanded SEPA Checklist

2200 Westlake Avenue/2200 EIS Addendum

2201 Westlake Avenue/ENSO EIS Addendum

Lake Union Park Master Plan EIS

2.5 Benefits and Disadvantages of Delaying the Proposed Action

Delaying adoption of zoning incentives to allow for increased height and density in the South Lake Union neighborhood could reduce the likelihood of public benefits that may be experienced as a result of zoning incentives. Because the existing IC and C2 zones would be retained, residential development would remain focused in the existing SM zone. Delaying the action would also maintain existing height limits. Depending on the perspective of the individual, this may be seen as a benefit or a disadvantage.

<i>Introduction</i>	Chapter 2 Contents
<i>Planning Context</i>	
<i>Proposed Action and Alternatives</i>	
<i>Environmental Review</i>	
<i>Benefits and Disadvantages of Delaying the Proposed Action</i>	

Clarifications, Corrections and Expanded Discussion

CHAPTER 3 DRAFT EIS CHAPTER 3

CLARIFICATIONS AND CORRECTIONS

This chapter contains clarifications or corrections based on responses to comments presented in Chapter 4 of this Final Environmental Impact Statement (Final EIS) or based on City of Seattle (City) or consultant review of the Draft EIS information. The sources of the clarifications or corrections are noted for each amendment. The clarifications or corrections do not change the relative impacts of the three Draft EIS alternatives or the overall Draft EIS conclusions.

3.1 **Draft EIS 3.4 Plants and Animals Clarifications or Corrections**

In response to Comment #10 in Letter #5, on the mitigation strategies for the Plants and Animals element of the environment (Draft EIS Section 3.4), the underlined text below has been added to the mitigation strategy in order to recognize the range of future potential mitigation measures at the project-level of review.

City permitting of proposed development under all alternatives would generally require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. General mitigation measures could include open space for vegetation, migrating animals, and human enjoyment. Other more specific mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a “lights out” program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.

<i>Plants and Animals</i>	1
<i>Land Use</i>	2
<i>Housing</i> ...	10
<i>Aesthetics</i> ...	12
<i>Transportation</i> .	108
<i>Public Services</i> .	203
<i>Utilities</i> .	211

3.2 Draft EIS 3.8 Land Use Clarifications or Corrections

City of Seattle Comprehensive Plan (1994, as amended)

The City's updated *Comprehensive Plan* consists of eleven major elements – urban village, land use, transportation, housing, capital facilities, utilities, economic development, neighborhood, human development, cultural resources and environment. Each element contains goals and policies that are intended to “guide the development of the City in the context of regional growth management” for the next 20 years. The *Urban Village, Land Use, Housing, Transportation, Economic Development, and Neighborhood Planning Elements* are the most relevant elements to the proposal.

The following goals and policies from the Economic Development Element of the City's Comprehensive Plan are the most applicable to the proposed alternatives.

Economic Development Element

Goals

Goal EDG1 - Add approximately 84,000 jobs in the city over the 20-year period covered by this Plan, in order to ensure long-term economic security and social equity to all Seattle residents.

Goal EDG1.5 - Establish Seattle as a place where average wages are high and costs of living are reasonable so that the city can accommodate households at a wide range of income levels.

Goal EDG2 - Recognize that Seattle's high quality of life is one of its competitive advantages and promote economic growth that maintains and enhances this quality of life.

Goal EDG3 - Support the Urban Village Strategy by encouraging the growth of jobs in Urban Centers and Hub Urban Villages and by promoting the health of neighborhood commercial districts.

Goal EDG4 - Accommodate a broad mix of jobs, while actively seeking a greater proportion of living wage jobs that will have greater benefits to a broad cross-section of the people of the City and region.

Economic Development & the Urban Village Strategy

Policies

Policy ED1 - Strive to maintain the economic health and importance of downtown as the economic center of the city and the region and home to many of Seattle's vital professional service firms, high technology

*Plants and
Animals
Land Use
Housing
Aesthetics
Transportation
Public Services
Utilities*

Chapter 3 Contents

companies, regional retail activity, as well as cultural, historic, entertainment, convention and tourist facilities.

Policy ED2 - Pursue opportunities for growth and strategic development, where appropriate, in urban centers and hub urban villages, which are planned for the greatest concentrations of jobs and job growth outside of downtown.

Policy ED3 - Strive to provide a wide range of goods and services to residents and businesses in urban centers and villages by encouraging appropriate retail development in these areas.

Discussion: Consistent with the goals identified for the City's Economic Development Element and policies for the Urban Village Strategy, the EIS Alternatives would increase employment density within the South Lake Union Urban Center to accommodate planned levels of employment growth, which would result in a compact mixed-use area where residents of the neighborhood could live near services, employment, and transit.

City of Seattle Shoreline Master Program

The Shoreline Master Program (SMP) is mandated by the State Shoreline Management Act (SMA), and includes the goals, policies and regulations that govern land use and activities within the Seattle Shoreline District. Seattle's Shoreline District includes the Duwamish River, the Ship Canal, Lake Union, Lake Washington, Green Lake, Puget Sound, associated wetlands and floodplains, and all land within 200-ft of these water-bodies.

Seattle's SMA establishes three major policy goals that all SMPs are required to achieve:

- *Preferred Shoreline Uses*: The SMA establishes a preference for uses that are water-oriented and that are appropriate for the environmental context (such as port facilities, shoreline recreational uses, and water-dependent businesses). Single-family residences are also identified as a priority use under the Act when developed in a manner consistent with protection of the natural environment.
- *Environmental Protection*: The Act requires protections for shoreline natural resources, including "... the land and its vegetation and wildlife, and the water of the state and their aquatic life ..." to ensure no net loss of ecological function.
- *Public Access*: The Act promotes public access to shorelines by mandating inclusion of a public access element in local SMPs and

requiring provisions to ensure that new development maintains public access features.

The Department of Planning and Development (DPD) is currently updating Seattle's SMP; the last comprehensive update of Seattle's SMP occurred in 1987. The SMP update process is the result of new rules governing shoreline activities and use established by the State Department of Ecology. These rules, among other things, establish new thresholds for evaluating SMPs statewide, including no further reduction in the ecological functioning of the shoreline environment.

The City's Shoreline District is divided into eleven (11) environments/designations including:

Conservancy Navigation	CN	Urban Stable	US
Conservancy Preservation	CP	Urban Harborfront	UH
Conservancy Recreation	CR	Urban Maritime	UM
Conservancy Management	CM	Urban General	UG
Conservancy Waterway	CW	Urban Industrial	UI
Urban Residential	UR		

Shoreline environments present within the South Lake Union Urban Center include:

Conservancy Management (CM) – The purpose of the CM shoreline environment is to conserve and manage areas for public purposes, recreational activities and fish migration routes. While the natural environment need not be maintained in a pure state, developments shall be designed to minimize adverse impacts to natural beaches, migratory fish routes and the surrounding community.

Conservancy Waterway (CW) – The purpose of the CW Environment is to preserve the waterways for navigation and commerce, including public access to and from water areas. Since the waterways are public ways for water transport, they are designated CW to provide navigational access to adjacent properties, access to and from land for the loading and unloading of watercraft and temporary moorage.

Urban Residential (UR) – The purpose of the UR environment is to protect residential areas.

Urban Stable (US) – The purpose of the US environment is to:

1. Provide opportunities for substantial numbers of people to enjoy the shorelines by encouraging water-dependent recreational uses

and by permitting non-water dependent commercial uses if they provide substantial public access and other public benefits;

2. Preserve and enhance views of the water from adjacent streets and upland residential areas; and
3. Support water-dependent uses by providing services such as marine-related retail and moorage.

Urban Maritime (UM) - The purpose of the UM environment is to preserve areas for water-dependent and water-related uses while still providing some views of the water from adjacent streets and upland residential streets. Public access shall be second in priority to water-dependent uses unless provided on street ends, parks or other public lands.

Development within the Shoreline District usually requires a substantial development permit¹ from the city, although there are exemptions listed in the code. Each shoreline environment designation contains a listing of uses that are permitted outright on waterfront lots in each district as either principal or accessory uses. To be permitted in the Shoreline District, a use must be permitted in both the shoreline environment and the underlying land use zone in which it is located. All principal uses² on waterfront lots must be water-dependent, water-related or non-water-dependent with public access. The SMP code also regulates conditional uses, as well as uses that are prohibited.

Discussion: The proposed EIS Alternatives would be consistent with the Shoreline Master Program as no changes to the existing land use, zoning, or shoreline designations in the shoreline areas of South Lake Union are proposed.

Revised Flight Path

Draft EIS Section 3.8 described the Lake Union Seaport Airport flight path as it rises over the South Lake Union neighborhood. The described flight path was shown in Draft EIS Figure 3.2-1.

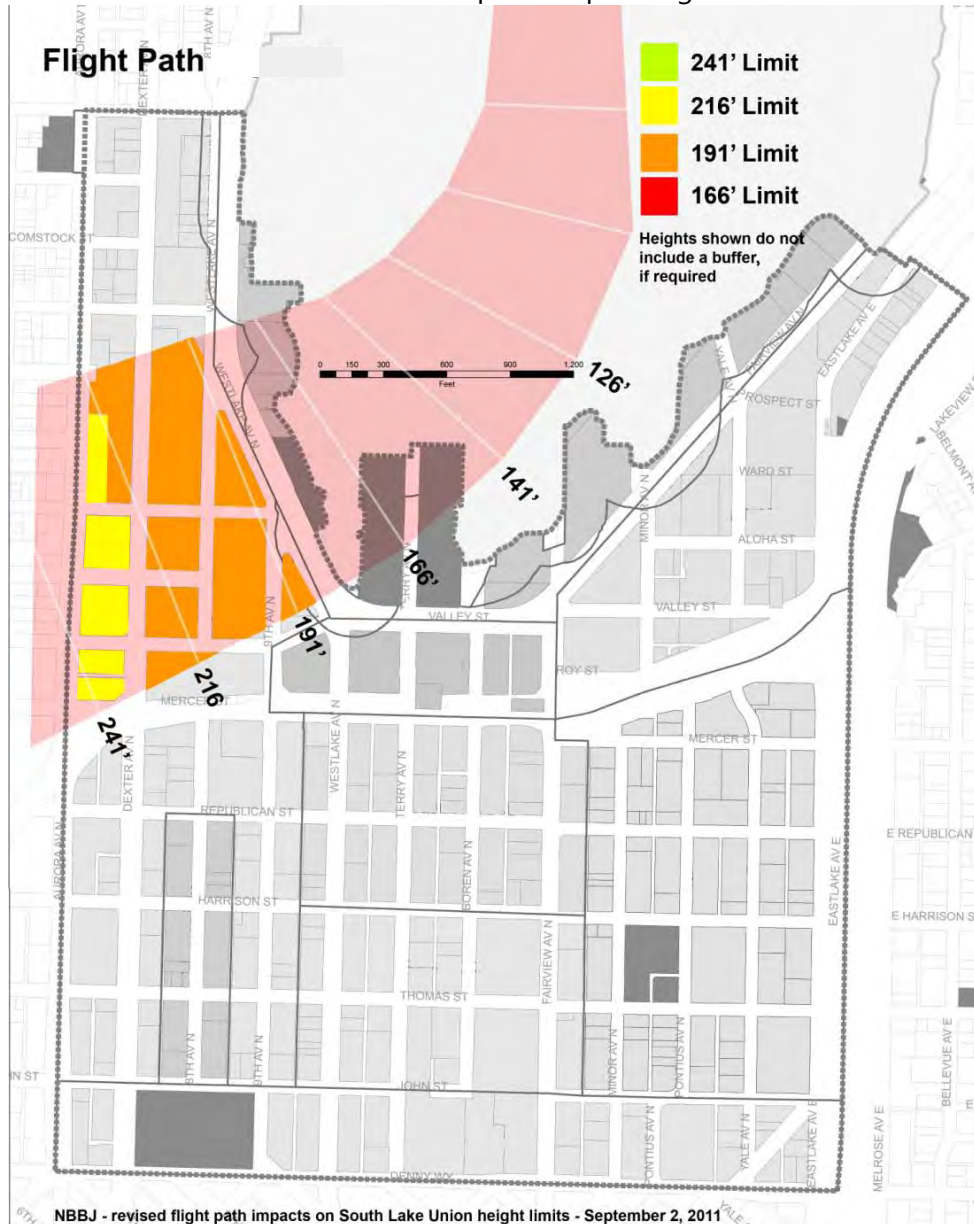
¹ "Substantial development" means any development of which the total cost or fair market value exceeds \$2,500, or any development which materially interferes with the normal public use of the water or shorelines of the City.

² Principal uses are permitted in the respective shoreline environments in accordance with the lists of permitted and prohibited uses in the respective environments and subject to all applicable development standards. If a use is not identified in this chapter and is permitted in the underlying zone, it may be authorized as a conditional use by the Director in specific cases upon approval by the Department of Ecology when the criteria contained in Section [23.60.034](#) are satisfied.

Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see **Appendix F**). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.

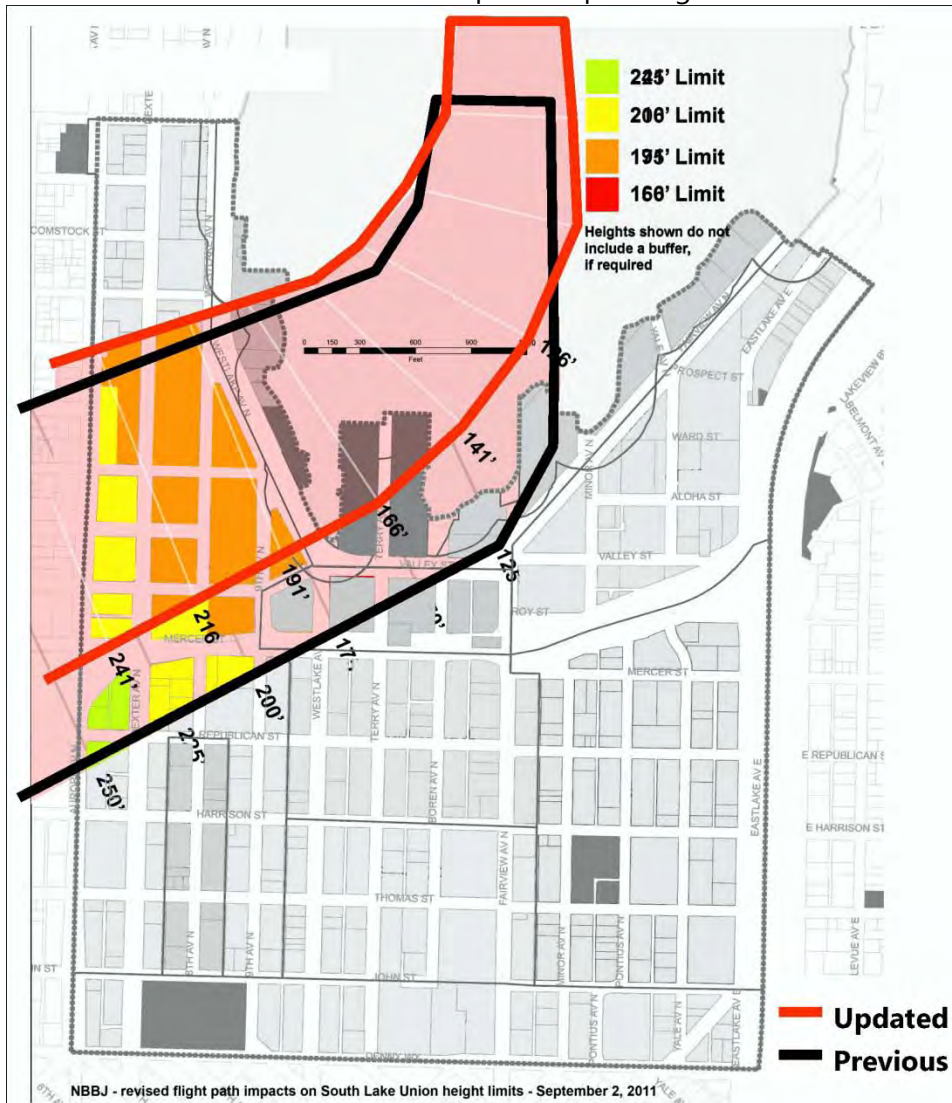
Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified as shown in revised **Figure 3.2-1**, below. This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see **Section 3.4 Aesthetics** for revised images associated with the revised flight path.

Figure 3.2-1
Revised Lake Union Airport Seaport Flight Path



NBBJ - revised flight path impacts on South Lake Union height limits - September 2, 2011
Source: Barnard Dunkelberg & Company, WSDOT (Aviation Division), NBBJ, 2010.

Figure 3.2-2
Revised Lake Union Airport Seaport Flight Path



Source: Barnard Dunkelberg & Company, WSDOT (Aviation Division), NBBJ, 2010.

Revised Mitigation Measure

In order to provide more specific direction for future project-level wind analysis at the project-level of environmental review, the following mitigation measure is recommended as a mitigation strategy in the Draft EIS Land Use element (Draft EIS Section 3.8).

Future development proposals within the flight path corridor that exceed the base height permitted in the underlying Seattle Mixed zoning should provide a wind analysis in accordance with the following methodology.

1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.)
2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project
3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path
4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions
5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results require an assessment of acceptability of specific results for the aircraft actually used at this location by an aviation specialist.

In addition, the City may consider requiring additional analyses to address the following questions:

- Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future)
- Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable)

3.3 Draft EIS 3.9 Housing Clarifications or Corrections

This section of the Final EIS provides an updated inventory of housing in the South Lake Union neighborhood based on input from Comment Letter #89. Please see also response to Comment #4 in Letter #89 in Chapter 4 of this Final EIS.

Table 3.3-1 contains a listing of most of the apartment and condominium buildings within the neighborhood and the affordability associated with publicly subsidized units and number of housing units available in each.

<i>Plants and Animals</i>	Chapter 3 Contents
<i>Land Use</i>	
<i>Housing</i>	
<i>Aesthetics</i>	
<i>Transportation</i>	
<i>Public Services</i>	
<i>Utilities</i>	

Table 3.3-1
Multi-Family Apartment Buildings within the South Lake Union
Neighborhood

Building	Housing Units							Total # of Units
	% Median Income (AMI) Rent/Income Limit							
	30%	40%	50%	60%	70%	80%	Unres- tricted	
502 Minor Avenue N							11	11
Alcyone Apts							161	161
Alley24				35			137	172
Alterra Condominiums							59	59
Amlis 535							199	199
Art Stable							5	5
Bart Harvey Apts			50					50
Blue Duplex (1190 Repub.)							2	2
Borealis						50	3	53
Brewster Apts		9	26					35
The Cairns					30		70	100
Canady House	83							83
The Carlton							30	30
Carolina Court							72	72
Carolyn Manor Apts							22	22
Casa Pacifica			24	39			2	65
Cascade Shelter Project							12	12
Compass Ctr	34							34
Corazon Apts							6	6
David Colwell Bldg.	25		75	24		2		126
Denny Park Apts	20		25	5				50
Dexter Lake Union							201	201
Duplex (766 Thomas St)							2	
Grandview Apts							25	25
Harrison Apts							12	12
Jensen Block Apts	2	24	4					30
Kerner-Scott House	40							40
Lakeview Apts	20		26	13		13		59
Mercerview Apts							67	67
Mirabella						31	349	380
Nautica Condominiums							73	73
Neptune							234	234
The Pontius							14	14
Republican Street Apts							16	16
Rollin Street Flats							208	208
Triplex (417 Minor)							3	3
Union Bay Apts							73	73
Veer Lofts							99	99
TOTALS	224	33	230	116	30	96	2,137	2,866

Sources: City of Seattle, Office of Housing, 2010. Vulcan Real Estate, 2010, King County Assessor's Office, 2010.

*Plants and
Animals**Land Use**Housing****Aesthetics****Transportation**Public Services**Utilities*

3.4 Draft EIS 3.10 Aesthetics Clarifications or Corrections

This section illustrates and describes the physical character of the South Lake Union neighborhood and its immediate surroundings using 3-D computer modeling and photographic simulations. These simulations provide representative views of both the existing neighborhood and each of the proposed Alternatives 1 – 4. Representations include selected viewpoints inside and outside the neighborhood, shadow studies of each alternative and possible light and glare impacts. This section also includes discussion of the possible impacts of the proposed alternatives as well as recommendations for potential mitigation strategies that could be used to address these impacts.

The South Lake Union Urban Design Framework recently completed by City's Department of Planning and Development with involvement of local neighborhood stakeholder groups has been utilized as a community supported resource for many of the specific mitigation recommendations contained in this study. Wherever the term UDF appears in the document, it is specifically referencing the final version of the South Lake Union Design Framework dated December 10, 2010.

HEIGHT, BULK AND SCALE

3.4.1 Affected Environment

Area Context

The South Lake Union neighborhood is immediately north of Seattle's Downtown Urban Center and the Denny Triangle neighborhood, west of the Capitol Hill Urban Center and east of the City's Uptown Urban Center. Each area is urban in character and is typically dominated by mid-rise and high-rise structures (commercial, residential and institutional). The area proximate to the boundary between the Capitol Hill neighborhood and the South Lake Union neighborhood is entirely residential in character with mid-rise multi-family buildings. The Uptown and Queen Anne neighborhoods to the west and northwest are also predominantly residential in the vicinity of the South Lake Union neighborhood with mid-rise multi-family buildings being the most common building type.

Much of the Uptown Urban Center, however, is dominated by the structures and open space of Seattle Center. While not currently part of the South Lake Union neighborhood, the Uptown Triangle (formed by Broad Street, Denny Way and Aurora Avenue) will be physically re-attached to the South Lake Union neighborhood once the SR 99 Bored



Single family residences



Multi-family residences



Office development

Tunnel is completed and three east-west streets – John, Thomas and Harris Streets – are again reconnected across Aurora Avenue N. The existing character of the Uptown Triangle is similar to the South Lake Union neighborhood – largely commercial and light industrial, with multi-family residential development interspersed throughout.

Due to their heights, predominant features visible from the South Lake Union neighborhood are located outside the study area and include: Queen Anne Hill, the Space Needle, Capitol Hill and the Downtown Seattle Skyline. An exception is Lake Union, which is partially visible at the north-end of 5 of the neighborhood’s 12 north-south streets.

Neighborhood Character

The visual character varies widely within the South Lake Union neighborhood due to substantial growth and changes in building types and uses in recent decades. Several structures or building features stand out due to their size (or the relative size of adjacent structures), unusual shape or dynamic character, including: the high-rise AGC Building on Lake Union, the former Naval Reserve Center (proposed new location for the Museum of History and Industry [MOHAI]), the consistent red brick buildings that constitute the Fred Hutchinson Cancer Research Center, the complex of new development associated with Amazon.com, the Mirabella Continuing Care Retirement Community (CCRC), the steeple of the Immanuel Lutheran Church and the domes of St. Spiridon Orthodox Cathedral, the glass enclosed REI Climbing Wall, and the digital sign atop the Pemco Insurance Headquarters.



Immanuel Lutheran Church

The variety of these building types demonstrates the changing nature of the study area. The area was predominantly light industrial and commercial in nature for most of the twentieth century with residential uses in several areas – the largest being the Cascade subarea, which occupies the eastern one-third of the study area. The Industrial Commercial (IC) and later Seattle Mixed (SM) zoning has accommodated a wide variety of commercial and light industrial uses, as well as continued multi-family residential development. Numerous underdeveloped and vacant parcels have buffered land uses from each other and kept the population density (day and night) at relatively low levels. This pattern began to change after the Seattle Commons initiative in the 1990s, when development attention turned toward this neighborhood.

Interwoven through the South Lake Union neighborhood, but largely in its eastern half, are a number of older brick structures that serve as one of the neighborhood’s defining features. These structures are a combination of industrial and residential buildings from the first half of the twentieth

century. Some, but not all, of these buildings are designated Seattle Landmarks (see Draft EIS Section 3.11). The largest examples include the former Ford Motor Company Assembly Plant (now Shurgard Storage) and the multiple commercial laundry facilities (e.g., Troy Laundry, New Richmond Laundry [now incorporated into Alley 24] and the Supply Laundry, which features a tall brick smokestack). While visible only on the streets they face, smaller brick buildings, such as The Webster and Van Vorst Buildings, add to the character of their immediate surroundings and the neighborhood as a whole.

Incremental growth over time has resulted in the emergence of multiple neighborhood epicenters. These epicenters tend to be oriented around parks or boulevards. The most established is the Cascade subarea, which is distinguished by a predominantly residential character with Cascade Playground as its centerpiece. A number of half-block apartment buildings have also contributed to the neighborhood's emerging character, including the Alcyone, the Neptune, the Cairns and Union Bay Apartments.

The South Lake Union waterfront, separated from the rest of the neighborhood by heavy traffic on Mercer and Valley Streets, is dominated by restaurants and public amenities, such as the new Lake Union Park, the non-profit Center for Wooden Boats and in the immediate future MOHAI; as well as a passenger terminal for float plane operations.

A largely new commercial and institutional core has emerged along (or proximate to) the axis of Westlake Avenue. Two multi-phase projects currently under construction in the study area – the multi-block office campuses for Amazon.com and the University of Washington's School of Medicine's expanding biotechnology and medical research facility – are already altering the built character of this portion of the South Lake Union neighborhood. The largest complex under construction in the vicinity of the South Lake Union neighborhood is the Bill and Melinda Gates Foundation facility in the Uptown Triangle.

Height, Bulk and Scale

Height, bulk and scale relate to the size of buildings and their relationship to neighboring structures. The City's SEPA policies recognize that physical characteristics of buildings affect the character of neighborhoods. These policies also recognize a need to address building height, bulk and scale as a means to achieve appropriate transition from one zoning district to another.

There is currently a broad range of building types and sizes in the South Lake Union neighborhood – from single-family residences, churches and one- and two-story commercial and/or light industrial (fabrication and storage) buildings, multi-block biotech campuses, and high-rise office towers. It is a neighborhood in transition where the differences between the new and old, small and large, intimate and public, are noticeable.

With regard to the surrounding neighborhoods, there are significant differences in allowed height. Development standards in the Denny Triangle to the south allow for buildings up to 400 feet in height. Properties in the Uptown/Queen Anne area that border the South Lake Union neighborhood are zoned to allow increasingly tall structures from north to south, starting with 30 foot structures in the L-3 zones, rising to 65 foot structures in the C1-65 and SM-65 zones, and 85 foot structures in the SM 85 zones that border on Denny Way. Properties on Capitol Hill that face the study area are zoned L-3 at the north-end and MR on the south, which limits building height to 30 feet and 75 feet respectively.

The height of Queen Anne and Capitol Hills can provide territorial views for existing low-rise and mid-rise buildings – overlooking existing buildings in the South Lake Union neighborhood. This is particularly true of the buildings on Capitol Hill, which are separated from the study area by I-5.

Aside from Seattle Center, much of the Uptown Urban Center is similar in use, texture and character to the South Lake Union neighborhood. As noted previously, Seattle Center is an assemblage of rather bulky, low-rise structures – with the important exception of the iconic Space Needle. The SR 99 right-of-way has historically provided a clear separation between the South Lake Union and the Uptown neighborhoods. However, as noted earlier, plans associated with the SR 99 Bored Tunnel would involve reconnection of the east-west John, Thomas and Harrison Streets.

Focus Areas³

8th Avenue North Corridor

This area is currently only lightly developed with a broad range of uses and building types, including Denny Park Lutheran Church and the Unity Church of Truth, which anchor either side of 8th Avenue N where it

³ Focus areas are subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable. Please discussion and Figure 2-3 in Chapter 2.



8th Avenue N

terminates at Denny Park. Other than one two-story and another six-story apartment building midway along this corridor, 8th Avenue N is edged with surface parking lots and two-story commercial or light industrial buildings. Mature street trees line both sides of the corridor for most of its length.

Fairview Avenue Corridor

While the blocks and half-blocks that constitute the Fairview Avenue Corridor have experienced recent development at either end, for the most part, this corridor remains largely underdeveloped. There is currently a broad mix of uses along the corridor, starting at the north-end with biomedical uses associated with the Fred Hutchinson Cancer Research Center campus and the large Shurgard storage facility and anchored at the south-end by the Mirabella Continuing Care Retirement Community (CCRC) and buildings associated with the Seattle Times. In between is a mix of low-rise commercial structures with surface parking – including restaurants, professional offices and retail services. Mature street trees line both sides of this corridor for most of its length.



Seattle Times building at John Street and Fairview Avenue N

Valley/Mercer Blocks

The four east-west blocks between Valley and Mercer Streets, Westlake and Fairview Avenues are currently vacant in conjunction with the City's Mercer Corridor Project, which is under construction.

3.4.2 Environmental Impacts

This section describes changes to the aesthetic character of the built environment that could occur in conjunction with any one of the four EIS alternatives. The EIS alternatives prescribe potential zoning envelopes, but do not locate, size or architecturally define particular buildings. Therefore, for purposes of this EIS and to provide a worst-case – yet realistic scenarios – assumptions have been formulated to allow for analysis of potential aesthetic impacts. These assumptions strive to be realistic in terms of development footprints, tower dimensions and orientations, but also conservative in terms of potential build-out on each respective site.

The assumptions include the following:

- All undeveloped and under-developed sites will redevelop in the future. Under-developed sites are defined as those that contain development square footage that is 40 percent or less than currently allowed by zoning;
- Property owners with sites larger than 22,000 sf will use available zoning incentives to build the maximum gross building area

allowable, while sites with less than 22,000 sf will develop consistent with underlying zoning;

- Where individual parcels with separate ownership are contiguous and can be assembled to create a lot size of 22,000 sf or greater, a developer or property owner will do so in order to build the maximum gross building area allowable;
- Since they will not be constrained by Floor Area Ratio (FAR) ⁴ restrictions, the towers of new residential buildings will be built to the maximum height and footprint allowable;
- Commercial towers will be built to the maximum FAR available and footprint allowable;
- Commercial and residential projects will maximize the size and height of their podiums;
- On-site structured parking will be provided half above grade and half below grade.
- Since contemporary office buildings generally have footprints of 20,000 sf or greater, lots under 20,000 sf will generally be used for residential development;
- A mix of commercial and residential projects are expected in the future, but since residential development will typically be allowed to build greater total square footage than commercial development (which is restricted by FAR maximums), more residential than commercial development is shown in the alternatives;
- Future development on lots within the defined flight path of the Lake Union Seaplane Airport will be limited by the lowest elevation indicated in the *FAR Part 77 Study*,⁵ but no additional height buffer⁶ has been included in the studies for purpose of this analysis (see **Figure 3.4-1**); and
- New public open space, although a likely incentive for accessing maximum FAR, is not shown because the amount and location of open space is unknown and would be speculative.

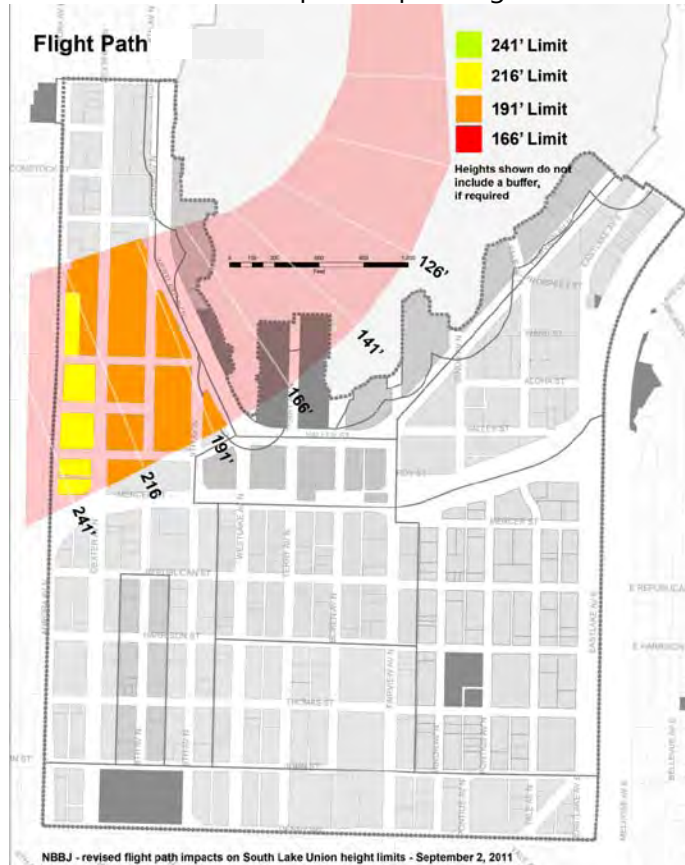
⁴ "Floor area ratio" ... (FAR is) ... a ratio expressing the relationship between the amount of gross floor area or chargeable floor area permitted in one or more structures and the area of the lot on which the structure is, or structures are, located..." (23.84A.012).

⁵ Washington State Department of Transportation, Aviation Division. Letter from Carter Timmerman, Aviation Planner. February 3, 2011.

⁶ This is a vertical separation between building heights allowed by zoning and the floor or lowest height of the flight path within each block.

The Preliminary Draft of the “South Lake Union Design Framework” document being developed by the City of Seattle has informed the study for locations of proposed uses.

Figure 3.4-1
Lake Union Seaport Airport Flight Path



Source: **Barnard Dunkelberg & Company, Kenmore Air, NBBJ, 2010.**

Impacts Common to All Alternatives

All the alternatives assume that every currently undeveloped or under-developed site, including surface parking lots, is built out to its maximum potential using the prescribed land use criteria. Therefore, all alternatives envision a significantly more dense urban environment.

Further, it should be noted that the assumed development pattern would result in employment and residential development that would exceed the estimated 2031 South Lake Union growth target and meet the estimated capacity described in Chapter 2 of this EIS (see tables 2-1 and 2-2). From a cumulative perspective, it is unlikely that full build-out would ever occur under any scenario. However, by assuming a full build-out scenario, this aesthetics analysis considers a development pattern under each

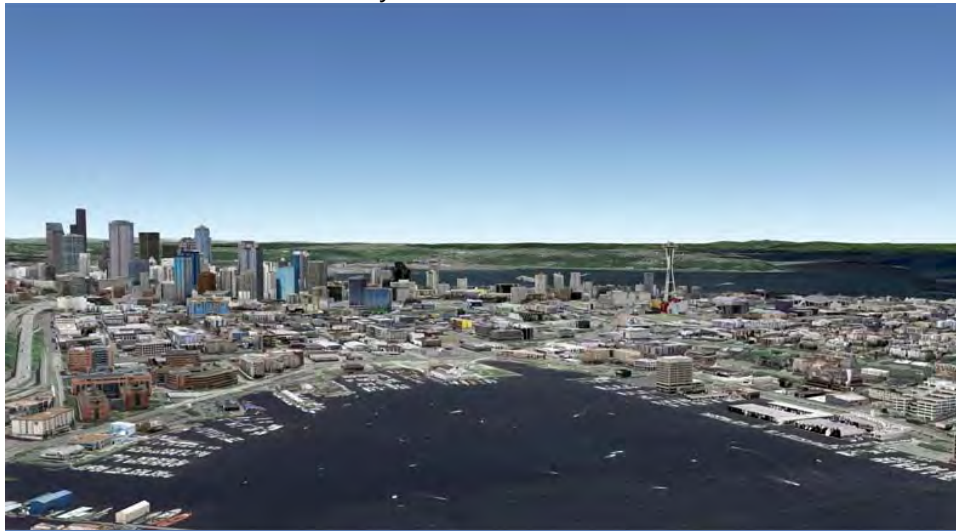
alternative that would result in the greatest possible impact on a neighborhood-wide basis.

Actual development and associated visual impacts would likely be less than those shown in this EIS. For comparative purposes, massing studies are included for both the full build-out version and one associated with the 2031 growth targets; however, the view analyses and shadow studies were all performed only using the full-build-out version.

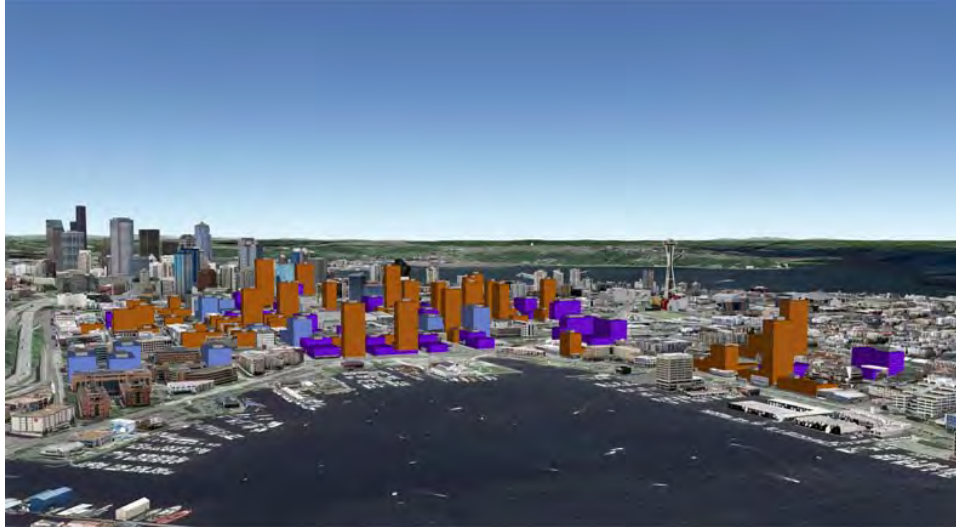
Figures 3.4-2 through **3.4-9** illustrate multiple views of each developed alternative over the South Lake Union neighborhood. Two views are typically shown for each alternative, one is a birds-eye view looking southwest and the other approximates the view from the top of the hill in Gas Works Park at the north end of Lake Union.

In the views for Alternatives 1 and 2, the top view shows the existing condition, the middle view portrays a 2031 growth target version and the bottom view a full build-out version. Since Alternatives 3 and 4 do not fully achieve the growth targets (times 1.25), the top view is of existing conditions and the bottom view portrays full build-out.

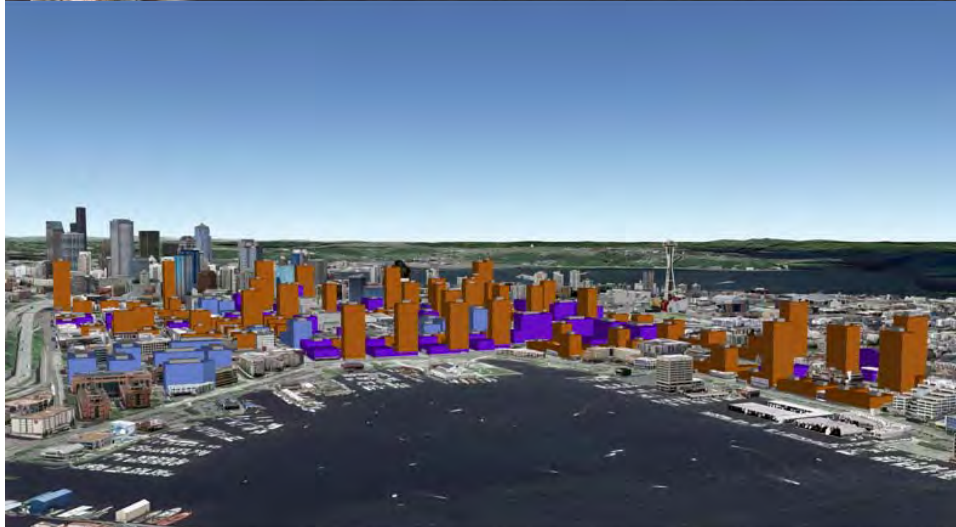
Figure 3.4-2
Birds-eye View – Alternative 1



EXISTING



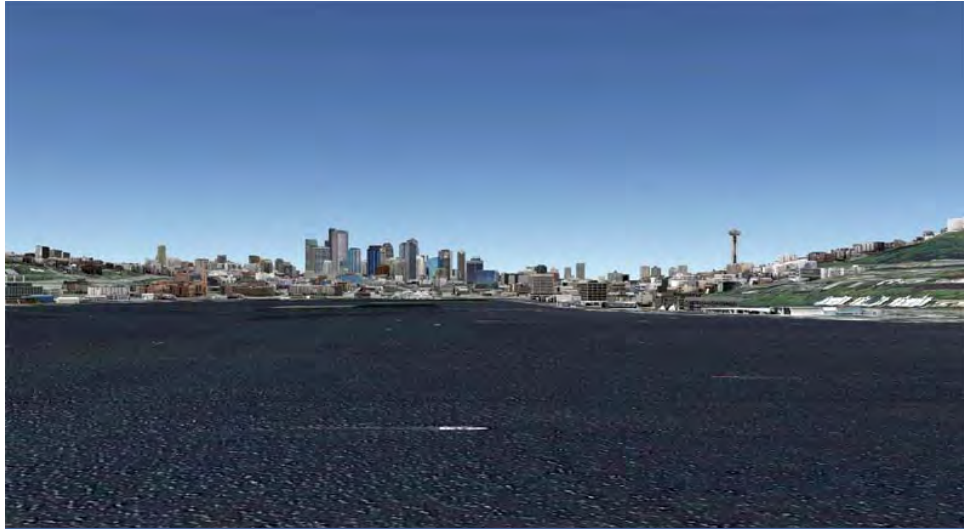
2031



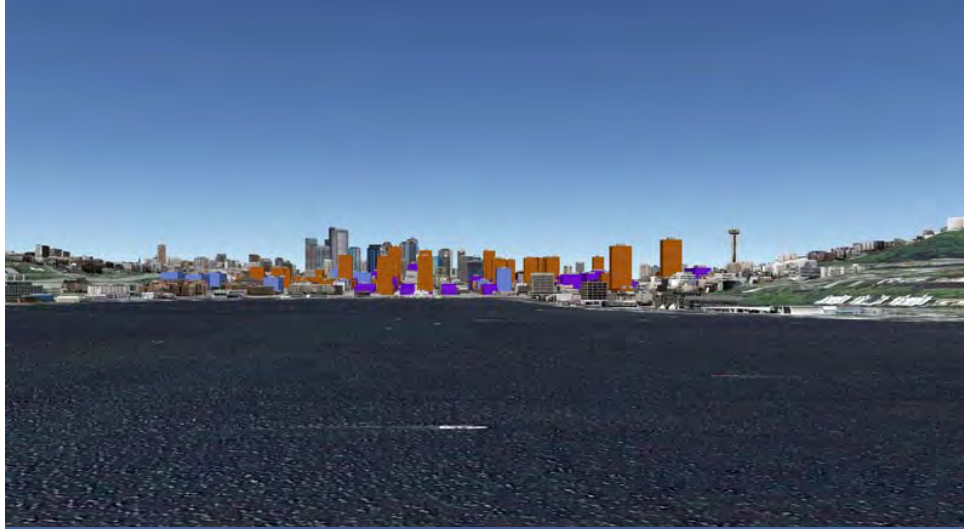
FULL BUILD-OUT

Source: NBBJ, 2010.

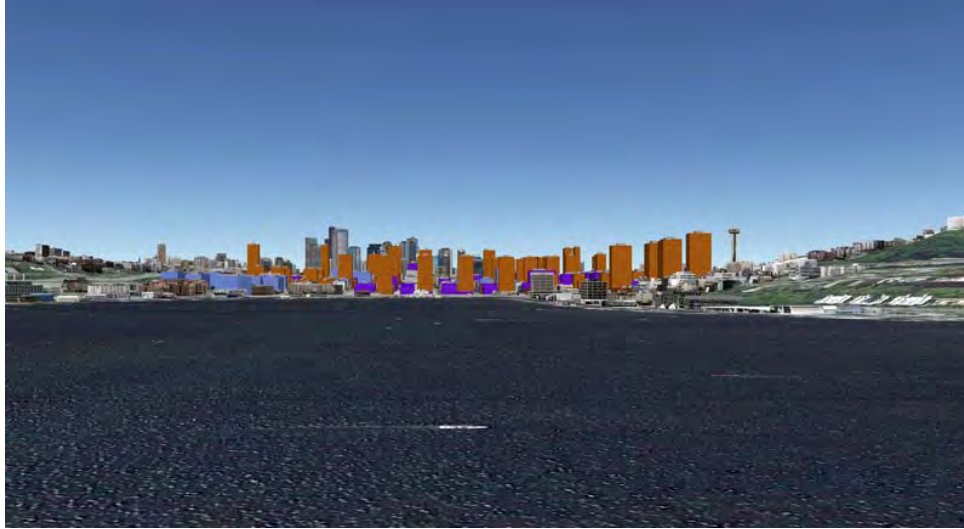
Figure 3.4-3
Gasworks Park View – Alternative 1



EXISTING



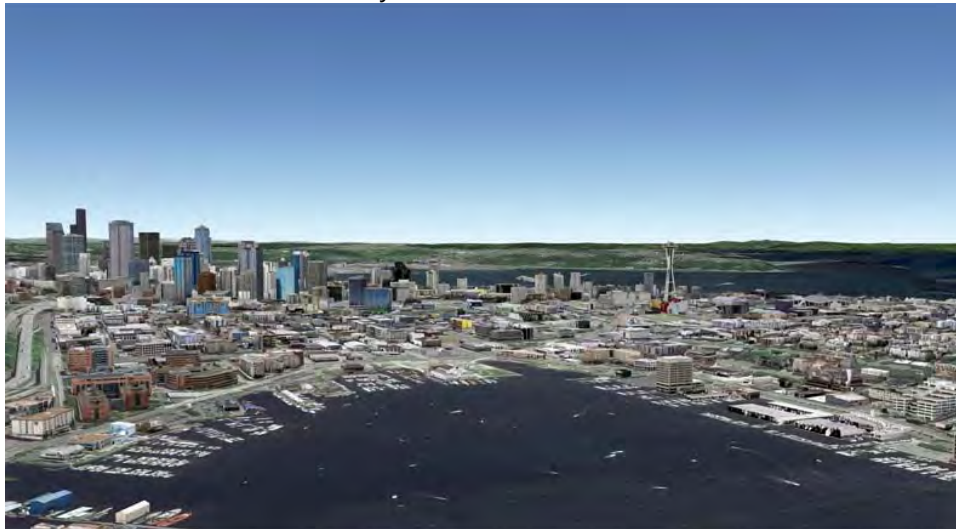
2031



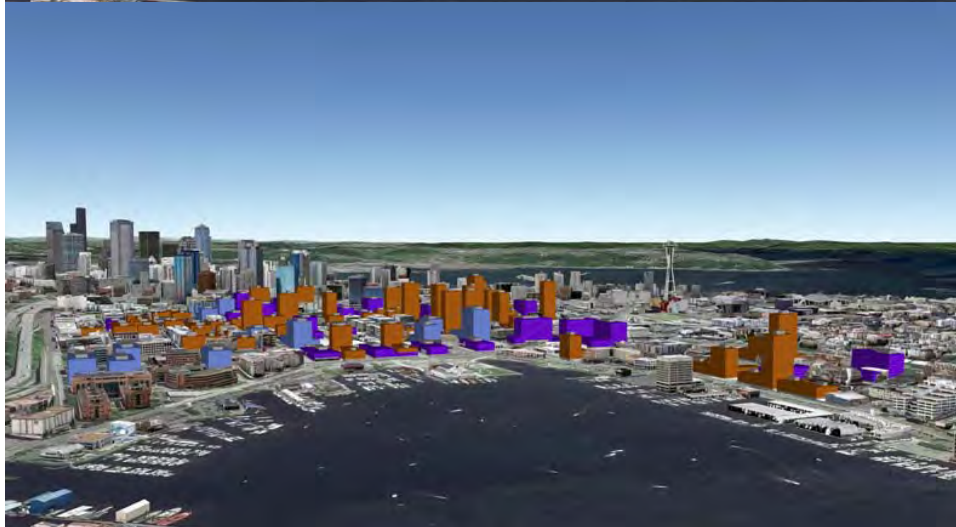
FULL BUILD-OUT

Source: NBBJ, 2010.

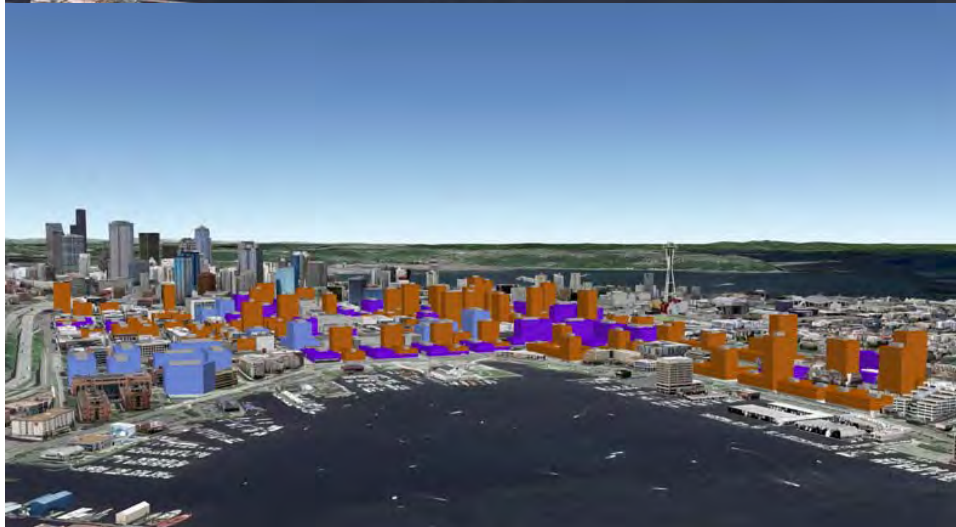
Figure 3.4-4
Birds-eye View – Alternative 2



EXISTING



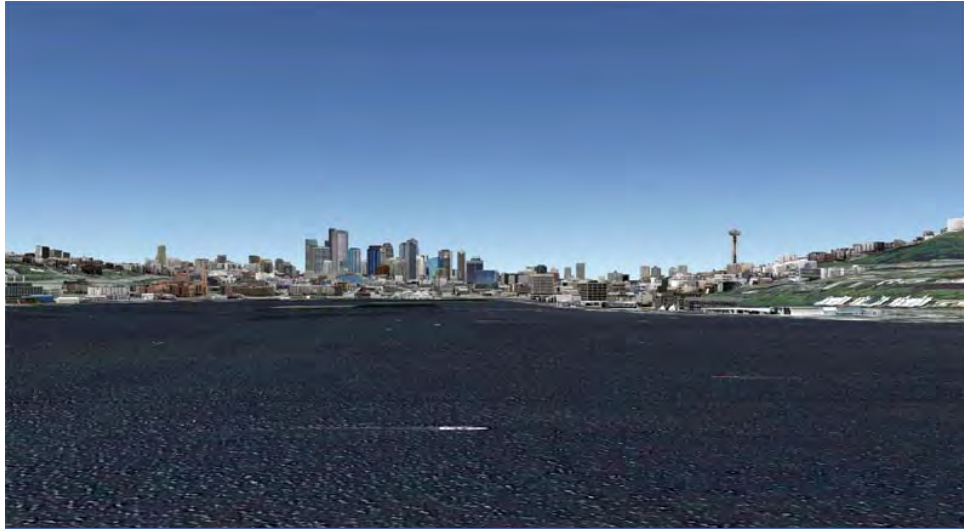
2031



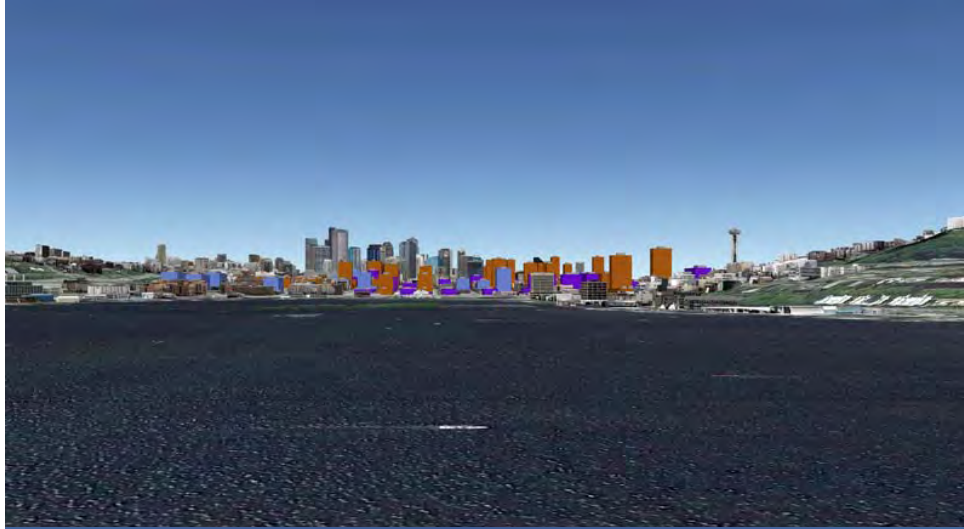
FULL BUILD-OUT

Source: NBBJ, 2010.

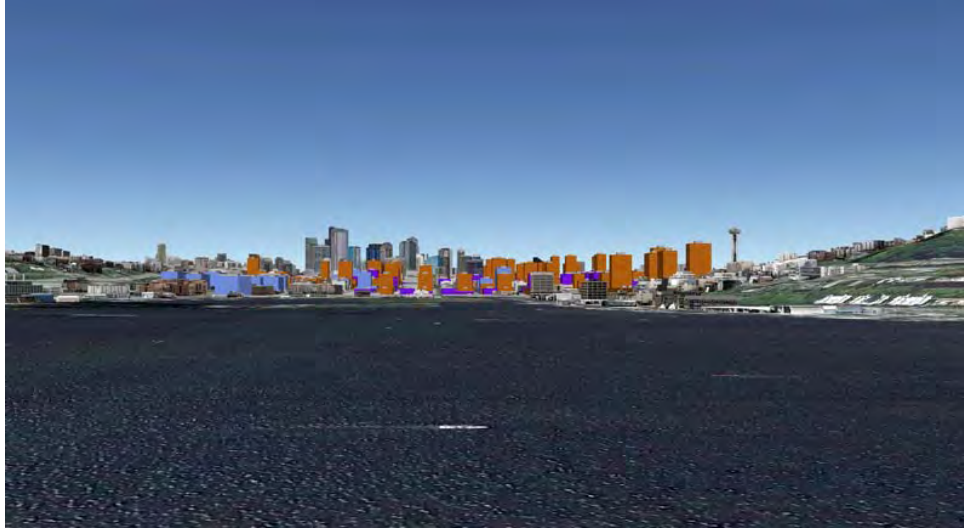
Figure 3.4-5
Gasworks Park View – Alternative 2



EXISTING



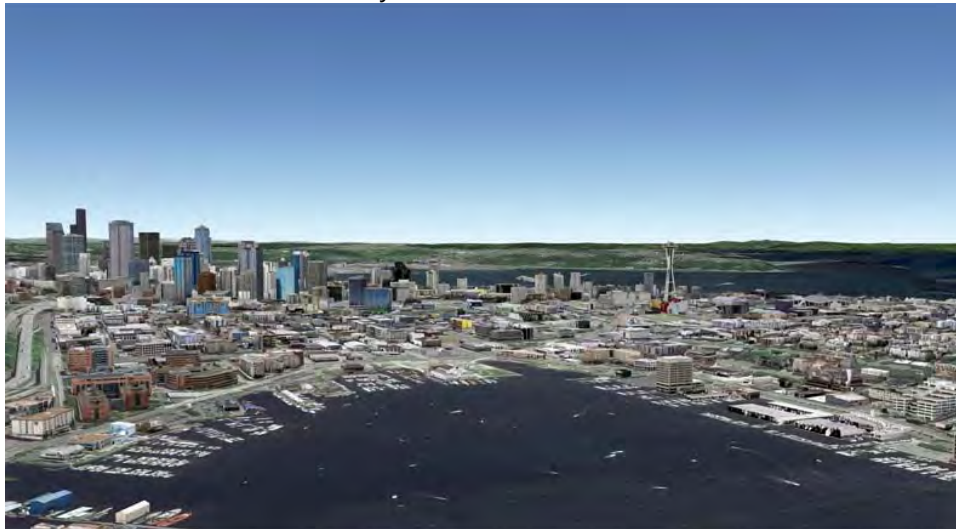
2031



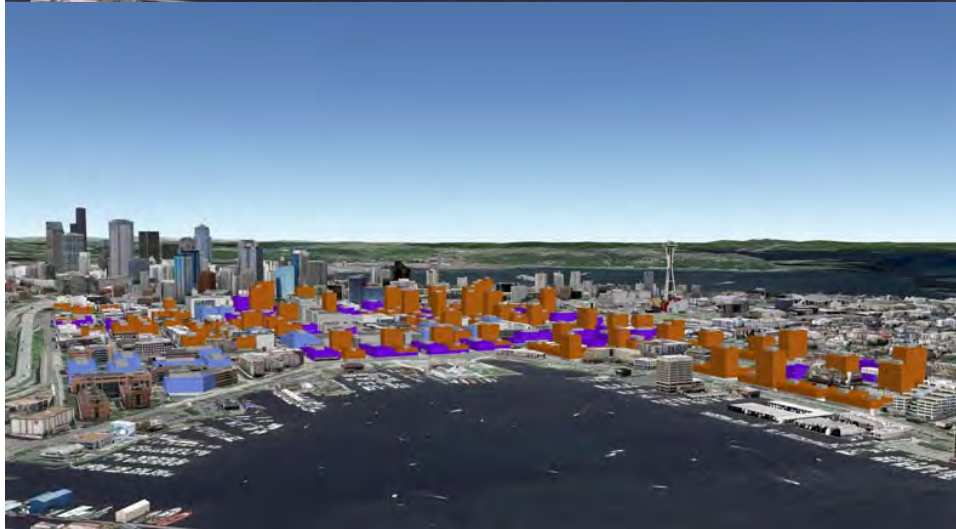
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.4-6
Birds-eye View – Alternative 3



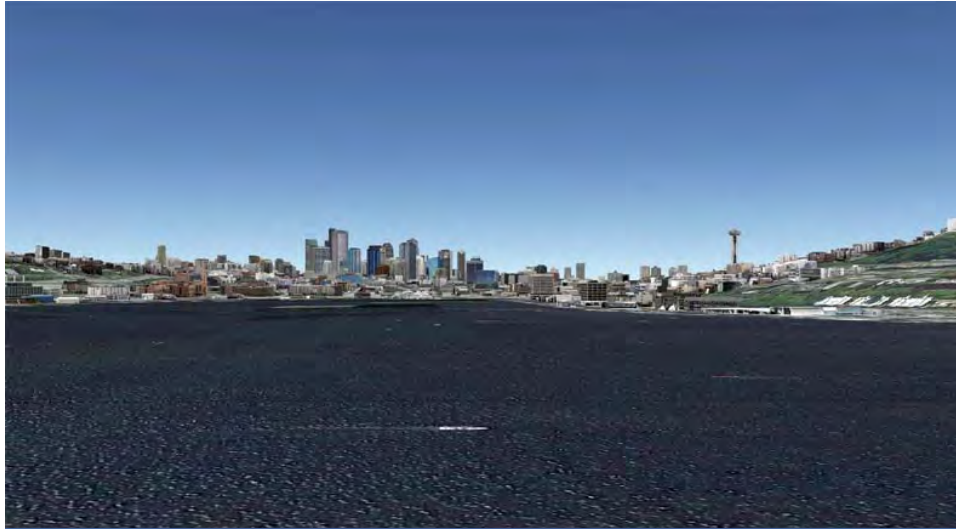
EXISTING



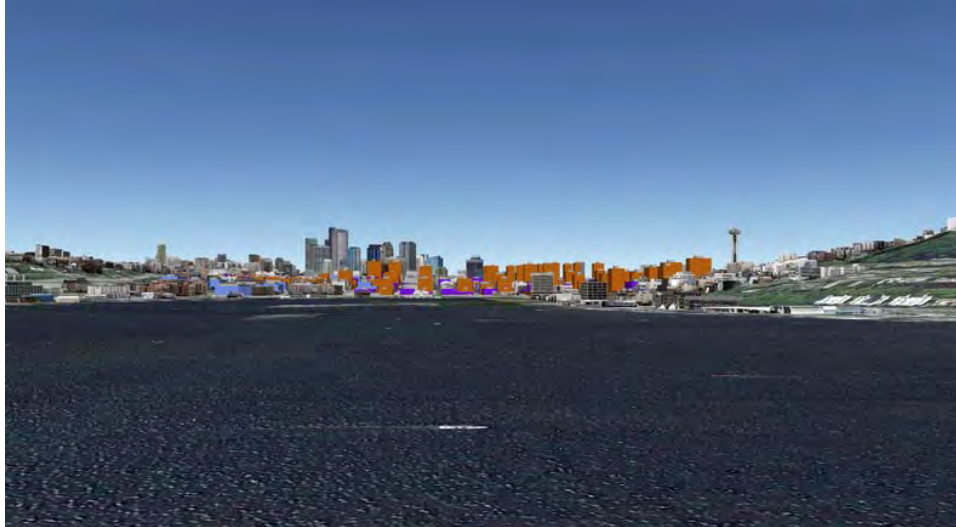
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.4-7
Gasworks Park View – Alternative 3



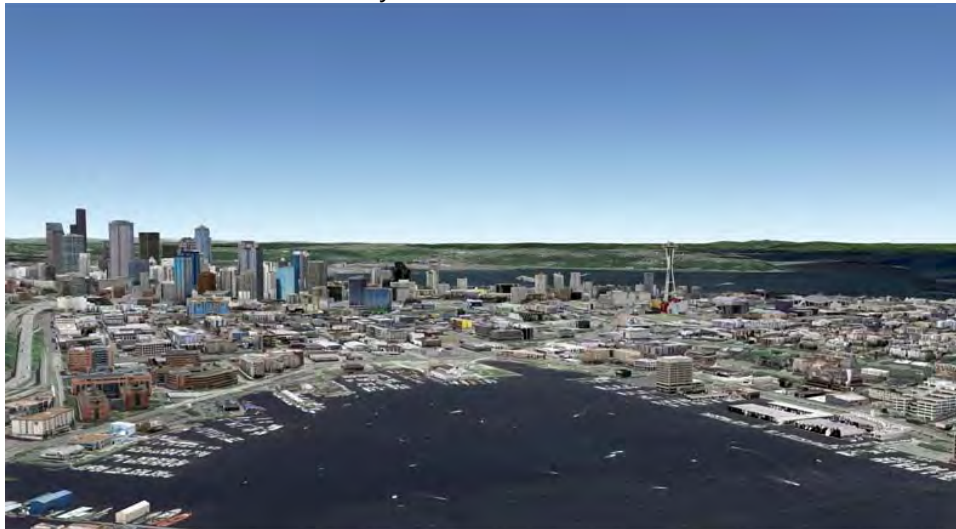
EXISTING



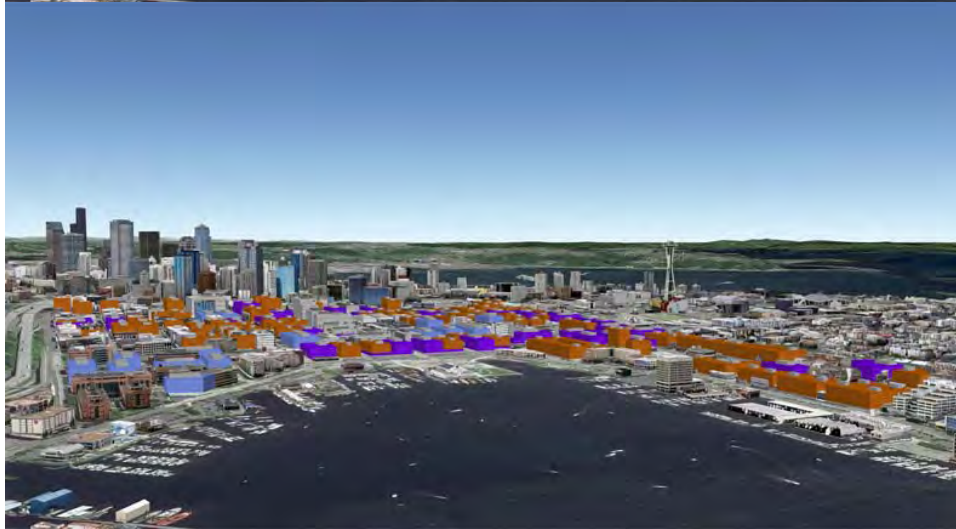
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.4-8
Birds-eye View – Alternative 4



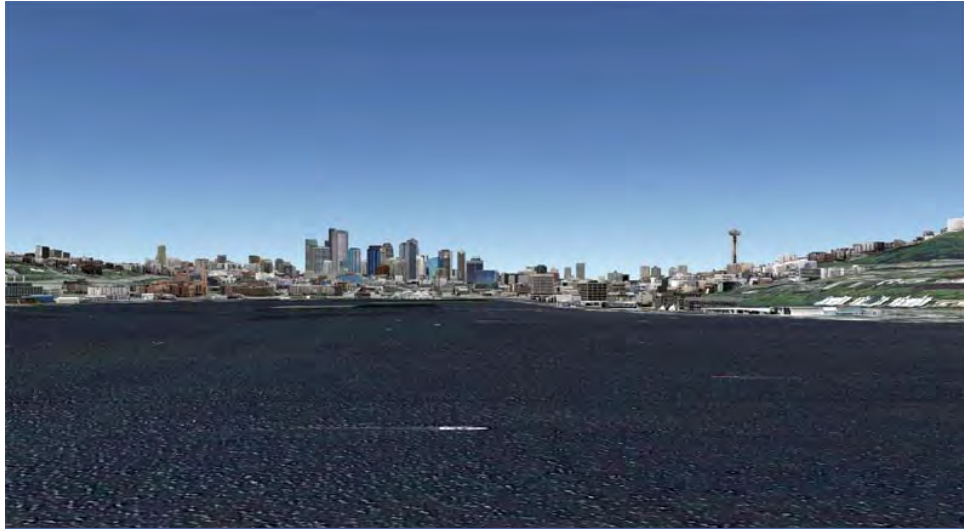
EXISTING



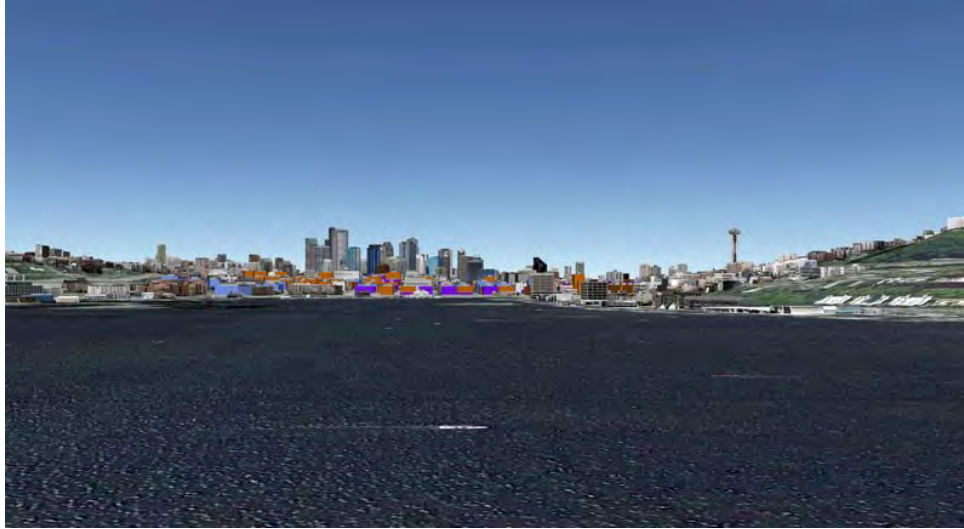
FULL BUILD-OUT

Source: NBBJ, 2010.

Figure 3.4-9
Gasworks Park View – Alternative 4



EXISTING



FULL BUILD-OUT

Source: NBBJ, 2010.

Area Context

The difference between Alternatives 1 and 2 is largely a matter of scale. The lines between height zones are drawn almost identically to those in Alternative 1, but building heights are reduced through much of the neighborhood.

As infill occurs in both the Denny Triangle and the South Lake Union neighborhoods, the greatest aesthetic difference resulting from the development under the first three alternatives – to greater or lesser degrees determined by the allowed height and density of development – will be the visual expansion of the Downtown Seattle skyline north to the shores of Lake Union. Although higher in elevation, territorial views of residents in the surrounding neighborhoods could be affected by new high-rise buildings within the study area. This impact, however, would not occur relative to development under Alternative 4 – No Action.

Neighborhood Character

All alternatives contemplate a significantly greater amount of development, with vacant lots, surface parking lots and under-utilized properties being developed to their full economic potential. Greater density of buildings, residents and employees will create a more urban environment with a consequent increase in street-front retail, employment opportunities and housing options, as well as pedestrian and vehicular traffic.

Height, Bulk and Scale

Alternatives 1 through 3 propose a relatively new building typology for the South Lake Union neighborhood. The new building type would feature a high-rise tower with a limited floor plate area positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line. These lower podium structures are intended to provide a stepped transition between new and existing development and create a more consistent street wall.

The heights of the towers would vary with the alternatives – potentially ranging from 125 feet to 240 feet for commercial buildings and from 125 feet to 400 feet for residential buildings. Floor plate sizes of towers would be limited to 24,000 sf above the podium for commercial use and an average of 10,500 sf (maximum of 11,500 sf) for residential development. Thus, although the same building typology would apply to both commercial and residential projects, the residential towers would typically be taller and narrower compared to the commercial towers.

For the purposes of comparative analysis, the location of towers and podiums are the same for each alternative with one notable exception. The exception is the location of towers on the Mercer Blocks in Alternative 1. Intuitively, in order to limit shadowing of the new Lake Union Park, towers on the Mercer Blocks were thought to be most appropriately located as far south as possible; this was also the assumption in the UDF. However, since there was no limitation on tower placement inherent in the base alternatives, it was determined that at least one alternative should show the impact of towers located as far to the north as feasible (immediately adjacent to Valley Street rather than Mercer Street). Alternative 1 was selected as the worst case example; otherwise, towers in Alternatives 2 and 3 are located at the south end (adjacent Mercer Street).

The FAR limitation on commercial buildings would reinforce the physical difference between commercial and residential projects. Not being constrained by maximum FAR restrictions, residential development would always have the potential to build to the maximum allowed building height for the use, but commercial development would be restricted by FAR and typically not rise to the maximum allowable building height.

Podiums at the base of the towers would provide the towers with a visual base and create a clear edge along the street.

Each of the alternatives for the South Lake Union neighborhood start by gradually transitioning down in height along the neighborhood's longitudinal axis (Boren Avenue N) from south to north. However, in Alternative 1 under incentive zoning, tower heights are allowed to rise again on the blocks adjacent to the shoreline zone on the south and west shores of Lake Union. To limit the potential view and shadow impacts of towers on Lake Union, the number of towers allowed is reduced from 2 to 1 on the blocks closest to the lake. Alternative 1 would also allow buildings of similar height to the maximum allowed in the Denny Triangle – up to 400 feet – for one block of depth along its border (Denny Way) with the Denny Triangle before decreasing to 300 feet at John Street. Generally speaking, the incentive zoning Alternatives 1 – 3 also imagines greater tower heights on the study area's western border (adjacent to the Uptown Triangle) than along its eastern edge (the Cascade Neighborhood). Tower bulk (length and width) is mitigated by the limitation on the number of towers per block and the restrictions on floor plate size in the alternatives using incentive zoning. However, it is possible that two towers on the same block could be located in close proximity to one another and separated only by an alley.

In some instances, the bulk of podiums created under incentive zoning may be impactful unless appropriate restrictions are placed on their size or height – this is especially the case with the podiums in excess of 45 feet (Alternative 1 only) and the double length blocks along Dexter Avenue N between Aloha and Galer Streets where the street grid is interrupted. Podiums that are 45 feet tall or less will create a street wall lower than buildings allowed under current zoning and are intended to create an appropriate street edge while balancing the height of new towers and providing them with a visual base. In addition, it should be noted that podiums are not required and towers may be developed without a podium base.

While for purposes of this EIS maximum development has been assumed, it is possible that some property owners may not choose to maximize their full development potential. In addition, owners with properties of less than 22,000 sf would still have the option to develop projects to the standards of the underlying zoning. The typology for these buildings is well established within the neighborhood and includes (in plan view) simple rectangles, L-shapes and U- shapes that fill out their zoning envelope from property line to property line and to the maximum height allowed by zoning code, typically ranging between 65 and 85 feet (exceptions being a narrow zone along Denny Way that has a 125 foot height limit and another between Mercer and Valley that is restricted to 40 feet).

Focus Areas

The impacts of potential development in the Focus Areas are shown in conceptual massing studies for each alternative. The orientation of each of these views is described and depicted by computer modeling relative to each alternative (see Focus Area discussion within each alternative later in this section). The depictions show massing of the buildings relative to the street width and surrounding context, but do not attempt to show designs for the individual building or streetscapes.

Alternative 1

Of the development alternatives, full development under Alternative 1 could have the greatest impact on aesthetics in that this alternative would permit the greatest building heights and could result in the greatest increase in development density. The difference between this alternative and Alternative 2, however, is largely a matter of scale.

Area Context

The greatest difference to the surrounding context envisioned in Alternative 1 would be the apparent visual expansion of the Downtown

Seattle skyline to the shore of Lake Union due to the potential for new high-rise construction.

Neighborhood Character

As previously discussed, a greater density of buildings, residents and employees would create a more urban environment with consequently an increase in street-front retail, employment and housing, as well as pedestrian and vehicular access. Over time, it is anticipated that small-scale buildings would redevelop to the larger building typology permitted under the proposed zoning. Relative to the other alternatives, the South Lake Union neighborhood would likely experience the greatest change in character as a result of Alternative 1, although the difference between Alternatives 1 and 2 is incremental in nature.

Similar to Alternative 2, Alternative 1 would encourage a future residential character of the 8th Avenue corridor, through a greater emphasis on residential development compared to commercial. In this corridor, residential building heights allowed at up to 300 feet, while commercial uses in residential buildings are limited to 20 feet in height and free-standing commercial buildings are limited to a maximum of 85 feet.

Alternative 1 is the only alternative that would change the existing Seattle Mixed Residential (SMR) zoning designation in the Cascade neighborhood to Seattle Mixed (SM) and allow commercial building heights to increase from 55 to 85 feet, with potential for greater increases through use of incentive zoning. Compared to the other alternatives, this change could allow for the greatest increase in non-residential floor area and significantly impact the existing residential character of the Cascade neighborhood.

Height, Bulk and Scale

Alternative 1 would allow the greatest building heights of the alternatives under consideration – potentially ranging from 85 feet for commercial buildings in the Cascade area and within the Mercer Blocks to 240 feet for much of rest of the study area, and ranging from 160 feet for residential buildings in the Cascade subarea up to 400 feet along Denny Way. This alternative would allow future buildings that may be more than twice the height than is currently allowed by zoning in the Cascade area and three or more times the allowed height in the rest of the South Lake Union neighborhood.

The impact of these differentials in zoning may be an abrupt juxtaposition of building heights as sites within the neighborhood redevelop. Potential

impacts associated with height, bulk and scale differences between new and existing development could occur in the following situations.

- Areas where neighborhood character is more established and consistent (e.g., the Cascade area). Until recently, high-rise buildings were a rarity in the South Lake Union neighborhood and non-existent in the Cascade area. Alternative 1 would allow for substantial change in the physical scale of individual buildings, create greater differential in the neighborhood skyline and reduce the visual presence of older structures – including Landmark structures.
- Places of transition with neighboring low and mid-rise neighborhoods, such as Uptown. The border with the Uptown Urban Center has numerous available sites for high-rise towers, as well as many additional sites along Dexter Avenue N and 8th Avenue N. The impact of this scale differential could be substantial at full build-out. Given the anticipated re-connection of the Uptown and South Lake Union neighborhoods across Aurora Avenue N, it may be appropriate to address this potential issue by addressing the zoning of the Uptown Triangle and South Lake Union neighborhoods together rather than independently.
- Areas now only very lightly developed, such as the 8th Avenue Corridor and the Dexter Avenue Corridor north of Mercer Street These are areas where the density of new high-rises, if fully developed, could create a potential wall of building to the neighbors. This concern also applies to the Valley/Mercer Blocks, but to a lesser degree. Towers within the Valley/Mercer Blocks would have less impact due to limitation on the number of towers imposed, as a result of the requirement to assemble 60,000 sf of site area for each potential tower (although the relatively tall podium heights of up to 85 feet permitted by Alternative 1 in the Valley/Mercer Blocks could contribute to a more bulky appearance in this area). This impact could be mitigated by a requirement to limit building height within the flight path of the Lake Union Seaplane Airport, which restricts building height to 150 feet (or less if a height buffer is mandated). This restriction could severely constrain building height on two of the four blocks in this area (see **Figure 3.4-1**).

Focus Areas

Alternative 1 would allow the greatest degree of development and could potentially result in the greatest amount of change within the designated

Focus Areas. Such changes would be particularly noticeable within the Fairview and 8th Avenue Corridors.

8th Avenue Corridor. **Figure 3.4-10** is a computer-generated graphic depicting the existing, as well as a developed street-level view associated with Alternative 1 along 8th Avenue N from the intersection at Republican Street. This view looks south toward Denny Park. A concentration of multi-family residential development that could be expected to occur on blocks facing onto 8th Avenue N could result in a neighborhood with one or two new towers on every block between Denny Way and Republican Street. Lower podium heights and the retention of the mature street trees that currently line both sides of this corridor could partially mitigate the building heights. Furthermore, there is a natural association between the concentration of residential buildings in this corridor with the existing open space and amenities provided by a renovated Denny Park.

Figure 3.4-10
Street-Level View: Eighth looking South – Alternative 1

Existing



Proposed

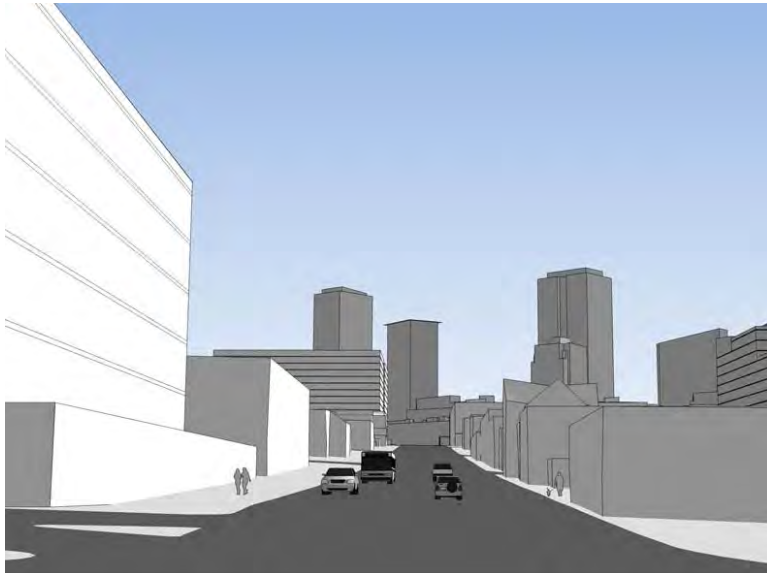


Source: NBBJ, 2010.

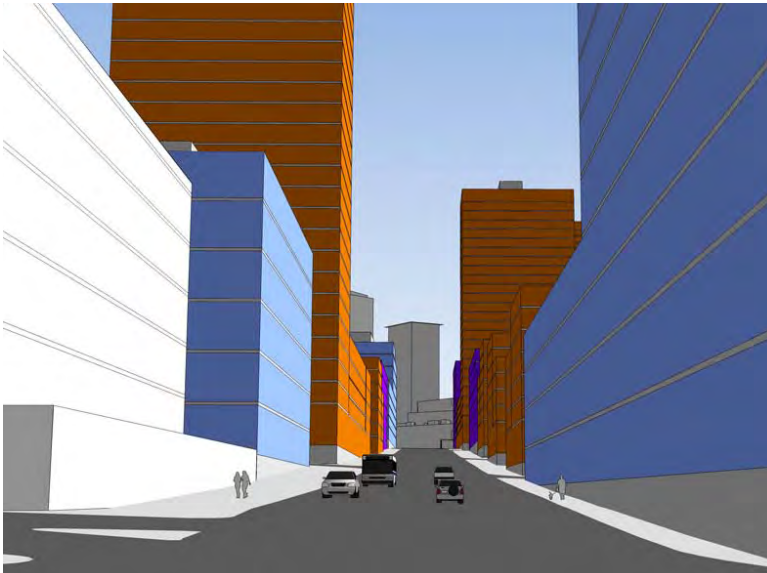
Fairview Avenue Corridor. **Figure 3.4-11** is a computer-generated graphic depicting the existing and developed view (Alternative 1) along Fairview Avenue N from the intersection with the Mercer Street ramp to I-5. This view looks south toward Downtown Seattle. The anticipated mix of new residential towers with significantly shorter commercial structures, together with the retention of some existing (including landmark) structures would result in a neighborhood character with a great variety of building types and heights.

Figure 3.4-11
Street-Level View: Fairview Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

Valley/Mercer Blocks. **Figure 3.4-12** is a computer-generated graphic depicting the existing and developed view (Alternative 1) along Mercer Street from the intersection of Mercer and Boren Avenue N. The view associated with this corridor looks west toward Uptown and Queen Anne along Mercer Street. The Valley/Mercer Blocks are on the right in this view. Alternative 1 would produce less impact on the Mercer Corridor and the Valley/Mercer Blocks than on the other two Focus Areas. This is due not only to the limit of a single tower in each block on the north-side of Mercer, but also the reduction in tower height due to the air corridor study associated with the Lake Union Seaplane Airport, which would affect three of the Valley/Mercer Blocks (see **Figure 3.4-1**). Improvement of the Mercer Way corridor (presently under construction) is expected to provide an enhanced pedestrian environment and would be important to mitigating the scale of future development associated with this alternative. In particular, the addition of a new median with a row of street trees and public art should both improve conditions for all forms of mobility, but also add foreground elements that would mitigate the scale of surrounding buildings. New development also has the potential to create a synergistic relationship with the new Lake Union Park that could benefit both the public and private realms.

Figure 3.4-12
Street-Level View: Mercer Street – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

Alternative 2

The difference between Alternatives 1 and 2 is largely incremental and a matter of scale.

Area Context

The greatest difference to the surrounding context envisioned in Alternative 2, like Alternative 1, will be the visual expansion of the Seattle City skyline to the shores of Lake Union as a direct consequence of new high-rise construction. There will, however, be a more noticeable height change from neighborhoods to the south and the South Lake Union neighborhood due to the reduction in allowable building heights across Denny Way, from 400 feet in the Triangle to 240 feet in South Lake Union.

Also like the first alternative, Alternative 2 creates an abrupt transition with the Uptown neighborhood (see “Height, Bulk and Scale” below) and impacts some views from neighboring communities (see “Viewshed” later in this Chapter).

Neighborhood Character

Generally speaking, the South Lake Union neighborhood would become more urban in its physical appearance, but maintain a distinct character commensurate with its unique community of uses and the retention of its historic structures. Since this alternative would retain existing zoning in the Cascade area, Cascade would continue to stand apart with its combination of low-rise and mid-rise buildings.

As noted in Alternative 1, the 8th Avenue Corridor and Valley/Mercer Blocks Focus Areas would likely be those areas within the study area that would experience the greatest change. Both have an opportunity to create a synergistic relationship with their neighboring parks – a renovated historic Denny Park at the south end of the 8th Avenue Corridor and the new Lake Union Park adjacent the Valley/Mercer Blocks.

Similar to Alternative 1, Alternative 2 emphasizes residential development in the 8th Avenue corridor, with commercial building heights limited to 20 feet and residential development permitted at building heights of up to 240 feet. In contrast to Alternative 1, Alternative 2 would maintain the existing SMR zoning designation in the Cascade neighborhood.

Height, Bulk and Scale

In terms of height, bulk and scale, Alternative 2 would have similar, but fewer, impacts as compared to Alternative 1.

Outside of the Cascade area, building heights could potentially range from 160 feet for residential buildings on the Valley/Mercer Blocks up to 300 feet along the western border with Uptown. Although there are significant differences in the allowed maximum height for commercial buildings between alternatives, the FAR limitation would be the controlling factor and the commercial building envelopes in Alternative 2 would be largely unchanged compared to Alternative 1, except for some size reduction (approximately one floor) in the Cascade area. As noted, the Cascade area would retain its existing zoning.

The tallest buildings anticipated by Alternative 2 would be 300-foot residential towers that are proposed for the portion the study area that borders the Uptown Urban Center. Therefore, potential impacts described in Alternative 1 under 'Height, Bulk and Scale' would also apply to Alternative 2 relative to the abrupt scale transition between the two neighborhoods. As noted in Alternative 1, one approach may be to address this potential issue by addressing the zoning of the two Urban Centers together rather than independently.

Unlike Alternative 1, podium heights associated with Alternative 2 would not vary with street width, but would remain relatively consistent – typically 45 feet. This would translate to a reduced building profile at the street edge. In turn, the scale of the 'urban room' formed by street and podium – and its sense of enclosure – would also be commensurately reduced.

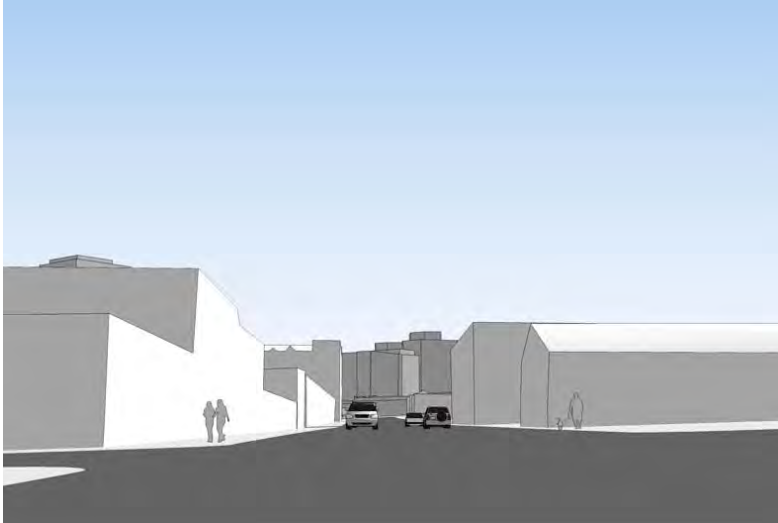
Focus Areas

For all practical purposes, the impacts of Alternative 2 would be the same as Alternative 1 within the designated Focus Areas. While a reduction in height could occur, no substantial differences in aesthetic impacts are anticipated.

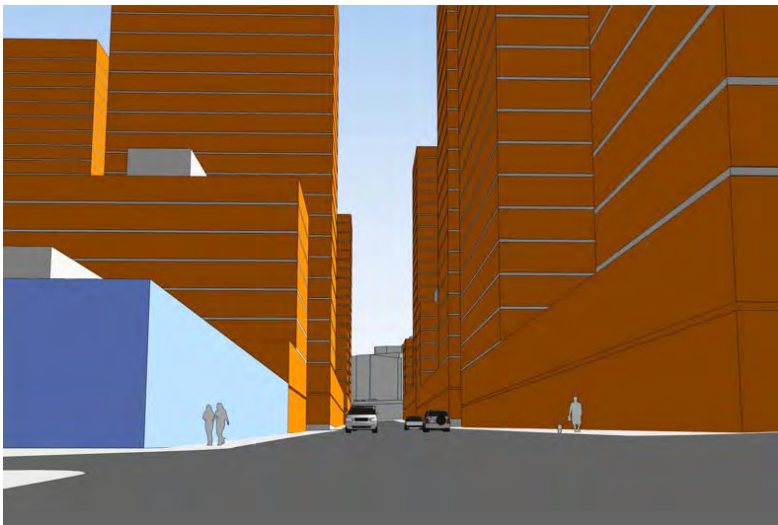
8th Avenue Corridor. See Figure 3.4-13 and the discussion under Alternative 1.

Figure 3.4-13
Street-Level View: Eighth looking South – Alternative 2

Existing



Proposed

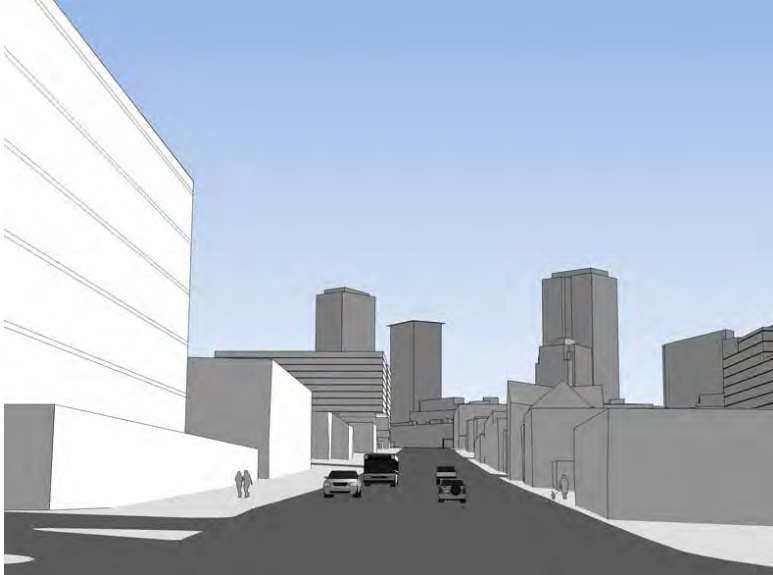


Source: NBBJ, 2010.

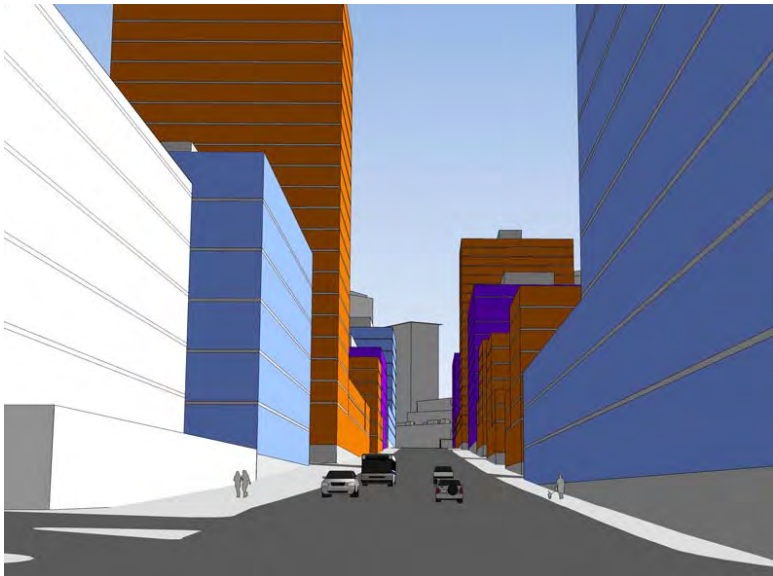
Fairview Avenue Corridor. See Figure 3.4-14 and the discussion under Alternative 1.

Figure 3.4-14
Street-Level View: Fairview Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

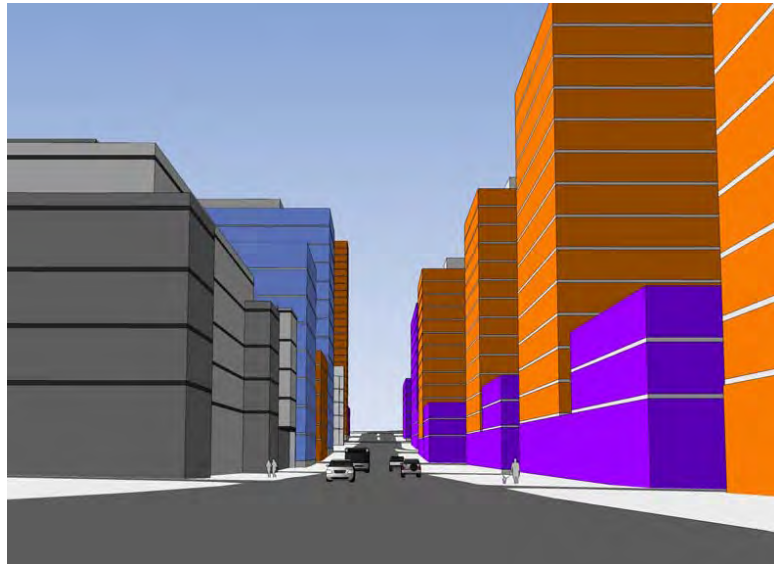
Valley/Mercer Blocks. See **Figure 3.4-15** and the discussion under Alternative 1.

Figure 3.4-15
Street-Level View: Mercer Street – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Alternative 3

Alternative 3 would envision a neighborhood with graduated heights from north to south – with the tallest buildings located closest to Denny Triangle and the lowest building heights proximate to Lake Union. The Cascade area would be an exception in that that area would retain existing zoning.

Area Context

The greatest difference to the surrounding context envisioned by Alternative 3 – like Alternative 1 and 2 – would be the visual expansion of the Downtown Seattle skyline to the shore of Lake Union as a result of potential new high-rise construction. As in Alternative 2, there may be a noticeable stepping down between the Denny Triangle and the South Lake Union neighborhood due to the reduction in allowable building heights north of Denny Way – from 400 feet in the Denny Triangle to 240 feet in South Lake Union. In Alternative 3, there would also be a graduated stepping down toward Lake Union that would be less abrupt than the transition between the Denny Triangle and the study area.

Also like the first and second alternative, development under Alternative 3 would create an abrupt transition with the Uptown neighborhood (see “Height, Bulk and Scale” below) and could affect some views from neighboring communities (see “Viewshed” later in this chapter).

Neighborhood Character

As is the case with Alternatives 1 and 2, the South Lake Union neighborhood would become more urban in its physical appearance with the changes envisioned by Alternative 3, but still maintain a distinct character commensurate with its unique community of uses and the retention of its historic structures. Compared to the other alternatives, future development under Alternative 3 would be lower in height and more likely to be residential in character. Since this alternative would also retain the existing SMR zoning in the Cascade area, Cascade would continue to stand apart with its combination of low-rise and mid-rise buildings and current residential character.

Similar to Alternatives 1 and 2, the 8th Avenue Corridor and Valley/Mercer Blocks Focus Areas would likely be the most changed portions of the study area. Both have an opportunity to create a more residential character with a concentration of housing synergistic relationship with their neighboring parks – a renovated historic Denny Park at the south-end of the 8th Avenue Corridor and the new Lake Union Park adjacent to the Valley/Mercer Blocks.

Height, Bulk and Scale

As in Alternative 2, the Cascade area would retain its existing zoning in this alternative. Other than that, Alternative 3 would substantially differ from Alternatives 1 and 2 in terms of the location and orientation of allowable building heights. With the exception of the Cascade area, allowable heights of residential buildings would transition down between Denny Way and South Lake Union. Except for a narrow band that would allow 125-foot buildings along a portion of Denny Way and 65-foot buildings along the north-half of the Dexter and Westlake Avenue N corridors, commercial building height would be uniformly limited to 85 feet.

Although the graduated building height would differ from Alternative 1 and 2, Alternative 3 could also have a potential impact on development within the Uptown Urban Center relative to an abrupt scale transition between the two neighborhoods (see 'Height, Bulk and Scale' in Alternative 1); the difference, however, being between 65-foot or 85-foot buildings in Uptown and potentially 160-foot or 240-foot buildings in the South Lake Union neighborhood. As noted with regard to Alternative 1, one approach may be to address this potential height differential issue by zoning the two Urban Centers together rather than independently.

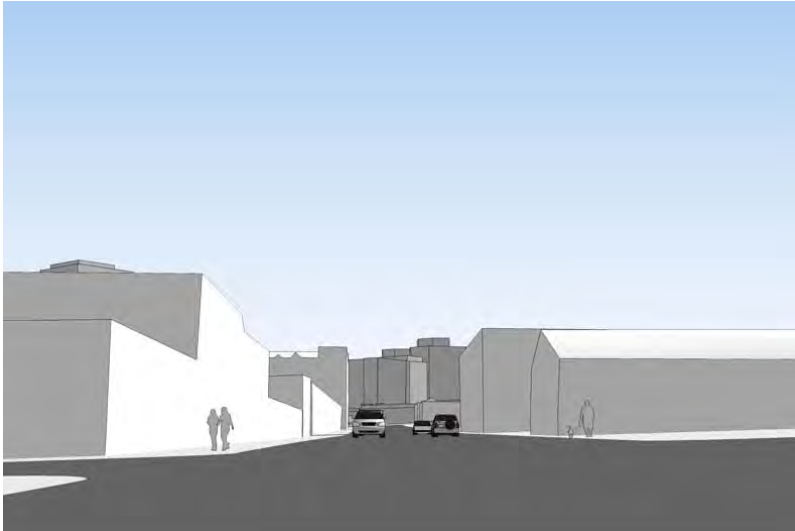
Focus Areas

For all practical purposes, the impacts of Alternative 3 would be the same as Alternative 1 within the designated Focus Areas. While a reduction in overall height would occur in conjunction with this alternative (compared to Alternative 1 and 2), the changes in aesthetic impacts are not expected to differ greatly.

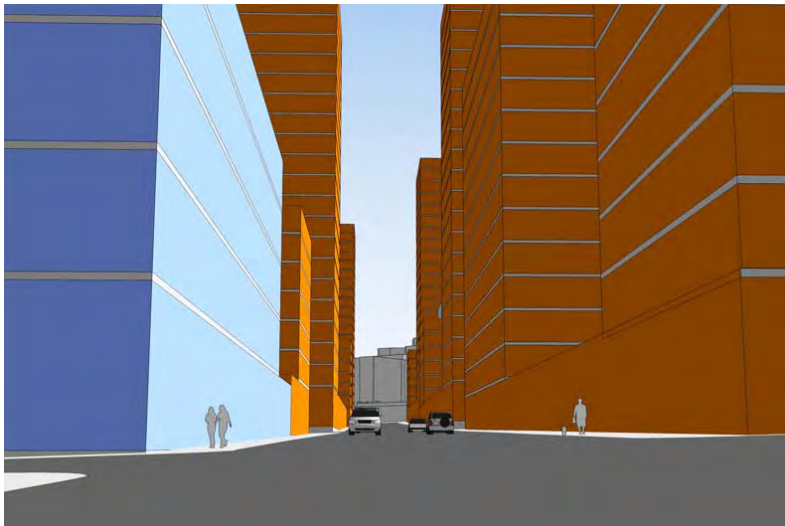
8th Avenue Corridor. See Figure 3.4-16 and discussion under Alternative 1.

Figure 3.4-16
Street-Level View: Eighth Avenue N – Alternative 3

Existing



Proposed

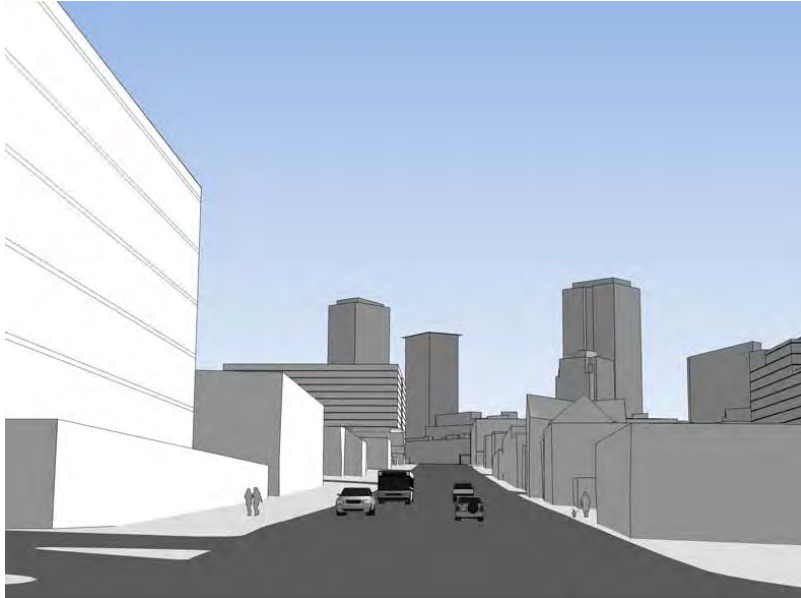


Source: NBBJ, 2010.

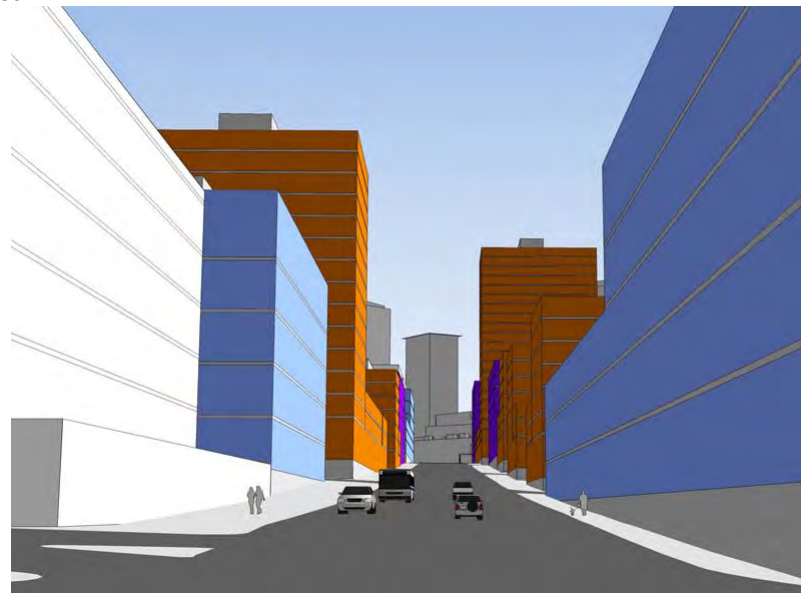
Fairview Avenue Corridor. See Figure 3.4-17 and discussion under Alternative 1.

Figure 3.4-17
Street-Level View: Fairview Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

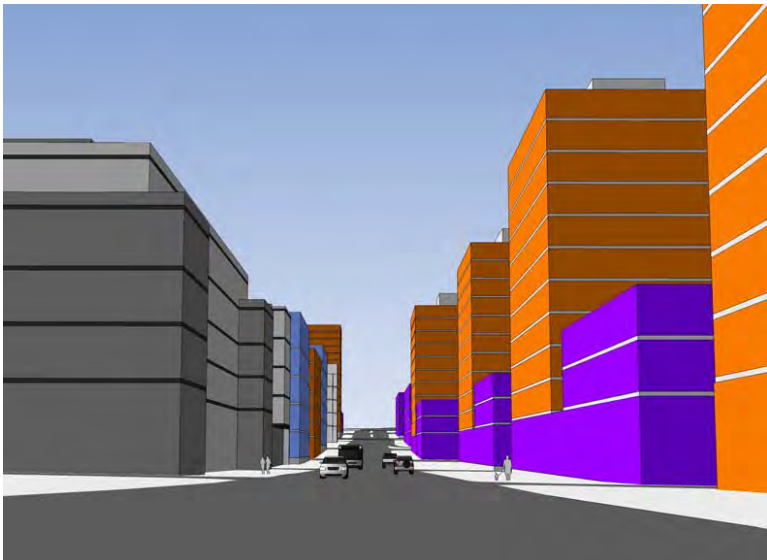
Valley/Mercer Blocks. See Figure 3.4-18 and discussion under Alternative 1.

Figure 3.4-18
Street-Level View: Mercer Street – Alternative3

Existing



Proposed



Source: NBBJ, 2010.

Alternative 4 (No Action)

Alternative 4 would retain the existing zoning for the entire South Lake Union neighborhood.

Area Context

No significant change to the area context is anticipated with regard to future development of the neighborhood under current zoning.

Neighborhood Character

No significant change to neighborhood character is anticipated with future development under current zoning. In particular, the existing Industrial Commercial (IC) zone would continue as an employment area with residential development prohibited and the residential character of the SMR zoning would be maintained. Over time, the neighborhood would become more urban in character, but retain its current low- and mid-rise character.

Height, Bulk and Scale

Because the entire neighborhood would retain current zoning, Alternative 4 would have the least impact on neighboring communities compared to the other three alternatives. Heights of new buildings would be roughly equivalent to those in the Uptown Urban Center and would remain significantly less than those in Denny Triangle.

While height is not an issue with Alternative 4, bulk could be. Within the South Lake Union neighborhood, recent experience has shown that buildings built to the existing zoning typically fill their site from property line to property line and to the maximum height allowable. This has resulted in bulky buildings with a massive footprint and no mediating base or podium that would tend to dominate the immediate street environment. The best examples have carved out street level plazas and through-block connections that can significantly mitigate building bulk by introducing welcome interruptions in otherwise unrelieved street facades.

Focus Areas

Under Alternative 4, existing development regulations would be retained and no significant change to neighborhood character and height, bulk and scale are anticipated.

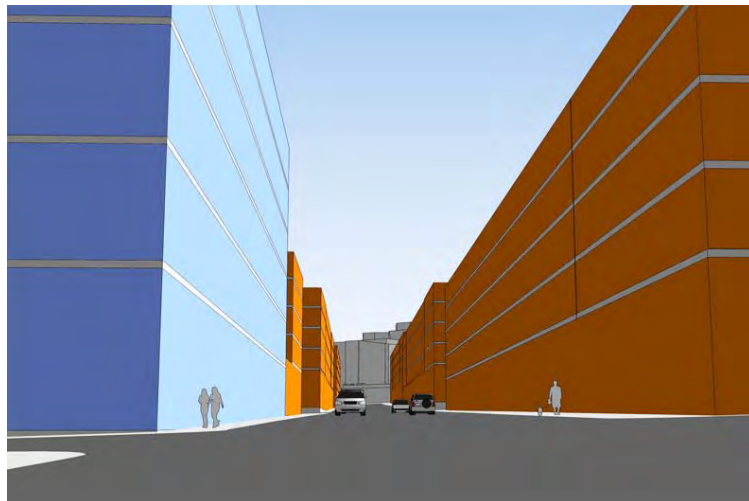
8th Avenue Corridor. See Figure 3.4-19.

Figure 3.4-19
Street-Level View: Eighth Avenue N – Alternative 4

Existing



Proposed

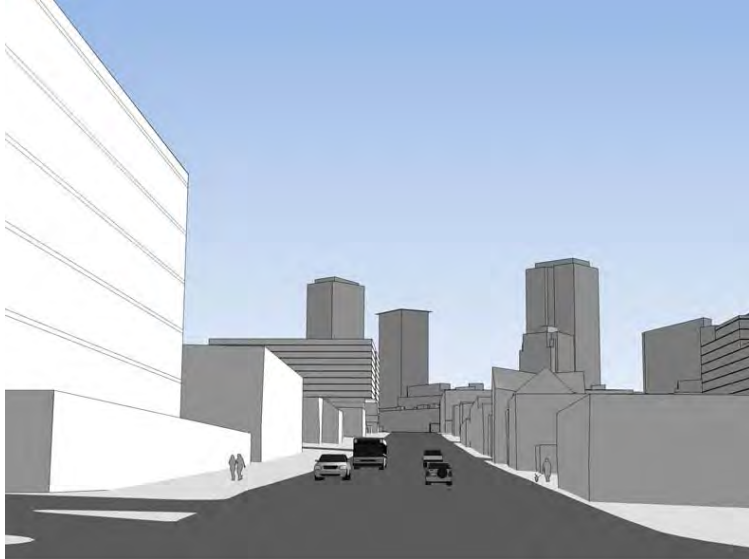


Source: NBBJ, 2010.

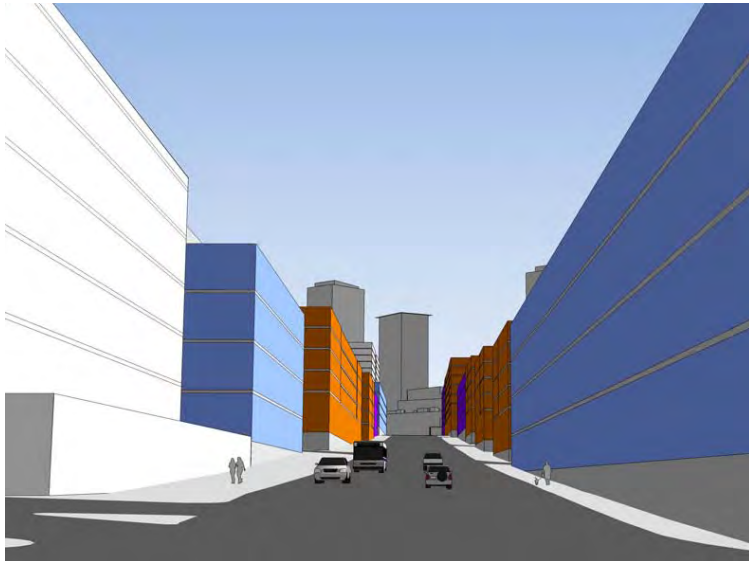
Fairview Avenue Corridor. See Figure 3.4-20.

Figure 3.4-20
Street-Level View: Fairview Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Valley/Mercer Blocks. See Figure 3.4-21.

Figure 3.4-21
Street-Level View: Mercer Street – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

3.4.3 Mitigation Strategies

A number of potential approaches for mitigation are discussed below. See also mitigation recommendations contained in SMC 25.05.675, some of which are incorporated below.

Possible mitigation strategies to reduce the impact of height, bulk and scale that may apply to all alternatives include:

- a. Either limit the height of development or create additional zones that transition building heights down more gradually.
- b. Implement measures to modify the bulk of development.
- c. Modify building façades or envelopes through adjustments in building modulation, finish material, color, architectural detailing or fenestration (including type or percentage of glazing).
- d. Reduce, relocate or rearrange of accessory structures.
- e. Modify required building setbacks.
- f. Relocate buildings on-site.
- g. Modify building orientation.
- h. Redesign the building profile of a project.
- i. Create or modify on-site view corridors.
- j. Reduce or modify walls, fences, screening or landscaping.
- k. Require or encourage incorporation of open space or through-block pedestrian connections as part of development projects.
- l. Develop and adopt design guidelines to specifically address bulk impacts identified with each alternative.

For South Lake Union, recommendations for specific migration strategies to reduce the potential impacts of the height, bulk and scale include the following:

- a. Where multi-block development is anticipated, consider development agreements to achieve cohesive design solutions and appropriate site-specific mitigations for project height, bulk and scale.
- b. On sites allowing podium heights of 65 and 85 feet (Alternative 1 only) consider providing an incentive to create public open space, limit overall height and step (or otherwise modulate) the podium mass by limiting the podium area to a maximum of 3 FAR.
- c. In order to maintain a pedestrian character, street level uses and positive visual expression at the podium levels, discourage

above-grade parking. Consider setting a maximum of one FAR for above-grade structured parking.

- d. As inspired by the UDF (see pages 14 and 15 of Final UDF), consider creating a sense of openness at designated street intersections by requiring a substantial percentage (i.e. 70%) of street level transparency (i.e. between 2 feet and 9 feet above street grade) for a distance of 40 feet from the corner in all directions. Proposed locations include all intersections of Dexter Avenue N, 9th Avenue N, Terry Avenue N and Fairview Avenue N. between John and Republican Streets, as well as Mercer Street between 9th and Boren Avenues N. Retail and other pedestrian-oriented uses could be encouraged in these locations through incentives (but should not be a requirement lacking an established customer base).
- e. Per the UDF (see pages 18 and 19), consider incentivizing or otherwise encouraging mid-block pedestrian connections and public open space. Additional, small scale open spaces are recommended throughout the study area. Mid-block pedestrian connections should also be encouraged throughout the neighborhood, but these would be particularly beneficial on the residential blocks between Mercer and John Streets on either side of 8th Avenue N and on the west side of Yale Avenue N.
- f. As suggested by the language of the UDF (see page 37, Item 20), consider allowing TDRs (Transfer of Development Rights) for the older structures within the neighborhood that do not utilize their full development potential, in order to preserve neighborhood character, protect affordable housing and maintain a variety of building scales. This strategy could be applied to all structures over a certain age (i.e. 25 years) or to specific buildings identified through an inventory of South Lake Union's character-defining structures and affordable housing.
- g. Consider incentivizing ground-level housing with street setbacks (i.e. 15 feet) to create sufficient privacy separation to encourage entry at grade or near-grade (porches or stoops).

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described in the Viewshed Section under 3.4.7 Mitigation Strategies will also ameliorate the impacts of height, bulk and scale.

3.4.4 Significant Unavoidable Adverse Impacts

With recommended mitigation no significant unavoidable adverse impacts to height, bulk and scale are anticipated.

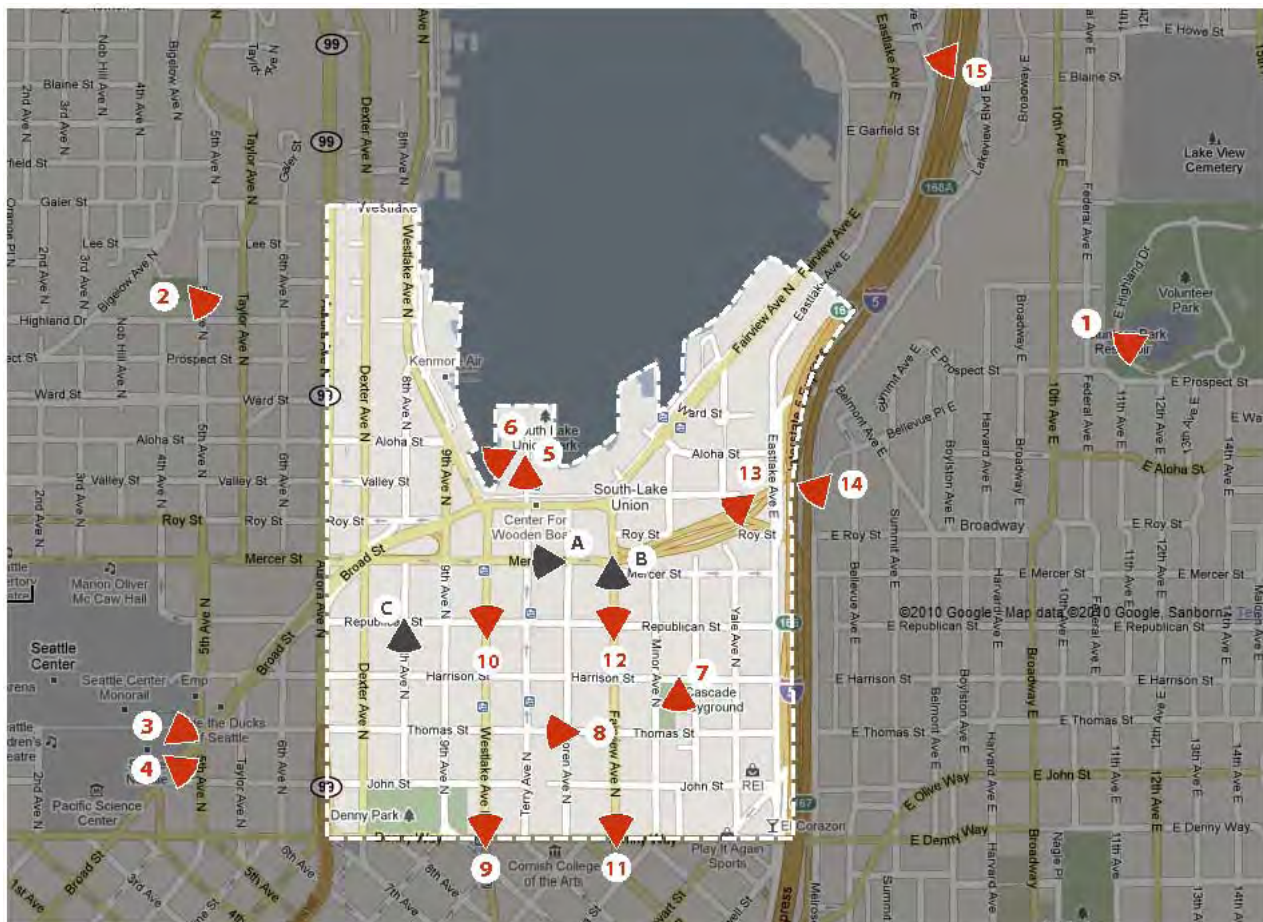
VIEWSHED

This section illustrates and describes the physical character of the South Lake Union neighborhood and its immediate surroundings using 3-D computer modeling and photographic simulations. These simulations provide representative views from selected viewpoints of both the existing neighborhood and each of the proposed alternatives.

3.4.5 Affected Environment

To evaluate the potential impact of the four alternatives relative to views, 15 viewpoints have been identified. Six of the viewpoints are officially-designated viewpoints (discussed below) and photosimulations for these are provided in this section of the Draft EIS. Photosimulations for non-designated viewpoints are contained in **Appendix D** of this Draft EIS. **Figure 3.4-22** depicts all 15 viewpoint locations; those that are color coded are included in this section of the Draft EIS.

Figure 3.4-22
Viewshed Locations



Source: NBBJ, 2010.

Each of the simulations is based on a photograph that was taken at the viewpoint. To evaluate the impact of each alternative on the viewshed, a 3-D computer model for each alternative was inserted into Google Earth and view angles were set to match the viewpoints used for the photos. Since Google Earth does not typically show the height of plant material, trees and other growth that play a prominent role in specific views were added directly from the photos using Photoshop to provide as much realism as possible.

The City of Seattle Municipal Code Section 25.05.675 P contains SEPA policies related to public view protection. Specifically, "(i)t is the City's policy to protect public views of significant natural and human-made features: Mount Rainer, the Olympic and Cascade Mountains, the downtown skyline, and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal, from public places consisting of the specified viewpoints, parks, scenic routes, and view corridors ..." (SMC 25.05.675 P2a). Designated viewpoints are identified in Attachment 1 to that section of the code.

There are three City-designated **viewpoints**⁷ in the vicinity of the South Lake Union neighborhood – Volunteer Park, Bhy Kracke Park and Plymouth Pillars Park (formerly known as Four Columns Park/Boren-Pine-Pike Park). Views toward the South Lake Union neighborhood from Plymouth Pillars Park were analyzed and it was determined that the majority of the neighborhood is not visible from this viewpoint. The viewpoint analysis contained in this Draft EIS, therefore, addresses Volunteer Park and Bhy Kracke Park.

While not identified as City-designated viewpoints based on Attachment 1, there are additional locations in and proximate to the South Lake Union neighborhood that provide a public (or quasi-public) view of the this neighborhood, including: Lake Union Park, the Cascade Playground, Bellevue Place, and the Space Needle. Simulations associated with these viewpoints are contained in **Appendix D** of this Draft EIS.

The following is an overview of the existing viewsheds associated with Volunteer Park and Bhy Kracke Park.

Volunteer Park

The park is located in the Capitol Hill neighborhood approximately three-quarters of a mile northeast of the South Lake Union neighborhood. The

⁷ Based on Seattle's SEPA Code 25.05.675, Attachment 1.

designated viewpoint is atop the cylindrical water tower near the reservoir in the southern portion of the park. This designated viewpoint provides southwesterly views toward the study area from the tower including views of the Space Needle, the Downtown Seattle skyline, the Olympic Mountains and Puget Sound. During part of the year, views of portions of the South Lake Union neighborhood from this location are obscured by mature deciduous and coniferous trees.

Bhy Kracke Park

This park is located on the southeast side of Queen Anne Hill, west of Lake Union (1215 - 5th Avenue N) and approximately one-half mile northwest of the South Lake Union neighborhood. This designated viewpoint provides southeasterly views toward the study area. The park is situated on a hillside and features a narrow pedestrian path that winds from the bottom to the top of the hill. From the outlook at its highest point, Bhy Kracke Park offers views of the Downtown Seattle skyline, Mount Rainier, the Space Needle and Lake Union. Only portions of the South Lake Union neighborhood are visible from the higher elevations in the park and even then, part of the view of the study area is obscured during portions of the year by mature deciduous trees.

In addition to City-designated public viewpoints of significant natural and human-made features, the City has identified 10 viewpoints from which views of the Space Needle are to be protected.⁸ Of these ten viewpoints, only one has a line of sight through the South Lake Union neighborhood – Volunteer Park.

City policy also protects public views of **historic landmarks** that have been officially designated by the City's Landmarks Preservation Board and, "which, because of their prominence of location or contrasts of siting, age, or scale are easily identifiable visual features of their neighborhood or the City and contribute to the distinctive quality or identity of their neighborhood or the City."⁹ Nine historic structures or objects have been designated as Landmarks in the South Lake Union neighborhood.¹⁰ Each of these is at least 25 years old and each meets one or more of the City's designation criteria.¹¹ These structures are not only key character defining

⁸ Seattle Municipal Code Chap. 25.05.675 P2c. and Seattle DCLU, 2001,

⁹ Seattle Municipal Code Chap. 25.05.675 P.2.b.i.

¹⁰ The South Lake Union, Eastlake and Fremont areas are combined as part of the City's Lake Union region.

¹¹ Refer to Seattle Municipal Code Chap. 25.12.350 for the specific standards associated with designation.

features within the neighborhood, but also serve as important visual clues for orientation. Preserving historic structures can mean preserving views as well, since older buildings are often shorter and smaller than more contemporary structures built to maximize their zoning envelope.

Lastly, City ordinances¹² identify specific **scenic routes** throughout the City from which view protection is to be encouraged. Portions of several streets within the study area are designated as scenic routes, including: Westlake Ave. N, Fairview Avenue N, the Mercer St. off-ramp from I-5, I-5 and portions of Aurora Avenue N and Dexter Avenue N.

While not identified as a City-designated scenic route, Thomas Street provides a public westerly view through the South Lake Union neighborhood toward the Space Needle. Simulations associated with this route are contained in **Appendix D** of this Draft EIS.

The following is an overview of four key scenic routes: Westlake Avenue N., Fairview Avenue N, the I-5/Mercer off-ramp, and I-5 (southbound).

Westlake Avenue N and Fairview Avenue N

Northerly views from Westlake Avenue N and Fairview Avenue N toward Lake Union improve as the viewer moves closer to the water and the view corridor widens.

Due to the fact that Seattle city blocks are typically longer in the north-south dimension, many east-west views are already obscured by buildings. However, some east-west views are still possible from these corridors in conjunction with streets that intersect Westlake Avenue N and Fairview Avenue N. Especially notable are westerly views toward the Space Needle along John and Thomas Streets (see **Appendix D**).

Dexter Avenue N and Aurora Avenue N

Portions of Aurora and Dexter Avenues north of Broad Street currently offer occasional views toward Lake Union and towards more distant scenic features such as Gas Works Park or the Cascade Mountains. Within the South Lake Union Neighborhood, however, these views are only available along the perpendicular rights-of-way or across undeveloped properties.

I-5 and the Mercer Street Off-ramp

Southbound I-5 and a segment of the Mercer Street Off-ramp are elevated and each provides scenic views of the South Lake Union area, the

¹² Ord. #97025 (Scenic Routes Identified by the Seattle Engineering Department's Traffic Division) and Ord. #114057 (Seattle Mayor's Recommended Open Space Policies).

Space Needle, the Downtown skyline, Elliott Bay and the Olympic Mountains beyond. Views along these corridors are already partially obstructed by vegetation and existing man-made structures – including buildings (particularly those constructed closest to the highway and ramp), sound walls and other highway appurtenances.

3.4.6 Environmental Impacts

This section describes changes to the aesthetic character of the built environment relative to existing views that could be affected under the four alternatives.

Impacts Common to All Alternatives

All of the alternatives assume that every vacant or underdeveloped site is built out to its maximum potential. Therefore, all alternatives – even No Action – envision a significantly more dense urban environment.

Westlake Avenue N and Fairview Avenue N

Mature street trees and existing low-rise buildings constructed to their property lines already frame the views of the lake and shoreline looking north on Westlake and Fairview Avenues. The view studies indicate that new towers built under incentive zoning will not reduce their width any more than buildings constructed under existing zoning. Future towers will frame views of the open sky above the lake.

Dexter Avenue N and Aurora Avenue N

Under all of the alternatives, including the No-Action Alternative, views from Dexter Avenue N would continue to be available only along the perpendicular rights-of-ways (since even a low-rise structure would block street-level views). Towers built under incentive zoning east of Dexter Avenue could potentially impact views from Aurora Avenue N

The following discussion pertains to designated viewpoints and scenic routes relative to the four alternatives. As noted previously, simulations for non-designated viewpoints are contained in **Appendix D**.

Alternative 1

A number of views inside and outside the South Lake Union neighborhood will be potentially impacted by Alternative 1 at full build-out, although none of the protected views are significantly impacted. The most significant changes are to Views #6, #8 and #13. Less significant but notable changes occur to Views #1, #5 and #14.

View #1 – Volunteer Park (**Figure 3.4-23**)

New high-rise buildings within the study area would be prominent in the view Volunteer Park. However, the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. Conceivably, the base of the Space Needle may be screened to about one-third of the tower height. As noted previously, the view of the Space Needle from Volunteer Park is a protected view per SMC 25.05.675 P2c. Views of Elliott Bay from this location would be affected by the new high-rise buildings.

Figure 3.4-23
Volunteer Park – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #2 – Bhy Kracke Park (**Figure 3.4-24**)

New high-rise buildings within the study area would be prominent in the view from Bhy Kracke Park. Views of the Seattle Downtown skyline, the Cascade Mountains and Capitol Hill, however, would remain. Although the new buildings do not significantly change the profile of the skyline,

individual high-rises could obscure portions of Capitol Hill and would dominate the foreground.

Figure 3.4-24
Bhy Kracke Park – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #9 – Westlake Avenue N (**Figure 3.4-25**)

New high-rise buildings would frame the north-facing viewshed down the Westlake Avenue N view corridor from the intersection of Westlake Avenue N and Denny Way. Lake Union would remain visible in the distance and the focal point of the view. Mature street trees are prominent in the foreground and, because of perspective, would continue to be a determining factor concerning the width of the water view.

Figure 3.4-25
Westlake Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #10 – Westlake Avenue N (Figure 3.4-26)

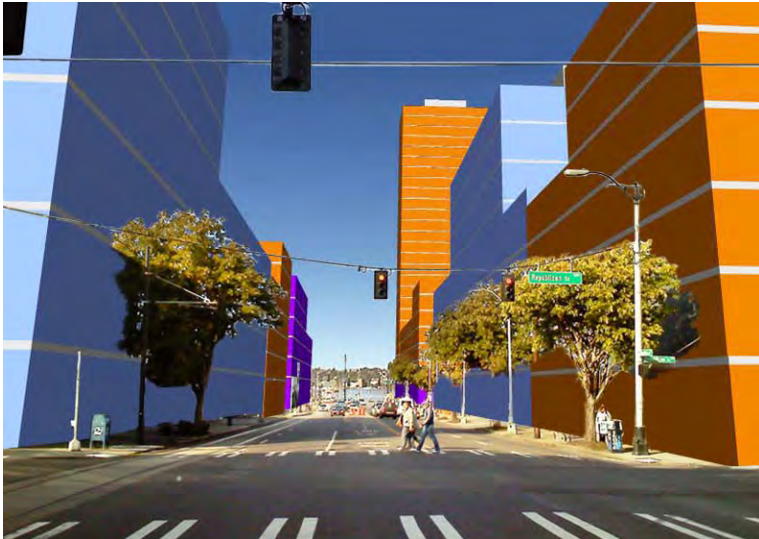
New high-rise buildings would frame this north-facing view down the Westlake Avenue N view corridor from the intersection of Westlake Avenue N and Republican Street. Lake Union would remain visible in the distance and the focal point of the view, but the width of the water view may be diminished by as much as 25%. However, the anticipated view reduction would be entirely the result of a new building being built to the property lines on the currently vacant Valley Mercer blocks. This view reduction would occur with development under current zoning and is, therefore, not considered significant.

Figure 3.4-26
Westlake Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #11 – Fairview Avenue N (**Figure 3.4-27**)

New high-rise buildings would frame this north-facing view down the Fairview Avenue N view corridor from the intersection of Fairview Avenue and Denny Way. Lake Union would remain visible in the distance and the focal point of the view. As with Westlake Avenue N, mature street trees are prominent in the foreground and would be the determining factor concerning the width of the water view.

Figure 3.4-27
Fairview Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #12 – Fairview Avenue N (**Figure 3.4-28**)

New high-rise buildings would frame the north-facing vista down the Fairview Avenue view corridor from a viewpoint at the intersection of Fairview Avenue and Republican Street. If preserved, mature street trees would remain prominent in the foreground and determine the width of the water view from this perspective. Lake Union would remain visible in the distance and the focal point of the view.

Figure 3.4-28
Fairview Avenue N – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.4-29**)

New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to completely block some views of the Space Needle from the Mercer Street exit off I-5. Although the selected view offers a glimpse of the Space Needle and not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or fully obscured from other points-of-view along this off-ramp.

Figure 3.4-29
Mercer Street Off-ramp – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

View #15 – I-5 (Figure 3.4-30)

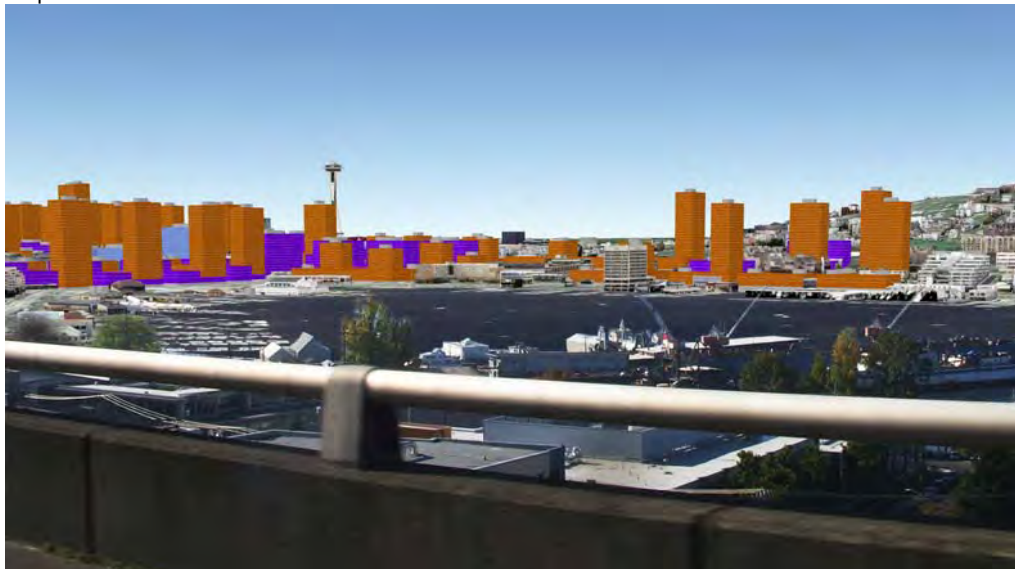
New high-rise buildings within the study area would dominate the view from southbound lanes of I-5 in the vicinity of Boylston Avenue E. Lake Union and the Space Needle would remain prominent, but the lower third of the Space Needle could be screened by future development. This scenic route is not an official Space Needle protected view.

Figure 3.4-30
I-5 – Alternative 1

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

Alternative 1 could result in the greatest amount of development and result in the greatest change to existing designated viewsheds. Street-level changes would be most pronounced in the Fairview Avenue N and the Eighth Avenue N Corridors. Street-level views for the Eighth Avenue N and the Mercer Street Corridors were discussed earlier in this section under Height, Bulk, and Scale. Views along Fairview Avenue, which is a City-designated scenic route, are discussed under Views 11 and 12.

Alternative 2

Although some tower heights would be reduced with this alternative, compared to those of Alternative 1, the view impacts of Alternative 2 would be very similar to those of Alternative 1. The following is a discussion of viewshed changes that could occur relative to Alternative 2.

View #1 – Volunteer Park (**Figure 3.4-31**)

New high-rise buildings within the study area would be prominent as viewed from Volunteer Park. As noted with regard to Alternative 1, the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. Conceivably, the base of the Space Needle may be screened to about one-third of the tower height and views of Elliott Bay would be affected by the new high-rise buildings.

Impacts from other designated viewpoints (e.g., #2, 9, 10, 11, 12 and 15) would not differ significantly from those noted with regard to Alternative 1. See **Figure 3.4-32** through **36** and **3.4-38**).

Figure 3.4-31
Volunteer Park – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-32
Bhy Kracke Park – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-33
Westlake Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-34
Westlake Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-35
Fairview Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-36
Fairview Avenue N – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.4-37**)

New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to completely block some views of the Space Needle from the Mercer Street Off-ramp from I-5. As noted with regard to Alternative 1, although the selected view offers a glimpse of the Space Needle and is not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or fully obscured from other points-of-view along this off-ramp.

Figure 3.4-37
Mercer Street Off-ramp – Alternative 2

Existing



Proposed



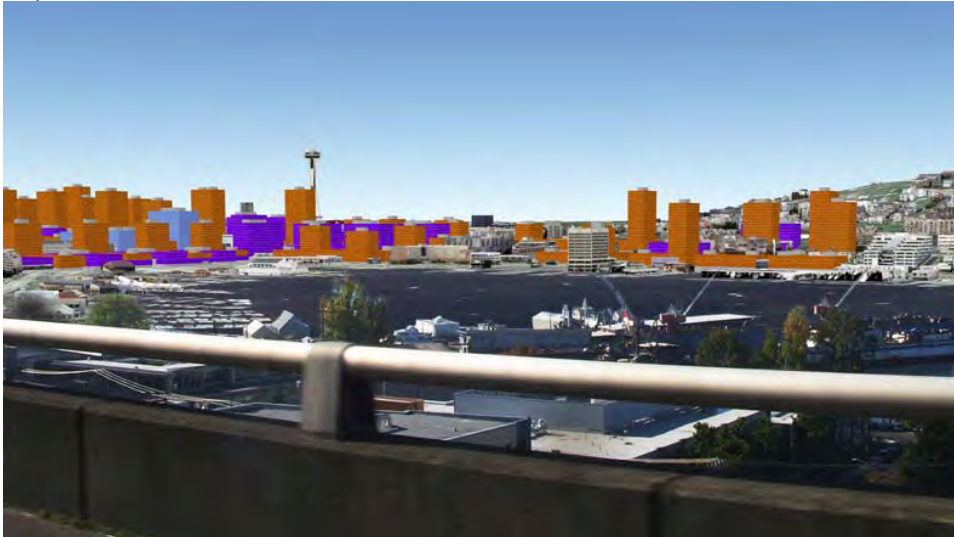
Source: NBBJ, 2010.

Figure 3.4-38
I-5 – Alternative 2

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

For all practical purposes, viewshed impacts associated with Alternative 2 would be the same as Alternative 1 relative to the designated Focus Areas. There would be an important reduction in overall height, but the changes are not expected to significantly change the overall street-level impacts from those identified under Alternative 1. Street-level views for the Eighth Avenue N and the Mercer Street Corridors were discussed earlier in this section under Height, Bulk, and Scale for each alternative. Views along Fairview Avenue, a City-designated scenic route, are discussed in Alternative 1 relative to Views 11 and 12.

Alternative 3

Although tower heights are further reduced with this alternative compared with Alternatives 1 and 2, the view impacts of Alternative 3 would be similar to the previous alternatives. The following is a discussion of viewshed changes that could occur relative to Alternative 3.

View #1 – Volunteer Park (**Figure 3.4-39**)

New high-rise buildings in the study area would be prominent in the view from Volunteer Park, but the Space Needle, Elliott Bay, Bainbridge Island and the Olympic Peninsula would still be visible. The base of the Space Needle may be screened slightly less than that associated with Alternative 1 and 2 – to about one-quarter of the tower height. Views of Elliott Bay would be affected by the new high-rise buildings.

Impacts from other designated viewpoints (e.g., #2, 9, 10, 11, 12 and 15) would not differ significantly from those noted with regard to Alternatives 1 and 2. See **Figure 3.4-40** through **3.4-44** and **3.4-46**.

Figure 3.4-39
Volunteer Park – Alternative 3

Existing



Proposed



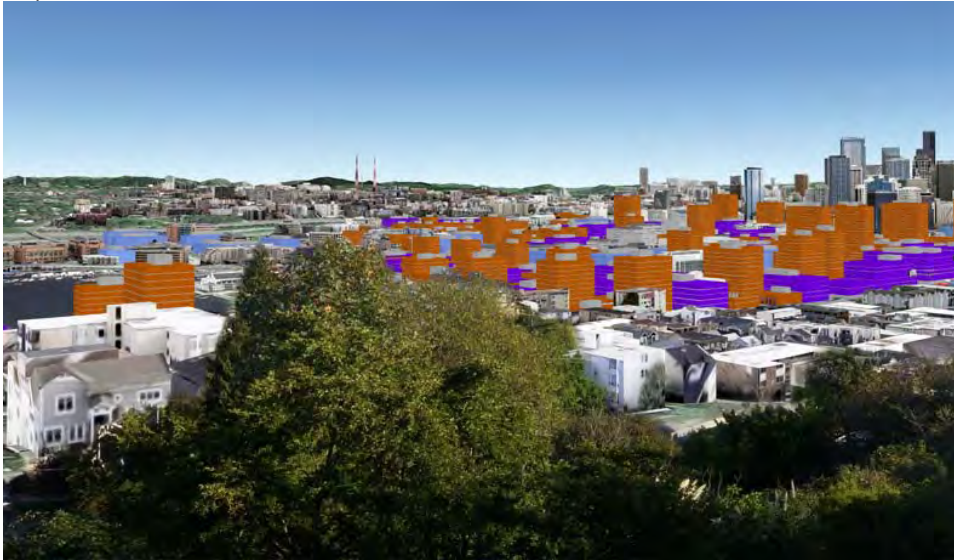
Source: NBBJ, 2010.

Figure 3.4-40
Bhy Kracke Park – Alternative 3

Existing



Proposed



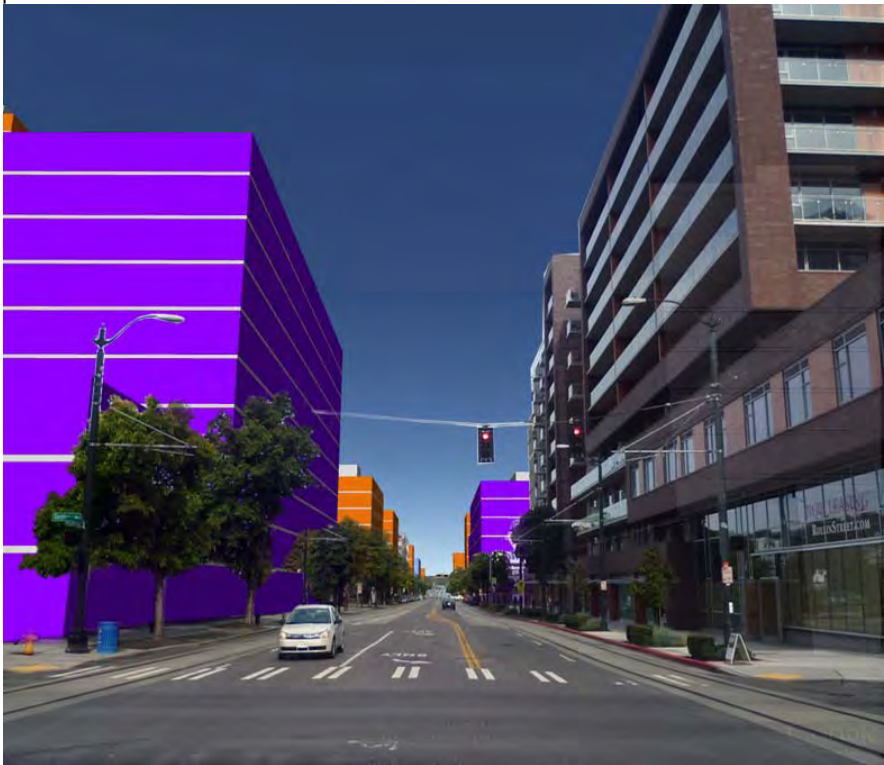
Source: NBBJ, 2010.

Figure 3.4-41
Westlake Avenue N - Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-42
Westlake Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-43
Fairview Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-44
Fairview Avenue N – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

View #13 – Mercer Street Off-ramp (**Figure 3.4-45**)

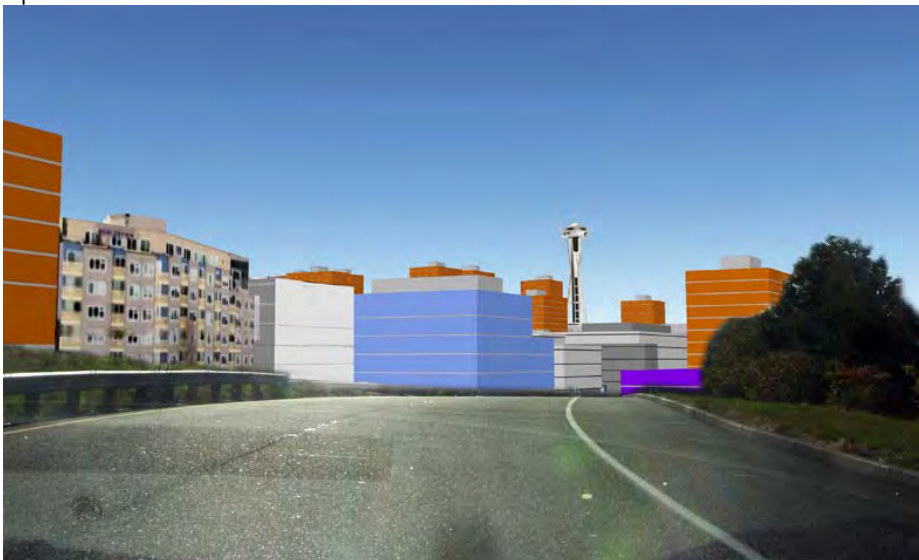
New mid-rise and high-rise buildings in the South Lake Union neighborhood would have the potential to partially block some views of the Space Needle from the Mercer Street Off-ramp from I-5. As noted with regard to Alternative 1 and 2, although the selected view offers a glimpse of the Space Needle and is not an official Space Needle protected view, the changing perspective of the driver would result in the Space Needle being partially or substantially obscured from other points-of-view along this off-ramp.

Figure 3.4-45
Mercer Street Off-ramp – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-46
I-5 – Alternative 3

Existing



Proposed



Source: NBBJ, 2010.

Focus Areas

Viewshed impacts associated with Alternative 3 would be the same as Alternative 1 relative to the designated Focus Areas. The reduction in building heights is not expected to result in substantially different street-level view impacts from those noted previously for Alternative 1.

Alternative 4 (No Action)

This alternative assumes that underdeveloped properties within the study area would be developed to the extent allowed by existing zoning. As such, views could be expected to change from what currently exists.

However, no significant impacts to views are anticipated as a result of development under current zoning. Simulations associated with views from designated viewpoints are depicted in **Figures 3.4-47 through 3.4-54**).

Figure 3.4-47
Volunteer Park – Alternative 4

Existing



Proposed



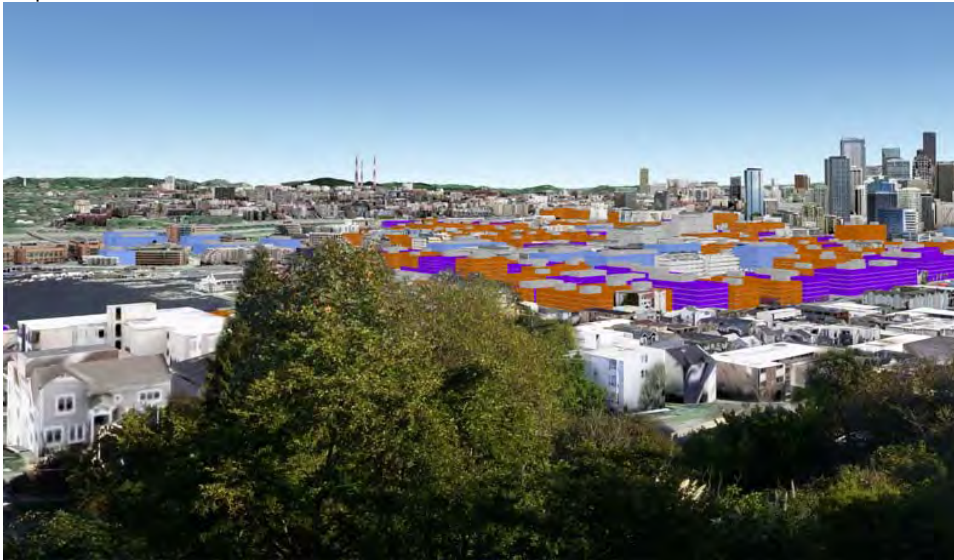
Source: NBBJ, 2010.

Figure 3.4-48
Bhy Kracke Park – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-49
Westlake Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-50
Westlake Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-51
Fairview Avenue N – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-52
Fairview Avenue N – Alternative 4

Existing



Proposed



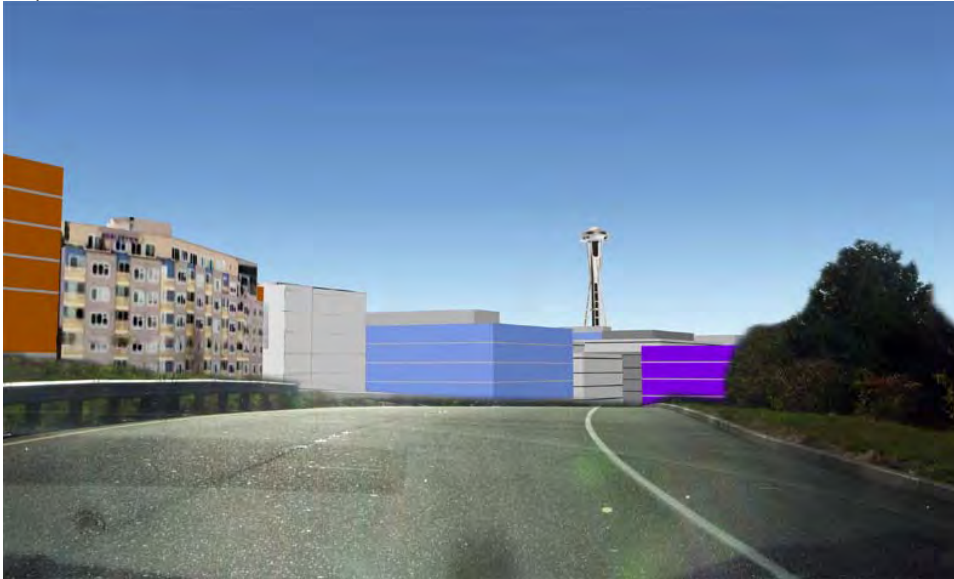
Source: NBBJ, 2010.

Figure 3.4-53
Mercer Street Off-ramp – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Figure 3.4-54
I-5 – Alternative 4

Existing



Proposed



Source: NBBJ, 2010.

Changes to Private Views

The potential for future development projects in South Lake Union to change views from adjacent neighborhoods will depend on several variables:

- 1) The location and elevation of views from existing and potential projects in those neighborhoods;
- 2) The actual height, dimensions and location of future projects in South Lake Union ; and
- 3) The effect of tower spacing requirements, floor plate size limits, and FAR limits for future projects within South Lake Union.

As development occurs in South Lake Union, as well as in the area south of Denny Way, there are potential changes to views from Downtown and Belltown looking north to Lake Union, looking west from Capitol Hill, and looking south east from Queen Anne Hill. The tallest potential building heights studied are located between Denny Way and John Street between Eastlake Avenue and Aurora Avenue. These heights range from 160 feet to 400 feet. Projects built to these heights are likely to change views from existing and future development projects –particularly those located South of Denny Way and in Belltown. Elsewhere in South Lake Union the three action alternatives identify potential building heights ranging from 160 feet (125 feet at the lakefront) up to 240 feet. It is likely that future projects built to these heights would change views from Capitol Hill and Queen Anne hill. In light of the variables identified above it is not possible to precisely describe view changes to all locations that might experience a change of view, in the context of this non-project EIS.

The City does not prohibit development that may result in changes to private views under the City's SEPA ordinance. However, the potential for such changes is one factor taken into consideration when the City Council makes rezone decisions, according to rezone criteria pertaining to height limits in SMC 23.34.009. As part of the Council process, citizens may provide comments to the City Council regarding potential changes to private or public views that might result from the proposed zoning changes.

4.7 Mitigation Strategies

While no significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis, there are notable impacts to views valued within the neighborhood. These currently unprotected views include views toward the Space Needle from Lake Union Park, along Thomas and John Streets, and views toward the open sky above Lake Union looking north along Fairview Avenue N, Boren Avenue N and Westlake Avenue N.

These impacts can be partially mitigated by the setback provisions recommended in the Urban Design Framework (see discussion and diagram on pages 22 and 23 of Final UDF, dated December 31, 2010). In addition to the recommendations contained in the UDF, consider adding upper-level setbacks on:

- a. On the east-west rights-of-way north of Aloha Street between Westlake Avenue N and Aurora Avenue N in order to open up views toward Lake Union and Lake Union Park from Queen Anne Hill and Dexter Avenue

- b. On 8th Avenue N between Denny Park and Mercer Street in order to reduce shading and bring light and air to the street – and possible woonerf – targeted principally for future residential development.

At such time site-specific development occurs, detailed viewshed analysis should be performed relative to any development that would be within the view corridor between Volunteer Park and the Space Needle.

3.4.8 Significant Unavoidable Adverse Impacts

With recommended mitigation, no significant unavoidable adverse impacts to views are anticipated.

SHADOWS

3.4.9 Affected Environment

Seattle's SEPA policies aim to "minimize or prevent light blockage and the creation of shadows on open spaces most used by the public". Of particular concern is the amount and the timing of shading that occurs to key public places. Besides weather conditions, the relative amount of shadow and sun available at the pedestrian level depends upon multiple factors; the most important of these for this study area include: topography, the built environment (structures and street grid orientation) and vegetation.

In terms of topography, the South Lake Union neighborhood is shaped like half of a shallow bowl with the landform sloping downward and inward from the neighborhood boundaries on the east, south and west – with the low point being the shoreline of Lake Union. Furthermore, the surrounding neighborhoods are much higher in elevation. Portions of Capitol Hill on the east casts shadows the neighborhood in the early morning hours and portions of Queen Anne Hill on the west does the same in the late afternoon and early evening. Due to a lower sun angle, the effect of this shading is more noticeable in the winter than at other seasons. The elevation differential between the study area and the landform to the south is not significant enough to create shadows in the study area, but the shadows of a few recently constructed high-rise buildings built in the Denny Triangle neighborhood penetrate the South Lake Union neighborhood in late morning and early afternoon hours during the winter months.

Shadows cast by buildings create a striped or stepped pattern of alternating sunny and shady areas at street level. These patterns are constantly changing with the sun angle and vary according to the season.

The orientation of the street grid in the South Lake Union neighborhood closely follows the cardinal directions, so that the north-south streets typically experience full sun near midday – the specific time of day changing during the period when daylight savings time is in effect. Streets with an east-west orientation receive full sunlight in the early morning and late afternoon. At all other times of the day, both streets and avenues are affected, to varying degrees, by shadows from neighboring structures.

Generally speaking, greater building heights extend the length of the shadow cast, and increased mass (or cross-sectional width) widens the shadow cast by a building. The shadows of tall buildings extend farther from a building, but their effects on more distant locations are of shorter duration, because the sun's motion translates into faster movement of the shadow over the ground. Buildings with greater mass would create wider shadows and an increased amount of shaded area on the immediately adjacent streets and public spaces, but the reach of the shadow would be limited by the building's height.

The amount and impact of shadows cast by a group of buildings depends upon their relative location, spacing and orientation (e.g., some building arrangements may result in overlapping shadows, or cast shadows in patterns that are not detrimental to public areas where solar access is desirable).

Building height and bulk are the main factors with regard to shadow analyses, but other characteristics – such as street level and/or upper level setbacks, the location of high-rises within a block, spacing between buildings, roof overhangs, rooftop appurtenances, street level canopies and marquees – can significantly modify the total amount and pattern of sun and shadow on the streetscape.

In areas of the City outside Downtown City policy¹³ indicates that the following areas are to be protected:

- Publically owned parks;
- Public schoolyards;
- Private schools which allow public use of schoolyards during non-school hours; and
- Publically owned street-ends in shoreline areas.

¹³ SMC 25.05.675 Q2b

Within the South Lake Union neighborhood, the particular areas that could meet the City's criteria for minimizing or preventing light blockage and the creation of shadows include:

Denny Park

Denny Park is in the southwest corner of the South Lake Union neighborhood and is bordered by major roadways on three sides: Denny Way to the south, Dexter Avenue N on the west and 9th Avenue N on the east. John Street on the north is a less busy street, but traffic is expected to increase once John Street is reconnected across Aurora Avenue N as part of the SR 99 Bored Tunnel Project.

Dedicated in 1883, Denny Park is one of Seattle's oldest public parks. The park is shaded by mature trees (both evergreen and deciduous) and features generous lawns and broad pathways leading to a central circle. A one-story Parks and Recreation Building is located on the west side of the park. In 2009, a children's playground was completed on the east side of the park.

Cascade Park and Playground

Centrally located in the Cascade subarea, Cascade Park and Playground is surrounded by relatively quiet streets on all four sides. After decades of minimal use, the park has recently undergone a major resurgence due to the surrounding growth of residential construction and a successful park renovation.

The park has a strong residential focus and features the Cascade People's Center in its southeast quadrant; an active P-Patch in the southwest quadrant, a children's play area in the northwest quadrant and permanent public restrooms in the northeast quadrant. Most of the middle of the block is occupied by a large recreational lawn area.

The park is well used during daylight hours; the playground, in particular, is activated by school and pre-school children. While not striped or set up for any particular sport, the open lawn area is used for informal recreational activities and is popular with dog owners at all hours of the day. Kickball games occur regularly during the week, including a couple of evenings and, occasionally, the weekend. The growing season sees the P-Patch well utilized by nearby residents. Both residents and office workers can be found strolling in and around the park on sunny days – regardless of season –but especially over the noon hour.

Lake Union Park

Located at the south end of Lake Union and bordering on Valley Street, this 12-acre Lake Union Park was just completed in September 2010. The

park features a lawn with sculpted land forms and boat-shaped planters, a waterfront promenade and steps, a model boat pond, interactive fountains, a beach for hand-launched boats, a tree grove, and interpretive History Trail. A new pedestrian bridge connects the east and west segments of the park.

The park is a stop on the Seattle Streetcar South Lake Union Line and is part of larger complex of public amenities that currently includes the Center for Wooden Boats. The former Naval Reserve Center, which is located at this park, is in the process of being renovated as the new home of the Museum of History and Industry (MOHAI). Other 'public' activities that occur proximate to this park include the Northwest Native Canoe Center by the United Indians of All Tribes

Lake Union Park has excellent solar exposure and is used by strollers and pet owners during all daylight hours, but especially the noon hour and at the beginning and end of the workday. Once MOHAI is complete, the most intense usage is likely to be during museum hours, but especially schools hours.

Per the Municipal Code, "(t)he analysis of sunlight blockage and shadow impacts shall include an assessment of the extent of shadows, including times of the year, hours of the day, anticipated seasonal use of open spaces, availability of other open spaces in the area, and the number of people affected" (25.05.675 Q2c).

In areas outside Downtown, if analysis indicates that a proposed project would substantially block sunlight from protected open spaces "at a time when the public most frequently uses that space, ...(the City) ... may condition or deny the project to mitigate the adverse impacts of sunlight blockage."

Appendix D contains 15 shadow diagrams. Collectively, they depict probable shading from each of the proposed alternatives (assuming weather conditions are conducive) for the four key solar days of the year: vernal equinox (approx. March 21st), summer solstice (approx. June 21st), autumnal equinox (approx. Sept. 21st), and winter solstice (approx. December 21st). The analysis depicts shadows cast by proposed development for three specific times during each day - 9 AM, noon, and 3 PM; shadow impacts are indicated in the right column of each shadow diagram). The maximum allowable heights and bulk including height exceptions for rooftop equipment were modeled to identify the 'worst case' impacts. In addition to shading resulting from possible development associated with each alternative, the figures also depict shadow impacts resulting from existing buildings within and proximate to the study area (shown in the left column of each figure).

These key days of the solar year and times of the day depict worst-case impacts. Shadow-related impacts, however, can also occur at other times of the day throughout the year. Because of the earth's rotation, the duration of shadow-related impacts varies for a stationary observer¹⁴ based on season, depending upon the width of the shadow. The shadow graphics have been adjusted to compensate for topography and, in the case of vernal equinox, summer solstice and autumnal equinox, daylight savings time.¹⁵

3.4.10 Environmental Impacts

This section describes changes to the aesthetic character of the built environment related to shadow impacts that could occur under the four EIS alternatives.

Impacts Common to All Alternatives

Cumulative shadow impacts would result from all alternatives due to the increased amount of development in the South Lake Union neighborhood. Generally, the infill development on undeveloped or under-developed sites would increase the local shadows on streets and adjacent properties.

Shadows would generally be longest during winter mornings and afternoons when the sun is less likely to be out under clear skies. At noon on winter solstice, when the sun angle is low on the horizon, shadow impacts could extend great distances and result from each alternative. Conversely, at noon on summer solstice, when the sun is at its greatest height above the horizon shadow impacts would be shorter and would be less likely to cause impacts.

Each of the alternatives could shade portions of the water area of Lake Union in the winter morning (southeast lake shore) and in the winter afternoon (southwest lake shore) hours. See Section 3.4 for discussion of potential shadow impacts on marine habitat. As would be expected, the taller the buildings and the closer their proximity to the shoreline, the greater the overwater shading.

Comparison of the alternatives reveals some differences in the impacts to the noted public parks and SEPA protected places. The location and extent of shadows vary and are described in each alternative. Generally,

¹⁴ The rate of change of the sun's angle relative to the earth varies widely by season – from about 5 degrees horizontally and 2 degrees vertically every 15 minutes in June to 3 degrees horizontally and 1 degree vertically every 15 minutes in December.

¹⁵ Pacific Daylight Savings Time (PDST) applies to shadow impacts associated with spring equinox, summer solstice and autumnal equinox.

the shadow impacts are not expected to result in significant adverse environmental impacts on the public parks – with a couple of exceptions as noted below and under Alternative 1. Except when the sun is on, or near, the axis of the street (i.e. midday on north-south avenues and early morning and evening on east-west streets), shading of sidewalks in the public rights-of-way can be expected in all alternatives when buildings are built to their property lines.

In winter, Cascade Park and Playground could be fully shaded – or very nearly so – through much of the morning and afternoon in all four alternatives. At midday in winter, the P-Patch area of the park could be shadowed. The children’s playground should be shadow free at midday in all alternatives except Alternative 1.

In all three of the incentive zoning alternatives (Alternatives 1 – 3), a new tower fronting on Denny Street and the eastern edge of Denny Park could cast a significant shadow on the park in the area of the new children’s play area during the mid-morning hours of all seasons. Similarly, afternoon shadows cast by a building at western edge of the park and Denny Way could shade the park and the landscaped area in front of the Parks and Recreation Building (but not the play area). The impact of new tower shadows on Denny Park is less significant since the canopies of existing trees currently shade most of the park area.

Other than the observation above, the impacts common to all alternatives are typical of an urbanizing area changing from lower intensity development to that of more intensive development.

Alternative 1

At full build-out, Alternative 1 could result in the greatest potential impact of the alternatives due to the fact this alternative would allow the tallest buildings heights and could result in the greatest increase in population (residents and employees) that may utilize the parks/open spaces.

The taller buildings along the Denny and Mercer corridors would cast the longest shadows impacting neighborhood parks at the times of the day when usage may be at its highest (e.g., noon [all seasons], summer morning and summer afternoon). At noon, shadows from new towers in the South Lake Union Neighborhood may just touch the corners of Denny Park and Cascade Park and Playground in all seasons except winter. Future high-rise buildings in the Denny Triangle could also cast potentially shadow a significant area in Denny Park. Mid-morning shadows may cover up to 20 percent of Denny Park and Cascade Park and Playground during the summer. Shadows may cover between 30 percent to approximately one-half of these parks at mid-morning during the

spring and fall. The eastern and northern portions of these parks would be most affected by the shadows of new buildings.

In addition to the potential impacts on Denny Park outlined under Impacts Common to All Alternatives above, a new tower fronting on Thomas Street and the eastern edge of Cascade Park and Playground under Alternative 1 could cast a significant shadow on the park in the area of the new children's play area as well as the recreational playfield; similarly, a new tower located on the southwest corner of the intersection of Minor Avenue N and Thomas Street could shade the P-Patch during the afternoon.

Alternative 1 demonstrates that allowing tower construction on the northern-half of the Mercer Blocks could result in significant impacts on Lake Union Park in all seasons except summer. The impact would be greatest in the morning and afternoon. Although shadows would not cover more than 20% of the park area in the spring and autumn, and would be concentrated in that portion of the park that serves as a buffer to the traffic noise on Valley Street, the shadows could extend to the model boat pond for a brief period in both morning and afternoon.

During the winter months, building shadows could cover all or a majority of the three parks in the morning and Lake Union and Cascade Parks in the afternoon. Shadows at noon in winter from buildings within the South Lake Union Neighborhood are expected to have minimal impact on Denny Park due to its location on the southern boundary of the neighborhood. Shadows at noon in winter could cover up to 50% of Lake Union Park depending on the location of towers on the Mercer Blocks; the most shading would result from two towers being in close proximity on either side of Westlake Avenue.

Shadows at noon in winter may cover up to 60 percent of Cascade Park and Playground. Although this is the season when sunlight is typically obscured by clouds/poor weather in our region, the noontime shadows could impact the children's play area on the west side of the block.

Focus Areas

Alternative 1 would allow the greatest degree of development and envisions the greatest degree of change in the designated Focus Areas. The changes would be most apparent in the Fairview and 8th Avenue Corridors; however, all four alternatives will shade the adjacent street and sidewalks during early morning and late afternoon hours if buildings or podiums are built out to their property lines (see Impacts Common to All Alternatives).

Alternative 2

Since the zoning is unchanged for the Cascade Neighborhood in Alternatives 2 – 4, the potential impact of shadows on Cascade Park and Playground are the same. The park could experience some shadow impacts in early morning and late afternoon during all seasons; otherwise, the park will be largely shadow free except in winter (see Impacts Common to All Alternatives for winter impacts).

With its assumption that future towers would be located on the southern half of the Mercer Blocks, Alternative 2 demonstrates that the impact of the tower placement relative to Lake Union Park would be significantly mitigated compared to Alternative 1. Although shadows could still cover a significant portion of the park area in the winter during the morning and afternoon, the park would be largely free of shadows at midday, except for a narrow band adjacent Valley Street. The park would be almost completely free of shadows in all other seasons from mid-morning through mid-afternoon; the exception being the possible shadowing of a small area in the western portion of the Park pan handle and existing shadows cast by the existing Naval Reserve Center.

Shadow impacts on Denny Park are described in Impacts Common to All Alternatives.

Focus Areas

For all practical purposes, the impacts of Alternative 2 would be the same as Alternative 1 on the designated Focus Areas. While this alternative would result in a reduction in overall height, the changes in shadow impacts on adjacent streets would not differ substantially from those noted with regard to Alternative 1.

Alternative 3

The shadow impacts in Alternative 3 are very similar to those in Alternative 2. Cascade Park and Playground could experience some shadow impacts in early morning and late afternoon during all seasons; otherwise, the park will be largely shadow free except in winter. Winter impacts and shadow impacts on Denny Park are described in Impacts Common to All Alternatives.

As was the case with Alternative 2, shadows cast in Alternative 3 could still cover a significant portion of Lake Union Park in the winter during the morning and afternoon, but the park would be largely free of shadows at midday, except for a narrow band adjacent Valley Street (narrower still in this alternative). The park would be almost completely free of shadows in all other seasons from mid-morning through mid-afternoon; the exception again being the possible shadowing of a small area in the

western portion of the Park panhandle and existing shadows cast by the existing Naval Reserve Center.

Focus Areas

The impacts of Alternative 3 would be the same as Alternatives 1 and 2 in the focus areas. As with Alternative 2, height reduction would occur, but the changes in shadow impacts on adjacent streets would not differ substantially from those noted with regard to Alternative 1.

Alternative 4 (No Action)

The shadow impacts on Cascade Park and Playground in Alternative 4 are very similar to those in Alternative 2 and 3; the park could experience some shadow impacts in early morning and late afternoon during all seasons; otherwise, the park will be largely shadow free except in winter. Winter morning, noon and afternoon shadows could affect all three open spaces (see Impacts Common to All Alternatives).

As was the case with Alternatives 2 and 3, shadows cast in Alternative 4 could cover a significant portion of Lake Union Park in the winter during the morning and afternoon, but the park would be largely free of shadows at midday, except for a narrow band adjacent Valley Street (narrower still in this alternative than in Alternatives 2 or 3 – almost negligible). The park would be almost completely free of shadows in all other seasons from mid-morning through mid-afternoon; the only exception being the existing shadows cast by the existing Naval Reserve Center.

Focus Areas

Alternative 4 anticipates no significant changes other than those associated with developing all the available sites under the existing zoning regulations (as described under Impacts Common to All Alternatives).

3.4.11 Mitigation Strategies

At such time site-specific development occurs, detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground or Lake Union Park with attention to times of the year and hours of the day the open space could be affected, the geographical area(s) of the open space affected, anticipated seasonal use of the open space, availability of other open spaces in the area, and the number of people affected.

SMC 25.05.675Q2e authorizes the City to employ measures to mitigate adverse shadow impacts to key open spaces, including:

- a. limiting the height of development;
- b. limiting the bulk of the development;
- c. redesigning the profile of the development;
- d. limiting or rearranging walls, fences or plant material;
- e. limiting or rearranging accessory structures, i.e., towers, railings, antennae; and
- f. relocating the project on the site.

Specific recommendations for limiting shading follow:

- a. Throughout the study area, consider a requirement for a 60 foot separation (equivalent to a typical street separation) between a residential tower and any other high-rise tower (office or residential). This will contribute an added level of safety appropriate to the residential use, as well as improve privacy and diminish shadow impacts.
- b. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation, in addition to the width of the Valley Street right-of-way, between towers on the Mercer Blocks and the park.
- c. In order to minimize shading of Lake Union Park, consider a requirement for a half-block separation in the east-west dimension, in addition to the width of the north-south street, between towers on adjacent Mercer Blocks
- d. On parcels bordering on the east and west edges of public parks, consider requiring that towers be located as far north as feasible within their lot lines in order to limit shadowing of the parks.

In addition to the recommended mitigation measures outlined above, the upper-level setbacks as described below will also ameliorate the impacts of shading and shadows on the public realm.

Per the UDF, consider upper level setbacks on the following streets (see also plan diagram, Fig.2-10):

- a. John Street between Eastlake Avenue N and Aurora Avenue N. A 30 foot setback on the south side of the street to improve solar exposure. A progressive setback on the north side starting at 15 feet between Fairview Avenue N and 9th Avenue N, and expanding to a 30 feet between 9th Avenue N and the Aurora Avenue N in order to open up street views toward the Space Needle.

- b. Thomas Street between Eastlake Avenue N and Aurora Avenue N. A progressive setback on the south side of the street starting at 30 feet between Eastlake Avenue N and 9th Avenue N, expanding to 40 feet between 9th and 8th Avenues N and then to 50 feet between 8th Avenue N and Aurora Avenues N in order to open up street views toward the Space Needle, as well as improve solar exposure to the street.
- c. Fairview Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on the east side of the street side to improve solar exposure as well as views to the landmarked Ford Motor Plant Building. A 30 foot setback on the west side of the street between John and Mercer Streets, plus a 50 foot setback between Mercer and Valley Streets, to improve solar exposure and views toward Lake Union.
- d. Boren Avenue between John and Mercer (or Valley) Streets. A 10 foot setback on both the east and west sides of the street side to improve solar exposure as well as views toward Lake Union.
- e. Westlake Avenue N between Mercer and Valley Streets. A 50 foot setback on the east side of the street to improve views toward Lake Union.
- f. 8th Avenue between Denny Park and Mercer Street. A 15 foot setback on both sides of the street to allow more light and air to street-level.
- g. Valley Street between Fairview Avenue N and Westlake Avenue N. A progressive setback on the south side of the street, starting with 90 feet between Fairview and Boren Avenues N, expanding to 120 feet between Boren and Terry Avenues N and once more to 150 feet between Terry and Westlake Avenues N in order to reduce shadows on Lake Union Park and improve views toward the Space Needle from the Lake Union waterfront and trail system.
- h. All street bordering on the east, south and west sides of Denny Park and Cascade Park and Playground. A 15 foot setback would apply only where the streets – 9th Avenue N, Dexter Avenue N, Thomas Street, Pontius Avenue N. and Minor Avenue N. – border directly on the parks, so as to improve solar exposure and reduce shading.
- i. The remaining east-west rights-of-ways north of Aloha Street (aligned with Prospect, Highland, Comstock and Lee Streets) between Aurora and Westlake Avenues N. A 15 foot setback on both sides of the street to open up views from Aurora Avenue N and Queen Anne Hill toward Lake Union and the Cascades.

All proposed upper-level setbacks would be minimum dimensions measured from the property line and would start at the top of the podium structure.

As noted in the UDF, corresponding upper level setbacks should eventually be considered as well in the Uptown Triangle in order to fully realize the view benefits of the proposed setbacks along John and Thomas Streets.

3.4.12 Significant Unavoidable Adverse Impacts

With recommended mitigation, no significant unavoidable adverse impacts to shade and shadow are anticipated.

LIGHT & GLARE

3.4.13 Affected Environment

The major sources of artificial illumination in the South Lake Union neighborhood include street lights, building lighting, vehicle headlights, signage, security lighting and other lighting typical of an urban setting.

There are no major sources of unusually bright artificial lighting, such as sports field illumination. Major arterials are particularly well lighted corridors, including Denny Way, Mercer Street, Fairview Avenue N, Westlake Avenue N, and Aurora Avenue N. The mixture of commercial and residential uses does not appear to create any significant sensitivity to nighttime light exposure.

Natural daylight is also typical of an urbanized area with expanded exposures due to the north-south orientation of the topographic basin. The rising elevations along the east side (Eastlake Avenue E and Capitol Hill) and along the west side (Aurora Avenue N and Queen Anne Hill) reduce local morning and afternoon daylight exposures respectively.

There is high visibility and light exposure of the taller buildings in South Lake Union because of the natural basin setting. The I-5 freeway extends along the eastern edge of South Lake Union and SR-99 extends along the western edge and there is high visibility and possible glare exposure as a result of vehicular traffic. While the water surface of the lake can, at times, become a potentially reflective surface, currently there are no highly reflective building surfaces that could at times present light and glare hazards to motorists or pedestrians.

Air traffic from the Lake Union Seaplane Airport generally takes off and lands facing south or south west and could be a sensitive receptor for light and glare impacts.

Focus Areas

Existing light and glare in the three focus areas is typical of an urban environment.

3.4.14 Environmental Impacts

This section describes changes to the aesthetic character of the built environment including light and glare impacts that could occur under the four EIS alternatives.

Impacts Common to All Alternatives

The increased amount of buildings would increase the cumulative level of artificial illumination in South Lake Union. The level of building and site lighting would be greater than current conditions, incrementally expanding with the density of development. The new buildings will include towers that may potentially incorporate reflective surfaces that could on occasion create glare impacts. The exposure may extend to adjacent hillsides and the freeway because of the topographic basin location.

Potential increases in building heights in this area and specular surfaces on buildings could, at times, generate increased light and glare impacts that may affect seaplane approaches to the south.

Focus Areas

Future development under any of the action alternatives would likely result in a significant increase in the cumulative level of artificial illumination in the focus areas.

Alternative 1

Glare impacts may occur from new tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The distant visibility from Capitol Hill and Gas Works Park of artificial illumination of the towers is high because of their currently unobstructed location. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

Because Alternative 1 allows the greatest degree of development and the potential for increased light and glare is greatest. However, light and glare would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 2

As in Alternative 1, glare impacts may occur from tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The towers and buildings of Alternative 2 are generally shorter than those in Alternative 1, so potential glare impacts may be slightly less because of the reduced surface area.

Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

For all practical purposes, the impacts of Alternative 2 are relatively less, but similar to Alternative 1 in the Focus Areas. Light and glare would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 3

As in Alternatives 1 and 2, glare impacts may occur from tower development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. Tower glare could impact seaplane approaches to the south.

The towers and buildings of Alternative 3 are generally shorter than those in both Alternative 1 and 2 so potential glare impacts should be less because of the reduced surface area. The exposure is different – especially adjacent to Lake Union – due to the graduated concept. Artificial illumination from new towers will be highly visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area.

Focus Areas

For all practical purposes, the impacts of Alternative 3 are relatively less, but similar to Alternatives 1 and 2 in the Focus Areas. Light and glare

would be typical of an urban environment and is not anticipated to be significantly different or greater than the rest of the neighborhood.

Alternative 4 (No Action)

Glare impacts may occur from the lower scaled development along the south and west frontages of Lake Union because of the morning and afternoon exposures to sunlight over open water. With no towers, there would not be any distinctive sources for possible glare.

Artificial illumination from new buildings will still be visible from those portions of Capitol Hill, Queen Anne Hill and Gas Works Park that currently have unobstructed views toward the study area, but will be less a factor due their reduced height.

Focus Areas

Alternative 4 anticipates no significant change.

3.4.15 Mitigation Strategies

SMC 25.05.675K2d authorizes the City to employ measures to mitigate adverse light and glare impacts, including the following:

- a. "limiting the reflective qualities of surface materials that can be used in the development;
- b. limiting the area and intensity of illumination;
- c. limiting the location or angle of illumination;
- d. limiting the hours of illumination; and
- e. Providing landscaping."

Other measures that may be also employed include:

- f. install screening, overhangs, or shielding to minimize spillover lighting impacts – particularly near sensitive residential receivers;
- g. shield exterior lighting fixtures and directing site security lighting away from nearby residential uses;
- h. include pedestrian-scaled and pedestrian-oriented lighting for safety along sidewalks, parking areas, street crossings and building access points;
- i. employ timers or motion sensors for lighting to reduce spillover lighting and generally reduce ambient light levels;
- j. avoid large expanses of smooth, uniform, reflective building surfaces;

- k. incorporate architectural relief and detail, such as exterior sun shades, deep spandrels, mullions or other features of façade articulation, that reduce reflectivity; and
- l. as necessary, undertake project-specific solar impact analysis studies to determine the extent of light and/or glare impacts and to identify specific mitigation measures.

3.4.16 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts from light and glare are anticipated.

3.5 Draft EIS 3.13 Transportation Clarifications or Corrections

This section presents a multi-modal transportation analysis performed for with the proposed height and density rezone of the South Lake Union neighborhood. It presents existing transportation conditions in South Lake Union, as well as future transportation conditions (2031) under three future alternatives. Transportation impacts and potential mitigation measures are identified for each future alternative based on the policies and recommendations established in state and local plans. Below is an executive summary of impacts and potential mitigation measures.

As shown in the following table and described fully in the transportation analysis chapter, there will be impacts to the future year transportation system with any of the proposed height and density rezone alternatives.

Table 3.5-ES1
Summary of Impacts to the Transportation System

Type of Impact	Future Year Height and Density Alternative (2031)		
	Alternative 1	Alternative 2	Alternative 3
Traffic Operations (congestion)	✓	✓	✓
Transit (capacity)	✓	✓	✓
Pedestrian and Bicycle Circulation			
Parking	See note below on parking impacts		
Freight Mobility	✓	✓	✓
Traffic Safety	✓	✓	✓

Note: The analysis indicated that there could be short-term parking impacts as individual projects in South Lake Union build out. However, over time parking prices will adjust to meet demand and travelers will shift to other modes, thus reducing the demand for parking.

Source: Fehr & Peers, 2010

The table above indicates that all three alternatives have similar overall impacts on the transportation system. However, as described more fully in the transportation chapter, the magnitude of the impacts varies based on the total trip generation of the alternatives. **Table 3.5-ES2** summarizes the PM peak hour trip generation of each alternative.

Table 3.5-ES2
PM Peak Hour Trip Generation by Alternative

Alternative	Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)

Note: See Appendix E for details on the mode split calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Source: Fehr & Peers 2010

To mitigate the impacts of the three Action Alternatives, a comprehensive strategy for potential mitigation measures was developed in close coordination with the City of Seattle. Because each of the three Action Alternatives have similar impacts, a single mitigation strategy was developed that could be applied to all alternatives. The transportation chapter gives a full description of the potential mitigation strategy, however, a brief summary is provided below:

- *Improve the bicycle and pedestrian network:* Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust bicycle and pedestrian system is provided. Potential mitigation measures to provide this system include the implementation of bicycle and pedestrian improvements identified in plans and documents such as the *Seattle Pedestrian Master Plan*, *Bicycle Master Plan*, and *South Lake Union Urban Design Guidelines*. Specific projects include sidewalk gap closures, new bikeways, new hill-climbs, and marked/signalized pedestrian crossings.
- *Expand travel demand management strategies:* This potential mitigation measure looks to expand on the existing Commute Trip Reduction program and Transportation Management Program in

the South Lake Union area. Specifically, parking management strategies such as maximum parking limits and unbundled parking pricing have been shown by research to reduce demand for parking, vehicle trip generation, and traffic congestion. An expansion of the City's GTEC program could further support the goal to reduce vehicle trip generation and traffic congestion in the area.

- *Transit Service Expansion:* Traffic congestion, transit load factor, and transit frequency impacts could be reduced through expanded transit service in the area. The City of Seattle and King County Metro should work together to identify capital and operations funding for additional transit service and increased frequencies on key routes.
- *Roadway Capacity Enhancements:* A potential mitigation measure to reduce traffic congestion and improve freight mobility would be the implementation of the planned Mercer West Corridor Project.

The potential mitigation measures above reduce transportation impacts of the proposed Action Alternatives and no significant unavoidable impacts are expected. As shown in **Table 3.5-ES3**, the three Action Alternatives with mitigation are expected to have lower PM peak hour vehicle trip generation than the less dense No Action alternative.

Table 3.5-ES3
PM Peak Hour Trip Generation by Mitigated Alternative

Alternative	Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 With Mitigation	12,244 (37.5%)	11,835 (36.2%)	8,606 (26.3%)
Alternative 2 With Mitigation	12,236 (37.4%)	11,844 (36.2%)	8,606 (26.3%)
Alternative 3 With Mitigation	10,715 (37.4%)	10,435 (36.4%)	7,526 (26.2%)

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Source: *Fehr & Peers 2010*

3.5.1 Affected Environment

This section describes the existing conditions of the area that would be affected by the proposed height and density rezone.

The South Lake Union neighborhood is located in the center of the City of Seattle. The study area is adjacent to many neighborhoods, including Downtown, First Hill, Capitol Hill, Eastlake, and Uptown. South Lake Union is a neighborhood in transition with a mix of older industrial buildings and new medical research buildings, office buildings, and residential developments.

As shown in **Figure 3.5-1**, the South Lake Union neighborhood is bounded by Lake Union to the north, Aurora Avenue to the west, Denny Way to the south, and I-5 to the east.

Existing Transportation Network

This section describes the existing transportation system in South Lake Union for all modes, including bicyclists, pedestrians, transit riders, and drivers.

Pedestrian System

Accessing the Neighborhood

Lake Union (to the north), SR 99 (to the west), and I-5 (to the east) limit pedestrian access to the study area. Listed below are specific routes that pedestrians can use to access the South Lake Union neighborhood from other parts of Seattle.

Figure 3.5-1
South Lake Union Neighborhood Map



Source: Fehr & Peers, 2010

From the west: SR 99 underpasses at Mercer and Broad Streets with sidewalks on both sides.

From the south: pedestrians and bicyclists can cross SR 99 at Denny Way.

From the north: a pedestrian bridge over SR 99 at Galer Street.

From the east: Denny Way and Lakeview Boulevard E I-5 overpasses. The Denny Way overpass over I-5 has a sidewalk on the south side only. The Lakeview Boulevard E overpass is a somewhat indirect connection because it runs parallel to I-5 for approximately one-third of a mile, but has sidewalks on both sides.

Sidewalk Facilities within South Lake Union

In general, sidewalk coverage in the South Lake Union neighborhood is complete, and most sidewalks are in good condition. However, there are areas where sidewalks are missing or need repair as described below.

Figure 3.5-2 shows the pedestrian facilities in the study area.

Gaps in the Pedestrian System. Terry Avenue N has no sidewalks from Denny Way to Thomas Street and limited sidewalks from Thomas Street to Harrison Street. In addition, there are gaps in the sidewalk system on Roy Street near Minor Avenue and on Valley Street near Yale Avenue.

Pedestrian Facilities in Poor Condition. There are damaged sidewalks at some locations such as on Westlake Avenue N south of Broad and Valley Streets.

Sidewalk condition varies significantly from new sidewalks at recent developments to cracked and overgrown sidewalks in older areas. The general sidewalk width tends to be 5.5 to 6 feet with wider sidewalks along some new developments. Wide planting strips along new developments provide a buffer between pedestrians and vehicles. Some newer planting strips match the width of the walkway while older planting strips are narrower: between 1.5 and 2.5 feet.

Figure 3.5-2
Pedestrian Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Pedestrian Crossings

Some intersections have missing or inconveniently located marked crosswalks. For example, there is no marked crosswalk on the west side of the 9th Avenue N/Broad Street intersection. One block south, at the 9th Avenue N/Mercer Street intersection, there is no marked crosswalk across the ramp from Broad Street to Mercer Street. A pedestrian traveling along the north side of Mercer Street would have to walk a block north to reach a marked crosswalk in order to cross the curved ramp and then rejoin the sidewalk on Mercer Street. John Street does not go through the block east of Terry Avenue N so all traffic (pedestrians, bicycles, and vehicles) must travel around the block via Thomas Street or Denny Way.

There are two unsignalized mid-block crossings along Boren Avenue N; one between Mercer and Republican Streets and the other between John Street and Denny Way. Another unsignalized mid-block crossing is provided on Eastlake Avenue E north of E Nelson Place.

Multi-Use Paths

Several paths or plazas cut through city blocks in the east/west direction. Two plazas connect Terry Avenue N to Boren Avenue N in the blocks between Mercer and Republican Streets and between Republican and Harrison Streets. A path connects Yale Avenue N and Pontius Avenue N between Thomas and John Streets. On the Yale Avenue N end of the walkway, mid-block ramps are provided to access the REI store to the east, but there is no marked crosswalk. The Cheshiahud Lake Union Loop is a multi-use path that circles Lake Union and serves as a connection within South Lake Union as well as to other neighborhoods such as Fremont, Wallingford, University District, Capitol Hill, and Queen Anne. The Lake to Bay Loop is a planned multi-use connection between Elliot Bay at the Olympic Sculpture Park and South Lake Union Park. Within the South Lake Union neighborhood, the proposed Lake to Bay Loop would traverse Thomas Street, Terry Avenue, and Mercer Street.

Bicycle System

South Lake Union has three north/south bicycle routes, consisting of either striped lanes, sharrow pavement markings¹ or shared parking/bicycle lanes.

- Eastlake Avenue E has bicycle facilities throughout the South Lake Union neighborhood. From Denny Way to approximately Mercer Street, sharrows are provided, and from Mercer Street to Fairview Avenue N, bicycle lanes are provided. Field observations indicate that idling busses often occupy the outside northbound lane on Eastlake Avenue E between Stewart Street and Lakeview Boulevard E. These busses block the path of travel indicated by the sharrows, forcing cyclists to travel in the general purpose lane in this section.
- 9th Avenue N has bicycle lanes from Denny Way to approximately Republican Street.
- Dexter Avenue N has bicycle lanes from Denny Way to Mercer Street. North of Mercer Street, there are signs for the "Interurban

¹ A sharrow is a pavement marking indicating the recommended path for bicycle travel in a shared-use lane. Sharrows are often used to notify drivers about the potential for bicycles in the lane.

North" bicycle facility which is a shared parking and bicycle lane. Field observations indicate that this is a heavily traveled bicycle route.

There are no east/west bicycle facilities except for the portion of the Cheshiahud Lake Union Loop that runs along the south shore of Lake Union. The I-5 overpass at Lakeview Boulevard E, which connects South Lake Union to Capitol Hill, has a bicycle lane followed by sharrows in the north/east direction and sharrows in the south/west direction; however, the grade between South Lake Union and Capitol Hill is steep. **Figure 3.5-3** shows the bicycle facilities in the South Lake Union neighborhood.

The Seattle Bicycle Master Plan identifies existing bicycle issues in the South Lake Union neighborhood, including the need to improve bicycle facilities along Westlake Avenue N.

Existing Transit Services

The project area is served by the South Lake Union Streetcar and several King County Metro bus routes. The streetcar runs from Westlake Center in Downtown Seattle through the South Lake Union neighborhood and terminates at the Fred Hutchinson Cancer Research Center located at Fairview Avenue N and Ward Street. Within the study area, the streetcar runs along Westlake Avenue N, Terry Avenue N, Valley Street, Fairview Avenue N, and a one-block segment of Thomas Street. Along these streets, the streetcar runs in the outside travel lane with no lane restrictions when the streetcar is not present. The primary bus connections reach north, central and southeast Seattle.

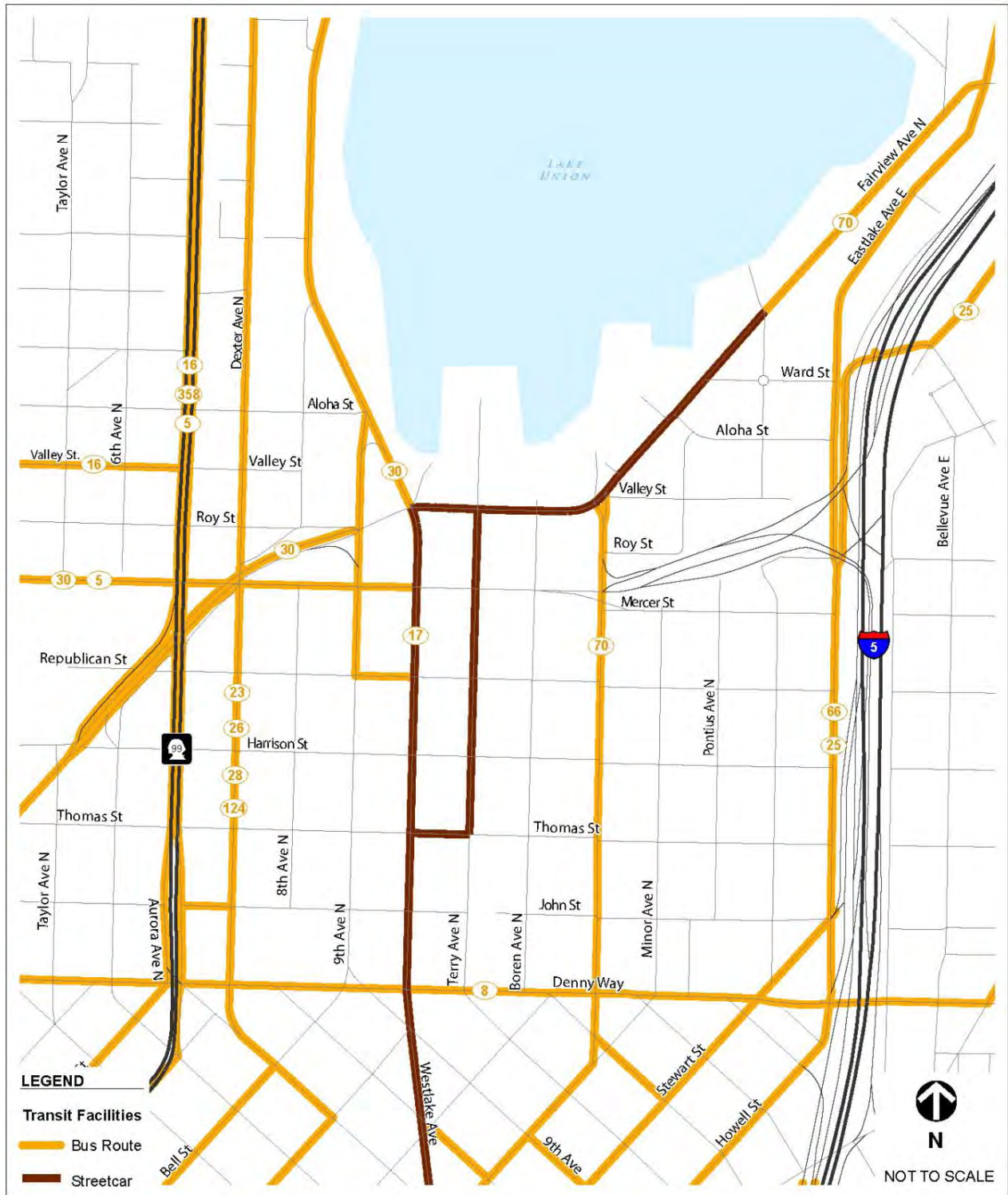
Figure 3.5-4 shows the transit routes in the South Lake Union neighborhood.

Figure 3.5-3
Bicycle Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Figure 3.5-4
Transit Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Table 3.5-1 summarizes the transit routes that serve the South Lake Union neighborhood. The table includes average headways for the AM peak period, PM peak period and mid-day period. The average headways were calculated as the ratio of minutes to number of busses in the period. These headways give a general indication of frequencies, but route times vary substantially on some routes. For instance, Route 17 runs anywhere from every nine to thirty minutes in the afternoon peak period.

Existing Roadway Network

Interstate 5 (I-5) and State Route (SR) 99 form the eastern and western boundaries of the South Lake Union neighborhood and also serve as the major roadways providing regional access. The local street network is a combination of one-way and two-way streets that serve multiple travel modes. Most local streets have multiple lanes, on-street parking, and sidewalks. Some arterial streets include bicycle lanes or sharrows. Arterial streets have speed limits of 30 miles per hour (mph) unless otherwise posted. Exceptions include local commercial and residential streets which generally have speed limits of 25 mph. **Figure 3.5-5** shows the roadway facilities in the South Lake Union study area.

Regional Access

I-5 is a north/south freeway that serves both local and regional traffic. Adjacent to the South Lake Union neighborhood, I-5 experiences congestion during a substantial portion of the day due to the intense land uses in Downtown Seattle, the limited crossings of the Ship Canal, and the lack of ramp capacity at the SR 520 interchange. The primary access to the South Lake Union area from I-5 is at the Mercer Street interchange.

SR 99 is a north/south highway located immediately west of the South Lake Union neighborhood. Northbound SR 99 can be accessed from various east/west streets in the project area, including Valley Street, Roy Street, Republican Street, Harrison Street, and Thomas Street. Southbound SR 99 is only accessible from the west side of the highway.

Table 3.5-1
King County Metro Routes in South Lake Union

Route	Destinations	Average Headways		
		Peak Periods (6-9 AM & 3-6 PM)		Midday (9 AM-3 PM)
		Peak Direction	Off-peak Direction	
5	Downtown Seattle, Fremont, Woodland Park Zoo, Greenwood, North Seattle Community College, Northgate Transit Center, Northgate Mall, Shoreline Community College	11	15	15
8	Rainier Beach, Rainier Beach Station, Othello Station, Columbia City Station, Rainier Valley, Mt. Baker Transit Center, Central District, Capitol Hill, Group Health Hospital, Seattle Center, Lower Queen Anne	15	15	15
16	Colman Dock-Ferry Terminal, Downtown Seattle, Seattle Center, Wallingford, East Green Lake, North Seattle Community College, Northgate Mall, Northgate Transit Center	20	23	20
17	Downtown Seattle, Westlake, Seattle Pacific University, Ballard, Sunset Hill, Loyal Heights	20	26	30
25	Downtown Seattle, Eastlake, Montlake, University Village, Children's Hospital, Laurelhurst	26	36	65
26	Downtown Seattle, Fremont, Wallingford, East Green Lake	23	30	29
28	Stadium Station, Downtown Seattle, Fremont, Ballard, Whittier Heights, Broadview	20	26	30
30	Seattle Center, Fremont, Wallingford, University District, Ravenna, Sand Point, NOAA	30	36	31
66	Colman Dock-Ferry Terminal, Downtown Seattle, Eastlake, University District, Maple Leaf, Northgate Transit Center	30	30	30
70	Downtown Seattle, Eastlake, University District	15	20	15
358	Downtown Seattle, West Green Lake, Aurora Ave N, Shoreline P&R, Aurora Village Transit Ctr	9	15	15

Figure 3.5-5
Roadway Functional Class – Existing Conditions



Source: Fehr & Peers, 2010

Arterial and Local Access

Dexter Avenue N is a north/south street classified as a minor arterial located just east of SR 99. South of Aloha Street, there are four travel lanes, parking, and sidewalks on both sides of the street. Dexter Avenue N does not have a center turn lane in this area, with the exception of a southbound left-turn lane at Denny Way. North of Aloha Street, Dexter Avenue N transitions to one through lane in each direction with a center turn lane, parking, and sidewalks. Bicycle lanes are provided from Denny Way to Mercer Street; north of Mercer Street, bicycles are allowed in the wide parking lane signed as part of the "Interurban North" trail. Dexter Avenue N is a heavily-traveled bicycle route between Downtown Seattle and the Fremont Bridge.

8th Avenue N runs north-south, but is not contiguous through the study area. 8th Avenue N has two sections, one from Mercer Street to John Street and the second from Roy Street to Westlake Avenue N. Each section has one lane in each direction, on-street parking, and sidewalks. Some intersections are stop-controlled while others are uncontrolled.

9th Avenue N is a two-way principal arterial between Broad Street and Denny Way. South of Mercer Street, 9th Avenue N has one lane in each direction with parking on one or both sides of the street. Sidewalks are provided on both sides of the street, and there are bicycle lanes southbound between Harrison Street and Denny Way and northbound between Republican Street and Denny Way. Major intersections are signalized and minor intersections are stop-controlled.

Westlake Avenue N is a two-way arterial between Broad Street and Denny Way. The street has two travel lanes in each direction, provides turn pockets at some locations, and has sidewalks on both sides. Parking is generally on one or both sides of the street although some blocks have no parking provided. The South Lake Union Streetcar travels in the outside lane southbound along Westlake Avenue N from Broad Street to Denny Way and northbound from Denny Way to Thomas Street. Major intersections are signalized and minor streets are stop-controlled at other intersections. Westlake Avenue N continues north around Lake Union, eventually connecting to the Fremont Bridge.

Terry Avenue N is a north/south street that varies between one-way and two-way operations through the study area. Terry Avenue N is a two-way street from Denny Way to Thomas Street, a one-way street from Thomas Street to Mercer Street, and transitions back to two-way operations between Mercer Street and Valley Street. Along the entire stretch of Terry Avenue N, there are two travel lanes (one lane in each direction for the

areas with two-way operations). There is generally parking on both sides of the street. Some sections of Terry Avenue N have sidewalks on both sides of the street while other sections have none. The South Lake Union Streetcar travels northbound on Terry Avenue N from Thomas Street to Valley Street. Major intersections are signalized and minor intersections are stop-controlled.

Fairview Avenue N is a two-way north/south principal arterial with one to two travel lanes in each direction. In addition, there are either turn pockets or a center left-turn lane throughout the South Lake Union neighborhood. Sidewalks are provided on both sides of Fairview Avenue N. Parking is generally allowed on both sides of the street between Mercer Street and Denny Way; however, there are restrictions during peak periods. Parking is prohibited on the east side of Fairview Avenue N (northbound direction) between 4 and 6 PM and on the west side (southbound direction) between 7 and 9 AM. The empty parking lane provides an extra travel lane in the peak direction. There is no parking provided on Fairview Avenue N north of Mercer Street. The South Lake Union Streetcar travels in both directions of Fairview Avenue N from Valley Street to Yale Avenue N.

Valley Street is a two-way east/west street stretching from Westlake Ave N to Yale Avenue N. It is a principal arterial connecting Westlake Ave N and Broad Street to the I-5 interchange at Mercer Street, and a local access street for the remaining eastern portion. Along the arterial segment, there are three westbound lanes, and two eastbound lanes with turn pockets. Intersections are signalized and no parking is provided. Sidewalks are provided on the south side of the street, while a multi-use trail is provided on the north side of the street.

Mercer Street is an east/west principal arterial with four eastbound travel lanes extending west of Fairview Avenue N. From Dexter Avenue N to 9th Avenue N, one westbound lane is also provided as a connection from Broad Street to Dexter Avenue N. Sidewalks are provided on both sides of the street; however some of the sidewalks on the southern side of the street have been temporarily closed due to building construction. Mercer Street provides the main access to I-5 at Fairview Avenue N. Mercer Street continues eastward as a two-lane one-way minor arterial to Eastlake Avenue E with parking and sidewalks on both sides. During our field visits the buildings on the north side of Mercer Street were being demolished to make way for the upcoming conversion of Mercer Street into a two-way six-lane arterial between I-5 and Broad Street.

Republican Street is a lightly traveled two-way east/west minor arterial with two travel lanes extending from SR 99 to Eastlake Avenue E. Parking and sidewalks are provided on both sides of the street.

Denny Way is a two-way principal arterial with two lanes in each direction. Sidewalks are provided on both sides, but there is no on-street parking. Major intersections are signalized and there are left-turn bays provided at the Fairview Avenue N intersection. Left turns are prohibited at all other signalized intersections in the study area. Denny Way is a major east/west connector between the Seattle Center and waterfront areas to the west, and First Hill and Capitol Hill to the east.

Parking

This section summarizes the existing on-street and off-street parking supply and utilization in South Lake Union. Most of the source data for this analysis is based on the *2006 Parking Inventory* (Puget Sound Regional Council) and the *2006 South Lake Union On-Street Parking Study* (Seattle Department of Transportation). The parking conditions are substantially different today when compared to 2006 conditions. Between 2006 and 2010 several major office buildings were completed that increased off-street supply while also increasing overall parking demand. Additionally, the City of Seattle expanded the paid parking program throughout most of South Lake Union and a Restricted Parking Zone (RPZ) program was also established in the more residential portions of the neighborhood. While more recent data from a 2010 study has also been included, this data covers a small portion of South Lake Union, and many of the findings of the 2006 surveys are still valid. More information may be found in **Appendix E**.

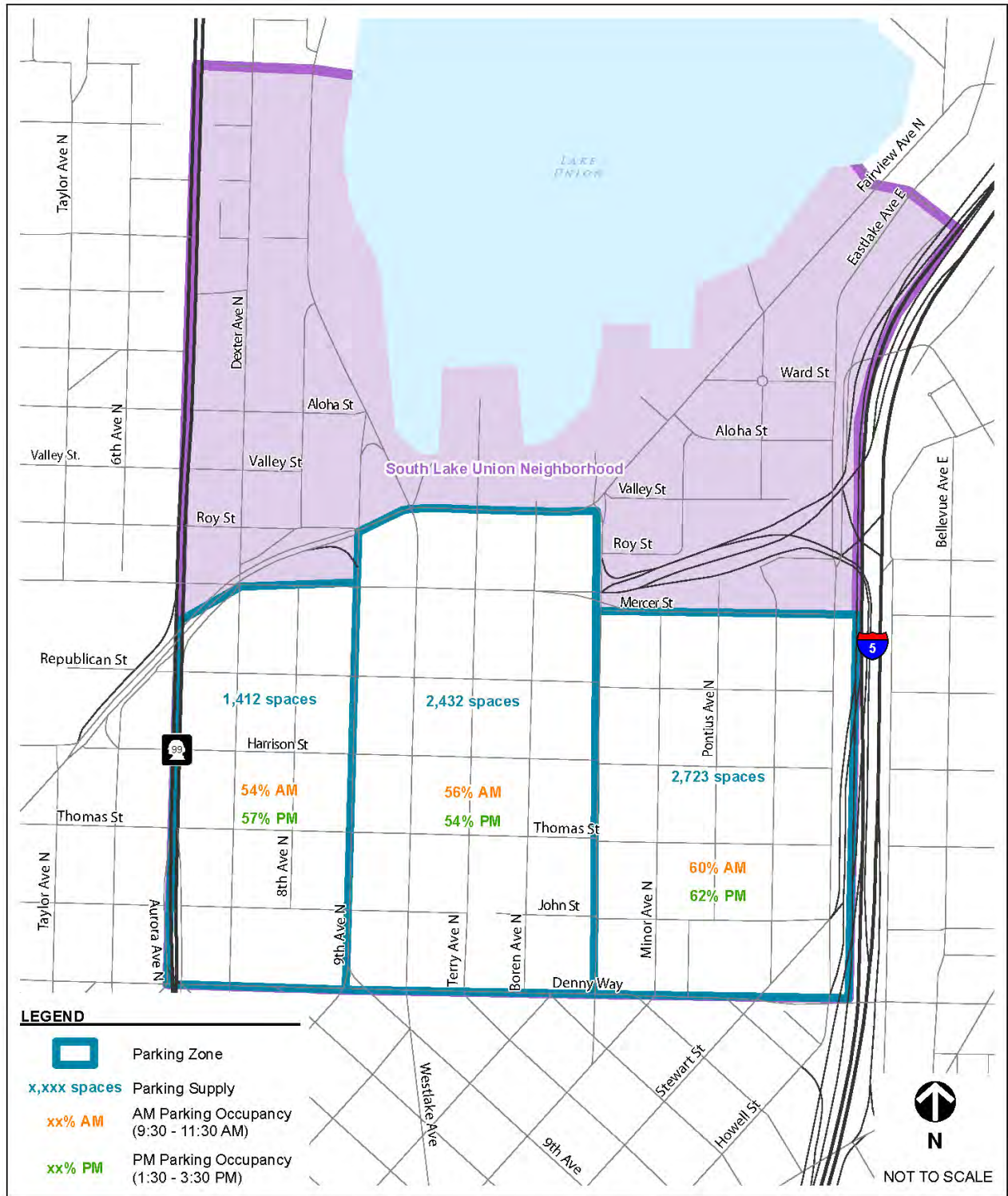
Off-Street Parking

The 2006 Puget Sound Regional Council (PSRC) off-street parking inventory included most of the study area; those areas excluded were primarily north of Mercer. Results were aggregated into three subareas:

- Denny Park area bounded by Mercer Street/Broad Street, Denny Way, 9th Avenue N, and Aurora Avenue N
- South Waterfront/Westlake area bounded by Valley Street, Denny Way, Fairview Avenue N, and 9th Avenue N
- Cascade area bounded by Mercer Street, Denny Way, I-5 and Fairview Avenue N

Figure 3.5-6 summarizes the parking supply, morning occupancy, and afternoon occupancy within each subarea in 2006.

Figure 3.5-6
Off-Street Parking Supply and Occupancy (2006)



Source: Fehr & Peers, 2010

As indicated in **Figure 3.5-6**, occupancy was relatively uniform between the morning and afternoon periods. The highest occupancies (60 percent in the morning and 62 percent in the afternoon) were observed east of Fairview Avenue N in the Cascade neighborhood where most of South Lake Union's residences are located. West of Fairview Avenue N, occupancies were slightly lower, ranging from 54 to 57 percent.

Recent field observations generally confirm the results from the 2006 PSRC study; however, discussions with property managers and field observations suggest that off-street facilities are often full in the vicinity of the Amazon headquarters along Terry and Boren Avenues.

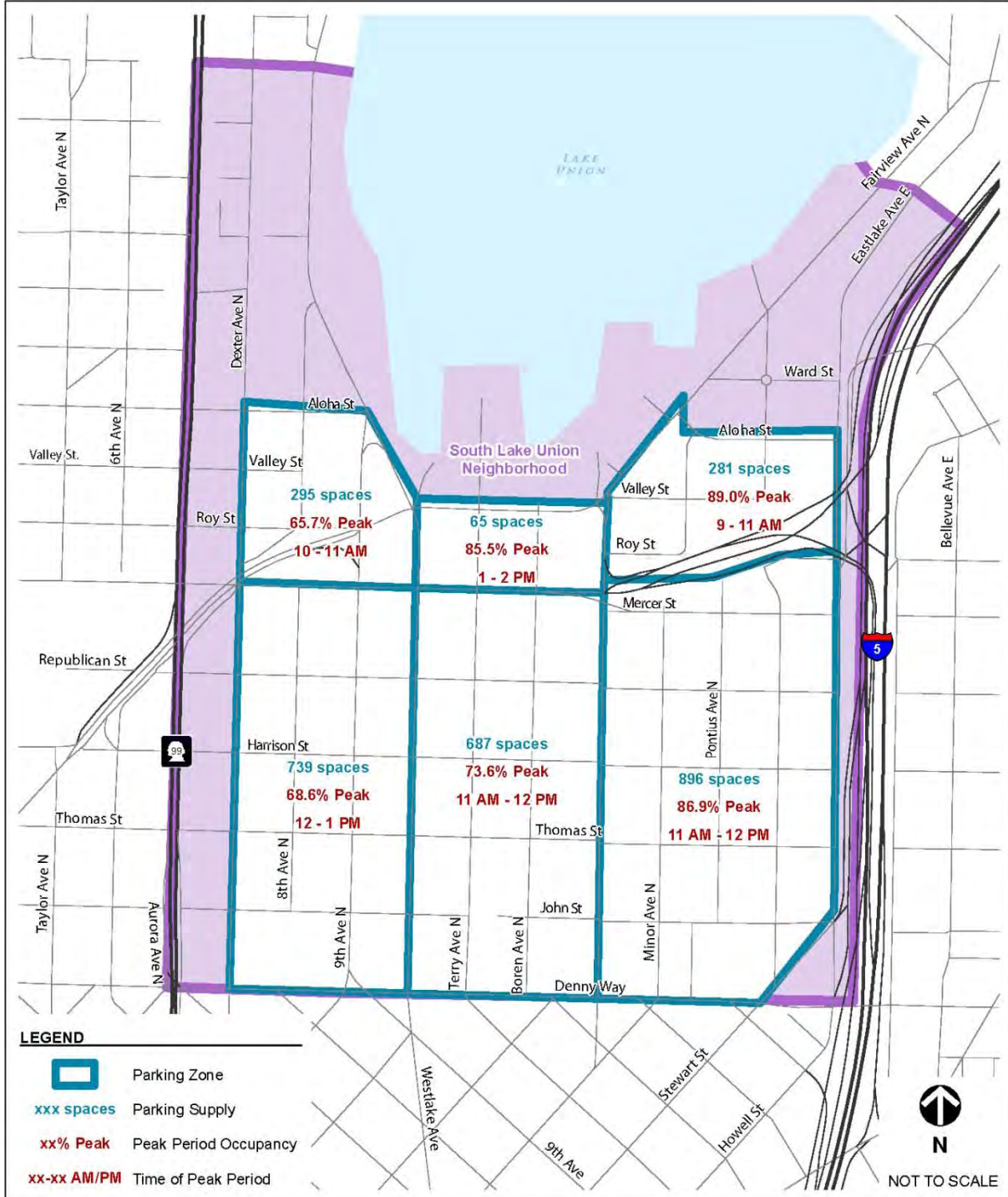
On-Street Parking

The *2006 South Lake Union On-Street Parking Study* counted nearly 3,000 on-street parking spaces in the South Lake Union neighborhood. The study provides the supply and utilization data presented in **Figure 3.5-7**. The study sampled approximately 40 percent of the spaces between the hours of 8 AM and 6 PM. Note that this study was completed when most parking spaces were unrestricted in terms of time limits, and there was no Restricted Parking Zone. When the survey was completed, only 76 spaces were metered.

Following the completion of the 2006 study, pay stations were implemented in the South Lake Union area. The time limits and prices are as follows:

- Two-hour parking at a rate of \$1.50 per hour, which is geared towards higher demand areas such as along Westlake Avenue N
- Ten-hour parking at a rate of \$1.25 per hour, tailored for long-term users, such as local employees

Figure 3.5-7
Off-Street Parking Supply and Occupancy (2006)



Source: Fehr & Peers, 2010

In addition, a Restricted Parking Zone (RPZ) with the following boundaries was created: Mercer Street to the north, John Street to the south, Fairview Avenue N to the west, and Eastlake Avenue E to the east. Eligible residents within these boundaries may purchase RPZ permits that allow them free parking not subject to the two-hour time limit on RPZ signed streets (not all block faces within the RPZ are subject to the restrictions). Non-permitted vehicles are prohibited from long-term parking in this RPZ (Zone 24) from 8 AM to 6 PM, Monday through Sunday.

Figure 3.5-8 shows the type of on-street parking currently available on each block within South Lake Union.

In November 2010, the Seattle Department of Transportation conducted a parking study that included parts of South Lake Union. The results are summarized in **Figure 3.5-9**. The areas included in the study were:

- The area bounded by Republican Street to the north, John Street to the south, Dexter Avenue N to the west, and Westlake Avenue to the east
- The area bounded by Republican Street to the north, John Street to the south, Fairview Avenue N to the west, and Yale Avenue N to the east

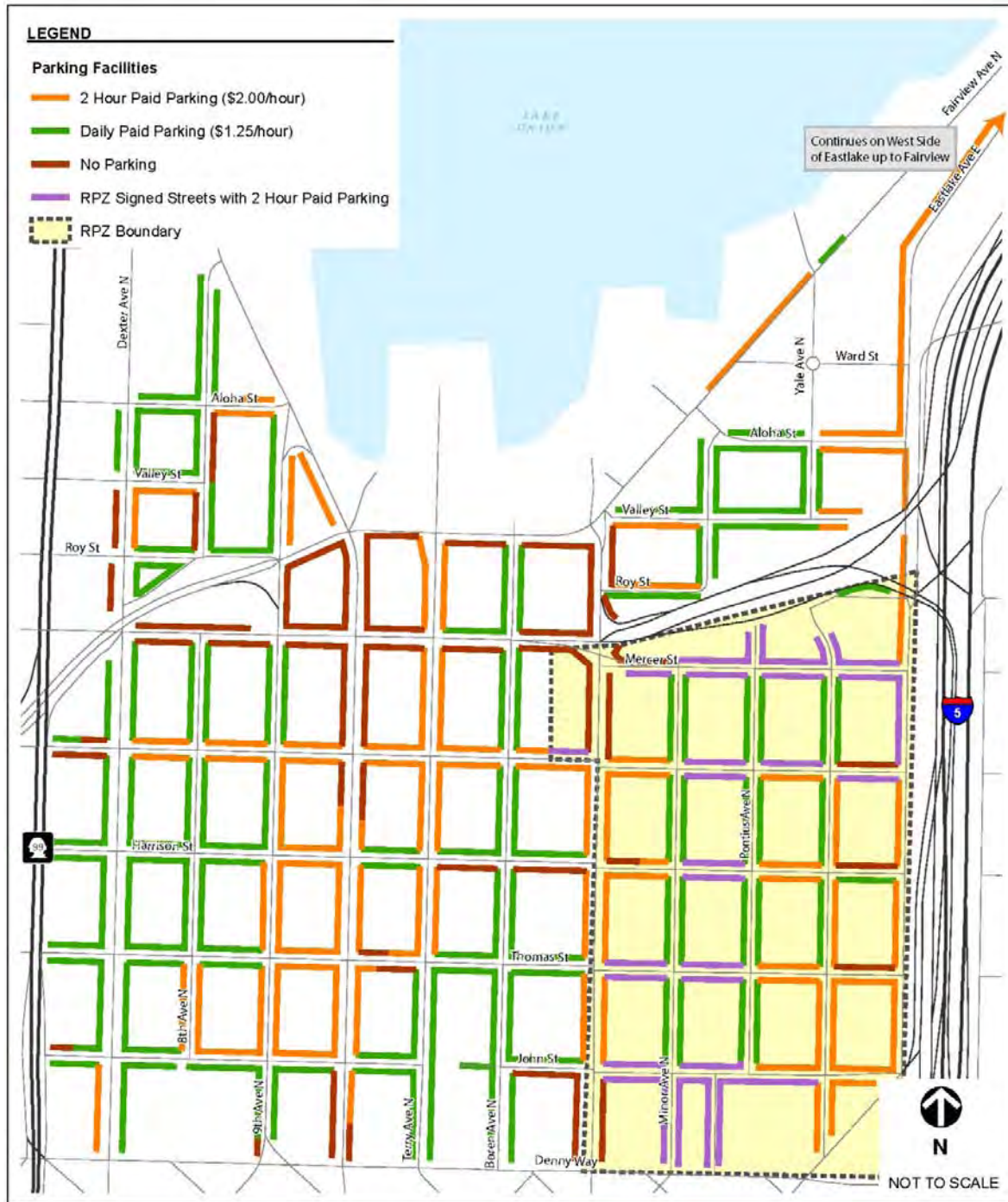
The eastern subarea, which lies within the RPZ, experienced its peak occupancy of 82 percent from 7 to 8 PM. The western subarea experienced its peak occupancy of 51 percent from 11 AM to 12 PM. Overall, the ten-hour spaces had higher occupancy rates than the two-hour spaces from 10 AM to 5 PM, after which the two-hour spaces had higher occupancy.

As was the case with off-street parking, recent field observations indicate that the ten-hour parking spaces are full in the vicinity of the Amazon headquarters along Terry and Boren Avenues. Outside of that area, there are usually 10-hour parking spaces available.

The 2006 and 2010 on-street parking studies both indicate high occupancy in the Cascade area east of Fairview Avenue N and south of the I-5 ramps, however the peak time of day differed. In 2006, the occupancy peaked at 86.9 percent between 11 AM and 12 PM, while in 2010 the occupancy peaked at 82 percent between 7 and 8 PM. The 2006 study found similarly high occupancy rates (peaking at 85.5 to 89 percent) in the area east of Westlake Avenue N and north of Mercer Street. The other area of comparison between the two studies is the southwest corner of South Lake Union. In 2006, occupancy peaked at 68.6 percent between 12 and 1 PM, but in 2010 the peak dropped to 51 percent between 11 AM

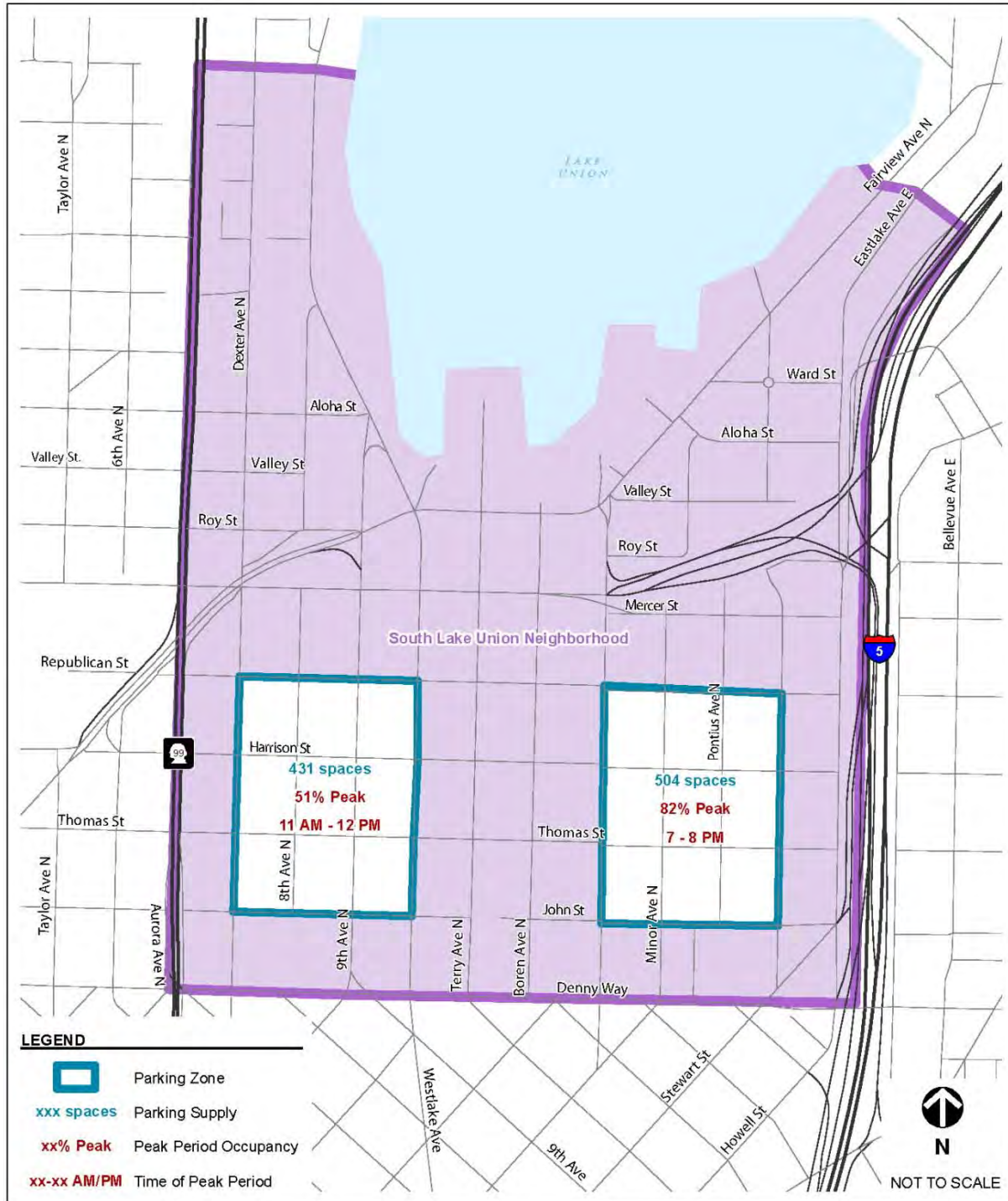
and 12 PM. These changes in occupancy may be due to different economic conditions between 2006 and 2010, and also due to the introduction of paid parking and the subsequent rate increase in 2009.

Figure 3.5-8
On-Street Parking Facilities – Existing Conditions



Source: Fehr & Peers, 2010

Figure 3.5-9
On-Street Parking Supply and Occupancy (2010)



Source: Fehr & Peers, 2010

Freight

While South Lake Union is continuing to transition from a light industrial center to a mixed-use neighborhood with service employment and

residential uses, freight movement is an important consideration in the area. In particular, Mercer Street, Valley Street, and Broad Street provide an important connection between the industrial uses in the Interbay area and I-5. Westlake Avenue N north of Mercer Street also provides an important freight connection to the Fremont neighborhood north of the Ship Canal.

While the City of Seattle allows truck traffic on all arterials in the City, a specific set of "major truck streets" has been defined to serve as primary routes focused on moving trucks through the City. Major truck streets within and in the vicinity of South Lake Union are shown in **Figure 3.5-10**.

Figure 3.5-10
Major Truck Streets – Existing Conditions



Source: Fehr & Peers, 2010

Analysis Methodology

This section describes the methodology used to analyze the existing conditions of the South Lake Union neighborhood transportation network.

Roadway Network

Level of Service

Level of Service (LOS) is a common metric used to assess the level of congestion of the roadway network and average driver delay. Historically, transportation impact analyses in the City of Seattle have used intersection LOS, which purely measures a road's performance for autos. The measure does not reflect the performance of the network for other users such as bicyclists and pedestrians.

Further, while intersection-level analysis may be appropriate for assessing the effects of individual parcels or block development, a more broad-based assessment is typical for the analysis of larger scale changes like rezones and other comprehensive planning efforts. The following reasons describe why a corridor analysis is appropriate for the South Lake Union height and density rezone analysis:

1. Single intersection analysis will not provide a systematic, area-wide impact assessment for a neighborhood like South Lake Union where complex transportation facilities and services are inter-related. A "pin map" approach might give some information about individual intersections in a vacuum, but it would not portray the effects of long queues, side-street diversions, and the spill back effect of congestion on regional roads such as I-5.
2. Intersection analysis measured purely from the driver's perspective ignores other potential effects of development; in particular, impacts on bicyclists and pedestrians. This approach is not able to effectively evaluate improvement projects (including pedestrian and bicycle projects) as mitigation measures that are not part of, or immediately adjacent to an intersection.

Measuring delay and congestion on a corridor or roadway segment basis effectively addresses the first issue. The *Highway Capacity Manual* (HCM) defines how LOS is calculated for many types of transportation facilities, including urban roadway segments and corridors.

Many agencies and departments of transportation have translated the corridor congestion levels defined above into a series of volume-to-capacity ratios. As further discussed below, this type of analysis provides

the opportunity to consider mobility in the area from a multi-modal perspective, not only the driver's perspective. One of the most commonly accepted set of thresholds is defined by the Florida Department of Transportation², and is summarized in **Table 3.5-2**, along with definitions for each level of service³.

² In the *2009 FDOT Quality/Level of Service Handbook*, the Florida Department of Transportation applied the methodologies described in Chapter 10 of HCM for a variety of rural, suburban, and urban roadway facilities to simplify the definition of roadway segment operations.

³ *Highway Capacity Manual 2000*, p. 10-5.

Table 3.5-2
Levels of Service

LOS	Description	Percentage of Free Flow Speed	Volume-to-Capacity Ratio ¹
A	Primarily free-flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream and average driver delay at signalized intersections is minimal.	90	<0.40 ²
B	Reasonably unimpeded operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and average driver delays at signalized intersections are not substantial.	70	<0.40 ²
C	Stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than at LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds.	50	<0.40 ²
D	Borders on substantial delay and decreases in travel speed. May be due to adverse signal progression, inappropriate signal timing, high volumes, or a combination of these factors.	40	0.40-0.89
E	Characterized by major delays. Such operations are caused by a combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	33	0.90-0.99 ³
F	Characterized by urban street flow at extremely low speeds. Intersection congestion is likely at critical signalized locations, with high delays, high volumes, and extensive queuing.	<33	>1.00

Notes:

¹ Valid for one-way roads/two-way roads with turn lanes at major intersections, which is representative of the South Lake Union street network

² Based on the HCM definition, there is no distinction between LOS A, B, or C for urban roadway segments since speed limits are low for these streets

³ The HCM defines roadway capacity as LOS E. Any roadway that has a volume or traffic demand that exceeds 1.0 is defined as operating at LOS F conditions

Source: Highway Capacity Manual, Transportation Research Board, 2000; 2009 FDOT Quality/Level of Service Handbook, Florida Department of Transportation, 2009.

Corridor LOS Analysis

To assess the level of vehicle congestion in the vicinity of South Lake Union, a set of study corridors were selected based primarily on the average volume of traffic and speed of the roadway and the proportion of traffic related to the South Lake Union neighborhood. All road segments within the traffic impact analysis area were considered for inclusion as a study corridor. In general, corridors satisfying both of the following conditions were selected.

- Classification as a principal or minor arterial (generally higher volume streets)
- Carries at least five percent of traffic generated within the South Lake Union neighborhood (as estimated by the City's travel model for 2031)

Ten corridors satisfied both criteria. Exceptions to the basic criteria were made to better capture the traffic operations in the traffic impact analysis area. For example, less than five percent of South Lake Union related traffic travels on E Pine Street, but of arterials accessing First Hill, it carries the highest percentage of such traffic. Therefore, E Pine Street was included as a study corridor. Likewise, the Lakeview Boulevard E and Denny Way I-5 overpasses were selected to capture the traffic impacts of the main Capitol Hill access points. Another exception was made to ensure that an east-west connection within the South Lake Union neighborhood would be studied. Thomas and Harrison Streets are study corridors despite being classified as access streets. Republican Street was not selected as a study corridor since, despite being classified as minor arterial, the traffic conditions on Thomas and Harrison Streets are similar based on existing traffic counts and any development-related impacts are expected to be similar on all three streets. Some corridors were broken into multiple segments to reflect the differing characteristics along a single route. For example, Fairview Avenue N was split at Yale Avenue N and Harrison Street to reflect the congestion that occurs on both sides of the intersection with Mercer Street. **Table 3.5-3** lists the selected study segments and **Figure 3.5-11** displays them on a map of the area.

Demand-to-Capacity Ratios. For each study segment, demand-to-capacity (d/c) ratios were calculated using traffic count data provided by the City of Seattle and roadway capacity estimates described below. D/C ratios give an indication of the level of congestion that exists today. The d/c ratios are very similar to the v/c ratios described earlier; however the d/c ratio has a slightly broader definition:

Under existing conditions, the d/c ratio is equal to the volume of traffic traveling along a segment during a set period, plus the vehicles that are waiting in a queue to traverse the segment.

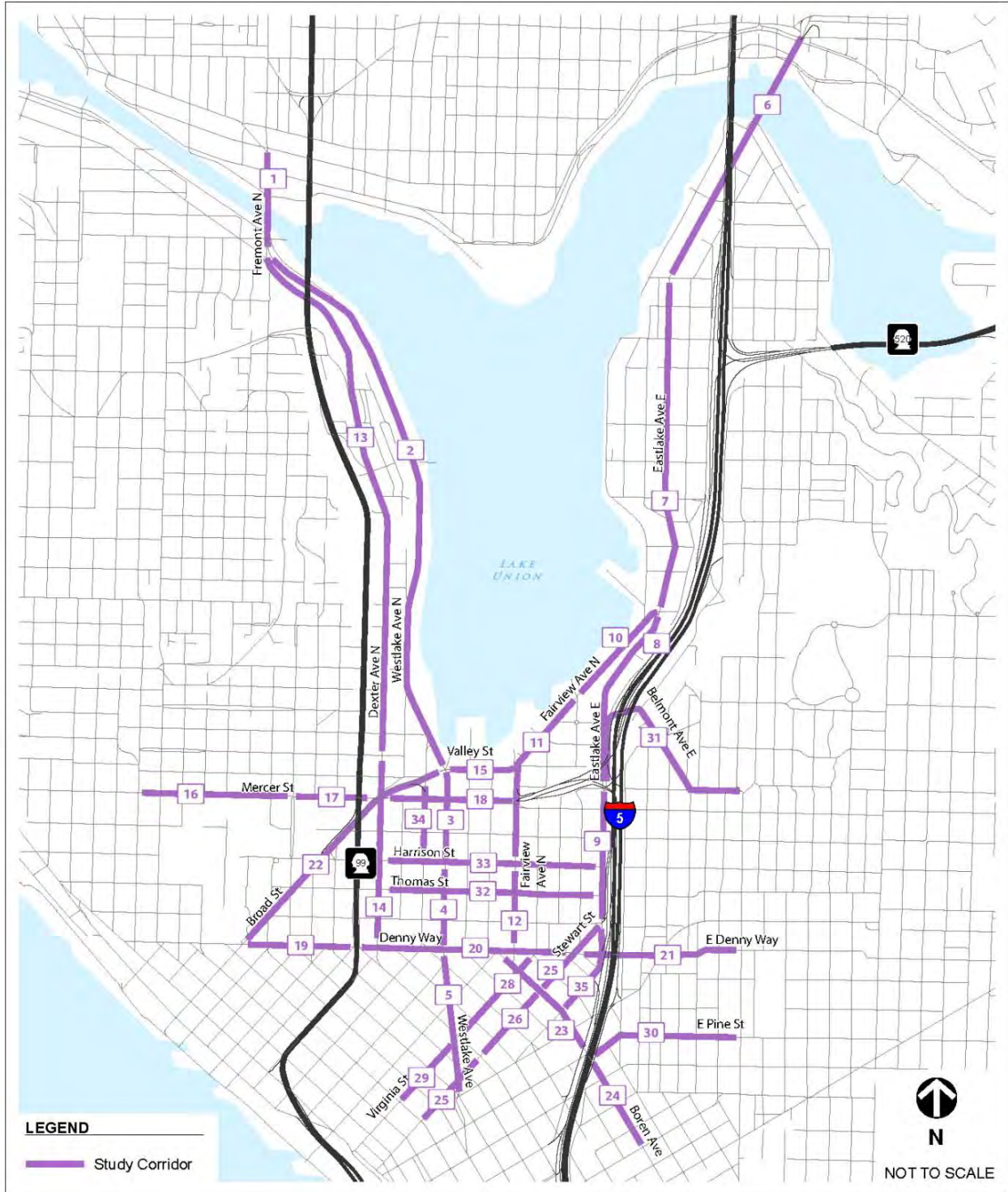
For most of the corridors in the South Lake Union neighborhood, the d/c ratio is equivalent to the v/c ratio. However for congested corridors like Mercer Street and Fairview Avenue N, the d/c ratio is higher because of the queues waiting to access these streets.

Table 3.5-3
Study Corridors

Road	Segment
Fremont Bridge	1) N 35th Street to Westlake Avenue N
Westlake Avenue N	2) Fremont Bridge to Valley Street 3) Valley Street to Harrison Street 4) Harrison Street to Denny Way 5) Denny Way to Stewart Street
Eastlake Avenue E	6) N 40th Street to E Hamlin Street 7) E Hamlin Street to Fairview Avenue N 8) Fairview Avenue to Lakeview Blvd E 9) Lakeview Blvd E to Stewart Street
Fairview Avenue N	10) Eastlake Avenue to Yale Avenue N 11) Yale Avenue N to Harrison Street 12) Harrison Street to Denny Way
Dexter Avenue N	13) Fremont Bridge to Valley Street 14) Valley Street to Denny Way
Valley Street	15) Westlake Avenue N to Fairview Avenue N
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N 17) 5th Avenue N to Dexter Avenue N 18) Dexter Avenue N to Fairview Avenue N
Denny Way	19) Broad Street to Aurora Avenue N 20) Aurora Avenue N to Stewart Street 21) Stewart Street to Broadway E
Broad Street	22) Denny Way to Westlake Avenue N
Boren Avenue	23) Denny Way to Pine Street 24) Pine Street to University Street
Stewart Street	25) Eastlake Avenue E to Boren Avenue 26) Boren Avenue to 7th Avenue 27) 7th Avenue to 3rd Avenue
Virginia Street	28) Denny Way to Westlake Avenue N 29) Westlake Avenue N to 3rd Avenue
E Pine Street	30) Boren Avenue to Broadway
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E
9th Avenue N	34) Roy Street to Republican Street
Howell/Eastlake	35) Stewart Street to Boren Avenue

Source: Fehr & Peers, 2010

Figure 3.5-11
Study Corridors – Existing Conditions



Source: Fehr & Peers, 2010

The d/c ratio measures the typical observed peak period queue and adds those queued vehicles to the congested segments. The advantage of this approach is that it more accurately captures the total traffic demand and the inter-related nature of the roadways in South Lake Union.

For example, Mercer Street is congested for a considerable portion of the afternoon peak period due to congestion at the Mercer Street/Fairview Avenue N intersection. Based on several field visits, the queue typically extended back from this intersection approximately a half mile. Based on this level of queuing and the location of the bottleneck, the d/c ratio of the segment of Mercer Street was calculated by adding the observed traffic counts and the estimated number of vehicles waiting in the queue. This type of calculation better captures the level of traffic congestion on the roadway network than v/c ratios, which only measure the number of vehicles that pass through the count location (which ignores the vehicles in queue due to congestion).

As described in the HCM, LOS definitions above, a d/c ratio exceeding 0.9 (corresponding to LOS E and F conditions) suggests that drivers, transit vehicles (and their passengers) likely experience undesirable delays and queues at key intersections along the corridor. Therefore, this analysis methodology speaks to both roadway and intersection congestion on the study corridors for drivers and transit passengers.

A key consideration in measuring d/c ratios was determining the lane capacity of each segment. Lane capacity is a measurement of how many vehicles per hour can travel within the travel lanes on various streets. Lane capacity was determined by starting with the assumptions in the City of Seattle travel model, which were then adjusted, based on each segment's location and operational characteristics, such as whether it was one-way or two-way or had turn pockets. In general, these capacity adjustments are consistent with those listed in the *2009 FDOT Quality/Level of Service Handbook*. Based on these considerations, the following base lane capacities were assigned.

Principal and Minor Arterials: Principal and Minor Arterials are streets that generally carry the highest number of vehicles on an average weekday.

- Downtown— lane capacity is 600 vehicles per hour (vph)
- South Lake Union—lane capacity is 700 vehicles per hour
- Outside South Lake Union and Downtown—lane capacity is 800 vehicles per hour

Non-Arterials: Non-Arterials are access roads and other streets that carry fewer vehicles per day.

- Harrison and Thomas Streets—lane capacity is 600 vehicles per hour

As shown above, the lane capacity of arterial streets is assumed to be lowest in Downtown, slightly higher in South Lake Union, and highest in areas outside of South Lake Union and Downtown. The reason for this difference in capacity has to do with how fast vehicles can travel along a stretch of roadway.

Downtown has the lowest base lane capacity since this portion of the study area has the greatest number of traffic signals per mile and the greatest level of pedestrian and transit activity. Research in the HCM indicates that closely spaced traffic signals generally degrade the vehicle capacity of roadway corridors; however, short blocks and frequent crossing opportunities are better for pedestrians. The high level of pedestrian and bus activity in Downtown reduces the lane capacity further since busses can block travel lanes when loading and heavy pedestrian traffic can block turning vehicles. We verified these lane capacities with field observations, which indicated that pedestrian activity and queue spillback between signalized intersections reduced roadway capacities in Downtown and portions South Lake Union.

Base lane capacities were increased by 20 percent for one-way streets since they operate more efficiently than two-way streets due to reduced turning conflicts and more efficient traffic signal operations. In addition, a 20 percent adjustment was made in some locations to account for turn lanes, which further increase the capacity of a street, since vehicles waiting for a gap in traffic to execute a turn are not blocking through traffic. Some additional adjustments were made at select locations to reflect actual lane capacities. For example, although E Pine Street has no turn lane, the road is wide enough to allow through traffic to pass turning cars so it was treated as if it had a turn lane. These increases in base capacity for one-way streets and streets with turn lanes is consistent with the methodology recommended by the Florida Department of Transportation (see **Appendix E**).

Certain streets have unique circumstances that affect their lane capacities. For instance, on Mercer Street there are four through lanes, but only three of them lead onto the I-5 ramps. Because the vast majority of motorists are accessing the ramps, the fourth lane is underutilized. Counting it as a full lane would overestimate the capacity of the street. In this case, the number of through lanes was adjusted to 3.5 to accurately represent the

traffic operations on Mercer Street. A similar lane adjustment was used on Westlake Avenue N where the streetcar tracks run in the outside lane. Motorists tend to avoid driving in that lane resulting in a reduced capacity. Some streets like Eastlake Avenue N have parking allowed in certain directions during portions of the day. The capacity analysis took into account the variations in the number of lanes on these streets.

Transit

Based on correspondence with King County Metro, which owns and operates the transit system, passenger load factor of bus service was selected as the key performance measure for transit in the study area. Information about transit frequency and span of service was also described, but since the Height and Density alternatives do not affect these factors, an impact analysis was not performed.

While documents like the *Urban Village Transit Network*, and the *2005 Transit Master Plan* identify transit reliability as another important service measure, reliability is difficult to measure and forecast without a detailed traffic/transit simulation model and this measure was not considered as part of this study.

Load factor is the ratio of passengers to seating capacity on a bus line during the peak hour. King County Metro provided data from Spring 2010 for routes serving the South Lake Union neighborhood. Details of the transit analysis methodology may be found in **Appendix E**.

Traffic Safety

The traffic safety analysis is based on previous transportation analyses prepared in the South Lake Union area. These earlier studies have used the concept of High Accident Locations, which the City of Seattle defines as follows:

- Signalized intersections with an average of ten or more traffic collisions per year
- Unsignalized intersections with an average of five or more collisions per year

High Accident Locations will be targeted for future safety improvements in an effort to reduce the number of collisions.

While the previous studies evaluated High Accident Locations in general, they did not specifically define any High Accident Location standards for pedestrian or bicycle collisions. Given the substantial increase in new land uses (and therefore additional demand for pedestrian and bicycle travel in the area) associated with the height and density rezone alternatives, a

pedestrian/bicycle intersection of interest is identified if *either* of the criteria below are met:

- Any intersection with an average of 1.7 or more pedestrian **or** bicycle collisions per year (which equates to five or more collisions in a three-year period),
- Or any intersection with average of 2.3 or more pedestrian **and** bicycle collisions per year (which equates to seven or more collisions in a three-year period).

The first criteria treats pedestrian and bicycle collisions separately, while the second combines the two measures.

Analysis Results

This section presents the results of the existing traffic conditions analysis.

Existing Study Corridor Demand-to-Capacity Ratios

Table 3.5-4 and **Figure 3.5-12** display the results of the d/c ratio analysis.

In some instances, a road segment may operate with standing queues despite having a d/c ratio well below 1.0. Such instances are noted below with an asterisk to indicate that standing queues were observed in the field. As described earlier, the intersection of Mercer Street and Fairview Avenue N is congested and causes queue spillbacks onto adjacent streets like 9th Avenue N, Westlake Avenue N, and Fairview Avenue N. While the d/c ratio technique takes into account congestion on the street with the main bottleneck, it does not account for intersection queues on minor streets as traffic attempts to merge into the major-street queue. The following facilities have d/c ratios greater than 1.0:

- Valley Street from Westlake Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street

Table 3.5-4
Existing Condition Demand-to-Capacity Ratios of Study Corridors

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,424	PM	N	2	1,600	0.89/D
Westlake Avenue N	2) Fremont Bridge to Valley Avenue	1,169	PM	N	2	1,600	0.73/D
	3) Valley Street to Harrison Street	1,093	PM	N	2	1,400	0.78*/D
Eastlake Avenue E	4) Harrison Street to Denny Way	685	PM	N	2	1,400	0.49/D
	5) Denny Way to Stewart Street	357	PM	N	1.5	900	0.40/D
	6) N 40th Street to E Hamlin Street	890	PM	NE	2	1,920	0.46/D
Fairview Avenue N.	7) E Hamlin Street to Fairview Avenue N	871	PM	N	2	1,920	0.45/D
	8) Fairview Avenue to Lakeview Blvd E	549	PM	S	1	700	0.78/D
	9) Lakeview Blvd E to Stewart Street	802	PM	N	2	1,400	0.57/D
Dexter Avenue N	10) Eastlake Avenue to Yale Avenue N	479	PM	SW	1	700	0.68/D
	11) Yale Avenue N to Harrison Street	1,186	AM	S	2	1,680	0.78*/D
	12) Harrison Street to Denny Way	745	PM	N	2	1,680	0.44/D
Valley Street	13) Fremont Bridge to Valley Street	848	AM	S	1	960	0.88/D
	14) Valley Street to Denny Way	848	AM	S	2	1,400	0.61/D
Mercer Street	15) Westlake Avenue N to Fairview Avenue N	2,372	PM	W	3	2,100	1.13/F
	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM	E	2	1,680	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM	E	3.5	3,185	0.45*/D
Denny Way	18) Dexter Avenue N to Fairview Avenue N	2,929	PM	E	3.5	3,185	0.99*/E
	19) Broad Street to Aurora Avenue N	1,031	PM	W	2	1,680	0.61/D
	20) Aurora Avenue N to Stewart Street	1,233	PM	E	1.5	1,050	1.17/F
Broad Street	21) Stewart Street to Broadway E	864	PM	W	2	1,600	0.54/D
	22) Denny Way to Westlake Avenue N	1,643	PM	SW	2	1,820	0.90/E

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Boren Avenue	23) Denny Way to Pine Street	1,136	PM	NW	2	1,200	0.95/E
	24) Pine Street to University Street	862	PM	NW	2	1,200	0.72/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	1,894	AM	SW	3.5	2,100	0.90*/E
	26) Boren Avenue to 7th Avenue	1,278	AM	SW	3	1,800	0.71/D
	27) 7th Avenue to 3rd Avenue	729	AM	SW	2	1,200	0.61/D
Virginia Street	28) Denny Way to Westlake Avenue N	603	PM	NE	2	1,200	0.50/D
	29) Westlake Avenue N to 3rd Avenue	832	PM	NE	3	1,800	0.46/D
E Pine Street	30) Boren Avenue to Broadway	530	PM	W	1	720	0.74/D
Lakeview/Belmont/ Roy	31) Eastlake Avenue to Broadway E	415	PM	E	1	800	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	260	PM	W	1	600	0.43/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	300	PM	W	1	600	0.50/D
9th Avenue N	34) Roy Street to Republican Street	1,214	PM	S	3	700	0.58/D
Howell/Eastlake	35) Stewart Street to Boren Avenue	424	AM	S	1	600	0.71/D

Source: City of Seattle count data, 2004-2010.

* Standing queues observed. As a result, actual LOS may be worse.

Figure 3.5-12
Demand to Capacity Ratios – Existing Conditions



Source: Fehr & Peers, 2010

In addition, queue spillbacks were observed on the following segments:

- 9th Avenue N from Westlake Avenue N to Mercer Street (because of the queues on Mercer Street)
- Westlake Avenue N from Valley Street to Harrison Street (because of the queues on Mercer Street)
- Fairview Avenue N from Yale Avenue N to Harrison Street (because of the queues on Mercer Street)
- Mercer Street from 5th Avenue N to Dexter Avenue N
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Stewart Street from Eastlake Avenue E to Boren Avenue

Transit

Tables 3.5-5 and 3.5-6 summarize the load factors for transit routes serving the South Lake Union neighborhood in 2010. **Table 3.5-1** summarizes the AM peak period, PM peak period, and Midday period transit frequencies for the bus lines serving the area. The AM peak hour load factor is calculated based on the highest one-hour ridership on the route between 6 to 9 AM. The PM peak hour load factor is based on the highest one-hour ridership between 3:15 to 6:30 PM. For each route, the peak hour load factors for both directions are shown.

According to King County Metro, load factor is based on the highest ridership along the route. Therefore, the maximum load does not necessarily occur in the South Lake Union neighborhood. King County Metro aims for an aggregate load factor of 0.5 to 0.8 for each peak period. A load factor below 0.5 indicates too much capacity and a load factor above 0.8 indicates that some trips will have standing passengers. As described above, since King County Metro owns and operates the transit system, their load factor criteria is used to identify impacts; a peak hour load factor exceeding 1.25 is considered by King County Metro to be deficient.

Table 3.5-5
South Lake Union Transit AM Peak Hour Load Factors

Route	Termini Locations	Peak Hour Load Factor	
		NB	SB
5/54/55	Shoreline, West Seattle	0.41	0.86
8	Uptown, Rainier Valley	0.70	0.81
16	Downtown, Northgate	0.67	0.93
17/27	Loyal Heights, Leschi	0.52	0.86
25/37	Laurelhurst, West Seattle	0.47	0.63
26/124	Green Lake, Tukwila	0.46	0.71
23/28	Broadview, White Center	0.45	0.81
30	Sandpoint, Seattle Center	0.83	0.84
66	Downtown, Northgate	0.69	1.17
70	Downtown, University District	0.73	0.89
358	Downtown, Aurora Village Transit Center	0.66	0.81

Source: King County Metro, Spring, 2010.

Table 3.5-6
South Lake Union Transit PM Peak Hour Load Factors

Route	Termini Locations	Peak Hour Load Factor	
		NB	SB
5/54/55	Shoreline, West Seattle	0.76	0.45
8	Uptown, Rainier Valley	0.56	0.97
16	Downtown, Northgate	0.80	1.08
17/27	Loyal Heights, Leschi	0.87	0.71
25/37	Laurelhurst, West Seattle	0.43	0.40
26/124	Green Lake, Tukwila	0.63	0.63
23/28	Broadview, White Center	0.70	0.55
30	Sandpoint, Seattle Center	0.96	1.08
66	Downtown, Northgate	0.83	0.63
70	Downtown, University District	0.63	0.67
358	Downtown, Aurora Village Transit Center	0.84	0.87

Source: King County Metro, Spring 2010.

Travel Demand Management

In 2004, the City Council directed the Seattle Department of Transportation to create a transportation demand management (TDM) program for South Lake Union. That report suggested strategies for the neighborhood to minimize the negative travel effects brought on by substantial growth. Those strategies included increased management of on-street and off-street parking, expansion of transit service, and the creation of a single transportation management organization that would conduct marketing and customer service to promote alternatives to driving alone.

Two types of travel demand management programs affect South Lake Union. The State's Commute Trip Reduction Law applies to larger employers. The City's Transportation Management Program applies to larger buildings (even if those buildings are occupied by small employers). Both programs are aimed at encouraging employees to reduce their drive-alone rate by implementing TDM programs and progress is monitored periodically.

Surveys are conducted every two years to measure the progress of companies affected by the State's Commute Trip Reduction Law. In a recent evaluation of these surveys, sixteen participating South Lake Union companies produced varied results. Each employer has its own mode split and VMT goals, based on a targeted reduction to its past rates. Nine companies achieved their single-occupant vehicle (SOV) mode-split goal, four reduced their SOV rate but did not reach their goal, while three increased their SOV rate. These results represent roughly 8,750 South Lake Union commuters. Of companies who have reached their mode-split goals, SOV rates range from 30 to 61 percent. The complete table may be found in **Appendix E**.

More detailed mode-split information was available for eight South Lake Union companies. That data is summarized in **Table 3.5-7**.

Table 3.5-7
Sample Mode-Split of South Lake Union CTR Participants

Company	Most Recent		Mode Split (%)			
	SOV Goal*	SOV	HOV	Transit	Bicycle	Walk
Alley 24 East & West	63	58	9	18	2	8
Gates Foundation	56	62	10	8	4	7
Group Health	47	37	14	38	2	3
Microsoft	34	37	15	23	2	14
Pemco	50	49	13	25	0	2
REI	39	39	4	20	16	5
Seattle Cancer Care Alliance	39	39	20	23	3	3
Tommy Bahama	50	45	19	25	2	5

Source: CTR Survey Reports, 2007-2010.

Freight

For the purposes of this study, the quality of freight mobility within South Lake Union will be assessed using the roadway segment d/c ratios on major truck streets. As described earlier, d/c ratios are correlated with traffic congestion and truck streets with high d/c ratios will be more difficult for trucks to navigate and have lower travel speeds, which can lead to delays.

As shown in **Table 3.5-4**, with the exception of Westlake Avenue N and Mercer Street west of Dexter Avenue N, all the major truck streets in the South Lake Union area (Mercer Street, Valley Street, and Broad Street) currently operate at LOS E or F conditions, with d/c ratios of 0.90 or greater.

Traffic Safety

The most recent (January 2007-December 2009) three-year collision records from the Seattle Department of Transportation were analyzed to determine if there were any High Accident Locations within the South Lake Union study area. The collision records identified only one High Accident Location at the intersection of Mercer Street and Taylor Avenue N. This unsignalized intersection experienced an average of five collisions per year over the last three years. A closer inspection of the collision data indicates that 40 percent of the collisions involved left turning vehicles while another 20 percent were right angle collisions. Most of the other collisions (33 percent) were sideswipes. These types of collisions are typical of unsignalized side-street intersections and often involve failure of a driver to properly yield right of way.

Previous studies in the area have identified other High Accident Locations within the South Lake Union study area, particularly at the intersections of Mercer Street and Fairview Avenue N, Mercer Street and Westlake Avenue N, Mercer Street and Dexter Avenue N, and Mercer Street and 5th Avenue N. These locations were reviewed for the average annual number of collisions over the three-year analysis period, but none of these locations met the City threshold defining a High Accident Location, with the highest collision rate of 8.7 occurring at Mercer Street and Fairview Avenue N.

The January 2007-December 2009 collision records from the Seattle Department of Transportation were also reviewed for pedestrian and bicycle collisions within the study area. Using the criteria defined in Analysis Methodology Section, the following two intersections were identified:

- Mercer Street and Dexter Avenue N – 1.7 bicycle collisions per year
- Eastlake Avenue and Fuhrman Avenue (south end of University Bridge) – 2.3 bicycle collisions per year

These two intersections correspond with intersections of major bicycle routes. Dexter Avenue N is also signed as the Interurban North bikeway and Eastlake Avenue near the University Bridge serves as a link on the Cheshiahud Lake Union Loop.

While this section identified several intersections with a relatively high number of collisions per year, the High Accident Location analysis methodology does not calculate a collision rate. Collision rates are often reported by state departments of transportation to identify locations that have a high number of collisions relative to the total traffic flow through the area.

3.5.2 Planning Scenarios Evaluated

This section describes the planning scenarios that will be evaluated in this document and presents the methodology and assumptions used to analyze the alternatives.

Four alternatives are evaluated under future year 2031 conditions. These include a No Action scenario that maintains South Lake Union's current zoning and three Action alternatives, which would increase the neighborhood's height and density zoning by varying degrees. Specifically, Alternatives 1 and 2 allow for increases to both residential and commercial development. Alternative 1 has higher allowable heights and densities, and Alternative 2 has more moderate standards. Alternative

3 allows commercial height and density focused primarily on residential development.

Transportation Network and Land Use Assumptions

This chapter assesses transportation system operations under 2031 conditions for all four future year scenarios. In general, the City of Seattle travel model forecast future background vehicle and transit volumes. For the South Lake Union area, we used a more refined method to project traffic volumes.

Per the direction of the Seattle Department of Transportation, the version of the City travel model used for this analysis was developed as a part of the Alaskan Way Viaduct (AWV) Replacement study and was used for the *AWV Supplemental Draft Environmental Impact Statement* (WSDOT, FHWA, and City of Seattle, July 2006). The following is a description of some of the travel model's key features.

- **Analysis Years:** This version of the model has a base year of 2008 and a horizon year of 2030. 2031 transportation forecasts for South Lake Union were developed by updating the land use forecasts and trip generation rates within the study area.
- **Network Representation:** The highway and major street systems (Westlake Avenue N, Fairview Avenue N, Mercer Street etc.) within South Lake Union are fully represented in the model.
- **Land Use:** The City of Seattle developed the estimates of citywide land use (residential, commercial, and industrial) for base and horizon year conditions.
- **Transit:** The travel model has a full representation of the transit system under base year conditions. The horizon year transit system is based on assumptions of service from the City of Seattle and the Puget Sound Regional Council.
- **Travel Costs:** The model accounts for the effects of auto operating costs, parking, transit fares, and tolls (on SR 520) on travel demand.
- **Travel Demand:** The model predicts travel demand for seven modes of travel: drive alone, carpool (2 person), carpool (3 plus), transit, trucks, walking, and bicycling. Travel demand is estimated for five time periods, morning (6 to 9 AM), midday (9 AM to 3 PM), afternoon (3 to 6 PM), evening (6 to 10 PM), and overnight (10 PM to 6 AM).

This chapter assumes several modifications to the transportation network in the Seattle travel model to better represent 2031 conditions. These

modifications were to ensure that only “reasonably foreseeable” transportation improvement projects were included in the future year analysis. The definition of reasonably foreseeable is based on the following criteria:

- Projects that have full funding commitments
- Projects with partial funding commitments but with a well-defined strategy in place to raise the remaining funds

Figure 3.5-13 shows the reasonably foreseeable projects in the study area. The bulk of the projects are related to the Mercer East and Mercer West projects, which will convert Mercer Street to two-way operations between I-5 and 1st Avenue N. This project affects several adjacent streets. The North Portal portion of the Alaskan Way Viaduct Replacement project is also assumed. This project will affect the southwestern corner of the South Lake Union neighborhood by completing the street grid across Aurora Avenue at John, Thomas, and Harrison Streets. The north portal of the bored tunnel will also require Broad Street to be vacated between 5th and 9th Avenues N.

Note that tolls are not assumed on the SR 99 bored tunnel since tolling was uncertain at the time this analysis began and the City of Seattle travel model did not include any tolls on SR 99. If tolling was assumed in the analysis, there would higher traffic volumes exiting at the new Aurora Avenue exits (27 percent increase), although total traffic entering and exiting to South Lake Union would decrease (13 percent) since the tolls will cause some traffic to divert to other routes such as I-5, Second Avenue, and Fourth Avenue. See the Alaskan Way Viaduct Replacement EIS for more information.

Note that the WSDOT SEIS is based on a particular tolling strategy and these results will vary if the legislature chooses to implement a different approach.

Transportation projects that do not meet the definition for reasonably foreseeable are shown in **Figure 3.5-14** (roadway improvements) and **Figure 3.5-15** (pedestrian and bicycle improvements)⁴. These projects are not assumed to be completed by 2031 and were not included in the travel

⁴ The PMP identifies locations where improvements are desirable, but does not identify specific projects. In those instances when it was reasonably clear what the general improvement would be, such as building a sidewalk where one was missing or adding a crosswalk, the location is shown in **Figure 3.5-15**.

model. Note that the full Mercer West project includes widening the Mercer Street underpass between Dexter Avenue N and 5th Avenue N to three lanes in each direction with left-turn lanes, wider sidewalks, and a bicycle path. Due to an expected funding shortfall, this part of the Mercer West project is not considered to be reasonably foreseeable. Instead, it is assumed that the Mercer Street underpass would operate with two lanes in each direction and no improvements to pedestrian or bicycle facilities. All other components of the Mercer West project are assumed to be reasonably foreseeable.

No changes were made to the travel model's horizon year transit network, since the region has a proven record of increasing transit service to keep up with population growth over the long-term. The current financial troubles faced by transit agencies would be speculative to assume for 2031 since there is no precedent for a long-term stagnation of transit funding.

A close review of the travel model indicated several bus route changes expected by 2031. Route 30 will no longer serve the study area⁵. The following new bus routes are expected to serve South Lake Union:

- Rapid Ride Line D: Ballard to Downtown Seattle
- Rapid Ride Line E: Aurora Avenue - Shoreline to Downtown Seattle
- Route 21: Arbor Heights to Downtown Seattle
- Route 29: Woodland Park to Downtown Seattle
- Route 56: Alki/West Seattle to South Lake Union
- Route 121: Burien to Downtown Seattle
- Route 308: Lake Forest Park to Downtown Seattle
- Route 313: Bothell to Uptown
- Route 316: Shoreline to Uptown

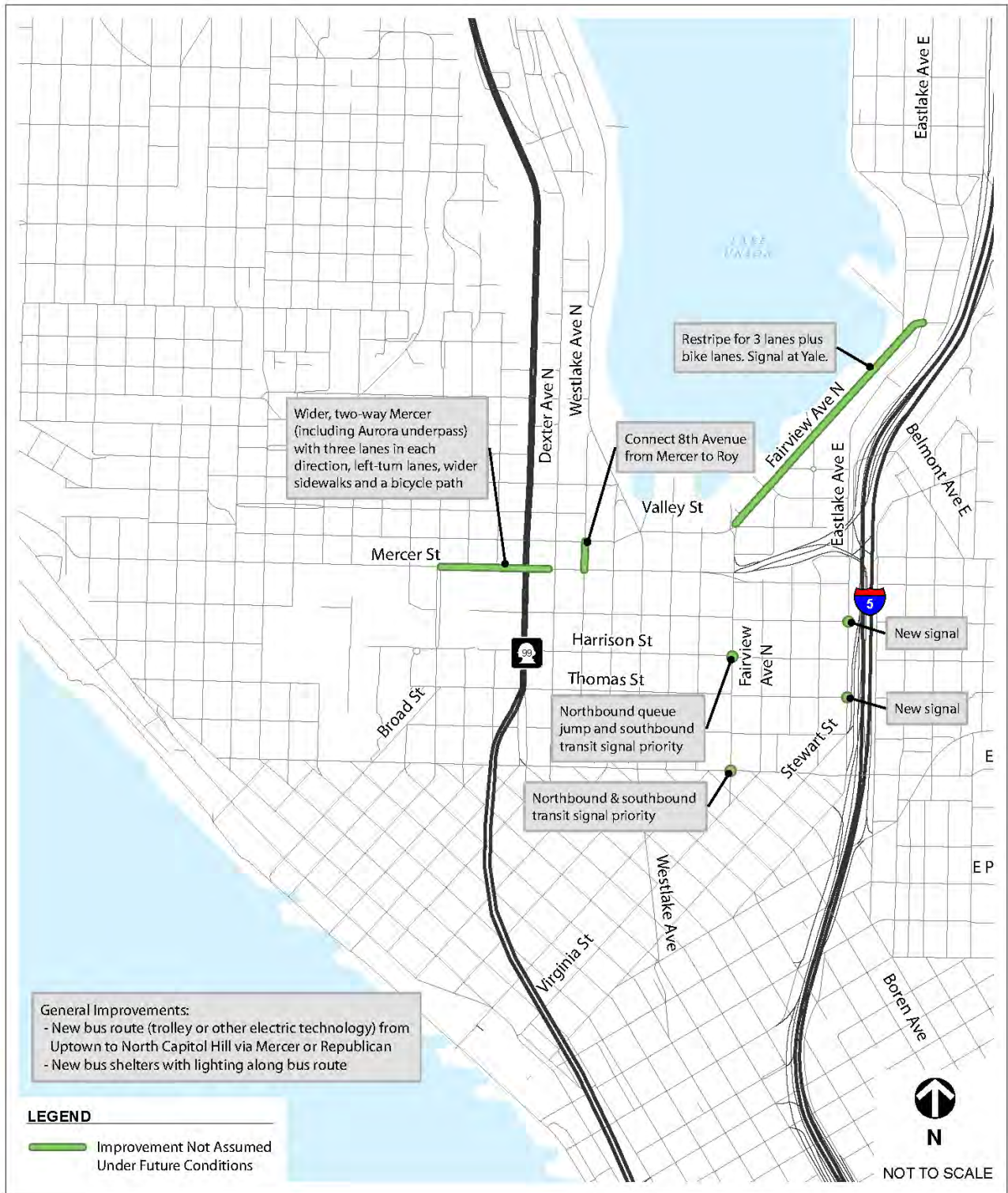
⁵ The Seattle travel model does not describe why Route 30 would no longer serve the study area (it would run only between Sand Point and the University District rather than continuing south to South Lake Union/Lower Queen Anne). However, it is likely the southern portion of this route will be unnecessary when the University Link of Light Rail is completed.

Figure 3.5-13
Reasonably Foreseeable Transportation Improvements



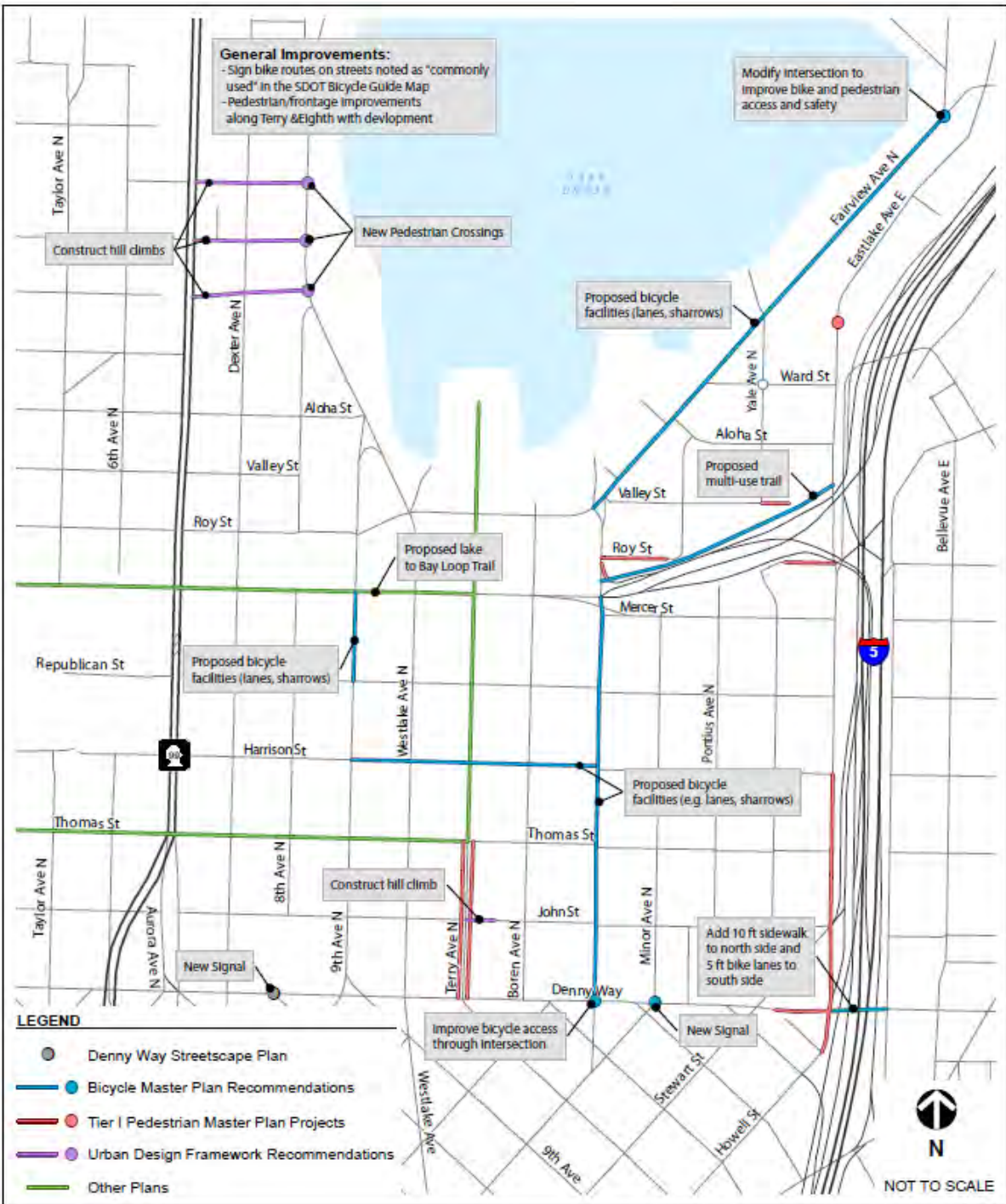
Source: Fehr & Peers, 2010

Figure 3.5-14
Roadway Improvement Not Assumed Under Future Conditions



Source: Fehr & Peers, 2010

Figure 3.5-15
 Pedestrian and Bicycle Improvements Not Assumed Under Future Conditions



Source: Fehr & Peers, 2010

Trip Generation Methodology

The project team used an innovative trip generation analysis technique, known as the mixed-use development (MXD) model, to analyze the future year land use scenarios. The MXD model is based on a growing body of research, which focuses on the relationship between travel and the built environment. This method supplements conventional trip generation methods to capture effects related to built environment variables (known as the Ds) like **d**ensity, **d**iversity of land uses, **d**estinations (accessibility), **d**evelopment scale, pedestrian and bicycle **d**esign, and **d**istance to transit services, and **d**emographics. The proposed height and density alternatives in the South Lake Union area incorporate changes in a number of these variables that, in turn, would influence the neighborhood's travel characteristics. In short, projects with higher densities, a rich variety of land uses close to one another, and high quality bicycle, pedestrian, and transit environments have a lower vehicle trip generation rate. Travelers have more choices in terms of both the travel mode they choose and the distance they must travel to reach various destinations. When these projects are located in urban areas, this effect intensifies. This method avoids overestimating the number of vehicle trips that infill projects generate and provides a more reasonable picture of how travel characteristics change over time.

Traditional trip generation methodologies are not well suited to analyze the proposed height and density rezone alternatives. These methods often take trip generation estimates from the Institute of Transportation Engineers (ITE) and factor the results using mode split data from the City's travel model, US Census Bureau, or engineering judgment.

While traditional trip generation methods can account for the high share of non-auto modes in the City, they have limited ability to consider shifts in mode choice caused by major land use changes like those considered in South Lake Union for the following reasons:

- Typical mode split adjustments tend to assume continuation of current trends and have limited responsiveness to changes in the land use and the built environment (e.g., increased density, increased mix of uses) or transportation system (e.g., improved pedestrian and bicycle connectivity, improved transit service).
- Mode split data are often derived from the US Census Bureau. As time passes the, mode split estimates may not be applicable given changes in development patterns and socioeconomic conditions. This may be the case for the current study, as the Census results were ten years old at the time of this analysis.

The MXD model overcomes many of these shortcomings and explicitly accounts for how built environment variables, such as building forms, the mix of land uses (jobs/housing balance), densities, transit accessibility, and neighborhood connectivity, affect travel behavior and mode choice.

The MXD model was developed in cooperation with the US Environmental Protection Agency (EPA) and ITE. Over 200 mixed-use development sites across the United States were surveyed as part of the model development process and the model was validated using data from 16 independent mixed use sites. Additional details regarding the model development, validation, and statistical performance can be found in **Appendix E**.

Figure 3.5-16 compares the traditional trip generation methodology to the enhanced MXD model applied for this analysis.

2031 South Lake Union Land Uses

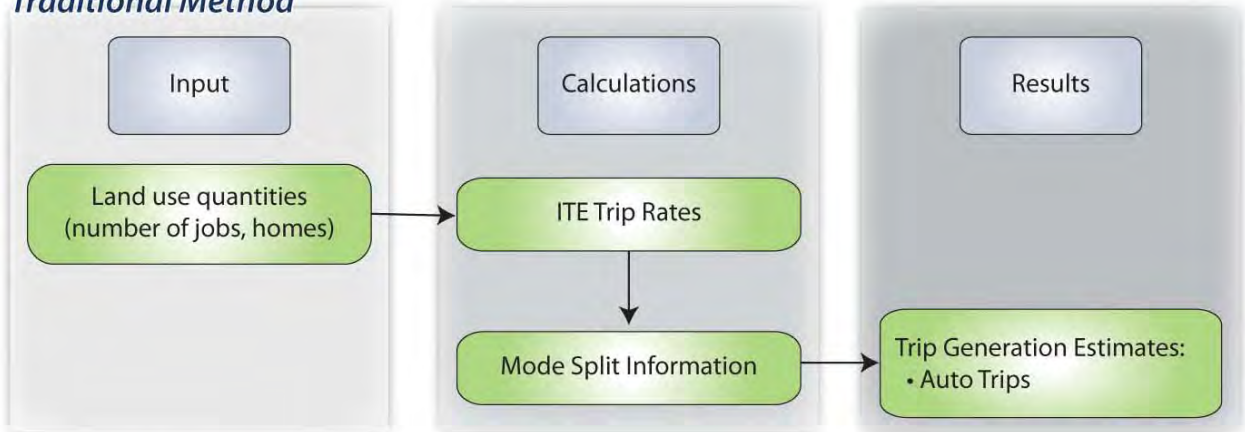
The City of Seattle provided 2031 land use data (number of new housing units and jobs) for each of the four height and density alternatives:

- No Action Alternative – Development under Current Zoning
- Alternative 1 – Maximum Increases to Allowed Height and Density
- Alternative 2 – Mid-Range Increases to Allowed Height and Density
- Alternative 3 – Modest Increases to Allowed Height and Density

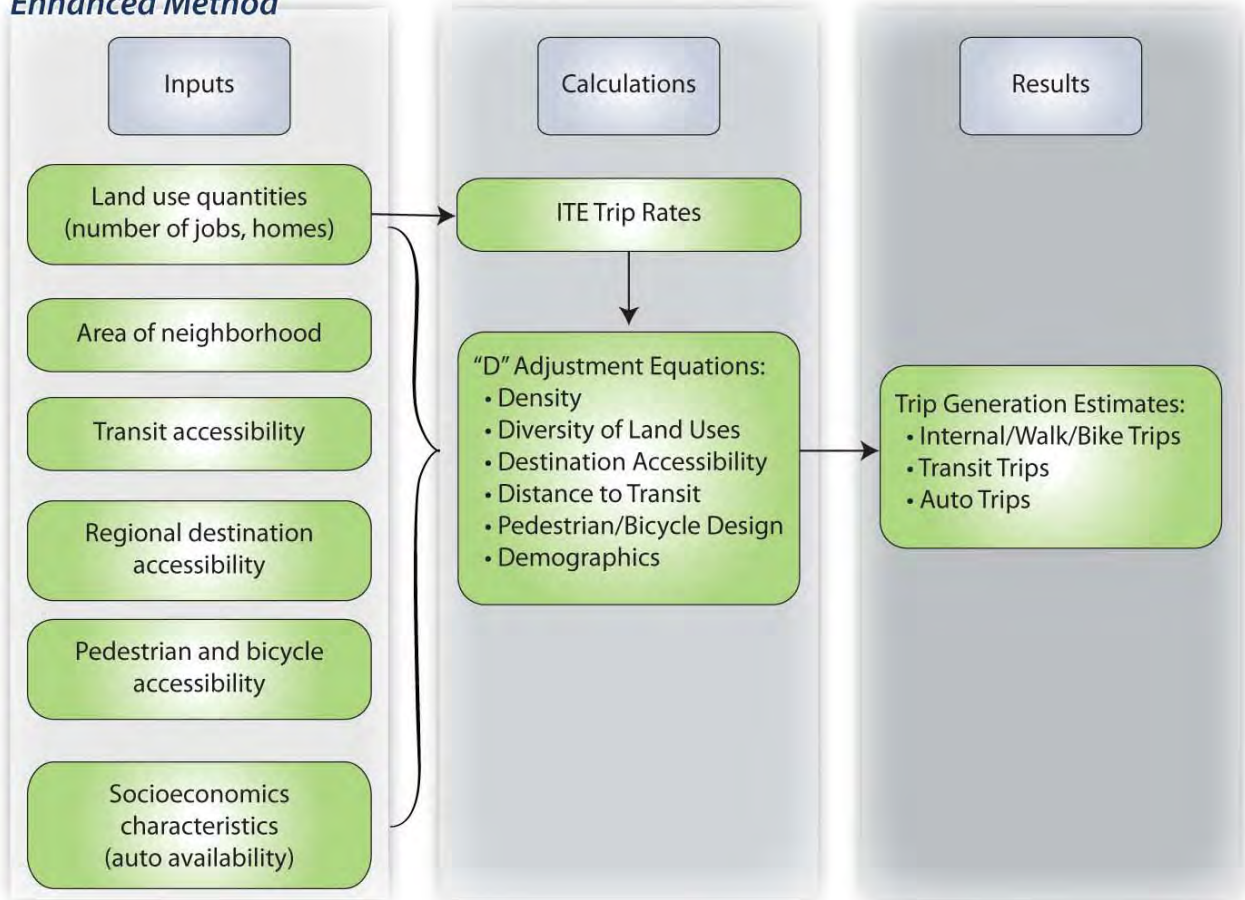
The 2031 land use data were developed according to the neighborhoods shown in **Figure 3.5-17**. The neighborhood boundaries were determined based on a number of factors, including the location of barriers (such as South Lake Union) and the clustering of land uses.

Figure 3.5-16
Comparison of Traditional and Enhanced Trip Generation Methods

Traditional Method



Enhanced Method



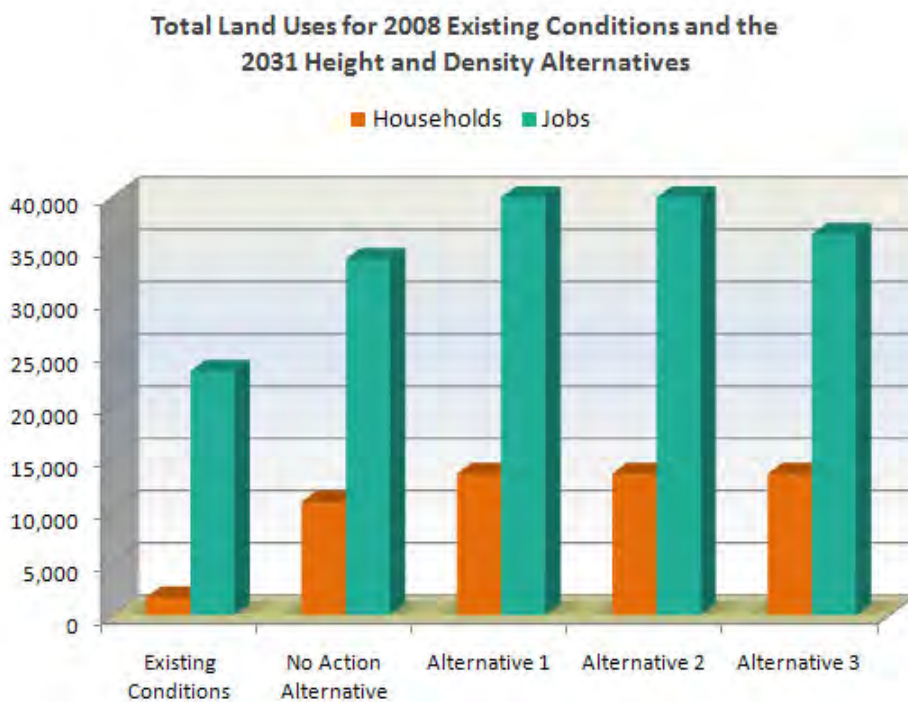
Source: Fehr & Peers, 2010

Figure 3.5-17
 Neighborhood Boundaries Used for Trip Generation



Source: Fehr & Peers, 2010

The chart below compares the 2031 land use totals (for housing units and jobs) for each of the height and density rezone alternatives. The totals for each alternative take into account existing uses, those that will be lost when parcels are redeveloped, and new development. For comparison purposes, the 2008 existing conditions land use totals from the latest version of the City of Seattle travel model are also summarized. The development totals shown below represent total land uses (number of households and jobs) for each of the time periods shown below and should not be confused with the growth targets or development capacities described in Chapter 2. The growth shown below is consistent with both the growth targets and development capacities.



As shown in the above chart, the No Action Alternative would have the fewest jobs and households under 2031 conditions (10,800 households and 34,047 jobs). Among the three height and density alternatives, all have the same number of households assumed under 2031 (13,500), and Alternatives 1 and 2 have the same number of jobs assumed (39,945). Alternative 3 has slightly fewer jobs assumed (36,449) since, as described earlier, this alternative has lower densities and a residential focus.

The chart above shows that Alternatives 1 and 2 have an identical level of development expected over the next 20 years despite different allowable densities and tower heights. This similarity is related to the assumption that only a limited amount (11,900 households and 21,900 jobs) of

development is expected to be built over the next 20 years, despite the differing zoning capacities. This is because Alternatives 1 and 2 will allow densities in excess of market demand for both housing and jobs. Alternative 3 will allow densities in excess of housing demand but not job demand, while the No Action Alternative will not provide enough density to meet market demand for housing or jobs.

Based on the land use totals described above, a GIS analysis was prepared for each of the future year alternatives (No Action, and Alternatives 1-3). This analysis measured key changes (as shown in **Figure 3.5-16**) such as the density of each neighborhood, the quality of the pedestrian environment (as measured by the frequency of crossing opportunities and block size), the mix of housing, retail, and employment, and other factors. **Table 3.5-8** presents the results of the trip generation estimate by mode for Daily and PM peak hour conditions. AM peak hour conditions were also calculated and those results, along with details of the calculations are presented in **Appendix E**.

As the table shows, the level of vehicle trip generation reflects the amount of land use development assumed under each future year alternative. For example, under PM peak hour conditions, Alternative 1 generates about 23 percent more vehicle trips when compared to the No Action Alternative. This result is reasonable considering that Alternative 1 contains about 25 percent more homes and 17 percent more employment than the No Action Alternative. Alternatives 1 and 2 generate about the same number of vehicle trips, and Alternative 3 generates trips at a level between Alternatives 1 and 2 and the No Action Alternative.

Table 3.5-8 also shows that the mode share predicted by the MXD model is relatively similar for each of the future year alternatives. This result is a reflection of several factors:

- The density of all the alternatives is relatively high
- The mix of land uses for all the alternatives is similar
- The roadway, pedestrian, bicycle, and transit networks are the same for all alternatives
- All the alternatives have the same proximity to major employment centers like Downtown Seattle and the University of Washington

Table 3.5-8 illustrates the gross ITE trip rates, followed by the breakdown by mode predicted by the MXD model.

Table 3.5-8
Trip Generation by Alternative

Alternative	Daily			PM Peak		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning	108,946 (49.4%)	70,540 (29.1%)	52,337 (21.6%)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	136,973 (48.3%)	93,828 (30.1%)	67,509 (21.6%)	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)
Alternative 2 - Mid-Range Increases to Height and Density	136,888 (48.3%)	93,908 (30.1%)	67,509 (21.6%)	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)
Alternative 3 - Moderate Increases to Height and Density	117,326 (48.1%)	81,403 (30.3%)	57,855 (21.6%)	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)

Source: Fehr & Peers, 2010.

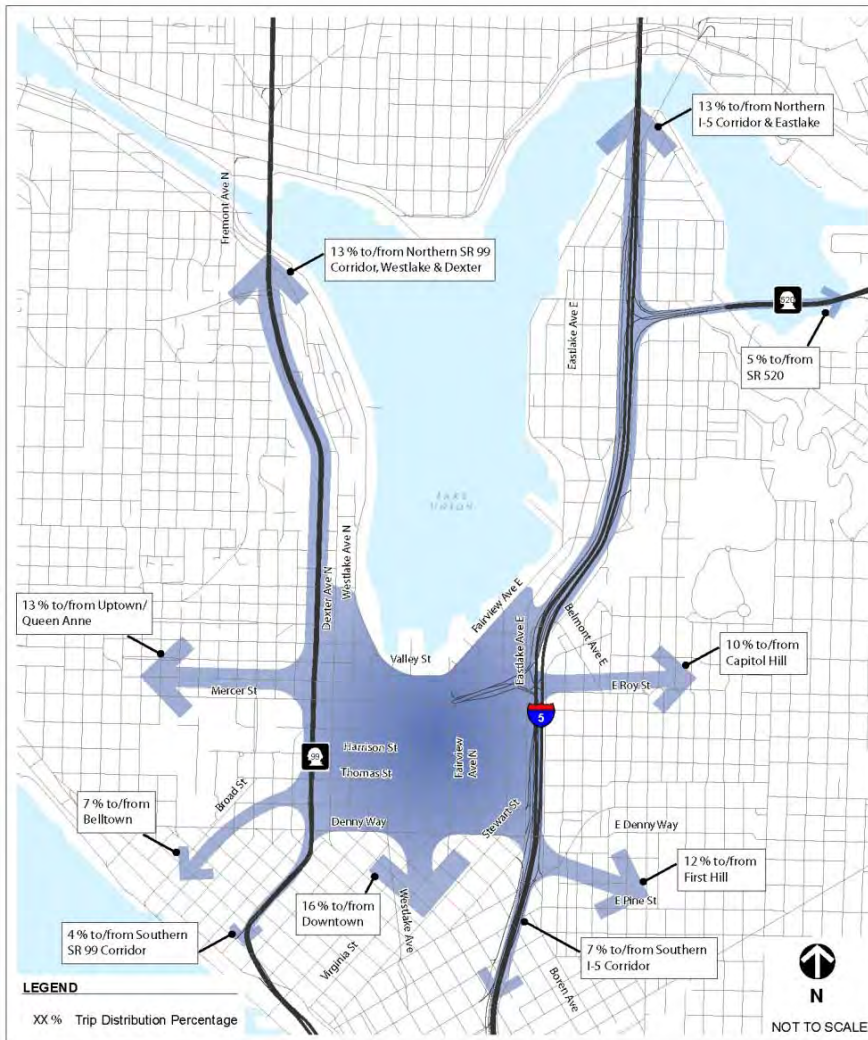
Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Trip Distribution

The City of Seattle model distributed the vehicle and transit trips presented in **Table 3.5-8** to the transportation system. The City of Seattle travel model indicated the following general distribution pattern for vehicle trips to and from the South Lake Union neighborhood in the PM peak period in 2031 (shown in **Figure 3.5-18**):

- 26% north via SR 99, I-5, or city streets
- 23% to Downtown/Belltown
- 22% east via city streets to Capitol Hill or First Hill
- 13% west via city streets to Queen Anne
- 11% south via SR 99 or I-5
- 5% east via SR 520

Figure 3.5-18
External Vehicle Trip Distribution



Source: Fehr & Peers, 2010

3.5.3 Environmental Deficiencies of the No Action Alternative

Analysis results and environmental deficiencies of the No Action Alternative are summarized in this section. Deficiencies are defined as:

- A study corridor operating at a d/c ratio of 0.90 or greater (LOS E or F conditions)
- A transit line operating at a load factor of 1.25 or greater
- An increase in pedestrian or vehicle traffic in an area experiencing pedestrian safety concerns
- An increase in pedestrian delay at signalized intersections
- An increase in bicycle or vehicle traffic in an area experiencing bicycle safety concerns

As defined above, deficiencies are future transportation operations that do not meet existing service standards. These deficiencies would be caused by future development and individual project-level mitigation could reduce the magnitude of the deficiency; however, this level of detail is not known and cannot be considered in this EIS. In this case, the term deficiency does not refer to an existing transportation system issue is the responsibility of the City to address.

The No Action Alternative serves as the baseline for the impact analysis. It represents the operations of the transportation system if no actions were taken by the City Council and no zoning changes are made in the South Lake Union neighborhood. As mentioned previously, all reasonably foreseeable⁶ transportation improvements (see **Figure 3.5-13**) are assumed to be in place in 2031. The same transportation network is assumed for the No Action and all three height and density rezone alternatives.

AM and PM peak period traffic volume and transit ridership estimates were generated using the City's travel model. The City travel model accounts for background growth in traffic and transit ridership associated with increases in city and regional land uses anticipated over the next 20 years.

⁶ As defined in Section 3.13.2, reasonably foreseeable improvements include projects that have full funding commitments and projects with partial funding commitments but with a strategy in place to raise the remaining funds.

Analysis Results

The following section describes the results of the evaluation of transportation conditions under the 2031 No Action Alternative. Transportation deficiencies are identified according to the criteria outlined in Section 3.13.4.

Study Corridors

Table 3.5-9 and **Figure 3.5-19** summarize the d/c ratios of the study corridors under the No Action Alternative. The following study corridors would operate at LOS E or F, exceeding the City's LOS standard, which constitutes a traffic operations deficiency:

- Fremont Bridge from N 35th Street to Westlake Avenue N
- Westlake Avenue N from Valley Street to Harrison Street
- Westlake Avenue N from Harrison Street to Denny Way
- Fairview Avenue N from Eastlake Avenue to Yale Avenue N
- Dexter Avenue N from Fremont Bridge to Valley Street
- Dexter Avenue N from Valley Street to Denny Way
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street
- Boren Avenue from Denny Way to Pine Street
- Stewart Street from Eastlake Avenue E to Boren Avenue
- E Pine Street from Boren Avenue to Broadway
- Harrison Street from Aurora Avenue N to Eastlake Avenue N
- 9th Avenue N from Roy Street to Republican Street
- Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue

Table 3.5-9
No Action Alternative: Demand-to-Capacity Ratios of Study Corridors

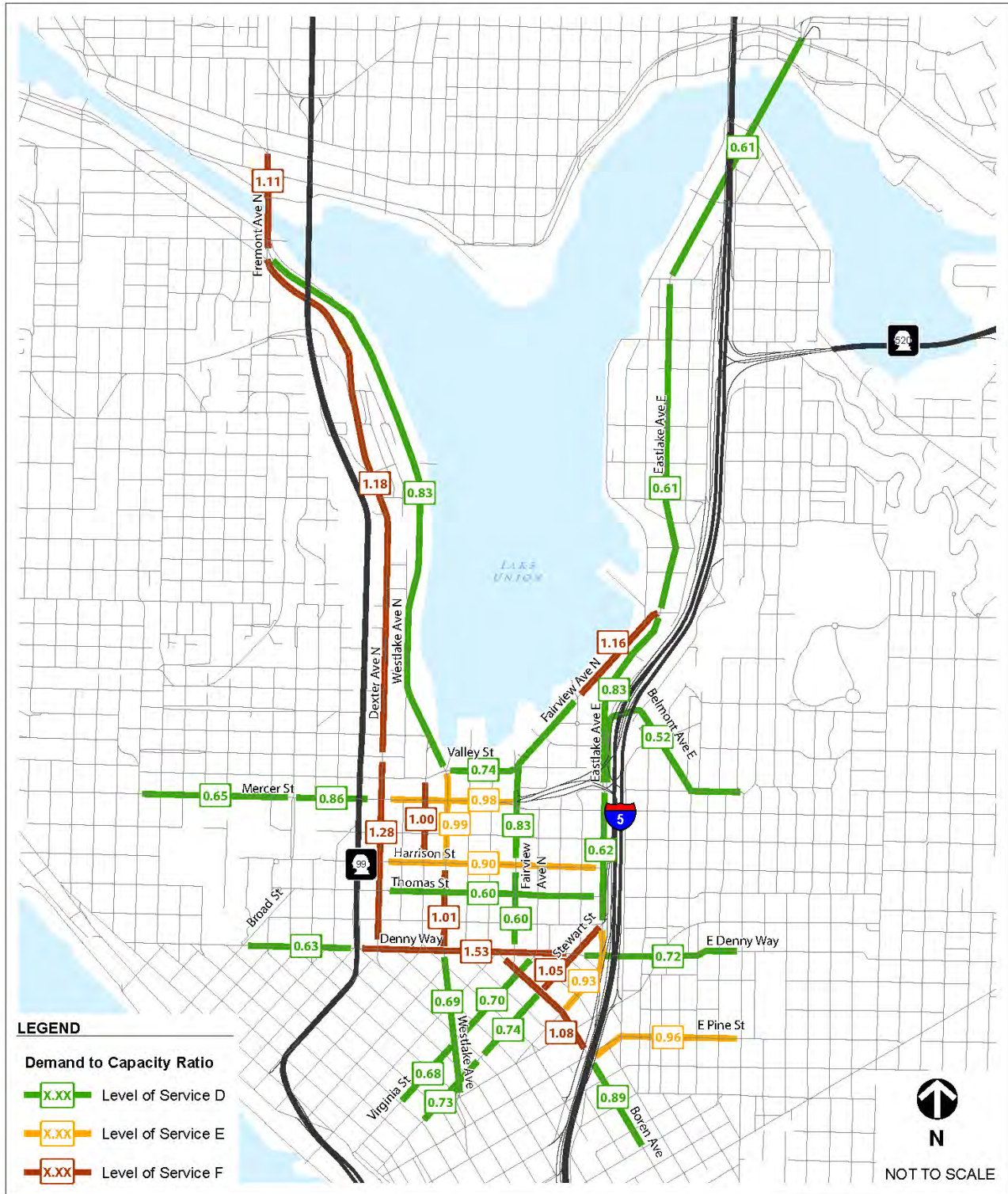
Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM	N	2	1,600	1.11/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM	N	2	1,600	0.83/D*
	3) Valley Street to Harrison Street	1,040	PM	S	1.5	1,050	0.99/E
	4) Harrison Street to Denny Way	1,061	PM	S	1.5	1,050	1.01/F
Eastlake Avenue E	5) Denny Way to Stewart Street	624	PM	N	1.5	900	0.69/D*
	6) N 40th Street to E Hamlin Street	1,166	AM	SW	2	1,920	0.61/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM	S	2	1,920	0.61/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM	N	1	700	0.83/D*
Fairview Avenue N.	9) Lakeview Blvd E to Stewart Street	867	PM	S	2	1,400	0.62/D*
	10) Eastlake Avenue to Yale Avenue N	810	AM	SW	1	700	1.16/F
	11) Yale Avenue N to Harrison Street	1,389	PM	N	2	1,680	0.83/D
Dexter Avenue N	12) Harrison Street to Denny Way	1,009	PM	N	2	1,680	0.60/D*
	13) Fremont Bridge to Valley Street	1,132	AM	S	1	960	1.18/F*
Valley Street	14) Valley Street to Denny Way	1,787	PM	N	2	1,400	1.28/F
	15) Westlake Avenue N to Fairview Avenue N	624	PM	E	1	840	0.74/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM	E	2	1,680	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM	E	2	1,680	0.86/D
Denny Way	18) Dexter Avenue N to Fairview Avenue N	2,057	AM	W	3	2,100	0.98/E
	19) Broad Street to Aurora Avenue N	1,053	AM	W	2	1,680	0.63/D
	20) Aurora Avenue N to Stewart Street	1,607	PM	E	1.5	1,050	1.53/F*
	21) Stewart Street to Broadway E	1,151	AM	W	2	1,600	0.72/D

Road	Segment	Volume	Peak Hour	Peak Direction	Number of Through Lanes	Total Capacity	d/c Ratio/LOS
Broad Street	22) Denny Way to Westlake Avenue N						Segment does not exist under future conditions
Boren Avenue	23) Denny Way to Pine Street	1,297	AM	NW	2	1,200	1.08/F*
	24) Pine Street to University Street	1,068	PM	SE	2	1,200	0.89/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM	SW	3.5	2,100	1.05/F
	26) Boren Avenue to 7th Avenue	1,334	AM	SW	3	1,800	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM	SW	2	1,200	0.73/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM	NE	2	1,200	0.70/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM	NE	3	1,800	0.68/D
E Pine Street	30) Boren Avenue to Broadway	691	PM	W	1	720	0.96/E
Lakeview/Belmont/Ro y	31) Eastlake Avenue to Broadway E	415	PM	E	1	800	0.52/D
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM	E	1	720	0.60/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM	E	1	600	0.90/E
9th Avenue N	34) Roy Street to Republican Street	698	PM	N	1	700	1.00/F
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM	N	2	600	0.93/E

Source: Fehr & Peers, 2010

Note: * These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing. Corridors that do not meet the City LOS standard are shown in bold.

Figure 3.5-19
Demand-to-Capacity Ratios – No Action Alternative



Source: Fehr & Peers, 2010

As defined by the HCM, the poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.

Transit

As was the case under the existing conditions analysis, transit operations are assessed using load factors. Ridership, frequency, and capacity will change by 2031, so the City of Seattle travel model was used to predict future load factors. Details of the calculations and assumptions can be found in **Appendix E**.

The 2031 No Action Alternative AM peak hour load factors are shown in **Table 3.5-10**. Since the Seattle travel model does not explicitly model PM peak period transit trips (they are modeled as the reverse of the AM trips), these load factors would also apply to PM peak hour conditions.

Table 3.5-10

No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Load Factors

Route	Termini Locations	Northbound	Southbound
5	Downtown, Shoreline	0.64	0.84
8	Uptown, Rainier Valley	0.89	0.88
16	Downtown, Northgate	0.53	0.77
17	Downtown, Loyal Heights	0.77	0.68
21	Downtown, Arbor Heights	1.17	-
25	Downtown, Laurelhurst	0.65	1.00
26	Downtown, Green Lake	0.83	0.77
28	Downtown, Broadview	1.19	0.84
29	Downtown, Woodland Park	1.19	1.49
56	South Lake Union, West Seattle	1.38	-
66	Downtown, Northgate	0.53	0.76
70	Downtown, University District	0.65	0.62
121	Downtown, Burien	0.67	-
308	Downtown, Lake Forest Park	-	0.97
313	Uptown, Bothell	-	0.45
316	Uptown, Shoreline	-	0.82
Rapid Ride	Downtown, Aurora Village Transit Center	0.62	0.80

Source: Fehr & Peers, 2010

Note: Dashes indicate either that the route does not serve South Lake Union or does not exist in the travel model in that direction.

Based upon the results above, two transit routes serving South Lake Union will not operate with acceptable load factors under the No Action Alternative.

- Route 29 (southbound in the AM peak hour and northbound in the PM peak hour)
- Route 56 (northbound in the AM peak hour and southbound in the PM peak hour)

Table 3.5-11 displays the estimated AM peak hour headways under 2031 conditions. Lines with headways greater than 15 minutes in at least one direction are noted in bold since they do not meet the UVTN transit frequency standards. Since the Action Alternatives themselves do not affect transit frequency, the headways in **Table 3.5-11** also apply to the Action Alternatives. The table highlights which routes do not meet the UVTN frequency goal; however, overall transit delay on these routes (caused by infrequent service) will increase with the additional ridership generated by each of 2031 development alternatives.

Based on the results, eight transit lines do not meet the UVTN frequency goal of 15 minute headways during the AM peak hour⁷. Those lines include Routes 16, 25, 28, 29, 66, 308, 313, and 316. The UVTN calls for 15 minute frequencies 18 hours of the day, every day of the week. The travel model does not provide transit information for that length of time. Therefore, the travel model's expected frequency improvements within the peak period along with current midday and weekend schedules were considered (see **Appendix E** for details). It appears likely that all routes with the exception of Aurora RapidRide would not meet the UVTN frequency goal. Although service within the weekday peak periods, as well as the midday period for many routes, would conform to the UVTN standards, it is unlikely that weekend schedules would change enough to meet the frequency goal.

⁷ Since the Seattle travel model does not explicitly model PM peak hour conditions, similar conditions are also assumed in the evening peak hour.

Table 3.5-11

No Action Alternative: 2031 South Lake Union Transit AM Peak Hour Headways

Route	Termini Locations	Northbound	Southbound
5	Downtown, Shoreline	12	11
8	Uptown, Rainier Valley	7	7
16	Downtown, Northgate	17	17
17	Downtown, Loyal Heights	15	15
21	Downtown, Arbor Heights	9	-
25	Downtown, Laurelhurst	24	26
26	Downtown, Green Lake	15	12
28	Downtown, Broadview	12	16
29	Downtown, Woodland Park	26	26
56	South Lake Union, West Seattle	13	-
66	Downtown, Northgate	26	26
70	Downtown, University District	14	14
121	Downtown, Burien	13	-
308	Downtown, Lake Forest Park	-	20
313	Uptown, Bothell	-	20
316	Uptown, Shoreline	-	20
Rapid Ride	Downtown, Aurora Village Transit Center	6	6

Source: Fehr & Peers, 2010

Note: Headways were determined by applying the change between base and future year model headways to existing headways when possible. For new transit lines, the headways provided are direct model outputs. Actual headways will vary when transit lines are implemented.

Pedestrian and Bicycle System

As shown in the trip generation table (**Table 3.5-8**), the land use development anticipated to occur under the No Action Alternative will result in a substantial number of pedestrian and bicycle trips within the study area. Typically, pedestrian and bicycle travel demand-to-capacity analyses are not performed since commonly accepted analysis methodologies, like the HCM, would not identify any capacity shortages outside of exceptional cases like Manhattan or Downtown Chicago. Further, bicycle and pedestrian environments are more often measured by the quality of experience they provide rather than by their levels of congestion.

While pedestrian and bicycle demand/capacity issues are not likely, buildout under the No Action Alternative could lead to consequences such as:

- Additional pedestrian and vehicle travel at major intersections could lead to increased pedestrian delays if the City retimes traffic signals to facilitate vehicle flow.
- Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection.

Parking

Although it is unknown how many off-street parking spaces will be provided by 2031, parking code requirements, typical market demand, and expected growth can give some indication of future supply, as shown in **Table 3.5-12**. A review of recently constructed commercial projects in South Lake Union indicate that many properties supply more parking than is required under the City Code; however, some of the newer properties near Denny Way provide parking at the minimum requirement. Based on this review, it was assumed that future parking would be supplied at similar ratios, which are shown in the table below.

No parking is required for multifamily residential uses in urban centers, which applies to most of the study area; however, parking is still usually provided. Again, based on actual supplied parking ratios, it was assumed that one parking space per dwelling unit would be supplied for residential uses. The growth in households and jobs was used to estimate future additional off-street parking spaces under the No Action Alternative. Details of the calculation may be found in **Appendix E**.

Table 3.5-12
No Action Alternative: Estimated Additional Off-Street Parking Supply

Alternative	Residential	Retail	Non-Retail	Total
Assumed Supply	1 space/ dwelling unit	3 spaces /ksf	1.5 space/ksf	
No Action	9,200	3,131	7,305	19,636

Source: City of Seattle Municipal Code 23.54.015, 2010;
<http://seattlecommercialpropertydirectory.com/>

Note: Basic retail and office requirements published in the City Code were used for this analysis, and mirror the assumptions used in the Downtown Height & Density EIS. Residential parking was assumed to be provided based on market demand at one space per unit.

The City and King County Metro are currently considering locations to be used as bus layover areas, which has the potential to remove on-street parking from the South Lake Union neighborhood. If current parking demand trends continue as highlighted by the existing peak period parking shortages near the Amazon campus, there will likely be at least

temporary shortages for both on-street and off-street parking under the No Action Alternative, particularly around office uses. The relationship between parking supply and cost will cause prices to climb as demand approaches or exceeds supply. In turn, this will cause some travelers to switch to modes such as transit, thereby freeing up some parking.

Off-street parking shortages often result in spillover to adjacent neighborhoods, but this may not be a problem in South Lake Union. The adjacent areas in Capitol Hill, Lower Queen Anne, and Downtown are either difficult to access or offer paid parking only, making them inconvenient parking locations.

Freight

As described in the Existing Conditions analysis section, the quality of freight movement is assessed based on the d/c ratios on major truck streets. As shown in **Table 3.5-9**, traffic congestion on Mercer Street between Dexter Avenue and Fairview Avenue N would increase substantially when compared to existing conditions. This increase in traffic congestion will lead increased difficulty for trucks to maneuver and increased travel times, which could delay trucking operations. This is considered a freight mobility deficiency in the area.

Note that the increase in traffic congestion is caused by both additional development in South Lake Union and regional traffic growth. While Valley Street would operate at an acceptable level of congestion under the No Action Alternative; however, it is unlikely that this would remain a major truck street after the Mercer East Corridor project is complete.

Additionally, as the South Lake Union neighborhood develops under the No Action Alternative, there could be localized freight deficiencies related to the lack of loading areas and small curb radii that trucks cannot navigate.

The removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street will leave a gap in the City of Seattle Major Truck Street network. This gap does not constitute a freight mobility deficiency since freight traffic can use arterial streets. However, the City should update its Major Truck Street system to identify a replacement for Broad Street.

Traffic Safety

As described earlier, the City of Seattle evaluates traffic safety concerns based on the definition of High Accident Locations. Since High Accident Locations calculate the average rate of collisions per year at intersections without any regard to the traffic flow through the intersection, the

increased traffic volumes anticipated under the No Action Alternative could lead to the identification of additional High Accident Locations. While there may be more High Accident Locations under future conditions with the No Action Alternative, there is no data available to suggest that a volume-based collision rate (e.g., collisions per million entering vehicles) will increase with buildout of the No Action Alternative.

3.5.4 Impact Identification

The 2031 No Action Alternative serves as the baseline for identifying impacts to transportation facilities in 2031 caused by the Action Alternative. This section describes the methodology used to identify impacts under each of the height and density rezone alternatives.

A transportation impact is said to occur if any of the proposed rezone actions would:

- Cause an increase in traffic demand that results in a study corridor, that operates acceptably under the 2031 No Action Alternative, to operate unacceptably (d/c ratio of 0.9, which equates to LOS E or F conditions)
- Cause an increase in traffic on a study corridor that operates unacceptably (as measured by d/c ratios and LOS) under the 2031 No Action scenario that results in the d/c ratio increasing by at least .01 (increases in d/c ratios of less than .01 are less than typical daily fluctuations and are not noticeable by drivers – see **Appendix E** for clarification)
- Lead to an increase in the peak hour load factor on a transit line which exceeds King County Metro’s standard of 1.25
- Increase pedestrian or vehicle traffic in an area experiencing pedestrian safety concerns
- Increase pedestrian delay at signalized intersections
- Increase bicycle or vehicle traffic in an area experiencing bicycle safety concerns

3.5.5 Environmental Impacts of Action Alternatives

This section provides the evaluation of each of the height and rezone alternatives in year 2031. Due to the similarities among the alternatives, they are all addressed in the same section to minimize redundancy. The impacts and potential mitigation measures for all alternatives are described in the following section.

Traffic volume estimates for each of the three height and density rezone alternatives uses the same methodology as described for the No Action

Alternative. See the trip generation discussion in Sections 3.13.1 and 3.13.3 for the full details.

Analysis Results

The following section describes the results of the evaluation of transportation conditions under each of the project alternatives in 2031.

Study Corridors

Table 3.5-13 and **Figures 3.5-20, 3.5-21 and 3.5-22** summarize the demand-to-capacity ratios of the study corridors under the action alternatives. Transportation operations impacts, which are based on the criteria and thresholds described in Section 3.13.4, are noted in bold and are highlighted below.

Under all three height and density alternatives, the following study corridors experience impacts to traffic operations:

- Westlake Avenue N from Valley Street to Harrison Street
- Westlake Avenue N from Harrison Street to Denny Way
- Mercer Street from Dexter Avenue N to Fairview Avenue N
- Denny Way from Aurora Avenue N to Stewart Street
- Boren Avenue from Denny Way to Pine Street
- Boren Avenue from Pine Street to University Street
- Stewart Street from Eastlake Avenue E to Boren Avenue
- Harrison Street from Aurora Avenue N to Eastlake Avenue E
- 9th Avenue N from Roy Street to Republican Street

In addition to those previously listed, the following study corridors are impacted under Alternatives 1 and 2:

- Fremont Bridge
- Eastlake Avenue E from Fairview Avenue to Lakeview Blvd E
- Dexter Avenue N from Valley Street to Denny Way
- E Pine Street from Boren Avenue to Broadway
- Howell Street/Eastlake Avenue from Stewart Street to Boren Avenue

As defined by the HCM, the poor operations on the study corridors identified above can also be assumed to translate to poor intersection operations (LOS E and F) at key intersections along these corridors, such as Mercer Street/Westlake Avenue N, Mercer Street/Fairview Avenue N, Denny Way/Westlake Avenue N, and Denny Way/Boren Avenue.

Table 3.5-13
Demand-To-Capacity Ratios of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,813	PM/N	1.13/F	1,805	PM/N	1.13/F	1,779	PM/N	1.11/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,336	PM/N	0.84/D	1,336	PM/N	0.84/D	1,332	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	1,130	PM/S	1.08/F	1,123	PM/S	1.07/F	1,071	PM/S	1.02/F
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,137	PM/S	1.08/F	1,135	PM/S	1.08/F	1,090	PM/S	1.04/F
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	657	PM/N	0.73/D	649	PM/N	0.72/D	640	PM/N	0.71/D
Eastlake Avenue E	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,210	AM/SW	0.63/D	1,208	PM/NE	0.63/D	1,177	AM/SW	0.61/D
	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,224	PM/N	0.64/D	1,221	PM/N	0.64/D	1,175	AM/S	0.61/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	641	PM/N	0.92/E	628	PM/N	0.90/E	608	PM/N	0.87/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	921	PM/S	0.66/D	922	PM/S	0.66/D	888	PM/S	0.63/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	801	AM/SW	1.14/F	808	AM/SW	1.15/F	792	AM/SW	1.13/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,392	PM/N	0.83/D	1,418	PM/N	0.84/D	1,388	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,033	PM/N	0.61/D	1,030	PM/N	0.61/D	1,014	PM/N	0.60/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,115	AM/S	1.16/F	1,102	AM/S	1.15/F	1,127	AM/S	1.17/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,810	PM/N	1.29/F	1,807	PM/N	1.29/F	1,795	PM/N	1.28/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	657	PM/E	0.78/D	664	PM/E	0.79/D	646	PM/E	0.77/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D	1,445	AM/E	0.86/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,097	AM/W	1.00/F	2,109	AM/W	1.00/F	2,078	AM/W	0.99/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,058	AM/W	0.63/D	1,084	PM/E	0.65/D	1,057	AM/W	0.63/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,642	PM/E	1.56/F	1,648	PM/E	1.57/F	1,616	PM/E	1.54/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,195	AM/W	0.75/D	1,193	AM/W	0.75/D	1,161	AM/W	0.73/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,329	AM/NW	1.11/F	1,333	AM/NW	1.11/F	1,309	AM/NW	1.09/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,095	PM/SE	0.91/E	1,097	PM/SE	0.91/E	1,080	PM/SE	0.90/E
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,262	AM/SW	1.08/F	2,283	AM/SW	1.09/F	2,232	AM/SW	1.06/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,347	AM/SW	0.75/D	1,356	AM/SW	0.75/D	1,335	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	898	AM/SW	0.75/D	898	AM/SW	0.75/D	884	AM/SW	0.74/D

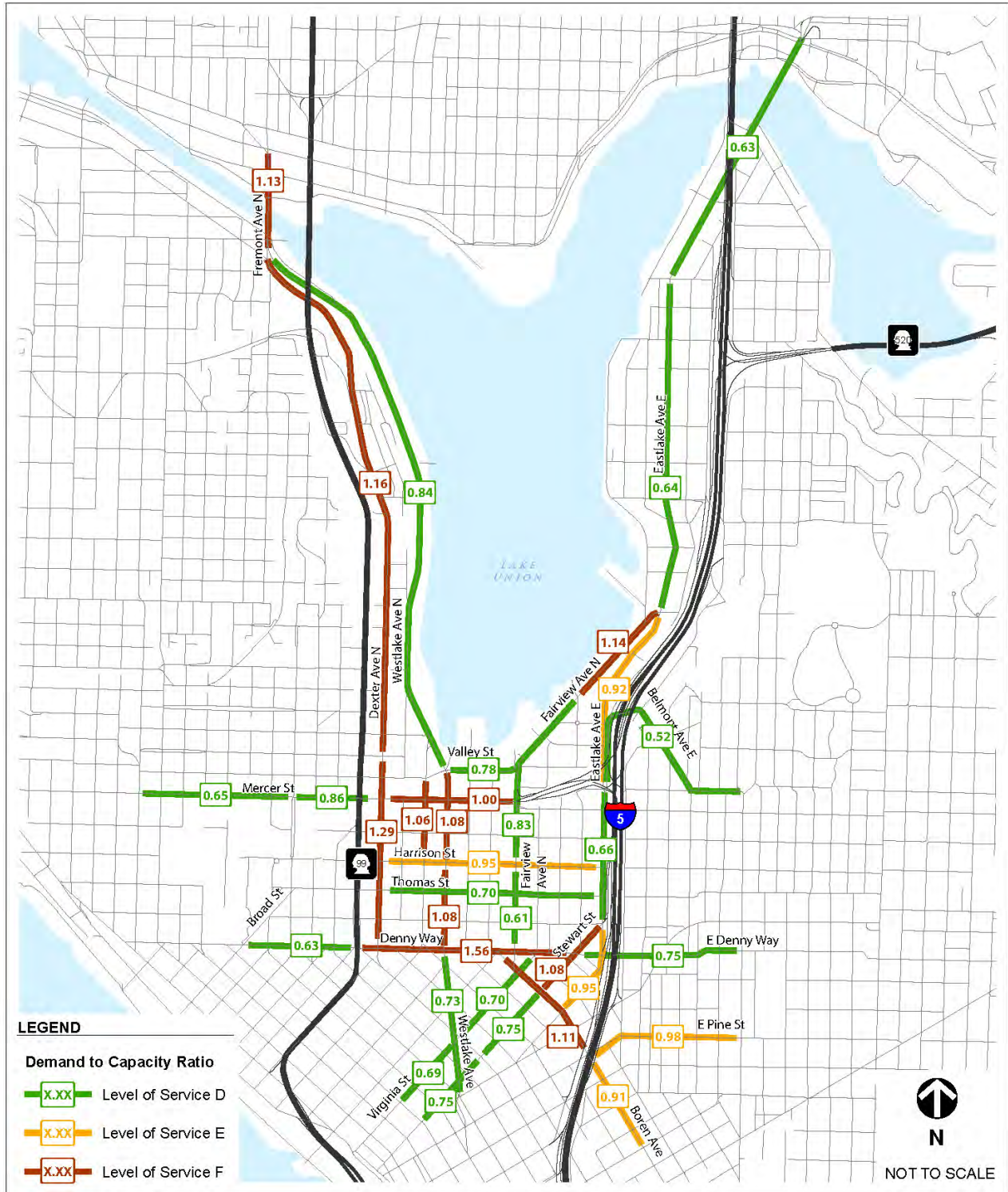
Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3			
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	834	PM/NE	0.70/D	835	PM/NE	0.70/D	839	PM/NE	0.70/D	*
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,233	PM/NE	0.69/D	1,230	PM/NE	0.68/D	1,222	PM/NE	0.68/D	
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	705	AM/W	0.98/E	705	PM/W	0.98/E	692	AM/W	0.96/E	
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	505	PM/E	0.70/D	505	PM/E	0.70/D	459	PM/E	0.64/D	*
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	569	PM/E	0.95/E	588	PM/E	0.98/E	549	PM/E	0.92/E	*
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	741	PM/N	1.06/F	753	PM/N	1.08/F	713	PM/N	1.02/F	
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/E	1,140	PM/N	0.95/E	1,130	PM/N	0.94/E	1,115	PM/N	0.93/E	

Note: Bold text signifies a transportation operations impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

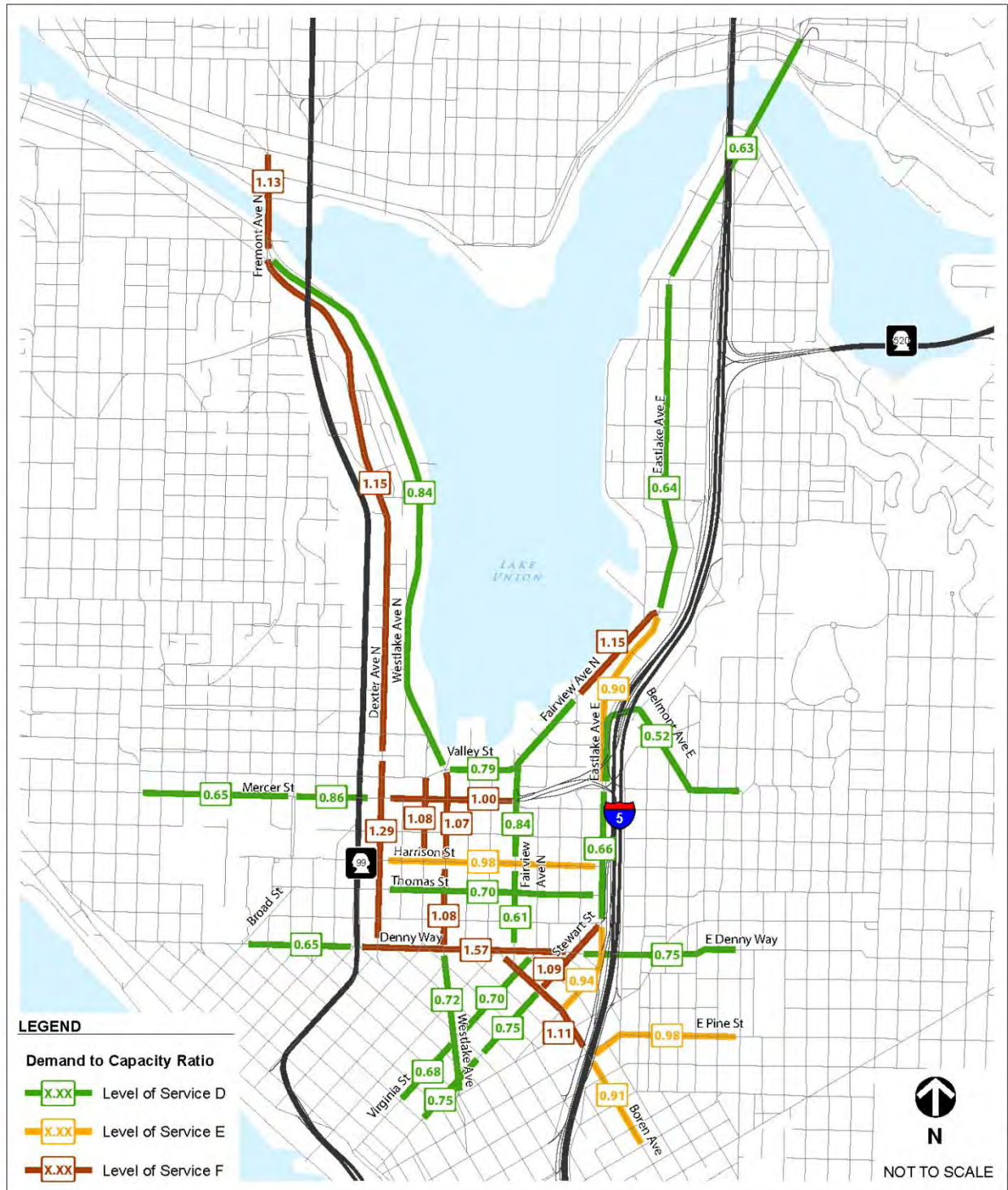
Source: *Fehr & Peers, 2010*

Figure 3.5-20
Demand-to-Capacity Ratios – Alternative 1



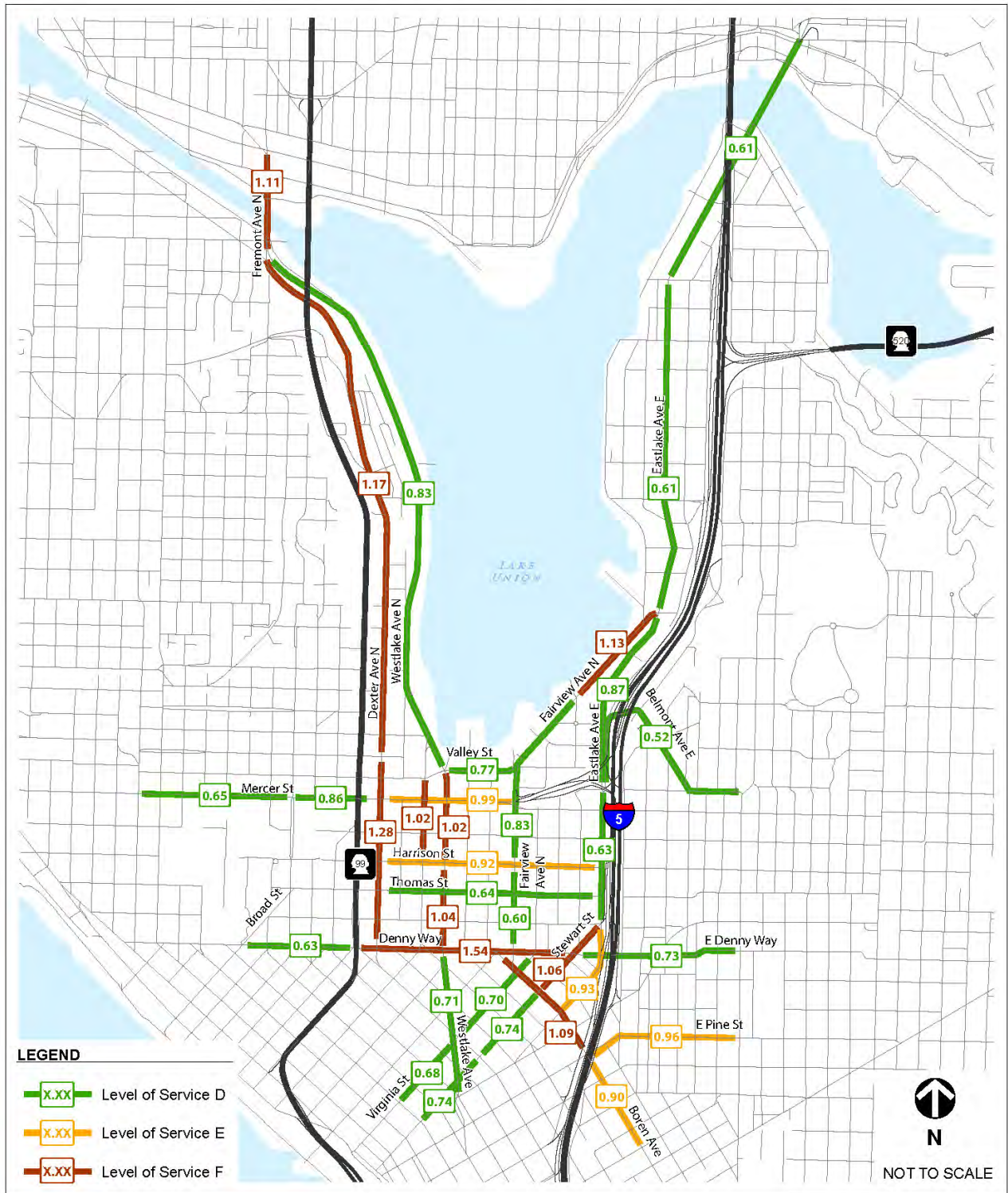
Source: Fehr & Peers, 2010

Figure 3.5-21
Demand-to-Capacity Ratios – Alternative 2



Source: Fehr & Peers, 2010

Figure 3.5-22
Demand-to-Capacity Ratios – Alternative 3



Source: Fehr & Peers, 2010

Transit

Transit ridership among the three height and density alternatives is very similar and the Action results shown in **Table 3.5-14** are representative of the load factors expected under all three height and density alternatives. The results from the No Action Alternative are included for comparison.

Table 3.5-14
Action and No Action Comparison: 2031 South Lake Union Transit Route AM
Load Factors

Route	Termini Locations	No Action		Action	
		NB	SB	NB	SB
5	Downtown, Shoreline	0.64	0.84	0.68	0.84
8	Uptown, Rainier Valley	0.89	0.88	1.01	0.95
16	Downtown, Northgate	0.53	0.77	0.53	0.77
17	Downtown, Loyal Heights	0.77	0.68	0.93	0.86
21	Downtown, Arbor Heights	1.17	-	1.35	-
25	Downtown, Laurelhurst	1.19	0.84	0.65	1.19
26	Downtown, Green Lake	0.65	1.00	1.04	0.88
28	Downtown, Broadview	0.83	0.77	1.40	0.97
29	Downtown, Woodland Park	1.19	1.49	1.49	1.79
56	South Lake Union, West Seattle	1.38	-	1.53	-
66	Downtown, Northgate	0.53	0.76	0.53	0.76
70	Downtown, University District	0.65	0.62	0.81	0.92
121	Downtown, Burien	0.67	-	0.87	-
308	Downtown, Lake Forest Park	-	0.97	-	1.05
313	Uptown, Bothell	-	0.45	-	0.60
316	Uptown, Shoreline	-	0.82	-	0.93
Rapid Ride	Downtown, Aurora Village Transit Center	0.62	0.80	0.68	0.80

Source: Fehr & Peers, 2010

Note: Dashes indicate either that the route does not serve South Lake Union or does not exist in the travel model in that direction.

Transit lines that would operate unacceptably under the Action Alternatives include:

- Route 21 (northbound AM and southbound PM)
- Route 28 (northbound AM and southbound PM)
- Route 29 in both directions (AM and PM peak hours)
- Route 56 (northbound AM and southbound PM)

The transit lines above are considered to be impacted by the three height and density alternatives.

The load factor of the South Lake Union Streetcar was also analyzed. The streetcar seats 29, but has a total capacity of 140. Ridership data from 2010 indicates the current load factor is 0.27 (assuming total capacity rather than seating capacity). The City of Seattle travel model assumes headways will decrease from 15 minutes to 10 minutes by 2031⁸, resulting in a 50 percent increase in capacity. This capacity increase will keep pace with the future ridership estimates from the City's travel model, causing the load factor to remain at 0.27 in 2031.

Since the Action Alternatives do not include any changes to transit headways in the area, transit frequency is the same as under the No Action Alternatives (see **Table 3.5-11**). As described in the previous section, only the Aurora Rapid Ride Line is expected to meet the frequency goals outlined in the UVTN.

Pedestrian and Bicycle System

As described in the No Action Alternative analysis, the increased land uses associated with the height and density alternatives will lead to a substantial increase in the number of bicycle and pedestrian trips within the study area. However, because of the exceptional levels of pedestrian and bicycle activity required to trigger poor LOS conditions as defined by the HCM, no pedestrian or bicycle demand/capacity impacts are anticipated under the three height and density alternatives.

While no bicycle or pedestrian demand/capacity impacts are anticipated, there are several adverse impacts to the pedestrian and bicycle system based on the impact identification criteria listed in Section 3.13.4:

⁸ This reduction in headways assumes that a fourth car is purchased.

- The increased heights and densities associated with each of the alternatives will lead to additional traffic demand on area roadways, which could result in longer traffic signal cycle lengths. Longer cycle lengths are associated with increased pedestrian delay, which discourages pedestrian travel. Any increases in pedestrian delay at intersections would be an impact to pedestrian mobility.
- Additional vehicle traffic at the Mercer Street/Dexter Avenue N could increase vehicle-bicycle conflicts at this High Bicycle Accident intersection.

Parking

The growth in households and jobs for each action alternative was used to estimate future additional parking spaces given current parking code requirements for commercial uses. Despite no minimum requirements for multifamily residential uses in the study area, parking is usually provided. The assumption for this analysis is that one parking space per dwelling unit would be built, as shown in **Table 3.5-15**. Details of the calculation may be found in **Appendix E**.

Table 3.5-15
No Action and Action Alternatives Comparison: Estimated Additional Parking Supply

Alternative	Residential	Retail	Non-Retail	Total
Assumed Supply	1 space/ dwelling unit	3 spaces /ksf	1.5 space/ksf	
No Action	9,200	3,131	7,305	19,636
Alternative 1	11,900	4,284	9,996	26,180
Alternative 2	11,900	4,284	9,996	26,180
Alternative 3	11,900	3,600	8,400	23,900

Source: City of Seattle Municipal Code 23.54.015, 2010,

<http://seattlecommercialpropertydirectory.com/>

Note: Parking codes vary depending on specific use. Basic retail and office requirements were used for this analysis, and mirror the assumptions used in the Downtown Height & Density EIS.

As was noted in the No Action Alternative parking discussion, if current parking demand trends continue as highlighted by the existing peak period parking shortages near the Amazon campus, there will likely be shortages of both on-street and off-street parking in the future particularly around office uses. The level of impact will vary depending on the intensity of land use. The balance between parking supply, parking cost, and alternative mode use will cause some travelers to change

modes. Therefore, the parking impact may not be long-term since travelers will shift to other modes in response to limited parking supply and higher parking cost.

Although Alternatives 1 and 2 would have the most demand, they would also provide more supply based on market trends and the City's existing minimum parking requirements. Likewise, the No Action Alternative would have less demand, but also less supply. Because of the relationship between development intensity, parking supply, and parking demand, all Action alternatives are expected to have short-term parking impacts.

Parking shortages typically result in spillover to adjacent neighborhoods, but this may not be a problem in South Lake Union. The adjacent areas in Capitol Hill, Lower Queen Anne, and Downtown are either difficult to access or offer only paid parking, making them unattractive places to park.

Freight

As shown in **Table 3.5-13**, d/c ratios on Mercer Street between Dexter Avenue and Fairview Avenue N would increase under the three height and density alternatives. This increase in traffic will exacerbate LOS E and F conditions, which will increase delay and reduce mobility for freight vehicles on these routes. This is considered an impact to freight mobility.

As was the case under the No Project Alternative, the increase in traffic congestion along the Major Truck Streets is caused by both additional development in South Lake Union and regional traffic growth. Also, with the removal of Broad Street between 5th Avenue N/Thomas Street and Mercer Street to accommodate the SR 99 bored tunnel, the City should update its Major Truck Street system to identify a replacement route.

In addition to the area-wide issues described above, there are also potential localized freight impacts that could occur as the South Lake Union neighborhood develops. As was the case under the No Action Alternative, impacts to freight mobility could be caused by lack of loading areas and small curb radii that cannot be navigated by trucks.

Traffic Safety

As described under the No Action Alternative analysis, while it is likely that the total number of vehicle collisions will increase proportionally with the increase in traffic in the South Lake Union area, there is nothing to suggest that the volume-based rate of vehicle-to-vehicle collisions will increase with the implementation of the height and density rezone alternatives. Therefore, no significant traffic safety impacts are anticipated.

3.5.6 Mitigation Strategies

This section identifies potential mitigation measures that could be implemented to lessen the magnitude of the impacts identified in the previous section.

Mitigation strategies to address traffic impacts can take one of two approaches: increase the supply of facilities, which usually takes the form of projects that increase roadway capacity, or decrease the demand for roadway capacity by reducing the number of vehicle trips. The MXD trip generation measures the reduction in demand that results from improving the bicycle, transit, and pedestrian environment. Other proven strategies to decrease vehicle demand include incentives to take transit (such as employer-subsidized transit passes) and disincentives to drive (such as parking management strategies). From both a policy and feasibility perspective, increasing roadway capacity is undesirable and cost-prohibitive. Therefore, the mitigation strategy for South Lake Union focused on methods to decrease the number of vehicle trips and maximize the number of bicycle, pedestrian, and transit trips, in order to impact mode splits.

Given the large scale of the height and density alternatives, the mitigation strategy focused on four main themes:

1. Improving the pedestrian and bicycle network. Projects listed in various plans/documents including the *Pedestrian Master Plan*⁹, *Bicycle Master Plan*, and *South Lake Union Urban Design Framework* were considered as mitigation measures to address roadway corridor impacts and pedestrian and bicycle safety impacts. As described earlier, there is a well documented link between improved bicycle and pedestrian accessibility and reduced demand for vehicle travel.
2. Expanding travel demand management strategies. Given cost, right-of-way, and environmental constraints, it was deemed infeasible to provide additional roadway and intersection capacity beyond what is currently planned to reduce impacts to traffic congestion and freight mobility. Therefore managing demand for auto travel is a critical element to reducing traffic congestion and

⁹ The Pedestrian Master Plan identifies locations where sidewalk or crossing improvements are desirable, but does not propose specific solutions. The project team assumed sidewalks and crossings would be added where it was reasonably clear that was the relevant improvement.

freight impacts. The City has well established Commute Trip Reduction and Transportation Management Programs in the area. This mitigation strategy looks to expand on the travel demand management strategies proposed as part of the CTR and TMP programs to include new parking-related strategies.

3. City of Seattle and King County Metro should work together to identify capital and operational funding options to support increased transit service. Provide capital improvement funding support for new transit vehicles to reduce headways and decrease the passenger load on key routes and to free resources for other potential transit service expansion.
4. Increasing roadway capacity through limited roadway and intersection improvement projects identified in existing plans. No currently unplanned roadway or intersection widening projects were considered because of limited right-of-way and "induced vehicle travel"¹⁰ impacts that are counter to the mode share goals in the *Seattle Comprehensive Plan* and the *South Lake Union Neighborhood Plan*. Moreover, City policies limit the ability to consider additional capacity expansion that is not in existing plans.

Using the framework described above, four packages of potential mitigation measures were developed to lessen the transportation impacts in the South Lake Union area. The packages are: bicycle and pedestrian system improvements, travel demand management measures, transit system enhancements, and roadway capacity enhancements. This packaged approach is different from the mitigation strategy that is typically used for smaller block or parcel-sized development projects. For smaller projects, discrete mitigation measures are typically identified for each impact. Because of the widespread land use changes associated with the height and density rezone alternatives, a larger-scale mitigation approach aimed at reducing the demand for roadway capacity is appropriate in this case. For example, implementation of Alternative 1 will cause traffic operations impacts to many study roadway corridors. This impact can be lessened by implementing a well connected and integrated bicycle and pedestrian network, which will encourage some travelers to switch modes. An isolated signalized crossing or bicycle lane will not

¹⁰ Induced travel is a well documented phenomenon where the addition of roadway capacity leads to a temporary reduction in travel congestion on a route. The decreased congestion attracts other drivers to the route that would have otherwise used a different mode, traveled at a different time, or not made the trip. Induced travel has the effect of encouraging more driving and increasing the mode share of automobiles.

substantially improve the pedestrian and bicycle environment at a level that will encourage travelers to consider other modes. A robust, well-connected network is necessary to the mitigation strategy.

The four potential mitigation packages are listed below; many of the potential individual mitigation measures are also shown in **Figure 3.5-23**.

It is important to note that the baseline condition already includes major roadway projects like the Mercer East and Bored Tunnel projects, increased transit frequency on several bus routes and the Aurora and Ballard Rapid Ride services per the Seattle travel demand model. The baseline condition also already includes the employer-based travel demand management programs (required by the CTR Law and TMP program) currently in place in South Lake Union¹¹.

¹¹ The City of Seattle travel demand model has built in trip generation and mode-split assumptions that are consistent with the existing level of implementation of CTR/TMP programs in South Lake Union. The model does not forecast that the CTR/TMP program will be more or less effective under 2031 conditions.

Figure 3.5-23
Mitigation Measures



Source: Fehr & Peers, 2010

Bicycle and Pedestrian System

Research has shown that vehicle trip generation and traffic congestion impacts can be reduced if a robust pedestrian system is provided.

Based on a review of the Pedestrian Master Plan, several improvements could be implemented in South Lake Union. Some of the improvements related to Tier 1 Pedestrian mobility issues in the South Lake Union neighborhood include, but are not limited to:

- Complete missing sidewalks along Terry Avenue consistent with the *Terry Avenue Street Design Guidelines*
- Add sidewalk to north side of Denny Way between Stewart Street and Melrose Avenue consistent with the proposed *Denny Way Streetscape Concept Plan*¹²
- Add sidewalk along the east side of Eastlake Avenue from Denny Way to Harrison Street and add a signalized¹³ crossing at the Eastlake Avenue/Republican Street intersection
- Close pedestrian system gaps on Roy Street between Fairview Avenue and Minor Avenue and on Valley Street between Minor Avenue and Yale Avenue

The Bicycle Master Plan identifies the following relevant actions in the South Lake Union neighborhood including but not limited to:

- Add bikeways along Fairview Avenue from Valley Street to Eastlake Avenue E to connect to facilities provided as part of Mercer East and West projects on Valley and Roy Streets
- Add bikeways along Harrison or Thomas street between Fifth N and Eastlake and along Fairview Avenue between Denny Way and Valley Street
- Improve bicycle access through the Fairview Avenue/Denny Way intersection
- Signalize intersection at Minor Avenue N and Denny Way consistent with the *Denny Way Streetscape Concept Plan*

All Bicycle Master Plan improvements were considered for this analysis. However, before implementation, SDOT would review the projects during the design stage to address any potential concerns, such as safety. Other pedestrian and bicycle network projects include the following:

- Implement the planned Lake to Bay Loop
- Repair facilities in poor condition

¹² The *Denny Way Streetscape Concept Plan* has not yet been adopted.

¹³ To be implemented, a signal must meet warrants and be approved by SDOT.

- Require that projects which develop above the “base height” implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework
- Provide additional signalized crossings on Thomas Street at the Dexter Avenue, 9th Avenue, and Westlake Avenue N intersections¹⁴
- Provide additional signalized crossings on John Street at the Dexter Avenue and Westlake Avenue N intersections¹⁵
- Evaluate opportunity to provide enhanced, marked crossing locations across Westlake Avenue N, between Galer Street and 9th Avenue N¹⁶, and implement improvement as appropriate
- Implement the hill climbs defined in the Urban Design Framework
- Improve street lighting and way finding

Travel Demand Management and Parking Strategies

Implement best management practices for travel demand management including maximum parking limits and unbundled parking costs for residential and commercial properties. Research by the California Air Pollution Control Officers Association (CAPCOA), which is composed of air quality management districts in that state has shown that implementation of travel demand management programs can substantially reduce vehicle trip generation (see **Appendix E** for details), which, in turn, reduces traffic congestion impacts. Parking maximums would limit the number of parking spaces which can be built with new development. Unbundled parking separates parking costs from total property cost, allowing buyers or tenants to forego buying or leasing parking spaces. These types of potential mitigation measures would tend to reduce the number of work-based commute trips and all types of home-based trips. Shopping-based trips would also decrease, but at a lower level since these types of trips are less sensitive to parking costs and limited supply for short-term use.

¹⁴ Given the multi-lane nature of these streets, a pedestrian signal or half-signal is necessary to provide a safe crossing. The signal is required because of the adjacent land uses and likely pedestrian desire lines.

¹⁵ To be implemented, a signal must meet warrants and be approved by SDOT..

¹⁶ The frequency of marked crossings is a key component of the pedestrian network. The exact location of each crossing is not known at this time. In the future, the City would evaluate pedestrian desire lines to determine the precise location and treatment for each crossing.

The parking-based travel demand management strategies described above could be further supported by implementing the car sharing incentives identified in the Seattle Municipal Code¹⁷ and through the development of a parking management program like the recently deployed e-park system in Downtown Seattle to better utilize private parking resources.

Note that the parking analysis in the previous sections identified potential short-term parking impacts related to an imbalance between supply and demand. Any reductions to the parking supply in the South Lake Union area would exacerbate this short-term impact. However, as described in the previous sections, while reduced supply will create a short-term shortage in parking spaces, over time prices will adjust and some drivers will switch to other modes. This shift to other modes is the primary goal of the potential travel demand management mitigation measures since it will reduce the impacts to traffic congestion and freight mobility.

In addition to the parking management strategies described above, the City of Seattle could also seek to expand the Downtown Growth and Transportation Efficiency Center (GTEC) program to include the South Lake Union area, or institute a separate GTEC for South Lake Union. As described in *Growth and Transportation Efficiency Center Program 2009 Report to the Legislature*, WSDOT describes the GTEC program as an extension of the existing CTR program. The GTEC program engages employers of all sizes in vehicle trip reduction programs through an area-wide approach. GTECs must also include an evaluation of transportation and land use policies to determine the extent to which they complement and support trip reduction goals. The South Lake Union Height and Density land use changes along with the potential mitigation packages conform well to the general goals of the GTEC program.

Transit Service Expansion

Impacts to transit load factors could be reduced and frequencies could increase by providing capital and/or operational support existing and planned transit service between Uptown and Capitol Hill. King County Metro should consider options to increase the frequency and capacity on the impacted routes by running additional busses or rerouting downtown-bound buses through South Lake Union to serve the new ridership demand in the area. A South Lake Union shuttle service connecting destinations along Eastlake, the streetcar line, and the Aurora

¹⁷ SMC – 23.54.020.J

Rapid Ride line would provide additional transit service opportunities in the area, while supporting the shift to other modes caused by the potential travel demand management mitigation measures.

Additional improvements to the transit network are shown on **Figure 3.5-23**, including transit signal priority at the Fairview Avenue N./Denny Way intersection, and a northbound queue jump lane and southbound transit signal priority at the Fairview Avenue N./Harrison Street intersection.

Roadway Capacity Enhancements

Impacts to traffic congestion and freight mobility along the Mercer Street corridor could be reduced by the completion of the Mercer West Corridor Project. The roadway changes include:

- Widen the Mercer Street underpass between Dexter and 5th Avenues N to include three lanes in each direction, left-turn lanes, wider sidewalks, and a bicycle path
- Connect 8th Avenue N between Mercer and Roy Streets
- Consider separating southbound left turn phase at 9th Avenue/Denny Way/Bell Street intersection

Potential Mitigation Measure Implementation

Implementation of the potential mitigation measures described above is anticipated to be achieved through an update of the South Lake Union Voluntary Impact Fee Program and updates to the City Code to support the potential travel demand management/parking mitigation measures. As the South Lake Union neighborhood builds out, the Seattle Department of Transportation will monitor the transportation system, prioritize projects, and use the fees collected to construct projects, much as the current Voluntary Impact Fee Program is operated.

Projects that develop within the South Lake Union neighborhood may pay the voluntary mitigation fee in order to receive a Master Use Permit. Alternatively, if a project applicant does not wish to pay the voluntary impact fee, project applicants must perform a supplemental environmental analysis to determine transportation impacts and appropriate measures to mitigate project impacts.

Some of these mitigation measures may be implemented through the City's street or alley vacation process. If proposed projects within the South Lake Union Urban Center include street or alley vacations, the city may require contributions to the above mitigation measures as part of the public benefit required for approval of petitions to vacate public rights-

of-way, where such contribution would exceed the projects mitigation obligations and provide amenities that are identified as public benefits.

Specific Mitigation Measures

This section summarizes each impact along with potential mitigation measures.

Impact 1: Under all three alternatives, there will be impacts to study corridor traffic operations.

Potential Mitigation 1: The Roadway Capacity Enhancement mitigation measure, which includes the completion of the Mercer West Corridor Project, will reduce the impact on Mercer Street corridor and improve overall pedestrian and bicycle circulation in the area by implementing a key section of the Lake to Bay Loop.

Since no other roadway capacity expansion projects are planned or considered feasible, many of the remaining impacts can be lessened by implementing the Bicycle and Pedestrian System and Travel Demand Management mitigation measures, as described below.

Based on the output from the MXD model, the Bicycle and Pedestrian System mitigation measures will reduce vehicle trip generation by approximately 7 percent (for PM peak hour trips, see **Appendix E** for other time periods). The MXD trip generation tool predicts mode share based primarily on land use and demographic information, and does not take additional travel demand management into account. To estimate the reduction in trips prompted by travel demand management programs, research summarized by CAPCOA¹⁸ was consulted. According to this research, the travel demand management strategies will reduce vehicle trip generation by 15 percent¹⁹. Combined, these two measures would reduce overall PM vehicle trip generation by about 21 percent for all three

¹⁸ *Quantifying Greenhouse Gas Mitigation Measures: A Resource for Local Government to Assess Emission Reductions from GHG Mitigation Measures*, CAPCOA, August, 2010.

¹⁹ 15 percent reduction in trip generation assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative. Unbundled parking is assumed to cost an average of \$100 per month per space.

height and density alternatives²⁰. Additional information regarding these calculations and the CAPCOA research are available in **Appendix E**.

As shown in **Table 3.5-16**, these trip generation rates would be lower than what is anticipated under the No Action Alternative and the impact on many study roadway segments would be reduced. However, because the change in traffic congestion would affect drivers' behavior, some roadway segments would continue to operate poorly.

The Transit Service Expansion mitigation measure is also recommended. Based on the CAPCOA research, providing capital support that would lead to increased transit frequency would lead to an additional two percent reduction in vehicle trip generation. CAPCOA estimates an additional five percent reduction in vehicle trip generation could be achieved by providing new transit service (e.g., new service between Queen Anne, South Lake Union, and Capitol Hill via Mercer Street; South Lake Union shuttle service connecting the neighborhood with the Streetcar and the Aurora Rapid Ride, rerouted downtown buses through South Lake Union). However, additional studies would need to be conducted to determine the exact level of ridership on new transit lines.

Any additional transit would also support and enhance the pedestrian, bicycle, and travel demand management mitigation measures described above. However, since the background modeling already assumed a level of transit service improvement (as described on page 3.5-151) and since the City of Seattle does not own and operate the transit service in South Lake Union, there is no guarantee that further expanded transit service will occur. Therefore, this mitigation measure was not assumed when reporting the results with mitigation in **Table 3.5-17**.

Impact 2: Under all three height and density alternatives, there will be impacts to bicycle and pedestrian mobility.

Potential Mitigation 2: It is recommended that the Bicycle and Pedestrian System mitigation measures be implemented.

Impact 3: Under all three height and density alternatives, freight mobility is impacted.

²⁰ As noted in Appendix E, the combined effects of two trip reduction strategies are not additive since there are diminishing returns when multiple strategies are implemented.

Potential Mitigation 3: As discussed, the Roadway Capacity Enhancements will not address congestion on Mercer Street between Dexter Avenue and Fairview Avenue N. Therefore it is recommended that the Bicycle and Pedestrian System and Travel Demand Management mitigation measures also be implemented to reduce the automobile trip generation from residents and employees of South Lake Union. These measures will free up more capacity on the Mercer Street corridor for freight traffic.

It is also recommended that the City update the Major Truck Street network to identify a replacement for Broad Street. Further, improvements to major truck streets and arterials expected to carry heavy vehicles on a regular basis will continue to be considered pursuant to the City's adopted Complete Streets policy which guiding principle is to design, operate and maintain Seattle's streets to promote safe and convenient access and travel for all users. For example, the need for wider corner radii to accommodate turning trucks must be balanced with the need to shorten pedestrian crossings and slow regular passenger vehicles. The City will evaluate these trade-offs on a case-by-case basis.

Also, as specific projects seek a Master Use Permit, the City should review the applications to ensure that adequate loading and truck circulation facilities are provided based on the proposed use.

Impact 4: Under all three height and density alternatives, there will be impacts to transit in terms of load factors.

Potential Mitigation 4: To lessen the extent of this impact, it is recommended that the City of Seattle work with King County Metro to increase the frequency and capacity on the impacted routes by running additional busses.

Impact 5: Under all three height and density alternatives, there will be short-term impacts to parking. The impacts would be felt by employees who must pay more for parking, and building owners who must maintain active TDM programs to accommodate all the tenants.

Potential Mitigation 5: To reduce the extent of this impact, it is recommended that the Bicycle and Pedestrian System, Travel Demand Management, and Transit Service Expansion mitigation measures be implemented. There is a strong relationship between parking supply, parking cost, and mode share. Although there may be short-term impacts as individual developments are completed (causing parking demand to exceed supply), over the long-term the situation will reach equilibrium as drivers shift to other modes.

The City may have to review its on-street parking policies and consider implementing variable parking pricing to maintain supply. The shift from driving to transit may also require more transit service from King County Metro. The parking maximum limits suggested as mitigation for Impact 1 would also reduce supply and shift travelers to other modes.

Mitigation Results

The potential mitigation measures were taken into account and analysis was repeated on the three height and density rezone alternatives. The Pedestrian and Bicycle System and Travel Demand Management mitigation packages were factored in at the trip generation level. The Roadway Capacity Enhancement mitigation measures were integrated into the travel model. The trip generation results of the mitigated height and density alternatives are summarized in **Table 3.5-16** (more details may be found in **Appendix E**). The d/c ratios of the three action alternatives with mitigation are shown in **Table 3.5-17**, along with the No Action Alternative for comparison. As described above, the net impact of the pedestrian, bicycle, and transportation demand management strategies is a reduction in vehicle trip generation of approximately 21 percent for the three action alternatives. As shown in **Table 3.5-16**, this level of trip generation reduction would lead to fewer vehicle trips generated than under the No Action Alternative.

Given the current fiscal environment, funding for additional capital improvements is more uncertain than ever. Therefore, it is conceivable that some of the roadway capacity and bicycle and pedestrian mitigation measures described above could be delayed or deferred. Under this scenario, transportation demand management strategies could still be implemented to reduce vehicle trip generation; however, these strategies are much more successful in conjunction with additional transit service.

Assuming that the background levels of transit service included in the City of Seattle travel model are not implemented, then the transportation demand management strategies described above could still be implemented. As described earlier, it is anticipated that these strategies would reduce the total vehicle trip generation by approximately 15 percent. This level of vehicle trip generation reduction would result in a net increase in total vehicle trips generated for Alternatives 1 and 2 and would result in overall worse traffic congestion levels when compared to the No Action alternative. Alternative 3 with the transportation demand management alternative would still result in a net decrease in vehicle trip generation when compared to the No Action Alternative.

If the transit expansion assumptions included in the City of Seattle travel model are optimistic and little new transit service is added in the next 20 years, then the effectiveness of the transportation demand management program will be reduced. While it is difficult to quantify the level of reduction, it is reasonable to assume that all three Action Alternatives would result in a net increase in vehicle trip generation and thus traffic operations and freight impacts when compared to the No Action Alternative.

Table 3.5-16
PM Peak Hour Trip Generation with and without Mitigation

Alternative	No Mitigation			Mitigation		
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)	
		Internal, Bicycle & Pedestrian	Transit		Internal, Bicycle & Pedestrian	Transit
No Action Alternative - Current Zoning (Mitigation Not Applicable)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	12,648 (51.4%)	7,279 (26.9%)	5,871 (21.7%)
Alternative 1 - Maximum Increases to Height and Density	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)
Alternative 2 - Mid-Range Increases to Height and Density	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)
Alternative 3 - Moderate Increases to Height and Density	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)

Source: Fehr & Peers, 2010

Note: See Appendix E for details on the mode share calculation. Auto trips include both SOV and HOV trips, so the number reported is not equivalent to person-trips. The Internal, Bicycle & Pedestrian and Transit categories are person-trips.

Table 3.5-17
Mitigated Action Alternatives: Demand-To-Capacity Ratios Of Study Corridors

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Fremont Bridge	1) N 35th Street to Westlake Avenue N	1,768	PM/N	1.11/F	1,754	PM/N	1.10/F	1,755	PM/N	1.10/F	1,733	PM/N	1.08/F
Westlake Avenue N	2) Fremont Bridge to Valley Street	1,330	PM/N	0.83/D	1,316	PM/N	0.82/D	1,316	PM/N	0.82/D	1,320	PM/N	0.83/D
	3) Valley Street to Harrison Street	1,040	PM/S	0.99/E	988	PM/S	0.94/E	991	PM/S	0.94/E	946	PM/S	0.90/E
	4) Harrison Street to Denny Way	1,061	PM/S	1.01/F	1,029	PM/S	0.98/E	1,030	PM/S	0.98/E	994	PM/S	0.95/E
	5) Denny Way to Stewart Street	624	PM/N	0.69/D	610	PM/N	0.68/D	616	PM/N	0.68/D	598	PM/N	0.66/D
	6) N 40th Street to E Hamlin Street	1,166	AM/SW	0.61/D	1,130	AM/SW	0.59/D	1,129	PM/NE	0.59/D	1,108	AM/SW	0.58/D
Eastlake Avenue E	7) E Hamlin Street to Fairview Avenue N	1,163	AM/S	0.61/D	1,130	AM/S	0.59/D	1,127	AM/S	0.59/D	1,109	AM/S	0.58/D
	8) Fairview Avenue to Lakeview Blvd E	578	AM/N	0.83/D	547	PM/N	0.78/D	544	PM/N	0.78/D	549	PM/S	0.78/D
	9) Lakeview Blvd E to Stewart Street	867	PM/S	0.62/D	849	PM/N	0.61/D	851	PM/N	0.61/D	858	PM/N	0.61/D
Fairview Avenue N.	10) Eastlake Avenue to Yale Avenue N	810	AM/SW	1.16/F	781	AM/SW	1.12/F	766	AM/SW	1.09/F	774	AM/SW	1.11/F
	11) Yale Avenue N to Harrison Street	1,389	PM/N	0.83/D	1,381	PM/N	0.82/D	1,384	PM/N	0.82/D	1,396	PM/N	0.83/D
	12) Harrison Street to Denny Way	1,009	PM/N	0.60/D	1,000	PM/N	0.60/D	1,000	PM/N	0.60/D	985	PM/N	0.59/D
Dexter Avenue N	13) Fremont Bridge to Valley Street	1,132	AM/S	1.18/F	1,140	AM/S	1.19/F	1,134	AM/S	1.18/F	1,151	AM/S	1.20/F
	14) Valley Street to Denny Way	1,787	PM/N	1.28/F	1,737	PM/N	1.24/F	1,734	PM/N	1.24/F	1,709	PM/N	1.22/F
Valley Street	15) Westlake Avenue N to Fairview Avenue N	624	PM/E	0.74/D	636	PM/E	0.76/D	633	PM/E	0.75/D	611	PM/E	0.73/D
Mercer Street	16) Queen Anne Avenue N to 5th Avenue N	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D	1,091	PM/E	0.65/D
	17) 5th Avenue N to Dexter Avenue N	1,445	AM/E	0.86/D	1,980	PM/W	0.79/D	1,983	PM/W	0.79/D	1,970	AM/W	0.78/D
	18) Dexter Avenue N to Fairview Avenue N	2,057	AM/W	0.98/E	2,054	AM/W	0.98/E	2,072	AM/W	0.99/E	2,040	AM/W	0.97/E
Denny Way	19) Broad Street to Aurora Avenue N	1,053	AM/W	0.63/D	1,031	PM/W	0.61/D	1,031	PM/W	0.61/D	1,032	AM/W	0.61/D
	20) Aurora Avenue N to Stewart Street	1,607	PM/E	1.53/F	1,591	PM/E	1.52/F	1,586	PM/E	1.51/F	1,573	PM/E	1.50/F
	21) Stewart Street to Broadway E	1,151	AM/W	0.72/D	1,126	AM/W	0.70/D	1,122	PM/W	0.70/D	1,102	AM/W	0.69/D
Broad Street	22) Denny Way to Westlake Avenue N	Segment does not exist under future conditions											
Boren Avenue	23) Denny Way to Pine Street	1,297	AM/NW	1.08/F	1,289	AM/NW	1.07/F	1,282	AM/NW	1.07/F	1,270	AM/NW	1.06/F
	24) Pine Street to University Street	1,068	PM/SE	0.89/D	1,063	PM/SE	0.89/D	1,068	PM/SE	0.89/D	1,051	PM/SE	0.88/D
Stewart Street	25) Eastlake Avenue E to Boren Avenue	2,196	AM/SW	1.05/F	2,194	AM/SW	1.04/F	2,208	AM/SW	1.05/F	2,163	AM/SW	1.03/F
	26) Boren Avenue to 7th Avenue	1,334	AM/SW	0.74/D	1,344	AM/SW	0.75/D	1,347	AM/SW	0.75/D	1,340	AM/SW	0.74/D
	27) 7th Avenue to 3rd Avenue	873	AM/SW	0.73/D	860	AM/SW	0.72/D	862	AM/SW	0.72/D	840	AM/SW	0.70/D
Virginia Street	28) Denny Way to Westlake Avenue N	839	PM/NE	0.70/D	854	PM/NE	0.71/D	851	PM/NE	0.71/D	856	PM/NE	0.71/D
	29) Westlake Avenue N to 3rd Avenue	1,215	PM/NE	0.68/D	1,195	PM/NE	0.66/D	1,203	PM/NE	0.67/D	1,177	PM/NE	0.65/D
E Pine Street	30) Boren Avenue to Broadway	691	PM/W	0.96/E	676	AM/W	0.94/E	689	PM/W	0.96/E	678	AM/W	0.94/E
Lakeview/Belmont/Roy	31) Eastlake Avenue to Broadway E	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D	415	PM/E	0.52/D

Road	Segment	NO ACTION ALTERNATIVE			ALTERNATIVE 1			ALTERNATIVE 2			ALTERNATIVE 3		
		Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS	Volume	Peak Hour/ Direction	d/c Ratio/ LOS
Thomas Street	32) Aurora Avenue N to Eastlake Avenue E	429	PM/E	0.60/D	419	PM/E	0.58/D	436	PM/E	0.61/D	390	PM/E	0.54/D
Harrison Street	33) Aurora Avenue N to Eastlake Avenue E	537	PM/E	0.90/E	522	PM/E	0.87/D	515	PM/E	0.86/D	502	PM/E	0.84/D
9th Avenue N	34) Roy Street to Republican Street	698	PM/N	1.00/F	661	PM/N	0.94/E	667	PM/N	0.95/E	648	PM/N	0.93/E
Howell/Eastlake	35) Stewart Street to Boren Avenue	1,113	PM/N	0.93/F	1,099	PM/N	0.92/E	1,093	PM/N	0.91/E	1,095	PM/N	0.91/E

Source: Fehr & Peers, 2010

Note: Bold text signifies an impact.

* These study corridors intersect or are adjacent to other study corridors that are expected to operate at LOS F conditions. Actual LOS may be worse because of queuing.

Potential transit mitigation calculations were completed independently of the other potential mitigation measures. **Table 3.518** shows the number of additional busses that would need to run during the peak hour to reduce the load factor to acceptable levels. Details of the calculations may be found in **Appendix E**.

Table 3.5-18
South Lake Union Peak Hour Transit Mitigation

Route	Termini Locations	No Action Load Factor	Action Load Factor	Peak Hour Ridership	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	1.17	1.35	520	1	1.18
28 NB	Downtown, Broadview	1.19	1.40	240	1	1.06
29 NB	Downtown, Woodland Park	1.19	1.49	120	1	1.04
29 SB	Downtown, Woodland Park	1.49	1.79	144	1	1.25
56 NB	South Lake Union, West Seattle	1.38	1.53	396	2	1.07

Source: Fehr & Peers, 2010

3.5.7 Significant Unavoidable Adverse Impacts

With the mitigation measures described above resulting in an overall net decrease in vehicle trip generation for the three Action Alternatives compared to the No Action Alternative, no significant unavoidable adverse transportation impacts are expected as a result of the height and density increase.

*Plants and
Animals**Land Use**Housing**Aesthetics**Transportation***Public Services***Utilities*

3.6 Draft EIS 3.14 Public Services Clarifications or Corrections

This section of the Final EIS includes additional information and analysis on public services that was not included in the Draft EIS, specifically public schools. Included in this section is a description of the existing status of Seattle Public Schools, including schools that provide service to the South Lake Union Neighborhood, and an evaluation of the impacts of added demand on schools from redevelopment under the alternatives.

3.6.1 Affected Environment

Public Schools

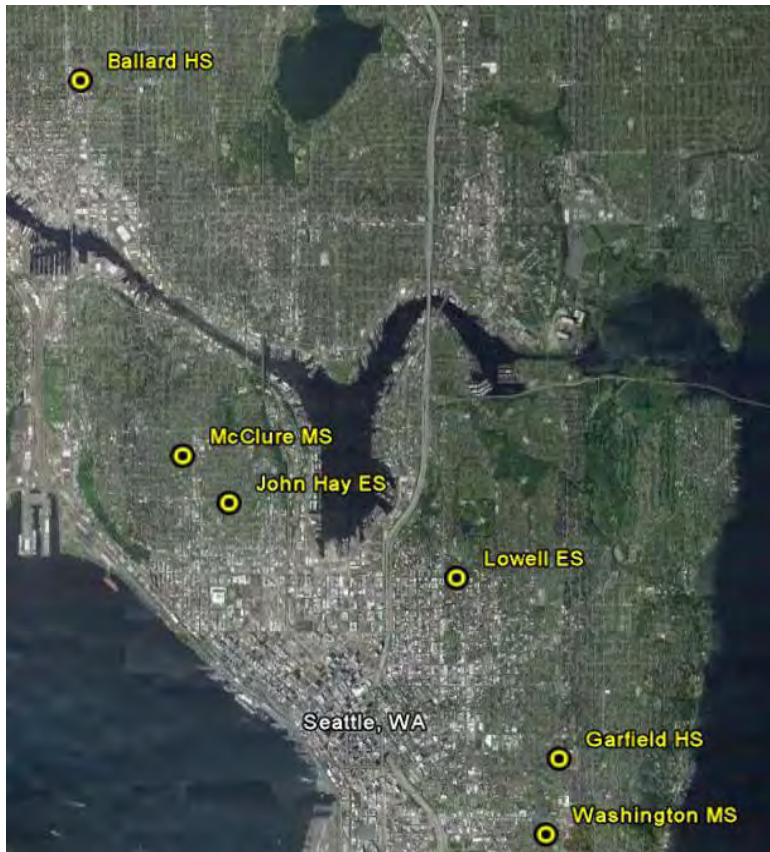
The Seattle School District provides public school services for the City of Seattle, including the South Lake Union Neighborhood. The Seattle School District operates approximately 90 schools/programs, including 52 elementary schools (kindergarten through fifth grade), 10 kindergarten through eighth grade schools, nine middle schools (sixth through eighth grade), 12 high schools (ninth through twelfth grade) and seven alternative schools/programs.

In 2009, the Seattle School District adopted a new method of assigning students to schools based on attendance area boundaries. Each school within the district is designated a geographic boundary (attendance area) and students who live within the boundary are assigned to that school.

The South Lake Union Neighborhood is generally located within the attendance area boundaries of John Hay Elementary School (kindergarten through fifth grade) and McClure Middle School (sixth through eighth grade). A small portion in the northeastern corner of the South Lake Union Neighborhood (north of the 1100 block on Fairview Avenue) is located within the attendance area boundary of Lowell Elementary School (kindergarten through fifth grade) and Washington Middle School (sixth through eighth grade).

Two high school attendance area boundaries are located in the South Lake Union Neighborhood, including Ballard High School (ninth through twelfth grade), and Garfield High School (ninth through twelfth grade). Within this South Lake Union Neighborhood, Ballard High School generally serves students located on the west side of Lake Union and north of Broad Street, while Garfield High School generally serves the remaining portion of the South Lake Union Neighborhood. See **Figure 3.6-1** for the location of the schools serving the South Lake Union Neighborhood.

Figure 3.6-1
Seattle Public School Locations



Source: Seattle School District, 2011.

Existing Enrollment. In 2009, the Seattle School District had an enrollment of approximately 45,900 students (kindergarten through twelfth grade). The total enrollment included approximately 23,300 elementary school students, 9,400 middle school students, and 13,200 high school students.

Table 3.6-1 provides a summary of the total enrollment in the Seattle School District from 2004-2009. Enrollment has held relatively steady over the past six years, with fluctuations of less than one percent each year.

Table 3.6-1
Seattle School District Total Enrollment – 2004-2009

Year	Enrollment	Change in Enrollment from Previous Year	Percent Change from Previous Year
2004	46,416		
2005	46,200	-216	-0.5%
2006	45,933	-267	-0.6%
2007	45,276	-657	-1.4%
2008	45,572	296	0.7%
2009	45,944	372	0.8%

Source: *Seattle School District, 2010.*

Table 3.6-2 summarizes the total student enrollment for the South Lake Union Neighborhood attendance area schools for the 2009-2010 school year.

Table 3.6-2
Attendance Area School Enrollment – 2009-2010

School	2009-2010 Enrollment
John Hay Elementary	467
Lowell Elementary	441
McClure Middle School	552
Washington Middle School	1,019
Ballard High School	1,632
Garfield High School	1,642

Source: *Seattle School District Reports for 2009-2010 School Year, 2010.*

Projected Enrollment. In 2009, the Seattle School District developed enrollment projections for 2015 based on the assumed functional capacity of schools under the established attendance area boundaries. Functional capacity, as defined by the Seattle School District, is the number of students a building can accommodate based on several factors, including: consistent accounting of classrooms, offices and other spaces in the building; consistent assumptions about space usage for various program needs; information on a school's student population; programmatic needs of those students; and, the location of space for specialized programs.

Table 3.6-3 illustrates the projected enrollment for 2015 for the Seattle School District and the attendance area schools that serve the South Lake Union Neighborhood.

Table 3.6-3
 Projected Seattle School District Functional Capacity and Enrollment –
 2015

	Forecasted Functional Capacity	Forecasted Enrollment	Forecasted Available Functional Capacity
Seattle School District			
Elementary	23,317	22,482	835
Middle School	8,983	8,258	725
High School	12,676	11,169	1,507
Total	44,976	41,909	3,067
Attendance Area Schools			
John Hay ES	420	425	-5
Lowell ES	545	506	39
McClure MS	768	493	275
Washington MS	1,119	1,044	75
Ballard HS	1,581	1,487	94
Garfield HS	1,598	1,624	-26
Total	6,031	5,579	452

Source: Seattle School District, 2010.

Enrollment projections indicate that District-wide enrollment would be anticipated to decline from 45,944 students in 2009 to 41,909 students in 2015. Enrollment at attendance area schools for the South Lake Union Neighborhood is also anticipated to decline at John Hay ES, McClure MS, Ballard HS, and Garfield HS; however, enrollment is anticipated to increase at Lowell ES and Washington MS by 2015.

As shown in **Table 3.6-3**, the Seattle School District is anticipated have sufficient functional capacity to accommodate the projected enrollment within the District in 2015. In addition, the majority of the attendance areas schools for the South Lake Union Neighborhood would also have sufficient capacity to accommodate the projected enrollment, with the exception of John Hay ES and Garfield HS.

School District Planning. According the Seattle School District’s Capacity Management Policy, the District will annually evaluate enrollment and capacity management issues. As described in the Capacity Management Policy, the District could take any of the following actions to match capacity and enrollment, depending on the needs in a particular area:

- Adding, relocating, or removing programs;
- Adjusting school boundaries;

- Adjusting geographic zones for option schools;
- Adding or removing portables;
- Adding to or renovating buildings; or,
- Opening, reconstituting or closing buildings

8th Avenue Corridor

The 8th Avenue Corridor is located within the attendance areas of John Hay Elementary School, McClure Middle School, and Garfield High School.

Fairview Avenue Corridor

The Fairview Avenue Corridor is located within the attendance areas of John Hay Elementary School, McClure Middle School, and Garfield High School.

Valley/Mercer Blocks

The Valley/Mercer Blocks are located within the attendance areas of John Hay Elementary School, McClure Middle School, and Garfield High School.

3.6.2 Environmental Impacts

The proposed action would adopt new or maintain existing zoning regulations. By itself, this action would not directly result in impacts to the public schools in the Seattle School District. However, zoning regulations would allow for potential future development at increased heights and densities and an associated increase in population, which could result in a subsequent impact to public schools. The impacts described below relate to the development that could result from the adoption of any of the proposed zoning alternatives.

Impacts Common to All Alternatives

Public Schools. Potential increases in population in the South Lake Union Neighborhood would be incremental and would be accompanied by subsequent incremental increases in demand for public schools.

For the purposes of this analysis, potential impacts to public schools were projected for the South Lake Union Neighborhood based on data from the 2010 US Census for the census tract areas that generally comprise the Neighborhood area (census tract 66, 67, 72 and 73). Based on the number of housing units assumed for the Action Alternatives and No Action Alternative (11,900 units and 8,000 units respectively) and the average household size for the South Lake Union Neighborhood (1.47 persons per unit¹⁶), the total projected increase in population was estimated to be

¹⁶ 2010 US Census data average household size for Census Tract 66, 67, 72 and 73.

approximately 17,520 for the Action Alternatives and 11,780 for the No Action Alternative.

2010 Census data indicates that approximately four percent of the population in the South Lake Union Neighborhood would be school age children (ages 5 to 19 years). This percentage was used in conjunction with the projected population total, to project the potential number of school age children that could be located in the South Lake Union Neighborhood under the Action Alternatives and the No Action Alternative.

Table 3.6-4 provides a summary of the projected number of new students that could be generated in the South Lake Union Neighborhood under the Action Alternatives and No Action Alternatives.

Table 3.6-4
Projected Student Generation for the South Lake Union Neighborhood

	Action Alternatives	No Action Alternative
Elementary School ¹	175	118
Middle School ²	123	82
High School ³	399	268
Total Students	697	468

Source: EA|Blumen, 2011.

¹ Approximately 1 percent of the total population (2010 US Census for tracts 66, 67, 71 and 72).

² Approximately 0.7 percent of the total population (2010 US Census for tracts 66, 67, 71 and 72).

³ Approximately 2.3 percent of the total population (2010 US Census for tracts 66, 67, 71 and 72).

Residential development under the Action Alternatives would generate additional student enrollment at the South Lake Union Neighborhood attendance area schools. Under the Action Alternatives, approximately 697 students would be generated by potential development at full buildout. It is estimated that new students would include approximately 175 elementary students, 123 middle school students, and 399 high school students.

Under the No Action Alternative, fewer students (approximately 468 students) would be generated by potential development in the South Lake Union Neighborhood. Approximately 118 elementary students, 82 middle school students, and 268 high school students would be generated under this alternative.

Table 3.6-5 provides a comparison of projected student generation under the Action Alternatives to the available forecasted functional capacity for the Seattle School District and the South Lake Union Neighborhood attendance area schools.

Table 3.6-5
Projected Student Generation and Forecasted Functional Capacity –
Action Alternatives

	Projected Student Generation	Available Functional Capacity in the School District	Functional Capacity in District After Action Alternatives	Available Functional Capacity in Attendance Area Schools	Functional Capacity in Attendance Area Schools After Action Alternatives
Elementary School	175	835	660	34 ¹	-141
Middle School	123	725	602	350 ²	227
High School	399	1,507	1,108	68 ³	-331
Total	697	3,067	2,370	452	-245

Source: EA|Blumen, 2011.

¹ Includes John Hay ES and Lowell ES

² Includes McClure MS and Washington MS

³ Includes Ballard HS and Garfield HS

As shown in **Table 3.6-5**, excess functional capacity is anticipated to be available at all school levels within the Seattle School District to serve the projected students that would be generated under the Action Alternatives. Attendance area middle schools (McClure MS and Washington MS) are also anticipated to have excess functional capacity to serve the projected students.

However, projected elementary student and high school student generation is anticipated to exceed the available functional capacity at the elementary (John Hay ES and Lowell ES) and high school (Ballard and Garfield) level. It is anticipated that a portion of these students would need to be accommodated at other schools outside of the existing attendance area boundary. This could result in the need for the District to adjust the attendance area boundaries, provide transportation service for the students, and/or other measures to accommodate the number of students in excess of the forecasted functional capacity.

Table 3.6-6 provides a comparison of projected student generation under the No Action Alternative to the available forecasted functional capacity for the Seattle School District and the South Lake Union Neighborhood attendance area schools.

Table 3.6-6
 Projected Student Generation and Forecasted Functional Capacity – No
 Action Alternative

	Projected Student Generation	Available Functional Capacity in the School District	Functional Capacity in District After Action Alternatives	Available Functional Capacity in Attendance Area Schools	Functional Capacity in Attendance Area Schools After Action Alternatives
Elementary School	118	835	717	34 ¹	-84
Middle School	82	725	643	350 ²	268
High School	268	1,507	1,239	68 ³	-200
Total	468	3,067	2,599	452	-16

Source: EA|Blumen, 2011.

¹ Includes John Hay ES and Lowell ES

² Includes McClure MS and Washington MS

³ Includes Ballard HS and Garfield HS

As illustrated in **Table 3.6-6**, functional capacity is anticipated to be available at all school levels within the Seattle School District to serve the projected students that would be generated under the No Action Alternative. Attendance area middle schools (McClure MS and Washington MS) are also anticipated to have excess functional capacity to serve the projected students.

Similar to the Action Alternatives projected student generation under the No Action Alternative is anticipated to exceed the available functional capacity at the elementary school and high school level. However, the number of elementary and high school students would be lower under the No Action Alternative. These students would need to be accommodated at other schools outside of the existing attendance area boundary, which could result in the need for the District to adjust the attendance area boundaries, provide transportation service for the students, and/or other measures to accommodate the number of students in excess of the forecasted functional capacity.

3.6.3 Mitigation Strategies

Future population increases associated with potential residential development in the South Lake Union Neighborhood under the Action Alternatives and No Action Alternative (Alternatives 1-4) would be incremental and would result in associated incremental increases in demand for public schools in the area. As noted above, the South Lake Union Neighborhood attendance area schools may not have the functional capacity to accommodate the projected number of students that could be generated by the Action Alternatives and No Action

Alternative. These potential impacts could be addressed through the following mitigation measures.

1. A portion of the tax revenue generated from potential redevelopment in the Neighborhood – including construction sales tax, business and operation tax, property tax and other fees, licenses and permits – would accrue to the City of Seattle and Seattle School District and could help offset demand for services from the District.
2. It is anticipated that increases in student population over the buildout period would be addressed through the Seattle School District capital facilities capacity planning process (policy H13.00) to insure that no significant impacts would occur as a result of redevelopment in the South Lake Union Neighborhood. As stated previously, the Seattle School District could take any or a combination of the following actions to match capacity and enrollment as buildout occurs in the South Lake Union Neighborhood:
 - Adding, relocating or removing programs;
 - Adjusting school boundaries;
 - Adjusting geographic zones for option schools;
 - Adding or removing portables;
 - Adding to or renovating buildings; and/or,
 - Opening, reconstituting or closing buildings.

3.6.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts to public schools are anticipated.

3.7 Draft EIS 3.15 Utilities Clarifications or Corrections

Discussion of electrical power requirements based on Seattle City Light input and Comment #44 in Comment Letter 5, pending further City direction.

*Plants and
Animals
Land Use
Housing
Aesthetics
Public Services
Utilities*

Chapter 3 Contents

Comments and Responses

CHAPTER 4 COMMENTS AND RESPONSES

4.1 Public Comments

Chapter 4 of this Final Environmental Impact Statement (Final EIS) contains public comments provided on the Draft Environmental Impact Statement (Draft EIS) during the 45-day comment period, and this Chapter also provides responses to those comments. The comment period for the Draft EIS was extended from February 24 to April 11, 2011.

Section 4.1 provides a list of public comments while Section 4.2 provides responses to comments followed by the letters and public meeting minutes.

Public Comments1 Responses to Comments6	Chapter 4 Contents
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Table 4-1
Public Comments Received During the Comment Period

Letter Number	Name (Last, First)	Agency/Organization	Date Received
Public Agencies			
1.	Timmerman, Carter	Washington State Department of Transportation	4/11/11
2.	Greve, Darren	King County Department of Natural Resources and Parks	4/11/11
3.	Freeman, Ketil and Belz, Sara	City of Seattle, Legislative Department	4/11/11
4.	Graves, David	Seattle Parks and Recreation	4/11/11
5.	Wilson, Barb	Seattle Planning Commission	4/11/11
Community Organizations and Interest Groups			
6.	Smith, Leslie G.	The Alliance for Pioneer Square	4/06/11
7.	Swenson, Skip	Cascade Land Conservancy	4/11/11
8.	O'Tool, Lori	The Center for Wooden Boats	3/28/11
9.	Danyluk, Edward	Denny Triangle Neighborhood Association	4/11/11
10.	Joncas, Kate	Downtown Seattle Association	4/11/11
11.	Woo, Eugenia	Historic Seattle	4/11/11
12.	Aramburu, J. Richard	Lake Union Opportunity Alliance	4/11/11
13.	Gemmel, Chris	Lake Union Opportunity Alliance	4/10/11
14.	Goodspeed, Jim; Gemmel, Chris; and Groth, Lori	Lake Union Opportunity Alliance	4/11/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
15.	Ramey, Brian	Lake Union Opportunity Alliance	4/10/11
16.	Staton, Renee A.	Leadership for Great Neighborhoods	3/28/11
17.	Lee, Sharon	Low Income Housing Institute	4/11/11
18.	Dinndorf, Jerry	South Lake Union Community Council	4/11/11
19.	Johnson, Rob	Transportation Choices Coalition	4/11/11
Citizen Comment			
20.	Adams, Terry and Ruth		4/11/11
21.	Allen, Chrissy	CB Richard Ellis	4/11/11
22.	Allen, Dean		4/11/11
23.	Alpert, Spencer		4/11/11
24.	Anderson, Fred	Leajack Construction	4/11/11
25.	Archambault, Curt	Jack in the Box Restaurants	4/06/11
26.	Archambault, Curt and Carla		4/06/11
27.	Armstrong, Sally		4/05/11
28.	Arrington, Alice		4/05/11
29.	Asher, Larry	School of Visual Concepts	3/24/11
30.	Auckland, David		4/07/11
31.	Autry, Mike		3/25/11
32.	Bacarella, Mary	Space Needle	3/28/11
33.	Bajuk, Christopher		3/29/11
34.	Banfill, Sally		3/25/11
35.	Behar, Howard		4/11/11
36.	Bekins, Pamela		3/29/11
37.	Bennett, Don		4/11/11
38.	Biggs, William	Group Health	4/08/11
39.	Bjerke, Bruce		3/25/11
40.	Bjerke, Jill		4/05/11
41.	Boland, Bridget		4/11/11
42.	Brandt, Adam		3/10/11
43.	Brooks, Tim	Kenmore Air	4/07/11
44.	Brumbaugh, Mark	Brumbaugh&Associates	4/10/11
45.	Buck, Peter L.	The Buck Law Group	4/11/11
46.	Buford, Thomas		3/12/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
47.	Burch, William and Gloria		4/01/11
48.	Butler, Henry and Olga		4/05/11
49.	Calder, Allegra		3/18/11
50.	Carlin, Gregory	Seattle Seaplanes	4/08/11
51.	Cesternino, Robert C.	Citadel Security Services	3/30/11
52.	Chadsey, Majorie		4/11/11
53.	Chandler, John		4/11/11
54.	Clancy, Karson		4/01/11
55.	Collins, Arlan and Woerman, Mark L.	Collins Woerman	3/30/11
56.	Coney, Donald John		4/08/11
57.	Corr, Saroj	CBRE Asset Services	4/10/11
58.	Coulter, Jefferson		3/27/11
59.	Cree, Russ	Glacier Real Estate Finance	3/25/11
60.	Crossley, Katharine		3/31/11
61.	Curran, Lori Mason		4/11/11
62.	Curtis, Jared		4/10/11
63.	Dasler, Joshua	CBRE	
64.	Douglas, Lloyd		4/11/11
65.	Doxsee, Marcella		4/11/11
66.	Ehlebracht, Mike	Hart Crowser, Inc.	4/05/11
67.	Estes, Brian		4/11/11
68.	Estes, Jill		4/11/11
69.	Evans, David R	David R Evans, SHME & Associates	4/07/11
70.	Felber, Jim		undated
71.	Foster, Dan	Finn Ferguson Corporate Real Estate	4/04/11
72.	Ferretti, Peter	Pan Pacific Hotel Seattle	4/11/11
73.	Fiedorczyk, Bryan		3/10/11
74.	Freeman, Judith		undated
75.	Frothingham, Donald		4/08/11
76.	Fulford, Lee		3/30/11
77.	Gaillard, Arnie and Pat		4/07/11
78.	Garner, Jackie	Garner Construction WBE Inc.	4/05/11
79.	Giacobazzi, Joseph, Paul Fuesel, Nelson Davis		undated
80.	Golde, Marcy J.		4/11/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
81.	Gooding, Kim		4/08/11
82.	Grant, Gabe	HAL Real Estate Investments Inc.	3/18/11
83.	Gregory, Serge		4/11/11
84.	Gunn, Cecelia		4/08/11
85.	Hafenbrack, Charles		3/31/11
86.	Hailey, Julia		4/10/11
87.	Hastings, Ryan		3/22/11
88.	Hazlehurst, Hamilton		3/28/11
89.	Healey, Ada M	Vulcan, Inc.	4/11/11
90.	Heffron, Marnie	Heffron Transportation, Inc.	4/11/11
91.	Hennings, Gloria		3/02/11
92.	Herb, Frederick and Margaret		4/08/11
93.	Hill, G. Richard	McCullough Hill Leary	4/11/11
94.	Holberg, Hillary		4/11/11
95.	Holmes, Robert J.		3/24/11
96.	Howe, Douglas, and Hurd, A-P	touchstone	4/06/11
97.	Hoy, Mary		4/11/11
98.	Huard, Brock		4/06/11
99.	Huberty, Dan	ZGF Architects	3/28/11
100.	Hughes, Brendan		4/11/11
101.	Hurd, A-P	touchstone	4/11/11
102.	Ito, Doug		3/31/11
103.	Johnson, Annalisa		4/11/11
104.	Johnson, Jay		3/17/11
105.	Kaivola, Linda		4/09/11
106.	Kaylor, Courtney A.	McCullough Hill Leary on behalf of Boris V Korry Testamentary Trust	4/07/11
107.	Kelly, James		4/06/11
108.	Kenny, Daniel		4/11/11
109.	Kenny, Dennis E.		4/11/11
110.	Kenny, Diane		4/11/11
111.	Kent, Mike		undated
112.	Kinzer, Craig and Richey, Kris	Kinzer Real Estate Services	4/07/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
113.	Kitto, Terri		4/11/11
114.	Kleinart, Jack		3/28/11
115.	Kleinart, Layne		undated
116.	Koshy, Ben		4/11/11
117.	Kroll, Jeff	Frontier Renewal	4/11/11
118.	Kushmerick, Martin		4/10/11
119.	Kushmerick, Patricia		4/10/11
120.	Langrand, Sylvain		4/10/11
121.	Larsen, Brian R.W.	South Lake Union Dentistry	4/08/11
122.	Lawless, Betsy		3/27/11
123.	Leabo, Dick A.	University of Michigan	3/08/11
124.	Leland, Larry	Perkins+Will	4/11/11
125.	Link, Kristen		4/03/11
126.	Littlel, John	Pacific Northwest Regional Council of Carpenters	undated
127.	Loacker, John		3/09/11
128.	Lust, Todd		4/08/11
129.	Malaspino, Joe		4/11/11
130.	Markley, David D.	Transportation Solutions, Inc.	4/11/11
131.	Masson, Chris		4/11/11
132.	Masson, Diane		4/09/11
133.	Matthews, Carrie		3/10/11
134.	Matthews, Tim		3/11/11
135.	McKay, JJ		3/23/11
136.	McLaughlin, Jan	Your Communication Connection	3/20/11
137.	Miller, Terry	Schultz Miller	3/31/11
138.	Moss, Christine		undated
139.	Mulica, Thomas		4/08/11
140.	Munger, Jeffrey		4/11/11
141.	Muratore, Michael	Pan Pacific Hotel Seattle	4/11/11
142.	Naprawrich, MaryAnn		undated
143.	Norton, Ruthe and Frank		4/11/11
144.	Novy, Richard		4/11/11
145.	Nottingham, Sarah Rose		4/11/11
146.	O'Brien, Kathleen	O'Brien & Company	3/28/11
147.	Ostergaard, Paul B	Urban Design Associates	4/08/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
148.	Parente, Kini		4/11/11
149.	Parrish, Brad	Standard Parking	4/11/11
150.	Parsons, Craig		4/08/11
151.	Pavlovec, Brian and Giselle		4/07/11
152.	Pearson, William		4/06/11
153.	Pehrson, John		4/11/11
154.	Penn, Steve		4/10/11
155.	Petrie, Mark	Copiers Northwest	3/29/11
156.	Pope, Charles E.		4/09/11
157.	Potter, William W.		4/10/11
158.	Rabe, Jeff		3/16/11
159.	Randall, Jaime		4/07/11
160.	Redman, Scott	Sellen Construction Company	4/11/11
161.	Reel, Richard		3/29/11
162.	Reel, Richard		4/06/11
163.	Reel, Richard		4/11/11
164.	Rivera, Chris E.	Washington Biotechnology & Biomedical Association	4/08/11
165.	Roewe, Matthew H.	VIA Architecture	4/11/11
166.	Rusch, Scott	Fred Hutchinson Cancer Research Center	4/05/11
167.	Russell, Eric		3/28/11
168.	Sather, Katherine		3/25/11
169.	Saucier, Lyn	Chiles & Company	4/07/11
170.	Schauer, Tom		4/11/11
171.	Sevart, Ron	Space Needle Corporation	4/11/11
172.	Sharp, Jeff		4/10/11
173.	Shushan, Stephanie		4/11/11
174.	Simonetti, Martin	VLST Corporation	4/06/11
175.	Sleicher, Charles		4/09/11
176.	Smith, Patricia		4/06/11
177.	Smithhart, Noelle		4/11/11
178.	Snorks, Paul		4/08/11
179.	Starr, Scott		
180.	Stepherson, Josh		3/29/11
181.	Stoner, Mark	PeterStoner Architects	4/07/11
182.	Sullivan, David	Pan Pacific Hotel Seattle	4/11/11

Letter Number	Name (Last, First)	Agency/Organization	Date Received
183.	Surdyke, Scott		4/11/11
184.	Suver, Joanne		4/11/11
185.	Symonds, Drew		4/11/11
186.	Tangen, John		4/07/11
187.	Thordarson, Michelle		4/08/11
188.	Timpson, E. Diana		4/11/11
189.	Trainer, Steve	9 th Avenue Investors	4/11/11
190.	Tung, Beatrice		4/09/11
191.	Turner, John	PEMCO Insurance	4/11/11
192.	Tweedale, Kelly	Seattle Opera	4/11/11
193.	Twill, Jason		4/11/11
194.	Umali, Tino		4/11/11
195.	Van Til, Steve		4/11/11
196.	Vice, Jodie		4/03/11
197.	Walker, Dewey		4/06/11
198.	Warren, Robert. P.		4/11/11
199.	Waymire, Jim	Waymire Consulting	4/11/11
200.	Weber, Brandon G.	CBRE	4/08/11
201.	Williams, Susanna		3/10/11
202.	Winges, Linda D		4/11/11
203.	Wood, Stephen	Century Pacific	4/06/11
204.	Yamamoto, Julianna		4/10/11
205.	Yamamoto, Mike		4/10/11
206.	Zak, Gary		4/11/11

Source: EA|Blumen, 2011.

4.2 Responses to Comments

Each of the comment letters listed in Section 4.1 is provided a response in this Section 4.2. Distinct comments are numbered in the margins of the written comments or testimony corresponding to the numbered response in **Table 4-2**.

Comments that state an opinion or preference are acknowledged with a response that indicates the comment is noted and forwarded to the appropriate decision-makers. Comments that ask questions, request clarifications or corrections, or are related to the Draft EIS are provided a response which explains the approach, offers corrections, or provides other appropriate replies.

Public Comments

**Responses to
Comments**

Chapter 4 Contents

Comment Letters 1-5

Public Agencies	
1.	Timmerman, Carter
2.	Greve, Darren
3.	Freeman, Ketil and Belz, Sara
4.	Graves, David
5.	Wilson, Barb



**Washington State
Department of Transportation**

Paula J. Hammond, P.E.
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
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April 11, 2011

Jim Holmes
Senior Urban Planner
City of Seattle, Department of Planning and Development
PO Box 34019
Seattle, WA 98124-4019

RE: Draft Environmental Impact Statement (DEIS) for the *South Lake Union Height and Density Alternatives*, February 2011

Dear Mr. Holmes,

Thank you for the opportunity to provide comment on the Draft Environmental Impact Statement (DEIS) for the *South Lake Union Height and Density Alternatives*, February 2011. We recognize the substantial time and resources invested in this DEIS. We request that our comments be made part of the public record. | 1

As stated in our December 15, 2008 and February 3, 2011 correspondence, WSDOT Aviation is concerned that the proposed density and allowable building heights within the established airspace corridor for Kenmore Air Harbor Seaplane Base (SPB), could affect the ability of the airport to function as an essential public facility. | 2

WSDOT has reviewed the (DEIS) for the *South Lake Union Height and Density Alternatives* and offers the following clarifications, observations, and recommendations:

- Objects that are too tall may constitute airspace hazards within the known flight corridor of the seaplane landing area on Lake Union. By holding objects to heights that remain below the established airspace corridor’s approach and departure and safety buffer, the City of Seattle can discourage airspace hazards that endanger pilots, passengers and people in the vicinity of the established airspace corridor. (3.8-32) | 3
- The red X, depicted in Figure 3.8-1, identifies the area where aircraft typically leave the runway. Many variables may change the actual runway departure point. Some variables include: boat traffic, aircraft traffic, piloting characteristics, aircraft capabilities and weather conditions. (3.8- 32 and 33) | 4
- Figure 3.8-1 FAR 77 shows the approach/departure surface diagram developed by Airside Consulting. The figure depicts the established airspace corridor for air operations from Kenmore Air Harbor’s runway on Lake Union, as compared to the approach and departure airspace as described in Title 14 of the FAA’s FAR Part 77 ‘*Imaginary Airspace Surfaces*’. In this case the metric was designed to show airspace needs for sea plane operations from the Lake Union facility. | 5

Jim Holmes
(DEIS) *South Lake Union Height and Density Alternatives*
April 11, 2011

- WSDOT does not have local land use jurisdiction, but does provide technical assistance to local jurisdictions and airport operators. WSDOT relies on local jurisdictions, with land use authority, to keep critical airspace clear of obstructions. RCW 36.70.547 and RCW 14.12 gives local jurisdictions the authority to develop and adopt airspace regulations. (3.8-33) | 6
- Allowable building heights are limited by the local land use authority, not the FAA. (3.8-42)
- Rooftop apparatus such as, but not limited to, antennae, flag poles and towers should be prohibited from penetrating the proposed vertical safety buffer and/or airspace surfaces developed for the seaplane base runway on Lake Union. | 7
- WSDOT supports the establishment of a vertical buffer below the approach surface to ensure safe aircraft operations and to minimize impacts associated with normal aircraft operations. The City of Seattle should perform a risk assessment to determine the appropriate vertical buffer. | 8
- WSDOT supports the quantitative wind modeling of the proposed building heights and established airspace corridor. It is clear that further analysis and consideration is required. | 9
 - The analysis should address the potential impacts to the airport's fleet mix, including, but not limited to, critical aircraft and aircraft performance. The analysis should consider operations from Kenmore Air, Seattle Seaplanes, and itinerant seaplane operators using landing area on Lake Union.
 - The analysis should consider all types of weather conditions.

Thank you again for the opportunity to provide technical assistance and comment on this important issue. WSDOT remains available to assist the City of Seattle in adopting comprehensive plan amendments and development regulations that discourage the encroachment of incompatible land use adjacent to public use airports.

Please don't hesitate to contact me at 360-651-6312 or timmerc@wsdot.wa.gov if you have any questions or concerns.

Jim Holmes
(DEIS) *South Lake Union Height and Density Alternatives*
April 11, 2011

Sincerely,

A handwritten signature in cursive script that reads "Carter Timmerman". The signature is written in black ink and is positioned above the printed name.

Carter Timmerman
Aviation Planner/ GIS Analyst
WSDOT Aviation Division



King County

Darren Greve
Department of Natural Resources & Parks
201 So. Jackson St., Suite 600
Seattle, WA 98104

April 11, 2011

Jim Holmes
Seattle Department of Planning and Development
700 Fifth Ave, Suite 2000
PO Box 34019
Seattle, WA 98124 - 4019

Dear Jim,

Please include these comments in the official record of comments received regarding the South Lake Union Draft Environmental Impact Statement (DEIS).

1

As you know, King County has been working with the City of Seattle since early 2009 to renew a rural TDR program that would allow rural transferable development rights (TDRs) to be a component of the City's incentive zoning structure for South Lake Union.¹

2

Regional or rural TDR (i.e. County-to-City) in South Lake Union represents an opportunity to link redevelopment with the creation of open space and parks both *inside* and *outside* the South Lake Union (SLU) neighborhood, while mitigating for the impacts of greenhouse gas (GHG) emissions associated with development particular to the alternatives in the DEIS.

The City acknowledged this link in July 2009, when the Seattle City Council passed Resolution #31147 which states the Council's support of a rural TDR program focused on preserving rural farms that provide locally grown food to Seattle farmers markets, restaurants and retailers. The Resolution further identifies South Lake Union as one of the best candidate TDR receiving sites.

¹ Seattle and King County entered into a previous TDR interlocal program for the Denny Triangle; the TDR agreement ran from 2001 – 2008.

This is clear evidence the City is thinking beyond its immediate boundaries to its connection with the region and the places that contribute to Seattle's quality of life and make the City an attractive place to live. In addition, DPD's final December 2010 South Lake Union Urban Design Framework document identifies regional TDR as a potential opportunity for incentive zoning.

2 cont

However, as currently drafted, the DEIS does not mention regional TDR or account for the GHG and open space mitigation opportunities that a regional TDR component can provide SLU development alternatives.

3

In its most basic form, a renewed Seattle-King County regional TDR program would allow developers in SLU to purchase a fixed number of rural development rights in exchange for a fixed amount of increased development capacity/floor area ratio per the City incentive zoning. In exchange, King County would invest in certain amenities in the SLU neighborhood.

In regards to GHG mitigation, a regional TDR program will directly and quantifiably reduce greenhouse gas emissions associated with increased SLU development. A regional TDR program relocates development potential out of distant rural areas into existing urban areas – like the Bel-Red Corridor in Bellevue and South Lake Union in Seattle. Distant rural development produces greater per household (and per person) VMT-related GHG emissions than does new urban development. This is well-known, and there is documented data based on Puget Sound Regional Council (PSRC) travel shed studies.

4

The delta between the GHG emissions from a potential dwelling unit in the rural area and its urban counterpart represents the mitigation potential that regional TDR will provide. For example, in the previous Seattle-King County TDR program, the 70 development rights transferred into the Denny Triangle² from important properties in Seattle's watershed were estimated to reduce VMT-related GHG emissions by 50,000 metric tons of CO₂.³

A regional TDR component to SLU incentive zoning will similarly reduce impacts from GHG emission associated redevelopment, and should therefore be considered a potential mitigation strategy in the DEIS.

In regards to open space mitigation, the DEIS indicates increased demand for parks and open spaces associated with development under the alternatives. A regional TDR component to SLU incentive zoning will bring up-front investment, and a stream of payments as TDRs are sold, by the County for open space and park amenities in South Lake Union. In this way a City-County TDR program is also an in-city open space/park mechanism to mitigate for increased density, and should be identified as such in the DEIS.

5

² These 70 development rights created 900 acres of land protection along the Cedar and Tolt rivers – the City's water supply

³ Based on 2006 PSRC Travel-shed data. Numbers were derived using PSRC VMT information at the census block level of where the development rights were transferred from and where they were used for development capacity (i.e. the Denny Triangle).

In closing, King County would hope to see in the Final EIS for South Lake Union the mitigation opportunities that a renewed Seattle-King County regional TDR program will provide.

Sincerely,

A handwritten signature in black ink, appearing to read "Darren Greve". The signature is fluid and cursive, with a prominent initial "D".

Darren Greve
King County TDR Program
Phone: (206) 263-0435
email: darren.greve@kingcounty.gov



**Legislative Department
Seattle City Council
Memorandum**

Date: April 11, 2011
To: Jim Holmes, Department of Planning and Development
From: Ketil Freeman & Sara Belz, Council Central Staff
Subject: *South Lake Union Height and Density Alternatives*, Draft Environmental Impact Statement

Draft Environmental Impact Statement Comment

This memorandum is a comment by Council Central Staff on incentive zoning provisions discussed in the *South Lake Union Height and Density Alternatives Draft Environmental Impact Statement*.

- 1. In 2009 Council passed Resolution 31147, which states the Council’s support for renewed participation in King County’s rural transferable development rights program. Resolution 31147 also identifies rural King County farms and dairies that supply Seattle’s farmer’s markets as preferred sending sites and identifies the South Lake Union Urban Center as one of the best candidates for receiving sites. Additionally, the City received a Department of Commerce grant to study the feasibility of creating a new program in the South Lake Union Urban Center and elsewhere in the City.

1

Collateral benefits to rural transferable development rights programs include 1) reduced future travel – and associated emissions – from rural and ex-urban areas to major regional employment centers, such as downtown Seattle and the South Lake Union Urban Center itself; and 2) infrastructure grant funds from King County to design or develop neighborhood amenities in development rights receiving areas, such greenstreet improvements on 8th Avenue or Harrison Street.

Please provide a discussion in the *Climate Change and Greenhouse Gas Emissions and Open Space and Recreation* affected environment sections of the potential mitigation associated with participation in King County’s rural transferable development rights program and describe a rural transferable development rights program in the description of incentives in Section 2.3.2.

- 2. In 2009 the City created the Pike / Pine Conservation Overlay District in Seattle Municipal Code Chapter 23.73. One purpose of the district is to preserve “character structures” by providing incentives for retaining those structures in new development. Other strategies discussed by Council include creating a program whereby an identified character structure in the overlay could transfer unused development capacity to sending sites in the South Lake Union Urban Center. Please discuss the potential for this program in the description of incentives in Section 2.3.2.

2

cc. Council President Richard Conlin, Councilmember Sally Clark, Councilmember Tom Rasmussen



City of Seattle
Seattle Parks and Recreation

April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900; P.O. Box 34019
Seattle, WA 98124-4019

Sent via e-mail: southlakeunioneis@seattle.gov

Re: South Lake Union Height and Density Alternatives – Draft Environmental Impact Statement

Seattle Parks & Recreation (Parks) appreciates the opportunity to provide comments on the South Lake Union Height and Density Alternatives Draft Environmental Impact Statement (DEIS). Increased development capacity will encourage the continued developing urban environment in the South Lake Union neighborhood. That said; Parks has serious reservations regarding potential shading impacts on both Cascade Playground and Lake Union Park with the future increased building heights. The following are more specific comments on the DEIS.

- 1-19: Aesthetics – There is no mention of potential shadow impacts on Cascade Playground or Lake Union Park. Increased building height will potentially create shadows that cover park properties in South Lake Union, negatively impacting park users. Shadow impacts could be significant as shadows could completely cover Cascade Playground and/or Lake Union Park at certain time(s) of the day. 1
- 1-27: Open Space and Recreation – There is no discussion of potential shadowing of Cascade Playground and/or Lake Union Park and potential impacts on park users.
- 3.10-86: The DEIS states that “[d]uring the winter months, building shadows would cover all or a majority of the three parks in the morning and Lake Union and Cascade Parks in the afternoon. Shadows at noon in winter are expected to have minimal impact on Denny and Lake Union Parks, but may cover up to 60 percent of Cascade Park and Playground. Although this is the season when sunlight is typically obscured by clouds/poor weather in our region, the noontime shadows could impact the children’s play area on the west side of the block.” Given these potential impacts to Parks’ property and park users, specific mitigation measures should be proposed to minimize potential future shadow impacts. 2
- 3.16-1: The discussion of Lake Union Park implies that the park is still under construction. Construction was completed in September 2010 and the park is complete and operational. This section should be updated to represent the conditions today. 3
- 3.16-2/Table 3.16-2: The Cheshiahud Lake Union Loop, a 6.2 mile multi-use corridor around Lake Union which connects parks, open spaces, street-ends and neighborhoods around the lake, is not listed in the table of existing Parks and Open Spaces. The 4

❖ Planning and Development Division ❖

800 Maynard Avenue South, 3rd Floor, Seattle, Washington 98134-1336
Tel: (206) 233-3872, Fax: (206) 233-3949

- Cheshiahud Loop provides a recreation amenity to the South Lake Union neighborhood and should be included. | 4 cont
- 3.16-6: The DEIS lists potential improvements to Denny Park including a children's play area. A new children's play area was completed in the Northeast corner of Denny Park in 2009. This section should be updated accordingly to represent the conditions today. | 5

Building heights on parcels adjacent to parks in South Lake Union should be closely considered to provide the maximum solar exposure to Cascade Playground and Lake Union Park and to minimize the potential significant adverse shadow impacts on Parks' property and park users. Thank you for your consideration of these comments as you prepare the Final EIS. If you have any questions regarding these comments, please contact me at 206.684.7048 or david.graves@seattle.gov. | 6

Regards,



David Graves, AICP
Senior Planner
Planning & Development Division
Seattle Parks & Recreation



City of Seattle

Seattle Planning Commission

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April 11, 2011

Diane Sugimura, Director
 City of Seattle Department of Planning and Development
 700 Fifth Avenue, Suite 2000
 PO Box 34019
 Seattle, WA 98124-4019

RE: South Lake Union Draft Environmental Impact Statement

Dear Ms. Sugimura,

The Planning Commission would like to thank you for the opportunity to provide our comments and recommendations on the South Lake Union Height and Density Alternatives Draft Environmental Impact Statement (DEIS). We support the City's ongoing planning work in this neighborhood, which helps implement the neighborhood plan that was adopted in 2007. This letter provides our overall comments about the DEIS; more detailed comments about chapter 3 – affected environment, significant impacts, mitigation measures and unavoidable adverse impacts are **attached**.

While the neighborhood has seen welcomed commercial growth in recent years, most recently 460,000 square feet being leased by Amazon, residential growth has achieved only 20 percent of the residential growth target for 2024 established in Seattle's Comprehensive Plan. South Lake Union Urban Center boasts wonderful proximity to downtown and the University of Washington, great opportunity for open space plus recent and planned transportation investments. All of these factors lay a framework for South Lake Union to be a vibrant mixed use neighborhood achieves far greater numbers of residents and jobs, particularly in the biotech, medical, and high-tech research and development sectors.

To achieve the full benefits of a transit community (fewer per capita vehicle miles traveled, reduced carbon emissions, lower transportation costs for residents, etc.), we recommend future land use strategies that focus on increasing residential development to create the planned mixed use center envisioned in the Comprehensive Plan and the South Lake Union neighborhood plan.

The alternative development scenarios evaluated in the DEIS set the stage for zoning changes that should support growth that is more balanced between residential and commercial uses, and will create the vibrant mixed use transit community envisioned. Balanced growth will help South Lake Union become a livelier and flourishing transit community, which will help achieve numerous benefits as outlined in our recently released report: Seattle Transit Communities – Integrating Neighborhoods with Transit. Our specific recommendations for South Lake Unions from that report are **attached**.

As a regional growth center, South Lake Union plays “a unique and important role¹” in the future of central Puget Sound. Integrating land use changes with the City’s significant transportation investments in the Mercer Corridor and the streetcar will help achieve local and regional goals. The crucial land use decision will be how to shape this growth. We believe that the existing zoning will not be conducive to meeting the housing goals for SLU, and that increased height and floor areas will open the area to more private investment in housing along with the commercial development we have been seeing. This will result in lower GHG emissions per person and acre and help us achieve our future goals to become carbon neutral.

2

The growth encouraged by increased height must be balanced with essential components of livability that are targeted to the needs of the community, such as strategic mid-block pedestrian connections, wide sidewalks, bike facilities, public plazas and green open spaces, schools, and community facilities.

3

Conversely, allowing for taller buildings in key locations throughout the neighborhood will result in building forms that can better accommodate plazas, wider sidewalks, midblock crossings, and other livability components like parks, community centers, and schools. The alternatives evaluated in the South Lake Union Draft Environmental Impact Statement set the stage for changing the form of this neighborhood. Overall, the Planning Commission supports these anticipated changes. We believe the objective of encouraging a better balance of residential and commercial growth could be clarified and emphasized in the description of the project in the EIS.


4

As the City moves forward with zoning changes and other land use actions we urge incorporating a variety of building heights and forms that will promote greater residential density, urban design that encourages a wider range of building types, and incorporating tools and incentives for affordable housing, open space and other essential components of livability.

5

Thank you for the opportunity to provide you with our recommendations regarding the South Lake Union Height and Density Alternatives DEIS. We look forward to assisting you as the process advances. Please contact me or our Director, Barbara Wilson at (206) 684-0431 if you have further questions.

Sincerely,


Josh Brower, Chair
Seattle Planning Commission

cc: Mayor Mike McGinn
Seattle City Councilmembers
Darryl Smith, Ethan Raup, Julie McCoy, Liz Birkholz, Rebecca Deehr, Mayor's Office
Marshall Foster, John Skelton, Jim Holmes, DPD
Peter Hahn, Bob Powers, Tracy Krawczyk, Barbara Gray, Eric T'weit, Tony Mazalla, SDO
Rebecca Herzfeld, Norm Schwab, Council Central Staff

SEATTLE PLANNING COMMISSION RECORD OF DISCLOSURE & RECUSAL

- Commissioner Matt Roewe recused himself from this matter.
- Commissioner Colie Hough Beck disclosed that she lives and works in South Lake Union, and that the firm she works for, HBB, has contracts with Seattle Parks, SPU, SDOT (the Mercer Corridor Improvements Project in SLU) and FOLKpark. HBB also works on multifamily and commercial projects in the city.
- Commissioner Josh Brower disclosed that his firm, Brower Law, represents developers and owners of single-, multifamily and commercial projects in the area. He also represents industrial businesses working on freight and mobility issues in Seattle.
- Commissioner Armalia Leighton disclosed that her firm, SvR Design did some storm water/sewer capacity analysis for the EIS.
- Commissioner Catherine Benotto disclosed that her firm, Weber Thompson has an office in South Lake Union, that they work for developers and the City in this area and a member of the firm serves on the South Lake Union Community Council.
- Commissioner Martin Kaplan disclosed that his firm Martin Henry Kaplan, Architects AIA has completed projects in SLU and may so in the future; and he has sat on and currently sits on several committees that serve South Lake Union.

¹ Vision 2040, page 48.

Seattle Planning Commission
South Lake Union Draft Environmental Statement Comments
April 11, 2011

Chapter 3: Affected Environment, Significant Impacts, Mitigation Measures, and Unavoidable Adverse Impacts

3.1 Geology and Soils

This section clearly documents existing conditions. Site-by-site analysis and engineering is appropriate as redevelopment occurs.

- 3.1-5 Mentions potential groundwater but does not identify whether some alternatives would have more potential to include below-grade structures, and what effects this could have on other buildings in the area. In some areas where peat has been displaced by garages, groundwater levels have risen on adjacent properties. | 6
- 3.1-6 Identifies liquefaction as a potential impact but does not examine the impacts on people who live in the area in the event of an earthquake - loss of road access, utility disruption, etc. All alternatives that raise density increase the risk of exposing people to loss of the use of homes for at least a period of time. Building codes are designed to save lives but not to prevent any damage or even for the building to remain usable after a major quake. | 7

3.2 Air Quality

The Health Planning Area in which the study area is located experiences a higher prevalence of asthma among adults versus King County as a whole (8.7% vs 8.4%). This may be linked to particulate matter, ozone, and other factors that degrade air quality. Consider encouraging “breathe easy” homes in multifamily developments. | 8

- 3.2-4 Recently, with the increase in restaurants which burn wood for cooking (i.e. pizza), concerns have been raised over commercial wood burning and potential impacts to air quality. | 9

3.3 Water Quality

Generally, this section is fine. Consider impacts of Green Factor, green roofs, and other vegetation on water quality. Describe the anticipated impacts of the Mercer Corridor Improvements on water quality. In 2005, there was a study that provided exemptions to certain parcels based on their proximity to the new CSO facility. Confirm with SPU whether these exemptions remain valid or are overridden by the new stormwater code. We are concerned about the water quality in Lake Union from storm water runoff and the effects the alternatives may have upon it. We would like the EIS to address treatment and/or mitigation options. | 9

- 3.3-3 Quantify the project area discharging to separate storm vs. combined. | 10

3.4 Plants and Animals

While the proposed alternatives would not directly result in impacts to plant and animal habitat, potential mitigation measures could include open space for vegetation, migrating animals, and human enjoyment, which would also enhance health and livability. | 10

3.5 Environmental Health

Recognize the positive outcome of Alternative 1 with the higher excavation requirements and benefits of removal of hazardous materials.

11

3.6 Noise

Discuss the effects of additional housing density near the major noise sources – I-5 and SR 99. Consider how these areas would treat housing density incentives, since residential development would either expose people to more environmental noise, or could force them to live in housing with the windows closed.

12

- 3.6-1 Noise can be linked to negative human health through stress, hypertension, sleep deprivation, etc. This is particularly true when exposed to noise for extended periods of time.
- 3.6-11 In general buses (particularly diesel) tend to be noisier than cars, with Alternative 1 there would likely be increases in bus service which may negatively impact noise levels along arterials.

3.7 Climate Change and Greenhouse Gas Emissions

No significant comments. This section describes the process by which GHG are to be measured as well as lists appropriate mitigation strategies.

- 3.7-3 Transit and walkability should be described as an additional mitigation strategy.

13

- 3.7-2 The measurement of GHG and the metrics associated with determining environmental impacts should consider that higher densities, as proposed, produce less GHG per capita. Indeed, it would be important to compare the impacts of development in other Seattle neighborhoods, at significantly much less densities, with projected GHG and other environmental impacts. This measures would help us understand how SLU can accommodate future growth with the least footprint.

14

In addition, it appears that GHG and VMT calculations are only related to comparing impacts between alternatives. While this comparison is important in evaluating each alternative in relationship to each other, another approach would be to compare these growth targets as compared to other neighborhoods in order to better evaluate where targeting the predicted jobs and housing growth will best help us achieve our goal of becoming carbon neutral.

3.8 Land Use

No significant comments. This section focuses on the air travel path. We note that the flight path, controlled by federal and state regulations, limits the height of future development. While all action alternatives would be able to accommodate anticipated 2031 growth targets, the taller heights allowed in Alternatives 1 and 2 may be appropriate outside of the flight path to maximize development opportunities.

15

- 3.8-1 This section should include a detailed study of the economics behind the projections. By 2031 the number of sites that can and may be developed with significant height increases may be much less than what is illustrated in the models.

16

3.8-9 The discussion of growth expected does not examine what proportion of recent growth has gone to South Lake Union, it only discusses goals and how the goals are likely to be increased. The neighborhood has accommodated 8% of the citywide residential growth, while the target was 17%. 17

3.8-10 The assumptions on page 2-7 regarding the 2031 growth target describe the target as a "conservative" approach. However, it is important to note that because this target is as high as could be expected, the conclusion is that the existing zoning would fall short of achieving it. While it may be desirable to increase the capacity of this area for the purposes of the real estate market, decision makers should be cautioned that in this instance, the "shortfall" is an artifact of the EIS process (using the worst case assumption for traffic and other analysis) and not a policy shortfall per se. 18

3.9 Housing

3.9-6 Description of existing and expected demographic characteristics of the neighborhood would be useful here. For example, the low household sizes of employees in companies like Amazon likely leads to higher demand for housing units. Also, the estimate of 350 SF of commercial space per job likely overestimates space per employee in companies like Amazon. Therefore, there are likely to be more employees/jobs and higher demand for units than are estimated. 19

3.10 Aesthetics

3.10.2 Potential aesthetic impacts considering potential properties available for development should be analyzed in relationship to economic projections of growth and the absorption rate of new residential and commercial square footage. As is explained on page 3.10.8, the 2031 build-out models may offer an overly optimistic prognostication of the future construction over the next 20 years. 20

Figure 3.10-1 The Lake Union Seaport Airport Flight Path impacts development opportunities and the EIS should address this by explaining how these standards compare to the concept plans previously presented by the City. The limits on building heights in the flight path with regard to proper, safe, and sustained accessibility should be accounted for in the future district-wide land use strategies. 21

3.10-6 New open space is critical to the visual success of proposed height increases, particularly under Alternative 1; open space should be a component of a height bonus. The computer models for Alternatives 1-3 highlight the need for this open space at grade. It is not the height of the building that is the aesthetic issue, it is the unbroken base at pedestrian level. 22

3.10-17 Alternatives 1-3 propose the potential for a tall building to be on a bulkier podium that might fill the block. The computer images provide a graphic argument for requiring open space at grade for developments that take up most of the block. Breaking up this lower bulk is critical to how pedestrians will experience the neighborhood. 23

In all Alternatives, to varying degrees, a negative impact is described as extending the downtown skyline to the shores of SLU. Seattle has a small downtown area of tall buildings compared to other cities, particularly as seen in the context of Elliot Bay. Therefore, this extension of the skyline to SLU is not necessarily a negative. It can be dramatic and with this

newer building type, give the city, and the neighborhood, much a distinctive character this is different from other neighborhoods. The area will change and it will likely be better.	23 cont
3.10-39 There are comments throughout about new development making an abrupt transition in height with existing development. Since the majority of SLU is surface parking lot or one story buildings, this is unavoidable. Seeing this as a negative impact requiring mitigation strategies is debatable as the variety in height is often what gives a city interesting character.	24
3.11 Historic Resources Both the Historic Resources (3.11) and Cultural Resources (3.12) are detailed and cover potential issues that came to mind. A possible mitigation for Historic Resources could be to establish a Historic Overlay that creates a corridor connecting the major sites in the area.	25
3.12 Cultural Resources Both the Historic Resources (3.11) and Cultural Resources (3.12) are detailed and cover potential issues.	
3.13 Transportation Please include the correct “source” for information shown in figures. In many cases the source of the information is not the consultant, but rather SDOT, the Comprehensive Plan, Pedestrian Master Plan, King County Metro, etc.	26
3.13-2 Using a multi-modal model to evaluate transportation impacts of future land use scenarios seems like a better method than traditional ITE models in an urban mixed-use setting like South Lake Union. Perhaps the model could be explained more to articulate why the mode split does not change much among the alternatives. Comparison of average daily trips under the alternatives could further illustrate the difference between mode share if midblock connections, wide sidewalks, etc. are created.	27
Table ES2: Auto trips are not equivalent to person trips, yet auto trips are compared to person trips relative to mode share. This may not accurately portray the relationships. Since auto trips contain at least one person trip, but by definition a pedestrian or bicycle trips and a transit trip is counted as one trip, the mode share for auto trips will be greater than the percentage included in these tables. Person trips should be used as the metric to compare and to calculate mode share percentage. Please identify what is included in the “internal” category of trips.	28
3.13-10 <i>Figure 2</i> While text on page 3.13-6 describes this as showing pedestrian facilities in the area, the figure shows Pedestrian Issues and Pedestrian Features, not a complete inventory of Pedestrian Facilities (which it should contain). Highlighting key areas of concern should be included on a separate map if too cluttered on one map.	29
3.13-12 <i>Regional access</i> I-5 section attributed congestion to intense land use in Downtown Seattle. It is likely that there is a significant component of regional trips that bypass Downtown Seattle.	30
3.13-17 <i>Off-Street Parking</i> cites 2006 data, which is pretty old, especially considering the land use transformation that has occurred since then. If more recent data is not available, a footnote should be included to diminish the relevance of this information as an “existing condition”.	31
3.13-19 <i>On-Street Parking</i> Confirm quoted “current” time limits and parking rates.	32

3.13-43 <i>Transit assumption</i> what about King County Metro as a resource for information?	33
3.13-44 So it is not reasonably foreseeable that any pedestrian and bicycle projects would be complete and included in the 2031 transportation network assumptions?	34
3.13-49 The innovative MDX travel demand model was developed from “over 200 mixed use development sites”. South Lake Union is larger than a “development site” so can the model be accurately applied in this setting or should any caveats be noted?	35
3.13-52 The chart is helpful, but it is not clear how these numbers relate either to the 2031 targets or the development capacity discussed in tables 2-1 and 2-. Do any tables show how much development was assumed for each alternative?	36
3.13-54 <i>Table 8</i> shows a remarkable consistency among alternatives, suggesting that increased density would not affect mode share. (The margin of error is not mentioned, but one would assume it is at least +/- 1%.) Is this because the higher incomes of new residents and workers would bring with them higher rates of access to autos and therefore any gains from density are offset by the demographic trend?	37
3.13-76 Differences, if any, of short-term parking impacts among action alternatives are not clear.	38
3.13-82 Additional pedestrian and bicycle projects could include: adding and improving connectivity between South Lake Union and Capitol Hill; and improve the quality of bicycling by ensuring that bicycle routes and striped bicycle lanes have smooth pavement and are regularly swept of debris.	39
<u>3.14 Public Services</u>	
South Lake Union is a relatively low-crime and low emergency response call area; fire and police response should be adequate to accommodate growth. Potential for major liquefaction damage to infrastructure and housing discussed on geology/soils above is also not discussed here.	40
3.14-5 Two fire stations are identified as scheduled for Levy upgrades in 2010. According to the City’s website, the upgrades to _____ and _____ are scheduled to be completed in 2013 and 2012 respectively.	41
<u>3.15 Utilities</u>	
Some of these items are likely being improved as part of the Mercer Corridor Improvements; it would be a good time to make improvements if they are not already being made.	42
3.15-3 Will there be improvements to the sanitary sewer system as part of the Mercer Corridor Improvements?	43
3.15-6 The existing capacity of the electrical system is not mentioned. Have the issues around higher demand for biotech uses been resolved?	44

3.16 Open Space and Recreation

There is not much discussion of the distribution of open space within the boundaries of SLU. While the total area of parks and open space may exceed the minimum standards used across the entire city, the distribution of open space does not meet the requirements of LEED ND, a certification being pursued by the City for SLU. The ND requirements should also be considered. Where it falls short, is having public space within 1/4 mile walk for 90% of residents. Particularly, as density increases the need for public space increases, not just through an increase in population, but to give more breathing room around taller buildings and contribute to livability. Using the ND criteria, nearly every block would need an open space of at least 1/6 an acre/7000 sf. A review of ND requirements should be made with City Green Building and the Office of Sustainability and Environment.

45

- 3.16-3 The list of existing facilities includes Denny Park/Playfield. 3.16-1 clarifies that Denny Playfield is a private owned temporary recreation facility that is proposed for private development. Please clarify that Denny Playfield is not included in the 15.7 acres of usable open space when calculating the ratio of useable open space.

46

- 3.16-5 *Exhibit 3.16-1* includes park and recreation facilities accessible from SLU and that are within the 1/8 mile service area. There are major obstacles on the east side of SLU: I-5 plus a major topographic change between SLU and Capitol Hill. It is not realistic to count on those parks and open space areas as major contributors to the SLU neighborhood.

47

- 3.16-9 *Mitigation Strategies* There should be more discussion about how much area a bonus is likely to provide and if it will achieve the results desired under LEED ND. Recommendations for filling the gaps seem weak and may not be in the area where most desired - there seems to be a lot of area not covered as accessible to Denny Park, Cascade Park, and SLU Park. In addition, privately owned open space was not considered and should be part of the analysis as private developers are the likely providers of future open space, particularly through a bonus program. These are the types of spaces that make the area more livable. Stronger recommendations to ensure they happen with any development are needed. Make provision for open space mandatory with any height bonus.

48

The EIS also states there are sufficient major facilities in or near the SLU area, but this number will fall short with the proposed alternatives. Increased development will be incremental and if the open space and recreation facilities don't keep up with development there will be a shortfall. There are gaps in the system in SLU that have been identified. Open space and breathing room should be evenly distributed throughout the SLU neighborhood and closely associated with housing developments in the form of expanded sidewalks, plazas, and pocket parks. With alternatives 1-3, the EIS should consider requiring a minimum of one to two park facilities per block to provide even distribution and close the gaps. Parks and open space should also align and compliment transit facilities where possible. An even distribution of park facilities would reduce the over use of existing facilities as described in the EIS.

49

One concept mentioned in the EIS is tax revenues generated from future development which would accrue to the City of Seattle. If this revenue is collected in SLU it should be reinvested in SLU for park and recreation facilities.

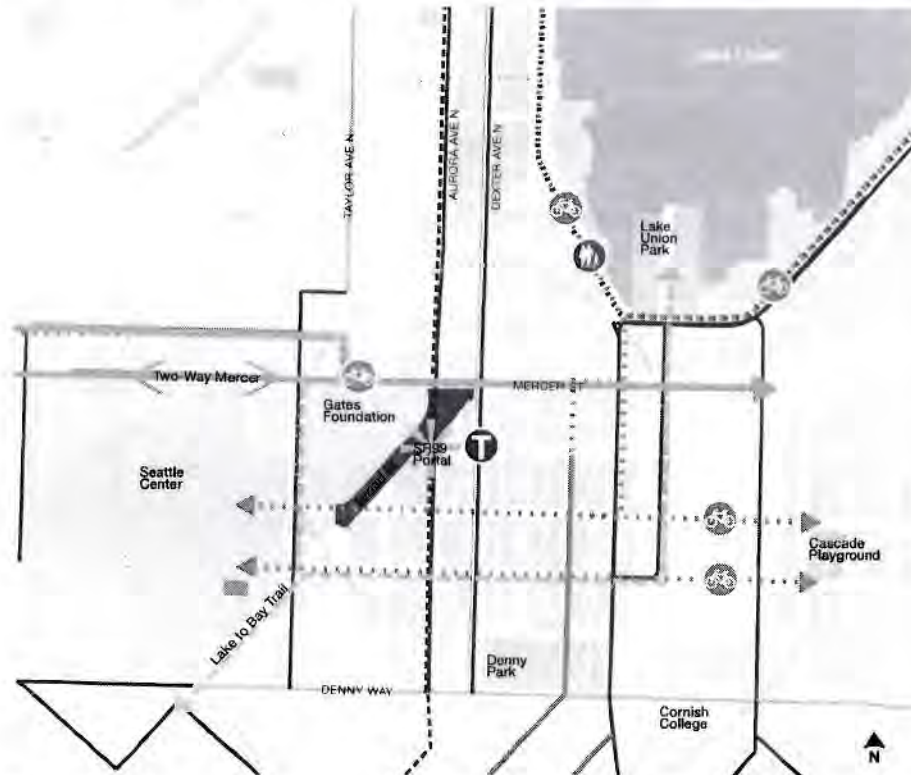
50

Another mitigation concept described in the EIS provides park and recreation facilities in conjunction with future development as part of a bonus system. This only works if these facilities are connected with the right of way and are designed and clearly identified as public spaces.

51

South Lake Union

South Lake Union is a burgeoning employment center focused on biotech, medical research, and internet commerce industries. This transit community is also a growing urban residential neighborhood and has been a focus of policy level planning for a number of years. Development pressure and market desirability are likely to remain relatively high. Transformational momentum has started with the addition of the new park, the South Lake Union Streetcar, and the Mercer Corridor project. The Commission recommends the development of an Urban Design Framework/Implementation Plan.



KEY ACTIONS

Use the urban design framework to coordinate SR-99 and Mercer Corridor projects, Thomas Street redesign project, Lake-to-Bay trail, and the buffered bike lanes proposed on Dexter. Follow up with appropriate rezones and a strong implementation plan.

Promote high-density development around walkability and livability.

Improve streetcar service with shorter headways. Connect route to the First Hill Streetcar once implemented.

Improve east-west connections to Seattle Center, Uptown, and Lake Union.

Consider narrowing 8th and 9th Avenues, Thomas and John Streets and widening sidewalks to enhance public realm. Make better use of Dexter's wide right-of-way.

Encourage development of workforce housing and family-sized units.

Install essential infrastructure including community center, library, senior center, daycare, and schools, public plazas and open space, and mature street trees.

Develop an open-space plan that provides for public plazas, mature street trees, pocket parks and kid-friendly areas. Consider city-owned land for this purpose.

LEGEND

- Mixed Use Center
- Mixed Use Neighborhood
- Special District
- Industrial Job Center

key transit station

frequency of transit service

- <15 min. existing
- <15 min. planned
- >15 min. existing

gateways / opportunities

bike connections

pedestrian connections

key pedestrian frontage

key potential redevelopment

key intersection

approximate walkshed
(in minutes)

zoning & land uses

single family

multifamily: lowrise

multifamily: mid/highrise

mixed use

commercial

institutional

industrial

civic buildings

open space

waterbodies

Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 1: Timmerman, Carter	
1	Public Record. All comments contained in this letter are included as part of the public record.
2	Airport Function. The comment is noted. Please refer to changes to the discussion of the flight path that are contained in this Final EIS, which address these issues.
3	Building Height and Airspace Hazard. The comment is noted. Please refer to changes to the discussion of the flight path that are contained in this Final EIS, which address these issues.
4	Runway Departure Point. It is acknowledged that the runway departure point identified in Draft EIS Figure 3.8-1 represents a typical, but not fixed, point of departure.
5	Approach/Departure Surface. The comment is noted. Please refer to the description of the revised approach/departure surface in Final EIS Chapter 2.
6	Land Use Jurisdiction. The comment is noted. Changes regarding the flight path address this issue. Seattle regulates airspace considerations through the City's Land Use and Zoning Code (Title 23).
7	Rooftop Apparatus. The comment is noted. The Draft EIS contains a mitigation strategy that addresses limiting rooftop appurtenances that could penetrate the flight path airspace or safety buffer.
8	Vertical Buffer. The comment is noted. The Draft EIS contains a mitigation strategy that addresses the vertical safety buffer. In addition, please see the response to Comment 9 in this letter, below.
9	<p>Quantitative Wind Modeling. The comment is noted. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these relate to: building height, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development that may occur within the subarea. Therefore, the programmatic analysis that is contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on</p>

Comment Number	Response
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the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure is recommended -- requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning. It is anticipated that the approach to this analysis would include the following steps:

1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at the site, with the surrounding physical context (i.e., existing buildings, topography, etc.);
2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project;
3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path;
4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions;
5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location.

In addition, the City may consider requiring additional analyses to address the following questions:

- Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future); and/or
- Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).

Letter 2: Greve, Darren

1	Public Record. All comments contained in this letter are included as part of the public record.
2	Transfer of Development Rights (TDR). The comments are noted.
3	TDR in South Lake Union. The comment is noted. Please see Final EIS Chapter 2 for inclusion of regional TDR as an incentive zoning measure.
4	TDR and GHG Emissions. The comments are noted.

Comment Number	Response
5	TDR and Open Space. The comments are noted.
Letter 3: Freeman, Ketil and Belz, Sara	
1	Regional TDR. The comments are noted.
2	TDR and Incentive Zoning. Please see Final EIS Chapter 2 for inclusion of regional TDR as an incentive zoning measure.
Letter 4: Graves, David	
1	Shadow impact on public parks. The comment refers to a summarized description of potential shade impacts. A detailed and specific account of the shadow impacts of each alternative on the neighborhood parks, including Cascade Playground and South Lake Union Park, can be found in the Aesthetic Shadows section (Draft EIS 3.10.9 – 3.10.12). This account has been substantially updated in the Final EIS (see Final EIS Section 3.4). The matrix in the Environmental summary has also been updated in the Final EIS in order to better differentiate between alternatives. (See also Appendix D for diagrams of each alternative’s shadow impacts in June, September, December and March.)
2	Shadow Impacts. The comments are noted. Please see Final EIS Section 3.4.9 for revised shadow images and mitigating strategies. Note that mitigation strategies call for a detailed shadow analysis as part of site-specific environmental review of development proposals. As identified by Seattle Municipal Code 25.05.675Q2e, there are a range of measures to address shadow impacts of specific development proposals. Key measures are also noted in the Draft EIS (pg. 3.10-87-88).
3	Lake Union Park. The comment is acknowledged. The referenced text in Draft EIS page 3.16-1 is revised as follows: Lake Union Park is an approximately 9-acre park located at the north portion of the South Lake Union neighborhood, on the shore of Lake Union. The park is currently undergoing a renovation that is scheduled to be completed in September 2010.
4	Cheshiahud Lake Union Loop. The comment is noted and it is acknowledged that the Cheshiahud Lake Union Loop provides open space in South Lake Union. Note that the facility is also identified in Draft EIS Section 3.13.1 as a multi-use path.
5	Denny Park Play Area. The reference sentence on Draft EIS page 3.15-6 is revised as follows: Potential improvements to Denny Park could include a plaza area, sport courts, children’s play area , an off-leash area, and a community center.

Comment Number	Response
6	Maximize Solar Exposure to Parks. The comment is noted. Please see Final EIS Section 3.4.9 for revised shadow images and mitigating strategies.
Letter 5: Wilson, Barb	
1	Transit Community. The comments are noted, including the inclusion <u>Seattle Transit Communities – Integrating Neighborhoods with Transit</u> .
2	Support Increased Height and Density. The comments are noted.
3	Balance Growth with Livability Measures. The comment is noted.
4	Balance Residential and Commercial Growth. The comment is noted. Please see the revised objectives in Final EIS, Chapter 2.
5	Variety of Building Heights and Forms. The comment is noted.
6	<p>Below-Grade Structures and Groundwater. Some of concerns raised by this comment are already covered more broadly in the EIS. The first paragraph under “Impacts Common to All Alternative” (3.1-5 to 3.1-6) states that “The impacts would likely be greater for those alternatives with greater height limits (such as alternative 1), because deeper foundations would probably be required for construction.” In a subsequent paragraph on 3.1-6 (paragraph 3), potential changes to natural flow of groundwater are discussed. To improve this paragraph, and in response to the comment, the referenced paragraph is revised to read as follows.</p> <p>“Future development is also likely to impact surface water and groundwater flow in the area. Changes in grade and the addition of impervious surfaces would alter surface water flow. Excavation and foundation construction may require temporary or permanent dewatering to lower groundwater levels. Once constructed, foundations or underground structures may alter the natural flow of groundwater by acting as a barrier to groundwater movement. <u>These potential changes to local groundwater flow patterns could result in an increase or decrease in groundwater flow to properties adjacent to newly built structures.</u>”</p>
7	<p>Liquefaction. To address this comment, the sentence noted below has been added to Draft EIS Section 3.1.2.</p> <p>“Steep slopes, landslides, and liquefaction could have the potential to impact future development under any of the alternatives. Steep slopes in the Fairview Avenue Corridor could be destabilized by construction activities. Destabilization could result in increased erosion or landsliding. Liquefaction-prone areas, such as the Valley/Mercer Blocks, might experience settlement and/or increased earth pressures on retaining structures during an earthquake.</p>

Comment Number	Response
	<p><u>Damage to infrastructure (such as roads and utilities) by liquefaction could cause a disruption to services and access for people residing in the area.</u> Impacts associated with development in areas with steep slopes, landslide potential, or liquefaction hazards can be minimized through appropriate design and construction measures."</p>
<p>8</p>	<p>Breathe Easy Homes. The basis of the comment's reference to a higher incidence of asthma among adults being higher in the project study area is unclear (i.e., un-cited), and the stated difference (0.3%) seems insignificant. Nonetheless, air quality in most urban areas, as in most of the city of Seattle, is affected by more numerous and diverse sources than some rural areas of the county, and one ubiquitous air pollutant is particulate matter from motor vehicles and other combustion sources. "Breathe Easy Homes" seem to be aimed at removing both indoor and outdoor sources of a variety of air pollutants and allergens and may be more than is warranted for all residences in the project area. But enhanced air-filtering systems may be worth considering in most homes in the city in proximity to any major transportation routes.</p> <p>Wood Burning Pollution. Such emission sources are subject to review and controls administered by the Puget Sound Clean Air Agency, which has long recognized and worked to reduce such pollution in the region.</p>
<p>9</p>	<p>Water Quality-The current City Storm Water Manual (2009) requires treatment of any surface water that is discharged directly to the environment from a new pollution generating surface of over 5,000-SF. As most of the storm water in this basin is collected and routed to the combined sewer, local water quality treatment is typically not required. Treatment for this water is provided by the Metro treatment facility at West Point, prior to discharge to the environment.</p> <p>New buildings in the neighborhood that use green infrastructure methods (green roof or bio-retention planters) to detain and treat storm water will reduce pollutant loadings to the environment. As this will be a project by project decision, it is difficult to quantify improvements.</p> <p>Mercer Corridor improvements are providing some bio-retention features for the roadway improvements, but the runoff from most of this area will still be directed to the combined sewer and the regional treatment plant.</p> <p>Exemptions to the storm water code in 2005 have been rescinded with the adoption of the 2009 storm water code, for projects not vested before the adoption of the new code.</p> <p>The Combined Sewer area is approximately 265-acres of the 340-acre study</p>

Comment Number	Response
	<p>area. The remainder (75-acres) discharges through piped systems directly to Lake Union. See page 3.3-5 of the Draft EIS.</p>
<p>10</p>	<p>Potential Mitigation Measures. Because there is no project-specific development associated with this EIS, no mitigation would be required. The mitigation measures listed by the commenter would more likely be required as sites are redeveloped. These potential mitigation measures have been added as potential mitigation measures for plants and animals.</p> <p>“City permitting of proposed redevelopment under all alternatives would require completion of the SEPA process, which includes an assessment of project impacts to fish and wildlife. <u>General mitigation measures could include open space for vegetation, migrating animals, and human enjoyment.</u> Other more specific mitigation requirements could include treatment of project-related stormwater, evaluation of outside lighting, installation of native plant species to reduce potential light impacts, and implementation of a “lights out” program to educate and encourage high-rise building tenants to turn off lights at night, particularly during the fall (southward) avian migration period. The City could also choose to reduce height limits on the three lots discussed above that could shade the juvenile outmigration corridor during spring mornings and evenings under Alternatives 1 and 2.”</p>
<p>11</p>	<p>Hazardous Materials Removal. The higher excavation requirements for Alternative 1 and the associated potential benefits of removing more hazardous materials is addressed in the second to last paragraph in Section 3.5.2.</p>
<p>12</p>	<p>Noise Near Major Transportation Routes. Levels of urban noise affecting residential uses are a recognized issue that is usually addressed in project-specific design. For example, site layout can be used to locate noise-sensitive outdoor use areas as far as possible from noise sources and to shield such areas using intervening buildings or structures. Interior living spaces are typically protected from loud outdoor environments using building materials and construction techniques to enhance outdoor-to-indoor noise transmission.</p> <p>The acoustic environment in the South Lake Union area is not unique in terms of its exposure to noise from many urban sources including major roadways and aircraft overflights. The livability of residential spaces in this area will require consideration of exterior noise levels as part of the ultimate building design of specific projects.</p>
<p>13</p>	<p>GHG Mitigation. The commenter correctly notes that improved transit and pedestrian network can function as a GHG mitigation measure. These</p>

Comment Number	Response
	measures make walking and transit more competitive to car travel which has been shown to reduce GHG emissions.
14	GHG Emissions. Based on the results of the mode split analysis, the South Lake Union neighborhood, with the additional height and density, will have relatively low levels of GHG emissions, similar to other high-density neighborhoods such as Capitol Hill. Additional details regarding GHG emissions are expected as part of the upcoming updates to the City's Climate Action Plan and Comprehensive Plan.
15	Building Heights and Flight Path. The comment is noted. Also, please see the additional discussion in this Final EIS concerning the flight path (Section 3.2).
16	Economic Analysis. The comment is noted. A detailed economic analysis was outside the scope of this study. The EIS scope established that the visual analysis would identify impacts at build-out. A list of assumptions used in the visual modeling is contained in Draft EIS Section 3.10.2.
17	Growth Trends. The comment is noted. As described in Draft EIS Section 3.9, updated data specific to the South Lake Union neighborhood is not available. However, available housing data from census tracts that encompass the neighborhood is described in Draft EIS Section 3.9.
18	2031 Growth Estimate. The comment is noted. As described in Draft EIS Section 2.2, the 2031 estimates are intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.
19	Demographic Characteristics. The comments are noted. Documentation of demographic characteristics was not available. The assumption of 350 sf per employee is based on typical employment density in downtown Seattle.
20	Aesthetics Build-out Assumption. The comment is noted. The EIS scope established that the visual analysis would identify impacts at build-out.
21	Flight Path. The comment is noted. As described in Draft EIS Section 3.10.2, the visual modeling assumed that future development on lots within the defined flight path would be limited by the flight path elevations, although no additional vertical buffer was assumed. FAR Part 77 and associated flight path issues are primarily discussed in the Draft EIS Section 3.8, Land Use. Subsequent to issuance of the Draft EIS,

Comment Number	Response
	<p>additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
22	<p>New Open Space. The comment is noted. Additional mitigation measures are being proposed in the Final EIS to limit the total square footage of tower podiums greater than 45 feet in height and to encourage the development of more open space. See Final EIS Section 3.4.</p>
23	<p>Bulky Podiums. See response to Comment 22 above</p>
24	<p>Abrupt Transitions. The comment is noted. The Draft EIS reference to abrupt height transitions between neighborhoods is only intended to disclose this potential impact. Depending on individual perspective, this may be viewed as positive, neutral or negative.</p>
25	<p>Historic Resources. The comment is noted.</p>
26	<p>Figure Sources. Please see the following sources that are associated with specific figures.</p> <p>Figure 3.13-3 – Seattle Bicycling Guide Map, 2010.</p>

Comment Number	Response
	<p>Figure 3.13-4 – King County Metro, 2010.</p> <p>Figure 3.13-5 – Seattle Department of Transportation, 2010.</p> <p>Figure 3.13-6 – Puget Sound Regional Council Parking Inventory, 2006.</p> <p>Figure 3.13-7 – South Lake Union On-Street Parking Study, 2006.</p> <p>Figure 3.13-8 – Seattle Department of Transportation, 2007.</p> <p>Figure 3.13-9 – Seattle Department of Transportation, 2010.</p> <p>Figure 3.13-10 – Seattle Department of Transportation, 2010.</p> <p>Figure 3.13-13 – Washington State Department of Transportation, 2010.</p> <p>Seattle Department of Transportation, 2010.</p> <p>Figure 3.13-14 – Seattle Department of Transportation, 2010.</p> <p>Figure 3.13-15 – Denny Way Streetscape Concept Plan, 2009. Bicycle Master Plan, 2007. Pedestrian Master Plan, 2009. South Lake Union Urban Design Framework, 2010.</p> <p>Figure 3.13-23 – Seattle Department of Transportation, 2010. Denny Way Streetscape Concept Plan, 2009. Bicycle Master Plan, 2007. Pedestrian Master Plan, 2009. South Lake Union Urban Design Framework, 2010.</p>
27	<p>Similar Mode Splits among Alternatives. The transportation analysis did use a multimodal model to evaluate potential transportation impacts. As shown in table 3.13-8, Alternative 1 resulted in a mode share of 48.3, 30.1, and 21.6 percent for autos, pedestrian/bicycle, and transit respectively. In contrast, ITE rates would predict that nearly all trips would be made by autos. The comment also questions why the mode split does not change much between alternatives. It is important to note that from a transportation perspective, all four alternatives were more similar than dissimilar. For the most part, the diversity of land uses and the design of the transportation system were assumed to be identical for each of the alternatives and the main difference between them was the density of development. While density is an important determinant in trip generation, the differences in density between the alternatives (when considering the entire SLU neighborhood) are minor. Therefore, with only minor changes in transportation input variables, only marginal differences in mode split result. If this were comparing a traditional suburban development with SLU the differences would be much more substantial.</p>
28	<p>Auto, Person, & Internal Trips. The mode split calculations shown throughout the document correctly account for person versus auto trips. In all cases, mode split was calculated using person trips. The note in the tables helps readers understand why they cannot use the mixed vehicle and person trips shown in the table to reproduce the mode splits in the tables. Appendix</p>

Comment Number	Response
	<p>E has additional clarification. The MXD model is not explicit about what an "internal" trip is. The reason is based on the methodology used to develop the MXD model. MXD was developed by comparing traditional ITE trip generation estimates to observed flows of vehicles, buses/trains, and pedestrians/bicycles across a boundary surrounding the MXD site. Sites ranged in size from a few acres to 1,000 acres. Because of this range in scale, it was impossible to determine the precise mode of travel for trips that did not leave the cordon. Therefore MXD classifies them as internal and the planner/engineer must use their best judgment as to how they are made. For an area like SLU, which is relatively compact and features paid parking, the analysis assumed that the majority of the trips internal to the neighborhood will be made by walking with a minority of trips via bicycle and transit. A meaningful number of internal trips by car is not anticipated.</p>
29	<p>Existing Pedestrian Infrastructure. South Lake Union has a relatively complete pedestrian system, therefore, the analysis highlights deficiencies rather than creates a map showing that virtually every street has a sidewalk.</p>
30	<p>I-5 Traffic. Although a survey indicating the origins and destinations of vehicles using I-5 near South Lake Union is not available, it is likely that the traffic is a mix of downtown-related traffic and regional through trips, as pointed out by the commenter.</p>
31	<p>2006 Parking Data. We agree that the 2006 data is less relevant considering the changes in the area between now and then. As described in the report, there was a smaller sample of more recent parking utilization data (from November 2010), but the inventory was not as complete. The text includes a cautionary note about the relevance of the 2006 data (Page 3.13-17).</p>
32	<p>Parking Data. By using the word "current," the document referred to the time the data were collected, which was during November 2010. Parking rates have already changed since the data were collected.</p>
33	<p>King County Metro. The City of Seattle travel model includes a detailed transit network based on historical growth in service and future regional plans. Although King County Metro has indicated that the level of transit included in the PSRC model may be too ambitious due to current funding shortfalls, there is no alternate transit plan with the level of detail necessary to replace that in the City of Seattle model. Therefore, it is appropriate to use the regionally accepted travel demand model to complete the transit analysis.</p>
34	<p>Reasonably Foreseeable Pedestrian & Bicycle Projects. The only fully funded and programmed pedestrian and bicycle improvements are included in the Mercer East project. While it is possible that other projects will be</p>

Comment Number	Response
	<p>completed over time, using the traditional strict definition applied to EIS documents, no other improvements are reasonably foreseeable.</p>
<p>35</p>	<p>MXD Applicability to SLU. While the MXD model was developed over a range of development scales -- from less than five acres to over 1,000 -- it is true that the magnitude of development (total floor area) in SLU is larger than what MXD was developed. To give a fair and accurate measure, SLU was broken into five separate MXD districts to ensure that the model would not "over-internalize" simply because of the large development scale. This type of approach is commonly used when applying smart-growth trip generation adjustments and is consistent with how all travel demand forecasting models are developed and applied. The MXD model has been validated across the country and was deemed appropriate by various academic peer review panels as part of the academic journal submission process.</p>
<p>36</p>	<p>Development Assumptions. There are two issues to keep in mind when looking at the chart on Page 3.13-52: land use capacity and the 2031 future growth estimate. The land use capacity is the total amount of households and jobs that could be accommodated by the full buildout of each alternative. The 2031 growth estimate is intended to provide a general estimate of the potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City.</p> <p>The growth estimate of 11,900 households and 21,900 jobs (which were provided based on regional PSRC growth) are identical for all alternatives. The calculations for both capacity and land use take into account existing uses that would remain unchanged, those that will be lost when parcels are redeveloped, as well as new development. Not all of the alternatives would provide enough capacity to reach the 2031 growth estimate (the No Action Alternative and employment under Alternative 3), while others would accommodate all growth before reaching full buildout (Alternatives 1 and 2 for both housing and jobs, and Alternative 3 for housing). Therefore, the predicted land use totals are determined by either the capacity or the growth estimate, depending on which is the more limiting factor under each circumstance.</p>
<p>37</p>	<p>Trip Generation in High Density Areas. The literature on travel behavior and urban form shows that density is only one factor that influences how people travel. In fact, when taken in isolation, density is shown to reduce the demand for vehicle trips with an elasticity of approximately -4.6 percent (e.g., a doubling of density leads to a reduction in vehicle trip generation of about 4.6 percent). Density is often associated with more substantial reductions in</p>

Comment Number	Response
	<p>vehicle trip generation because higher densities are often concurrent with better mixes of land use type, more transit, better pedestrian amenities, higher parking costs, and other factors. Given that the EIS analysis held constant everything but density between the land use alternatives, the marginal impact on vehicle trip generation is consistent with expectations. The mitigation measures show the power of varying factors like the quality of the pedestrian environment and parking policies in a dense environment.</p>
<p>38</p>	<p>Parking Impacts among Alternatives. We expect the short term parking impacts for each of the action alternatives to be very similar. As new projects develop, these early projects will be helping to develop the infrastructure that will help provide more viable alternatives to driving. However, since these first projects will be entering into an incomplete environment, they will require more parking, which could lead to short-term impacts and parking scarcity in the neighborhoods. These impacts would be similar for all three action alternatives.</p>
<p>39</p>	<p>Pedestrian & Bicycle Improvements. These improvements would further enhance the quality of the bicycle and pedestrian system and would be consistent with the mitigation measures in the DEIS. However, given the programmatic nature of this document, specific details about mitigation cannot be defined at this time. Details will be included as part of specific project reviews.</p>
<p>40</p>	<p>Geology. As described in Draft EIS Section 3.1 (Geology and Soils), potential impacts associated with liquefaction hazards could be minimized through appropriate design and construction measures. Emergency service response (police or fire service) associated with potential liquefaction damage would be provided in accordance with City of Seattle Fire Department and Police Department standards.</p>
<p>41</p>	<p>Public Services – Fire. At the time of publication of the Draft EIS, Fire Station 8 and Fire Station 25 were scheduled for renovation in 2010 and were anticipated to be completed in 2012. The City of Seattle Fire Department website currently indicates that the renovations to Fire Station 8 and Fire Station 25 are anticipated to be completed in 2013 and 2014, respectively.</p>
<p>42</p>	<p>Sanitary Sewer. The Mercer Corridor improvements are making upgrades and changes to the public water, sewer and storm systems as part of that work. These changes are primarily under the new streets to reduce the likelihood that new paving would need to be disrupted later. The biggest change is a new combined sewer in 9th Avenue between Westlake and Mercer. Other changes are to the storm water system to support use of rain gardens and</p>

Comment Number	Response
	other bio-infiltration storm water methods in areas near the lake, north of Mercer Street.
43	Sanitary Sewer. Please see response to Comment 42 in this letter, above.
44	In response to the success of the development policies in the NODO area Seattle City Light is submitting in the 2013-2018 CIP a recommended option to build both a NODO Substation and Network to serve the North Downtown area Urban Centers. In addition SCL will look to strategically implement infrastructure improvements in coordination with other City capital improvement projects, such as our efforts on the Mercer Corridor Project (East & West).
45	Open Space. The Draft EIS alternatives do not specifically propose an amount of additional open space that could be provided in the South Lake Union Neighborhood, nor do they propose specific locations for such open space. The City could make a policy decision regarding the requirement for specific amounts or locations of open space in the South Lake Union Neighborhood, including a provision to meet the requirements of LEED ND.
46	Existing Open Spaces. The 15.7 acres of usable open space in the South Lake Union Neighborhood includes South Lake Union Park, Cascade Playground and Denny Park. As noted in the comment, Denny Playfield is a privately-owned, temporary recreation facility and was not included in this calculation.
47	Accessibility of Existing Park and Recreation Facilities. The comment is noted. There are existing physical obstacles between the South Lake Union Neighborhood and park/recreation facilities to the east that could discourage people from walking to these facilities. However, some of the park/recreation facilities contain unique features that could attract people to drive to them (i.e., tennis courts, wading pools, bike trails, Volunteer Park Conservatory). It should also be noted that these areas to the east were not included as part of the calculation of usable open space in South Lake Union Neighborhood.
48	Mitigation Strategies. The Draft EIS does not specify the amount of open space that could be required as part of development bonus process. This measure is identified as a potential mitigation measure. The City of Seattle would determine specific parameters regarding this potential development bonus.
49	Park and Recreation Facilities. As noted in the response to Comment #45, the Draft EIS does not propose a specific amount of open space that could be

Comment Number	Response
	<p>provided under the alternatives or the specific location that potential open space should be located. The City of Seattle would determine whether a policy decision is needed concerning the specific amount of requirement open space and/or the location of such open space in the South Lake Union Neighborhood.</p>
50	<p>Use of Tax Revenues. The comment is noted.</p>
51	<p>Public Access and Open Space. The comment is noted.</p>

Comment Letters 6-19

Community Organizations and Interest Groups

- | | |
|------------|--|
| 6. | Smith, Leslie G. |
| 7. | Swenson, Skip |
| 8. | O'Tool, Lori |
| 9. | Danyluk, Edward |
| 10. | Joncas, Kate |
| 11. | Woo, Eugenia |
| 12. | Aramburu, J. Richard |
| 13. | Gemmel, Chris |
| 14. | Goodspeed, Jim; Gemmel, Chris; and Groth, Lori |
| 15. | Ramey, Brian |
| 16. | Staton, Renee A. |
| 17. | Lee, Sharon |
| 18. | Dinndorf, Jerry |
| 19. | Johnson, Rob |

The Alliance for Pioneer Square

New Energy for Seattle's Historic Neighborhood

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes;

I am writing to comment on the Draft EIS for South Lake Union. Healthy and vibrant neighborhoods have a balance of jobs and housing. Seattleites should have a reasonable option to live and work close to downtown and not always have to rely on a car. I was struck when I heard recently that the new wealth is being able to walk to work. South Lake Union is perfectly poised to offer this, so long as it is allowed to grow appropriately. Height and density will allow more people to locate in this urban center and live a healthier and more environmentally friendly lifestyle. Zoning changes in South Lake Union to provide more housing and job opportunities for this Urban Center will generate multiple benefits for South Lake Union, Seattle and the region.

More jobs and residents in the South Lake Union Urban Center will:

- Increase Seattle's economic base
- Reduce trips by private automobile
- Attract more customers to retail and small business establishments throughout downtown
- Bring more eyes on the street; no long expanses of dark parking lots or along abandoned warehouses

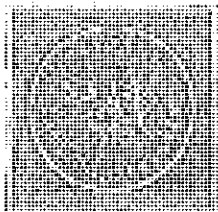
Pioneer Square will benefit from a healthy and vibrant downtown and center city neighborhoods by providing more customers for our unique restaurants, galleries and small businesses. In addition, we eagerly await connecting the First Hill and South Lake Union streetcar lines to enhance mobility and circulation between and among South Lake Union, Pioneer Square and other center city neighborhoods.

You are strongly encouraged to analyze the benefits for South Lake Union and the entire downtown area of Alternative 1 versus the status quo. Thank you for your time and consideration.

Sincerely,

Leslie G. Smith

Leslie G. Smith
Executive Director



CASCADE LAND CONSERVANCY

CONSERVING GREAT LANDS
CREATING GREAT COMMUNITIES

April 11, 2011

Mr. Jim Holmes
City of Seattle Department of Planning & Development
700 5th Ave, # 5752
Seattle, WA 98104-5070

Mr. Holmes:

The following comments pertain to the Draft Environmental Impact Statement (DEIS) for South Lake Union. As outlined in *The Cascade Agenda*, Cascade Land Conservancy strongly believes that growth should be focused in our cities and designed in a way that makes neighborhoods walkable, efficient and affordable. By making smart choices about future growth, we can create thriving neighborhoods and a vibrant city, as well as save the region's natural and working lands from poorly planned development and maintain the quality of life Seattleites and all Washingtonians enjoy.

Cascade Land Conservancy applauds the City of Seattle and the Department of Planning & Development for efforts to work with the community and stakeholders to investigate potential options for the redevelopment of South Lake Union. We feel that Alternatives 1 and 2 in particular are exciting opportunities for Seattle; these represent a unique and important opportunity to plan with serious consideration for how the City wants to grow—both in the near-term and beyond the 2031 planning horizon. | 1

Several items in the DEIS merit further comment. These include:

- Community amenities
- Walkability and multi-modal transportation
- Affordable housing
- Regional transfer of development rights

Any increases in residential and commercial capacity of South Lake Union must incorporate community amenities for residents, employers and employees, and those frequenting South Lake Union. Alternative 1 is particularly attractive in this regard, as it is most likely to generate the development and rents necessary to justify both public and private investment in community amenities. Amenities such as passive and active open space, green alleys, plazas, and streetscapes encouraging community use and interaction, amongst other considerations such as a library, a community center and arts programming, will contribute not only to the quality of life in the neighborhood, but will also drive demand for development and associated economic development. | 2

Significant improvements in both transit and bike/pedestrian infrastructure will be necessary to accommodate the increased development under Alternatives 1 and 2. This effort should include working with King County Metro to increase service and improve transit accessibility in the South Lake Union Neighborhood. Streetscape improvements to Denny and Aurora will also be necessary to facilitate safe, easy crossings of these streets for pedestrians and bicycles. With limited capacity for road | 3

expansion in South Lake Union, improved bicycle, pedestrian and transit access will be necessary to create a thriving neighborhood.

3 cont

Cascade Land Conservancy strongly supports the City's stated objective of increasing affordable housing in South Lake Union. We support, generally, proposals to mitigate for any loss of existing affordable housing stock, as well as opportunities to incentivize new affordable housing. The DEIS suggests incentives in current City code could be extended to South Lake Union; however, it does not detail how such incentives would be structured with regard to other considered incentives, such as those for onsite improvements. We recommend any incentive program or programs advancing the important goal of increased affordable housing be structured to achieve objectives but avoid competition with incentives for other community goals. Creating a framework that avoids pick-lists or overlapping incentives is key to a successful implementation.

4

Cascade Land Conservancy was disappointed to discover that, while opportunities for transfer of development rights for affordable housing, historic landmarks and overwater building removal were explored, the DEIS gives no consideration for regional transfer of development rights in South Lake Union. Transfer of regional development rights would encourage the transfer of development potential from farms, forests, and other lands of regional importance into South Lake Union. Such transfers support numerous City of Seattle objectives, including:

5

- Reduced carbon emissions by encouraging growth in cities and reducing vehicle miles traveled, per the 2010 City Council priority for carbon neutrality
- Implementing regional growth management strategies, per the Comprehensive Plan
- Strengthening the security and sustainability of Seattle's food system, per Resolution 31019

Including a regional transfer of development rights incentive program in South Lake Union is encouraged by Resolution 31147 and the South Lake Union Urban Design Framework, and is supported by state law (RCW 36.70A, RCW 43.362) and regional planning relevant to Seattle (Puget Sound Partnership Action Agenda, Puget Sound Regional Council VISION 2040). For these reasons, Cascade Land Conservancy urges the Department of Planning & Development to include regional transfer of development rights in any incentive zoning planning or recommendations.

South Lake Union represents a momentous opportunity for Seattle to proactively plan for growth, increase the quality of life for all Seattle residents, create new economic opportunities, and further Seattle's leadership as a world-class city. Cascade Land Conservancy is encouraged by the Alternatives proposed in the DEIS for South Lake Union, and we hope you will consider our comments in the final environmental impact statement.

Thank you for your consideration.

Sincerely,



Skip Swenson
Managing Director of Policy
Cascade Land Conservancy



South Lake Union, Seattle:
1010 Valley Street, Seattle, WA 98109
Tel: 206-382-2628 Email: cwb@cwb.org

Cama Beach State Park:
1880 SW Camano Drive, Camano Island, WA 98282
Tel: 360-387-9361 Email: cama@cwb.org

28 March, 2011

To whom it may concern,

The Center for wooden boats is a not-for-profit 501(c)(3) organization whose mission is to provide a gathering place where maritime history comes alive through direct experience and our small craft heritage is enjoyed, preserved, and passed along to future generations. As a resident of South Lake Union for over 30 years, The Center for Wooden Boats has seen many changes in the neighborhood, and we are encouraged and excited by what is on the horizon.

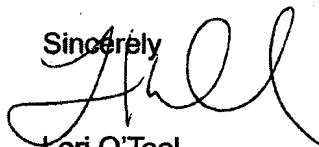
The Board of trustees of The Center for Wooden Boats is pleased to express its support for the Proposed South Lake Union Urban Design Framework and for the proposed Height and Density Alternatives #1 and 2 included in the Draft Environmental Impact Statement.

Visitors to The Center for Wooden Boats come from around the city and around the world; but it is engagement in our local neighborhood community that makes The Center for Wooden Boats the place that it is and that helps to keep us afloat year after year. A strong and vital community: healthy businesses, a diverse residential population, and active, welcoming pedestrian environments are all essential to the health of any organization that endeavors to preserve our cultural heritage.

We are excited by the dense, vital, pedestrian oriented and mixed use vision for the future growth of the South Lake Union neighborhood that is presented in the Framework. We appreciate the emphasis on visual and physical access to Lake Union through open space strategies, view corridors, and pedestrian links. We appreciate the view corridors along Terry and Boren, the pedestrian oriented retail use on Valley St, and the proposed festival street designations for Valley St and Terry St, as well as the focus on green stormwater infrastructure to help improve water quality and the aquatic habitat in Lake Union.

The Board of trustees of the Center for Wooden Boats is grateful to the individuals and organizations who have given their time to articulate this exciting vision for South Lake Union's future. We enthusiastically support the outcome of the process and look forward to the realization of the vision for the neighborhood.

Sincerely



Lori O'Tool

President, The Center for Wooden Boats Board of Trustees

CWB Mission: to provide a gathering place where maritime history comes alive through direct experience and our small craft heritage is enjoyed, preserved, and passed along to future generations.

1

DENNY TRIANGLE NEIGHBORHOOD ASSOCIATION

April 11, 2011

James Holmes, Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Avenue, Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

RE: South Lake Union Draft Environmental Impact Statement

Dear Mr. James Holmes:

The purpose of this letter is to provide the Denny Triangle Neighborhood Association's comments on the South Lake Union Height & Density Alternatives Draft EIS.

The Denny Triangle Neighborhood Association supports greater height and density in South Lake Union and supports the South Lake Union Neighborhood plan's goals and objectives to provide a dense, diverse, sustainable, energetic and aesthetically pleasing Center City neighborhood. | 1

Given the potential for growth and scope of land use changes proposed for South Lake Union, there are concerns related to the traffic impacts to our neighborhood as well as adjacent neighborhoods and the greater downtown area. | 2

We ask for more analysis on the traffic impacts. There is significant congestion in and out of our neighborhood and downtown now and all the alternatives appear to exceed the capacity of the streets and arterials. Additionally, it is very important that there be careful evaluation of how to improve vehicular access to the regional highway system and major arterials that are located in South Lake Union and in adjacent neighborhoods as well as planning improvements for transit, bicycle and pedestrians. |

We also ask that further evaluation be done regarding mitigation. There appears to be very limited resources available into the foreseeable future, especially from Metro Transit, to achieve adequate mitigation for transportation impacts related to density.

3

Sincerely,

Ed

Edward Danyluk, Chair
Denny Triangle Neighborhood Association
C/O Impark
1700 7th Avenue, Suite 106
Seattle, WA 98101

Cc: Seattle City Council President Richard Conlin
Councilmember Sally Bagshaw
Councilmember Bruce Harrell
Councilmember Nick Licata
Councilmember Tom Rasmussen
Councilmember Sally Clark
Councilmember Mike O'Brien
Councilmember Jean Godden

Ms. Diane Sugimura, Director
City of Seattle Department of Planning and Development



Our Mission
To champion a healthy, vibrant urban core

Downtown Seattle Association

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April 11, 2011

Diane Sugimura
Director, Planning and Development
700 Fifth Ave., Suite 2000
P.O. Box 34019
Seattle, WA 98124-4019

RE: Draft South Lake Union EIS

Dear Director Sugimura,

On behalf of the Downtown Seattle Association (DSA), I write to submit comments to the South Lake Union Draft Environmental Impact Statement. The Downtown community is excited by the recent growth in South Lake Union. The increases in retail, employment and residential units in the neighborhood are important to Downtown and have a positive ripple effect on other Downtown neighborhoods.

We believe that additional employment and residential density in South Lake Union is critical to Downtown's future economic vitality. As you are aware, the city has targeted South Lake Union for significant employment and residential growth through the Comprehensive Plan – calling for a minimum of 16,000 new jobs and 8,000 new households by 2024. We strongly support these targets and urge the city to take aggressive and deliberate actions to achieve them. The Final EIS should be broad enough and consider a wide range of alternatives so that policy makers have sufficient information, options and flexibility to achieve the minimum growth targets.

We urge the following issues to be incorporated in the Final EIS:

1. Analyze maximum floor plates of at least 35,000 square feet in certain sections of SLU. Currently the EIS limits tower floor plate size to 24,000 square feet. Certain technology and biotech employers require large floor plates to meet their programmatic needs. Large floor plates are more mechanically efficient for these users, and often foster better collaboration and innovation among employees.

By not studying an adequate range of zoning options that allows the city to plan for and attract key growth sectors to South Lake Union, we force Seattleites to seek work elsewhere in the region.

In 2009, Seattle had 30,000 fewer jobs than in the year 2000. During the same period, suburban King County added 15,000 jobs. SLU is well positioned to attract biotechnology and technology companies that have previously chosen suburban locations if the zoning is conducive to development of properties that meet their needs. If we fail to concentrate additional employment within the Downtown core, we encourage sprawl and additional gridlock, which is inconsistent with adopted local and regional policy.



The Final EIS should study floor plate sizes of at least 35,000 square feet to preserve options for policy makers to develop zoning that meets the needs of these tenants. We recognize that 35,000 square foot floor plates may not be appropriate in all areas of SLU, and recommend that this analysis be focused on the east and west sides of the Fairview Avenue corridor. This corridor is comprised of many superblocks (greater than 100,000 square feet) where two 35,000 square foot towers would still leave nearly an acre of public open space at street level. Limiting the floor plate size of the towers to 24,000 square feet has the potential to result in larger podiums and less open space at street level.

2 cont

2. Reduce the required minimum lot size for residential developments to 20,000 square feet. The Draft EIS considers a minimum lot size of 22,000 square feet, which will limit residential densities in SLU. A typical ¼ block lot is 120' X 180', which equates to 21,600 square feet. The Final EIS should consider minimum lot sizes of 20,000 square feet.

3

Finally, we urge the City to evolve its environmental review process for land use decisions and analyze and document the benefits from increased employment and residential densities. This could include, but should not be limited to, examining the amount of city tax revenue that would result from each zoning alternative. Dense, mixed-use development generates over ten times the amount of tax revenue per acre compared to the typical surface parking lot. These economic benefits should be considered as part of the analysis of zoning alternatives.

4

Thank you for consideration of our comments. We urge you to include a broader range of options for the Final EIS to put the neighborhood, property owners and developers in the best position possible to achieve South Lake Union's employment and residential growth goals.

5

Sincerely,



President
Downtown Seattle Association

cc: Mayor Mike McGinn
Seattle City Councilmembers
Marshall Foster, Department of Planning and Development
Jim Holmes, Department of Planning and Development



Preservation Development
Authority Council

11 April 2011

Via Email

Mary McCumber
Chair
Karen Breckenridge
Sharon Coleman
Andrea Divoky
Fauna Doyle
James Fearn
Michael Herschensohn
Pete Mills
Rico Quirindongo
Rick Sever
Marcia Wagoner

Seattle Department of Planning and Development
ATTN: James Holmes
700 5th Avenue, Suite 1900
PO Box 34019
Seattle, WA 98124

Re: Comments on the DEIS for the South Lake Union Height and Density Alternatives

Kathleen Brooker
Executive Director

Dear Mr. Holmes:

Foundation
Board of Directors

This letter provides comments on the 2011 Draft Environmental Impact Statement (DEIS) for the South Lake Union Height and Density Alternatives. I am writing on behalf of Historic Seattle, which is Seattle and King County's only nonprofit membership organization dedicated to preserving our architectural legacy.

Michael Herschensohn
President
James Fearn
Gary Gaffner
Mary McCumber

We appreciate the objectives of the South Lake Union Height and Density Alternatives proposal and believe continued planning for the area's growth and use is necessary. We've seen positive changes in the form of new development and mix of uses in the area and appreciate the added vibrancy to some sections of South Lake Union.

However, none of the objectives in Chapter 1 of the DEIS mentions historic character. Only one objective refers to "neighborhood character" but that is in the context of providing more "character" through new construction, not maintaining or valuing historic or potentially historic buildings. Since the South Lake Union Neighborhood Plan of 1998 and the updated South Lake Union Urban Center Plan of 2007 both specifically include entire sections on "Neighborhood Character" and discuss the importance of maintaining historic character, we believe an objective of this proposal should include language that recognizes the significance of historic character to be consistent with the neighborhood plans. This is a core value that should not be ignored.

1

The DEIS states clearly what the anticipated impacts are to historic resources. Alternative 1 "allows for the greatest amount of development, which could result in the greatest amount of development pressure on existing small scale structures that may be eligible for historic designation." Additionally, in reference to Alternative 1, "Differences in character, height, and bulk of new development adjacent to a designated historic structure or a structure potentially eligible for historic

2

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www.HistoricSeattle.org
info@HistoricSeattle.org

designation, could negatively impact the historic value of the existing structure." Alternatives 2 and 3 would have similar impacts to historic resources.

2 cont

The proposed mitigation measures do not offer much more than what has already been proposed in the 1998 and 2007 neighborhood plans. What guarantees are there that these proposed mitigation measures will actually be carried out and in a time frame that will actually be useful for protecting historic resources? One mitigation strategy discussed in both the DEIS and the 2007 updated neighborhood plan is analyzing the feasibility to expand the transfer of development rights (TDR) program to locally designated landmarks in South Lake Union. Historic Seattle supports financial incentives to preserve historic properties and believe expanding the TDR program to South Lake Union's designated landmarks would be a positive tool for both preservation and economic development.

While we understand and support the need for increased height and density in the South Lake Union Area and believe the area is not cohesive enough to be a historic district, it is also important to remember that historic character doesn't mean only maintaining and preserving individual buildings that meet local or national register criteria. Historic character, as a component of neighborhood character, is much broader than that. It's about how a streetscape, block or neighborhood feels. The most pedestrian-friendly neighborhoods are the ones that evoke a sense of place and history.

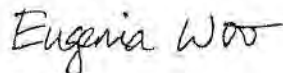
3

The light industrial heritage of South Lake Union is particularly important and evokes this sense of place. The "Historic Resources" section of the DEIS overlooked a significant property (802 Roy Street) that the City of Seattle Historic Preservation Program has deemed eligible as a Seattle Landmark and individual listing on the National Register of Historic Places. The building, owned by City Light, was included in the 2001 survey of City-owned properties which was not cited in the DEIS. This building has great adaptive reuse potential for community uses that can benefit the neighborhood.

4

Thank you for the opportunity to comment.

Sincerely,



Eugenia Woo
Director of Preservation Services

ARAMBURU & EUSTIS, LLP

Attorneys at Law

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April 11, 2011

James Holmes
Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Avenue, Suite 2000
Seattle, WA 98124

Jim.Holmes@seattle.gov

Re: DEIS for South Lake Union Height and Density Alternatives.

Dear Mr. Holmes:

This office represents Lake Union Opportunity Alliance (LUOA), a local coalition of residents, business owners and interested persons concerned with the future of the South Lake Union community.

1

My client has asked me to review and provide comments on the DEIS for South Lake Union Height and Density Alternatives (hereinafter "the DEIS"). After review, it is apparent that the DEIS is inadequate from multiple standpoints, which are described herein. Because these deficiencies are so serious, we ask that the DEIS be rewritten and recirculated before a final environmental impact statement ("the FEIS") is prepared. Our comments follow.

I. FAILURE TO PROVIDE A STATEMENT OF NEED.

The DEIS states that the Seattle Comprehensive Plan establishes that the South Lake Union neighborhood should support a concentration of housing and employment. Page 2-1. The South Lake Union neighborhood already contains a concentration of housing and employment and there is no documentation as to why the current zoning, with accompanying densities and heights, is insufficient to meet needs of the local community and the Comprehensive Plan.

2

Further, as the "Planning Context" discussion at Section 2.2 of the DEIS indicates, growth targets have been recently established for the planning horizon out to

3

2031 by King County and its cities. However, this discussion also makes clear that these overall growth targets have not been incorporated into the City of Seattle Comprehensive Plan, nor have the growth targets been allocated to the various neighborhoods within the City. That process will take place in 2014.

3 cont

The DEIS states that it gives the City "an early opportunity" to consider how these alternatives fit into the future comprehensive plan update. Page 2-7. As the footnote at page 2-8 indicates the city "has not yet identified specific 2031 targets for neighborhoods within the City" because that would not be done until 2014. The DEIS does not explain why planning for the South Lake Union neighborhood should be accelerated before the planning for the rest of the City's neighborhoods. The assumption that the same percentage of distribution of residences and employment will be applied to the allocation process in 2014 is not an assumption that can be made absent a City Council directive and decision. One of the key tenets of the Growth Management Act is to have coordinated planning, and to take account of all alternatives for the distribution of growth. The acceleration of analysis and adoption of development regulations for the South Lake Union Neighborhood is accordingly not consistent with GMA policies and the City should cease further analysis of the subject. The South Lake Union Neighborhood should be considered for additional growth based on 2031 populations and employment goals only at the time the rest of the city is also analyzed.

Under SEPA it is far more appropriate to examine the distribution of growth throughout the entire city, not a single location like South Lake Union. If the City is determined to pursue a process inconsistent with the GMA, the DEIS should be rewritten and redistributed for comment to examine growth issues on a citywide basis.

Based upon the foregoing, an additional alternative should be included within the DEIS. The DEIS should include an analysis of the deferral of planning for South Lake Union height and density alternatives until planning can proceed for the entire city in 2014. Alternative analysis must include distributing a portion of the new housing and employment into other urban villages and other city neighborhoods, especially for 2031,

4

Analysis is also required on current economic conditions and the corresponding effect on the need for additional housing and employment. It is widely known that housing markets continue in distress and the demand for additional housing has dropped substantially. The same is true for commercial real estate. The foregoing analysis should consider current commercial and office space vacancy rates in downtown Seattle and other neighborhoods. Analysis is also required for the number of permitted or proposed, but unbuilt, office, commercial and residential projects within the City that have been delayed or deferred due to the present recession. The revised DEIS, or FEIS, should provide analysis as to whether those deferred or delayed projects are able to absorb demands for new office, commercial and residential capacity without

5

the need for an increase in South Lake Union density and height.

5 cont

In light of the foregoing issues, analysis should be made as to whether the South Lake Union Neighborhood, with new heights and densities, will in fact mean that growth in other urban villages will be stifled by growth concentration in South Lake Union.

6

The foregoing leads to additional questions that must be answered in the final EIS:

*Explain whether the City is meeting its 20 year projections (2024) for housing and employment goals.

*What factors or adopted policies indicate the need for more housing and employment in this area?

*Is the City failing to meet its housing and employment goals and if so, are all areas of the City assuming equal portion?

*List the other Urban Center Neighborhoods in the city and what percentage these neighborhoods would assume as a part of either 2024 or 2031 goals.

II. AESTHETICS.

Most viewscape scenarios provide the "bird's eye" view and views from Gas Works Park. However, essentially bird's eye views are not seen by anyone but birds. The views from Gas Works are also seen by only a few persons. The DEIS is completely negligent for not providing perspective from areas south of the South Lake Union neighborhood. For example, there are no perspectives for view losses from downtown or Belltown, and only a few from the west side of Capitol Hill. Thousands of residents and office occupants have views from these areas over the South Lake Union Neighborhood to Lake Union itself. All of these views would be affected by density and height modifications for South Lake Union. These views need to be analyzed and carefully considered.

7

8

The analysis also does not include proposed projects to be built in the downtown south of Denny Way and the ability of these projects to absorb growth. An analysis needs to be made of the impacts on viewscales from these projects.

The City's analysis seems to assume that the terms of SEPA policies under SMC 25.05.675.P limit the viewpoints that should be considered. However, as this is an area-wide zoning modification, and not an action on a specific private project, these

limitations do not apply. This is a serious legal error that will require the DPD to redraft the DEIS and recirculate it.

8 cont

Further, the analysis completely fails to take account of the terms of the Shorelines Management Act (SMA), RCW ch. 90.58; in particular RCW 90.58.320, which establishes height limits respecting permits:

9

No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served.

It is obvious that the higher buildings that are found in some of the alternatives will block vies of many residents. It is important to note here that the location of the residences from which views may be blocked is not limited to properties within the shoreline area. The SMA also requires that these policies be applied to lands adjacent to the shoreline zone to be consistent with SMA policies:

All state agencies, counties, and public and municipal corporations shall review administrative and management policies, regulations, plans, and ordinances relative to lands under their respective jurisdictions adjacent to the shorelines of the state so as to achieve a use policy on said land consistent with the policy of this chapter, the guidelines, and the master programs for the shorelines of the state. The department may develop recommendations for land use control for such lands. Local governments shall, in developing use regulations for such areas, take into consideration any recommendations developed by the department as well as any other state agencies or units of local government.

RCW 90.58.340 (emphasis supplied). As noted above, the SMA establishes a strong policy for protection of visual access to the water/shoreline areas and for protection of views, especially from residential areas. Views of Lake Union are of great value in Seattle and the DEIS fails to give complete analysis of these impacts. Much of the development proposed by the current plan is achieved by permitting greater height either within or adjacent to the two hundred foot shoreline zone.

Analysis should be made of any residential or commercial properties that will have their view of Lake Union impaired or impacted by these zoning alternatives. For example, views are likely to be impacted as far south as Lenora or even areas further south in the downtown core. The areas affected should be shown on a map or maps, together with

10

the degree of impacted views. This will require a significant expansion of the view points and simulations stated on page 3.10-40 of the DEIS.

10 cont

In summary, the visual and aesthetic analysis is so deficient as to require a redrafting of the DEIS, and recirculation for comments, prior to proceeding to the preparation of the FEIS.

11

III. TRANSPORTATION ISSUES.

The transportation section is deficient in several respects.

12

First, there is only minimal discussion of the impacts of the construction of the Bored Tunnel on the South Lake Union neighborhood. Recent analysis has indicated that because of likely tolls for vehicular use of the Bored Tunnel, and the lack of intermediate downtown access, a significant portion of the current traffic on the SR 99 Viaduct will use downtown Seattle streets. This data is also included in the Supplemental DEIS for the Bored Tunnel project. "The issues, left unaddressed, will impact accessibility to and the character of the Center City, particularly in the vicinity of Pioneer Square and the Seattle Center/South Lake Union areas," says a briefing paper presented to the City Council on January 25, 2011 by Nelson/Nygaard (emphasis supplied). These impacts may significantly impact background traffic on streets and intersections in the South Lake Union area. The findings of this study need to be reviewed and incorporated into the transportation analysis for the DEIS.

Second, the DEIS appears to assume that peak trip generation will be heavily affected by non-auto alternatives, mostly including bike/pedestrian/internal trips. See DEIS at page 3.13-2. The justification for these conclusions needs to be disclosed and analyzed. Page 3.13-48 states that the project team "use an innovative trip generation analysis technique" known as the MDX model. Because the MDX model is new, with little backup support, the DEIS should provide a more traditional form of traffic analysis by trip generation rates as used in ITE Manuals. There are indications in the DEIS that socioeconomic conditions suggest traditional trip generation analysis is questionable, but those conditions need to be identified in detail.

13

Any analysis of heavy dependence on non-auto trips needs to be supported by the present circumstances. What are the percentages of non-auto trips in the South Lake Union Neighborhood at the present time? Do they come anywhere close to the percentages found in the DEIS? As to transit, an analysis needs to be made of the ridership on the Seattle Street Car lines in the community and how they compare with projections. Similar analysis needs to be made for current transit usage; how will the development of the foregoing alternatives change the current trip patterns?

14

Third, an analysis needs to be made as to the ability of the City or private sources to fund the mitigation measures proposed. The GMA requires that planning for capital improvements should proceed at the same time as land use planning. Local governments are currently in budget crises and an explanation needs to be made as to how each of the transportation mitigation measures will actually be funded and built. For example, new bike facilities for the Mercer project have been deleted; how many more of the suggested facilities will realistically be built by 2024 or 2031? 15

Fourth, the future estimates for parking usage are provided, but lack background data and have serious deficiencies in analysis. Parking utilization is based on daytime hours only; no analysis is provided for evening hours. Analysis of evening parking is critical as restaurant/bar and other evening uses develop and as visitors to residential uses attempt to find street parking. Current analysis of parking conditions suggests that on-street parking is now fully utilized during the evening hours (see Page 3.13-21). More residential and commercial development will result in increased evening parking demand which must be analyzed and considered. 16

Fifth, parking analysis needs to be provided for all portions of the subarea, not just those in the southerly portion of the South Lake Union neighborhood, i.e. the area south of Mercer. See pages 3.13-7. 17

Sixth, in addition, there needs to be an analysis of on-street parking for the built-out periods in 2024 and 2031, with attention to parking supply. Special attention needs to be given to the effect that the buildout of transportation facilities will have on parking supply during the study period, i.e. how many parking spaces will be eliminated by street, transit and bike improvements. 18

Seventh, the note on page 3.13-1 states that there may be "significant short-term parking impacts as individual projects in South Lake Union build out." Then the footnote explains that parking prices will "adjust to meet demand and travelers will shift to other modes, thus reducing the demand for parking." There needs to be analysis and support for this overly optimistic prediction. Short term visitors to residences, offices, restaurant/bar uses and other commercial uses are unlikely to switch to other modes. 19

IV. OPEN SPACE AND RECREATION.

This section of the DEIS discusses the impact of the density and height on park and open space resources in the area. As with other sections, there are major errors and failure to analyze critical subjects.

First, at page 3.16-4, a table is provided to compare amounts of open space to accommodate the 2024 Household and Jobs goals. However, the plan is intended to 20

address the 2031 population predictions. Figures must be provided to measure the adequacy of existing open space and recreation area for 2031 growth figures. Further, more detail is necessary to address those areas of the neighborhood that are not meeting identified goals.

20 cont

Second, while there is analysis of open space goals, there is no analysis of recreation areas. Detail needs to be provided as to recreation resources and whether they will be adequate for the 2031 population estimates.

21

Third, many of the supposed existing parks and open space in the "South Lake Union vicinity" described on Table 3.16-1 are well removed from the South Lake Union area. For example, Volunteer Park and Anderson Park are on Capitol Hill and separated by distance and barriers (I-5) from South Lake Union. Park areas should only be listed if they are accessible by walking from the South Lake Union Neighborhood.

22

Fourth, many of the park mitigation strategies (page 3.16-9/10) seem unrealistic. For example, #1 suggests use of tax revenues to fund park facilities. This funding would require changes in statutory authority. Mitigation through the capital facilities planning (#2) requires that the City prioritize South Lake Union, but analysis must be provided as to whether funding for such facilities will be available during the current budget crises. Item #3 refers to providing facilities as a part of new development, but analysis is necessary to assure that such facilities are not only public in name, but inviting to the public, not facilities such as interior courtyards useful only to building tenants or retailers. Again, capital facilities planning must accompany land use plans under GMA.

23

Fifth, page 3.16-5 states that the North Downtown areas requires eight additional acres of parks and open space to meet standards by 2024. What will the requirements be by the planning period set forth in the DEIS of 2024 or 2031? Further, given budget restraints, will eight acres of new parks actually be built in the area to meet needs?

24

V. CAPITAL FACILITIES.

The DEIS identifies deficiencies in sewer capacity within the South Lake Union Neighborhood. DEIS at 3.15-7. However, there are blithe assumptions that these problems will be resolved by the individual developers of new projects. *Id.* However, there is no basis on which such individual developers will replace or repair system wide facilities. GMA requires at RCW 36.70A.070(3) and (4) that capital facilities and utility strategies be a part of comprehensive planning. These also include plans for financing such necessary improvements. This section of the DEIS requires thorough analysis of the impacts on utilities, what improvements may be required and how such facilities will be funded.

25

VI. ALTERNATIVES.

Alternatives are the key element of SEPA decision making and all reasonable alternatives must be considered in the EIS. Agency analysis must be open-minded and public proposals in particular should be described in terms of objectives rather than preferred courses of action. This is especially true for a non-project action such as the adoption of sub-area plans such as that for the South Lake Union Neighborhood. Reasonable alternatives are those that approximate the proposal's objectives at a "lower environmental cost or decreased level of environmental degradation." WAC 197-1-440(5)(b). In the present DEIS, alternatives are not adequately considered for the reasons stated below.

26

First, the alternative analysis is deficient for failure to include a downzone of the subject area. A reduction in height and density must be considered, especially where it meets goals for preservation of views to Lake Union.

Second, The analysis is also deficient because it does not include the alternative of distributing new growth to other locations within the City.

Third, an additional alternative for review purposes is to defer any decision to modify the height and density standards in the South Lake Union Neighborhood until a comprehensive and coordinated review can be made of all Seattle neighborhoods. An explanation needs to be provided of the costs and impacts of deferring South Lake Union decisions.

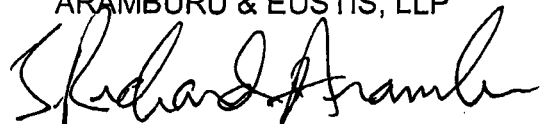
In conclusion, this comment letter has shown that the DEIS is deficient in several areas. In addition, accelerating consideration of 2031 growth goals in the South Lake Union Neighborhood ahead of other areas of the City violates important goals and policies of the GMA. As such, the City is better advised to defer further effort and expenditure until it undertakes planning for the entire city, as scheduled for 2014. If the City is intent on proceeding on this dubious course of action, the DEIS should be completely rewritten and recirculated for comment to incorporate the comments found herein.

27

Thank you for this opportunity to comment on this DEIS. Please send me a copy of the next EIS prepared by the City.

Sincerely yours,

ARAMBURU & EUSTIS, LLP



J. Richard Aramburu

JRA:cc

cc: LUOA

**Lake Union Opportunity Alliance
LUOA**



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Chris Gemmill; Vice President
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April 10, 2011

James Holmes
Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Avenue, Suite 2000
Seattle, WA 98124

Re: DEIS for South Lake Union Height and Density Alternatives.

Dear Mr. Holmes:

Lake Union Opportunity Alliance finds numerous flaws within the Draft EIS for South Lake Union as well as potential legal errors and we appreciate the opportunity to comment.

- LUOA has retained Richard Aramburu of Aramburu & Eustis, LLP to comment on our behalf from a legal perspective. Mr. Aramburu's comments will be submitted separately but are attached here as well. | 1
- LUOA also commissioned Christopher Ferrell of CFA Consultants (a transportation planning and research firm) to review and provide commentary on the Transportation section (3.13) of the DEIS. Mr. Ferrell's Memo will not be submitted separately and is included herein. | 2

It is the position of Lake Union Opportunity Alliance that the Draft EIS was not properly edited prior to being released to the public. We believe that the omission of this critical step caused significant negative impact on the public's ability to understand and provide appropriate feedback on the DEIS. As having an editor is an expected practice for a professional technical document, we strongly recommend that a REVISED Draft EIS be released along with an additional comment period prior to developing the Final EIS. | 3

The bulleted list below is a **summarized list of items** LUOA finds to be misrepresented, missing, or deficient in the DEIS and our requests for correction. Following the summary, you will find the more detailed explanation of various points from our contributing Board Members. **These comments may or may not be submitted individually so please review this document in its entirety for the purposes of your response to Public Comments.**

- First, the summary section of the EIS needs to be more informative, quantitative, and objective in order for the general public to understand the impacts in a timely manner. | 4
- LUOA formally requests an EIS free of misleading “sales pitch” style terminology. There are a multitude of examples to choose from - here is one: | 5
 - Page 1-18 states in reference to Alternative 1, “Building heights increase *slightly* in the block north of Mercer.” A transition from 240’ to 300’ to blocks currently zoned at 40’ is not ‘slight.’
- Disclose all entities who contributed to the construction of the DEIS document with all potential conflicts of interest made transparent to the public. | 6
- On page 1-55, it states “There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except Transportation.” This is a false statement and needs to be corrected. | 7
- The Shoreline Management Act prohibits the shading of water bodies with new development. The allowance of tall buildings next to the lake and the admission that these buildings will shade the lake seems to be a clear violation of the State Law and is ignored in the DEIS. The EIS must address this issue. | 8
- The “Growth Targets” for 2031 on Page 2-7 are extremely aggressive for SLU, have not been adopted by City Council, and are not incorporated in the Comprehensive Plan. These targets are inappropriate, inconsistent with policies of the Growth Management Act, and should not be used or considered for any purpose. | 9
- The entire document fails to address flight path issues – FAR77. Specifically, but not limited to page 1-13, page 1-15, page 1-35, and page 2-9 all illustrate inadequate study. The City must address this issue and not leave it in the hands of private corporations to determine the safety of the neighborhood. | 10
- Page 1-18 and 1-19 incorrectly characterize Alternatives 1 and 2 as a step-down to the lake. Alternatives 1 and 2 do not step down and this must be corrected. | 11
- While making the assertion that it “does,” the DEIS fails to address “how” an increase in height and density, which increases land values and moves from wood-frame construction to the more expensive steel and concrete, will actually increase the amount of low-income housing and affordable housing within SLU. High-rise housing is the most expensive per square foot and could eliminate new, low-income housing in SLU. This needs to be defined in the DEIS. | 12
- The Housing section (3.9) contains incomplete and inaccurate inventories of current housing available within SLU. This should be corrected. | 13
- One-day shadow studies are inadequate and shadows will have a major environmental impact on the public spaces of Denny Park, Cascade Park and Lake Union Park. Also, shadow impacts on page 1-19 suggest the impact is similar for all Alternatives. This is incorrect and must be addressed in further study. | 14
- The DEIS states that birds and fish species dependent on the lake will be adversely impacted by the build-out but fails to explain how the city will protect against the adverse environmental impacts in any Alternative to public health, the land, the vegetation and wildlife which are currently part of the Lake Union environment. This must be addressed. | 15
- In the Water Quality section (3.3) the DEIS fails to identify the baseline Combined Sewage Overflow (CSO) volumes for each of the six current outfalls into Lake Union. It further fails to indicate what the volumes of CSO’s will be upon full potential build-out of any Alternatives. The fact that the DEIS states that there will be unavoidable Combined Sewage and Storm-water Overflows into Lake Union in the future is unacceptable and is clearly a possible substantial adverse impact that must be studied. | 16

- The DEIS ignores the rights of recreational and commercial users of Lake Union for reliance on wind currents which provide public enjoyment of sail boat recreation and tourism. The DEIS does not address potential wind-wakes that could adversely impact sailing on Lake Union. This should be studied. | 17
- Tower spacing is an issue that should be addressed in the EIS. There is a general feeling that towers being proposed will be "slim" like those of 6,000 to 8,000 squared feet as seen in Vancouver and Belltown. But the proposals for two towers per block in SLU with floor plates of 10,500 to 24,000 square feet are NOT slim and the DEIS fails to adequately address the impacts of this in multiple sections throughout the document. | 18
- Table 2-3 indicates that an office tower with a floor area of 24,000sf will be awarded to a developer who owns 22,000sf of property. This is an obvious oversight that needs to be addressed. | 19
- The Land Use section (3.8) fails to examine the potential of South Lake Union to be overrun with commercial development based on the incentives offered in Alternatives 1 and 2. There is nothing in the DEIS discussing incentives or controls to allow for a vibrant retail, recreation, or living environment in a future South Lake Union under any of the proposed Alternatives. This must be addressed in the EIS with specific relation to, among other things, a primary goal of SLU's Neighborhood Plan to "balance housing and job growth, providing a live/work neighborhood" and the UDF's recommendation for enhancing community character "by requiring pedestrian-oriented uses along Westlake Ave. N and Valley St., and exploring requirements along other streets." | 20
- The entire Aesthetics section (Chap 1 and 3.10) is filled with misrepresentations and inaccuracies. They must all be addressed and corrected in a manner that more fully represents the true impacts of the proposed Alternatives on SLU. | 21
- The Transportation section (3.13) is woefully inadequate to the task of studying the potential transportation impacts in South Lake Union under the proposed Alternatives. Many of the suggested mitigation strategies appear to be pipe dreams at best. Realistic proposals are required along with a complete and thorough transportation study based on this urban neighborhood and Seattle's track record of mitigating traffic concerns. | 22
- The Air Quality section (3.2) is heavily tied to the flawed studied in the Transportation section. Poor assumptions and modeling in 3.13 can have a substantial and direct impact on the health of the residents and employees of SLU and this must be studied. | 23

We realize this is a long list, but it merely emphasizes the breadth of the deficiencies within the Draft Environmental Impact Statement itself.

What follows is more in-depth commentary from the contributing Board Members of Lake Union Opportunity Alliance along with the letter from Mr. Aramburu and the memo from Mr. Ferrell. We look forward to each of these points being addressed in preparation for finalizing the forthcoming EIS.

Thank you for your time and attention to detail in the coming weeks.

Chris Gemmill
Vice President, LUOA

Comments on SLU Rezone Draft EIS
John Pehrson, Past President, LUOA Board of Directors

A. Section 1.7

On page 1-55, it states "There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except Transportation." This is absolutely false for other elements beyond Transportation. The following is only a sample of impacts that are 'significant and adverse'. They are avoidable only if the underlying Alternative is materially changed.

24

1. Building heights allowed that would impinge upon airspace and aircraft flight
2. Wind wakes from buildings that would make landing and takeoff on the lake unsafe
3. Wind wakes from buildings that would adversely affect sailing now enjoyed by thousands on the Lake Union.
4. Building towers in an area of potential liquefaction
5. Destroying the 'step-down' zoning of concept of SLU and thereby adversely impacting the environment of existing residents and workers (in SLU and adjacent neighborhoods) that is currently protected by zoning regulations
6. Impacting the views from designated Scenic Routes.
7. Noise impacts on occupants of buildings allowed by these alternatives that would surround the landing and takeoff paths of aircraft
8. Lack of any tower spacing requirement for residential and commercial towers
9. Shadow impacts on Lake Union Park and SLU residents
10. Proposing population increases of up to 30,000 and no provisions for children (schools, play grounds, affordable family housing).

B. Growth Target Analysis

On Page 2-7 "Growth Targets" the City has assumed extremely aggressive growth targets for SLU for the period from 2024 and 2031. These are inappropriate and should not be used or considered for any purpose. First, they are not a part of a rationale, comprehensive allocation of growth beyond the 2024 growth targets across Seattle and they are not a part of the City Council approved Seattle Comprehensive Plan. Second, with the very aggressive growth targets for SLU through 2024, SLU would clearly be the urban Center with the most intense development (housing and commercial) outside of Downtown and about 50% beyond those adjacent Urban Centers. Charts on this have been provided to the City under previous cover and are attached. Use only growth targets from the Seattle Comprehensive Plan.

25

C. Tower Spacing and limitations

1. There is no tower spacing proposed, so towers could be 18' apart. There should be an absolute tower spacing requirement of 100'. Otherwise the environmental impact of 400' towers 18' apart must be considered.

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April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

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| 2. Limiting towers to lots of 22,000 sq. ft. does not limit to 2 towers per block. If developers get or have an alley vacation, blocks can be as much as 79,000 sq. ft., allow 3 towers per block. | 26 cont |
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D. Flight Path issues

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| 1. On page 1-35 there should be a safety buffer beyond the defined flight paths both vertically and horizontally. | 27 |
| 2. Wind analysis should clearly show the limitations on tower height in the blocks surrounding Lake Union and Lake Union Park. | 28 |
| 3. Wind analysis should result in definitive reductions in height from Denny Way to water. It is only addressed in general. | |
| 4. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats, will be much more widespread. | |
| 5. On Page 2-9, in section 2.2.3, Figure 2-4 only shows the flight path to and from the Southwest portion of Lake Union. We have understood, and have certainly observed, flights over the Southeast portion of Lake Union. Why is this not shown and taken into account? | 29 |
| 6. Page 1-13 Noise impacts, inadequately differentiates between Alternatives #1 and #2 from the existing zoning. In the former, the aircraft would be landing and taking off between 240' or 300' towers. In #4 all buildings are below the flight paths. Remember the 'third runway issues'. This factor is also ignored on page 1-32 and clearly mitigation is necessary if towers are to surround the flight paths. This environmental issue is real, whether Seattle's noise codes recognize it or not. | 30 |
| 7. Page 1-15 states that there is no problem because building height limits would remain, as they currently exist. This is false. There is no problem because the current zoning limits do not impinge on or surround the flight path. | |

E. Step-down to the Lake

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| 1. Step down is de facto Seattle Policy (see downtown and Belltown and current SLU zoning) so should be recognized. Benefits of step-down should be more clearly stated. | 31 |
| 2. Page 1-18 the top row is full of falsehoods in characterizing Alternative #1 and #2 as step-down. See attached three Step-down charts that clearly show that fallacy. This must be corrected. | 32 |
| 3. Page 1-35 "Wind Analysis" should specify some degree or scope of the step down required to eliminate wind impacts on aircraft landing and taking off and on sailboats on the lake. | 33 |
| 4. The impact of destroying the 'step-down' zoning concept of SLU and thereby adversely impacting the environment of existing residents and | 34 |

April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

workers (in SLU and adjacent neighborhoods) that is currently protected by zoning regulations must be recognized in the final report.

34 cont

F. Cascade Neighborhood Zoning

All of Cascade should be protected, as it is about 75% built out and has developed its own neighborhood character, with diverse housing, market rate housing, small commercial buildings and human services.. All the blocks of Cascade should be included, including all those between Fairview and Minor.

35

G. Diverse Housing

1. On Page 1-16, the report needs to explain how increasing the allowed zoning density (increasing the land values) increases the amount of low-income housing.
2. On page 1-16, the report needs to explain how increasing the allowed zoning density increases the construction of affordable housing. High-rise housing is the most expensive per square foot and has no record of its use as low-income housing. Alternative #1 and #2 zoning would eliminate new low-income housing in SLU.
3. On page 1-16, it says Alternative #4 would reduce development of low income housing, even though zoning of 65', 75' and 85' encourages wood over concrete, a more affordable housing construction, and universally used in Seattle for subsidized housing. This zoning has encouraged significant low-income housing in Cascade and the rest of SLU. Correct this false statement.

36

H. Schools and Family Friendly issues

Schools and family-friendly issues should be addressed under Public Services and Utilities per SMC 25.05.444. Per the Draft EIS there are, as of 2009, about 2940 Housing Units (about 4410 people based on 1.5 people per housing unit). The residential capacities and increases from 2009 numbers is shown below:

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Alternative	Residential Capacity	Increase from 2009
#1	35,874	31,464
#2	32,943	28,533
#3	26,941	22,531
#4	21,636	17,226

These kinds of population growth represent the equivalent of a small City. We see no provisions for a family-friendly environment, like schools and sports playfields and special considerations for multi-bedroom, affordable units. Further, particularly for Alternative #1 and #2, the predominate residential building form will be a high rise apartment/condo tower, the most expensive form of housing and the most unaffordable for young families. Does the City plan for this neighborhood to be devoid of children, with the resultant negative impact on

community (stability, safety and comfort)? What provisions are there for school sites, playfields for children and young adults, more economical housing types like townhouses or five floors of wood over concrete? This void must be corrected in the Final EIS.

37 cont

I. Aesthetics

1. Sections 2.3.3, 2.3.4, and 2.3.5 define the three alternatives with increased zoning. All allow about a 75% increase in bulk and scale for commercial buildings throughout most of SLU. Current zoning allows FAR of 3, 4, 4.5 and 5 for an average of 4. These alternatives allow FAR's up to 7 with bonuses. There is only one building currently in SLU with this bulk/FAR, and that is on Boren between Thomas and Harrison. A second such building is just starting on Boren between Thomas and John. These are a result of a special concession granted to Vulcan/Amazon, increasing the FAR from 3 to 7. The impact of 20 to 25 such buildings in SLU, two or more to the block, has not been adequately considered in this EIS. Not only is the bulk oppressive, but by taking credit for a large lot, they can also be high. The alternatives allow these 24,000 sq. ft. floor plates up to 240' high! Compared to residential towers of similar height, these buildings (using the example of the current building) are bland with no decks so they lack life and have over twice the horizontal impact or bulk. In addition their street level facades are monotonous for entire blocks. This is inherent, as the architects design a solid base to mount the bulky tower. All the emphasis seems to be the impact of residential towers on aesthetics, light, glare, shadows, air circulation and wind impacts on others. These analyses must also include a representation of these bulky, boring commercial buildings throughout SLU and their impact on the environment.
2. Page 1-18, second row, gives a very misleading statement, implying that the towers proposed are slim. Towers in Vancouver are about 6,000 sq. ft.. Towers in Belltown are from 7000 to 8000 square feet. In Belltown, 8,000 sq. ft. towers not a legacy of the past; 8000 sq. ft. towers up to 240' in height are being proposed today. These SLU towers are 10,500 square feet on top of bulky podiums of 45' to 85'. This document should reflect these appropriately. Two or more of these per block, and on tens of adjacent blocks would be oppressive and that impact must be considered.
3. Page 1-17 ignores the impact on adjacent neighborhoods of the residential towers on the area context and view. This includes Capital Hill, Denny Triangle, Belltown and Uptown.
4. Page 1-17 ignores the impact on area views within SLU that are currently protected by current zoning and would be totally destroyed in different amounts by Alternatives 1,2 and 3.
5. Page 1-17 ignores the fact that for some blocks, the proposed podiums are twice as high as the total allowed height under current zoning. (e.g. blocks between Mercer and Valley)

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April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

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| 6. Page 1-17 trivializes by statements like "similar to but less than Alternative 1". Professionals should be able to do better than that. | 40 cont |
| 7. Page 1-18 'Viewsheds' is just plain false. These alternatives do impact views; they just don't totally wipe them out. Losing the supporting structure of the Space Needle is an impact on the view of the Space Needle. Views from carefully selected points that 'frame' the Space Needle between distant towers is 'cherry picking'. | 41 |
| 8. Page 1-18 'viewsheds' should also take into account view impacts from within SLU and from non-designated viewpoints. This is a potential rezone, and not an individual project; so all views are in play. | |
| 9. Page 1-18 'viewsheds' says all view impacts from all alternatives are similar. This is false to any reasonable person. This must be corrected. | |
| 10. Page 1-18 'viewsheds' must list impacts to each scenic route specifically and the extent, by alternative, that these are compromised. | |
| 11. Page 1-39 discusses views from protected viewpoints, but this area rezone must consider general views also. | 42 |

I. Shadows -

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| 1. Page 1-19 Shadows is entirely unacceptable. To say that the shadow impact of Alternative #1 and #4 are similar throughout the day is not factual. | 43 |
| 2. Page 1-19 Shadows should be based on quantified data in some manner. Professionals should be able to quantify by sq. ft. of shadows or blackness of the area to allow rational comparisons to be made. | |
| 3. Page 1-19 shadows on Lake Union Park should be highlighted for all four seasons but particularly from September to March, critical months for light in Seattle. | |
| 4. On page 1-30, 'Plants and Animals', the different shadow impacts of the 4 alternatives on plants should be discussed. Obviously Alternatives #1 and #2 have greatest and most profound impact. | 44 |
| 5. On page 1-40 under 'Shadows', it merely lists what is in the land use code. Which of those is recommended in this general case and how much to mitigate the huge increase in shadows? | 45 |

K. Blocks South of Lake Union Park, between Valley and Mercer

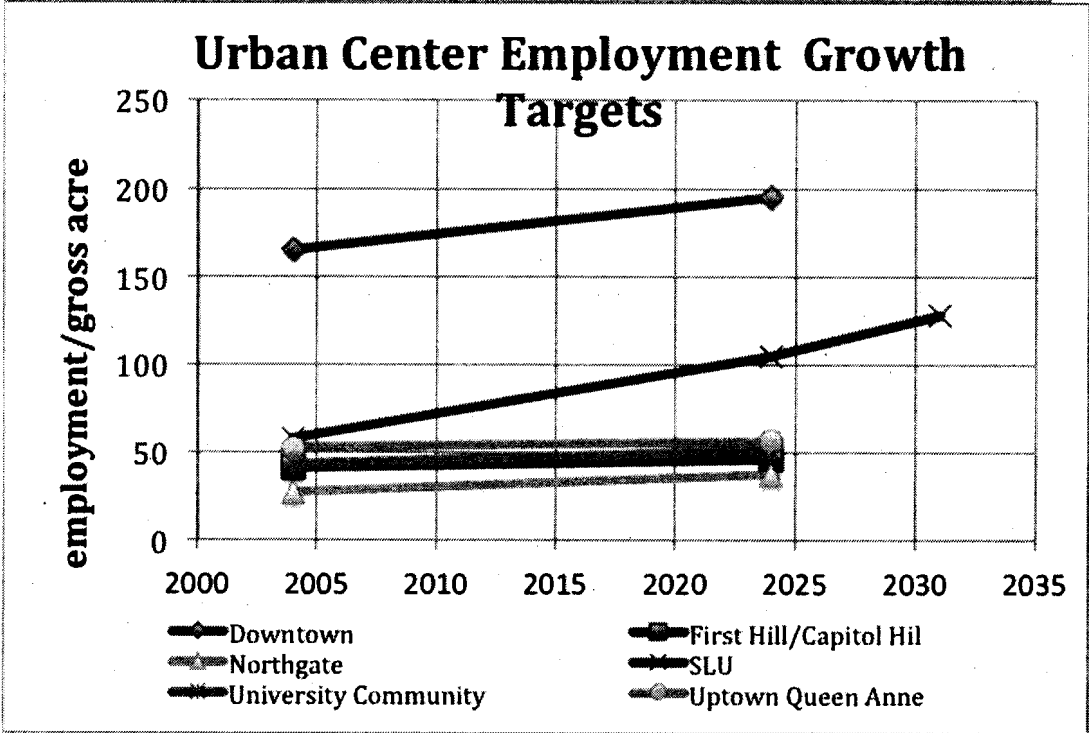
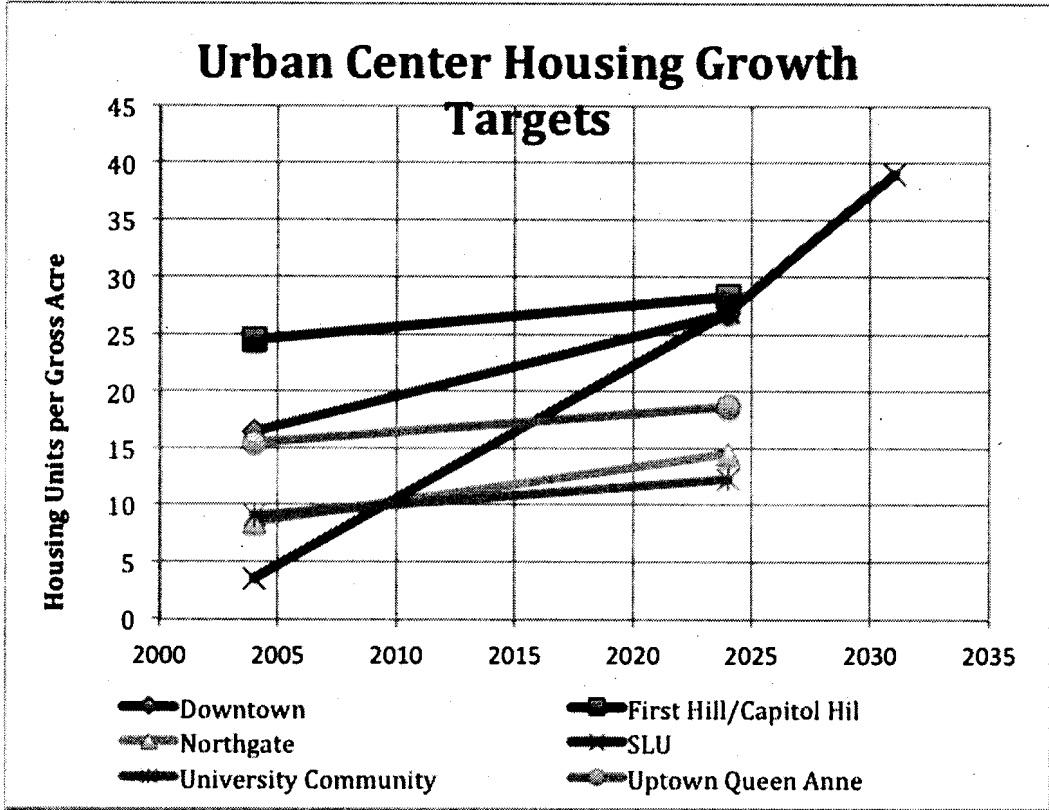
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| 1. The impact of building wind wakes on aircraft landing and taking off should limit building heights to existing zoning. | 46 |
| 2. Page 1-19 shadows on Lake Union Park should be highlighted for all four seasons, but particularly from September to March, critical months for light in Seattle. The mitigation for these damaging shadows should be to limit building heights between Valley and Mercer to eliminate them. | 47 |
| 3. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats, | 48 |

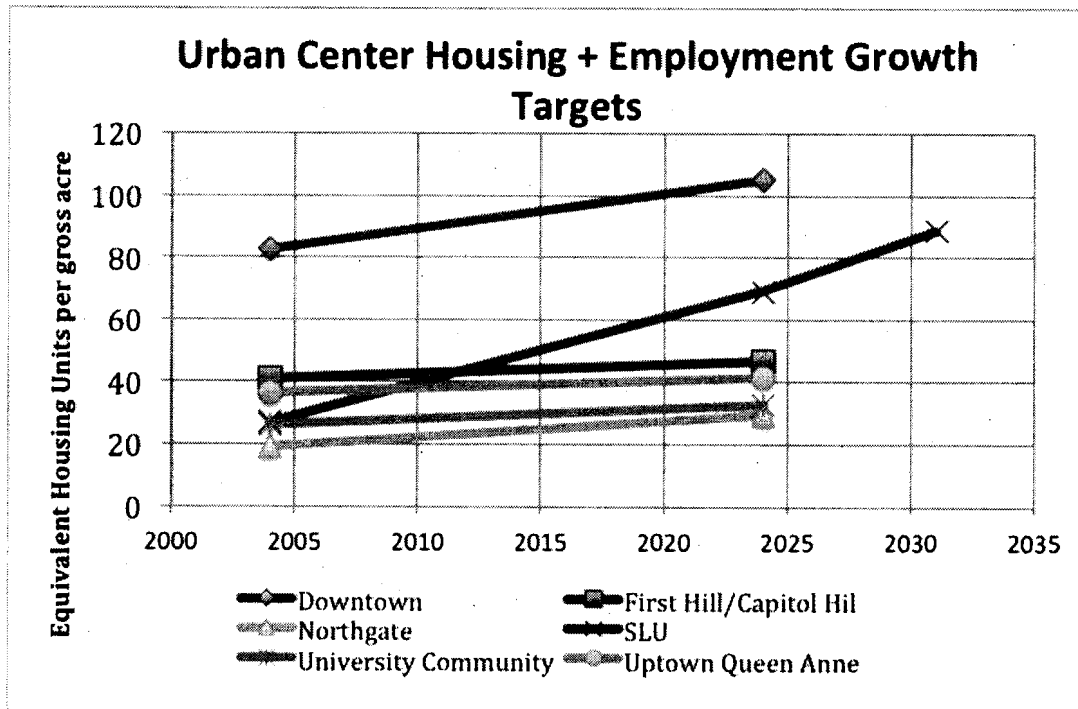
April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

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| will be much more widespread. The logical mitigation is limiting building heights in this area to existing zoning. | 48 cont |
| 4. All of the issues outlined above under Step Down call for limiting the heights in this area to existing limits. | 49 |
| 5. Page 1-28 should identify mitigation to account for the risk of the Liquefaction zone surrounding Lake Union. Should build mass be limited? Should certain kinds of construction be called for? | 50 |
| 6. Page 1-9 Geology and soil should state that in areas close to Lake Union, ground water will likely limit underground parking to one floor, so with a tower, much parking will have to be above ground which is damaging to the esthetics and pedestrian environment. | 51 |
| 7. The SLU growth targets in the Seattle Comprehensive Plan do not justify increasing the allowable building heights in this area from 60' to 160' to 300'. | 52 |

L. Blocks West of Lake Union and Lake Union Park

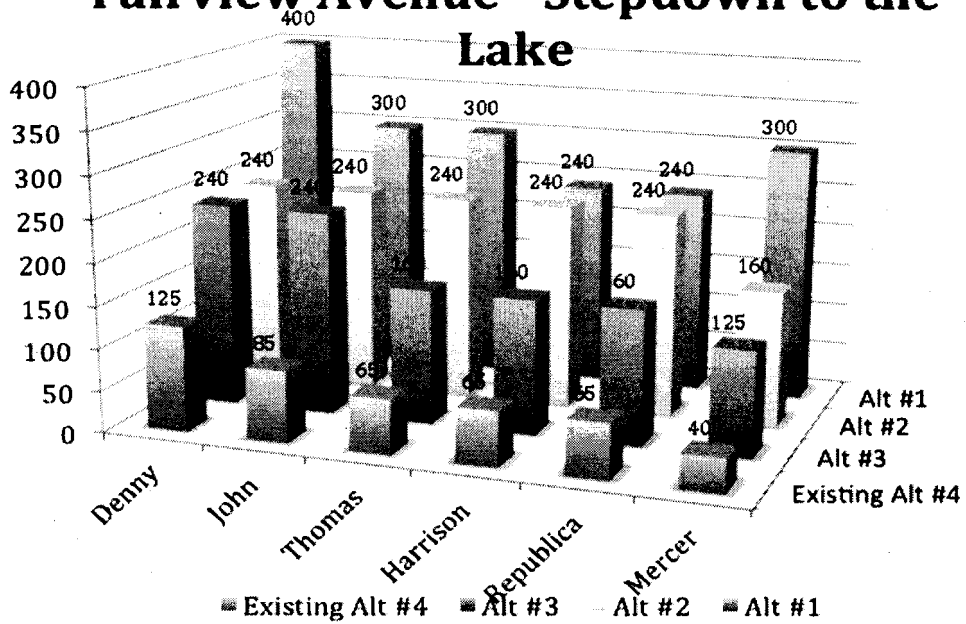
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| 1. Steep slopes, slide areas, and the flight path should limit zoning on the west side of Lake Union Park/Lake Union from Mercer north to the current zoning of S/M 65. | 53 |
| 2. The impact of building wind wakes on aircraft landing and taking off should limit building heights to existing zoning of 65'. | |
| 3. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats, will be much more widespread. The logical mitigation is limiting building heights in this area to 65'. | |
| 4. All the issues outlined above under Step Down call for limiting the heights in this area to existing limits. | |
| 5. Limiting zoning in this area to the current S/M 65 would not only recognize these hazards, but protect the existing views from the east side of Queen Anne toward Lake Union. | |



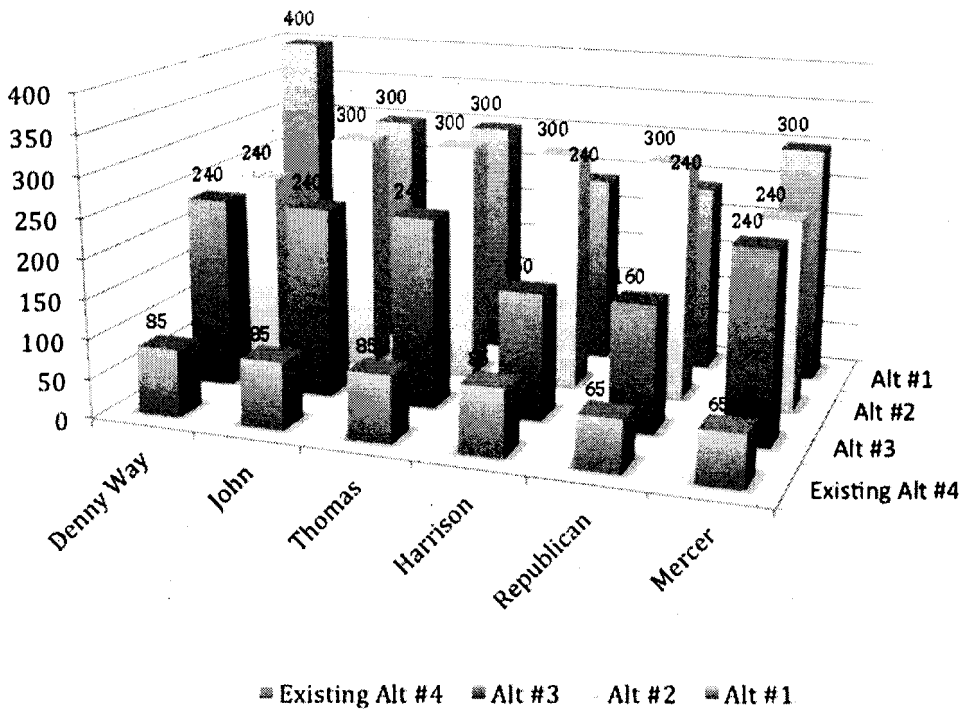


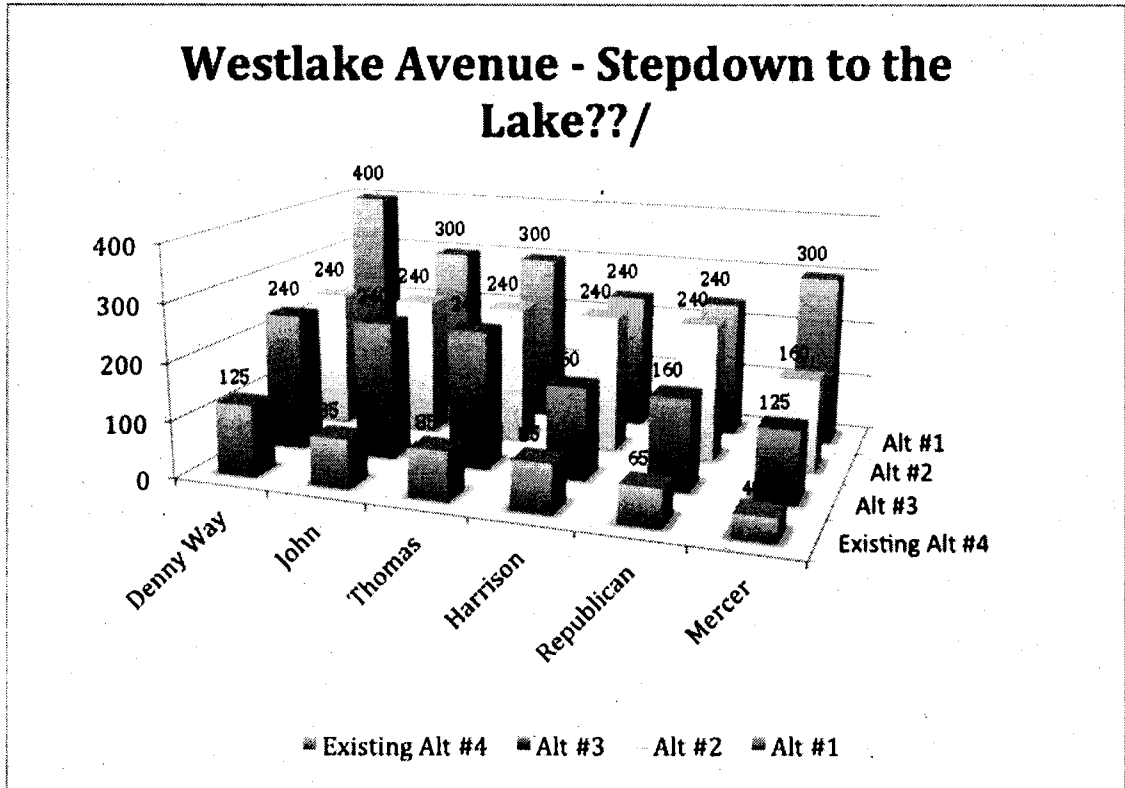
April 8, 2011
 Comments on SLU Rezone Draft EIS
 John Pehrson

Fairview Avenue - Stepdown to the Lake



8th Avenue - Stepdown to the Lake????





1. Summary

The summary section of the EIS needs to be more informative, quantitative, and objective in order for the general public to understand the impacts in a timely manner. The complete EIS is justifiably a large and thorough document, but it must be recognized that is also for the citizens of Seattle who volunteer their time and effort to help shape their neighborhoods.

Currently the summary reads as vague and even subjective. For example: page 1-18 states in reference to Alternative 1, "Building heights increase *slightly* in the *block* north of Mercer." First, a transition from 240' to 300' in a zone currently designated as 40' is not 'slight.' Second, 'block' should be pluralized, as there is more than one block north of Mercer. Third, there are several blocks (in fact, 24+) that do not step down at all between John St. and Galer St., extending substantially north (and south) of Mercer. People could interpret this as not only subjective, but misleading.

There are several more examples like this – many of them noted in John Pehrson's and others' comments. I would ask that the entire summary be revisited in this manner with the intention of being informative and meaningful to the public.

2.3 Proposed Action Alternatives

Table 2-3 indicates that an office tower with a floor area of 24,000sf will be awarded to a developer who owns 22,000sf of property. It is also characterized that this oversized floor plate will somehow be 'set back' from its podium base. It is understandable that such issues will be remedied during the zoning process, but what is not clear is how the assumptions for density capacity have been made throughout the body of the EIS. Please clarify.

3.8 Land Use

Mixed-Use Commercial Areas

It states on 3.8-11 that "All of the EIS Alternatives would increase residential and employment density within the South Lake Union Urban Center." While technically this is true (even for Alt 4), it is as general of a statement as saying "the neighborhood will grow." It should be noted that it is likely that Alts 1 & 2 will tip the delicate mixed-use balance into predominantly office use. Property values are a bargain compared to the downtown office core, but relatively expensive by Seattle neighborhood standards. *Incentivizing* office use will exasperate that condition. The reason the neighborhood has not already gone completely office is because the larger corporations and institutions are having a difficult time squeezing into the current zoning envelop. Numerous variances and exceptions have been made for Amazon and UWIII, but not for housing. It is then a flawed argument to imply (as on 3.8-13) that Alts 1 & 2 will "promote a variety of housing types." Rather, there will be a small amount of high-end residential, which will force a trace amount of low-income housing in what will be an unwelcomed and unsupported environment (i.e. no schools or services).

Affordable Low Income Households

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56

The myth needs to be put to rest that high-rise residential buildings will naturally result in more affordable housing. It is rare if it ever happens at all without government subsidies, such as “The Projects” throughout the nation. The concrete and steel construction otherwise puts the cost out of reach, no matter how many units are stacked on each other. The false argument has been heard numerous times around this public process by laypeople and city officials alike. The DPD should educate this conversation when appropriate, and the EIS would be a good place to begin.

57

Transportation

In cities with rapid transit, true urban centers naturally develop at the transit stops. This is how residents of Chicago or New York, for example, can confidently forgo owning a car. They can quickly visit places of work, eateries and culture within a few minutes walk of a transit station that did not get stuck in traffic or make stops every quarter-mile. Page 3.8-20 states that “There are no bus rapid transit or light rail lines planned in the South Lake Union neighborhood,” yet Alt 1 & 2 show Manhattan-like neighborhood densities. Furthermore, with no rail planned for the 520 bridge (or the 99 tunnel), it is hard to believe the city will change course. The types of businesses moving into SLU have strong ties with Bellevue and Redmond. To what degree that ‘everyone who works here will live here’ is unsubstantiated, and the outcomes of the traffic studies are not credible.

58

3.10 Aesthetics

The computer-generated models of the architecture are inaccurate. It is hard to determine all of the mistakes due to the poor selection of views that hardly inform the reader of the realities of the densities (which should be remedied for the EIS), but here are a few:

59

Figure 3.10-2 Full Build-Out: The ‘two tower per block’ does not appear to its full manifestation south of the Mercer blocks; the podiums of the Mercer blocks are wrong; the Mercer towers are not set back from Valley – does this reflect a policy of which we are not aware?

Figure 3.10-4 Full Build-Out: Either the Mercer block podiums are wrong, or it is showing two towers per block – one office and one residential.

Figure 3.10-6 Full Build-Out: Same mistake as above.

Figure 3.10-8 Full Build-Out: Not sure what is being shown at Mercer blocks. If it is the current incentive, the upper setbacks do not appear correct. Is it the Lab benefit assumption? It is certainly not the 40’ zoning. Please clarify or correct.

For all street-level views: Please add scale figures and an auto in order for the layperson to understand the scale at all street-level views.

Figure 3.10-12: This is both inaccurate and misleading. The podium heights north of Mercer are 85’ – taller than the existing buildings shown south of Mercer, so it is therefore inaccurate. It is also misleading that the towers do not appear in this view because they are not set back from Valley in this model, but that is inconsistent with the UDF. Please include a Valley view, and/or explain this new setback policy.

Figure 3.10-13: A 1-story podium is shown on the right, even though a 30’ is allowed. That is an unlikely depiction.

Figure 3.10-14: The podium for the building on the right is identical to that in 3.10-11 even though the plan indicates there would be a 20’ height difference. Which image, if

any, is accurate? If it claims to be a portion of the block that remains with current zoning, it is shown lower than that of 3.10-20.

Figure 3.10-15: This is an inaccurate and misleading depiction showing Alt 1 as being less dense at the waterfront than Alt 2. Now, without explanation in the text, the towers are on Mercer instead of on Valley as in 3.10-12. It is also inaccurate in that there are 2 towers per block – alternating an 85’ office with a 160’ residential.

Figure 3.10-18: Once again, showing inaccurately 2 towers per block north of Mercer.

Figure 3.10-21: Same comment as 3.10-8. Please explain how the forms were derived north of Mercer.

Figure 3.10-25: How was the form on the left derived? The tall portion appears to not use incentive zoning as it is similar in height to the Rollins building. The low portion appears to be part of the incentive form, but it seems unlikely that the corresponding 10,500sf tower would be completely out of view from this vantage point. It is also inconsistent with what is shown in the shadow model, **Figure 29, Appendix D.**

Figure 3.10-27: The new building appears to be using existing zoning where 400’ is allowed. Why? This does not reflect the Alt 1 proposed zoning across from Mirabella.

Figure 3.10-49: The new building does not utilize its 125’ allowable height. Why?

Appendix D, Figure 1: In this view, the Mercer towers have been moved from where they were depicted in the Mercer corridor view 3.10-12. In each case, they have been located in the image to have the least impact as possible.

Appendix D, Figure 2: Inaccurate.

Appendix D, Figure 3: Inaccurate.

Appendix D, Figure 4: ? (See comment on **Figure 3.10-25**)

Appendix D, Figure 20: This shows Alt 4 as having taller buildings in the Fred Hutch area than Alt 3, but the zoning heights for each Alt is the same. This mistake carries into the shadow depictions for **Figures 43 and 44**, unfairly showing that Alt 4 casts shadows farther into the water than Alt 3.

Appendix D, Figure 25: Perhaps the unbuilt Amazon building would show in this view. Also, 2 towers are identical in height and plan as in **Figure 26** (Alt 1 to Alt 2). One of these images would then not be a fair depiction of the zoning changes.

Appendix D, Figure 29: I retract my public statement that the shadows were rendered incorrectly. I see now the mistakes are in the building forms – not the shadows. Also, please put the shadow images with the body of the text – not in the appendix. This is not extra material but essential to their descriptions, and the reader should not have to flip back and forth to understand it.

It is unfortunate but understandable that the city could not afford to build physical models of the 4 alternatives. However, the city should remedy this shortfall by allowing the public access to the computer models, or at the very least, take requests for vantage points where people have concerns. The views shown are either bird’s-eye or on the street. There is a large range of intermediate views that should be incorporated into the EIS to maximize the peoples’ understanding of the densities.

Transportation – DEIS 3.13:

Table 3.13-13 of the DEIS indicates all three alternatives would bring several major arterials into failing categories for auto traffic levels - LOS scores of E and F. According to Wikipedia, these LOS Scores mean “every vehicle moves in lockstep with the vehicle in front of it... a constant traffic jam... a road for which the travel time cannot be predicted... more demand than capacity.”

61

Maintaining the green of designated “green streets” should be an important consideration. For example, as drivers who are stuck in highly congested conditions seek to find greater capacity, the potential for traffic from Denny (LOS F) and Harrison (LOS E) to overflow onto Thomas St (an adjacent designated green street) is a likely possibility that is overlooked in the DEIS and should be studied.

As the DEIS is essentially impossible for non-city planners or engineers to decipher, LUOA commissioned Christopher Ferrell of CFA Consultants (a transportation planning and research firm) to provide some professional perspective on the DEIS Transportation section. (See attached CFAC Memo.) Based on CFAC commentary, there appear to be several points of serious concern with the DEIS Transportation study:

1. Auto Trip Generation appears to be of concern. The study expects the number of employees in SLU to increase by 58%, and the number of housing units to increase by 83% (most of which are not likely to be single occupant dwellings), while the increase in trip generation increases by a mere 29%. While this increase in trip generation may be in line with expectations, without adequate metrics to clearly validate this seemingly optimistic outcome, a more in-depth trip analysis should be conducted.
2. The ITE Model used to predict trip generation, is industry standard but is (a) based primarily on suburban case studies that may not be applicable to South Lake Union and (b) is known within the industry for weak statistical basis. In light of greater implications of the MXD Model, used to estimate mode shifts, the DEIS results seem alarmingly aggressive at best:
 - The MXD Model is new and based on untested research.
 - Appendix E-4 is unclear and may indicate the estimation model may have been calibrated using generic assumptions as opposed to those more appropriate for the urban environment of South Lake Union.
 - The validation methods used appear to have shortcomings relying on suburban case studies inappropriate for use in South Lake Union.
 - Appendix E-1 inadequately states whether any true correlation exists between the results of the MDX model, used to estimate mode share, and the ITE, used to predict trip generation.
 - The statistics used to validate the model, found in Appendix E-4 appear inadequate to the task: RMSE and Pseudo R-Square for the ITE and MDX methods may produce strong goodness of fit scores while consistently over or under estimating the underlying values being modeled.

62

63

These trip generation increases to just 29% appear are obtained by the assumed implementation of several mitigation techniques found throughout the DEIS that seem to rely heavily on “mode shifts” (presumably from single-occupant vehicles to public transportation) to identify the best-case scenario. (See Table 3.13-16 & 17.) Thus, the DEIS

64

actually illustrates a decrease in the trip count of Alternative 1 at full build-out to levels below what would be expected Alternative 4 with no mode shifts applied. The assumption that *"if we build tall buildings, we will get viable public transportation that people will use instead of cars"* is faulty at best for the Seattle metropolitan area considering the challenges Seattle faces delivering viable public transportation. Seattle is known across the country to be sub-standard in this area, thus it is irresponsible to gloss over this critical issue by using disparate metrics.

64 cont

The proposed mitigation strategies seem optimistic, at best:

- Bicycle & Pedestrian System 65
 - Wider sidewalks will most certainly help, but that is very limited in scope. It seems there is inordinately high reliance placed on the idea of car-free living in SLU. The Alterra condominium community of SLU as example has 60 residential units with 110 parking spaces. All spaces are full and there is demand for more. It is a rare occasion during the day that there are more than 30 cars remaining in the garage and residents admittedly commute, by car, to locations as nearby as The Gates Foundation and Nordstrom.
 - Some aspects of the Bicycle Master Plan have shown, through real-world experience in SLU thus far, to carry the potential to create greater auto traffic congestion. One example, related to bike lanes on arterials, is the intersection of Dexter and Mercer. The addition of the bike lane made Dexter a 3-lane road. With 3 lanes, a left turn arrow is now required on Dexter southbound at Mercer. (Presumably northbound as well, once Mercer becomes 2-way.) Along with Roy Street as a tributary and, to a lesser degree, Valley Street, Dexter Ave N is now frequently backed up in excess of 2 blocks during non-peak times of day (10am, 1:30pm, etc.) with drivers waiting to turn left at Mercer. Additionally, lane modifications made to accommodate this same bike lane pose precarious safety concerns for both drivers and bicyclists on Dexter southbound immediately south of the Denny intersection.
- Transit Service Expansion 66
 - The addition of busses and bus routes is a great theory, over which the City of Seattle has no control. In practice, King County Metro has been scaling back service and increasing rates for years and they still project a shortfall in revenue of \$600M through 2013. There are admittedly no plans for Rapid Transit in SLU. The Seattle Streetcar goes virtually nowhere and does not effectively connect to any other service. In general, expansion of these systems and the addition of others is a mitigation strategy that has proven to be a failure time and time again throughout Seattle.
- Potential Mitigation Measure Implementation 67
 - Because the number one suggestion to fund these mitigations is the "South Lake Union Voluntary Impact Fee Program," it sounds as though there may be no way to pay for them. As noted by Donald R. Samdahl in his "Multi-Modal Impact Fees" paper:
 - "The Washington State legislature did not authorize jurisdictions to impose impact fees on modes other than roadways in the Growth Management Act. Seattle had to rely on the "volunteer agreement" provision of the State Environmental Policy Act. This provision is not as effective at raising funds uniformly as the GMA traditional impact fees. **In fact, the City of Seattle has not been as**

successful in convincing developers to voluntarily use the mitigation payment program as an option to undergoing a more detailed SEPA review.”
(Emphasis added.)

67 cont

Essentially, there is not enough detail in the DEIS for an engineer with a PhD and over 15 years of experience in transportation planning and review, to be able to piece together how the study arrived at the its figures. The Final EIS needs to provide information. The study should include accurate trip counts for cars, heavy trucks, mass transit, bicycles, pedestrians, etc. The study should be based on an urban city environment and apples-to-apples case studies. The Final EIS also needs to propose realistic and actionable mitigation strategies that are proven to work in Seattle. In short, a thorough and comprehensive traffic study must be completed and significant growth in South Lake Union must be tied (legislatively) to an agreed upon and funded mobility plan.

68

Air Quality - DEIS 3.2:

1. Ozone (O³) implications:

On page 3.2-4 the DEIS states that, in 1997, the EPA deemed the Puget Sound region a nonattainment area and in 2005, the EPA adopted more stringent ozone standards. The DEIS then goes on to state: "Based on ozone measurements over the past few years, the Puget Sound region seems to again be on the brink of becoming a nonattainment zone" but claims because ozone problems tend to be regional in nature and can be transported far from their sources that "the potential future nonattainment status for ozone would have no direct implications for any of the South Lake Union alternatives."

69

While ozone problems may have a regional propensity and, in the time between emission and formation, can be transported far from their sources, the DEIS seems to imply the source is ultimately irrelevant in hydrocarbon production. No mitigation strategy has been put forth, no future modeling has been done, in fact, no testing has been done at all in attempt to determine whether SLU under alternatives of increased height and density might substantially and adversely impact the region as a whole. All this, while our region is on "on the brink" of producing unacceptable levels of health-based NAAQS for ozone, with no explanation provided.

Ozone levels pose a material public health risk and not testing the environmental impacts "that could occur under worst-case conditions" for the reasons sited in the DEIS is unacceptable to the public.

2. Carbon Monoxide (CO) implications:

On page 3.2-2 the DEIS reports the area of South Lake Union to be a current "maintenance area" for CO emissions and on page 3.2-5 states "the analysis of potential air quality impacts related to the alternatives focuses on traffic and was based on consideration of ambient concentrations of [CO] the could occur under worst-case conditions near congested intersections."

70

The analysis is stated to have been performed at three (3) signalized intersections based on traffic levels predicted for the year 2031 at peak-hour traffic levels of service (LOS). While rationale is provided for the selection of these three intersections, it seems insufficient at best to only examine intersections along Mercer Street that are all just a few blocks from each other. As in the Transportation analysis, there is no mention of potential impacts of air quality at the proposed Republican Street exit of the deep-bore tunnel and other seemingly high impact areas like Denny/Fairview and Denny/Dexter.

Furthermore, directly due to the Transportation analysis (for the reasons sited previously in these comments), the Air Quality analysis may be substantially flawed and shortsighted in understating potential hazards to public health. If the potential flags raised in the Transportation section and a thorough traffic analysis as recommended by LUOA in these comments produce results that are even moderately less favorable, the health impacts on residents and employees of South Lake Union may be greatly compromised.

By default, the DEIS seems to be using the most aggressive methods of analysis to come to the most optimistic result. This is in direct conflict with the stated goal of the analysis in this section - that of determining what "could occur under worst-case conditions"

71

Comments by Chris Gemmill, Vice President, LUOA Board of Directors

and is, again, unacceptable to the public. If the results of the transportation section are to be used in making air quality determinations, a thorough and comprehensive traffic study must be completed.

71 cont

Full and Fair Disclosure within the DEIS:

Prominent South Lake Union landholders have several motives in the upzoning rulings that will come to SLU following the Final EIS. While not overlooking their altruistic motives of sustainable design, et.al., a primary driving factor is certainly to maximize their return on investment. Developers, architects and others also have significant financial skin in the game. Nothing comprehensive is found in the DEIS (individual sections, appendixes, credits, etc) where disclosure has been made with respect to the contributing parties of the DEIS document. (Exception drawn to simple source citations for various charts and graphics throughout.) Who, for example, authored the Air Quality section? This is unknown to the public and is a material to the public document. In fact, certain contributors (known privately) are known to have strong business ties with prominent South Lake Union landholders, thus, conflict of interest can easily be assumed without disclosure. In an ideal world, the City would select competent and capable contributors for the EIS without these conflicts but COI is sometimes difficult to avoid. In lieu of this requirement it is my recommendation that all contributors involved in the construction of this public document be disclosed along with potential conflicts they may carry including, at a minimum, a list of prominent South Lake Union landholders and corporations with whom each have business dealings. Avoiding COI is not always necessary but transparency should be the norm!

72

April 10, 2011

Comments on SLU Rezone Draft EIS

Brian D. Ramey

Thank you for this opportunity to comment.

My Name is Brian Ramey I live in the Eastlake Neighborhood of Lake Union.

ENVIRONMENTAL IMPACTS NOT ADDRESSED:

SHORELINE MANAGEMENT ACT IGNORED:

The State of Washington Shoreline's Management Act recognizes that the shorelines and the waters of the state are "among the most valuable and fragile" of the state's natural resources and the State requires that Cities recognize the importance of protecting the shoreline and urban water-bodies.

73

The Shoreline Management Act prohibits the shading of water bodies with new development. The allowance of tall building next to the lake and the admission that these buildings will shade the lake are clear violations of the State Law.

The DEIS states that birds and fish species dependent on the lake will be adversely impacted by the build-out. The Draft EIS fails to explain how the city will protect against the adverse Environments impacts in any Alternative to public health, the land, the vegetation and wildlife that are currently part of the Lake Union environment.

74

WATER:

Section 3.3.1 through 3.3.12

The DEIS fails to identify the baseline Combined Sewage Overflow (CSO) volumes for each of the six current outfalls into Lake Union. It further fails to indicate what the volumes frequency of CSOs will be upon full potential build-out of any Alternatives. The DEIS does not state whether any additional outfall facilities will be built to allow for additional CSO into Lake Union and what, if any, expected CSO volumes and/or frequencies would be attributable to any new outfalls under a full build-out scenario of any Alternative identified in the DEIS. No mention is made or descriptions outlined in the DEIS of any future needs for Stormwater or Sewage capital facility upgrades within the basin or required improvements to the existing system for any Alternative identified in the DEIS. The face that the Draft

75

EIS states that there will be unavoidable Combined Sewage and Storm-water Overflows into Lake Union in the future is unacceptable and this statement is made without any detail on the actual source of the overflows.

75 cont

What are the projected volumes of sediment deposits into Lake Union as a result of any of the development Alternatives?

Please provide a quantifiable description of the Sewage and Stormwater impacts under all Alternatives.

LIGHT AND AIR:

The Draft EIS fails to explain how development will be placed to prevent interference with air and water navigation in Lake Union. This includes Sea Plane and Sailboat navigation. The DEIS ignores the rights of recreational and commercial users of Lake Union for reliance on **wind currents** which provide public enjoyment of sail boat recreation and tourism. The proposed height, bulk and numbers of buildings allowed under Alternatives 1, 2, and 3 will have a major impact on the future viability of the Tuesdays Duck Dodge due to major buildings shielding natural wind currents over the lake creating dead zones where none existed before.

76

The creation of **Shadows** will have a major environmental impact on the **public spaces** of Denny Park, Cascade Park and Lake Union Park. No mitigating measures are proposed.

77

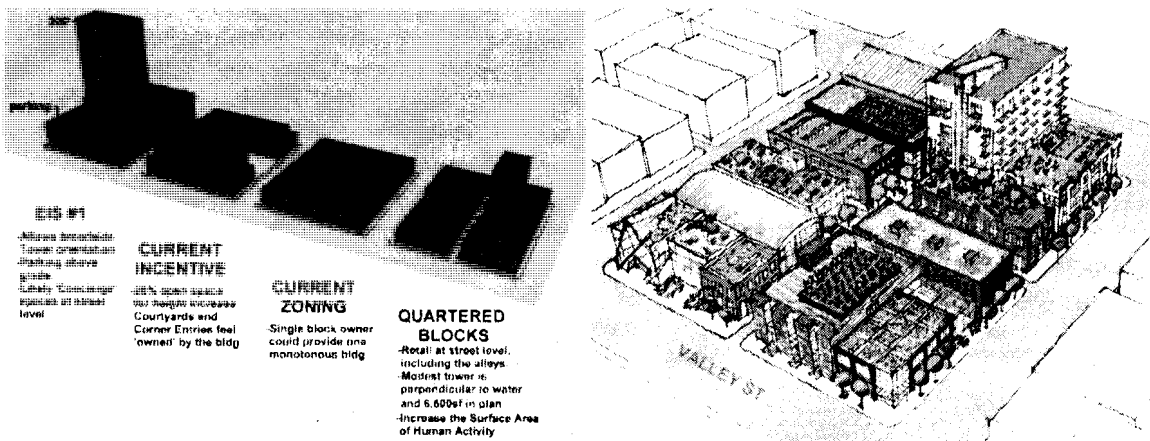
I do not believe that we are creating the incentives or controls to allow for a **vibrant** retail, recreation, or living environment in a future South Lake Union under any of the proposed alternatives.

78

DESIGN AND DEVELOPMENT CHOICES ARE NOT FORTHCOMING IN THE DEIS:

The failure of the DEIS Alternatives to provide future affordable land to encourage development at a scale that allows for active and ground related development is a major reason that the DEIS has failed. The negative impacts related to the creation of a 8am to 5pm office park in South Lake Union without any incentives for affordable ground related people active retail and affordable housing enterprises near the shores of Lake Union will miss the only opportunity to actually provide a vibrant and attractive future for this neighborhood.

79



One of the goals missing from any of the Alternatives is the creation of affordable spaces for small retail and tourist related enterprises to complement the public spaces already started to develop along the shoreline of Lake Union. If the planning of South Lake Union neglects the opportunity to create a walkable community with public services and retail, open space and active street level vibrant magnets at both the south end of the community along the lake front and at north end of the community it will miss a rare and possibly one time opportunity to create a truly welcoming and vibrant neighborhood. The plan of having designated Terry Avenue as a green and walkable passage north to south in the community will have little impact on creating a lively and vibrant neighborhood in the future without the creation of retail magnets at both north and south ends of the community.

80

In the DEIS 3.14.4 the statement is made:

“Design features could be incorporated into potential development in the South Lake Union Neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility “

81

This implies that the public safety will be improved on the street by placing people underground in tunnels between buildings to make all the walkable areas of the community under the control of private development interests. This is a terrible approach to development and a very poor approach method to protecting the public safety in a planned “NO MAN’S LAND” currently on the table with the proposed DEIS Alternatives.

The Draft EIS is using the most aggressive methodology to come up with the most optimistic conclusions.

82

I am re-submitting my December 16, 2008 scoping comments (which have not been responded to in the DEIS) together with these additional comments for inclusion in the responses to the DEIS the April 11th deadline.

83

**Thank you,
Brian Ramey**

Comments by Don Bennett, member of LUOA Board of Directors

The Draft EIS for Public Services misrepresents the statistics. For the Fire Stations listed as covering South Lake Union. (Figure 3.14-3) The incident numbers for 2004 thru 2008 (Stations 2 & 8) show a 10% increase followed by a one year decrease in 2009. It looks like 2009 is an anomaly and there is no reason to expect that it is representative. Additionally, all the figures listed relate to all calls for the fire stations and do not break out the results for calls to South Lake Union. As South Lake Union is at the extreme end of the coverage districts for these three stations it would make sense to guess that a majority of the failure to meet the time expectations would be in the South Lake Union neighborhood.

84

With regard to Police services there is no breakout of calls to South Lake Union. There is the additional noted problem that due to budget problems the SPD is not staffed to current expectations. All of this is without consideration of the additional problem of responding to problems on the 30th or 40th floor of a high-rise.

85

As a recreational sailor on Lake Union, there is a large dead air space on the lake for the AGC Building which is only 10 stories high. I hate to think of what a number of 30 to 40 story buildings of indeterminate floorplate along Mercer would do to this traditional use of Lake Union.

86

Comments by Kevin McCarthy, member of LUOA Board of Directors

This study uses the most aggressive methodologies to come up with the most optimistic conclusions. The EIS states the wildlife in this study is likely limited to species adapted to urban areas and birds migrating through the study area. That is incorrect. It further states that the Mercer Valley focus area wildlife is likely limited to highly urbanized species and that this proposal will not directly result in an enhanced or planned animal habitat. This is incorrect. I'm very familiar with the blue herons, wood ducks and freshwater turtles that reside in the south end of Lake Union. And I can tell you for sure that 300-foot towers rimming Westlake as well as Valley would create a permanent shadow zone in that area and my daughter and I would not get to enjoy freshwater turtles sunning when there is no sun.

87

The EIS states that for affordable housing, from 2004 to 2009, the housing unit growth for people making 0 to 80 percent of the median income range grew at 19 percent, as opposed to the City's existing goal of 37 percent. That means we're already failing by 50 percent to the affordable housing goals that we're trying to hit. And by upzoning this land, it's going to be so expensive that any affordable housing dollars that come into the South Lake Union area will not end up spent in this area. So it is my contention that affordable housing will not happen in this area because the price of land will go up so high, due to taking land that is currently 85 feet and moving it to 300 feet.

88

3.4 Plants and Animals

Even with the inadequate one day shadow studies there are large impacts to the newly restored natural habitat areas in Lake Union Park. Located in the southwest portion of the Lake, the natural shoreline is intended to aid in the restoration of fish and fowl populations in the Lake and to those transiting the area.

89

The one day figures do not measure the length and duration of the shadows over the lake and shoreline so there is no way to see if there is any degradation or mitigation(s) needed.

Further study is needed, especially in the Dexter and Fairview areas, of the impact of shadows on plant life and its supporting role in restoring water quality for wild life and people.

Page 3.4-7

"During the fall migration ... would experience barrier a few minutes earlier ... Alternatives 1 – 3 are in- fill do not extend downtown west or east... .

90

Alternatives 1 and 2 excessive heights may cause the diversion of the bird flight paths into the take off lanes of the FAR 77 area. Since this is a critical time in flight and a bird strike could easily cause the loss of power thus endangering the plane's crew and passengers and if full power is lost people on the ground could lose their life through impact and/or burning of aviation fuel .



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Date: March 8, 2011

Memorandum

To: Lorie Groth, Lake Union Opportunity Alliance
cc: Michael Carroll, CFA Consultants
From: Christopher Ferrell, CFA Consultants
Reference #: P11001
Subject: Preliminary Findings from the Peer Review of the South Lake Union EIS

The following are findings from our review of the transportation sections of the South Lake Union Draft Environmental Impact Statement (EIS). These findings should be considered preliminary since they are based on a brief review of this document and would require further investigations to verify and elaborate upon. As such, the discussion below is intended to provide the Lake Union Opportunity Alliance with insights regarding where they may want to seek additional information from the City of Seattle and the EIS analysts.

Project Background

According to the Draft EIS, "...the South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east, respectively," and is roughly 340 acres in area. The Draft EIS considers four alternatives for increasing the height and density of the neighborhood with Alternatives 1, 2 and 3 representing a range of potential height increases. Alternative 4 would retain the existing zoning designations and is referred to as the no-action alternative.

It is our understanding that the South Lake Union project will result in significant impacts to study corridor traffic operations, freight, bicycle and pedestrian mobility, transit load factors, and parking. A series of mitigation measures are also proposed to reduce these impacts including limited roadway capacity enhancements. However, the majority of mitigations are focused on improving the bicycle, pedestrian and transit environments in the study neighborhood.

91

Preliminary Findings

The following preliminary findings were identified based on a review of the transportation sections of the Draft EIS:

- 1) *Auto Trip Generation¹ for the Proposed Projects*: To determine if the number of trips the EIS estimates the zoning changes will produce is reasonable, the amount of development considered under Alternative 1 and the number of trips the Draft EIS estimates were compared.

Alternative 1, the most ambitious of the three alternatives studied, would increase the number of employees by 57.5 percent and the number of dwelling units by 82.6 percent, over what current zoning would allow (the “No Action” alternative). Based on the ITE trip generation estimates provided in Appendix E of the Draft EIS, the number of daily total trips will increase from 220,539 for the No Action alternative to 283,594 with Alternative 1—an increase of 28.6 percent.

It is noted that a 29 percent increase in trips is not proportionate to the increase in employment or residential development. This is because the ITE trip generation calculations are not linear. In effect, the rate of trip generation falls as projects achieve a higher density. Therefore, the fact that the increase in the number of trips is proportionally lower than the increase in development is not *necessarily* a “warning flag” and may be in line with expectations. Short of a more detailed independent trip generation analysis to check the assumptions and estimates produced by the Draft EIS traffic engineers/planners, this part of the Draft EIS analysis appears reasonable.

However, the Draft EIS also recommended a series of trip generation estimates based on the trip reduction effects of a series of mitigations that could be implemented in concert with the development anticipated in all three alternatives. These mitigations are described in section 3.13.6 of the Draft EIS, and contemplate the benefits of a series of improvements to the transit, bicycle and pedestrian environments of the South Lake Union neighborhood.

The Draft EIS estimates that this package of mitigations will reduce the number of daily auto trips (different from total trips, as discussed above) for Alternative 1 from 136,973 to 108,207. This is compared to the total number of auto trips estimated for the No Action alternative of 108,946. Essentially, the Draft EIS analysts suggest that these mitigations will reduce the number of auto trips in the most intense development alternative to levels slightly below those estimated for the No Action alternative—this despite the 58 percent increase in jobs and 83 percent increase in dwelling units. This substantial reduction in the number of auto trips is achieved through the benefits of the proposed mitigations, which are assumed to effectively “shift” people from using cars to riding transit, bicycles

¹ The term, “trip generation” is used by traffic engineers and transportation planners to describe how many trips go to and from an existing or proposed development. Trip generation is typically estimated based on surveys of existing, similar developments. The Institute of Transportation Engineers (ITE) publishes the most widely-used report for these purposes, called the Trip Generation report. Engineers and planners will typically take trip generation rates from this report and then use these as multipliers to estimate the trip generation for the study project. Therefore, in the case of a proposed 30-unit apartment building, the analyst will look up the “per dwelling unit” trip generation rate for apartment buildings and will multiply this rate by 30 (the number of units in the proposed project).

or walking. These mode shifts were estimated using a new transportation analysis tool, known as the MXD model. This model is discussed below.

92 cont

- 2) *Estimating Mode Shift:* The MXD model provides the basis for the mode shift estimates discussed above. This model is very new and is based on recent and (as far as we are aware) untested research. We have a great deal of respect for the people who developed this model and think this is valuable and much-needed research, but this may very well be the first practical application of it to a planning study, so some degree of caution is warranted.

93

The mode shift estimates produced by the MXD model seem somewhat optimistic (as discussed above). One possible explanation for this may be found in the validation and calibration (i.e., adjustment) processes for the model. While there are many similarities between cities across the country in terms of the choices people make when traveling, there are also important differences based on differences in urban form, transportation supply, local economic conditions, and other factors. Therefore, all travel estimation models need to be calibrated for local conditions. However, while our review of Appendix E-4 revealed a validation process—wherein the model’s outputs are compared to real-world data to determine the degree to which the model produces data that are accurate representations of the real world—our review of the Draft EIS did not reveal any calibration processes that would make adjustments to the model to make it appropriate for use in Seattle’s urban environment.

Furthermore, this validation process appears to have shortcomings. For validating the model, the Draft EIS analysts used data from 16 local sites and found that the MXD model did a better job of predicting trip generation than the industry standard, the Institute of Transportation Engineers (ITE) Trip Generation report. Based on our preliminary review, this validation approach may be inappropriate. The ITE report is notorious within the transportation field for its somewhat weak statistical basis, and it is based primarily on suburban case studies. These suburban cases are obviously not the right comparisons for urban Seattle.² Therefore, the analysts may not be using the appropriate basis for comparison to show that the MXD model is accurately predicting the mode share/split of the proposed EIS alternatives.

Furthermore, the MXD model predicts mode share while the ITE report provides the methods to predict trip generation (auto trips only)—not mode share. Therefore, to show that the MXD model is a reliable and accurate predictor of mode share for local conditions, the best comparison would be between the model’s estimates and the observed trips by mode (mode share) of the 16 validation sites. The description of the validation process for the MXD model to local conditions in Appendix E-1 did not clearly state whether the model’s outputs were compared to observed trips by mode or

² It should be noted that the EIS analysts applied a series of adjustments to the ITE rates (estimating so-called “internal” trips to account for walking and bicycle trips), and therefore, they appear to have used the best ITE methods available.

simply a count of total trips.

Finally, the statistics used to validate the model appear to be inadequate to the task. Appendix E-4 reports that the Root Mean Squared Error (RMSE) and Pseudo R-Square statistics for the ITE and the MXD methods were compared. These statistics provide so-called "goodness of fit" measures of the discrepancy (difference) between the values produced by the model and those observed in the real-world. However, if relying on these measures alone, it is possible that the model will have a strong goodness of fit score, but still consistently over- or under-predict the values being modeled. In other words, the MXD model may be giving low trip generation values for automobiles while the ITE method gives higher values, but since the MXD model provides values that are closer to observed values overall, its goodness of fit scores are better than ITE. Ideally, the Draft EIS analysts would have employed additional statistical measures that could have illuminated these aspects of the models' performance (e.g., t-statistics).

94

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April 11, 2011

James Holmes
Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Avenue, Suite 2000
Seattle, WA 98124

Jim.Holmes@seattle.gov

Re: DEIS for South Lake Union Height and Density Alternatives.

Dear Mr. Holmes:

This office represents Lake Union Opportunity Alliance (LUOA), a local coalition of residents, business owners and interested persons concerned with the future of the South Lake Union community.

My client has asked me to review and provide comments on the DEIS for South Lake Union Height and Density Alternatives (hereinafter "the DEIS"). After review, it is apparent that the DEIS is inadequate from multiple standpoints, which are described herein. Because these deficiencies are so serious, we ask that the DEIS be rewritten and recirculated before a final environmental impact statement ("the FEIS") is prepared. Our comments follow.

I. FAILURE TO PROVIDE A STATEMENT OF NEED.

The DEIS states that the Seattle Comprehensive Plan establishes that the South Lake Union neighborhood should support a concentration of housing and employment. Page 2-1. The South Lake Union neighborhood already contains a concentration of housing and employment and there is no documentation as to why the current zoning, with accompanying densities and heights, is insufficient to meet needs of the local community and the Comprehensive Plan.

Further, as the "Planning Context" discussion at Section 2.2 of the DEIS indicates, growth targets have been recently established for the planning horizon out to

2031 by King County and its cities. However, this discussion also makes clear that these overall growth targets have not been incorporated into the City of Seattle Comprehensive Plan, nor have the growth targets been allocated to the various neighborhoods within the City. That process will take place in 2014.

The DEIS states that it gives the City "an early opportunity" to consider how these alternatives fit into the future comprehensive plan update. Page 2-7. As the footnote at page 2-8 indicates the city "has not yet identified specific 2031 targets for neighborhoods within the City" because that would not be done until 2014. The DEIS does not explain why planning for the South Lake Union neighborhood should be accelerated before the planning for the rest of the City's neighborhoods. The assumption that the same percentage of distribution of residences and employment will be applied to the allocation process in 2014 is not an assumption that can be made absent a City Council directive and decision. One of the key tenets of the Growth Management Act is to have coordinated planning, and to take account of all alternatives for the distribution of growth. The acceleration of analysis and adoption of development regulations for the South Lake Union Neighborhood is accordingly not consistent with GMA policies and the City should cease further analysis of the subject. The South Lake Union Neighborhood should be considered for additional growth based on 2031 populations and employment goals only at the time the rest of the city is also analyzed.

Under SEPA it is far more appropriate to examine the distribution of growth throughout the entire city, not a single location like South Lake Union. If the City is determined to pursue a process inconsistent with the GMA, the DEIS should be rewritten and redistributed for comment to examine growth issues on a citywide basis.

Based upon the foregoing, an additional alternative should be included within the DEIS. The DEIS should include an analysis of the deferral of planning for South Lake Union height and density alternatives until planning can proceed for the entire city in 2014. Alternative analysis must include distributing a portion of the new housing and employment into other urban villages and other city neighborhoods, especially for 2031,

Analysis is also required on current economic conditions and the corresponding effect on the need for additional housing and employment. It is widely known that housing markets continue in distress and the demand for additional housing has dropped substantially. The same is true for commercial real estate. The foregoing analysis should consider current commercial and office space vacancy rates in downtown Seattle and other neighborhoods. Analysis is also required for the number of permitted or proposed, but unbuilt, office, commercial and residential projects within the City that have been delayed or deferred due to the present recession. The revised DEIS, or FEIS, should provide analysis as to whether those deferred or delayed projects are able to absorb demands for new office, commercial and residential capacity without

the need for an increase in South Lake Union density and height.

In light of the foregoing issues, analysis should be made as to whether the South Lake Union Neighborhood, with new heights and densities, will in fact mean that growth in other urban villages will be stifled by growth concentration in South Lake Union.

The foregoing leads to additional questions that must be answered in the final EIS:

*Explain whether the City is meeting its 20 year projections (2024) for housing and employment goals.

*What factors or adopted policies indicate the need for more housing and employment in this area?

*Is the City failing to meet its housing and employment goals and if so, are all areas of the City assuming equal portion?

*List the other Urban Center Neighborhoods in the city and what percentage these neighborhoods would assume as a part of either 2024 or 2031 goals.

II. AESTHETICS.

Most viewscape scenarios provide the "bird's eye" view and views from Gas Works Park. However, essentially bird's eye views are not seen by anyone but birds. The views from Gas Works are also seen by only a few persons. The DEIS is completely negligent for not providing perspective from areas south of the South Lake Union neighborhood. For example, there are no perspectives for view losses from downtown or Belltown, and only a few from the west side of Capitol Hill. Thousands of residents and office occupants have views from these areas over the South Lake Union Neighborhood to Lake Union itself. All of these views would be affected by density and height modifications for South Lake Union. These views need to be analyzed and carefully considered.

The analysis also does not include proposed projects to be built in the downtown south of Denny Way and the ability of these projects to absorb growth. An analysis needs to be made of the impacts on viewscales from these projects.

The City's analysis seems to assume that the terms of SEPA policies under SMC 25.05.675.P limit the viewpoints that should be considered. However, as this is an area-wide zoning modification, and not an action on a specific private project, these

limitations do not apply. This is a serious legal error that will require the DPD to redraft the DEIS and recirculate it.

Further, the analysis completely fails to take account of the terms of the Shorelines Management Act (SMA), RCW ch. 90.58; in particular RCW 90.58.320, which establishes height limits respecting permits:

No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served.

It is obvious that the higher buildings that are found in some of the alternatives will block views of many residents. It is important to note here that the location of the residences from which views may be blocked is not limited to properties within the shoreline area. The SMA also requires that these policies be applied to lands adjacent to the shoreline zone to be consistent with SMA policies:

All state agencies, counties, and public and municipal corporations shall review administrative and management policies, regulations, plans, and ordinances relative to lands under their respective jurisdictions adjacent to the shorelines of the state so as to achieve a use policy on said land consistent with the policy of this chapter, the guidelines, and the master programs for the shorelines of the state. The department may develop recommendations for land use control for such lands. Local governments shall, in developing use regulations for such areas, take into consideration any recommendations developed by the department as well as any other state agencies or units of local government.

RCW 90.58.340 (emphasis supplied). As noted above, the SMA establishes a strong policy for protection of visual access to the water/shoreline areas and for protection of views, especially from residential areas. Views of Lake Union are of great value in Seattle and the DEIS fails to give complete analysis of these impacts. Much of the development proposed by the current plan is achieved by permitting greater height either within or adjacent to the two hundred foot shoreline zone.

Analysis should be made of any residential or commercial properties that will have their view of Lake Union impaired or impacted by these zoning alternatives. For example, views are likely to be impacted as far south as Lenora or even areas further south in the downtown core. The areas affected should be shown on a map or maps, together with

the degree of impacted views. This will require a significant expansion of the view points and simulations stated on page 3.10-40 of the DEIS.

In summary, the visual and aesthetic analysis is so deficient as to require a redrafting of the DEIS, and recirculation for comments, prior to proceeding to the preparation of the FEIS.

III. TRANSPORTATION ISSUES.

The transportation section is deficient in several respects.

First, there is only minimal discussion of the impacts of the construction of the Bored Tunnel on the South Lake Union neighborhood. Recent analysis has indicated that because of likely tolls for vehicular use of the Bored Tunnel, and the lack of intermediate downtown access, a significant portion of the current traffic on the SR 99 Viaduct will use downtown Seattle streets. This data is also included in the Supplemental DEIS for the Bored Tunnel project. "The issues, left unaddressed, will impact accessibility to and the character of the Center City, particularly in the vicinity of Pioneer Square and the Seattle Center/South Lake Union areas," says a briefing paper presented to the City Council on January 25, 2011 by Nelson/Nygaard (emphasis supplied). These impacts may significantly impact background traffic on streets and intersections in the South Lake Union area. The findings of this study need to be reviewed and incorporated into the transportation analysis for the DEIS.

Second, the DEIS appears to assume that peak trip generation will be heavily affected by non-auto alternatives, mostly including bike/pedestrian/internal trips. See DEIS at page 3.13-2. The justification for these conclusions needs to be disclosed and analyzed. Page 3.13-48 states that the project team "use an innovative trip generation analysis technique" known as the MDX model. Because the MDX model is new, with little backup support, the DEIS should provide a more traditional form of traffic analysis by trip generation rates as used in ITE Manuals. There are indications in the DEIS that socioeconomic conditions suggest traditional trip generation analysis is questionable, but those conditions need to be identified in detail.

Any analysis of heavy dependence on non-auto trips needs to be supported by the present circumstances. What are the percentages of non-auto trips in the South Lake Union Neighborhood at the present time? Do they come anywhere close to the percentages found in the DEIS? As to transit, an analysis needs to be made of the ridership on the Seattle Street Car lines in the community and how they compare with projections. Similar analysis needs to be made for current transit usage; how will the development of the foregoing alternatives change the current trip patterns?

Third, an analysis needs to be made as to the ability of the City or private sources to fund the mitigation measures proposed. The GMA requires that planning for capital improvements should proceed at the same time as land use planning. Local governments are currently in budget crises and an explanation needs to be made as to how each of the transportation mitigation measures will actually be funded and built. For example, new bike facilities for the Mercer project have been deleted; how many more of the suggested facilities will realistically be built by 2024 or 2031?

Fourth, the future estimates for parking usage are provided, but lack background data and have serious deficiencies in analysis. Parking utilization is based on daytime hours only; no analysis is provided for evening hours. Analysis of evening parking is critical as restaurant/bar and other evening uses develop and as visitors to residential uses attempt to find street parking. Current analysis of parking conditions suggests that on-street parking is now fully utilized during the evening hours (see Page 3.13-21). More residential and commercial development will result in increased evening parking demand which must be analyzed and considered.

Fifth, parking analysis needs to be provided for all portions of the subarea, not just those in the southerly portion of the South Lake Union neighborhood, i.e. the area south of Mercer. See pages 3.13-7.

Sixth, in addition, there needs to be an analysis of on-street parking for the built-out periods in 2024 and 2031, with attention to parking supply. Special attention needs to be given to the effect that the buildout of transportation facilities will have on parking supply during the study period, i.e. how many parking spaces will be eliminated by street, transit and bike improvements.

Seventh, the note on page 3.13-1 states that there may be "significant short-term parking impacts as individual projects in South Lake Union build out." Then the footnote explains that parking prices will "adjust to meet demand and travelers will shift to other modes, thus reducing the demand for parking." There needs to be analysis and support for this overly optimistic prediction. Short term visitors to residences, offices, restaurant/bar uses and other commercial uses are unlikely to switch to other modes.

IV. OPEN SPACE AND RECREATION.

This section of the DEIS discusses the impact of the density and height on park and open space resources in the area. As with other sections, there are major errors and failure to analyze critical subjects.

First, at page 3.16-4, a table is provided to compare amounts of open space to accommodate the 2024 Household and Jobs goals. However, the plan is intended to

address the 2031 population predictions. Figures must be provided to measure the adequacy of existing open space and recreation area for 2031 growth figures. Further, more detail is necessary to address those areas of the neighborhood that are not meeting identified goals.

Second, while there is analysis of open space goals, there is no analysis of recreation areas. Detail needs to be provided as to recreation resources and whether they will be adequate for the 2031 population estimates.

Third, many of the supposed existing parks and open space in the "South Lake Union vicinity" described on Table 3.16-1 are well removed from the South Lake Union area. For example, Volunteer Park and Anderson Park are on Capitol Hill and separated by distance and barriers (1-5) from South Lake Union. Park areas should only be listed if they are accessible by walking from the South Lake Union Neighborhood.

Fourth, many of the park mitigation strategies (page 3.16-9/10) seem unrealistic. For example, #1 suggests use of tax revenues to fund park facilities. This funding would require changes in statutory authority. Mitigation through the capital facilities planning (#2) requires that the City prioritize South Lake Union, but analysis must be provided as to whether funding for such facilities will be available during the current budget crises. Item #3 refers to providing facilities as a part of new development, but analysis is necessary to assure that such facilities are not only public in name, but inviting to the public, not facilities such as interior courtyards useful only to building tenants or retailers. Again, capital facilities planning must accompany land use plans under GMA.

Fifth, page 3.16-5 states that the North Downtown areas requires eight additional acres of parks and open space to meet standards by 2024. What will the requirements be by the planning period set forth in the DEIS of 2024 or 2031? Further, given budget restraints, will eight acres of new parks actually be built in the area to meet needs?

V. CAPITAL FACILITIES.

The DEIS identifies deficiencies in sewer capacity within the South Lake Union Neighborhood. DEIS at 3.15-7. However, there are blithe assumptions that these problems will be resolved by the individual developers of new projects. *Id.* However, there is no basis on which such individual developers will replace or repair system wide facilities. GMA requires at RCW 36.70A.070(3) and (4) that capital facilities and utility strategies be a part of comprehensive planning. These also include plans for financing such necessary improvements. This section of the DEIS requires thorough analysis of the impacts on utilities, what improvements may be required and how such facilities will be funded.

VI. ALTERNATIVES.

Alternatives are the key element of SEPA decision making and all reasonable alternatives must be considered in the EIS. Agency analysis must be open-minded and public proposals in particular should be described in terms of objectives rather than preferred courses of action. This is especially true for a non-project action such as the adoption of sub-area plans such as that for the South Lake Union Neighborhood. Reasonable alternatives are those that approximate the proposal's objectives at a "lower environmental cost or decreased level of environmental degradation." WAC 197-1-440(5)(b). In the present DEIS, alternatives are not adequately considered for the reasons stated below.

First, the alternative analysis is deficient for failure to include a downzone of the subject area. A reduction in height and density must be considered, especially where it meets goals for preservation of views to Lake Union.

Second, The analysis is also deficient because it does not include the alternative of distributing new growth to other locations within the City.

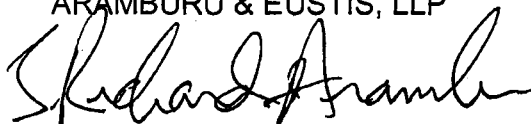
Third, an additional alternative for review purposes is to defer any decision to modify the height and density standards in the South Lake Union Neighborhood until a comprehensive and coordinated review can be made of all Seattle neighborhoods. An explanation needs to be provided of the costs and impacts of deferring South Lake Union decisions.

In conclusion, this comment letter has shown that the DEIS is deficient in several areas. In addition, accelerating consideration of 2031 growth goals in the South Lake Union Neighborhood ahead of other areas of the City violates important goals and policies of the GMA. As such, the City is better advised to defer further effort and expenditure until it undertakes planning for the entire city, as scheduled for 2014. If the City is intent on proceeding on this dubious course of action, the DEIS should be completely rewritten and recirculated for comment to incorporate the comments found herein.

Thank you for this opportunity to comment on this DEIS. Please send me a copy of the next EIS prepared by the City.

Sincerely yours,

ARAMBURU & EUSTIS, LLP



J. Richard Aramburu

Holmes, Jim

From: Carol
Sent: Monday, April 11, 2011 11:29 AM
To: Holmes, Jim; DPD_Planning_Division
Cc: Rick Aramburu
Subject: South Lake Union EIS
Attachments: LUOA SLU DEIS Comment Letter 4-11-11.pdf

Attached are comments on the SLU Draft EIS made on behalf of the Lake Union Opportunity Alliance. If you have any questions for LUOA or for Mr. Aramburu, please contact this office.

Thank you,
Carol Cohoe
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This message may be protected by the attorney-client and/or work product privilege. If you received this message in error please notify us and destroy the message. Bcctc CgJp. Thank you.

1. Summary

The summary section of the EIS needs to be more informative, quantitative, and objective in order for the general public to understand the impacts in a timely manner. The complete EIS is justifiably a large and thorough document, but it must be recognized that is also for the citizens of Seattle who volunteer their time and effort to help shape their neighborhoods.

Currently the summary reads as vague and even subjective. For example: page 1-18 states in reference to Alternative 1, "Building heights increase *slightly* in the *block* north of Mercer." First, a transition from 240' to 300' in a zone currently designated as 40' is not 'slight.' Second, 'block' should be pluralized, as there is more than one block north of Mercer. Third, there are several blocks (in fact, 24+) that do not step down at all between John St. and Galer St., extending substantially north (and south) of Mercer. People could interpret this as not only subjective, but misleading.

There are several more examples like this – many of them noted in John Pehrson's and others' comments. I would ask that the entire summary be revisited in this manner with the intention of being informative and meaningful to the public.

2.3 Proposed Action Alternatives

Table 2-3 indicates that an office tower with a floor area of 24,000sf will be awarded to a developer who owns 22,000sf of property. It is also characterized that this oversized floor plate will somehow be 'set back' from its podium base. It is understandable that such issues will be remedied during the zoning process, but what is not clear is how the assumptions for density capacity have been made throughout the body of the EIS. Please clarify.

3.8 Land Use

Mixed-Use Commercial Areas

It states on 3.8-11 that "All of the EIS Alternatives would increase residential and employment density within the South Lake Union Urban Center." While technically this is true (even for Alt 4), it is as general of a statement as saying "the neighborhood will grow." It should be noted that it is likely that Alts 1 & 2 will tip the delicate mixed-use balance into predominantly office use. Property values are a bargain compared to the downtown office core, but relatively expensive by Seattle neighborhood standards. *Incentivizing* office use will exasperate that condition. The reason the neighborhood has not already gone completely office is because the larger corporations and institutions are having a difficult time squeezing into the current zoning envelop. Numerous variances and exceptions have been made for Amazon and UWIII, but not for housing. It is then a flawed argument to imply (as on 3.8-13) that Alts 1 & 2 will "promote a variety of housing types." Rather, there will be a small amount of high-end residential, which will force a trace amount of low-income housing in what will be an unwelcomed and unsupported environment (i.e. no schools or services).

Affordable Low Income Households

The myth needs to be put to rest that high-rise residential buildings will naturally result in more affordable housing. It is rare if it ever happens at all without government subsidies, such as “The Projects” throughout the nation. The concrete and steel construction otherwise puts the cost out of reach, no matter how many units are stacked on each other. The false argument has been heard numerous times around this public process by laypeople and city officials alike. The DPD should educate this conversation when appropriate, and the EIS would be a good place to begin.

Transportation

In cities with rapid transit, true urban centers naturally develop at the transit stops. This is how residents of Chicago or New York, for example, can confidently forgo owning a car. They can quickly visit places of work, eateries and culture within a few minutes walk of a transit station that did not get stuck in traffic or make stops every quarter-mile. Page 3.8-20 states that “There are no bus rapid transit or light rail lines planned in the South Lake Union neighborhood,” yet Alt 1 & 2 show Manhattan-like neighborhood densities. Furthermore, with no rail planned for the 520 bridge (or the 99 tunnel), it is hard to believe the city will change course. The types of businesses moving into SLU have strong ties with Bellevue and Redmond. To what degree that ‘everyone who works here will live here’ is unsubstantiated, and the outcomes of the traffic studies are not credible.

3.10 Aesthetics

The computer-generated models of the architecture are inaccurate. It is hard to determine all of the mistakes due to the poor selection of views that hardly inform the reader of the realities of the densities (which should be remedied for the EIS), but here are a few:

Figure 3.10-2 Full Build-Out: The ‘two tower per block’ does not appear to its full manifestation south of the Mercer blocks; the podiums of the Mercer blocks are wrong; the Mercer towers are not set back from Valley – does this reflect a policy of which we are not aware?

Figure 3.10-4 Full Build-Out: Either the Mercer block podiums are wrong, or it is showing two towers per block – one office and one residential.

Figure 3.10-6 Full Build-Out: Same mistake as above.

Figure 3.10-8 Full Build-Out: Not sure what is being shown at Mercer blocks. If it is the current incentive, the upper setbacks do not appear correct. Is it the Lab benefit assumption? It is certainly not the 40’ zoning. Please clarify or correct.

For all street-level views: Please add scale figures and an auto in order for the layperson to understand the scale at all street-level views.

Figure 3.10-12: This is both inaccurate and misleading. The podium heights north of Mercer are 85’ – taller than the existing buildings shown south of Mercer, so it is therefore inaccurate. It is also misleading that the towers do not appear in this view because they are not set back from Valley in this model, but that is inconsistent with the UDF. Please include a Valley view, and/or explain this new setback policy.

Figure 3.10-13: A 1-story podium is shown on the right, even though a 30’ is allowed. That is an unlikely depiction.

Figure 3.10-14: The podium for the building on the right is identical to that in 3.10-11 even though the plan indicates there would be a 20’ height difference. Which image, if

Comments by Jim Goodspeed, member of LUOA Board of Directors

any, is accurate? If it claims to be a portion of the block that remains with current zoning, it is shown lower than that of **3.10-20**.

Figure 3.10-15: This is an inaccurate and misleading depiction showing Alt 1 as being less dense at the waterfront than Alt 2. Now, without explanation in the text, the towers are on Mercer instead of on Valley as in **3.10-12**. It is also inaccurate in that there are 2 towers per block – alternating an 85' office with a 160' residential.

Figure 3.10-18: Once again, showing inaccurately 2 towers per block north of Mercer.

Figure 3.10-21: Same comment as **3.10-8**. Please explain how the forms were derived north of Mercer.

Figure 3.10-25: How was the form on the left derived? The tall portion appears to not use incentive zoning as it is similar in height to the Rollins building. The low portion appears to be part of the incentive form, but it seems unlikely that the corresponding 10,500sf tower would be completely out of view from this vantage point. It is also inconsistent with what is shown in the shadow model, **Figure 29, Appendix D**.

Figure 3.10-27: The new building appears to be using existing zoning where 400' is allowed. Why? This does not reflect the Alt 1 proposed zoning across from Mirabella.

Figure 3.10-49: The new building does not utilize its 125' allowable height. Why?

Appendix D, Figure 1: In this view, the Mercer towers have been moved from where they were depicted in the Mercer corridor view **3.10-12**. In each case, they have been located in the image to have the least impact as possible.

Appendix D, Figure 2: Inaccurate.

Appendix D, Figure 3: Inaccurate.

Appendix D, Figure 4: ? (See comment on **Figure 3.10-25**)

Appendix D, Figure 20: This shows Alt 4 as having taller buildings in the Fred Hutch area than Alt 3, but the zoning heights for each Alt is the same. This mistake carries into the shadow depictions for **Figures 43 and 44**, unfairly showing that Alt 4 casts shadows farther into the water than Alt 3.

Appendix D, Figure 25: Perhaps the unbuilt Amazon building would show in this view. Also, 2 towers are identical in height and plan as in **Figure 26** (Alt 1 to Alt 2). One of these images would then not be a fair depiction of the zoning changes.

Appendix D, Figure 29: I retract my public statement that the shadows were rendered incorrectly. I see now the mistakes are in the building forms – not the shadows. Also, please put the shadow images with the body of the text – not in the appendix. This is not extra material but essential to their descriptions, and the reader should not have to flip back and forth to understand it.

It is unfortunate but understandable that the city could not afford to build physical models of the 4 alternatives. However, the city should remedy this shortfall by allowing the public access to the computer models, or at the very least, take requests for vantage points where people have concerns. The views shown are either bird's-eye or on the street. There is a large range of intermediate views that should be incorporated into the EIS to maximize the peoples' understanding of the densities.

Transportation - DEIS 3.13:

Table 3.13-13 of the DEIS indicates all three alternatives would bring several major arterials into failing categories for auto traffic levels - LOS scores of E and F. According to Wikipedia, these LOS Scores mean "every vehicle moves in lockstep with the vehicle in front of it... a constant traffic jam... a road for which the travel time cannot be predicted... more demand than capacity."

Maintaining the green of designated "green streets" should be an important consideration. For example, as drivers who are stuck in highly congested conditions seek to find greater capacity, the potential for traffic from Denny (LOS F) and Harrison (LOS E) to overflow onto Thomas St (an adjacent designated green street) is a likely possibility that is overlooked in the DEIS and should be studied.

As the DEIS is essentially impossible for non-city planners or engineers to decipher, LUOA commissioned Christopher Ferrell of CFA Consultants (a transportation planning and research firm) to provide some professional perspective on the DEIS Transportation section. (See attached CFAC Memo.) Based on CFAC commentary, there appear to be several points of serious concern with the DEIS Transportation study:

1. Auto Trip Generation appears to be of concern. The study expects the number of employees in SLU to increase by 58%, and the number of housing units to increase by 83% (most of which are not likely to be single occupant dwellings), while the increase in trip generation increases by a mere 29%. While this increase in trip generation may be in line with expectations, without adequate metrics to clearly validate this seemingly optimistic outcome, a more in-depth trip analysis should be conducted.
2. The ITE Model used to predict trip generation, is industry standard but is (a) based primarily on suburban case studies that may not be applicable to South Lake Union and (b) is known within the industry for weak statistical basis. In light of greater implications of the MXD Model, used to estimate mode shifts, the DEIS results seem alarmingly aggressive at best:
 - The MXD Model is new and based on untested research.
 - Appendix E-4 is unclear and may indicate the estimation model may have been calibrated using generic assumptions as opposed to those more appropriate for the urban environment of South Lake Union.
 - The validation methods used appear to have shortcomings relying on suburban case studies inappropriate for use in South Lake Union.
 - Appendix E-1 inadequately states whether any true correlation exists between the results of the MDX model, used to estimate mode share, and the ITE, used to predict trip generation.
 - The statistics used to validate the model, found in Appendix E-4 appear inadequate to the task: RMSE and Pseudo R-Square for the ITE and MDX methods may produce strong goodness of fit scores while consistently over or under estimating the underlying values being modeled.

These trip generation increases to just 29% appear to be obtained by the assumed implementation of several mitigation techniques found throughout the DEIS that seem to rely heavily on "mode shifts" (presumably from single-occupant vehicles to public transportation) to identify the best-case scenario. (See Table 3.13-16 & 17.) Thus, the DEIS

Comments by Chris Gemmill (VP) and Lorie Groth (Tres), LUOA Board of Directors

actually illustrates a decrease in the trip count of Alternative 1 at full build-out to levels below what would be expected Alternative 4 with no mode shifts applied. The assumption that *"if we build tall buildings, we will get viable public transportation that people will use instead of cars"* is faulty at best for the Seattle metropolitan area considering the challenges Seattle faces delivering viable public transportation. Seattle is known across the country to be sub-standard in this area, thus it is irresponsible to gloss over this critical issue by using disparate metrics.

The proposed mitigation strategies seem optimistic, at best:

- **Bicycle & Pedestrian System**
 - Wider sidewalks will most certainly help, but that is very limited in scope. It seems there is an inordinately high reliance placed on the idea of car-free living in SLU. The Alterra condominium community of SLU as an example has 60 residential units with 110 parking spaces. All spaces are full and there is demand for more. It is a rare occasion during the day that there are more than 30 cars remaining in the garage and residents admittedly commute, by car, to locations as nearby as The Gates Foundation and Nordstrom.
 - Some aspects of the Bicycle Master Plan have shown, through real-world experience in SLU thus far, to carry the potential to create greater auto traffic congestion. One example, related to bike lanes on arterials, is the intersection of Dexter and Mercer. The addition of the bike lane made Dexter a 3-lane road. With 3 lanes, a left turn arrow is now required on Dexter southbound at Mercer. (Presumably northbound as well, once Mercer becomes 2-way.) Along with Roy Street as a tributary and, to a lesser degree, Valley Street, Dexter Ave N is now frequently backed up in excess of 2 blocks during non-peak times of day (10am, 1:30pm, etc.) with drivers waiting to turn left at Mercer. Additionally, lane modifications made to accommodate this same bike lane pose precarious safety concerns for both drivers and bicyclists on Dexter southbound immediately south of the Denny intersection.
- **Transit Service Expansion**
 - The addition of busses and bus routes is a great theory, over which the City of Seattle has no control. In practice, King County Metro has been scaling back service and increasing rates for years and they still project a shortfall in revenue of \$600M through 2013. There are admittedly no plans for Rapid Transit in SLU. The Seattle Streetcar goes virtually nowhere and does not effectively connect to any other service. In general, expansion of these systems and the addition of others is a mitigation strategy that has proven to be a failure time and time again throughout Seattle.
- **Potential Mitigation Measure Implementation**
 - Because the number one suggestion to fund these mitigations is the "South Lake Union Voluntary Impact Fee Program," it sounds as though there may be no way to pay for them. As noted by Donald R. Samdahl in his "Multi-Modal Impact Fees" paper:

"The Washington State legislature did not authorize jurisdictions to impose impact fees on modes other than roadways in the Growth Management Act. Seattle had to rely on the "volunteer agreement" provision of the State Environmental Policy Act. This provision is not as effective at raising funds uniformly as the GMA traditional impact fees. **In fact, the City of Seattle has not been as**

Air Quality - DEIS 3.2:

1. Ozone (O³) implications:

On page 3.2-4 the DEIS states that, in 1997, the EPA deemed the Puget Sound region a nonattainment area and in 2005, the EPA adopted more stringent ozone standards. The DEIS then goes on to state: "Based on ozone measurements over the past few years, the Puget Sound region seems to again be on the brink of becoming a nonattainment zone" but claims because ozone problems tend to be regional in nature and can be transported far from their sources that "the potential future nonattainment status for ozone would have no direct implications for any of the South Lake Union alternatives."

While ozone problems may have a regional propensity and, in the time between emission and formation, can be transported far from their sources, the DEIS seems to imply the source is ultimately irrelevant in hydrocarbon production. No mitigation strategy has been put forth, no future modeling has been done, in fact, no testing has been done at all in attempt to determine whether SLU under alternatives of increased height and density might substantially and adversely impact the region as a whole. All this, while our region is on "on the brink" of producing unacceptable levels of health-based NAAQS for ozone, with no explanation provided.

Ozone levels pose a material public health risk and not testing the environmental impacts "that could occur under worst-case conditions" for the reasons sited in the DEIS is unacceptable to the public.

2. Carbon Monoxide (CO) implications:

On page 3.2-2 the DEIS reports the area of South Lake Union to be a current "maintenance area" for CO emissions and on page 3.2-5 states "the analysis of potential air quality impacts related to the alternatives focuses on traffic and was based on consideration of ambient concentrations of [CO] the could occur under worst-case conditions near congested intersections."

The analysis is stated to have been performed at three (3) signalized intersections based on traffic levels predicted for the year 2031 at peak-hour traffic levels of service (LOS). While rationale is provided for the selection of these three intersections, it seems insufficient at best to only examine intersections along Mercer Street that are all just a few blocks from each other. As in the Transportation analysis, there is no mention of potential impacts of air quality at the proposed Republican Street exit of the deep-bore tunnel and other seemingly high impact areas like Denny/Fairview and Denny/Dexter.

Furthermore, directly due to the Transportation analysis (for the reasons sited previously in these comments), the Air Quality analysis may be substantially flawed and shortsighted in understating potential hazards to public health. If the potential flags raised in the Transportation section and a thorough traffic analysis as recommended by LUOA in these comments produce results that are even moderately less favorable, the health impacts on residents and employees of South Lake Union may be greatly compromised.

By default, the DEIS seems to be using the most aggressive methods of analysis to come to the most optimistic result. This is in direct conflict with the stated goal of the analysis in this section - that of determining what "could occur under worst-case conditions"

Comments by Chris Gemmill, Vice President, LUOA Board of Directors

and is, again, unacceptable to the public. If the results of the transportation section are to be used in making air quality determinations, a thorough and comprehensive traffic study must be completed.

Full and Fair Disclosure within the DEIS:

Prominent South Lake Union landholders have several motives in the upzoning rulings that will come to SLU following the Final EIS. While not overlooking their altruistic motives of sustainable design, et.al., a primary driving factor is certainly to maximize their return on investment. Developers, architects and others also have significant financial skin in the game. Nothing comprehensive is found in the DEIS (individual sections, appendixes, credits, etc) where disclosure has been made with respect to the contributing parties of the DEIS document. (Exception drawn to simple source citations for various charts and graphics throughout.) Who, for example, authored the Air Quality section? This is unknown to the public and is a material to the public document. In fact, certain contributors (known privately) are known to have strong business ties with prominent South Lake Union landholders, thus, conflict of interest can easily be assumed without disclosure. In an ideal world, the City would select competent and capable contributors for the EIS without these conflicts but COI is sometimes difficult to avoid. In lieu of this requirement it is my recommendation that all contributors involved in the construction of this public document be disclosed along with potential conflicts they may carry including, at a minimum, a list of prominent South Lake Union landholders and corporations with whom each have business dealings. Avoiding COI is not always necessary but transparency should be the norm!



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Date: March 8, 2011

Memorandum

To: Lorie Groth, Lake Union Opportunity Alliance

cc: Michael Carroll, CFA Consultants

From: Christopher Ferrell, CFA Consultants

Reference #: P11001

Subject: Preliminary Findings from the Peer Review of the South Lake Union EIS

The following are findings from our review of the transportation sections of the South Lake Union Draft Environmental Impact Statement (EIS). These findings should be considered preliminary since they are based on a brief review of this document and would require further investigations to verify and elaborate upon. As such, the discussion below is intended to provide the Lake Union Opportunity Alliance with insights regarding where they may want to seek additional information from the City of Seattle and the EIS analysts.

Project Background

According to the Draft EIS, "...the South Lake Union neighborhood is located in the center of the City of Seattle, immediately north of Downtown, and adjoining the Uptown and Capitol Hill areas to the west and east, respectively," and is roughly 340 acres in area. The Draft EIS considers four alternatives for increasing the height and density of the neighborhood with Alternatives 1, 2 and 3 representing a range of potential height increases. Alternative 4 would retain the existing zoning designations and is referred to as the no-action alternative.

It is our understanding that the South Lake Union project will result in significant impacts to study corridor traffic operations, freight, bicycle and pedestrian mobility, transit load factors, and parking. A series of mitigation measures are also proposed to reduce these impacts including limited roadway capacity enhancements. However, the majority of mitigations are focused on improving the bicycle, pedestrian and transit environments in the study neighborhood.

Preliminary Findings

The following preliminary findings were identified based on a review of the transportation sections of the Draft EIS:

South Lake Union EIS Preliminary Peer Review Memorandum
March 8, 2011

- 1) *Auto Trip Generation¹ for the Proposed Projects*: To determine if the number of trips the EIS estimates the zoning changes will produce is reasonable, the amount of development considered under Alternative 1 and the number of trips the Draft EIS estimates were compared.

Alternative 1, the most ambitious of the three alternatives studied, would increase the number of employees by 57.5 percent and the number of dwelling units by 82.6 percent, over what current zoning would allow (the “No Action” alternative). Based on the ITE trip generation estimates provided in Appendix E of the Draft EIS, the number of daily total trips will increase from 220,539 for the No Action alternative to 283,594 with Alternative 1—an increase of 28.6 percent.

It is noted that a 29 percent increase in trips is not proportionate to the increase in employment or residential development. This is because the ITE trip generation calculations are not linear. In effect, the rate of trip generation falls as projects achieve a higher density. Therefore, the fact that the increase in the number of trips is proportionally lower than the increase in development is not *necessarily* a “warning flag” and may be in line with expectations. Short of a more detailed independent trip generation analysis to check the assumptions and estimates produced by the Draft EIS traffic engineers/planners, this part of the Draft EIS analysis appears reasonable.

However, the Draft EIS also recommended a series of trip generation estimates based on the trip reduction effects of a series of mitigations that could be implemented in concert with the development anticipated in all three alternatives. These mitigations are described in section 3.13.6 of the Draft EIS, and contemplate the benefits of a series of improvements to the transit, bicycle and pedestrian environments of the South Lake Union neighborhood.

The Draft EIS estimates that this package of mitigations will reduce the number of daily auto trips (different from total trips, as discussed above) for Alternative 1 from 136,973 to 108,207. This is compared to the total number of auto trips estimated for the No Action alternative of 108,946. Essentially, the Draft EIS analysts suggest that these mitigations will reduce the number of auto trips in the most intense development alternative to levels slightly below those estimated for the No Action alternative—this despite the 58 percent increase in jobs and 83 percent increase in dwelling units. This substantial reduction in the number of auto trips is achieved through the benefits of the proposed mitigations, which are assumed to effectively “shift” people from using cars to riding transit, bicycles

¹ The term, “trip generation” is used by traffic engineers and transportation planners to describe how many trips go to and from an existing or proposed development. Trip generation is typically estimated based on surveys of existing, similar developments. The Institute of Transportation Engineers (ITE) publishes the most widely-used report for these purposes, called the Trip Generation report. Engineers and planners will typically take trip generation rates from this report and then use these as multipliers to estimate the trip generation for the study project. Therefore, in the case of a proposed 30-unit apartment building, the analyst will look up the “per dwelling unit” trip generation rate for apartment buildings and will multiply this rate by 30 (the number of units in the proposed project).

South Lake Union EIS Preliminary Peer Review Memorandum
March 8, 2011

or walking. These mode shifts were estimated using a new transportation analysis tool, known as the MXD model. This model is discussed below.

- 2) *Estimating Mode Shift:* The MXD model provides the basis for the mode shift estimates discussed above. This model is very new and is based on recent and (as far as we are aware) untested research. We have a great deal of respect for the people who developed this model and think this is valuable and much-needed research, but this may very well be the first practical application of it to a planning study, so some degree of caution is warranted.

The mode shift estimates produced by the MXD model seem somewhat optimistic (as discussed above). One possible explanation for this may be found in the validation and calibration (i.e., adjustment) processes for the model. While there are many similarities between cities across the country in terms of the choices people make when traveling, there are also important differences based on differences in urban form, transportation supply, local economic conditions, and other factors. Therefore, all travel estimation models need to be calibrated for local conditions. However, while our review of Appendix E-4 revealed a validation process—wherein the model’s outputs are compared to real-world data to determine the degree to which the model produces data that are accurate representations of the real world—our review of the Draft EIS did not reveal any calibration processes that would make adjustments to the model to make it appropriate for use in Seattle’s urban environment.

Furthermore, this validation process appears to have shortcomings. For validating the model, the Draft EIS analysts used data from 16 local sites and found that the MXD model did a better job of predicting trip generation than the industry standard, the Institute of Transportation Engineers (ITE) Trip Generation report. Based on our preliminary review, this validation approach may be inappropriate. The ITE report is notorious within the transportation field for its somewhat weak statistical basis, and it is based primarily on suburban case studies. These suburban cases are obviously not the right comparisons for urban Seattle.² Therefore, the analysts may not be using the appropriate basis for comparison to show that the MXD model is accurately predicting the mode share/split of the proposed EIS alternatives.

Furthermore, the MXD model predicts mode share while the ITE report provides the methods to predict trip generation (auto trips only)—not mode share. Therefore, to show that the MXD model is a reliable and accurate predictor of mode share for local conditions, the best comparison would be between the model’s estimates and the observed trips by mode (mode share) of the 16 validation sites. The description of the validation process for the MXD model to local conditions in Appendix E-1 did not clearly state whether the model’s outputs were compared to observed trips by mode or

² It should be noted that the EIS analysts applied a series of adjustments to the ITE rates (estimating so-called “internal” trips to account for walking and bicycle trips), and therefore, they appear to have used the best ITE methods available.

South Lake Union EIS Preliminary Peer Review Memorandum
March 8, 2011

simply a count of total trips.

Finally, the statistics used to validate the model appear to be inadequate to the task. Appendix E-4 reports that the Root Mean Squared Error (RMSE) and Pseudo R-Square statistics for the ITE and the MXD methods were compared. These statistics provide so-called "goodness of fit" measures of the discrepancy (difference) between the values produced by the model and those observed in the real-world. However, if relying on these measures alone, it is possible that the model will have a strong goodness of fit score, but still consistently over- or under-predict the values being modeled. In other words, the MXD model may be giving low trip generation values for automobiles while the ITE method gives higher values, but since the MXD model provides values that are closer to observed values overall, its goodness of fit scores are better than ITE. Ideally, the Draft EIS analysts would have employed additional statistical measures that could have illuminated these aspects of the models' performance (e.g., t-statistics).

April 10, 2011 Comments on SLU Rezone Draft EIS Brian D. Ramey, Secretary, LUOA Board of Directors

April 10, 2011

Comments on SLU Rezone Draft EIS

Brian D. Ramey

Thank you for this opportunity to comment.

My Name is Brian Ramey I live in the Eastlake Neighborhood of Lake Union.

ENVIRONMENTAL IMPACTS NOT ADDRESSED:

SHORELINE MANAGEMENT ACT IGNORED:

The State of Washington Shoreline's Management Act recognizes that the shorelines and the waters of the state are "among the most valuable and fragile" of the state's natural resources and the State requires that Cities recognize the importance of protecting the shoreline and urban water-bodies.

The Shoreline Management Act prohibits the shading of water bodies with new development. The allowance of tall building next to the lake and the admission that these buildings will shade the lake are clear violations of the State Law.

The DEIS states that birds and fish species dependent on the lake will be adversely impacted by the build-out. The Draft EIS fails to explain how the city will protect against the adverse Environments impacts in any Alternative to public health, the land, the vegetation and wildlife that are currently part of the Lake Union environment.

WATER:

Section 3.3.1 through 3.3.12

The DEIS fails to identify the baseline Combined Sewage Overflow (CSO) volumes for each of the six current outfalls into Lake Union. It further fails to indicate what the volumes frequency of CSOs will be upon full potential build-out of any Alternatives. The DEIS does not state whether any additional outfall facilities will be built to allow for additional CSO into Lake Union and what, if any, expected CSO volumes and/or frequencies would be attributable to any new outfalls under a full build-out scenario of any Alternative identified in the DEIS. No mention is made or descriptions outlined in the DEIS of any future needs for Stormwater or Sewage capital facility upgrades within the basin or required improvements to the existing system for any Alternative identified in the DEIS. The face that the Draft

EIS states that there will be unavoidable Combined Sewage and Storm-water Overflows into Lake Union in the future is unacceptable and this statement is made without any detail on the actual source of the overflows.

What are the projected volumes of sediment deposits into Lake Union as a result of any of the development Alternatives?

Please provide a quantifiable description of the Sewage and Stormwater impacts under all Alternatives.

LIGHT AND AIR:

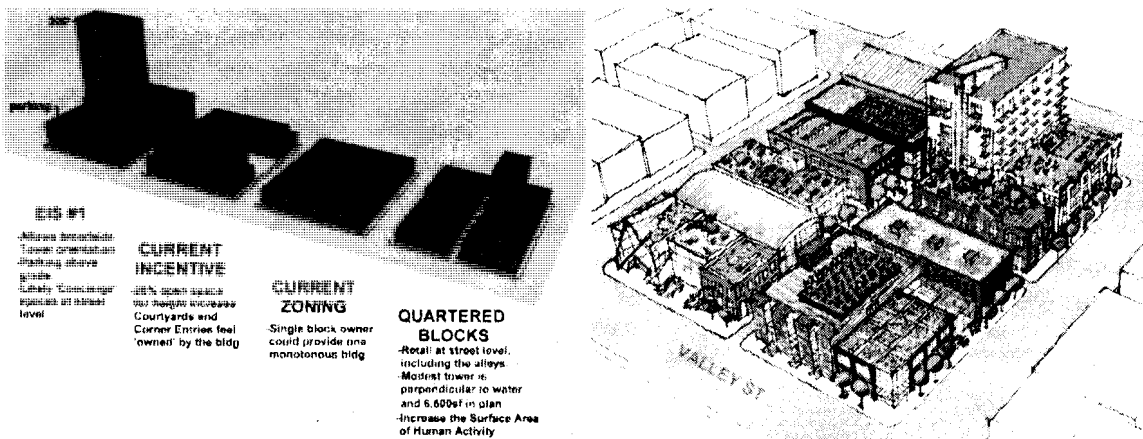
The Draft EIS fails to explain how development will be placed to prevent interference with air and water navigation in Lake Union. This includes Sea Plane and Sailboat navigation. The DEIS ignores the rights of recreational and commercial users of Lake Union for reliance on **wind currents** which provide public enjoyment of sail boat recreation and tourism. The proposed height, bulk and numbers of buildings allowed under Alternatives 1, 2, and 3 will have a major impact on the future viability of the Tuesdays Duck Dodge due to major buildings shielding natural wind currents over the lake creating dead zones where none existed before.

The creation of **Shadows** will have a major environmental impact on the **public spaces** of Denny Park, Cascade Park and Lake Union Park. No mitigating measures are proposed.

I do not believe that we are creating the incentives or controls to allow for a **vibrant** retail, recreation, or living environment in a future South Lake Union under any of the proposed alternatives.

DESIGN AND DEVELOPMENT CHOICES ARE NOT FORTHCOMING IN THE DEIS:

The failure of the DEIS Alternatives to provide future affordable land to encourage development at a scale that allows for active and ground related development is a major reason that the DEIS has failed. The negative impacts related to the creation of a 8am to 5pm office park in South Lake Union without any incentives for affordable ground related people active retail and affordable housing enterprises near the shores of Lake Union will miss the only opportunity to actually provide a vibrant and attractive future for this neighborhood.



One of the goals missing from any of the Alternatives is the creation of affordable spaces for small retail and tourist related enterprises to complement the public spaces already started to develop along the shoreline of Lake Union. If the planning of South Lake Union neglects the opportunity to create a walkable community with public services and retail, open space and active street level vibrant magnets at both the south end of the community along the lake front and at north end of the community it will miss a rare and possibly one time opportunity to create a truly welcoming and vibrant neighborhood. The plan of having designated Terry Avenue as a green and walkable passage north to south in the community will have little impact on creating a lively and vibrant neighborhood in the future without the creation of retail magnets at both north and south ends of the community.

In the DEIS 3.14.4 the statement is made:

“Design features could be incorporated into potential development in the South Lake Union Neighborhood that would help reduce criminal activity and calls for police service, including orienting buildings towards the sidewalk and public spaces, providing connections between buildings, and providing adequate lighting and visibility “

This implies that the public safety will be improved on the street by placing people underground in tunnels between buildings to make all the walkable areas of the community under the control of private development interests. This is a terrible approach to development and a very poor approach method to protecting the public safety in a planned “NO MAN’S LAND” currently on the table with the proposed DEIS Alternatives.

The Draft EIS is using the most aggressive methodology to come up with the most optimistic conclusions.

I am re-submitting my December 16, 2008 scoping comments (which have not been responded to in the DEIS) together with these additional comments for inclusion in the responses to the DEIS the April 11th deadline.

Thank you,
Brian Ramey

Ms. Diane Sugimura
Director
City of Seattle Department of Planning and Development
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Diane;

Leadership for Great Neighborhoods (LGN) appreciates the opportunity to comment on the DEIS. LGN is a broad-based coalition of neighborhood leaders, residents, business owners and other stakeholders. We are dedicated to affecting change and achieving the greatest possible social, economic and environmental benefits for all Seattle neighborhoods. We seek specific progress across neighborhood boundaries in the areas of smart growth, sustainable development, zoning, affordable housing, and mobility and transit.

Some of our comments do not address specific impacts in the DEIS. Rather, they suggest alternative ways of measuring, quantifying and reporting impacts of the various alternatives.

Although there is no requirement for an EIS to examine positive benefits of an action, LGN recommends identifying in the document how each of the growth alternatives can help address adopted goals for carbon reduction and for growth management through compact urban neighborhoods. A specific comment is that impacts are examined cumulatively and not per capita. If looked at via a per capita lens, the growth alternatives can be seen as the most direct means to implement growth management and address climate change at the local level. | 1

A second concern is that the DEIS did not look at economic development. You are encouraged to analyze the economic development impacts of the alternatives. There is likely a clear and distinct difference between the growth alternatives and the no-action alternative with respect to economic development. The City's SEPA ordinance requires analysis of consistency of the project with "adopted plans and policies." The City has many adopted plans and policies, including the Comprehensive Plan, which state economic development goals. As a potential model to follow, the Downtown Seattle Association has demonstrated the tax benefits of denser mixed use development in urban areas. These benefits mirror work at the national level by renowned urbanist thinker Peter Katz. | 2

LGN believes that variety in urban form is a key aspect of livability. We urge DPD to look at the impacts of a less diverse urban form and how additional height can mitigate the impacts of current zoning. Greater height enables tall, slender towers atop relatively short podiums - a building form that can provide benefits in many areas, including: | 3

- *Pedestrian Environment:* The average person on the street is aware of the podium portion of the building only, and the result is a more open feeling streetscape.
- *Footprint flexibility and open space:* When building floor space can be accommodated in tall towers, it is possible to pull back the base of the building from the property line to create wider sidewalks, plazas, or pocket parks.
- *Views:* Tall slender towers can actually have less impact on views because views are preserved between towers. In contrast, shorter, bulkier buildings tend to wall off views.
- *Shadows:* Tall buildings cast longer shadows, but compared with the shorter, bulkier alternative, the tower/podium form typically has reduced shadow impacts on the public right-of-way because the towers are set back from the property line.

3 cont

We believe these benefit considerations for all four alternatives should be more fully investigated for the FEIS.

Next, a key livability concern for LGN members is the presence of basic neighborhood necessities such as community centers, libraries and schools. This is particularly important for dense urban neighborhoods. Opportunities for funding those necessities can be made more certain with flexibility in South Lake Union zoning provisions relating to height and development capacity.

4

Under the current Incentive Zoning ordinance, a portion of the public benefit for additional height or development capacity can be used to pay for community identified needs such as community centers and libraries. Without sufficient height allowances, both Seattle and the South Lake Union neighborhood may be unable to achieve its goals.

In conclusion, we ask that the city analyze per capita impacts, economic development, urban form and how increased height can lead to neighborhood necessities in South Lake Union.

5

LGN believes that increased height and flexibility will positively benefit the region. We look forward to seeing these issues addressed in the Final Environmental Impact Statement.

Sincerely,



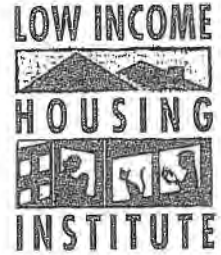
Renee A. Staton
Chair, Neighborhood Leaders Group
Leadership for Great Neighborhoods

Cc:

Michael McGinn, Mayor
Richard Conlin, President, Seattle City Council

Sally Bagshaw, Seattle City Council
Tim Burgess, Seattle City Council
Sally Clark, Seattle City Council
Jean Godden, Seattle City Council
Bruce Harrell, Seattle City Council
Nick Licata, Seattle City Council
Mike O'Brien, Seattle City Council
Tom Rasmussen, Seattle City Council
Marshall Foster, Department of Planning and Development
Jim Holmes, Department of Planning and Development

April 11, 2011



Ms. Diane Sugimura, Director
Seattle Department of Planning and Development
PO Box 94745
Seattle, WA 98124-4745

RE: Comment on South Lake Union DEIS

Dear Ms. Sugimura:

The Low Income Housing Institute (LIHI) hereby submits our comments on the South Lake Union Draft Environmental Impact Statement. LIHI is a leader in providing low-income housing in South Lake Union (SLU). Currently, LIHI housing accounts for one-third of the 568 units of nonprofit subsidized low-income housing in SLU.

LIHI owns and manages four properties that provide 189 rental units for families, low-wage workers, seniors, youth and homeless people. The Bart Harvey, Denny Park Apartments, Lakeview Apartments and Jensen Block Apartments are affordable to households making 30%, 50% and 60% of the area median income (AMI). This housing ranges in size from studios to three-bedroom units. LIHI has made a commitment to keep our housing affordable long-term, from 50 to 75 years.

We believe that as SLU continues to grow over the next 25 years that the production of low-income and affordable housing must keep pace with other residential and commercial development. The DEIS points out that the City's Comprehensive Plan goal for year 2031 of 11,900 residential units in SLU would require: 1,765 units affordable for households up to 50% of AMI, 1,500 units for 51-80% AMI, and 2,383 for 81-120% AMI. Given these targets, how can land use, incentive zoning and mitigating factors get us there?

The DEIS is woefully inadequate in addressing the following factors:

1. There is no financial analysis or modeling of how many units of low-income housing would be generated through incentive zoning through alternatives 1-3. The DEIS merely states that alternative 1 would result in more units than alternatives 2 and 3. But do we know if the number of affordable units generated from alternative 1 are significantly more than the other alternatives-- to warrant the increase in zoning? There is also a puzzling blanket statement (Section 3.9-8) that reads: "Incentive zoning provisions under any of the action alternatives can ensure that the City has adequate capacity to meet current and future targets for the neighborhood." Does this mean that any of the selected choices can be designed to result in the target goals? Where is the financial analysis for what developers would be willing to pay for Housing Bonus or TDR in exchange for increased height and density?

1

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2. There is no assessment of the number of developable properties/parcels for low-income housing that would become prohibitive in cost due to the up-zoning proposed in alternatives 1 through 3. The sites that nonprofit organizations seek out are smaller 40-80 unit sites for five-stories, stick-built over a concrete podium. Nonprofit developers have been successful thus far in finding and purchasing sites in SLU under the existing zoning. If we cannot find or afford significantly more expensive sites under alternatives 1-3, how can the Comp Plan goals be achieved? If we cannot afford sites even with subsidies using Housing Bonus funds, this could mean that affordable housing would have to be built in other neighborhoods and not in SLU.

2

3. The Transfer of Development (TDR) option listed under Mitigation Strategies, should be expanded to preserve all existing low-income housing, not just older (red brick) residential buildings as currently written (see Section 3.9 -14). Even newer subsidized buildings such as Denny Park Apartments and Lakeview Apartments will need rehab and upgrades in 20-30 years and being able to sell TDRs would ensure their long-term preservation. Allowing a nonprofit to sell TDRs from one building and use the funds for another affordable property would also make the program more attractive. Giving nonprofit owners and developers more flexibility can help us preserve and develop more affordable housing in SLU and other neighborhoods.

3

4. The increase in allowable zoning and height in the Cascade neighborhood to 85/160 under alternative 1 could result in the demolition and sale of older unsubsidized buildings like Carolina Court. This would result in the loss of 72 units at Carolina Court, 25 units at Grandview, and there are other examples as well. There is no financial analysis contained in the DEIS surrounding this problem.

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5. There is no presentation of an alternative 4 or a new alternative 5 that simply rezones commercial zones that prohibit residential development to allow it under Seattle Mixed or SM.

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6. The DEIS needs to include other strategies to achieving affordable housing targets in SLU. Section 3.9 -14 should include the following:

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SLU Acquisition Fund – The city needs to assist nonprofits with acquiring sites at current lower prices for future development as mitigation for increasing height and density. Create a \$50 million revolving fund for acquisition of existing privately owned unsubsidized buildings and land in SLU. The city could work with Impact Capital or Enterprise to set up and leverage other resources for a SLU Acquisition Fund. Some of the goals of creating housing for low-wage SLU workers and family housing can be promoted in the Fund.

Growth Fund - The City Council and Mayor should re-establish the Growth Related Housing Fund where 20% of new construction tax revenue that flows to the city each year from downtown is committed to low-income housing in Downtown, SLU and close-in neighborhoods. Mayor Nickels eliminated the Growth Fund when he first took office. It was a very effective program that linked new commercial development with affordable housing. The Growth Fund can include new construction revenue from downtown as well as SLU.

Tax Increment Financing - Promote passage of state legislation and use of TIF for affordable housing preservation and development in SLU. Set targets so that at least

80% of the funds are allocated to meet low-income housing goals of 30, 50 and 80% AMI affordability.

| 6 cont

In summary, LIHI would be in favor of increasing height and density in SLU provided benefits of the housing bonus and TDR program and other mitigation would result in significantly more low income housing resources.

| 7

Thank you for the opportunity to comment on the DEIS. I can be reached at Sharonl@LIHI.org or (206) 443-9935, ext. 111.

Sincerely,



Sharon H. Lee
Executive Director

cc: Jim Holmes, DPD
Marshall Foster, DPD

Holmes, Jim

From: Jerry Dinndorf [Jdinndorf@agcwa.com]
Sent: Monday, April 11, 2011 1:51 PM
To: DPD_Planning_Division
Cc: Holmes, Jim; Harrell, Bruce; Godden, Jean; O'Brien, Mike; Licata, Nick; Conlin, Richard; Bagshaw, Sally; Clark, Sally; Burgess, Tim; Rasmussen, Tom; Raup, Ethan; Sugimura, Diane
Subject: SLUCC SLU Height and Density DEIS Comments
Attachments: DEIS LtrFinal DOC041111 (3).pdf; SLUCC DEIS Ltr Attachment Edited Final 040811.pdf

Seattle Department of Planning and Development
Attn: James Holmes

Attached are the comments of the Southlake Union Community Council on the Height and Density Draft Environmental Impact Statement. Our comments include a cover letter with overarching comments on the rezone process and an attachment with detailed comments on the environmental impacts and mitigation measures. The comments represent the diverse interests of our neighborhood on the DEIS.

We look forward to the development of a final height and density alternative for Southlake Union and timely action by the Council on adopting new zoning for Southlake Union. The opportunities to achieve desired community benefits that can result with increased height and density will be lost if the rezone process languishes and development continues under the current zoning designations.

Thank you in advance for considering our comments. The Southlake Union Community Council is committed to achieving a vibrant and sustainable urban center here in Southlake Union.



Jerry Dinndorf
President, South Lake Union Community Council



April 6, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Jerry Dinndorf,
President
AGC Seattle

Dawn Oliver,
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Morningside Academy

Michael Blumson,
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Lorie Groth,
Secretary
Resident

Lloyd Douglas
Cascade Neighborhood
Council

Matthew Edwards
Equity Office

Dan Foltz
Weber Thompson
Architects

Molly and Joshua Franklin
Residents

Mike Kenney
Resident and Small
Business Owner

Pearl Leung
Vulcan Inc.

Mike McQuaid
Virginia V Foundation

Steven Paget
OAC Services

John Savo
NBBJ Architects

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes,

As the City's designated steward of the Neighborhood Plan, it is the responsibility of the South Lake Union Community Council (SLUCC) to represent the diverse interests of our neighborhood on issues of public policy and development that have a direct impact on South Lake Union. We, therefore, feel compelled to offer direction and comments about the DEIS.

SLUCC has gone to great lengths, in a collaborative approach, to develop its DEIS comments based upon the community-adopted neighborhood plan. Principally, we seek to insure a walkable, sustainable neighborhood that balances housing and job growth and supports a diversity of businesses, organizations and families.

Presented below are our overarching comments on the DEIS as it relates to the overall South Lake Union rezone process. The attached matrix presents in greater detail the cumulative comments and lists all our comments on environmental impacts and mitigation measures.

OVERARCHING COMMENTS

- The Urban Design Framework (UDF) needs to take a primary role in the rezone process
Clear and effective mitigation is essential for all the proposed alternatives
Significant Growth in South Lake Union argues for proportionate allocation of funding

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2
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- ***In order for the EIS to provide adequate guidance to determine the Preferred Alternative, additional analysis must be conducted***

Further analysis would be required to address the flight path changes and the need to reflect all the transportation projects not represented in the current analysis. Please see the matrix for specific recommendations.

- ***Economic impacts need to be addressed in the EIS***

The EIS does not address the economic impacts of the Height and Density Alternatives. South Lake Union is slated to support 16,000 new jobs by 2024 which may well be exceeded. The relationship between this target and the capacity of work places to absorb this growth should be evaluated relative to the different densities and heights represented by each alternative. The benefits of an increased tax base in terms of the City's ability to provide police, fire transportation, community improvements, schools, etc should be presented in the EIS.

The SLUCC asks that you consider these overarching comments as highlights of the more detailed comments outlined in the matrix provided. They represent critical areas of concern and requests for specific action. The SLUCC has been an integral part of developing the alternatives and scoping the EIS since its inception. We thank you for your attention and look forward to continuing to work with the City on finalizing the EIS and working towards the preferred alternative.

We stay hopeful and committed to achieving a vibrant urban center that is not only a great place to live and work, but also a proud example of a sustainable urban community.

Sincerely,

Jerry Dinndorf
President, South Lake Union Community Council (SLUCC)

Attachment: SLUCC Comprehensive Comments – April 2011

- cc: Councilmember Tim Burgess
Councilmember Sally Bagshaw
Councilmember Sally Clark
Councilmember Richard Conlin
Councilmember Jean Godden
Councilmember Bruce Harrell
Councilmember Nick Licata
Councilmember Mike O'Brien
Councilmember Tom Rasmussen

- Ethan Raup, Office of the Mayor
Diane Sugimura, Office of Planning and Development

Jerry Dinndorf,
President
AGC Seattle

Dawn Oliver,
Vice President
Morningside Academy

Michael Blumson,
Treasurer
Plymouth Housing

Lorie Groth,
Secretary
Resident

Lloyd Douglas
Cascade Neighborhood
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Molly and Joshua Franklin
Residents

Mike Kenney
Resident and Small
Business Owner

Pearl Leung
Vulcan Inc.

Mike McQuaid
Virginia V Foundation

Steven Paget
OAC Services

John Savo
NBBJ Architects

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South Lake Union Community Council Comprehensive Comments on the **Draft Environmental Impact Statement for the South Lake Union Height and Density Alternatives - April 2011**

Affected Environment, Significant Impacts, Mitigation Measures and Unavoidable Adverse Impacts

(Major Issues identified by the SLUCC are shown in green)

Section	Title	Comments
3.1	Geology and Soils	
3.2	Air Quality	
3.3	Water Quality	
3.4	Plants and Animals	<p>Even with the inadequate one day shadow studies there are large impacts to the newly restored natural habitat areas in Lake Union Park. Located in the southwest portion of the Lake, the natural shoreline is intended to aid in the restoration of fish and fowl populations in the Lake and to those transiting the area.</p> <p>The one day figures do not measure the length and duration of the shadows over the lake and shoreline so there is no way to see if there is any degradation or mitigation(s) needed.</p> <p>Further study is needed, especially in the Dexter and Fairview areas, of the impact of shadows on plant life and its supporting role in restoring water quality for wild life and people.</p>
3.5	Environmental Health	
3.6	Noise	

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3.7	Energy (Greenhouse Gas Emissions)	<p>3.7.2: Since the estimates for total jobs, households, office and retail square footage are respectively the same for Alternatives 1, 2, and 3, it is hard to understand how there could be any differences between these alternatives for GHC house gas emissions. (It is noted that there are small variations in VMT generated by each of these alternatives which could result in the differences but VMT generation is dependent upon the same variables.) But the slight variations shown in Table 3.7-7 don't appear to be significant. Presumably the City can document as to how it arrived at these differences but unless they are significant, the EIS should simply note for the reader that GHC emission between alternatives 1,2and 3 are insignificant.</p> <p>3.7.3 Mitigation Strategies: Transportation Mitigation Measures: Noticeably absent from this section is the listing of transportation mitigation measures. Over the life of a building, Transportation is the single largest contributor to GHC emissions. These measures, if implemented, would reduce GHC emissions substantially. Transportation mitigation measures are listed in the transportation section and simply could be referenced here to show that significant reductions could be achieved through increased transit, TDM and walking or biking. Building Design: As stated under the Methodologies Section it should be noted here as well that "Green Building Design", i.e. Built Green, Energy Star ratings or LEED ratings, could reduce overall energy usage by at least 20 percent. It may also be appropriate to note the LEED ND designation for SLU as a mitigation strategy for both GHC and Transportation.</p>	8
3.8	Land Use	<p><u>Major Issue</u> - Much of what can happen in South Lake Union has already been determined by existing development or projects in the pipeline. The EIS needs to make a realistic assessment of what can be done with the parcels of land available for development. The likelihood of a block being redeveloped should be determined (development potential map underlay) and the impacts of those redeveloped blocks evaluated for each of the alternatives using 3-d modeling approaches</p> <p>Alternatives should be assessed as to how they support or detracts from developing a truly sustainable urban neighborhood. Each of the Alternatives should be analyzed against sustainability factors such as those contained in the South Lake Union LEED Neighborhood Development Pilot Project. For example, identify which alternatives emit fewer greenhouse gas emissions, etc.</p> <p>The Wind Analysis Mitigation Strategy recommends that, "The area of the tallest height limit should be located near the outer perimeter of the South Lake Union Neighborhood most distant from Lake Union," and to "Reduce overall building massing and height progressively, approaching the lake." If the buffers discussed above in "Overarching Comments" become prescribed requirements, this would substantively change the building heights and densities imagined in all three alternatives, but particularly Alternatives 1 and 2. (These Alternatives had focused height along corridors aligned with major boulevards.) Stepping down building height approaching the lake implies that the tallest buildings belong closer to Denny Street and the southern halves of our north-south boulevards on the east and west, Aurora and Eastlake Avenues. About a third of the area bordered by these three streets is within the Cascade Neighborhood, which has not been targeted for increased height in Alternatives 2, 3 and 4. Height prohibitions near the water would seem to encourage height increases along the full east-west dimension of the South Lake Union Neighborhood, including the Cascade Neighborhood. While some increased height may be appropriate in Cascade, particular attention will need to be paid to preserving access to sunlight for the Cascade Park and Playground.</p>	9 10 11

Land Use (continued)	<p>Lake Union Flight Operations. The latter third of the Land Use Chapter, 3.8 is dedicated to this subject.</p> <p>The EIS reports that “This flight path represents a refinement by WASHDOT of earlier flight path information that was available.” It is very regrettable that this information was not known before the EIS options were created, let alone very late before publishing the document.</p> <p>The flight path envelope now looks much wider than previously shown, but I am told that it is not – that said there are several additional factors that could intensify its newly represented volume:</p> <ul style="list-style-type: none"> ▪ A vertical [safety] buffer will likely get added, lowering heights, which has not yet been quantified. ▪ A wind shear buffer will likely get added, presumably widening the flight path diagram further, which has not yet been quantified. ▪ A turbulence buffer will likely get added, presumably widening the flight path diagram further, which has not yet been quantified. ▪ The 25’ height increments in the flight path diagram are based on the lake, so as the envelop rises, so does the ground. ▪ Zoning heights typically have a 10% (or so) additional height allowance for rooftop mechanical, etc. The [final] flight envelope and its buffers will be absolute, so subtractions from potential tower heights will need to be made for roof top appurtenances. <p>What does the Flight path envelope and its buffers mean, moving forward?</p> <p>If the west side of the neighborhood is challenged to support appropriate density due to the final flight path envelope and if the Cascade neighborhood doesn’t want density, is it possible that the alternatives might need to be modified?</p> <p>We ask that this section be brought back for public comment if the changes to the buffer areas become substantially different from what's presented in the EIS.</p> <p>Transfer of Development Rights (TDR) Incentives should include the possibility for TDR transfers from sites that do not currently utilize their full development capacity but feature older, character defining buildings. Smaller and older structures add diversity in appearance and use within our neighborhood, and the incentive program needs to create opportunities for their preservation, independent of whether they achieve landmark status.</p>
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3.9	Housing	<p>Major Issue - The EIS simply states that all alternatives meet the city's growth targets. It does not assess the amount of affordable and market rate housing that could result from each of the Alternatives. Incentive zoning is one of the few tools at the city's disposal to make sure that affordable housing is developed within South Lake Union and not pushed to the peripheries of the city. Similarly, the funds generated could also go to developing other needed community facilities such as a community center. The draft EIS needs to provide guidance about which alternative would best serve these needs.</p> <p>3.9.1: Overall, the review team believes that there needs to be a comprehensive housing inventory done for the neighborhood. The last time that was done by Office of Housing was back in 2004. The inventory shown in the DEIS is not complete and is missing several buildings such as Alterra Condominiums, the ArtStable in Cascade, the Pontius apartments, and the Harrison apartments. In addition, in Table 3.9-1, it neglected to reflect 50 income restricted units in the Borealis.</p> <p>Housing Affordability - If a complete inventory of housing is done in SLU, it should reflect not only the income-restricted affordable units in the neighborhood, but should also show the affordability of the housing stock itself. There are several mid-sized unrestricted apartment buildings such as the Union Bay Apartments or Carolina Court that are older and considered affordable based on King County median income guidelines. That would give a much more accurate picture of the baseline of affordable housing in SLU and where exactly are the gaps of affordability in the housing continuum. Focus Areas - Why were Cascade and the northwestern pan handle of SLU excluded in the focus area where there are existing concentrations of housing?</p> <p>3.9.2: Housing Affordability - The Comprehensive Plan Housing Policy spells out citywide affordable housing goals as 20% of expected housing growth earning up to 50% of AMI; 17% of expected housing growth earning from 51-80% of AMI; and 27% of expected housing growth earning 81-120% of AMI. Those are great and much vetted citywide goals that would ensure our city is affordable to all who work in Seattle. However, we'd like to know how housing affordability is distributed throughout the city. How do other neighborhoods compare in achieving those affordability goals? Or is much of that responsibility put on SLU and other neighborhoods like Rainier Valley?</p> <p>Issue of potentially displacing existing wood frame buildings and older single family residences - The review team thought that if we did a complete inventory of existing SLU housing, we would have a better understanding of the stock and current use of older single family houses and wood frame buildings in the neighborhood. That information would help the community identify the level of protection these buildings should have. For instance, we know of at least one such single family structure in the neighborhood that has not been used for housing for years and been an office instead. There was discussion about obtaining the number of affordable units that these buildings provide and comparing that with the number of affordable units a new development could bring through incentive zoning on the same sites. We also question the quality of affordable housing that these existing buildings provide, particularly 30+ years out when full build-out is expected. Also, the impact of those types of buildings should be the same under Alternative 4. The likelihood of displacement in the long run for those buildings would be the same if zoning does not change.</p> <p>3.9.3: If a comprehensive housing inventory is conducted, it should identify existing affordable housing (both income restricted and unrestricted) that could qualify for TDR. This would be in addition to only the red-brick buildings that were mentioned on page 3.9-14. Under the "Employers Promoting Living Near Work" mitigation strategy, it should make clear mention of promoting living near work for employees of all wages and levels. What about other strategies to preserve unrestricted affordable housing stock such as making it easier (via building codes) to renovate existing housing stock?</p>
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3.10	Aesthetics	<p>Major Issue - The EIS presented numerous graphic representations of the various proposed heights but did nothing with regards to analyzing bulk, scale (of podiums as well as towers) and associated mitigations. An actual height, bulk, scale study, with options would help to convey an understanding of what is being proposed and it should help to advance and elevate the dialogue of the community.</p> <p>There is no meaningful reference to, or study of, tower spacing in the EIS document. While the restriction of minimum lot size may limit the number of towers per block, it does not preclude the construction of tall towers on either side of an alley with only 20 feet of separation. Additional analysis of how to preclude this unwanted circumstance needs to be provided in the EIS.</p> <p>General Comments</p> <p>EIS Lite: The text is often obvious, obligatory information for the general public and frequently redundant between the alternatives as well as restating fundamentals from other chapters and the overall EIS document. For being a technical document, this seemed to fall short. Of the 92-page Aesthetics document 3.10, once you back out 55 pages of comparative computer modeling and a fair amount of text generalities, redundancies, definitions and quoting policies, there is little substance, and we were underwhelmed. We understand that the computer models have and serve a purpose, although they are cartoonish, virtually scale-less and unrealistic, with little to no analysis. Appendix D provided more, compulsory computer images which were OK, but again were similarly cartoon-like, with only floor lines to give any sense of scale. Perhaps more of the computer comparisons could have gone to Appendix D to make room for other important Aesthetic topics (see below).</p> <p>What happened to the UDF? The UDF has been hailed as a bridge between the largely-aspirational Neighborhood Plan and the EIS. It has also been widely referenced as an important building block for the EIS. While by nature they are entirely different documents, there are many important things that were brought forward through the UDF that are aesthetic-related which are vacant from the EIS which seems unfortunate. The EIS references the UDF in a few places, but typically in passing</p> <p>Height yes, but what about Bulk or Scale? The EIS presented numerous graphic representations of the various proposed heights but did nothing with regards to analyzing bulk, scale (of podiums as well as towers) and associated mitigations. The UDF worked extensively on dozens of various tower heights, podium heights, proportions, floor plate sizes, FAR's, etc. The EIS simply accepted the proposed parameters. Meaningful architectural studies of tower and podium height, bulk, scale, proportions, etc., gave way to partial views of towers in photo-montages or as dozens of tiny towers in birdseye views from far away. There seems to be nothing that shows what a building with a specific FAR and a certain height actually look like proportionately. An actual height, bulk, scale study should help to convey an understanding of what we are looking at and it should help to advance and elevate the dialogue of the community. Even some photographs of existing buildings that are examples of what is being proposed (for floor plate sizes, tower and podium heights, FAR, etc. would be helpful.</p> <p>Other Important Aesthetic Topics: The review team certainly understands that an EIS Aesthetic sub-chapter is compelled to study the four classic areas of EIS review: Height/ Bulk/ Scale, Views, Shadows and Light and Glare. We believe that there are several other areas of analysis and review that can equally affect aesthetics and could or should have been included in the document. The UDF dealt with some of these as well and some of that thinking could have been carried forward.</p>	18
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Aesthetics (continued)

- Open spaces. Throughout much of the UDF process, the importance of open spaces was discussed. Critical to Aesthetics as well as other things, open spaces are critical. There were many thoughts in the UDF about incentivizing or even requiring some form of open space(s) for projects pursuing towers. Many of the computer simulations would look extremely different and better had there been open spaces in them. (Note: We read the Open Space sub-chapter and found nothing specific relating to open spaces provided by projects/ development. That document dealt more with parks and other public open spaces.)
- “Bread Loaves versus towers.” For years, Seattle has been wrestling with these idioms. Through the UDF, these were debated. For the review team, “bread loaves” or mid-rise buildings are synonymous with little relief as they are assumed to be for the most part built out to their property lines to maximize their square feet. Conversely, “towers” have been synonymous with not only verticality but also with creating open spaces in exchange for being able to go higher than the underlying zoning.
- For the review team, the EIS did a poor job of differentiating between the mid-rise buildings and the towers, which is a fundamental issue. Without the distinctions that there are differences at podiums of towers (or towers without podiums) and the mid-rise buildings themselves, the EIS made us feel like we were to be looking at a comparison of mid-rise buildings and mid-rise buildings with towers on top of them, which is a fundamental problem.
- Other tower incentives. In addition to Open spaces, the UDF contemplated other controls and incentives to tower projects which a developer would have to commit to providing in order to go up, which most, if not all would provide opportunities for enhanced aesthetics. Those physical ‘incentive zoning’ provisions should have been included in the list of potential mitigations.
- Podiums. Podiums are very important to aesthetics. There is concern about the lack of attention in the document towards aesthetics at building bases. Many of us put high importance on aesthetics at the street level and the bases of buildings in general. Podiums get a few scant references in the text, but aren’t looked at comparatively and they don’t get much if any attention in the 3-D models. It is mentioned that podiums aren’t required, but there are no graphics that study that premise, Podium heights, their treatments, what is allowed in them (example: above-grade parking), and other considerations are very important. Are there provisions for limiting podium sizes? Example: If a developer needs at least four parcels/ lots (or typically 240’ by 108’ or 120’) in order to satisfy the 22,000 SF lot size requirement for towers, won’t they want to have an above-grade parking garage that is 240’ long, above the ground floor? Is that what we want?
- Tower Spacing? There is no reference to, or study of, tower spacing in the document. We understand that the City may be presently avoiding it. Having a minimum of 4 parcels, mentioned above, may limit towers to a maximum of two per block, but it does nothing to control which four contiguous lots and what if the neighbor across the alley wants to develop the same four lots directly across the alley, and what if they are both mid-block sites? It appears that we are all left to hope that towers always get developed on opposite ends of the block from each other. Why is this issue not addressed in the EIS?

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	Aesthetics (continued)	<p>- Re-orienting blocks. In the UDF, there was great support early on for having the ability to rotate block orientation, allowing buildings to orient east-west axially instead of north-south, improving solar angles, increasing space between towers and having other positive benefits (like greater porosity towards the Space Needle and the Sound). Why is this issue not addressed in the EIS aesthetics section or is that no longer being considered?</p> <p>3.10.1: There are three “<i>Focus Areas</i>” listed – 8th Avenue North Corridor, Fairview Avenue Corridor and Valley/ Mercer Blocks. <i>Focus Areas</i> are defined as being “subareas in the South Lake Union neighborhood that are considered in greater detail, where applicable.” There is no explanation of why there are Focus Areas, why there are only three, or why these three. While the three chosen are deserving, the review team feel that their inclusion in the EIS should be explained and made relevant and there should be consideration of other <i>Focus Areas</i>. The UDF identified several such potential areas of focus. To name a few that came to the minds of the review team:</p> <ul style="list-style-type: none"> ▪ Seattle Times Blocks ▪ Denny Park area ▪ Cascade Park area ▪ Westlake corridor ▪ Broad Street corridor (radical change there) ▪ John Street Hill Climb block ▪ John, Thomas and Harrison corridors, specifically pertaining to the “re-stitching” zone of South Lake Union and Uptown. <p>3.10.2: There are several assumptions listed. The review team had a few comments</p> <ul style="list-style-type: none"> ▪ “<i>All undeveloped and under-developed sites will redevelop in the future.</i>” The review team questions the relevance of this statement absent any consideration of the actual, likely amount of time in which this will happen. The planning parameters for this EIS seem to us to be shorter than the many decades it would take to develop all remaining sites in South Lake Union. ▪ “<i>Property owners with sites larger than 22,000 SF will use available zoning incentives to build the maximum gross building area allowable, while sites with less than 22,000 SF will develop consistent with underlying zoning.</i>” Is this equitable and fair to the “little guy?” For example, in a commercial situation, a property owner who has a site less than 22,000 SF would never be able to develop to an FAR of 7. Meaning that the de-facto zoning for two adjacent properties, one greater than 22,000 SF and one less, are radically different. ▪ “<i>On-site structured parking will be provided half above grade and half below grade.</i>” The review team does not understand why this is, or even should be an assumption. We further-more think that this assumption is flawed. Per the UDF process, there was a lot of conversation about parking, treatment of above grade parking, encouraging or even incentivizing below-grade parking, with possible exemptions for high water table, etc. The simple assumption above seems to ignore the UDF.
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Aesthetics (continued)	<p>Figure 3.10-2 – 3.10-9: These first show on page 3.10-9, but continue throughout the document. The review team questions the relevance of views that are never seen by anyone not in a seaplane.</p> <p>Alternative 1 Page 3.10-19: <i>“Of the development alternatives, full development under Alternative 1 could have the greatest impact on aesthetics in that this alternative would permit the greatest building heights and could result in the greatest increase in development density.”</i> Members of the review team feel that “greatest impact” (on aesthetics) can be good or bad and should be less vague and more completely addressed. Lorie views greater height and dense spacing of towers as having a negative impact on aesthetics due to shadowing, etc. Dan believes that taller buildings should provide open space and/ or other amenities to get their height, making for example, pocket parks that would not otherwise be provided. This was discussed at length through the UDF process, but seems to be lost in this EIS. Dan also generally believes that high rises typically have budgets that provide for better quality architecture, better massing proportions, etc. Lorie is concerned that the realities of economic pressures may lead to a future of aesthetically-challenged buildings blocking views of iconic landmarks (e.g. the Space Needle) unless addressed.</p> <p>Transitions Page 3.10-20: Places of transition with neighboring low and mid-rise neighborhoods, such as Uptown, are referenced in the bottom two paragraphs of this page. The review team feels that this is a very important and relevant concern, particularly in Alternatives 1 and 2 which are tall on the western edge of SLU. Due to the possible discrepancy in zoning between the South Lake Union and the Uptown neighborhoods due to a re-zone, we agree with the EIS statement that <i>“it may be appropriate to address this potential issue by addressing the zoning of the Uptown Triangle and South Lake Union neighborhoods together rather than independently.”</i></p> <p>Significant Unavoidable Adverse Impacts Pages 3.10-39, 80, 88 & 92: When considering the magnitude and differing amounts of potential growth of South Lake Union between the Alternatives, the review team was genuinely surprised that all four areas of EIS review (Height/ Bulk/ Scale, Views, Shadows and Light and Glare) were summed up with the statement <i>“No significant unavoidable adverse impacts to [all categories] are anticipated.”</i> We need to better understand how a Determination of No Significance is made in each case.</p>	<p>25</p> <p>26</p> <p>27</p> <p>28</p>
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3.11 Historic Resources

3.11.1 Affected Environment

Existing Conditions, "Development of Seattle's South Lake Union Area":

We recommend shorting the section and simply citing additional more detailed accounts of neighborhood history.

Detail the strong connection between historic preservation and affordable housing in South Lake Union, perhaps mentioning specific properties in both lists (see EIS chapter 3.9 Housing). City zoning prohibited new residential uses from roughly the 1920s to 1990s, a period during which a wide range of housing was built in adjacent neighborhoods like Capitol Hill, Uptown/Lower Queen Anne, and Eastlake.

"Construction of I-5 further defined the identity ... [and] made the South Lake Union area increasingly attractive" (page 6) is not accurate. Nyberg and Steinbruck describe the freeway construction as "irreparable damage" and other retrospectives characterize that as a period of decline for the neighborhood leading to surface parking lots instead of active uses.

Instead of focusing on types of businesses present at various time periods, draw a connection to the potential landmarks from those times. For example, employees of early industries may have worshiped at the wood-frame Immanuel Lutheran Church and lived in the brick apartment houses. Postwar decline led to relatively inexpensive land, allowing architectural variety such as the J. Lister Holmes/Holly Press Mid-Century Modern building.

We suggest changing "Development ... 2000-2010 has consisted mainly of five- and six-story buildings as well as apartment buildings and condominiums of up to six and seven stories on consolidated, full- and half-block parcels" to something like "has consisted of a variety of building sizes and types, including many residential buildings." There has been great variety in heights and parcel sizes; Mirabella which is pictured on that page is 125 ft (12 stories), as are several Amazon buildings; Alcyone is 8 stories, and many developments like Veer (condos), Bart Harvey, Art Stable, and SCCA House, are all on smaller parcels.

Mention successful recent preservation, for example the New Richmond Laundry building at Alley24, transfer of development rights (TDR) program between the Brewster Apartments and 2200 Westlake, and the Naval Reserve Armory as MOHAI at Lake Union Park.

201 Boren (parcel 1986200370) has been demolished, and 223 Pontius Ave N (parcel 2467400455) will be soon (site has a MUP).

3.11.2 Environmental Impacts

This section does not appear to capture the complex interplay between development incentives and historic preservation, instead simply stating that the greatest development opportunity leads to the greatest pressure on existing structures. However, because the close-in location of South Lake Union is much more valuable today than when smaller-scale historic buildings were constructed, many are already

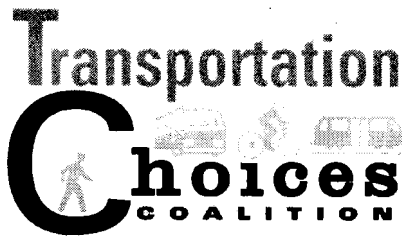
29

30

	Historic Resources (continued)	<p>highly likely to be redeveloped at current zoning levels. Various incentive zoning and transfer of development rights programs provide an important opportunity for preservation, meaning that Alternative 4 (No Action) may be the least attractive.</p> <p><u>3.11.3 Mitigation Strategies</u></p> <p>We agree with the need for a wide range of mitigations, including an updated survey and landmark nominations, including buildings that have only recently become eligible (25 years for City of Seattle).</p> <p>We would also like to see a survey of additional mitigation options that have been successfully employed elsewhere.</p> <p>Since the city transfer of development rights (TDR) program saw some success before it expired, it should be renewed without the need for feasibility analysis.</p> <p>There is also opportunity for preservation partnerships with local non-profit housing organizations such as LIHI and Capitol Hill Housing, architectural advocacy organizations such as Docomomo WEWA and Historic Seattle, and other non-profits like MOHAI.</p> <p>Lastly, even when full preservation is not possible we would like to see preservation of historic elements into new projects. For example, some of the remaining Northern Pacific Railroad tracks in Terry Ave N and Valley St could be incorporated into future development.</p>	30 cont 31
3.12	Cultural Resources	<p>CULTURAL RESOURCES: Section does not relate to current cultural resources. It could have had an inventory of current social/cultural resources in the district and failed to do so. It failed to stress the low income and family resources such as the Cascade Peoples Center and Lutheran Community Services. Potential impacts to these cultural resources should be studied under each alternative.</p>	32
3.13	Transportation	<p><u>Major Issue -</u> The recently completed South Lake Union Mobility Plan should be incorporated into the EIS as a mitigation strategy. This community sponsored plan makes a number of modal recommendations that will significantly reduce the transportation impacts of the Height and Density alternatives.</p> <p>The Corridor LOS Analysis indicates that Republican Street has not been identified as a study corridor because Thomas and Harrison streets are similar based on existing traffic patterns and any development-related impacts are expected to be similar on all three streets. In fact, Republican Street has been identified as the main exit into South Lake Union from the northbound Deep Bore Tunnel, and therefore should be studied as a corridor with its anticipated increased traffic.</p> <p>The Mercer West project is not assumed for purposes of analyzing transportation impacts. This substantially if not fully funded but not yet built project includes the widening of the underpass under Aurora with 3 lanes for each direction of traffic and a grade-separated bike and pedestrian path. This widened underpass is critical to the proper functioning of all of the Mercer Street improvements, as well as the functioning of the access/egress to the tunnel North Portal. It therefore needs to be included in the mitigation evaluations.</p> <p>The amount and type of Housing generated within South Lake Union by each of the alternatives and its corresponding ability to limit trip making into and out of the area should be considered as a traffic mitigation strategy.</p>	33

	Transportation (continued)	<p><u>General Comments</u></p> <p>The overall findings of the EIS Transportation section seem to indicate that traffic will inevitably worsen in South Lake Union regardless of which alternative is chosen. Can we really know this unless we study the No Action Alternative with mitigation that we know will happen? And are the projected traffic volumes accurate counts?</p> <p>We need more information and the confidence that the information provided is accurate to most successfully assess the transportation section.</p> <p>3.13. Tables ES2 and ES3 (pgs. 2 & 4): The purpose of these tables is to show the difference in traffic volume for each of the four alternatives with implemented mitigation strategies. For the No Action Alternative, no mitigation strategies are assumed. This data seems incorrect because many of the mitigation strategies will happen, as they are part of planned traffic projects in South Lake Union. We would like to see the assumed traffic volume from the No Action Alternative with these mitigation strategies applied.</p> <p>Mitigation Measures identified (pg. 2): The EIS document states: ‘Potential mitigation measures to provide this system include the implementation of bicycle and pedestrian improvements identified in plans and documents such as the Seattle Pedestrian Master Plan, Bicycle Master Plan, and South Lake Union Urban Design Guidelines.</p> <p>3.13 .1 Affected Environment - Multi-Use Paths (pg.8): Two multi-use paths are identified as being viable transportation options for cycling to and through South Lake Union: Cheshiahud Lake Loop and the Lake to Bay Loop. Neither of these multi-use trails is actually a ‘trail,’ but a combination of sidewalk, street and multi-use path. Because of this, these loops function only as recreational bicycle paths and not effective transportation cycling options.</p> <p>Traffic Safety (pg. 33): High accident locations are identified for future safety improvements, and intersections are graded from safe to dangerous based on how many accidents occur at each intersection. Is there a way to evaluate safety based on near misses? There are several intersections of great concern that have NOT been identified for safety improvements (9th & Denny, Westlake & Valley, Westlake & Thomas, for example). Let’s improve the safety before people are seriously injured or killed.</p> <p>This section also addresses changes in bus routes expected by 2031. While new/changed bus routes to service SLU would be great, we question the assumption that this will happen, when changes to infrastructure that are already planned are NOT assumed in the mitigation evaluations (3-way Mercer underpass for example).</p> <p>2031 South Lake Union Land Uses (pg. 52): Total Lane Use Figure shows the existing conditions and expected conditions in 2031 given the three zoning alternatives. Where did the projections on expected jobs and residences come from? Is full build-out assumed for each alternative? Sources should be listed.</p> <p>It is noted in the chart description that Alternative 3 has slightly fewer jobs and a “residential focus.” Having fewer jobs is not the same as having a residential focus, which instead would imply more households.</p> <p>3.13 .3 Environmental Impact – Deficiencies of the No Action Alternative - Parking (pg. 64, Table -12): This table shows estimated additional off-street parking. Where did these numbers come from? Are these assumptions in line with current market-provided parking in South Lake Union? Are developers currently providing 1 parking space per dwelling unit, for example?</p> <p>3.13 .6 Mitigation Strategies (pg. 77): The mitigation for South Lake Union focuses on methods to decrease the number of vehicle trips and maximize the number of bicycle, pedestrian and transit trips in order to impact mode splits. The EIS states: “From both a policy and feasibility</p>	<p>34</p> <p>35</p> <p>36</p> <p>37</p> <p>38</p> <p>39</p> <p>40</p>
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	Transportation (continued)	<p>perspective, increasing roadway capacity is undesirable and cost-prohibitive.” Given that shifting modes is the only available mitigation for SLU, we believe education and community outreach programs should be part of the mitigation efforts. Just because it becomes more difficult to drive does not mean that people will automatically convert to other modes of transportation.</p> <p>Errors in EIS</p> <p>Pg. 20: Figure 3.13-7 is titled “Off-Street Parking Supply and Occupancy,” and it should be titled “On-Street Parking Supply and Occupancy.”</p> <p>Pgs. 29, 57 and Figures 4, 9, 13 and 17: Valley Street is mislabeled as Yale Avenue North as part of the Fairview Ave N. study corridor.</p> <p>Figure 14 indicates Roy Street is a through-street allowing access across Aurora Avenue for cars, cyclists and pedestrians. This information is incorrect and this graphic is misleading.</p>	40 cont 41
3.14	Public Services	The only Public Services considered were Police and Fire, and the consideration of police and fire was inadequate. The section failed to actually look at the response times under each alternative.	42
3.15	Utilities		
3.16	Open Space and Recreation		



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Seattle, WA 98124-4019

Submitted via: southlakeunioneis@seattle.gov

Matt Ferguson

Secretary

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes;

Dave Asher

Mike Cooper

Steve Crane

Dan Evans

Mike Harbour

Dave Janis

Sandeep Kaushik

Brian Painley

Dave Ross

Christian Sinderman

Thank you for the opportunity to comment on the South Lake Union DEIS. Transportation Choices Coalition is a statewide nonprofit organization working for more transportation choices for all Washingtonians. We believe that providing diverse transportation choices in our cities is a critical strategy to accomplish many social and environmental goals, including supporting greater physical health associated with more active lifestyles, connecting residents to jobs and destinations, reducing transportation related greenhouse gas emissions, and lowering household expenses associated with vehicle ownership and use.

Thank you to the Department of Planning and Development for the years of time and resources that have been put into planning for the future of the South Lake Union neighborhood. South Lake Union is projected to accommodate over 20% of the City's housing and job growth in the next twenty years. With its growing employment center, proximity to downtown Seattle, and connectivity to other urban centers including the University District, South Lake Union represents one of the best opportunities in the central Puget Sound region to accommodate growth with social and environmental *benefit*, rather than *impact*. In particular, the neighborhood's great potential for walkability and transit use—measured by its relatively tight street grid, mix of amenities and neighborhood destinations, good jobs-housing balance where people can live close to their jobs, frequent streetcar and bus service, and proximity to the Westlake Transit hub—make it a place in which people can live and work without relying on a personal vehicle.

Allowing more zoning capacity and flexibility and strengthening neighborhood transportation choices will ensure that this growth leads to a high quality of life for residents, as well as environmental and social benefits for the entire region.

STAFF

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Executive Director

Andrew Austin

Field Director

Carrie Dolwick

State Policy Director

Viet Shelton

Campaign Director

Shefali Ranganathan

Director of Programs

To this end, we make the following comments on the DEIS:

For the numerous reasons stated above, **we strongly support increasing zoning capacity and flexibility to maximize the potential for housing and job growth in SLU.** Alternative 1 in the DEIS would provide the greatest capacity and flexibility.

1

However to maximize potential to create a great community with real transportation choices, the City must also improve transportation investments in the neighborhood. **We strongly support many of the recommendations of the South Lake Union / Uptown Triangle Mobility Plan to improve pedestrian, bicycling and transit use,** including:

2

- Connecting the South Lake Union and Uptown communities with better east-west pedestrian and bike connections across Aurora Avenue
- Using "complete streets" standards for all roadway improvements in the neighborhood
- Implementing the Seattle Streetcar Plan that would connect the existing South Lake Union Streetcar to the funded First Hill Streetcar, as well as potential routes to the University, Seattle Center, and through Downtown.

In order to provide a more accurate analysis of the result of such zoning changes and infrastructure improvements, **we strongly urge that the EIS examine the projected per capita vehicle miles traveled and greenhouse gas emission production, rather than the gross change.** It makes sense that an increase in people would lead to an overall increase in greenhouse gas emissions. However data demonstrates that accommodating population and employment increases in dense in-city neighborhoods with diverse transportation choices lead to lower *per capita* greenhouse gas emissions than less dense scenarios. This critical analysis is not currently captured in the DEIS, creating a misleading suggestion that denser alternatives perform worse on vehicle miles traveled and greenhouse gas emissions than do less dense scenarios. We urge you to analyze the per capita impacts to more accurately describe the results of zoning alternatives.

3

Thank you again for the opportunity to comment on the South Lake Union DEIS. Please do not hesitate to contact us if we can provide any further assistance.

Sincerely,



Rob Johnson, Executive Director
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Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 6: Smith, Leslie G.	
1	Support Alternative 1. The comment is noted.
Letter 7: Swenson, Skip	
1	Support Alternatives 1 and 2. The comment is noted.
2	Community Amenities. The comment is noted. Amenities are essential for a vibrant community.
3	Transit and Bike/Pedestrian Infrastructure. The comment is noted. Improvements are planned consistent with the alternatives that are noted.
4	Incentives and Affordable Housing. The comment is noted. Incentives are essential to a realization of the selected alternative.
5	Regional TDR. The comment is noted. Please see the Final EIS Chapter 2 for a discussion of regional TDR as an incentive zoning measure.
Letter 8: O'Tool, Lori	
1	Support Alternatives 1 and 2. The comment is noted.
Letter 9: Danyluk, Edward	
1	Support Height and Density. The comment is noted.
2	Transportation Analysis. The analysis identified significant and unavoidable impacts on several corridors throughout the study area. Additional analysis would not affect the overall results of the transportation that is contained in the EIS.
3	Transportation Mitigation. An EIS only requires that mitigation be identified. It does not require analysis of the mitigation implementation. Mitigation implementation and monitoring is carried out as a subsequent part of the height and density amendments, should the action go forward.
Letter 10: Letter : Joncas, Kate	
1	Support Additional Employment and Residential Density. The comments are noted.
2	35,000 SF Floor Plates. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the broad alternatives to be studied in this EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000

Comment Number	Response
	sf. Please see the discussion of alternatives that were eliminated from consideration (Draft EIS Section 2.3.7.). Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
3	Minimum Lot Size. As noted in the Response to Comment #2 above, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in this EIS. Through this public process, the standard for minimum lot size was increased from 18,000 sf to 24,000 sf and 60,000 sf near Lake Union. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7.
4	Benefits of Increased Employment and Density. The comment is noted. As the commenter states, the EIS does not discuss the economic benefits of the proposal. As required in WAC 197-11-402, EISs are required to identify probable significant adverse impacts, but are not required to address beneficial environmental impacts. Please see Final EIS Section 3.2 for a discussion of the City's economic development policies that are contained in the Comprehensive Plan.
5	Broader Range of Options. The comment is noted. The alternatives that are part of this EIS were established through an extensive public outreach process and they are intended to present a reasonable range of options for Council consideration. Conceivably, the alternative that is selected could be a hybrid of the alternatives presented here.
Letter 11: Woo, Eugenia	
1	Objectives of the Proposal. It is recognized that preservation of the historic character of the area is an important consideration of the South Lake Union Neighborhood Plan. Although not specifically called addressed, historic character is assumed to be included in the objective of the proposal, which seeks increases in height and density to achieve neighborhood plan goals through an incentive zoning program. Potential incentive measures are identified in Draft EIS Section 3.11.3.
2	Mitigation (Historic Resources). Recommended mitigation will be determined by the City's decision-makers. The adoption of mitigation measures ultimately will be a policy decision made by the City and voted on by City Council.
3	Historic Character. The comments are noted.
4	Properties Previously Identified as Potentially Eligible for Historic Designation. The commenter is correct. The 802 Roy Street property was

Comment Number	Response
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added to the "Properties Previously Identified as Potentially Eligible" matrix, Table 3.11-2, on p. 3.11-9 in the Draft EIS and to Figure 3.11-1, "Eligible and Designated Historic Sites."

Site no.	Parcel no.	Name (constr. date)	Address	Source
16A	4088803530	Puget Sound Power & Light Co. Shops (1926)	802 Roy St/800 Aloha St	2000 City Inventory / 2000 DAHP

Letter 12: Aramburu, J. Richard

1 EIS Adequacy. Please see responses to comments in this letter and in Letters 13 through 15, responding to comments from Lake Union Opportunity Alliance (LUOA). The City of Seattle has determined that the Height and Density EIS adequately meets state and local SEPA requirements.

2 Statement of Need. As noted in the Draft EIS, South Lake Union is one of the City's six designated Urban Centers. These are key areas within the City that are expected to continue to evolve as concentrations of employment and housing -- with direct access to high-capacity transit and a broad range of land uses that support the urban center employment and housing.

As described in Chapter 2, the proposal that is considered in the EIS would involve the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided.

Capacity to accommodate future housing and employment is one of six objectives of the proposal that are identified in the Draft EIS (Section 2.1.2). Other objectives include:

- Advance Comprehensive Plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services.
- Provide for a more diverse and attractive neighborhood character by providing a mix of housing types, uses, building types and heights.
- Enhance the pedestrian quality at street level by providing amenities, taking into consideration light and air as well as public view corridors and providing for retail activity at key locations.
- Use increases in height and density to achieve other neighborhood plan goals such as increasing the amount of affordable housing, open space, and other public benefits through an incentive zoning program.

Comment Number	Response
	<ul style="list-style-type: none"> Determine how to best accommodate growth while maintaining a functional transportation system, including street network, transit, and non-motorized modes of travel. Similarly, determine how to accommodate growth while maintaining functional capacity of utility systems, including electrical energy, water, sewer and storm drain systems. <p>As described in the Draft EIS Section 3.8, the capacity of zoning to meet growth targets will be determined by the growth target that is ultimately adopted as part the City's 2031 Comprehensive Plan update. Such will entail a citywide review of growth capacity and targets. Please see also response to Comment 3 of this letter, below.</p>
<p>3</p>	<p>Growth Targets and EIS Timing. As described in the Seattle Comprehensive Plan Urban Village Element discussion in Section 3.8, formal City action to establish a growth target will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p> <p>As described in the Draft EIS Chapter 2, the proposal that is considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. Review of citywide growth targets is beyond the scope of analysis contained in this Final EIS.</p>
<p>4</p>	<p>Add Alternatives. The No Action alternative considered in the Draft EIS would maintain existing zoning and, in that sense, would defer height and density changes that are proposed in this area of the City. It should be noted, however, that with deferral: 1) future development options would not be foreclosed, and 2) deferral would not necessarily eliminate or lessen the severity of environmental impacts identified – merely postpone them. In some instances, such could result in greater cumulative impacts as a result of changes in background conditions..</p> <p>As noted in the response to Comment 3, above, the proposal that is considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Such review does not require a citywide analysis of growth targets.</p>
<p>5</p>	<p>Economic Conditions. The City issued the Scoping Notice for the Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Throughout 2009, the City worked with neighborhood</p>

Comment Number	Response
	<p>stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS.</p> <p>Analysis of current economic conditions within South Lake Union was not included as part of the scope of this EIS. As noted, the focus of this EIS is a 2031 planning horizon. Review of current economic conditions would not provide a sufficient level of information to inform decisions regarding long-term height and density standards within the neighborhood.</p>
<p>6</p>	<p>Housing and Employment Analysis. Please see the response to Comments 2 and 3, above. The proposal that is considered in the EIS is the use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. The proposal does not include identification of 2031 growth targets in South Lake Union or citywide.</p>
<p>7</p>	<p>Views to the Neighborhood. The potential for future development projects in South Lake Union to change views from adjacent neighborhoods will depend on several variables:</p> <ol style="list-style-type: none"> 1) The location and elevation of views from existing and potential projects in those neighborhoods; 2) The actual height, dimensions and location of future projects in South Lake Union ; and 3) The effect of tower spacing requirements, floor plate size limits, and FAR limits for future projects within South Lake Union. <p>As development occurs in South Lake Union as well as in the area south of Denny Way, there are potential changes to views from downtown and Belltown looking north to Lake Union, looking west from Capitol Hill, and looking south east from Queen Anne Hill. The tallest potential building heights studied are located between Denny Way and John Street between Eastlake Avenue and Aurora Avenue. These heights range from 160 feet to 400 feet. Projects built to these heights are likely to change views from existing and future development projects –particularly those located South of Denny Way and in Belltown. Elsewhere in South Lake Union the three action alternatives identify potential building heights ranging from 160 feet (125 feet at the lakefront) up to 240 feet. It is likely that future projects built to these heights would change views from Capitol Hill and Queen Anne hill. In light of the variables identified above it is not possible to precisely describe view changes to all locations that might experience a change of view, in the context of this non-project EIS.</p> <p>The City does not prohibit development that may result in changes to private views under the City’s SEPA ordinance. However, the potential for such</p>

Comment Number	Response
	<p>changes is one factor taken into consideration when the City Council makes rezone decisions, according to rezone criteria pertaining to height limits in SMC 23.34.009. As part of the Council process, citizens may provide comments to the City Council regarding potential changes to private or public views that might result from the proposed zoning changes.</p>
<p>8</p>	<p>Additional Viewpoints. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS.</p> <p>The final scope for the EIS establishes that the view analysis will consider impacts to SEPA-designated public viewpoints and corridors. View perspectives that are analyzed in Section 3.10 of the Draft EIS include viewpoints designated by SMC 25.05.675.P. As noted, additional locations in and near the neighborhood have been included as part of the analysis; these include views from public or quasi-public viewpoints, as well as from designated scenic routes. As shown by Figure 3.10.22 of the Draft EIS, a total of fifteen viewpoints were analyzed.</p>
<p>9</p>	<p>Shoreline Management Act. The cited Shoreline Management Act provisions apply when the views from a substantial number of existing residences in areas adjoining the shorelines would be obstructed by the proposed construction of buildings within the shoreline that exceed 35 feet in height. Because there are no existing residences on land adjoining the Shoreline District, these provisions do not apply.</p>
<p>10</p>	<p>Views to Lake Union. The City's view protection policies address public views. Private views are regulated by the City through zoning and associated development standards.</p> <p>As noted in response to Comment 8, the scope of the EIS established that the view analysis would consider impacts to SEPA-designated viewpoints and corridors. View perspectives analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P, as well as additional locations in and near the neighborhood that provide public or quasi-public views of the neighborhood, and designated scenic routes. As shown in Figure 3.10.22 of the Draft EIS, a total of fifteen viewpoint locations were analyzed.</p> <p>Please refer to the response to Comment #9, above.</p>
<p>11</p>	<p>Adequacy of Visual Analysis. Please see responses to Comments 7 through 10, above.</p>

Comment Number	Response
12	<p>Bored Tunnel. The Draft EIS does consider the impacts of the Bored Tunnel. As described on page 3.14-43 of the document, the Bored Tunnel was included as a reasonably foreseeable project and, therefore, the traffic attraction/diversion effects of the tunnel are included in the background traffic forecasts. No further analysis is required.</p>
13	<p>Use of MXD Model. Draft EIS Appendix E presents the statistical evidence demonstrating that the MXD model is an appropriate tool available for analyzing dense mixed use environments, such as South Lake Union. The Institute of Transportation Engineers (ITE) Trip Generation Handbook, 2nd Edition, notes that the information in ITE's Trip Generation document is provided as general information only and if more relevant and locally valid information is available, that should be used instead of, or in conjunction with the national average information in the Trip Generation Handbook. Using traditional ITE rates would overestimate the number of automobile trips generated by the potential land uses allowed by the height and density increase.</p>
14	<p>Non-auto Trips. The Draft EIS notes that internal, pedestrian, and bicycle travel is expected to account for about 27-28 percent of travel in the future. Compared to current conditions, this level of non-motorized travel is higher, but not unreasonably so. As shown on page 3.13-40, the businesses surveyed as part of the City's Commute Trip Reduction program have non-motorized mode shares between 2 and 21 percent, with an average of about 10 percent. However, businesses are only part of the equation. Based on data from the US Census Bureau, existing residents in South Lake Union and other more residential neighborhoods nearby have comparatively high walk/bicycle mode splits ranging between 29 and 40 percent. Considering the projected increase in residential population in the area, the estimates from the MXD tool are reasonable. Related to transit, the Draft EIS does provide a transit ridership and impact assessment for the streetcar and other transit routes in the area. The results are presented on pages 3.13-62-63 and 3.13-73-73. The results show that the transit patterns will be similar with and without the proposed action, but that ridership will be higher and more routes will have load factors that exceed the City's standard under the three action alternatives.</p>
15	<p>Feasibility of Mitigation. The purpose of the Draft EIS is to document probable environmental impacts and identify reasonable and appropriate measures that could mitigate the significance of the impacts. Mitigation measure implementation is addressed in subsequent phases of the environmental and legislative process. However, it should be noted that the City has a long track record of delivering transportation improvements to the</p>

Comment Number	Response
	<p>South Lake Union area, as is evident in the recent improvements related to the Streetcar, streetscape enhancements along streets such as Terry, John, and Yale, just to name a few. Moreover, the City is making a considerable investment in the Mercer Street upgrades. Lastly, the City has a long standing fee program in the area where developers can either elect to pay the fee to implement transportation improvements, or conduct a separate SEPA review to identify mitigation measures that the City then requires as conditions of approval of a project's Master Use Permit.</p>
<p>16</p>	<p>Adequacy of Parking Analysis. The parking analysis focused on the hours between 8 AM and 8 PM, the period over which parking information is available from SDOT. The DEIS does identify that on-street parking utilization rates peak in the 7-8 PM hour in 2010 (see page 3.13-21). The commenter's assertion that on-street parking is fully utilized is not supported by the available data. While evening parking demand could increase with additional restaurant/bar uses in the area, SDOT is committed to pricing parking in such a way as to ensure an adequate supply of short-term on-street parking. Evidence of this effort is documented by the on-street parking pricing adjustments in 2010 and 2011. In addition, the Draft EIS points out that parking is not like other environmental impacts in that parking impacts are controllable through additional market forces. The City of Seattle is continually revising its parking rates/policies throughout much of the City (including South Lake Union), to address demand/supply imbalances. With demand and supply balanced by price, those who elect to drive and park will be able to find a parking space over the long-term and no long-term parking impacts are expected.</p>
<p>17</p>	<p>Parking North of Mercer. The lack of existing conditions parking data in the northern portion of the study area does not affect the impact findings related to parking. As described in the Draft EIS, short term parking shortages and impacts to those seeking parking are possible; however, long-term impacts are less likely as the market will respond to the parking demand through parking pricing adjustments and new supply. Based on field observations, parking appears to be more constrained south of Mercer given the more intense uses in the area.</p>
<p>18</p>	<p>Future Year On-street Parking Analysis. The Draft EIS acknowledged that changes in street design (specifically related to bus layover locations) could reduce the amount of short-term on-street parking supplies in South Lake Union. Given the configuration of the streets and future projects to add bicycle facilities and other non-auto improvements, it is unlikely that additional on-street spaces will be provided. As noted in the Draft EIS, the</p>

Comment Number	Response
	potential removal of spaces coupled with additional land uses could lead to short-term parking shortages. However, long-term shortages and impacts are not anticipated since the City periodically adjusts on-street parking rates to ensure that an adequate supply is available for short-period visitors.
19	Additional Parking Analysis. The comment asserts that residents, employees, and visitors are insensitive to changes in parking pricing. This assertion is not supported by any academic literature and is inconsistent with observations in the nearby Belltown neighborhood. In Belltown, it is fairly easy to find both on-street and off-street parking because prices are set to manage the supply. The only time on-street parking is scarce is during unpriced periods like Sundays and holidays.
20	Open Space Demand. Draft EIS Table 3.16-2 is part of a larger description of existing City of Seattle park planning guidelines and is excerpted from the City of Seattle <i>2006 Gap Report Update</i> , which does not include a comparison to the 2031 planning horizon. A comparison of parks and open space to the 2031 planning horizon estimated in the Draft EIS is provided in the discussion of impacts (Section 3.16.2).
21	Recreation Areas. Existing park and recreation facilities are listed in Table 3.16-1 of the Draft EIS. This listing includes all park and open space facilities within 0.5 miles of the South Lake Union Neighborhood. Active recreation facilities are included in this list. Section 3.16.2 includes a discussion of potential impacts to both active and passive recreation areas.
22	Park Access. It is acknowledged that the facilities listed in Table 3.16-1 of the Draft EIS identify all facilities within 0.5 miles of the neighborhood and do not differentiate by how they may be accessed. It is reasonable to assume that residents and employees may choose to access nearby parks through modes other than walking.
23	Park Mitigation. Draft EIS Section 3.16.3 identifies mitigation strategies for potential park and open space impacts. Actions that would require a change to the City's Capital Facilities Plan are not identified in the mitigation strategies. As noted in the comment, the Growth Management Act requires that capital facilities plan meet the levels of service established by the City.
24	North Downtown Area Park Plan. The comment refers to a summary of the City's North Downtown Park Plan. Identification of the impacts of the alternatives in 2024 and 2031 is provided in Draft EIS Section 3.16.2, Environmental Impacts.
25	Capital Facilities. The comment refers to a stormwater system map that

Comment Number	Response
	<p>shows existing stormwater conveyance in the neighborhood. Draft EIS Section 3.15.2 identifies impacts to the sewer and stormwater system. The discussion identifies that many of the systems are at or nearing the end of their expected life. The future need to replace these facilities is not an impact associated with the proposal. The discussion notes that there will be increased demand on the sewer system, but that increased demand on stormwater capacity is not expected. Draft EIS Section 3.15.3 provides mitigation strategies for identified impacts of the proposal. Actions that would require a change to the City's Capital Facilities Plan are not identified in the mitigation strategies. Future review of the capital facilities needs in the neighborhood will be considered during the planned 2014 citywide Comprehensive Plan update.</p>
<p>26</p>	<p>Alternatives. As described in Draft EIS Sections 2.2.5 and 2.3.7, the City identified the alternatives considered in the Draft EIS based on an extensive outreach process with the public and interested stakeholders. The alternatives defined through this process did not include an area-wide downzone. Such an alternative would not meet the objectives of the proposal, as listed in the Draft EIS.</p> <p>As noted in the responses to Comments 3 and 4 above, the proposal that is considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Such review does not require a citywide analysis of growth targets.</p> <p>As noted in the response to Comment 4 above, the No Action Alternative (Alternative 4) would maintain existing zoning without adoption of incentive zoning provisions.</p> <p>"Consideration of alternatives in a non-project EIS is limited. SMC 25.05.442."</p>
<p>27</p>	<p>Summary. The comment is noted. Please see the responses to comments in this letter, above.</p>
<p>Letter 13: Gemmel, Chris</p>	
<p>1</p>	<p>Additional Comments. The comment is noted. Please see the comments and responses to Letter 12, above (Richard Aramburu, representing Lake Union Opportunity Alliance).</p>
<p>2</p>	<p>Transportation Comments. The comment is noted. Please see the memo from CFA Consultants contained in this comment letter, including comments and responses 91 through 94.</p>
<p>3</p>	<p>Editing. City of Seattle staff representing various key departments provided comprehensive review and comment regarding the preliminary Draft EIS and the document was thoroughly edited before the City authorized publication.</p>

Comment Number	Response
4	<p>Summary Section. Please see revisions to the summary section in Chapter 1 of this Final EIS. The summary section is intended to be just that – an overview of the project and salient points with regard to impacts of the alternatives. It is not intended to serve as a exhaustive analysis of an environmental parameter. As noted at the beginning of the section, the information is intentionally brief and the reader is encouraged to refer to Chapters 2 and 3 for more detailed information. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
5	<p>Summary Section. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
6	<p>EIS Contributors. Please refer to page iv of the Fact Sheet at the front of the Draft EIS. The Fact Sheet lists the principal authors and contributors to technical analyses contained in this Draft EIS, together with the specific technical areas that each addressed. Each of the participants noted are professional firms and each have extensive experience conducting environmental review and technical analyses for project project-level development in the South Lake Union neighborhood. In addition, some firms have offices in the neighborhood. The City of Seattle has determined that there is no conflict of interest that would impact the team’s ability to provide objective analysis in the SEPA EIS.</p>
7	<p>Significant Unavoidable Adverse Impacts. The referenced statement is a summary statement based on the analyses contained in the Chapter 3 of the Draft EIS and accurately represents the conclusions of the analyses as stated in the “Significant Unavoidable Adverse Impacts” section for each element of the environment. Please refer to the analysis of each element of the environment for a discussion of impacts, mitigation and significant unavoidable adverse impacts.</p>
8	<p>Shoreline Shading. Although the proposal does not include any changes to land use designations in the designated shoreline areas, Appendix D of the Draft EIS shows the potential for shading along the Lake Union shoreline. Shadows are discussed in Draft EIS Section 3.10.9 and shading impacts to plants and animals are analyzed in Section 3.4.2. Consistency with the Shoreline Management Act will be considered by the City in determining the future policy and regulatory direction.</p>
9	<p>Growth Estimates. The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for</p>

Comment Number	Response
	<p>understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
<p>10</p>	<p>Flight Path. FAR Part 77 and associated flight path issues are primarily discussed in the Draft EIS Section 3.8, Land Use. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>This programmatic analysis in Section 3.8 of the Draft EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, orientation, location and massing. At the subarea level of analysis, it is impossible to accurately forecast these actors for</p>

Comment Number	Response
	<p>all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur. At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable)
<p>11</p>	<p>Aesthetics Summary. The referenced row accurately provides a summarized description of potential maximum building heights under each alternative. The reader is referred to Draft EIS Chapter 2 for a more specific description of building heights under each alternative.</p>
<p>12</p>	<p>Housing Affordability. Section 3.9.2, Housing, describes that incentive</p>

Comment Number	Response
	<p>zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 also states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
13	<p>Housing Inventory. Please see the revisions to the housing inventory data in Final EIS Section 3.3.</p>
14	<p>Shadow Studies. There are no one-day shadow studies. All 15 shadow graphic figures are contained in Appendix D to the Draft EIS – Figures 29 through 41. As shown, they depict possible shadow impacts for each development alternative at 9 am, noon and 3 pm -- for each of the four key solar days of the year. Analysis contained in the Aesthetic Section, pages 3.10-81 through 3.10-88 provides a comprehensive discussion of shadow impacts. See also response to comment 38 below.</p>
15	<p>Lake Union Habitat Mitigation. Please see Draft EIS Section 3.4.3, Plants and Animals, which contains proposed mitigation measures for plant and animal impacts.</p>
16	<p>Combined Sewer Overflows. As described in the Draft EIS Combined Sewer Overflows (CSOs) are not a function of development density. The amount of storm water discharged from the area to the combined sewer system is a function of the area of the basin and the amount of rainfall in a given storm, neither of which will change in these development scenarios. There is no baseline CSO volume for this area and review of King County annual reports for Combined Sewer Overflows reveals no patterns to the size and frequency of overflow events.</p> <p>Under current stormwater regulations, the stormwater load on the public sewers will likely be reduced by redevelopment. New development will be required to provide stormwater flow control in the area collected by the Combined Sewer. Flow control systems can take the form of Green Infrastructure (green roof, rain gardens, cisterns, etc.), or conventional underground tanks, or a combination of systems. Whichever system is used, these methods will hold collected storm water on-site longer, allowing the public piped system to flow at lower volumes, reducing the likelihood of a</p>

Comment Number	Response
	CSO. Each individual redeveloped site that is over 10,000 sf will be required to reduce the peak flow rates from the site to approximately 25% of the uncontrolled flow rates. The existing, older, development in this area generally has no on-site flow control facilities.
17	<p>Wind Impacts on Recreational Sailing. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS.</p> <p>The potential wind wake impact on recreational sailing was not included as part of the Final EIS scope.</p>
18	<p>Building Bulk. Please refer to the discussion in Draft EIS Section 3.8, which discusses height, bulk and scale of the action alternatives. This section also includes visual models of the neighborhood as a whole and at street level, assuming the proposed floor plate sizes.</p>
19	<p>Floor Plate and Lot Size. In the Draft EIS (Table 2-3), the floor plate size establishes a maximum limit and the lot size establishes a minimum limit. It is acknowledged that floor plate size would not exceed lot size.</p>
20	<p>Land Use Patterns. The scope of review established for the South Lake Union EIS states that no land use compatibility issues are expected to result from the proposal that are not already possible under current zoning. The scope states that the land use analysis will focus on a plans and policies analysis, including policies related to the flight path. Please see the Draft EIS Section 3.8, Land Use, for this discussion.</p>
21	<p>Aesthetics Analysis. Please see responses to Comments 38 through 42 and 59 in this letter and revisions to the aesthetics analysis in this Final EIS (Section 3.4).</p>
22	<p>Transportation Analysis. Please see the transportation section methodology that is described in Section 3.13 of the EIS and response to Comments 93 and 94 in this letter. The recommended mitigating measures are based on existing plans and adopted City of Seattle projects.</p>
23	<p>Air Quality Analysis. Regarding the adequacy of the transportation analysis methodology, please see response to Comments 93 and 94 in this letter.</p>
24	<p>Significant Unavoidable Adverse Impacts. Comments #24 through 54 are based on Section I of the Draft EIS – the Summary. As noted, the summary is</p>

Comment Number	Response
	<p>just that ... a synopsis of the impact discussion that is contained in Chapter 3 of the Draft EIS. Analysis is the focus of Chapter 3.</p> <p>The statement that is referenced in this comment is a summary based on the analyses contained in Chapter 3 of the Draft EIS. As such, it accurately represents the conclusions of the analyses as stated in the "Significant Unavoidable Adverse Impacts" section for each element of the environment. Please refer to the analysis of each element of the environment for a discussion of impacts, mitigation and significant unavoidable adverse impacts.</p>
<p>25</p>	<p>Growth Estimates. The 2031 numbers that are discussed in Section 2.2 of the Draft EIS are not targets, but are estimates that are intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Draft EIS Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
<p>26</p>	<p>Distance Between Towers. The comment regarding an absolute distance between towers is noted. The Draft EIS visual analysis assumes a variety of tower distances, depending on the location of existing structures and lot configurations. In some cases, towers were assumed to be as close as 20 feet apart.</p>
<p>27</p>	<p>Flight Path Safety Buffer. The comment is noted. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis that is contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>This programmatic analysis in Section 3.8 of the Draft EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective,</p>

Comment Number	Response
	<p>numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, orientation, location and massing. At the subarea level of analysis, it is impossible to accurately forecast these actors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur. At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable)
28	<p>Wind Analysis. The comments are noted. Please see response to Comment 27 in this letter, above. As noted in the response to Comment 17 above, the potential wind wake impact on recreational sailing on was not specifically</p>

Comment Number	Response
	addressed as part of the scope of this EIS.
29	<p>Flight Path. With winds from the south, outbound flights taxi north on Lake Union, turn and head south into the wind adhering to the flight path that is depicted in Section 3.2 of this Final EIS as much as possible. Once airborne, as soon as safety permits, aircraft turn west toward Elliott Bay. The flight path that is referred to in this comment is located near the southeast portion of Lake Union, and is used for inbound aircraft when wind conditions are from the north. Proposed building heights are not a constraint to aviation in this area.</p>
30	<p>Noise Impacts. The comment is noted. The comment refers to a summary statement in Chapter 1 of the Draft EIS; additional discussion is provided in Draft EIS Section 3.6, Noise.</p> <p>Draft EIS Section 3.6 cites the Seattle Municipal Code 25.08.530, which exempts aircraft in flight from maximum permissible sound levels. As described in the noise analysis, increased building heights near the flight path could result in increased noise impacts to residences and/or offices in upper portions of new buildings as a result of aircraft overflights. However, as noted, while sounds from seaplane operations may on occasion be a nuisance to some, such sound levels remain exempt from Seattle’s Noise Code.</p>
31	<p>Step Down Benefits. The alternatives described in the Draft EIS are based on public input and comment, but do not incorporate formal or de facto City of Seattle policy related to the concept of “step down.”</p>
32	<p>Aesthetics Summary. The referenced row accurately provides a summarized description of maximum building heights under each alternative. Please refer to Draft EIS Chapter 2 for a more specific description of building heights under each alternative.</p>
33	<p>Wind Analysis. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, orientation, location and massing. At the subarea level of analysis, it is impossible to accurately forecast these actors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur. At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height</p>

Comment Number	Response
	<p>permitted under the Seattle Mixed zoning is recommended The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable) <p>As noted in the response to Comment 17 above, the potential wind wake impact on recreational sailing on was not included as part of the Final EIS scope.</p>
34	<p>Step Down Zoning. The alternatives described in the Draft EIS are based on public input and comment, but do not incorporate formal or de facto City of Seattle policy related to the concept of "step down."</p>
35	<p>Cascade Neighborhood. The comment is noted.</p>
36	<p>Affordable Housing. The comment refers to a summary statement in Chapter 1 of the Draft EIS. The commenter is encouraged to review the more-detailed analyses contained in Chapter 3.9 of the Draft EIS, specifically:</p> <ul style="list-style-type: none"> • Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be

Comment Number	Response
	<p>used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <ul style="list-style-type: none"> The discussion in Section 3.9.2 also states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.
<p>37</p>	<p>Schools, Parks, and Housing. Draft EIS Section 3.9, Housing, provides a discussion of housing affordability. This section also contains a brief discussion of the residential character in South Lake Union, but does not quantify school demand. Please refer to Final EIS Section 3.6 for a discussion of potential school-related impacts.</p> <p>Draft EIS Section 3.16, Open Space and Recreation, provides an analysis of park and open space impacts associated with each alternative.</p>
<p>38</p>	<p>Building Height, Bulk and Scale. Draft EIS Section 3.10, Aesthetics, addresses building height, bulk and scale. The analysis includes street level views of buildings with unornamented facades.</p>
<p>39</p>	<p>Building Height and Bulk. This comment refers to a summary statement in Chapter 1 of the Draft EIS. Please refer to the Draft EIS Chapter 3.10, Aesthetics for the detailed discussion of impacts associated with neighborhood character and building bulk and scale.</p>
<p>40</p>	<p>Aesthetics Summary. This comment refers to a summary statement in Chapter 1 of the Draft EIS. Draft EIS Chapter 3.10, Aesthetics, is the detailed discussion of view impacts. The views analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P, additional locations in and near the neighborhood that provide public or quasi-public views of the neighborhood, and designated scenic routes. As shown in Draft EIS Figure 3.10.22, a total of fifteen viewpoint locations were analyzed.</p>
<p>41</p>	<p>Aesthetics Viewsheds Summary. Draft EIS page 1-18 is a summarized statement of view-related impacts. The full discussion of viewshed impacts -- including impacts to scenic routes -- is contained in Draft EIS Section 3.10-5 through 3.10-8 and additional views are shown in Appendix D of the Draft EIS.</p> <p>As established by the final scope for the EIS, the views that are analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P, additional locations in and near the neighborhood that provide public or quasi-public views of the neighborhood, and designated scenic routes. As shown in Draft</p>

Comment Number	Response
	EIS Figure 3.10.22, a total of fifteen viewpoint locations were analyzed.
42	<p>Viewpoints. The comment refers to a summary statement in Chapter 1 of the Draft EIS. Chapter 3.10, Aesthetics, is the detailed discussion of view-related impacts. As established by the final scope for the EIS, the views analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P, additional locations in and near the neighborhood that provide public or quasi-public views of the neighborhood, and designated scenic routes. As shown in Draft EIS Figure 3.10.22, a total of fifteen viewpoint locations were analyzed.</p> <p>The comment refers to the proposal as an area rezone. It should be noted that under any of the action alternatives, the only area that would be rezoned is the existing Industrial Commercial (IC) designation, which would be rezoned to Seattle Mixed Use. This change in zoning designation is intended to establish consistency with the surrounding neighborhood and is not related to the proposal for increased height. The remainder of the neighborhood would retain existing underlying zoning designations with the potential for increased building height through the use of incentive zoning. The City is considering the use of incentive zoning to link code flexibility, increased density and development potential with public benefits valued by the community. Please see the discussion of incentives in Section 2.3.2 of the Draft EIS.</p>
43	<p>Shadow Analysis. The comment refers to the summarized statement of shadow impacts. The full discussion of shadow impacts of each alternative on neighborhood parks, including Lake Union Park, can be found in the Aesthetic Shadows section (3.10.9 – 3.10.12). See also Appendix D for diagrams of shadow impacts associated with each alternative based on three times of the day on each of the key solar days of the year – vernal equinox, summer solstice, autumnal equinox and winter solstice.</p> <p>This programmatic analysis does not quantify shadow impacts by square footage. Such an analysis could be provided as part of project-level SEPA review in conjunction with specific development proposals.</p>
44	<p>Shadow Impacts on Plants and Animals. The comment refers to the Chapter 1 summary of mitigating measures. The Draft EIS Section 3.4 must be reviewed for the comprehensive analysis of shadow impacts on plants.</p>
45	<p>Shadow Mitigation Strategies. Draft EIS Section 3.10.10 contains a complete discussion of potential shadow impacts. In addition, comprehensive shadow diagrams are contained in the Draft EIS, Appendix D. Section 3.10.11 of the Draft EIS states that as part of a site-specific development proposal, a detailed shadow analysis should be performed relative to any development that could affect Denny Park, Cascade Playground, or Lake Union Park, consistent with Seattle SEPA policies. The measures listed in SMC 25.05.75A2e provide</p>

Comment Number	Response
	measures to mitigate adverse shadow impacts identified at the site-specific level.
46	<p>Wind Wake Impacts. The comment is noted. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, orientation, location and massing. At the subarea level of analysis, it is impossible to accurately forecast these actors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur. At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size

Comment Number	Response
	and location on that site that could be acceptable)
47	Shadows on Lake Union Park. Please see response to Comment 43, above.
48	Wind Impacts on Recreational Sailing. Please see response to Comment 17, above.
49	Limit Building Heights. The comment is noted. Please see responses to Comments 31 through 34 above.
50	Liquefaction. As stated in Draft EIS Section 3.1.3, depending on the nature of future site-specific development, mitigation may be necessary to address site-specific impacts of development under any of the alternatives. While liquefiable soil would need to be considered in design and construction, the presence of liquefiable soil does not necessarily limit building mass. Building design or site preparation can address potential liquefaction hazards. Potential site-specific mitigation measures are mentioned in Section 3.1.3 and would be considered in detail as part of a site-specific environmental review process.
51	Underground Construction. It would be inaccurate to state that the presence of shallow groundwater limits underground construction to one floor. While it may increase cost, groundwater conditions could be managed at the building site (via dewatering or lining) so that deeper construction would be possible.
52	Building Heights and Growth Estimates. The comment is noted. Please see response to Comment 25 above.
53	<p>Limit Building Heights. The comments are noted. Please see the discussion of steep slopes in the Draft EIS Section 3.1. Also, please see the description of the revised flight path in Final EIS Chapter 2 and Section 3.2 of this Final EIS, as well as the response to Comment 10 in this letter (above).</p> <p>As noted in the response to Comment 17, the potential wind impact to sailboats on Lake Union was not included as part of the EIS scope and has not been fully analyzed.</p> <p>For responses to comments under “Step Down” in this letter, please see responses to comments 31 through 34.</p> <p>Visual simulations from Bhy Kracke Park, which is located on the southeast side of Queen Anne Hill, help inform potential view-related impacts from this SEPA-designated viewpoint and are described in Section 3.10 of the Draft EIS.</p>
54	Summary Section. Please see revisions to the Summary section in Chapter 1 of this Final EIS. The summary section is intended to be just that – an overview of the project and salient points with regard to impacts of the alternatives. As noted at the beginning of the section, the information is intentionally brief

Comment Number	Response
	<p>and the reader is encouraged to refer to Chapters 2 and 3 for more detailed information. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
55	<p>Floor Plate and Lot Size. In the Draft EIS Table 2-3, the floor plate size establishes a maximum area and lot size establishes a minimum area. Redevelopment assumptions are described in Section 3.10.2 of the Draft EIS. For redevelopment sites that are less than 24,000 square feet, it was presumed that the estimated floor plate size would match lot size.</p>
56	<p>Mix of Uses. The comment regarding the mix of uses in the neighborhood is noted. Overall, residential development -- under all of the action alternatives - - would have the potential to achieve greater building height than office development, which is intended to serve as an incentive for increased residential development in this area, particularly under Alternative 3. As described in Section 2.3.5, Alternative 3 focuses potential height increases on residential uses and retains existing maximum building heights for office uses in much of the neighborhood.</p>
57	<p>Affordable Housing. Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 also states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
58	<p>Urban Densities and Potential Transit Service. The comment questions the findings of the transportation analysis because of a perceived lack of existing and future transit service in the area. The results of the transportation analysis, with respect to mode split, are not dissimilar to other neighborhoods in the area. Capitol Hill, for example, has the highest residential population densities in the City (based on US Census Bureau data) and achieves mode shares of 25 percent transit and 42 percent walk/bike for commute trips. Capitol Hill's mode shares occur in an area with similar transit characteristics that are similar to those expected in South Lake Union (no light rail, no BRT). Note that existing transit use and walk/bike mode share in Capitol Hill are considerably</p>

Comment Number	Response
	<p>higher than what is forecast for South Lake Union under 2031 conditions. Given these existing conditions results, the future mode share forecasts for South Lake Union are reasonable.</p>
<p>59</p>	<p>Aesthetics Figures. The commenter provides specific comments and questions related to the figures in Draft EIS Section 3.10 and Appendix D. Based on a review of this comment, figures have been revised and are included in Final EIS Section 3.4. These revisions are to ensure that all figures are as technically accurate as possible, but do not change the overall analysis or conclusions of the aesthetics section of the Draft EIS.</p> <p>Figure 3.10-2 Full Build-out. Please see the development assumptions described in Draft EIS Section 3.10.2. Where two towers are likely to be constructed, they have been included in the model. However, several of the blocks immediately south of the Mercer blocks were recently constructed and were assumed as unlikely to be redeveloped during the study timeframe. Other areas were assumed to be prime sites for future commercial or bio-tech, rather than residential development. These sites maximize FAR but not necessarily the height limit. Still other sites in this zone are smaller than the minimum lot size of 22,000 SF, so are shown as existing or built to the underlying zoning. See Final EIS Section 3.4 Figures 3.4-2 thru 3.4-9 for a color coded diagram of development assumptions for each block.</p> <p>The comment regarding the podiums on the Mercer blocks is correct. There was an error in the way the podiums were shown, which resulted in a larger building bulk than would be allowed by zoning. This has been corrected in the Final EIS and is shown in Section 3.4.</p> <p>Since mitigation measures had not yet been determined, Alternative 1 (the worst case condition in terms of shadows and potential view blockage), was shown with towers on the north side of the Mercer blocks adjacent to South Lake Union Park. See Final EIS Section 3.4.</p> <p>Figures 3.10-4 and -6 Full Build Out. The comment regarding the podiums on the Mercer blocks is correct. There was an error in the way the podiums were shown, which resulted in a larger building bulk than would be allowed by zoning. This has been corrected in the Final EIS and is shown in Section 3.4.</p> <p>Figure 3.10-8 Full Build Out. Per Seattle Municipal Code section 23.48.010C, maximum structure height may be increased from forty (40) feet to sixty-five (65) feet within the area bounded by Valley and Mercer Streets and Westlake and Fairview Avenues North as a special exception. This exception includes a requirement that a minimum of twenty (20) percent of the total development area must be provided as useable open space at street level and that the useable open space must be directly accessible to the public during the hours</p>

Comment Number	Response
	<p>of operation of South Lake Union Park. This exception was used for the model since it provided the worst case condition in terms of shadows and potential view blockage.</p> <p>Street-level views. Please advise regarding use of figures and cars to provide scale.</p> <p>Figure 3.10-12. The referenced figure has been corrected and is shown in Final EIS Section 3.4. No setback policy or mitigation was assumed in the Draft EIS analysis. As noted in the discussion of Figure 3.10-2 Full Build Out, above, Alternative 1 (the worst case condition in terms of shadows and potential view blockage), was shown with towers on the north side of the Mercer blocks adjacent to South Lake Union Park. See Final EIS Section 3.4.</p> <p>Figure 4.10-13. Final EIS Section 3.4 shows the revised podium height at mid-block.</p> <p>Figure 3.10-14. The podium heights of these images in the Draft EIS are correct. Although the floor lines provided for scale purposes are somewhat obscured by the building shading, the podium in Figure 3.10.11 is shown as three residential stories or thirty (30) feet, and the podium in Figure 3.10.14 is shown as 4 residential stories or forty-five (45) feet.</p> <p>Figure 3.10-15. There was an error in the model, which resulted in a larger building bulk than would be allowed by zoning under Alternative 2. Final EIS Section 3.4 contains the corrected image. Please see the response Figure 3.10-12 regarding the location of towers on the Mercer blocks.</p> <p>Figure 3.10-18. Please see Final EIS Section 3.4 for the corrected image.</p> <p>Figure 3.10-21. See the response under Figure 3.10-8 above.</p> <p>Figure 3.10-25. The building on the left is a 12 story commercial structure that maximizes the allowed height of 160 ft. for the project type. The podium in the foreground is assumed to be contiguous with the commercial tower and is shown at 65' in height, the maximum allowed.</p> <p>Figure 3.10-27. Please see Final EIS Section 3.4 for the corrected figure. A commercial structure was assumed to be the most likely building constructed on this half-block site with residential on the western half of the block. The height limit for commercial in Alternative 1 is 240 ft. in this location. The study indicated that FAR will control rather than height on most commercial sites.</p> <p>Figure 3.10-49. A commercial structure was assumed to be the most likely building constructed on this half-block site with residential on the western half of the block facing Denny Park. While the height limit is 125 ft. for both residential and commercial in Alternative 4 at this location, the study indicated that Floor Area Ratio (FAR) will control rather than height. This image assumes</p>

Comment Number	Response
	<p>a building constructed from property line to property to the maximum FAR allowed.</p> <p>Appendix D, Figure 1. An image from an earlier version of the 3-D model was inserted in the Draft EIS. In addition, two towers were shown in the model rather than one, which resulted in a larger building bulk than would be allowed by zoning. A corrected figure is shown in Final EIS Section 3.4.</p> <p>Appendix D, Figures 2 and 3. Two towers were shown in the model rather than one, which resulted in a larger building bulk than would be allowed by zoning. Corrected figures are shown in Final EIS Section 3.4.</p> <p>Appendix to, Figure 4. See response under Figure 3.10-8 above. A corrected figure is shown in Final EIS Section 3.4.</p> <p>Appendix D, Figure 20. Building heights for the Fred Hutchinson Campus in Alternative 4 have been corrected in Final EIS Section 3.4.</p> <p>Appendix D, Figure 25. The 3-D computer model includes the new Amazon buildings (see shadow studies). However, Google Earth, which was used to provide the greater context for the view studies, did not include the newest and tallest Amazon structures. The differences have been reconciled by adding the recently completed Amazon buildings to all four zoning overlays and updating the views, see Final EIS Section 3.4.</p> <p>Appendix D, Figure 29. Comment noted. Due to the large volume of images in this section, shadow images are retained in Appendix D.</p>
60	Visual Model. Comment noted..
61	<p>Impacts on Thomas Street. Traffic congestion associated with the proposed height and density increases were assessed using traffic assignments from the City of Seattle Travel Model. This tool is widely regarded as an accurate tool to evaluate existing and future traffic congestion patterns and has been validated to match existing traffic conditions. Based on the results of the Seattle Travel Model, there is no anticipated impact on Thomas Street. It should be noted that under existing conditions, the significant congestion on Denny Way (LOS F) and Mercer/Valley Streets (LOS E-F) does not cause the adjacent streets of Republican, Harrison, or Thomas to experience substantial traffic congestion. This is because these smaller streets do not provide access to the freeway or other neighborhoods. This pattern is expected to continue into the future.</p>
62	<p>Trip Generation Estimates. As described by the commenter's traffic study, the trip generation estimates in the Draft EIS appear reasonable. Appendix E describes how the MXD model used in the analysis has been validated to a variety of existing data and has been shown to have superior statistical validity</p>

Comment Number	Response
	when compared to more traditional analysis techniques.
63	MXD Model Validation. The commenter states an opinion that the validation results presented in Appendix E are not applicable to South Lake Union. The research that was prepared to develop the MXD model has been submitted to and accepted by several peer-reviewed academic journals and deemed to be adequately rigorous. While the commenter may disagree with the interpretation of the statistical results, the data presented in Appendix E nevertheless demonstrates that the alternative methods of analysis are less accurate and would be less appropriate in this EIS.
64	Effectiveness of Mitigation. The commenter disagrees with the Draft EIS assessment of trip generation reductions associated with the proposed mitigation measures. The basis for this disagreement is unclear. The mitigation measure trip reductions are based on empirical research as cited on Draft EIS page 3.13-82.
65	Bicycle and Pedestrian Mitigation. A substantial body of research has shown that improved bicycle and pedestrian conditions are correlated with reduced trip generation. The information the commenter provided about existing parking demand and traffic congestion is noted, but does not change the findings of the Draft EIS.
66	Transit Service Mitigation. It is true that the current funding picture for King County Metro is bleak and that there is the potential for near-term reductions in transit service. However, the Draft EIS is a forward-looking document and assumes the regionally accepted levels of future transit, as directed by the Seattle Department of Transportation and defined by the Puget Sound Regional Council. It should be noted what while transit funding fluctuates on the short-run, transit funding and service over the last 20 years has expanded substantially in the Puget Sound Region.
67	Mitigation Measure Implementation. Please see response to Comment 15, Letter 12.
68	Transportation Analysis Level of Detail. The Draft EIS clearly defines the existing conditions for traffic congestion, transit, and bicycle/pedestrian travel. The most accurate trip generation methodology available was used to estimate trip generation and potential "with action" transportation impacts, as well as a series of mitigation measures to reduce the significance of the impacts. The final conclusion of the Draft EIS is that there will be significant and unavoidable transportation impacts as a result of the height and density increase.

Comment Number	Response
69	<p>Ozone Analysis. As indicated in the Draft EIS and reiterated in the comment, ozone problems are indeed regional in nature and potential ozone impacts are not considered on a project-level basis as part of air quality impact assessments. Because ozone is not emitted directly, and due to the complexity of evaluating ozone formation and transport, there are, in fact, no means of estimating or characterizing ozone impacts associated with individual projects. Instead, regional ozone issues are addressed using regional modeling tools and planning. At this point, while the Puget Sound region is not considered out of attainment for ozone, there are no applicable requirements nor any effective mechanisms for assessing the effects of specific projects on regional ozone levels.</p>
70	<p>Carbon Monoxide Analysis. As described in the Draft EIS, carbon monoxide (CO) is used as an indicator of potential air quality issues related to transportation sources. EPA guidance indicates CO assessments that consider conditions at up to the three of the most project-affected intersections are adequate for evaluating potential impacts. This was the approach used in the air quality analysis that is contained in the Draft EIS. Conversely, the potential for air quality impacts at all other less-affected locations would be lower than indicated by this worst-case evaluation. Consequently, no additional analysis is necessary or warranted.</p> <p>It is also worth noting that trends in CO concentrations in the Puget Sound region have been downward for many years. As stated in the Draft EIS, there have been no measured violations of the CO standards in many years, and the former CO problem is thought to have been resolved. It is, therefore, highly unlikely that project-related traffic would result in any CO issues at any affected intersections in the project area. Currently, the focus of EPA and other air quality agencies is turning towards other transportation-related pollutant emissions such as NO², fine particulate matter, and other substances emitted in engine exhaust. But there are as yet no requirements or guidelines for assessing such emissions or resulting concentrations -- and air quality monitoring has not detected any problems with these pollutants in the Puget Sound region, except as discussed in the Draft EIS.</p>
71	<p>Analysis Methodology. The meaning of the comment that "the Draft EIS seems to be using the most aggressive methods of analysis to come to the most optimistic result" is unclear. The use of "worst-case" scenarios is a standard practice in analyses of potential environmental impacts, and this approach was used in the review of the air quality implications of project-related traffic. This sort of review was accomplished based on consideration of peak-hour traffic conditions with air quality modeling using the CAL3QHC model (EPA 1995) and the WASIST intersection screening tool (WSDOT 2009).</p>

Comment Number	Response
	<p>These tools are deliberately conservative in estimating emissions and dispersion conditions. Results produced using these tools thus represent conservative approximations of potential air pollutant concentrations. Because project-level modeling assuming worst-case congestion conditions indicated traffic-related emissions would not result in air quality problems, no significant air quality impacts would be anticipated.</p>
<p>72</p>	<p>EIS Contributors. Please refer to page iv of the Fact Sheet at the front of the Draft EIS. The Fact Sheet lists the principal authors and contributors to technical analyses contained in this Draft EIS, together with the specific technical areas that each addressed. Each of the participants noted are professional firms and each have extensive experience conducting environmental review and technical analyses for project project-level development in the South Lake Union neighborhood. In addition, some firms have offices in the neighborhood. The City of Seattle has determined that there is no conflict of interest that would impact the team’s ability to provide objective analysis in the SEPA EIS.</p>
<p>73</p>	<p>Shoreline Shading. Although the proposal does not included any changes to land use designations in the designated shoreline areas, Draft EIS Appendix D shows the potential for shading along the Lake Union shoreline. Shadows are discussed in Draft EIS Section 3.10.9 and shading impacts to plants and animals are noted in Section 3.4.2. Additional analysis regarding consistency with provisions of Seattle’s Shoreline Master Program is provided in Section 3.2 of this Final EIS. These considerations will be addressed by the City in determining future policy and regulatory direction for the area.</p>
<p>74</p>	<p>Lake Union Habitat Mitigation. Please see Draft EIS Section 3.4.3, Plants and Animals, which contains proposed mitigation measures for plant and animal impacts.</p>
<p>75</p>	<p>Combined Sewer Overflows (CSO). Please see response to Comment 16 in this letter.</p> <p>Regarding additional outfalls from CSOs, the City of Seattle and King County are working together to reduce the number of CSO events through improvements to city and county sewer systems in this area. Planning and implementation of these improvements is unrelated, however, to the South Lake Union proposal and additional CSOs are not anticipated to be needed as a result of the proposal.</p> <p>The volume of sediment that is discharged from this area is not expected to be impacted by the proposal. Regardless of the alternative, future project-level review will establish construction and operational measures to control the</p>

Comment Number	Response
	<p>amount of sediment leaving a given site.</p> <p>At a programmatic level of environmental review, sewer and stormwater impacts are not quantified. However, it is expected that, based on current stormwater regulations, the stormwater load on public sewers will likely be reduced by redevelopment. This is a result of providing more efficient sewer and stormwater water control systems, compared to existing older systems.</p>
<p>76</p>	<p>Air and Water Navigation on Lake Union. Draft EIS Section 3.8 provides a programmatic analysis of wind-related impacts on air navigation. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the</p>

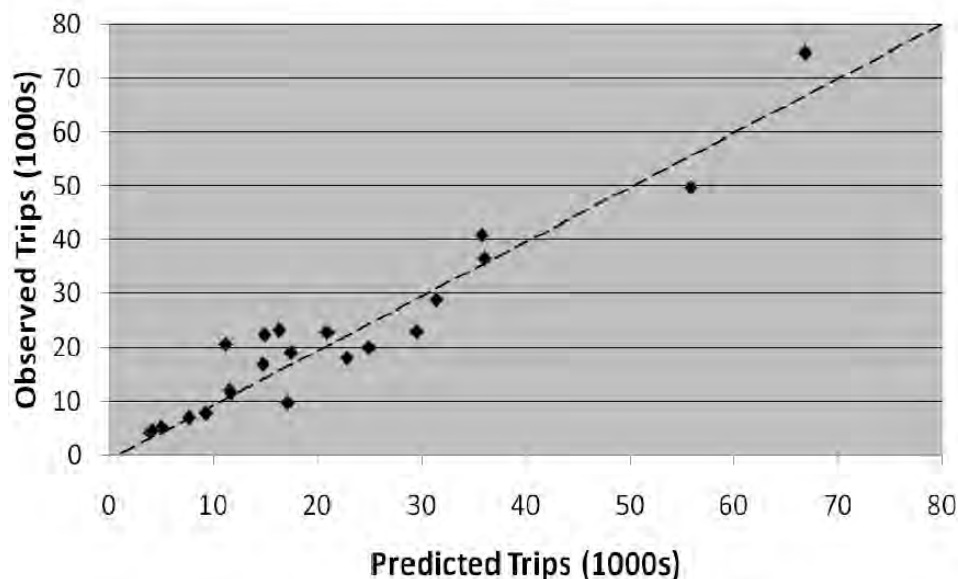
Comment Number	Response
	<p>following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable). <p>As noted in the response to Comment 17 above, the potential wind wake impact on recreational sailing on was not included as part of the Final EIS scope.</p>
77	<p>Shadow Analysis. A more detailed and specific account of the shadow impacts of each alternative can be found in the Aesthetic Shadows section (3.10.9 – 3.10.12) of the Draft EIS. Project specific mitigation strategies are identified in Draft EIS Section 3.10.11. Additional mitigation strategies to reduce shadow have been identified based on policy guidance contained in the Urban Design Framework and are included in Final EIS Section 3.4.</p>
78	<p>Alternatives Not Supported. The comment is noted.</p>
79	<p>Draft EIS Alternatives. The comments are noted. As described in Draft EIS Sections 2.2.5 and 2.3.7, the alternatives considered in the Draft EIS were developed and revised through an extensive outreach process. The alternatives established through this process were carried forward for review in the Draft EIS.</p>
80	<p>Affordable Retail Spaces Missing. The comments are noted.</p>
81	<p>Public Safety Mitigation. As described on Draft EIS page 3.14-12, potential criminal activity and calls for police service could be reduced through the implementation of building design features such as orienting buildings towards the sidewalk and public spaces, providing connections (i.e. walkways, etc.) and providing adequate lighting and visibility; the use of underground tunnels is not proposed. These potential design features would enhance the visibility of the public realm area and thereby discourage potential criminal activity in the area.</p>
82	<p>EIS Methodology. Although the specific methodology that the comment refers to is unknown, the Draft EIS generally incorporated conservative assumptions and methodologies intended to ensure that potential adverse impacts were not minimized. As relevant, specific methodologies for the corresponding element of the environment are described in Chapter 3 of the Draft EIS.</p>

Comment Number	Response																		
83	Scoping Comments. The comment is noted. As described in the response to Comment 17, the City considered all public comments in finalizing the scope of the EIS.																		
84	Emergency Response Statistics. Table 3.14-3 of the Draft EIS illustrates the incident responses for fire stations that serve the South Lake Union Neighborhood and are representative of annual activity for the Seattle Fire Department in this area. As described on Draft EIS pages 3.14-9 and 3.14-10, the Seattle Fire Department calculated the projected number of EMS service calls that could occur in the South Lake Union Neighborhood under the Action Alternatives and the No Action Alternative. Seattle Fire determined that additional EMS incident responses may be required for the South Lake Union neighborhood with or without development under the action alternatives.																		
85	Police Response Data. Draft EIS Table 3.14-6 illustrates the number of calls for the West Precinct between 2005 and 2009. The West Precinct is divided into 12 sectors/beats and the South Lake Union Neighborhood generally comprises Sector D1 and D2. The D1 sector generally includes the western portion of the South Lake Union Neighborhood while D2 generally encompasses the eastern portion of the South Lake Union Neighborhood. Please refer to the table below for a breakdown of calls for service in the D1 and D2 sector areas for the period 2005-2009.																		
2005-2009 Calls for Service – D1 and D2 Sector																			
<table border="1"> <thead> <tr> <th></th> <th>D1 Sector</th> <th>D2 Sector</th> </tr> </thead> <tbody> <tr> <td>2005</td> <td>12,114</td> <td>7,959</td> </tr> <tr> <td>2006</td> <td>12,735</td> <td>7,440</td> </tr> <tr> <td>2007</td> <td>12,583</td> <td>6,995</td> </tr> <tr> <td>2008</td> <td>9,448</td> <td>7,753</td> </tr> <tr> <td>2009</td> <td>9,141</td> <td>8,189</td> </tr> </tbody> </table>			D1 Sector	D2 Sector	2005	12,114	7,959	2006	12,735	7,440	2007	12,583	6,995	2008	9,448	7,753	2009	9,141	8,189
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Source: Seattle Police Department, 2010.																			
<p>Draft EIS Page 3.14-12 acknowledges that the hiring of new officers under the <i>Neighborhood Policing Staffing Plan</i> has been delayed due to recent budget issues. However, the Seattle Police Department anticipates that the remaining new officers identified in the <i>Neighborhood Policing Staffing Plan</i> would be hired prior to the assumed buildout date under the action alternatives (2031).</p>																			
86	Wind Impacts on Recreational Sailing. Please see the response to Comment 17, above.																		
87	Wildlife and Building Heights. The blue heron, ducks, and freshwater turtles																		

Comment Number	Response
	<p>that currently use South Lake Union are acclimatized to urban situations. Because the high-rise buildings would not be constructed all at once, these species would have sufficient time to adapt to changes in their environment. Therefore, increased building heights are not anticipated to significantly adversely affect either their populations or behavior.</p>
<p>88</p>	<p>Affordable Housing. The comment is noted. Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
<p>89</p>	<p>Habitat and Shading. Based on the Draft EIS shading study, shading would only occur during mornings and evenings in the winter when many plants are dormant. None of the proposed alternatives would shade South Lake Union for the entire day, and most urbanized wildlife can move from shadier areas to sunnier areas as needed. In addition, the potential shading impacts to wildlife and potential mitigation measures (e.g., removing existing underwater debris that currently causes shade), would be assessed at a project-level basis as part of the SEPA review process associated with project-specific development. Revisions to the shading analysis contained in Final EIS Section 3.4 do not alter this conclusion.</p>
<p>90</p>	<p>Flight Path and Birds. Waterfowl and other birds currently fly in the FAR 77 area without major incidents. Birds quickly habituate to changes in their surroundings and are adept at making changes in flight to avoid collisions. Avian flight paths are not anticipated to be significantly affected in the lake vicinity by the proposed density changes. In addition, potential impacts to wildlife and potential mitigation measures, would be assessed at a project level basis as part of the SEPA review process associated with project-specific development.</p>
<p>91</p>	<p>Transportation Mitigation. The commenter correctly notes that many mitigation measures are aimed at improving the quality of the pedestrian, bicycle, and transit systems in the neighborhood.</p>

Comment Number	Response
92	<p>Trip Generation Methodology. The summary of the trip generation methodology used in the Draft EIS is noted.</p>
93	<p>MXD Validation Methodology. The MXD tool used in the Draft EIS has been reviewed by academics as part of submissions to peer-reviewed scholarly journals. As part of this academic review process, the methodology, validation, and applicability of this model to a variety of environments were deemed to be adequate as to warrant publication in academic journals. In addition to this academic review, the MXD tool has been officially adopted by the San Diego Council of Governments and the US EPA as their preferred methods of calculating trip generation for mixed use developments in urban and suburban settings. MXD has also been successfully applied in several Environmental Impact Reports in California. With respect to the critique of the validation methods, the commenter notes that the ITE's traditional validation methods of comparing a model/equation to a suburban site is inappropriate for a tool applied in South Lake Union. The transportation analysis used in South Lake Union agrees with this conclusion and therefore the MXD tool was validated using 16 sites, both urban and suburban to test the viability of the tool across a range of built environments. In terms of the validation metric - the primary validation metric was total external vehicle trips; however, observations of modal trips were also made.</p>
94	<p>Statistical Validation of MXD Model. The MXD tool was validated at a level that is unprecedented for most travel forecasting tools. The current ITE recommended practice was estimated using three sites in Florida and no statistical validation of this widely used method was published in the original ITE document. Typical travel models used for travel forecasting are also not subject to statistical validation, but rather a more simplistic look at how the model can replicate traffic counts at a small set of screenlines. The more rigorous validation of the MXD tool at 16 independent sites and comparison of statistics such as root-mean squared-error and pseudo- R squared indicate that the MXD model is more accurate at trip generation estimates in urban areas when compared to other methods and is the best available technique for this EIS.</p> <p>In response to the commenter's question about model bias (e.g., consistently under-predicting the trip generation of a project/site), the following table showing the MXD model's performance at the validation sites:</p>

Figure 5. Scatterplot of Predicted vs. Observed External Vehicle Counts



As shown in the table, the model does not have a bias and most trip generation estimates are within 20 percent of the observed trip generation.

Letter 14: Goodspeed, Jim; Gemmel, Chris; and Groth, Lori

- 1 Please see responses to Comments 54 through 72 and 91 through 94, Letter 13.

Letter 15: Ramey, Brian

- 1 Please see responses to Comments 73 through 83, Letter 13.

Letter 16: Staton, Renee A.

- 1 **Environmental Benefits.** As the commenter states, the EIS does not discuss the environmental benefits of the proposal. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.

With respect to climate change, it should be noted that the GHG analysis does incorporate a per capita analysis. As shown in Table 3.7-6 of the Draft EIS, the analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.

Comment Number	Response
2	<p>Economic Development. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders and the public to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Economic development was not included as part of the EIS scope.</p> <p>Please see a discussion of the City's Comprehensive Plan Economic Development Element in Final EIS Section 3.2.</p>
3	<p>Urban Form. The comments are noted. The impacts on urban form are considered in the aesthetics section of the Draft EIS, which include street-level images, views and shadows. Please see revisions to the aesthetics analysis in Final EIS Section 3.4. Although the analysis assumes that future development would maximize development potential, the potential to pull back development from property lines is acknowledged.</p>
4	<p>Neighborhood Facilities. The comments are noted. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and this Final EIS Section 3.5 for a discussion of schools.</p>
5	<p>Conclusion. The comment is noted. Please see the responses to comments 2 through 4 in this letter, above.</p>

Letter 17: Lee, Sharon

- 1 **Financial Analysis.** The Draft EIS housing analysis provides a programmatic review of housing affordability goals; growth in affordable housing in the neighborhood, and a qualitative discussion of the difference between the alternatives in the potential for affordable housing development. Reliable data is not available to develop a quantitative 20-year forecast of affordable housing development under each alternative. From a qualitative perspective, the discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.
- The referenced sentence was simply noting that all of the action alternatives would provide adequate capacity to achieve housing targets. It was not intended to provide a conclusion regarding the financial feasibility of various

Comment Number	Response
	incentive measures.
2	<p>Potential for Low-Income Housing. The programmatic review in the EIS does not include a quantitative assessment of the number of parcels available for low-income housing development. The discussion in Section 3.9.2 states that there may be market-driven opportunities for new construction of affordable housing associated with the minimum lot size requirements contained in the action alternatives. Depending on lot configurations, consolidation of parcels to create the minimum lot requirement may create remainder lots that are not large enough for another tower and potentially available for low-scale development, including affordable housing. This section also notes that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
3	<p>Transfer of Development Rights. The comment is noted.</p>
4	<p>Alternative 1 Impacts. The comment is noted. Please see the response to Comment 1 in this letter.</p>
5	<p>New Alternative. As described in Draft EIS Sections 2.2.5 and 2.3.7, the City identified the alternatives considered in the Draft EIS based on an extensive outreach process with interested stakeholders. The alternatives identified through this process did not include an option that rezones the existing Industrial Commercial (IC) zone and does not adopt the incentive zoning measures. Such an alternative may not meet the objectives of the proposal identified in Final EIS Chapter 2. However, the EIS does not preclude a future policy decision by the City of Seattle to adopt this approach.</p>
6	<p>Affordable Housing Strategies. The comments are noted.</p>
7	<p>Support Increased Low Income Housing Resources. The comment is noted. Please see Final EIS Chapter 2 discussion of incentive measures, which includes TDR as an option.</p>
<p>Letter 18: Dinndorf, Jerry</p>	
1	<p>Urban Design Framework (UDF). The comment is noted. EIS Chapter 2 provides a description of the UDF, including the incentive provides identified in the UDF. Please see Final EIS Section 3.4 for revisions to the aesthetics analysis which incorporates additional information from the UDF. Please see response to Comment 1, Letter 90 regarding the <u>South Lake</u></p>

Comment Number	Response
	<u>Union/Uptown Triangle Mobility Plan.</u>
2	Mitigation. The comment is noted. Mitigation strategies address identified impacts.
3	Funding to Support Growth. The comment is noted.
4	<p>Additional Analysis. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed. Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street.</p> <p>Regarding the transportation analysis, please see the responses to comments 33 through 41 in this letter.</p>
5	<p>Economic Impacts. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. The potential benefits of economic development was not included as part of the EIS scope.</p> <p>Please see Final EIS Section 3.2 for a discussion of the City's Comprehensive Plan economic development policies.</p>
6	Consider Comments. The comment is noted. Please see the responses to comments in this letter.

Comment Number	Response
7	<p>Habitat and Shading. Please see the response to Letter 13, Comment 14, above.</p>
8	<p>Greenhouse Gas Emissions. The commenter raises a valid point that the transportation mitigation measures will also reduce GHG emissions. Similarly, the recommended adoption of green building designs could also act as a mitigation measure to reduce GHG emissions.</p>
9	<p>Availability for Development. As described in the scope of the EIS, no land use impacts are anticipated to result from the proposal that are not already possible under current zoning. Therefore, the land use analysis focuses on a plans and policies analysis, together with potential wind impacts associated with the Lake Union Seaport Airport.</p> <p>Assumptions regarding potential for future development are described in Draft EIS Section 3.10.1 and have been clarified in Final EIS Section 3.4. These assumptions form the basis for the 3D modeling in the aesthetics analysis.</p>
10	<p>Sustainability Analysis. For a greenhouse gas analysis, please refer to Draft EIS Section 3.7. This analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.</p> <p>Final EIS Chapter 2 includes LEED Neighborhood Development as a possible incentive measure that could be incorporated into an incentive program.</p>
11	<p>Building Height Limits. The recommended Draft EIS mitigation to address wind impacts was not intended to suggest that building heights in the Cascade neighborhood would be increased. Please see the response to Comment 12 in this letter, below.</p>
12	<p>Flight Path. The development assumptions described in the EIS incorporated the flight path limitations (see Draft EIS Section 3.10.1). Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were</p>

**Comment
Number****Response**

also reviewed.

Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street.

This programmatic analysis in Section 3.8 of the Draft EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, orientation, location and massing. At the subarea level of analysis, it is impossible to accurately forecast these actors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur. At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:

Please see Final EIS Section 3.4 (aesthetics analysis) for a revised analysis that includes the changes associated with the revised flight path.

This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.

At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional

Comment Number	Response
	<p>mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
<p>13</p>	<p>Transfer of Development Rights. Please see Final EIS Chapter 2, which includes TDR as a possible incentive measure that could be incorporated into an incentive zoning program.</p>
<p>14</p>	<p>Housing Forecasts. The Draft EIS housing analysis provides a programmatic review of housing affordability goals; growth in affordable housing in the neighborhood, and a qualitative discussion of the difference between the alternatives in the potential for affordable housing development. Reliable data is not available to develop a quantitative 20-year forecast of affordable housing development under each alternative. From a qualitative perspective, the discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs,</p>

Comment Number	Response
	<p>property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p> <p>Incentive zoning is a fundamental element of the proposal and is identified in the mitigating strategies section of the Draft EIS housing analysis.</p>
15	<p>Comprehensive Housing Inventory. The comment is noted. Although resources for such an inventory were not included in the scope of the EIS, information on the existing housing inventory was included and has been updated in Final EIS Section 3.3.</p>
16	<p>Housing Affordability. Please see Draft EIS page 3.8-9 for a table summarizing the affordable housing goals for all urban centers or villages in the City. Please see the response to Comment 15 in this letter, above, regarding the comprehensive housing inventory. From a qualitative perspective, the potential for displacement of existing wood-frame structures is considered in the Draft EIS. As noted under Alternative 4, current residential trends are likely to continue.</p>
17	<p>Incentives for Housing Preservation. The comments are noted. Please see the response to Comment 15, above, regarding the comprehensive housing inventory.</p>
18	<p>Height Bulk and Scale Study. The options studied were limited to the alternatives provided as determined during the EIS scoping process. Based on comments received during the Draft EIS comment period, more specific mitigations have been added in the Final EIS, see Section 3.4. The issue of tower spacing is also being addressed in the Final EIS through a recommendation for a minimum distance between residential towers, in addition to the limitation on the number of towers per block.</p>
19	<p>Level of Analysis. As is typical of an EIS for a neighborhood where development has not yet been designed, the possible height, bulk and scale of future buildings has been provided without additional detail – other than the likely number of floors and the possibility of rooftop mechanical spaces. Further development of building design was intentionally omitted for three reasons: first, to limit discussion to the elements being evaluated in the EIS; second, to avoid appearance of bias for or against development by showing buildings as more or less attractive, and; third to avoid visual distractions from the main points of analysis.</p>
20	<p>Urban Design Framework (UDF). As noted in the comment, the UDF is referenced in several parts of the EIS. Recommendations from the UDF have</p>

Comment Number	Response
	<p>been added to the Final EIS Aesthetics analysis and mitigating strategies, see Final EIS Section 3.4.</p>
<p>21</p>	<p>Bulk and Scale. The Draft and Final EIS imagery attempt to accurately show the possible building massing outcome of the zoning alternatives without speculation as to design modifications that may alleviate or moderate the impact of the potential height, bulk or scale of new development built to the maximums allowed. By showing the possible massing outcome without bias, the need for possible mitigation is highlighted. Specific recommendations for mitigation have been added to the Final EIS (Section 3.4) to address public comments related to the bulk and scale of future buildings visualized in the Draft EIS.</p>
<p>22</p>	<p>Open Spaces. The comment is noted. A mitigation measure to encourage more open space has been added to Final EIS Section 3.4. In addition, a specific mitigation to limit the bulk of the larger podiums allowed under Alternate 1, is recommended in the Final EIS for the specific purposes of moderating their bulk and encouraging the creation of more public open space. Please see also the discussion of open space in Draft EIS Section 3.16, Open Space and Recreation.</p> <p>Bread Loaves vs. Towers. The massing alternatives were color coded to highlight the difference between commercial office, biotech and residential structures, which was intended to make it easier to distinguish between the differences between building floor plate sizes (see Fig. 3.4-2). As noted above under 'Open Spaces', specific mitigations have been added to the Final EIS for limiting the bulk of the larger podiums allowed under Alternate 1.</p> <p>Tower Controls and Incentives. Many of the recommendations for controls contained in the UDF have been added to the Final EIS as specific mitigations to the height alternatives. The identification of specific incentives will be determined by the City in future policy and regulatory decisions. The menu of possible incentives, including those listed in the UDF, are described in EIS Chapter 2.</p> <p>Podiums. The comment is noted. Please see Final EIS Section 3.4 for specific mitigating strategies related to podium size.</p> <p>Tower Spacing. The comment regarding the need for spacing between towers is noted. A determination was made that this is a particular concern for residential buildings, since these are anticipated to be the tallest buildings allowed under incentive zoning and the building type where occupant safety is typically of the greatest concern. Residences are also the building type most concerned with privacy issues. Consequently, a recommendation for a minimum tower separation of 60 feet, measured perpendicular to the face of</p>

Comment Number	Response
	<p>the building, has been added as a potential mitigation in the Final EIS for residential towers built under incentive zoning.</p> <p>Re-Orienting Blocks. The north-south orientation of Seattle City blocks is well established in much of the neighborhood and there is no specific recommendation contained in the EIS to mandate a re-orientation to East-West. The Final EIS does recommend that through-block passageways be encouraged and there is no requirement for the current orientation to be maintained.</p>
23	<p>Focus Areas. The focus areas are described in Draft EIS Chapter 2. The analysis for these areas is intended to provide, where available and appropriate, additional detail regarding existing conditions and potential environmental impacts. The analysis provides additional information, but does not confer any specific benefits to these areas.</p>
24	<p>Redevelopment Assumption. The EIS scope required that the aesthetics analysis be conducted for a build-out scenario. In addition, the analysis shows a 2031 scenario that matches future growth projections.</p> <p>Minimum Lot Size Assumption. The comment is noted. The minimum lot size is based on the alternatives description, as defined through the scoping process. The intention of this element of the alternatives is to limit the number of towers built on any block to a maximum of two, and to recognize the minimum lot size typically associated with major commercial construction.</p> <p>On-Site Parking Assumption. While it did not directly affect the 3-D massing studies, this assumption was added to highlight the potential issue of allowing above-grade parking. Above grade parking may be necessitated by specific site conditions (especially sub-surface conditions) on some properties within the neighborhood – if the property owner is to realize the full potential of the density and height allowed under incentive zoning. A mitigating measure to discourage above-grade parking has been added to Section 3.4 of the Final EIS.</p>
25	<p>3.10-2 – 3.10-9 Views. These birds-eye views were included at the beginning of the Aesthetic Section to provide an overall (neighborhood-wide) perspective of the massing differences between the four alternatives and to show the study area in its regional context. They were not used to evaluate view impacts.</p>
26	<p>Alternative 1 Discussion. The comment is noted. Please see the revised discussion in Final EIS Section 3.4.</p>
27	<p>Places of Transition. The comment is noted.</p>
28	<p>Significant Unavoidable Adverse Impacts. Prior to the summary statement</p>

Comment Number	Response
	<p>at the end of each section (Height, Bulk and Scale, Viewsheds, Shadows, Light and Glare), a more nuanced discussion of the impacts created by each alternative is offered. This summary statement is based on the conclusion that, with the proposed mitigation, none of the alternatives would result in significant unavoidable adverse impacts.</p>
<p>29</p>	<p>Historic Resources Affected Environment. The comments are noted. Recent preservation projects in the study area include the New Richmond Laundry Building/Alley 24 development, the rehab of the Terry Avenue Building for restaurant use, the adaptive use of the former Naval Reserve Armory for MOHAI, and the incorporation of the Van Vorst Building into one of the Amazon complexes.</p> <p>The commenter is correct that the building at 201 Boren Ave N (#30) has been demolished and should be removed from both the table of Properties Previously Identified as Potentially Eligible for Historic Designation (Table 3.11-2) and from the map showing Eligible and Designated Historic Sites (Figure 3.11-1). At this time (8/29/11), the building at 223 Pontius Ave N (#37) is still extant and, therefore, remains in the table and on the map.</p>
<p>30</p>	<p>Historic Resources Environmental Impacts. The commenter correctly notes that there is already significant pressure on small-scale historic buildings with current zoning. However, maintaining the current zoning would not <i>change</i> the development pressure on potential historic resources. Without mitigation, greater development opportunity presents the greatest pressure on lower-scale historic resources; discussion of potential impacts precedes examination of mitigation strategies.</p>
<p>31</p>	<p>Historic Resources Mitigation Strategies. The comments are noted. Mitigation strategies vary considerably depending on the specific project and resources and have successfully included public education programs and interpretive media postings; oral history programs, exhibits, and interpretive plaques; and HABS/HAER documentation; as well as additional inventories and nomination reports and the other incentives modeling that are suggested already for the study area. Since this is a programmatic EIS, the recommendations are general; more specific mitigation may occur in the future when specific building projects are proposed or undertaken.</p>
<p>32</p>	<p>Cultural Resources. In the context of the EIS, the term cultural resources refers to archaeological resources. As established in the scope of the EIS, the cultural resource analysis provides an assessment of potential archaeological resources, impacts and mitigation strategies.</p>
<p>33</p>	<p>Republican Street. The City's travel demand model includes the ramp from</p>

Comment Number	Response
	<p>northbound SR 99 onto Republican Street. Based on the output of the travel demand model, no traffic impacts are anticipated and no mitigation is necessary. Including Republican Street as a study corridor would not change the outcome of the DEIS. The commenter also requests that details from the South Lake Union/Uptown Triangle Mobility Plan be included in the mitigation strategy. In response, the city agrees with many of the ideas and concepts in the South Lake Union/Uptown Triangle Mobility Plan and may implement specific elements that are consistent with other plans (Pedestrian Master Plan, Bicycle Master Plan, Transit Master Plan). However, given the programmatic nature of this EIS, specific details cannot be defined at this point, but will be included as part of specific project reviews.</p>
<p>34</p>	<p>Mitigate No Action Alternative and Future Volumes. The commenter requests analysis of the No Action Alternative with mitigation, however, since the No Action Alternative can proceed without any conditions placed on it by the City, there is no mechanism to require mitigation measures. Therefore, a No Action with Mitigation Measures alternative is not a reasonable scenario to analyze in an EIS. The projected traffic volumes are forecasts determined by the City of Seattle travel demand model and the MXD tool. Please see the response to Comment 90, Letter #13 for additional information regarding the MXD tool.</p>
<p>35</p>	<p>Mitigate No Action Alternative. The commenter requests analysis of the No Action Alternative with mitigation, however, this is not required or expected in an EIS.</p>
<p>36</p>	<p>Cheshiahud Lake Loop and Lake to Bay Loop. The commenter notes that these facilities function as recreational bike paths and not as effective transportation cycling options. While this may be true, it does not change the result of the Draft EIS.</p>
<p>37</p>	<p>Safety Analysis. There is no data source for analysis of safety based on near misses. It is true that the current funding picture for King County Metro is constrained and that there is the potential for near-term cuts in transit service. However, the Draft EIS is a forward-looking document, and assumes the regionally accepted levels of future transit as directed by the Seattle Department of Transportation and defined by the Puget Sound Regional Council. It should be noted what while transit funding fluctuates on the short-run, transit funding and service over the last 20 years has expanded substantially in the Puget Sound Region.</p>
<p>38</p>	<p>Land Use Assumptions. The projected number of households and jobs takes into consideration both the DPD-provided regional growth estimates and full buildout of the capacities allowed by the alternatives. Pages 3.13-52 and 3.13-</p>

Comment Number	Response
	53 provide more details. Also refer to response to Letter 5, Comment 36. The description of Alternative 3 refers to the slightly higher proportion of residential development compared to the overall development when compared against the other action alternatives.
39	Parking Assumptions. Text on Page 3.13-64 and notes within the chart summarize the sources. The assumptions were made using the City of Seattle Municipal Code 23.54.015, and reflect the DPD's assumptions in Appendix B of the Draft EIS, and those made in a similar study, the Downtown Height & Density EIS.
40	Mitigation. Through the state's Commute Trip Reduction (CTR) program, large employers (more than 100 employees) provide the type of outreach described in the comment letter. The city sees additional opportunity to extend this level of outreach for smaller employers through the Commute Seattle program and by potentially extending the city's Growth and Transportation Efficiency Center (GTEC) program to include the entire South Lake Union neighborhood. GTEC extends CTR-style resources and benefits to all employers (rideshare matching, guaranteed ride home program, transit pass discounts).
41	Figures. The commenter is correct that Figure 3.13-7 should be titled "On-Street Parking Supply and Occupancy" (not off-street). Pages 29 and 57 are correct as published in the EIS; study corridor 10 and 11 have endpoints at Yale Avenue N, not Valley Street. The commenter also raises concerns about Figures 4, 9, 13, 14, and 17; those figures were examined and no mistakes were found.
42	Public Services. The Draft EIS analyzed potential impacts to police and fire services in consultation with the City of Seattle Police Department and the City of Seattle Fire Department. As described in the Draft EIS, the Seattle Police Department anticipated that sufficient staffing would be available to serve the South Lake Union Neighborhood through the continued implementation of the <i>Neighborhood Policing Staffing Plan</i> . The Seattle Fire Department indicated that additional EMS incident responses could be required in the South Lake Union Neighborhood with or without potential development under the alternatives.
Letter 19: Johnson, Rob	
1	Support Increased Zoning Capacity and Flexibility. The comment is noted.
2	Mitigation. The commenter requests that details from the South Lake Union/Uptown Triangle Mobility Plan be included in the mitigation strategy. In response, the city agrees with many of the ideas and concepts in the South

Comment Number	Response
	<p>Lake Union/Uptown Triangle Mobility Plan and may implement specific elements that are consistent with other plans (Pedestrian Master Plan, Bicycle Master Plan, Transit Master Plan). However, given the programmatic nature of this EIS analysis, specific details, such as which elements of the South Lake Union/Uptown Triangle Mobility Plan will be implemented cannot yet be determined.</p>
<p>3</p>	<p>Per capita GHG emissions. Per capita GHG emissions information is presented on page 3.7-13 of the EIS.</p>

Comment Letters 20-54

Citizen Comment	
20.	Adams, Terry and Ruth
21.	Allen, Chrissy
22.	Allen, Dean
23.	Alpert, Spencer
24.	Anderson, Fred
25.	Archambault, Curt
26.	Archambault, Curt and Carla
27.	Armstrong, Sally
28.	Arrington, Alice
29.	Asher, Larry
30.	Auckland, David
31.	Autry, Mike
32.	Bacarella, Mary
33.	Bajuk, Christopher
34.	Banfill, Sally
35.	Behar, Howard
36.	Bekins, Pamela
37.	Bennett, Don
38.	Biggs, William
39.	Bjerke, Bruce
40.	Bjerke, Jill
41.	Boland, Bridget
42.	Brandt, Adam
43.	Brooks, Tim
44.	Brumbaugh, Mark
45.	Buck, Peter L.
46.	Buford, Thomas
47.	Burch, William and Gloria
48.	Butler, Henry and Olga
49.	Calder, Allegra
50.	Carlin, Gregory
51.	Cesternino, Robert C.
52.	Chadsey, Majorie
53.	Chandler, John
54.	Clancy, Karson

Holmes, Jim

From: Terry Adams
Sent: Monday, April 11, 2011 9:50 AM
To: DPD_Planning_Division
Subject: Comments on SLU EIS

We have three objections to Alternative #1 of the SLU EIS: 1) traffic, 2) green space, and 3) views. Development of the South Lake Union area will inevitably occur, but Alternative #1 sets a target that will make the resulting neighborhood much less attractive to families and to the existing residents. | 1

For 10 years we lived in Vancouver BC where the downtown area has a height and density similar to Alternative #1. Like SLU it is also adjacent to the downtown. The traffic in this area is gridlocked during each commute period, and is bad even on the weekends. Part of the reason for the gridlock is that unlike New York, London, Paris, Toronto and other high-density cities Vancouver and Seattle do not have a mass transit system to move people around the area and to outlying areas. Within the SLU EIS there was no attempt to coordinate with King County on transit issues other than wishful thinking that they will participate in increasing mass transit options. Even if they do, they cannot provide more than surface transportation on roads that are already heavily used and gridlocked during commuting times. None of the cities we mention above have substantial bike traffic as an alternative and this would not really be an alternative in Seattle in the winter for many people. As a result, there will be increased car traffic and substantial gridlock in SLU. | 2

Vancouver BC is surrounded on two sides by water and on the third side by a gigantic park. This provides the sense of open green space for the residents. Lake Union will be a beautiful waterfront on one side of SLU. However, with 400 foot towers between Mercer and Valley Avenues along with the fact that SLU is in a trough between Capital Hill and 3rd Avenue it is going to feel like anything but the open air of the Pacific Northwest. | 3

The birds-eye-views from SLU may give excellent views of our Space Needle, mountains and lake, but 85 foot pedestals and 400 foot towers on the perimeter of SLU is going to limit all views to very narrow corridors. The practical result for those living and walking in SLU is very little of the views that make Seattle a nice place to live. | 4

Terry and Ruth Adams

Holmes, Jim

From: Allen, Chrissy @ Seattle [Chrissy.Allen@cbre.com]
Sent: Monday, April 11, 2011 3:16 PM
To: DPD_Planning_Division
Subject: ESI Comment

Good afternoon,

I have been working in South Lake Union neighborhood for the past six years and have had the pleasure of watching the neighborhood grow and change. I would like for more people to live, work and visit the area. More people would mean more activity and life on the street. This added foot traffic would also support our local businesses and also encourage new business to move here.

I would like to express my encouragement for the city to adopt Alternative 1, the most aggressive and progressive alternative because it benefits the most people and maximize our city resources. It's the right thing to do.

Thank you,

Chrissy Allen | Real Estate Manager
CB Richard Ellis | Asset Services
321 Terry Avenue North, Suite 120 | Seattle, WA 98109
T 206 264 8006 | F 206 624 1389 | C 206 218 7113
chrissy.allen@cbre.com | www.cbre.com

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Holmes, Jim

From: Dean Allen
Sent: Wednesday, April 06, 2011 2:38 PM
To: DPD_Planning_Division

April 6, 2011

James Holmes, Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Ave, Suite 1900
PO Box 34019
Seattle, WA 98123-4019

Dear Mr. Holmes:

As a business owner and lifelong resident of Seattle, I have borne witness to the region's explosive growth over the last three decades. I know how important new development is to the city's economy, and I also know that zoning decisions must reflect the community's values. As such, I am writing to express my support for Alternative #1 under consideration in the South Lake Union Height and Density Draft EIS.

The timing of any new zoning approved for the South Lake Union neighborhood seems likely to produce a burst of development activity as we continue to emerge from the Great Recession. By generating new residential and commercial development near the urban core, Alternative #1 would bring a host of benefits to the city. Family-wage construction jobs would bring income-earning opportunities to newcomers and long-time residents alike. Market- and incentive-driven affordable housing construction – which, according to the EIS, is likely to be greatest under this alternative – would bring living options to wide range of families. And there would be many opportunities for new businesses to develop within the fabric of a dense and growing community.

Although the increase in congestion under this alternative would be greatest, I think the benefits outweigh this negative. Perhaps further study of modifications to transit service could be coordinated with King County Metro – such study may reveal ways around adding to congestion.

Seattleites place a high value on the livability of their communities, and Alternative #1 will drive the creation of new jobs, affordable housing, and new businesses – three keys to creating livable human environments. This is an opportunity to embed these values in the shape and form of new urban spaces, and we should not pass it up.

Sincerely,



Dean Allen

Holmes, Jim

From: Spencer
Sent: Saturday, April 09, 2011 5:51 PM
To: Holmes, Jim
Subject: South Lake Union Draft EIS

Dear Mr. Holmes:

This is in support of Alternative 1

I am a Seattle resident who dined and shops and spends time with family and friends in the South Lake Union area. Here are some of the reasons I am in support: more people will mean more activity and life on the street; more amenities will be created, such as smaller, locally-owned independent retailers and businesses with character; more eyes on the street means more safety; providing more housing near downtown can only increase the character of the neighborhood and allow for people to work and live in close proximity, thus decreasing noisy and environmentally-harming transportation alternatives; a shorter commute will also decrease everyday costs and leave more time for family and community; a variety of housing will allow for downsizing without having to give up preferred lifestyle choices, as housing in South Lake Union will allow continued, and easier access to entertainment and other desirable activities; density in the urban core could be a catalyst for better schools in the downtown area; more housing in the neighborhood would allow for healthy lifestyles by encouraging more biking and walking, which will also help the environment; and the taller, sleeker buildings will allow more light and preserve air quality in the neighborhood.

It's easy to picture a vibrant South Lake Union neighborhood as a catalyst for similar development in nearby communities, such as Belltown, where character can be preserved and the neighborhood can be allowed to grow and improve. And if not South Lake Union, where and how will development occur? Are we to have more bulky six-pack townhomes?

In South Lake Union new residents can take advantage of existing infrastructure, thus saving costs. Seattle has already put considerable economic support into this area; why not reap the benefits? More housing also means more affordable housing will become available. And more ongoing revenue for the city through real estate tax, sales tax, utility tax, etc. is sorely needed at this particular time, and would be a welcome side-effect of the more dense development that would occur.

What a great opportunity to do the right thing for our planet by supporting the greatest possible growth in the very part of town where it makes the most sense. If the city adopts Alternative 1, it will best benefit the most people and maximize our city's resources.

One can picture the South Lake Union neighborhood five, ten or twenty years from now, with little coffee shops and bakeries on the corners, people out walking their dogs and generally benefiting from the lifestyle such density will encourage. I'll bet we'll all look back with a sense of pride that when given the opportunity our planners had the forethought to ensure the future of this vital area so close to the Seattle Center and downtown core.

Best regards,

Spencer Alpert

LEAJAKConcrete Construction Inc.

PO Box 250
 Mountlake Terrace, Washington 98043
 Phone (425) 771-7168
 Fax (425) 771-6914

April 11, 2011

James Holmes, Senior Urban Planner
 City of Seattle Department of Planning & Development
 700 – Fifth Avenue, Suite 1900
 Seattle, WA 98101

Re: South Lake Union Height & Density Draft EIS Comments

Dear Mr. Holmes:

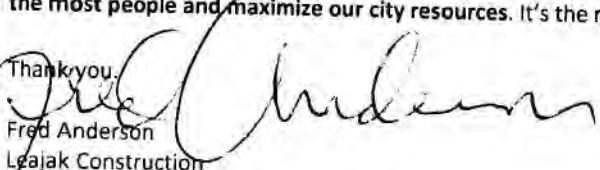
My name is Fred Anderson and the owner of Leajak Construction, a minority-owned business located in Seattle. It's very important that the South Lake Union DEIS identifies economic development benefits for each of the 4 alternatives. Since 2007, the current recession has hit everyone hard both in the private and public sector. Many families are struggling and the City needs to jumpstart the city's tax base, incentivize construction and encourage revenue streams that help pay for basic services (public safety, human services & parks). | 1

My firm has played a big part in improving the transportation infrastructure and transit system in South Lake Union. Leajak Construction helped to make the streetcar project a reality and laid the concrete foundation for the rail tracks. This resulted in many livable-wage jobs not only for our firm but many other companies who have been involved in making South Lake Union a great livable urban neighborhood. The South Lake Union Streetcar lays the foundation for a great transit spine that provides a reliable and consistent transit facility that will serve the current and future job/residential growth targeted for this Urban Center. This key fixed-rail transit system runs through the heart of South Lake Union and the City needs to take advantage of this important public infrastructure improvement by siting taller buildings/densities along the entire streetcar alignment from Denny Way to Valley Street. | 2

Our county's leaders now recognize that urban development must follow dense, compact and walkable attributes. President Obama stated in 2009 – "The days where we're just building sprawl forever, those days are over." I think that Republicans, Democrats, everybody recognizes that's not a smart way to design communities." The Obama administration introduced the "Sustainable Communities Initiative" that promotes more transit-oriented development in order to link more choices for affordable housing near employment opportunities. | 3

The city should adopt Alternative 1, the most aggressive and progressive alternative because it **benefits the most people and maximize our city resources**. It's the right thing to do.

Thank you.


 Fred Anderson
 Leajak Construction

Holmes, Jim

From: Curt Archambault |
Sent: Wednesday, April 06, 2011 7:52 PM
To: DPD_Planning_Division
Subject: Support for Alternative #3

To whom it may concern,

After reviewing all of the alternatives, I am in favor of alternative #3 as it allows for growth in the neighborhood but does so in a much more manageable way. I carefully considered all options and feel that alternative 3 is a win-win for the community and the developers in the neighborhood. It is very clear that Vulcan and Urban Ventures would be in favor of alternative #1 but the motive is clearly monetary and not a concern for quality of life in the neighborhood. The higher the buildings, the obvious financial benefit there is for the developer. This doesn't take into consideration the infrastructure in the community and I have not seen anything from alternative #1 that would offset these deficiencies. Alternative #3 allows for growth, meaning money for the developers and a quality of life for current and future community residents. Part of living in the Northwest is the ability to take in the natural beauty of the community and the surroundings...alternative #3 still has enough room around the buildings for those currently in the community to continue to enjoy the surroundings. Alternative #1 and even #2 creates a skyline that blocks all that is good in the Northwest and that is the environment we live in and the accompanying views. It would be a travesty to allow for the iconic Space Needle to be blocked by monolithic structures like office buildings.

I realize there are many pressures on planning commissions and I just hope that you will give equal consideration to the residents in the community as is given to the developers. Be aware that I am not anti-developer as I think the street car in SLU, though unpopular in some circles, is a great addition to the community and will be value added for years to come.

Thank you for your consideration of my opinion.

Sincerely,

Curt Archambault
Organization Effectiveness Manager
Jack in the Box Restaurants
(w) 858-609-3372
(c) 253-740-0134 (no voicemail)
curt.archambault@jackinthebox.com



Holmes, Jim

From: CURTIS ARCHAMBAULT
Sent: Wednesday, April 06, 2011 7:57 PM
To: DPD_Planning_Division
Subject: Support for Alternative #3

To whom it may concern,

After reviewing all of the alternatives, I am in favor of alternative #3 as it allows for growth in the neighborhood but does so in a much more manageable way. I carefully considered all options and feel that alternative 3 is a win-win for the community and the developers in the neighborhood. It is very clear that Vulcan and Urban Ventures would be in favor of alternative #1 but the motive is clearly monetary and not a concern for quality of life in the neighborhood. The higher the buildings, the obvious financial benefit there is for the developer. This doesn't take into consideration the infrastructure in the community and I have not seen anything from alternative #1 that would offset these deficiencies. Alternative #3 allows for growth, meaning money for the developers and a quality of life for current and future community residents. Part of living in the Northwest is the ability to take in the natural beauty of the community and the surroundings...alternative #3 still has enough room around the buildings for those currently in the community to continue to enjoy the surroundings. Alternative #1 and even #2 creates a skyline that blocks all that is good in the Northwest and that is the environment we live in and the accompanying views. It would be a travesty to allow for the iconic Space Needle to be blocked by monolithic structures like office buildings.

I realize there are many pressures on planning commissions and I just hope that you will give equal consideration to the residents in the community as is given to the developers. Be aware that I am not anti-developer as I think the street car in SLU, though unpopular in some circles, is a great addition to the community and will be value added for years to come.

Thank you for your consideration of my opinion.

Sincerely,

Curt and Carla Archambault

Seattle, WA 98121

Holmes, Jim

From: Sally Armstrong
Sent: Tuesday, April 05, 2011 3:49 PM
To: DPD_Planning_Division
Subject: EIS Comment

Mr Holmes,

The reason for my message today is to convey my thoughts of the possible rezoning in the South Lake Union area.

I live on Capitol Hill, overlooking South Lake Union and have been in Seattle just a short five years, but during that time I have watched the continuous development of South Lake Union take place. What used to be a collection of vacant, run-down buildings and parking lots has made the transition to a viable and bustling community. However, the current height restrictions, I feel, does not allow South Lake Union to reach its full potential. It limits the height of new buildings, which results in bulky, space-consuming structures with little or no incorporated community space.

This inability to grow vertically causes the inevitable alternative of urban sprawl. Capitol Hill has already felt the effects of this outward growth - condos have consumed Broadway Avenue and the surrounding areas at an alarming rate. A walk down the once historical street is now feeling more and more confined with each new building. It's only a matter of time before the growth continues out to other neighborhoods.

Allowing South Lake Union to grow into a healthy addition of downtown absorbs this urban sprawl that is changing the culture of our existing neighborhoods. Also, the recent addition of Lake Union Park, which I feel is currently under-used, can only be enhanced with the removal of parking lots and the addition of supporting new residential and business opportunities. This also revitalizes our downtown area and pumps new life into the city's gateway to Lake Union.

I personally, would like to encourage the city to adopt Alternative 1 of the proposed rezone of South Lake Union.

Thank you for taking the time to review and consider my comments on this topic.

Regards,
Sally Armstrong

Holmes, Jim

From: Alice Arrington
Sent: Tuesday, April 05, 2011 2:44 PM
To: DPD_Planning_Division
Subject: opposition statement

As a resident in the South Lake Union I want to express my concerns regarding the proposals set forth in the latest eis for SLU. (1) If the vision is for high density mixed-use buildings, the plan must include community amenities such as schools, centers for residents -including children - to play and gather, and better street transportation than the current plans are showing. Mostly (if not only) adults live in the core downtown area with its high rise office and condo buildings. There is no sense of a neighborhood community -and in fact there is a fair amount of crime and disturbances - in Belltown, 1st/2nd Ave, and the Denny Triangle areas. (2) It would be a travesty to line (even partially)the shore of Lake Union with high rises - as was attempted years ago with Lake Washington at the foot of Madison. As the first two buildings went up the folly of such a plan was immediately visible to the whole community. A step down plan would be more esthetically attractive for **all** city residents and would allow for growth in the area. It seems a bit un-Seattle-like to have the big developers, institutions and governemnt run rough shod over it citizens who want to be proud of a livable city where familys can grow and thrive, work and play, and enjoy the best that Seattle and the Northwest have to offer.

Alice Arrington

Holmes, Jim

From: Larry Asher [larrya@svcseattle.com]
Sent: Thursday, March 24, 2011 10:45 PM
To: DPD_Planning_Division
Subject: I'm supporting greater density in South Lake Union

Good Morning,

I am the co-owner of the School of Visual Concepts, a professional design and marketing communications school at 500 Aurora Avenue in South Lake Union. SVC has been in business for 40 years at this address, and I've been an owner of the school since 1994.

As someone who spends the better part of every day in the neighborhood I've seen vivid evidence of how more density has already been a huge plus for the city, for the area, for small businesses such as mine, and for the quality of life of those who work and live in South Lake Union.

I believe it's an important vision for the city to foster more successful "mom and pop" enterprises, and the increase in business activity and residents in SLU over the past few years has done exactly that. As few as five years ago, there were almost no restaurants or service businesses we could walk to from our location. Now, we have a choice of restaurants (many independently owned), coffee shops, banks, and other services, such as a hardware store, just a few blocks away.

It's certainly made life more convenient for us and our employees. And, I'd submit that our small, privately held business has also been the beneficiary of greater density, as we are now seeing more and more students enrolling from Amazon, Group Health, REI, WPP, and Microsoft.

So to the extent that more density -- including density made possible by taller buildings -- would create a pool of customers for small businesses such as ours, I can only be in support of such a move. And I would encourage the drafters of an environmental impact statement to focus on this positive outcome of changes to the zoning in our neighborhood.

Thanks so much.

Larry Asher
 Co-Director

--



School of Visual Concepts
 500 Aurora Ave. N.
 Seattle, WA 98109
 206-930-3417 direct
 206-623-1560 main
www.svcseattle.com
 twitter svcseattle
 facebook.com./svcseattle

Holmes, Jim

From: David Auckland
Sent: Thursday, April 07, 2011 12:07 PM
To: DPD_Planning_Division
Subject: Support of South Lake Union development

Dear Mr. James Holmes, Seattle Dept of Planning and Development -

I am writing in support of further development and higher residential densities in South Lake Union.

As a avid fan of downtown seattle and a small business owner in Queen Anne, I've seen the dramatic improvement in energy and excitement that surrounds continued growth and opportunities in neighborhoods. Just recently, I stayed in downtown Bellevue and walked to a fine dining establishment and attended a movie. It was exciting to see lines at all the various entertainment establishments and energy that surrounded a vibrant concentrated area. I could only hope that South Lake Union is able to exceed that feeling and culture with increased foot traffic from higher density buildings.

It is absolutely critical to have permanent residents in neighborhoods to drive businesses to the area. We've all taken note of Ballard and Fremont, which are two of the most unique and special places in the downtown area and the thought of adding another in South Lake Union is thrilling. South Lake Union is perfect to replicate and exceed those models with existing infrastructure, parks, easy access to downtown core and the lake as well as momentum in business and employment opportunities. With all those things going for it, I couldn't think of a better place for the City to really embrace the environmental benefits of having people work, dine, shop and socialize where they live.

I believe the city should adopt Alternative 1 and really get behind maximizing our city resources and send a message that we're serious about being a world class city.

I look forward to the continued progress and excited about what the future holds for South Lake Union.

Sincerely,

David Auckland

Holmes, Jim

From: Mike Autrey
Sent: Friday, March 25, 2011 3:41 PM
To: DPD_Planning_Division
Subject: SLU Draft EIS comments

I live in Fremont and work downtown, so I often travel through South Lake Union (on the bus). I also do business in South Lake Union from time to time. I think it's wonderful that this area is finally starting to be redeveloped. The type of dynamic, urban-infill, mixed-use and sustainable development that is going on in South Lake Union right now is exactly the reason why I moved to Seattle in the first place.

I would like to see no height restrictions in the neighborhood so that it can be a dense, urban neighborhood (commercial and residential) and include "pencil-tower" type development rather than solely consist of squatty, bulky and boxy development. As I understand it, in order to get the increased height over the current zoning, developers would be required to provide additional public amenities. 1

I believe that a denser South Lake Union with more height and with additional developer-provided public amenities will have the following benefits: 2

- *better jobs/housing balance in Seattle as people can live in South Lake Union and bike, walk or take transit to work downtown (or in South Lake Union itself)
- *keeps more employment downtown, one of the hallmarks of a sustainable city
- *gives more people the opportunity to live without a car, so is more affordable
- *puts people and development where we already have a lot of infrastructure instead of building new
- *stimulates job creation as South Lake Union is becoming a biotech hub
- *better preserve views of Seattle and Lake Union for people on the street and those that live and work in the existing, relatively short buildings in the neighborhood (i.e., your view is going to be better from the street or existing buildings if you're not walled in all around by seven-story buildings)
- *more open space between buildings and bigger set backs from the street
- *in comparison to development on the urban fringe (which is where the development will go if we don't accomodate it in areas like South Lake Union), compact, dense, in-fill development uses less energy, and reduces the number of vehicle miles traveled, helping to combat climat change

I really hope the city does the right thing here and gives Seattle the opportunity to be the poster child for smart growth. Sustainable development starts with density - if we don't get the high density part right, then we put a ceiling on the benefits of sustainable development, and I don't think we want to do that!

Thanks,

Mike Autrey



Comments from the Space Needle

March 28, 2011

South Lake Union Draft EIS

Good evening, my name is Mary Bacarella and I am the vice president of brand management for the Space Needle.

Thank you for the opportunity to comment on the Draft EIS, this urban form study is of vital interest to us as some alternatives could severely impact the Space Needle.

The Space Needle attracts 1.3 million visitors a year and generates \$280 million dollars per year in economic benefit to the region.

The Needle is the city's most recognized symbol of Seattle.

The Space Needle's landmark status is due in part to its unique hourglass shape, its tri-pod legs, and the fact that it is only one of two steel Towers in the world, the other being the Eiffel Tower in Paris.

We are very concerned because the visual depictions in the Draft EIS show that views to the Space Needle will be impacted by Alternative 1 and 2. Yet, the language of the Draft EIS concludes that there is no significant adverse impact to views of the Needle.

The thinking behind the Draft EIS conclusion seems to be that it is ok to cut off our legs. I urge you to re-read the landmark nomination of our iconic structure, and you will see it is the totality of our beloved Space Needle and its tripod legs that make it an icon. Lopping off a significant portion of this view is an adverse impact that must be recognized in the Final EIS. Mitigation measures and perhaps new alternatives must be developed to avoid this impact.

We believe that growth in our South Lake Union neighborhood should occur in a way that preserves the prominence of our city's premier landmark.

Views of the Space Needle should be enjoyed from neighborhoods, local parks and Lake Union.

As the symbol of the city we want to be a part of this process and stay in touch with our neighbors and the broader Seattle community. We are confident that the City will do a better analysis of any possible impacts to the Space Needle as we move forward with the Final EIS process.

Thank you.

203
6th
Ave. N
Seattle,
WA
98109-
5005

Phone:
206
905
2200

Fax:
206
905
2107

Holmes, Jim

From: Christopher J Bajuk [cbajuk@uw.edu]
Sent: Tuesday, March 29, 2011 10:45 PM
To: Holmes, Jim
Subject: South Lake Union EIS Feedback

Hello Jim,

I'm a graduate student at UW in the MBA and M.S. in Real Estate programs. I attended the hearing Monday night and have skimmed through the EIS. Like some of the folks said during the public comment period, I think it would be useful for the EIS to list potential POSITIVE impacts associated with greater density development, along with the negative impacts. I think it would be especially insightful if there were a study looking at the tax increment associated with each level of higher density so city taxpayers would have a better grasp of the issue knowing how higher density could equate to more revenue for the city. In fact, I'm looking for a good summer project (internship) and would definitely be interested in helping conduct this kind of analysis for the planning department. | 1 | 2

Other than that, I think the EIS looks good and is very thorough. On a personal note, I definitely support greater density development in the neighborhood. Much greater. Thank you. | 3

Sincerely,

Chris

--

Chris Bajuk
MBA Candidate 2011 | Michael G. Foster School of Business
MSRE Candidate 2012 | Runstad Center for Real Estate Studies
University of Washington
Real Estate Club Co-President
425-457-2710
cbajuk@uw.edu
chrisbajuk@gmail.com

Holmes, Jim

From: Sally Banfill
Sent: Friday, March 25, 2011 4:41 PM
To: Holmes, Jim
Subject: South Lake Union Project

Hello Jim,

I can't attend the meeting but wanted to send in this comment. Please add me to your email list if you have one.

I own a condo on Capitol Hill and recently saw an illustration of the new project. Allowing this much height and density is unacceptable.

The Space Needle is an icon and focal point for the people of Seattle. This is a giant view blocking project that devalues thousands of homes! Paul Allen has enough money and should respect Seattle homeowners. He can build things without being this heavy handed and ruining Seattle for the rest of us.

Sincerely,

Sally Banfill

Holmes, Jim

From: Howard Behar [mailto:howard@seattle.gov]
Sent: Monday, April 11, 2011 2:58 PM
To: Holmes, Jim
Cc: Lynn Behar
Subject: South Lake Union

Jim,

My name is Howard Behar. I am a lifetime resident of the Seattle area having been born and raised in the north end of the city. My father and mother were both immigrants to the city almost one hundred years ago. My father worked at the Pike Place Market long before it was a tourist attraction and my mother worked at Rhodes Department store (long since gone). As a family we have always been committed to the social and economic well being of our city. We have watched with pride the development of our city and celebrated it's continued caring for the people who live here and for the environment in which we live. So it is with that caring and love that I want to give you my input on South Lake Union development.

One of the great things about our city is its natural beauty. There are not many cities in the world that have such beauty. Our lakes, Puget Sound and our mountains along with hills and plant life all go to make our city one of the most scenic places to live. We have done a great job of keep our high rise growth in the downtown corridor....exactly where it belongs. Now I hear that we are considering extending high rise growth to the South Lake Union corridor. I could not disagree more with that idea. We have plenty of room already dedicated for high rise growth in the Bell Town area as well as downtown. Most of it is not be used so why spread out. I am not against tall buildings, just not for them everywhere. We have already done an extremely poor job of creating view corridors and parks in the downtown area, can you imagine what will happen if we open up the corridor to the lake for high rise development. If we wanted a city like New York we would move there. Can you imagine a city where people celebrate the fact that sunlight hits there windows for an hour a day and worst of all they think that is a big selling point, they do in NYC. We have enough gray let's not make it worse.

For the most part this all about economics. The developers are trying to maximize their earnings on the land they own.....I can understand their desires.....and the city government is trying to maximize it's tax base and I can understand that as well. The problem is that "economic maximization" is not the right goal. The right goal is preservation of our natural assets. The decisions that you make will be forever....never to be changed please do not make them based on someones pocket book....even our own.

Let's keep our natural beauty for all to see and enjoy. There is only one place for Lake Union to be....right where it is.....on the other hand buildings are created by us....we can put them where we want them and keep them out of where we don't.

I vote for keeping the zoning the same and letting all not just a few take pleasure in the natural beauty of our surroundings. I bet if it came to a vote the rest of the citizens would vote the same way.

Warm regards,
 Howard Behar
 206.465.1175

Holmes, Jim

From: pbekins@comcast.net
Sent: Tuesday, March 29, 2011 12:58 PM
To: DPD_Planning_Division
Subject: Comment on the South Lake Union Height & Density Draft Environmental Impact Statement

I have been a resident of 2200 Westlake for 4 years. When my family first moved to our condominium at 2200 from Magnolia there was very little going on in the South Lake Union neighborhood. It was a bit like living on an island. We knew however that the neighborhood held great promise for the time when people would start joining us to live and work here.

The streetcar is now rolling through the neighborhood connecting us to almost every place that we want to go. When flying out of town, it could not be much easier than connecting from the streetcar to the light rail nearby that takes us to the airport. With all our new mobility choices we have now become a 1 car family.

The wonderful new Lake Union Park has recently opened a short distance away. This park is fairly passive in its design however, and would greatly benefit from more people using it 7 days a week.

With all the new Amazon employees coming to work in the neighborhood and new residents now living here, there are great restaurants and shops sprouting up all over the place. It is wonderful to see that many of the older neighborhood retailers and the shop owners who were pioneers in the new "South Lake Union" are now beginning to thrive. The streets are becoming much more alive during the day, but they have a lot of room for becoming more active and safe at night. I believe that the only solution for more safe night-time activity is a much greater concentration of people living in the neighborhood.

I urge the city to adopt Alternative 1 which will maximize the opportunity for much greater numbers of people living in South Lake Union. As a resident of a condo "tower" I welcome more towers like it. I have grown accustomed to looking out on high-rise office buildings and other residential towers. This is what I expect when living in the city. I greatly prefer looking at well designed buildings with lots of people living and working in them to the vast expanses of empty parking lots that I see as I overlook the Denny Triangle area. While I strongly support height and density in the neighborhood, I would like to see a move away from the bulkier buildings that current zoning supports and toward the taller slender buildings that I have seen in Vancouver, BC.

Pamela Bekins

Holmes, Jim

From:
Sent: Monday, April 11, 2011 4:21 PM
To: DPD_Planning_Division
Subject: DEIS

The Section on Public Services provides no information about South Lake Union. There is no breakout of calls or response times to SLU. Until there is a breakout of specific calls and response times to South Lake Union this is an invalid section.

There is no indication whether this lack is because of an absolute lack of information, lack of time or money to achieve this breakout, or an intentional effort to hide the data.

Until this is corrected in a Revised EIS or Final EIS This section and its conclusions have no validity.

Don Bennett

1



GroupHealth

Group Health Cooperative
Administrative South Building
12501 East Marginal Way South
Tukwila, WA 98168

April 8, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Subject: South Lake Union Draft Environmental Impact Statement

Dear Mr. Holmes:

Group Health Cooperative has been an active part of the South Lake Union community since before our relocation of our headquarters to the neighborhood approximately three years ago. We have approximately 700 employees working in this neighborhood, and have enjoyed the increasingly vibrant community emerging in this part of our city. I am writing today in support of the proposed neighborhood rezoning of South Lake Union which in our view facilitates more room for businesses to grow, their employees to live and will add vibrancy to this neighborhood. Many benefits for employers, employees, residents and visitors exist in the proposal, including:

- Urban infill is sound public policy. When done well, development of enhanced density accommodates jobs and housing together, while decreasing congestion and dependency on single occupant vehicles. Expanding jobs in the urban center increases utilization of public transportation infrastructure..., helps relieve regional congestion, creates more vibrant local communities, and is supports healthy environments for working, living and playing.
- More people living/working in the area will create more activity on the street, people who will shop in local businesses, enhance vibrancy, and enhance safety.
- Expanding tax revenues associated with density will generate funding that is much needed for public services.
- SLU is currently underdeveloped and represents one of Seattle's best opportunities for accommodating growth while minimizing demand on city and regional roadways and other services.

How this growth is planned for and impacts mitigated are critical to the continued vitality of the community. Group Health would like to register the following comments on the Draft Environmental Impact Statement.

- We urge Department of Planning and Development to consider Economic Development as an important factor that is not adequately addressed in the Draft Environmental Impact Statement (DEIS). 1
- We encourage careful assessment of on-street and off-street parking to assure adequate supply of affordable and accessible parking for those who work, live, shop and/or visit SLU, while simultaneously improving transit service, enhancing walking and bicycling infrastructure. 2
- Related to above we encourage careful consideration of specific transportation impacts related to major road improvement projects in queue today and/or are planned or need to be, including the expansion of Mercer to 6-lanes, the North Portal and reconnection of the street grid north of Denny. These are critical to understanding and appropriately analyzing and mitigating impacts for each of the re-zone alternatives. 3

Thank you for your consideration.

Sincerely,

William Biggs, Executive Director Administrative Services
Group Health Cooperative

Holmes, Jim

From: Bjerke, Bruce [BruceBjerke@dwt.com]
Sent: Friday, March 25, 2011 12:16 PM
To: DPD_Planning_Division
Subject: south lake union upzone proposal

I am writing to you in support of alternative #1 of the proposal upzoning alternatives for South Lake Union. 1

I have been a Seattle resident for more than 30 years, and am delighted by the transformation that is occurring in South Lake Union.

I live on Capitol Hill and now visit South Lake Union for shopping and to visit restaurants in the area. I also go to meetings with clients in their new offices in that neighborhood. It is clear that the area is quickly becoming a magnet for people who want to live near where they work, and shop close to home.

This kind of development reduces our society's dependence on the automobile and presents the rare opportunity to create a vibrant, urban living space that will enhance the attractiveness of our city as a place to live and work, and play.

This is a rare opportunity and I hope that the City will grant the approvals that are required to allow this to continue to happen, and will encourage continued development in the area in accordance with the terms of alternative #1.

Yours,

Bruce Bjerke
1051 E. Galer St
Seattle, Wa 98102

Holmes, Jim

From: _____
Sent: Tuesday, April 05, 2011 3:59 PM
To: DPD_Planning_Division
Subject: South Lake Union rezone proposal

My name is Jill Bjerke and I would like you to know that I support the proposal to rezone the South Lake Union area to allow more people to work and live there.

I was a Seattle Public Schools teacher for 30 years and recently retired. I live near Volunteer Park and often walk to the South Lake Union neighborhood, now that it is beginning to fill up with attractive shops, restaurants and pedestrian friendly attractions.

I think it is great to see the development of a true urban village, close to the center of the city, that will augment, rather than compete with the retail core of the city, and encourage people to walk from their homes to work and recreation.

Alternative #1 is the proposal that makes the most sense to me, and I support it.

Jill Bjerke

Holmes, Jim

From: Bridget Boland
Sent: Monday, April 11, 2011 1:23 PM
To: DPD_Planning_Division
Subject: South Lake Union Draft EIS Comment

Hello, I'm a South Lake Union homeowner, above Westlake on Dexter Ave North. I've lived in the area for about three years. I rented an apartment in the South Lake Union area for two years before buying my condo one year ago. When I was looking at homes, location was the number one factor in my decision. I looked in Queen Anne, Ballard, Belltown, Capitol Hill, Fremont and Wallingford.

The decision to buy a home in South Lake Union was partly based on the amenities already available in the neighborhood but more on the development I hoped would be taking place over the next few years. I was hopeful that the neighborhood would come alive with new restaurants and shops, the Lake Union park, and bring more people and more foot traffic—and it has, even just over the last year. But we can do more to support the significant growth potential that exists in South Lake Union. I think adding some diversity in the shape and sizes of buildings would make the neighborhood much more interesting and attractive. Our condo look towards downtown, so right now, we see mainly parking lots and old, gray 1-2 story warehouses.

What I care about most as a resident is having more shops and restaurants and services like drugstores and drycleaners within walking distance. I also want to see more people on streets and in our new park instead of dark and quiet lots that attract crime. I see taller buildings as a means to further activating the neighborhood. I realize that the EIS does not study benefits that taller buildings can bring but I believe there are significant economic or environmental benefits we can gain by allowing greater height/density in this area. Where else could Seattle grow if not in South Lake Union? | 1

I've also heard a lot of concern about towers near the lake. In my opinion, again, it's not so much about just the height of the buildings. As long as the towers are well designed, create welcoming access to the park, and provide a good street-level environment, I don't see a problem with tall 400-foot residential towers there. I've seen it done well in a lot of places like Portland and Vancouver, among many other cities. With all the innovative and creative organizations like Amazon, PATH and the biotech companies in the neighborhood, I think we need to take a page from them and think out of the box and be more progressive when it comes to zoning! We're in the middle of the city, not in the suburbs. | 2

Thank you,
 Bridget Boland

Holmes, Jim

From: Adam Brandt
Sent: Thursday, March 10, 2011 8:05 PM
To: DPD_Planning_Division
Subject: South Lake Union Expansion

Hi,

I've recently heard the expansion around South Lake Union is being blocked by a small number of residents living in that area. I've lived close to SLU for almost 10 years now, and I'm currently living in Fremont. In my mind, SLU has been a dead zone for as long as I can remember. There have been some very nice stores in the area that I used to frequent, but they rarely last and most are long gone. Outdoor and More was one of my favorites, but finally closed last year, as I'm sure your aware. There's almost zero foot traffic in the area and my wife and I still laugh at the SLUT as it passes by mostly empty all day long. It would be really great to see more opportunities to live closer to downtown; the city should be taking every opportunity to increase downtown population density and prevent the miles of sprawl created in areas like Northern Aurora. Make no mistake, Seattle will continue to expand and SLU will be surrounded by larger buildings no matter what. Retarding this natural growth in a place as close as SLU will only provide the less favorable elements of the city a place to gather where they'll be off the radar from higher trafficed areas.

I hope this email helps you make the right decision. Respectfully, Adam Brandt



KENMORE AIR™

the seaplane airline

6321 NE 175th Street, Kenmore, WA 98028 • Phone 425.485.4774 • Fax 425.485.4774

April 7, 2011

Mr. Jim Holmes, Senior Urban Planner
 City of Seattle Department of Planning and Development
 PO Box 34019
 Seattle WA 98124-4019

Response to South Lake Union DEIS

Dear Mr. Holmes,

Kenmore Air's comments to the *South Lake Union Height and Density Draft Environmental Impact Statement* relate to the following subjects:

1. Flight Operations/ Flight Path

The DEIS correctly identifies Kenmore Air as the largest operator on Lake Union. While Kenmore is responsible for transporting more than 80,000 passengers into and out of Lake Union annually, the most important and often overlooked perspective is that of the lake being recognized as an Essential Public Use Facility. Lake Union is the community's airport. It is one of the oldest and most active airports in the state. It has served as the location for the world's first international scheduled airline service, Boeing's first aircraft flights and home for more than five commercial seaplane operators during the 1980s. Today, the Lake Union airport is cited in numerous public documents as an airport of statewide and national significance. It is the present location for the only international customs and immigration facility for seaplanes in the greater Seattle area. As such it serves a number of daily scheduled international flights and foreign air carrier charter operators.

1

Perhaps the most critical element or mitigation necessary to ensure the safety of passengers in the air and residents on the ground is recognition of the lateral and vertical flight departure and arrival areas necessary for safe flight operations. For those aircraft departing to the south the area needed is generally shown in depictions in the DEIS and is referenced as FAR Part 77. While this FAA flight safety assessment tool is not legally binding (the FAA does not regulate land use changes or code revisions around airports) it is nevertheless one of the most recognized and useful tools for assessing the airspace requirements at airports. Jurisdictions consistently adopt this or a similar standard when evaluating the impacts of building or obstacle heights near airports in order to avoid

2

potential future liability and more importantly, as a measure to meet the general intent of preserving the public's best interest and safety.

2 cont

2. Wind Analysis

The DEIS conducts an analysis of the impacts of each Alternative with regard to the potential for increased height of vertical wind wake zones and shear layers, increased turbulence and changes in local wind patterns. The conclusions formed in the DEIS are general in nature. Among the most relevant generalizations are the following:

3

“Sudden changes in wind speed or high levels of turbulence can have significant effects on the small aircraft aerodynamic response and thus can affect their safety margin” (p. 3.8-39)

“It is, therefore, important that aircraft, particularly small aircraft, fly beyond these zones.” (p.3.8-39)

“Apart from the risk of physical impact, small aircraft flying through a “canyon or “corridor” of tall structures can be significantly affected by turbulent, local winds channeling and accelerating between buildings.” (p.3.8-41)

“Where the building height plus the vertical wake exceed the flight path elevation, safety for planes taking off or landing is compromised.”

All of the above are accurate statements but generalizations to a fault. Nowhere do we see an analysis of these factors on the specific fleet mix used on Lake Union. An analysis of these factors should be relevant to the specific flight and performance characteristics of those aircraft in common use on Lake Union.

In the first statement we would ask what these significant effects do to climb performance and the resulting altitudes gained by departing aircraft at the southwest shoreline. In the second statement it is likewise important to understand for each proposed alternative what is the capability of the aircraft to fly beyond each zone. And for the third statement we need to again understand if the aircraft can perform within accepted safety standards.

Empirical evidence from more than 65 years of flying experience on Lake Union totaling hundreds of thousands of individual aircraft operations tells us that existing wind shear, down drafts, and turbulence at the south shoreline already impacts aircraft performance and reduces the altitudes aircraft can gain over existing structures. Even utilizing the longest designated runway on the lake aircraft are often no higher than 200-250 feet at the southwest shoreline. Tall buildings of various floor plate sizes that are specifically placed along the horizontal edges of the established flight path will be expected to further impact existing operations in those categories noted in the DEIS conclusions above. The

4

need to quantify these impacts is necessary in evaluating appropriate vertical safety buffers within the horizontal limits of the flight path.

4 cont

3. Wind Analysis Mitigation

In the Mitigation Strategies section (3.8.3) only two have *significant* mitigation value. These two include limiting building heights within the horizontal flight path area and the establishment of a vertical safety buffer. Both of these measures serve the same purpose and intent—namely to ensure safe clearances between departing aircraft and obstructions on the ground. As listed here, however, they have little efficacy. Neither offers a specific number for an acceptable building height or vertical safety buffer.

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In the absence of quantitative analysis the only measure that can ensure the safety of residents and aircraft operators is a zoning overlay that restricts further building heights. Kenmore Air strongly urges the City of Seattle to engage in a dialog with WSDOT Aviation that would offer the parameters for a zoning overlay within the horizontal limits of the flight path. This zoning overlay would restrict future building heights within the horizontal flight boundaries to existing zoning heights or, if an aircraft performance based wind analysis indicates safety of flight can be maintained, then a safety buffer could be established below the 20-1 approach/departure surface of FAR 77.

4. Wind Analysis Summary Mitigation (p.3.8-52)

All three of the conclusions, and most specifically the first two in this section are accurate and comprise the fullest measure of mitigation for any increases in building heights in South Lake Union. These measures, however, are only found in Alternative 4 and to a lesser degree Alternative 3. Thus, any consideration for the adoption of Alternatives 1-3 which places taller buildings closer to the shoreline and/or adjacent to the horizontal limits of the flight path must include the adoption of the zoning overlay suggested above as a necessary measure to maintain the safety of future flight operations within the described departure area that will now experience increased wind shear, turbulence and down drafts.

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5. Noise/Quality of Life Impacts

The DEIS provides no analysis of the likely impacts of noise and the perceived fears from residents as a result of the proximity of flight to residential and commercial buildings. Our national airspace system has countless examples of communities that build up around an existing airport and find themselves at odds with the impacts of these flight operations. Existing airport operators, municipalities and residents can spend untold legal expense and time while engaged in these conflicts. In the event that zoning is accepted for taller buildings in the immediate area near the flight path, the City should

7

require developers to provide the existing seaplane operators an Avigation Easement. These easements simply serve to notify residents that they cannot initiate nuisance claims against the seaplane operator for conducting legal and normal flight operations. These Avigation Easements and Notice on Title are successful and proven tools in preventing future conflicts.

7 cont

Last, Kenmore Air is again appreciative of those efforts made by the City to account for the historical and existing flight path in all of the alternative zoning options. The more detailed analysis and suggested mitigation cited in this letter is viewed as necessary to ensure the greatest measure of safety for aircraft and community residents.

8

Please do not hesitate to include Kenmore Air in any discussion, review and analysis of these issues. Our interest remains first and foremost to preserve the safety of flight operations and the current and future resident quality of life. We welcome any opportunity to input on these issues.

Sincerely,

KENMORE AIR HARBOR, INC



Tim Brooks
Vice President, Flight Operations

Brumbaugh & Associates

April 10, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Avenue, Suite 1900
Seattle, WA 98124-4019

RE: South Lake Union Rezone

I am writing in support of Alternative 1 of the Height and Density Draft EIS to allow additional growth in the South Lake Union neighborhood of Seattle.

As the owner of a Seattle landscape architecture firm we see have seen the tremendous benefits of urban infill projects that have replaced parking lots and low density development with higher and better uses serving the community. We have also participated firsthand in the design of focal SLU projects including 2200 Westlake, the Discovery Center and Rollin Street Apartments. The Seattle area is projected to grow substantially in the decades to come. The SLU neighborhood provides an excellent opportunity to accommodate new development that is not dependent on an already maxed out transportation system. Allowing more height and density reduces sprawl and provides the critical mass necessary for a vibrant urban live/work center.

I am also on the Sustainable Sites technical advisory board for the U.S. Green Building Council helping to write new versions of LEED language. Much of the emphasis of the Sustainable Sites portion of LEED is encouraging dense urban development in areas that already have infrastructure in place such as SLU.

Thank you considering my comments. I look forward to a prosperous future for South Lake Union.

Sincerely,



Mark Brumbaugh

THE
BUCK
LAW GROUP

Peter L. Buck

April 11, 2011

SENT VIA EMAIL and FIRST CLASS MAIL

Mr. Jim Holmes
Department of Planning & Development
City of Seattle
P.O. Box 34019
Seattle, WA 98124-4019

RE: South Lake Union - Draft EIS Comments

Dear Mr. Holmes:

This firm represents the owners of the properties at 1000 and 1100 Dexter Avenue North, located in the South Lake Union panhandle (i.e., that portion of South Lake Union north of Valley Street, east of Aurora Avenue North, and west of Lake Union).

First, we again commend the City and its planning staff for the significant efforts expended to date in redesigning South Lake Union neighborhood. It has invaluable potential to become a more vibrant and sustainable neighborhood, and is a key location for a significant portion of the City's future growth. As one of six designated urban centers targeted for future growth, it holds the potential for the greatest impact on the City Center and surrounding neighborhoods providing commercial and residential capacity for the City. Our client, and numerous other residents and neighbors located in the South Lake Union panhandle, look forward to a thoughtfully vetted design that takes into account the unique aspects of each portion of the neighborhood.

Accordingly, we submit these Draft EIS comments, including several suggested refinements to the proposed alternatives, for your consideration in developing the FEIS. Because our client's properties are situated within the South Lake Union panhandle, we are limiting the scope of our comments to certain aspects of the alternatives as they affect the panhandle portion of the neighborhood.

1

DRAFT EIS – RECOMMENDED REFINEMENTS

Introductory Overview

It is our position that with some modifications, Alternative 1 provides the greatest possibility for achieving the numerous goals outlined in the Draft EIS. As recognized in major cities across the continent and elsewhere, population growth is best suited to occur in urban centers designated for growth. Growth best occurs with the benefit of thoughtfully crafted zoning requirements which recognize the unique characteristics of every neighborhood while also transitioning growth neighborhoods into centers designed for more heavily populated city living. The redevelopment of South Lake Union is no different, and represents a critical opportunity to shape growth in the City of Seattle consistent with the goals as carefully outlined in the Draft EIS which originate from the City's Comprehensive Plan.

2

Alternative 1 comes close to meeting the goals referenced.

However, we respectfully request additional consideration of the following factors unique to the panhandle of the South Lake Union neighborhood. These factors require modifications to the proposed Alternatives 1 & 2 as they pertain to residential development within the panhandle, and slightly greater modifications to the proposed alternatives as they pertain to commercial development within the panhandle. However, these modifications would provide for exponential increase in positive impacts for quality of life and activity in the panhandle and neighboring areas.

3

1. Development in the Panhandle Should Preserve Unique Characteristics

The panhandle segment of South Lake Union has some unique characteristics, distinguishing it from other portions of South Lake Union in several key ways. The Draft EIS recognizes these characteristics in part. However, none of the proposed alternatives appropriately account for the unique topography, purpose and character of this area as a key transition zone requiring a more thoughtful approach. A description of the key characteristics requiring further consideration follows.

Key Benefits of Dexter Avenue as Designated Seattle Scenic Route Providing Key Access to the City Should be Preserved

4

First, Dexter is a designated Seattle **scenic route** (see DEIS 3.10-43). Despite this designation and city ordinances which require consideration of scenic routes from which view protection is to be encouraged, the DEIS omits completely any analysis of views or view protection from Dexter. Dexter is a thoroughway between downtown and important neighborhoods providing key residential capacity for a significant portion of downtown employees. Dexter serves as key scenic and access route between downtown, passing through the east side/lower Queen Anne, and finally providing access to Fremont and surrounding neighborhoods via the Fremont Avenue bridge, or wrapping around further into Nickerson and providing access to North Queen Anne and then Ballard and surrounding neighborhoods via the 15th Avenue bridge. Dexter is a heavily used route into and out of downtown from these neighborhoods north of Seattle City Center, along with Aurora/Hwy 99, 15th Avenue NW and Westlake.

As such, development of the zoning along this route must consider that it is an important scenic route and view corridor, and one of few routes east of Queen Anne that offers views of Lake Union,

which is also a protected view. (See DEIS 3.10-41 and SMC 25.05.675 P2a which states "it is the City's policy to protect public views of significant natural and human-made features: Mount Rainer, the Olympic and Cascade Mountains, the downtown skyline, *and major bodies of water including Puget Sound, Lake Washington, Lake Union and the Ship Canal*, from public places consisting of the specified viewpoints, parks, *scenic routes*, and view corridors ...") Though development along this route to date has blocked portions of the Dexter Avenue corridor view, the City cannot allow views from this scenic drive to be destroyed in their entirety. As it exists now, there are numerous vantage points from the Dexter Avenue corridor providing scenic views of Lake Union. These views are critical to the Dexter Avenue corridor, both as a designated scenic route, but also as a transition zone between residential districts and what will be a heavily developed South Lake Union commercial and residential neighborhood. It is imperative that the City preserve light and open space to protect this scenic drive as well as to preserve the future of this panhandle neighborhood as a pedestrian-friendly district.

4 cont

Development in the Panhandle Should Respect Neighboring Areas

Second, as is recognized, but not fully considered in the DEIS, the panhandle section of South Lake Union abuts lightly developed neighborhoods including lower Queen Anne and the area extending north along the west side of Lake Union (see 3.10-20, where a "wall of building" could greatly adversely affect neighbors in "areas now only very lightly developed such as the ... Dexter Avenue corridor north of Mercer Street"). These areas, unlike the Denny Triangle and the remainder of South Lake Union, will not see the kind of growth and development for which South Lake Union is targeted. Consequently, this area of transition must be treated appropriately as a transition between two very different types of neighborhoods.

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Quoting the DEIS (at 3.10-3):

Height, bulk and scale relate to the size of buildings and their relationship to neighboring structures. The City's SEPA policies recognize that physical characteristics of buildings affect the character of neighborhoods. *These policies also recognize a need to address building height, bulk and scale as a means to achieve appropriate transition from one zoning district to another.* [Emphasis added.]

As an area of transition, development in the panhandle must occur in a way that gradually combines elements appropriate for this area while also mitigating the adverse impacts recognized in the DEIS which are not yet appropriately accounted for as required by SMC 25.05.675 (describing mitigation alternatives). This includes topographical considerations as they relate to the adverse impacts development along the west side of Lake Union could have on Queen Anne and other nearby neighbors. This can be done, as suggested herein, with only minor changes to the proposed alternatives as they exist now, and only as they pertain to the panhandle, which, though a small portion of the South Lake Union neighborhood is a critical transition area.

Further analysis pertaining to Height, Bulk and Scale, affecting *aesthetics and neighborhood character*, follow below.

6

Unique Street Formation in the Panhandle Should Be More Carefully Considered

6 cont

Third, street formation in the panhandle requires careful consideration when reviewing height, bulk and scale requirements, specifically as they relate to *podium heights* and *commercial development*. These elements of future development provide the greatest potential for adverse impacts and the possibility for a "wall of development" that eradicates current benefits of the neighborhood.

The traditional street grid is interrupted in a key portion of the panhandle where double blocks exist. As a result, this formation has the unique potential to cause significant blockage, dark canyons, shadowing, and a general lack of light and aerial open space should a wall of development be allowed to pervade this area. (See DEIS 3.10-18 acknowledging this risk in "the double length blocks along Dexter Avenue N. between Aloha and Galer Streets where the street grid is interrupted.") This outcome would be wholly inconsistent with the goals of Seattle's Comprehensive Plan which are specifically addressed in the Draft EIS. Although the Draft EIS (at 3.10-3) recognizes that because of the street grid interruption in this area, podium heights have the potential for the greatest impact (i.e. detrimental impact) within these double blocks, the proposed alternatives do not then continue the analysis of impacts by modifying podium heights appropriately for this unique area.

Bread-loaf type of commercial development is still permitted under the proposed alternatives, allowing commercial buildings a footprint of 24,000 square feet, and under Alternative 1, a height of up to 240 feet. This type of structure, if built all along the panhandle, would have significant associated adverse impacts which would negatively impact the Dexter Avenue corridor as a scenic drive, and lightly developed residential area. This type of commercial build out would also destroy the future ability to create a vibrant, pedestrian-friendly zone. The podiums permitted at the base of residential towers pose the same threat to a slightly less extent – that of eliminating light, creating shadows, destroying the scenic route views from Dexter and neighboring areas, decreasing the walkability of the area, and failing to meet urban design principles. It is time for Seattle to move towards more slender towers and away from blunt office buildings, and the panhandle provides the perfect opportunity to implement that concept.

If a vibrant, pedestrian-friendly zone is truly going to be developed alongside the Dexter Avenue corridor and Lake Union, the City should take additional steps towards preserving light, view corridors, vistas from Dexter Avenue as a scenic route within the city, and guard against shadows, dark canyons, and other byproducts of development that occur without the level of thoughtfulness required here.

Modifications to the Panhandle in Proposed Alternatives 1 & 2

Considering that 1) the Dexter Avenue Corridor is a scenic route, 2) the area along Dexter is a transitional area between residential and mixed use neighborhoods, and 3) the risks of key adverse impacts related to the panhandle and its unique street grid are so high (involving loss of light, loss of aerial open space, creation of shadows, and other impediments to pedestrian-friendliness), the development in the panhandle must be treated with greater care than has occurred to date. As we have stated since the beginning of this process, we support the proposed increases in building height for residential structures within the panhandle – this transitional area *should* lean more heavily towards residential development - but podium heights and widths and commercial "bread-loaves" should be restricted.

7

Specifically, **podium heights in all proposed alternatives should be limited to 2-3 stories of street-level retail and residential development**, moving away from bread-loaf bulkiness that detracts from walkability, instead creating more open space, and preserving solar access and view corridors throughout the neighborhood. Development patterns in Vancouver, B.C., show that residential pin towers can be an impressive way to achieve increased residential density while preserving light and limiting shadows. This is precisely the model we should be following here. Taking this concept a step further, the residential tower height could even be increased above the 300 feet proposed in Alternative 1 to maximize housing benefits with little additional impact.

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Furthermore, **the maximum floor plate size for commercial structures located within the Panhandle should be decreased to avoid a wall of buildings that will greatly restrict light and choke off public views. This is particularly important with the prevalence of long, relatively narrow blocks that exist in this unique section of South Lake Union.** If necessary, implementing a minimum tower spacing requirement, façade setbacks and a reduction in off-street parking requirements should be considered as a way to accomplish this goal. Further floor plate and bulk limitations should also be contemporaneously considered.

9

To the extent that this transitional area can favor greater residential build-out, the goals of the Draft EIS could be more effectively achieved as they pertain to the panhandle and the City at large.

2. Opportunity to Address City Housing Needs through Modifications to Alternatives, Appropriate for the Panhandle as an Area of Transition

10

One of the greatest goals of the City of Seattle is, and will continue to be, to develop greater density and residential capacity within the City limits. The City of Seattle has lagged far behind other leading cities in its ability to achieve this goal and meet residential demand through careful planning and urban design concepts. The redevelopment of South Lake Union offers the City a perfect opportunity to implement the best possible scenario through careful attention to priorities at this critical stage.

Because the panhandle is such a unique area of transition, located along a designated scenic drive within the City between residential and commercial districts, it offers itself as a prime location for future residential development that can occur in accordance with modern design principles allowing for the existence of light, pedestrian friendly features including ground-level retail space, aerial open space, view corridors, and reduction of shadows. Careful design and planning to retain these benefits is especially critical in this area involving exceptionally long city blocks which are inconsistent with the traditional street grid. In the panhandle area of South Lake Union exists the greatest potential for creating long, dark and oppressive urban canyons, an outcome which must be avoided by decreasing the size of podiums and commercial bread-loaf style building alternatives.

3. Proposed Modification to Alternatives Would Better Meet the Following Specific Urban Village Strategies and Goals, consistent with the City's Comprehensive Plan

11

In addition to furthering general goals involving 1) preserving views from a designated scenic route within the City of Seattle, 2) providing for increased housing capacity within urban centers to meet both current and future housing demands, 3) providing for greater livability through pedestrian friendly mixed-use residential and commercial centers and nodes, and 4) increasing the vitality, aesthetics and

efficiency of urban areas targeted for growth, the modifications to the proposed alternatives as described herein would help the City in meeting the following goals specifically outlined in the Draft EIS (comments follow each goal):

11 cont

Urban Village Element:

Policy UV3 – 1: [To achieve] Clearly defined geographic boundaries that reflect existing development patterns, functional characteristics of the area, and recognized neighborhood boundaries.

Comment: As described above, the panhandle is an area of transition between residential and mixed use neighborhoods within the City. That fact, as well as the stated policy of the City to preserve scenic drives, and views of significant natural features, including Lake Union, makes the panhandle more suitable for a higher ratio of residential development. The proposed alternatives should accordingly allow for build-out of residential pin-towers with lower podium heights and place restrictions upon the footprints of commercial buildings to avoid a wall of commercial bread-loaf style bulkiness.

Urban Center Goals:

Goal UVG17: Guide public and private activities to achieve the function, character, amount of growth, intensity of activity, and scale of development of each urban village consistent with its urban village designation and adopted neighborhood plan.

Comment: Development within the panhandle should be guided by its unique location and topography and preserve light, space, and walkability. This is consistent with modern concepts governing design and development in vibrant, residential urban areas.

Distribution of Growth:

Goal UVG30: Encourage growth in locations within the city that support more compact and less land-consuming, high quality urban living

Comment: Again, it is imperative that the City move away from bread-loaf style commercial development; particularly in the panhandle as a transition zone, a wall of buildings on double blocks should not be permitted.

Land Use Element:

Goal LUG17: Create strong and successful commercial and mixed use areas that encourage business creation, expansion and vitality by allowing for a mix of business activities, while maintaining compatibility with the neighborhood-serving character of business districts, and the character of surrounding areas.

Goal LUG18: Support the development and maintenance of areas with a wide range of characters and functions that provide for the employment, service, retail and housing needs of Seattle's existing and future population.

Comment: The character of the areas near the panhandle is residential, lightly developed, and distinctly different from the character of areas near the remainder of the South Lake Union neighborhood. The build-out in the panhandle should reflect this transition and be respectful of neighbors by retaining key elements involving space, light and quality of life in an urban residential area.

11 cont

Housing Element:

Policy H2: Maintain sufficient zoned development capacity to accommodate Seattle's projected share of King County household growth over the next 20 years.

Comment: The panhandle, as an area providing transition between commercial and residential districts, is most appropriately developed with a higher ratio of residential pin towers with low podium heights to achieve the goal of accommodating both current and future demands for housing while still providing for retail interests, vitality and walkability at the ground level. South Lake Union, and the panhandle in particular could provide a strong supply of additional housing.

Neighborhood Planning Element:

Policy SLU-P2: Promote diversity of building styles and support the diverse characters of neighborhood sub-areas.

Comment: Development in the panhandle should be guided by the City so as to reflect its unique character, and to create diversity both within South Lake Union as a neighborhood and the City at large. Pin towers with minimal base sizes would provide for this solution.

Seattle Pedestrian Master Plan Objectives:

Objective 2: Improve walkability on all streets.

Objective 5: Create vibrant public spaces that encourage walking.

Comment: Retaining light, aerial open space, and views from Dexter of Lake Union, while minimizing bread-loaf type of development, will contribute to preserving walkability and creating vibrant public spaces that encourage walking within and through this district. Pedestrian-friendly development requires optional routes through a district or zone that emphasize light, view and pedestrian corridors, optimum setbacks, and pockets of open space. This means that bread-loaf style development, long solid "walls of building" or development, and deep, dark canyons and shadows must be avoided.

Neighborhood Character:

Strategy 2a: Support the key characteristics of neighborhood sub-areas.

Strategy 2c: Use additional height and density as an incentive for projects that implement multiple neighborhood plan policies where the additional height will not negatively affect the surrounding area, flight paths or key public view corridors.

Comment: The only way to preserve key public view corridors from Dexter, light and pedestrian friendly elements also affecting nearby areas, is to reduce the size of podium bases for residential towers, and reduce the size of the footprint allowance for commercial buildings, so as not to create the wall of buildings that would eliminate all the current benefits of living in and passing through the panhandle.

11 cont

4. The Final Alternative Needs to Preserve Westlake Steps as a Public Amenity

Carr America presented a plan for Design Commission Review dated December 7, 2006. It involved development of property between Dexter Avenue North and Westlake Avenue North surrounding Highland Drive (project otherwise known as "Westlake Steps"). On page "i" of their submission entitled "Petition to Vacate Highland Drive," they provided a project overview which states in relevant part:

The Petitioner for this street vacation is CarrAmerica Dexter Avenue, LLC. They wish to vacate Highland Drive (bounded by Westlake Ave. N and Dexter Ave. N in the South Lake Union Neighborhood) and create a substantial public benefit for the South Lake Union Neighborhood. This benefit will be the creation of a public pedestrian connection akin to Seattle's Harbor Steps, a vibrant, open, public amenity with retail, a variety of outdoor seating options, landscaping, and numerous vantage points for the enjoyment of South Lake Union views. This amenity will enhance the connection between Queen Anne above and South Lake Union below the project site. It will create a destination, a heart within the South Lake Union Neighborhood. ...

They continued to describe current conditions as follows:

... Highland currently does not provide vehicular connection between Dexter and Westlake nor does it provide pedestrian access. If the Petitioner is granted the right to vacate Highland Drive, a public amenity will be developed on the site to accommodate pedestrian traffic across the site and to facilitate connection between Queen Anne hill and South Lake Union.

On page "iv" of the same document, the following was presented as a preferred option for development of what was called Westlake Steps:

Option Two: The preferred Option. The following graphics capture the essence of the proposed public amenity. As is depicted, a ramp will be provided that will assist in addition to the cascading stairs. This ramp will allow wheelchair and bicycle access between Dexter and Westlake. In addition, this ramp will create a tiered viewing opportunity – over the Lake, and over the steps below. The pedestrian connection will be a prime location for dining, access to retail, casual meetings, enjoyment of South Lake Union and much more. This heart will create vitality to enliven the site and the community as a whole.

12

Mr. Jim Holmes
April 11, 2011
Page 9 of 9

Attached to this letter as Exhibit A are two figures found on that page.

Subsequently, an approval was granted for development of a building on Westlake Avenue North just to the south of Highland Drive. It is important in looking at this subarea that podium heights and building heights and bulk be substantially limited so that this promised amenity not be turned into a dark canyon. It is imperative that the City preserve light and airspace for this pedestrian zone.

The Final EIS should examine the impacts of podium heights and commercial floor plates in this area.

It is certainly likely that future site specific development will attempt to point to this EIS process as having completed SEPA review. That being the case, this SEPA review needs to specifically address this major promised amenity.

Conclusion

In summary, Alternatives 1 and 2 should be modified to allow podium heights on residential towers to extend only to a maximum of 2-3 stories. Furthermore, commercial buildings in this area should be restricted through minimum tower spacing requirements, façade setbacks, reductions in off-street parking requirements if necessary, and additional floor plate and bulk limitations.

Seattle's highest priority within the panhandle should be to avoid the risk of a massive wall of buildings on long, double blocks, moving away from the bread-loaf style of development that pervades so many cities, restricting light, views and livability. Residential pin towers with more moderate bases of 2-3 stories would preserve light, support long-term viability, maintain portions of scenic views from the Dexter Avenue corridor to Lake Union, and protect the relationship of the panhandle as a transition area between the lightly developed, residential districts and the rest of South Lake Union extending to the Denny triangle, uptown and into downtown.

Thank you very much for your consideration of our additional comments. The redevelopment of South Lake Union holds tremendous potential and long-term impacts for downtown, and surrounding neighborhoods of Seattle. We hope you will carefully review these proposed modifications and revise the alternatives accordingly as they pertain to development within the panhandle.

We look forward to working with the City as this process continues and appreciate your ongoing efforts.

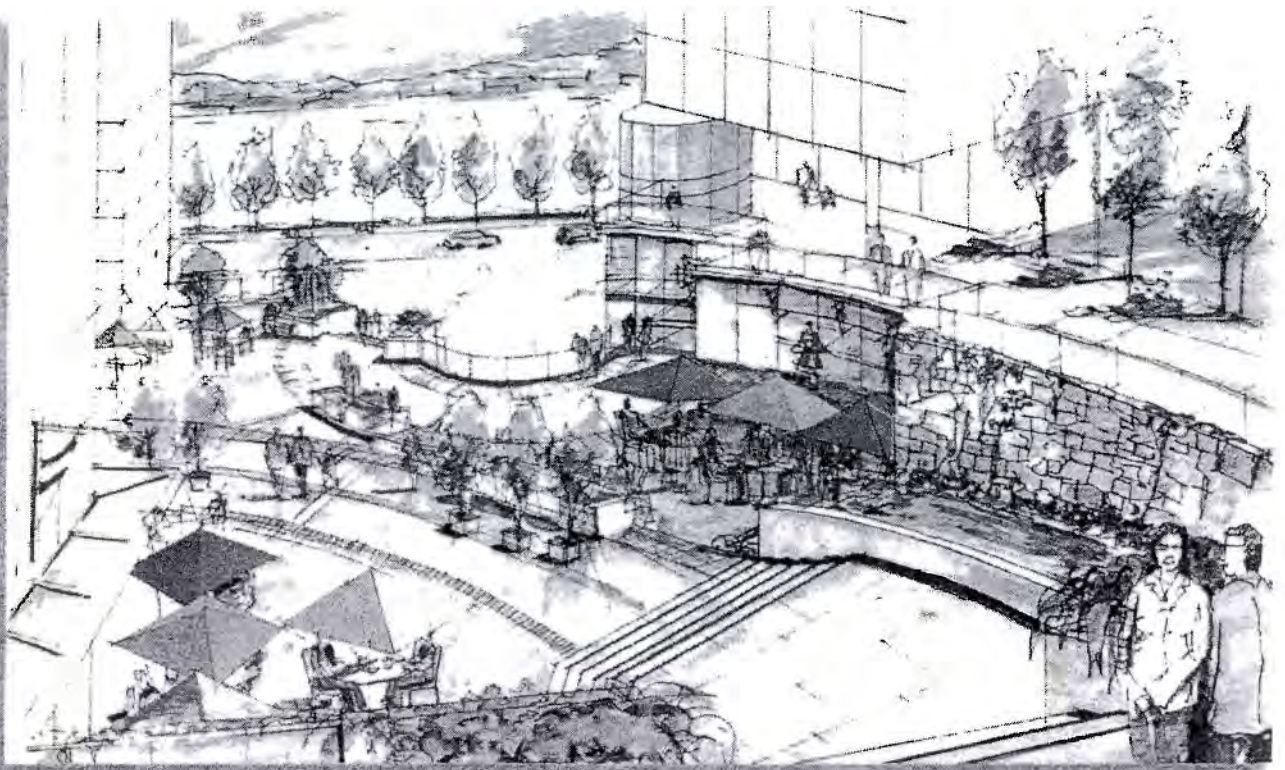
Sincerely,



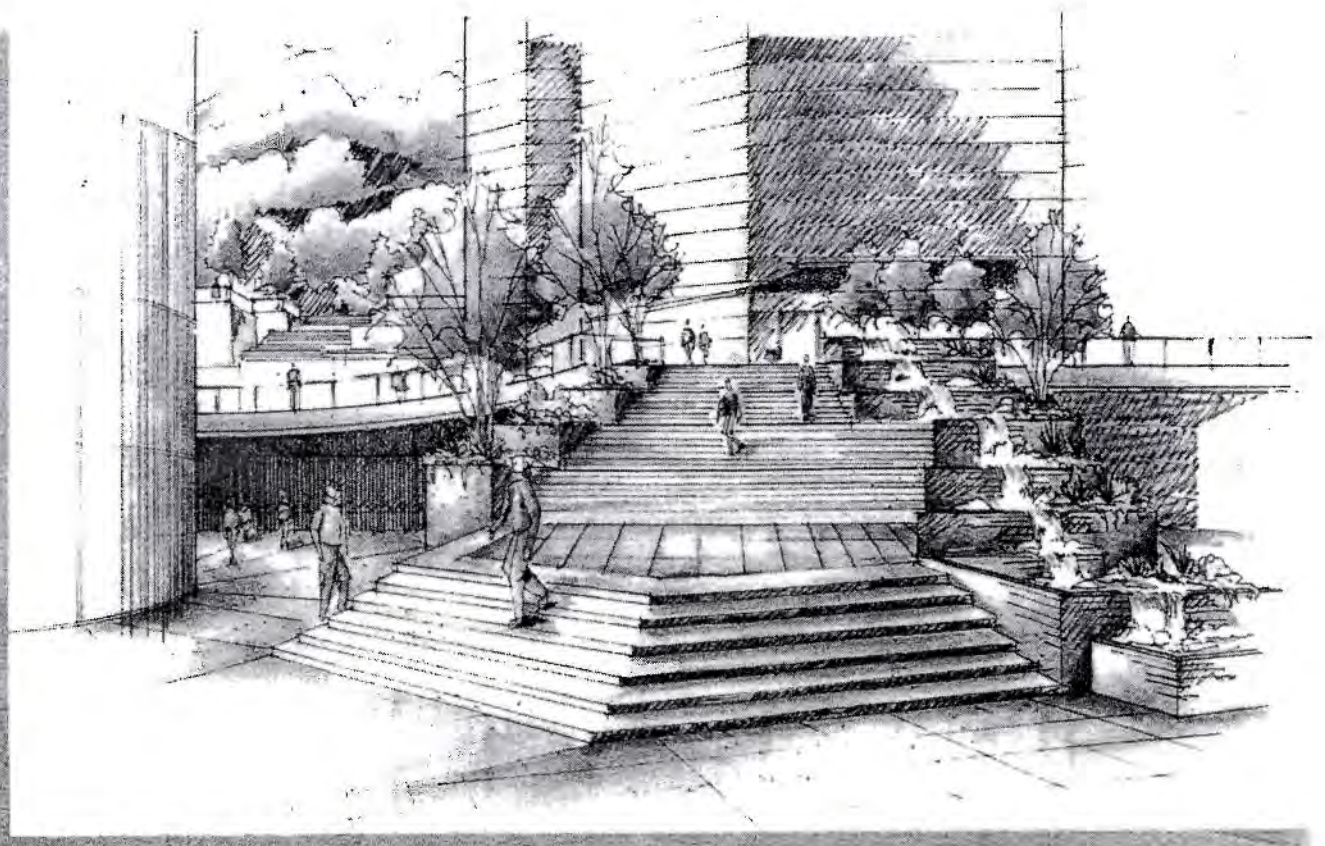
Peter L. Buck
Attorney for Owners of 1000-1100 Dexter Avenue N.

12 cont

13



OPTION 2 VIEW FROM DEXTER LOOKING EAST



OPTION 2 VIEW FROM WESTLAKE LOOKING WEST

Holmes, Jim

From: Thomas Buford |
Sent: Saturday, March 12, 2011 5:34 PM
To: DPD_Planning_Division
Subject: SLU Zoning

To whom it may concern,

I live and work in the city of Seattle (Ballard and Downtown, respectively). I am highly in favor of increasing the height and density in South Lake Union. A vibrant, bustling city needs residents and workers. If we do not increase our capacity as a city to grow, those talented, dynamic citizens and business leaders will move on to other places. South Lake Union is a perfect place for the city to grow - it is beautiful, central, and, perhaps most importantly, already growing. Seattle is a great city and South Lake Union is making the city a better place to live and work. We should encourage South Lake Union's growth and celebrate the vibrancy it brings to our city. | 1

Thank you,
Thomas Buford

April 1, 2011

Seattle Department of Planning and Development
Attn: Jim Holmes
700 Fifth Ave., Suite 1900
Seattle, WA 98124

Dear Sir:

I am a resident of South Lake Union and am writing concerning the impacts the DPD are considering regarding the heights of future buildings in SLU. Please don't increase the growth targets for SLU to extend the downtown densities all the way to Lake Union. Statistics show that more young people are moving back to the cities. They will want schools and family friendly housing.

1

Also, please consider the views of Lake Union. High rises will block the views of existing buildings. Maintaining a real step-down to the lake will save these views.

2

We are encouraging Mass Transit to the City. We already have gridlock on Fairview at peak commuting times. Alternatives #1 and #2 would cause unacceptable traffic in our neighborhood.

3

Please consider maintaining the current zoning in our very unique Cascade neighborhood.

4

Thank you,

William and Gloria Burch

Holmes, Jim

From: Henry & Olga Butler
Sent: Tuesday, April 05, 2011 3:13 PM
To: DPD_Planning_Division
Subject: Rezoning issues

As residents in the South Lake Union area we attended the recent meeting and were astonished to hear how little attention was given to the needs of a livable neighborhood and so much emphasis devoted to crowding as many high rise towers as possible into this area.. High rise towers are unsuitable to accommodate low income families with children and have not been successful wherever they have been tried Alternatives 1 & 2 are totally incompatible with the desire to provide an incentive to move into this area with already overburdened traffic, extremely heavy on Denny and Fairview, lack of a public school and library, etc. The attraction of Lake views would disappear for a large part of the surrounding area residents including the 500 residents at Mirabella who may not see Lake Union from their apartment but can enjoy it from the 10th floor dining room.

Any contemplated rezoning should not destroy the existing values but find a reasonable compromise between the existing parameters and alternative #3.

We urge your full consideration of the impact rezoning will have on this neighborhood. Thank you.

Olga and Henry Butler

Holmes, Jim

From: Allegra Calder
Sent: Friday, March 18, 2011 2:08 PM
To: Conlin, Richard; Rasmussen, Tom; Bagshaw, Sally; Burgess, Tim; Godden, Jean; Clark, Sally; Licata, Nick; Harrell, Bruce
Cc: DPD_Planning_Division; Holmes, Jim
Subject: Support the Alternative 1 Rezone in SLU

Dear City Council Members,

I'm writing to encourage you to support the Alternative 1 Rezone in South Lake Union with 35,000SF Technology Office Floorplates. Life Sciences and Global Health are critical economic drivers for our region and many of these institutions have expansion plans. Unfortunately, the DEIS contemplates towers with a maximum of 24,000SF commercial office floor plates, which are inadequate for many users. We need to build the kind of space our growth companies want, or they won't stay here.

I am a resident of Eastlake and have watched the evolution of South Lake Union over the past few years. The development of residential, commercial, lab, office and retail space has been tremendous and we should support continued growth and development. In exchange for 35,000SF floorplates, developers could be asked to provide street level amenities and public open space, break up larger blocks, and limit overall height.

We are fortunate to have thriving and growing companies and institutions in South Lake Union; I encourage you to support Alternative 1 Rezone.

Thank you for your consideration.

Best Regards,

Allegra Calder

April 8, 2011

Mr. Jim Holmes, Senior Urban Planner
City of Seattle Dept. of Planning and Development

Public Comment on South Lake Union DEIS

Mr. Holmes,

As a seaplane pilot working on Lake Union, I have two serious concerns regarding the proposed increase in building heights around south Lake Union. The first (and most serious) concern is for the safety of seaplane operations on the lake and the second concern is for the noise impact (for Eastlake) that will result if tall buildings are located along or near the south shore.

All seaplane operations on Lake Union are bounded by safety and noise concerns. The approach and departure paths/profiles are to ensure safety of persons (both in the aircraft and on the surface) in the event of engine failure. Aircraft taking off to the south and departing to the west must attain a safe altitude before crossing over the southwest shoreline en route to Elliot Bay. The aircraft continues to climb until midway between waters. This is to ensure that the aircraft could glide to water (Lake Union or Elliot Bay) in the event of engine failure. Buildings along the south shore of Lake Union would *eliminate* or severely hinder an emergency return to Lake Union if an engine failure occurred. This is a grave concern to me as a pilot.

1

When aircraft are departing to the south and cannot attain enough altitude to make a safe crossing to Elliot Bay (or when they are departing to the north and east) they will turn in the direction of Elliot Bay for a short time and then perform a climbing left turn to the north *always keeping Lake Union close enough to glide to in the event of engine failure*. The proposed zoning would allow buildings to be placed directly in this route. The only solution would be to perform a turn prior to encountering the south shoreline, which would be at a dangerous (much lower) altitude. Maneuvering an aircraft at low altitude would be made even more unsafe with the wind perturbation (wake turbulence) that would result from tall buildings along the south shore.

Noise has always been a concern for seaplane operations in and around Lake Union. The proposed changes would result in low altitude maneuvering along the south shore and lower altitude climbs (full engine power, maximum noise) along the east shore. If the airplane is performing this climb at an altitude that is half as high as is currently done, the noise would be twice as great (conservative estimate—my feeling is that the altitude would be only 1/3 as great making 3X the noise).

2

I am writing this comment because rezoning to allow tall building along the south shore of Lake Union poses a significant safety threat for seaplane operations. I ask that the decision be made to keep Lake Union as safe as possible for seaplane operations and not rezone higher buildings along the south shore.

3

Sincerely,

Gregory Carlin,
Flight Instructor, Charter Pilot, Seattle Seaplanes

Clafin, Jenny

From: Robert Cesternino [rob@citadelsecurity.org]
Sent: Wednesday, March 30, 2011 1:05 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS
Attachments: SLU Letter.doc

Attached are my comments relative to the SLU Height & Density EIS.

Robert C Cesternino
CEO
Citadel Security Services
315 Deaderick Street
Suite 125
Nashville, TN 37238
615-259-5770-office
615-736-5797-fax
615-405-4342-cell

City of Seattle
Department of Planning and Development
700 Fifth Ave- STE 2000
P.O. Box 34019
Seattle, WA 98124-4019

Dear Sir or Madam-

This letter is intended to address the **South Lake Union Height & Density Draft Environmental Impact Statement** and my feelings relative to same.

I am a former Mercer Island resident who has relocated to the Nashville, Tennessee area. I own a business and still have a Downtown Seattle office and I spend one (1) week a month in Seattle at a minimum. When in Seattle, I take full advantage of the myriad of quality of life opportunities offered. My wife and our children spent the entire summer of 2010 in Seattle. While we reside in Tennessee for the moment, whenever asked where we are from our answer is ALWAYS; *Seattle!* Our youngest daughter, a high school sophomore, fully intends to return to Seattle upon graduation to attend UDUB. We are loyal Husky fans who to this day, retain our season tickets to UDUB football. Seattle is where my wife and I intend to spend out twilight years.

Since relocating to the Nashville area, I have been elected to the City Council of a Nashville suburb and also serve as a member of the Board of Zoning Appeals not to mention other various Boards and Committees. I believe one of the keys to my successful election as a relative newcomer to both politics and Middle Tennessee was what I offer being from Seattle. My moderate, community and family quality of life focus is an attribute I attribute to living, working, playing and worshipping in the greater Seattle area.

Having watched South Lake Union from its infancy to now, I am amazed at how well the project has served to foster a true feeling of "community". All one has to do is to spend some time in the area and observe how well environments of business, personal and retail/restaurant have been woven together to create a safe, relaxed area which already can be listed as one of the greatest areas of character in Seattle. Having eaten dinner at a friend's and watched the "Boats Afloat" show and seeing float planes take off and land on South Lake Union, I can attest to its unique character.

I fully support re-zoning of this area to allow additional height and density from two (2) aspects; my personal feelings as someone who uses this area and as someone who currently holds an elected position in an area of the United States that is currently experiencing positive growth and the challenges that go with that growth.

Personally, I believe that re-zoning in this area will foster growth which will lead to more people, which will lead to more amenities, increased focus on forward thinking green building solutions, an increase in the use of public transit as well as bikes and foot traffic which in itself serves to reduce vehicle emissions. This growth could also lead to increased use of the existing parks in the SLU area. I also envision a South Lake Union Elementary and High School to be built using state of the art cutting edge green technology that supports joint education projects with the likes of Fred Hutch, the Gates Foundation and the other biotech and science leaders who call South lake Union home. I foresee buildings with garden projects on the roofs and a farmers market where some of the organically grown products are sold.

From the position of an elected official and someone who has specific zoning appeals experience, I see a tremendous opportunity for the City of Seattle to use existing infrastructure to create a green centric (low-carbon lifestyle), walkable neighborhood where special attention has been paid to preserving the waterfront views, characterized by parks, state of the art buildings with an aesthetically pleasing skyline that has the potential to reduce stormwater run-off (another unfunded federal mandate) while at the same time could result in a cumulative tax revenue estimated to be in the neighborhood of **\$1.3 BILLION** from 2005-2025 (as the financial stewards of the City of Seattle, that number alone should be enough to make the City Council stand up and take notice).

2

I urge each and every member of city government involved in this decision to take the time to visit SLU. Don't make a decision sitting in a conference room looking at a bunch of slides and renderings. Get out into the neighborhood, take your family there for a meal and get a true feel for the neighborhood. Since being elected I have seen too many instances of planning and zoning issues being decided without a "true feel" for the project. If you do this, I have no doubt you will come away as big a supporter of additional height and density zoning as I am.

3

I would like to thank you, in advance for your attention to this correspondence and the job that you do.

Sincerely-

Robert C Cesternino
CEO
Citadel Security Services
2001 Sixth Ave
STE 1700
Seattle, WA 98121

Holmes, Jim

From: Marjorie Chadsey
Sent: Monday, April 11, 2011 10:09 AM
To: DPD_Planning_Division
Subject: Plans for Further Development of South LakeUnion

As I write as a resident of South Lake Union I feel very strongly that the strength and beauty of Seattle lies in its local communities not in its crowded downtown skyscraper-filled areas. | 1

Let's save South Lake Union from tall view blocking buildings and keep the parks, churches, housing and small entrepreneurs alive and well. Everyone should be able to enjoy the beauty of Lake Union, the hills nearby and the distant mountains. Please don't spoil it!

Marjorie Chadsey

Holmes, Jim

From: John and Maryann Chandler
Sent: Monday, April 11, 2011 6:01 PM
To: DPD_Planning_Division
Cc: John Chandler
Subject: SLU EIS Comment

I am writing to note my overall approval for Option #1 in the SLU EIS. I have worked in the SLU neighborhood for four years and believe that this is the best alternative in providing a balanced approach to growth. It is important that the density is appropriate and that view corridors are balanced. The importance of providing a strong multi-modal transportation system is paramount as well.

1

John Chandler

Holmes, Jim

From: Karson Clancy [karson@gmail.com]
Sent: Friday, April 01, 2011 9:32 AM
To: DPD_Planning_Division
Subject: Comments on the SLU Environmental Impact Study

I work for Amazon.com at South Lake Union. Our offices were relocated to SLU about a year ago. Over the course of the past year the area has dramatically improved with new amenities that have made SLU much more convenient and enjoyable. Because of the availability of high quality corporate office space companies like Amazon are and will continue to be attracted to the area. I believe it is virtuous to adopt Alternative 1 in order to attract even more high caliber companies and people to the area. | 1

Thank you.

--

~~Karson Clancy~~
karson@gmail.com

Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 20: Adams, Terry and Ruth	
1	Objections to Alternative 1. The comment is noted. Please see responses to comments in this letter, below.
2	Traffic Congestion and Transit. The commenter expresses concern over the level of traffic congestion and uncertainty over the future provision of transit service. Please see response to Letter 13, response to Comment 63 regarding transit. No issues are raised that would affect the outcome of the EIS.
3	Open Space. The comment is noted. Please note that none of the alternatives propose 400-foot building heights between Valley and Mercer Streets. Please see Final EIS Chapter 2 for a description of the alternatives.
4	Views. The comment is noted. Please see Final EIS Chapter 2 for a description of podium and building heights. Please see also Final EIS Section 3.4 for revised images depicting street-level and view impacts.
Letter 21: Allen, Chrissy	
1	Support Alternative 1. The comment is noted.
Letter 22: Allen, Dean	
1	Support Alternative 1. The comments are noted.
Letter 23: Alpert, Spencer	
1	Support Alternative 1. The comments are noted.
Letter 24: Anderson, Fred	
1	Economic Development Benefits. The comment is noted. As the commenter states, the EIS does not discuss the economic benefits of the proposal. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts. Please see Final EIS Section 3.2 for a discussion of the City's Comprehensive Plan economic development policies.
2	Economic Benefits. The comments are noted.
3	Support Alternative 1. The comment is noted.

Comment Number	Response
Letter 25: Archambault, Curt	
1	Support Alternative 3. The comments are noted.
Letter 26: Archambault, Curt and Carla	
1	Support Alternative 3. The comments are noted.
Letter 27: Armstrong, Sally	
1	Support Alternative 1. The comment is noted.
Letter 28: Arrington, Alice	
1	Community Amenities. The comments are noted. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.6 for a discussion of schools.
2	Building Heights. The comment is noted. As described in the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.
Letter 29: Asher, Larry	
1	Density and Small Business Benefits. The comments are noted.
2	Support Density. The comment is noted. As indicated in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
Letter 30: Auckland, David	
1	Support Alternative 1. The comments are noted.
Letter 31: Autry, Mike	
1	Support No Height Restrictions. The comment is noted. Please note that the proposal would allow for increased height through the use of incentive zoning, but would not result in no height restrictions. Please see Final EIS Chapter 2 for a description of the alternatives.
2	Benefits of Increased Density. The comments are noted.
Letter 32: Bacarella, Mary	
1	Views to Space Needle. The concern is noted and it is acknowledged that the Space Needle is the most recognized historic landmark in the City. It is also

Comment Number	Response
	acknowledged that South Lake Union is one of the City's six designated Urban Centers where future concentrations of employment and housing are planned to occur. The City recognizes that it is unreasonable to expect that views of the Space Needle are to be protected from all of public locations without consideration of City policies regarding Urban Centers and the concentration of employment and housing. As noted in the <i>Seattle's View Protection Policies, Volume One</i> , ¹ "[c]ompeting policy objectives– require that we consider the merit of protecting a particular view corridor with other objectives for growth management, housing development, transportation and utility infrastructure and open space."
Letter 33: Bajuk, Christopher	
1	Positive Impacts. The comment is noted. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
2	Tax Benefits. The comment is noted. The referenced financial study is beyond the scope of this analysis.
3	Support Greater Density. The comment is noted.
Letter 34: Banfill, Sally	
1	Height and Density Increase is Unacceptable. The comments are noted. Regarding the Space Needle, please see Final EIS Section 3.4 for revised images of views toward the Space Needle under each alternative.
Letter 35: Behar, Howard	
1	Disagree with High Rise Growth in SLU. The comments are noted.
2	Retain Existing Zoning. The comments are noted.
Letter 36: Bekins, Pamela	
1	Support Alternative 1. The comment is noted.

¹ Seattle, city of; Department of Design, Construction and Land Use and the Strategic Planning Office. 2001. *Seattle View Protection Policies, Volume One – Space Needle Executive Report & Recommendations* and *Volume Two – Space Needle View Inventory & Assessment*.

Comment Number	Response
Letter 37: Bennett, Don	
1	Public Services. Please see the responses to Comments 84 and 85 in Letter 13.
Letter 38: Biggs William	
1	Benefits of Growth. The comments are acknowledged.
2	Economic Development. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Economic development was not included as part of the EIS scope. Please Final EIS Section 3.2 for a discussion of the City's adopted economic development policies.
3	Parking. Please see the Draft EIS analysis of parking in Section 3.13.
4	Transportation Assumptions. The Draft EIS analysis assumes all of the major road improvement projects cited by the commenter.
Letter 39: Bjerke, Bruce	
1	Support Alternative 1. The comment is noted.
Letter 40: Bjerke, Jill	
1	Support Alternative 1. The comment is noted.
Letter 41: Boland, Bridget	
1	Environmental Benefits. The comment is noted. As the commenter states, the EIS does not discuss the environmental benefits of the proposal. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
2	Support Increased Building Heights. The comment is noted.
Letter 42: Brandt, Adam	
1	Support Increased Density. The comment regarding is noted.
Letter 43: Brooks, Tim	
1	The comments are noted.
2	Flight Path. Subsequent to issuance of the Draft EIS, WSDOT Aviation undertook additional review of the flight path. This analysis included a review

Comment Number	Response
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of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.

Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street.

An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.

3 **Wind Analysis.** This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.

At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:

1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.)

Comment Number	Response
	<ol style="list-style-type: none"> 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
4	<p>Quantify Vertical Safety Buffer. Please see the response to Comment 3 in this letter, above.</p>
5	<p>Wind Analysis Mitigation. The comment is noted. As indicated in the response to Comment 3 in this letter (above), the proposed mitigation would require a project-level wind analysis to ensure that safety parameters for aircraft are met. The City is working with WSDOT aviation to establish these parameters.</p>
6	<p>Restrict Building Heights. Please see the response to Comments 3 and 5 in this letter, above.</p>
7	<p>Noise. Draft EIS Section 3.6 cites the Seattle Municipal Code 25.08.530, which exempts aircraft in flight from maximum permissible sound levels. As described in the noise analysis, increased building heights near the flight path could result in increased noise impacts to residences and/or offices in upper portions of new buildings from aircraft overflights. However, while sounds from seaplane operations may on occasion be a nuisance to some, such sound levels are exempt from Seattle’s Noise Code.</p>
8	<p>Safety of Flight Operations. The comment is noted.</p>

Comment Number	Response
Letter 44: Brumbaugh, Mark	
1	Support Alternative 1. The comment is noted.
Letter 45: Buck, Peter L.	
1	Significance of South Lake Union. The comment is noted. This EIS evaluates probable impacts associated with each of the alternatives as they relate to the entire South Lake Union Neighborhood.
2	Support Alternative 1. The comment is noted.
3	Panhandle Unique Characteristics. The comment is noted.
4	Dexter Avenue Designated Scenic Route. The comment is noted. Draft EIS indicates that Dexter Avenue North is a designated scenic route within the study area. Portions of both Dexter Avenue North and Aurora Avenue North provide easterly territorial views toward Lake Union, Capitol Hill and the Cascade Mountains beyond, as well as southerly views of the downtown skyline. Because of development that has already occurred along the east-side of Dexter Avenue North, however, easterly views toward Lake Union are limited to east-west street corridors. Existing zoning along Dexter Avenue North is SM-65, which allows mixed-use commercial development with provisions under certain circumstances for 85-foot high structures.
5	Transition Between Districts. Such is always an important consideration when considering area-wide rezones. However, transition may be less important with Queen Anne neighborhoods due to the separation that currently exists as a result of Aurora Avenue North. Zoning height measurement presently accounts for topographic variation across a site. Please see the discussion of impacts and mitigation in Section 3.10.2 and 3.10.3.
6	Street Grid and Tower Bulk. The comment is noted. As indicated, the Draft EIS acknowledges that tower bulk may be a consideration in areas containing double blocks, however, it is also noted that development may occur without a podium. As indicated above, existing zoning in this portion of the study area is SM-65, which allows mixed-use commercial development with provisions under certain circumstances for 85-foot high structures.
7	Residential Development Encouraged. The comment is acknowledged.
8	Limitation on Podium Heights. The comment is acknowledged. As indicated previously in the Draft EIS, however, development may occur without a podium.

Comment Number	Response
9	Reduce Maximum Floor Plate Size. The comment is noted.
10	Increased Residential Density. Increased residential development within South Lake Union is a key consideration of this Height and Density Alternatives EIS. The comment is acknowledged.
11	Additional Subarea Land Use Policy Analysis. The supplemental information is noted.
12	Westlake Steps. Further consideration will be given to podium heights and commercial floor plate size within this subarea as they relate to public amenity potential.
13	Panhandle Considerations. The comments concerning podium heights, tower spacing, façade setbacks, floor plate size and bulk limitations are noted relative to this subarea of the South Lake Union Neighborhood.
Letter 46: Buford, Thomas	
1	Support Increased Height and Density. The comment is noted.
Letter 47: Burch, William and Gloria	
1	<p>Don't Increase Growth Targets. The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Draft EIS Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
2	Consider Views of Lake Union. The comment is noted. Please refer to the analysis of views in Final EIS Section 3.4.
3	Unacceptable Traffic. The comment is noted. Please refer to the transportation analysis in Draft EIS Section 3.13.
4	Maintain Current Zoning in Cascade Neighborhood. The comment is noted. Existing zoning standards in the Cascade neighborhood would be retained in

Comment Number	Response
all EIS alternatives except Alternative 1.	
Letter 48: Butler, Henry and Olga	
1	Compromise Between Existing Conditions and Alternative 3. The comment is noted. As described in Final EIS Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. The proposal does not include a rezone of existing Seattle Mixed zoning designations.
Letter 49: Calder, Allegra	
1	Support Alternative 1. The comment is noted.
Letter 50: Carlin, Gregory	
1	Aircraft Approach Departure Paths. The comments are noted. Please see Final EIS Chapter 2 and Section 3.2 for information regarding the revised flight path.
2	Seaplane Noise. The comment is correct in suggesting that changes in seaplane takeoff flight paths and altitudes will change the noise from these sources, but incorrect in estimates of the amount of change. Noise levels from an individual plane in flight will change with increasing or decreasing distance at a rate somewhere between the rates of change from normal "line" (e.g., a road) and a "point" (e.g., a slamming door) sources of noise. So at a rate somewhere between 3 and 6 dBA for each doubling or halving of distance. So a change in elevation by 1/2 would result in about a 4.5 dBA increase in sound level, and a change to 1/3 in elevation would increase the sound level about 8 dBA. Either change would likely be noticeable to a person with normal hearing, but neither change would represent a doubling of loudness which requires a change of 10 dBA.
3	Oppose Higher Buildings. The comment is noted.
Letter 51: Cesternino, Robert C.	
1	Support Additional Height and Density. The comments are noted. As described in Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided.
2	Benefits of Growth. The comments are noted.

Comment Number	Response
3	Visit the Neighborhood. The comment is noted.
Letter 52: Chadsey, Marjorie	
1	Oppose Increased Height. The comment is noted.
Letter 53: Chandler, John	
1	Support Alternative 1. The comment is noted.
Letter 54:Clancy, Karson	
1	Support Alternative 1. The comment is noted.

Comment Letters 55-89

55.	Collins, Arlan and Woerman, Mark L.
56.	Coney, Donald John
57.	Corr, Saroj
58.	Coulter, Jefferson
59.	Cree, Russ
60.	Crossley, Katharine
61.	Curran, Lori Mason
62.	Curtis, Jared
63.	Dasler, Joshua
64.	Douglas, Lloyd
65.	Doxsee, Marcella
66.	Ehlebracht, Mike
67.	Estes, Brian
68.	Estes, Jill
69.	Evans, David R
70.	Felber, Jim
71.	Foster, Dan
72.	Ferretti, Peter
73.	Fiedorczyk, Bryan
74.	Freeman, Judith
75.	Frothingham, Donald
76.	Fulford, Lee
77.	Gaillard, Arnie and Pat
78.	Garner, Jackie
79.	Giacobazzi, Joseph, Paul Fuesel, Nelson Davis
80.	Golde, Marcy J.
81.	Gooding, Kim
82.	Grant, Gabe
83.	Gregory, Serge
84.	Gunn, Cecelia
85.	Hafenbrack, Charles
86.	Hailey, Julia
87.	Hastings, Ryan
88.	Hazlehurst, Hamilton
89.	Healey, Ada M

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March 30, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Re: In support of the South Lake Union Height & Density Draft EIS

Dear Mr. Holmes:

We are writing to declare our strong support of the South Lake Union Height & Density Draft EIS. As local business owners who also live within a mile of South Lake Union, we believe that there is much to be gained and little lost from allowing taller buildings in the neighborhood. Our reasons follow:

It's good business. South Lake Union is a burgeoning hub for the science, technology and commerce industries, which typically choose to locate in urban areas because they foster collaboration. Many of the city's largest, most high-profile employers are making their headquarters in South Lake Union for this very reason – to keep their employees together. We firmly believe that Seattle needs to do everything we can to attract and retain the nation's best companies. One way to do that is to create attractive, safe urban neighborhoods where people can live and work, and companies have room to expand over time. As a result, our economy will be given a much-needed boost.

Taller buildings in South Lake Union will house more businesses, more employees and create more living wage jobs which will lead—and sustain – our economic growth. This platform for prosperity will also drive up revenue for the city through increased fees and income from sales, utility, B&O and real estate taxes.

It's good planning. As urban design and planning professionals, we have spent decades studying what works best for growing cities and developing neighborhoods. We believe, without question, that Seattle needs a centralized location within the downtown core that can be the catalyst for

1

future growth – and we believe there is no better place for that than South Lake Union. Encouraging a vibrant, close-in community with taller buildings expands housing options, reduces the reliance on cars, and provides a much-needed reconnection with the surrounding neighborhoods. South Lake Union already has the infrastructure in place to make this not only a viable option, but the intelligent choice as well. Allowing taller buildings will require developers to offset new buildings with public benefits like parks and open space, affordable housing, child care facilities and recreation, entertainment and educational opportunities.

Tall, thin buildings have a number of advantages over their shorter, more compact counterparts: they preserve light and air, create more open space at street level and expand view corridors. In addition, more density in the SLU neighborhood will take some of the pressure off of the historic Cascade neighborhood.

It's good for the community. Warehouses, parking lots and outdated low-rise buildings are not amenities. Taller, denser housing and commercial buildings will bring more people to the area and in turn, attract restaurants, shopping, and services, necessary for a thriving urban community. Increasing the neighborhood population by increasing the development density will bring more amenities – typically the local, independent retailers that flock to new urban centers—that residents can access by bike or on foot, thus decreasing their need to drive. Ultimately, it's the people that make a neighborhood vibrant and exciting, and it's the people who shape the community. Increasing the allowable height will provide for more opportunities – family housing, affordable housing, businesses, and retail goods and services—all of which support the quality of life in our city and provide good jobs.

It's environmentally responsible. Seattle is often touted as one of America's greenest cities. Yet our current zoning limits our ability to build anything in this area other than short, stocky buildings. These limitations are neither in step with current urban design thinking nor are they environmentally responsible. Taller, denser multi-family housing buildings put less strain on the environment and are more energy efficient in terms of access to natural light and heating and cooling requirements. Not only are they good in terms of resource conservation, but they also result in lower occupancy costs for the residents and lower expansion costs for our utility providers. More importantly, increasing density so close to our city center means that more people will walk, bike, or take public transportation to work, reducing traffic congestion and vehicle emissions.

Adopt Alternative 1. Seattle will grow. If we don't look to our future and harness the potential to absorb this growth in the right strategic area - with existing infrastructure- then where will that growth go? We see few options and none are better than those in South Lake Union. We believe that adopting these changes just makes sense – from a business, community and sustainability standpoint – and that Alternative 1 benefits the most people and maximizes our city resources in a way that the other options do not.

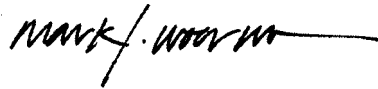
1 cont

We strongly support the South Lake Union Height & Density Draft EIS and ask that you do the same.

Sincerely,



Arlan Collins
Co-Founder and Principal
CollinsWoerman



Mark L. Woerman
Co-Founder and Principal
CollinsWoerman

April 8, 2011

Seattle Department of Planning and Development

Attn: James Holmes

700 Fifth Ave., Suite 1900

P.O. Box 34019

Seattle, WA 98124-4019

southlakeunioneis@seattle.gov

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes;

North Portal street realignments will transform the physical connections between the Uptown Urban Center and South Lake Union Urban. New access routes and transportation services linking the two urban centers and the other Seattle urban centers and hubs become possible.

There have been a number of shared, urban center planning efforts over the past decade: The on-going Mercer Corridor Stakeholder Committee, QA/SLU Visioning Charette, and most recently the QA/SLU Mobility Plan. Both urban centers are active in the WSDOT North Portal Advisory Group.

I am concerned that the DEIS did not look at economic development. The Downtown Seattle Association has demonstrated the tax benefits of mixed-use development in urban areas. Please analyze the economic development impacts of the alternatives.

In 2006, over 35 community stakeholders from QA and SLU were involved in developing a Joint Vision for Uptown and South Lake Union Urban Centers. A priority recommendation of this planning effort stated the need to "Develop Density around Public Investments." The participants recommended to :

- Locate taller buildings close to all transit corridors, particularly streetcar routes
- Encourage residential density around parks (Lake Union Park, Denny Park, Cascade Playground and Seattle Center).
- Locate mixed use high-rise tower development around regional transportation corridors (Aurora, Mercer, Westlake, Fairview and Denny).

The current Seattle Comprehensive Plan envisions locating 50% of new population growth in the six Seattle urban centers. South Lake Union and Uptown represent a major portion of that projected population growth. How can this be done in a way that adds residential development and infrastructure that is sustainable, functional, attractive, livable, and generates new tax base?

3

I believe that Alternative #1, the most dense proposal, will provide an attractive neighborhood for a broad range of residents considering a move from suburbs and exurbs to a center city that can offer the urban necessities for employment, transportation, recreation, education, health care, and public open space.

4

EIS documents focus on negative impacts of development and mitigations for impacts. We ask that the EIS study benefits per capita flowing from a densely developed urban center in the impact areas of *Air Quality, Environmental Health, Noise, Land Use, Housing, Aesthetics, Cultural Resources, Transportation, and Open Space & Recreation*.

5

For once, we see some infrastructure improvements leading the projected population growth in the instance of South Lake Union. We believe that the Seattle Streetcar, RapidRide BRT planning, the Mercer East and Mercer West Projects implementing the two-way Mercer/Roy Corridor, the North Portal street and right of way realignments, Lake to Bay Trail implementation and planning, Lake Union Park, Seattle Center, new access to the Elliott Bay waterfront, the arts-oriented Center High School, and other infrastructure plans offer a basis for a dense, livable, employment-centered neighborhood based on Alternative #1.

6

These on-going infrastructure improvements will provide major opportunities for enhanced pedestrian, bike, and transit improvements for both South Lake Union and The Uptown Urban Center.

Thank you for considering all the above factors that lead us to predict that South Lake Union will become a model, liveable, dense, mixed use neighborhood based on zoning such as is shown in Alternative #1.

Sincerely,

Donald John Coney

3227-13th Ave. W., Seattle, WA 98119

206/283-2049

djohnconey@aol.com

Comment for South Lake Union Height & Density Draft Environmental Impact Statement, April 11, 2011

Submitted by: Saroj Corr/Senior Transaction Manager/CBRE Asset Services

I am a Senior Transaction Manager for CBRE Asset Services leasing over 50K sq/ft of properties in South Lake Union. I have listings for properties that are ready for development, existing flex warehouse properties as well as retail and some office. I also lease other properties in Seattle, Eastside and the Peninsula. I represent tenants in Seattle and greater Seattle area and have over 10 years of experience in leasing Commercial Real Estate in Seattle.

As a real estate professional, I appreciate neighborhoods that provide the opportunity to build mixed use developments which create eco friendly options and increase job growth and urban density. With larger companies wanting to consolidate in one area, coming out of traditional campus settings and re-locating to Seattle in areas like South Lake Union, more jobs are created and opportunities for retail and restaurants to expand into the neighborhood. The urban density increases supply and demand and existing mom and pop establishments can remain in business and creates a need for new retailers to move into the neighborhood. The large employee growth, commute and parking needs drive the need for demand for housing in the area. I have several peers working for companies in the area who have recently relocated from suburban neighborhoods and purchased or leased condos in South Lake Union.

In order to create an urban center that will support the urban density in South Lake Union, there is a need for more mixed use buildings exceeding the current zoning restrictions. It is imperative to have buildings with height to be able to support the high space demand from large companies similar to Amazon, Group Health, SBRI, Microsoft, Path and other organizations in the technology and bio/medical science to consolidate their operations in one area in the City. Building tall buildings as opposed to bulky buildings will also allow the best use of existing infrastructure such as roads, public transit, parks and other. It also requires developers to create public benefits such as affordable housing, day care/childcare and pocket parks, all positive attributes for a diverse urban center.

South Lake Union in the last five years has created massive job growth, increased retail and restaurant use, steadily converted to a safe neighborhood with housing and is well on its way to being a thriving urban center. The SLU Height and Density EIS will provide opportunity for urban growth and potential expansion of a fully operational urban area consisting of schools, hospitals and multi family housing to come to flourish.

I support the additional height and density in South Lake Union and am hoping my comment would be taken into consideration towards any decision made in this regard.

Thank you.

Saroj Corr
Senior Transaction Manager/CBRE Asset Services
401 8th Avenue North,
Seattle, WA 98109
D: (206) 262 8828
F: (206) 262 8805

Holmes, Jim

From: Jefferson Coulter [mailto:jeffcoulter@ghmanet.org]
Sent: Sunday, March 27, 2011 8:51 PM
To: Holmes, Jim
Subject: South Lake Union DEIS Comment

Dear Mr. Holmes:

I wanted to comment on the proposed Density and Height increases in SLU. I live in Capitol Hill, in the Harvard Belmont neighborhood. On the west slope, we have a spectacular view of all the changes in South Lake Union. The height increases don't necessarily bother me if they are tied to specific neighborhood amenities, mitigation work and improvements. Both developers and residents should benefit.

1

Any height increases must be coupled with adequate infrastructure to support the increased density.

2

- Funding to increase frequency for the Streetcar (north/south) and Metro Route 8 (east/west).
- Converting the 8 into an electric trolleybus (reducing noise and pollution).
- Providing signal priority for transit on both corridors.
- Funding to build out the streetcar network.
- Funding for a Sounder Station at Broad Street.
- Adequate parking, sidewalk, and bike lane requirements.

Mid-rise development that includes varied street-level assets (such as restaurants, shops, schools, daycare, and health-care providers) is preferable to office park type development that leaves the neighborhood deserted at night, with a big box appearance during the day.

3

Neighborhood Connections should be a priority. Including improved connections between Capitol Hill, Queen Anne, Eastlake and Westlake.

4

Thank you for your consideration.

Jefferson Coulter

2007 1st Avenue East

Seattle, WA

Holmes, Jim

From: Russ Cree [russcree@glacier.com]
Sent: Friday, March 25, 2011 10:22 PM
To: DPD_Planning_Division
Cc: Russ Cree
Subject: South Lake Union Height & Density Draft Environmental Impact Statement

To: James Holmes, Seattle Department of Planning and Development
 From: Russ Cree, Glacier Real Estate Finance
 Re: South Lake Union Height & Density Draft Environmental Impact Statement
 Date: March 25, 2011

As a 30+ year Seattle area resident and real estate professional I want to thank you for the opportunity to list what I believe are several obvious reasons for supporting and encouraging increased density in the SLU neighborhood so that the transformation that is now under way can be continued and enhanced in a way that benefits not just the city of Seattle but our entire region. 1

1. The existing infrastructure (transit, roads, parks, etc.) makes SLU the logical neighborhood for taller and denser development
2. Denser housing and workplace development mixed with retail services encourages shopping, walking and biking - an environment that supports healthy lifestyles.
3. Taller multifamily buildings increase total housing stock in the city.
4. Taller buildings with accompanying setbacks create interesting view corridors and more open space for landscaping, public parks, etc.
5. More people living, working and visiting in an area means more activity and life on the street. More foot traffic. More people who can shop support and create additional retail services.
6. Dense development will concentrate jobs and housing along transit corridors in order to maximize transit use.
7. Building taller creates public benefits like affordable housing, pocket parks, childcare centers, etc.
8. Living densely means that the city can serve more citizens at lower cost to taxpayers
9. More development means an increased tax base

In summary, remember the SLU of 10-15 years ago....dead, dead, dead....look at it now and imagine how much better it can be. Think Vancouver, BC.

Thank you.....let's get going!

Russ Cree
 Principal
 Glacier Real Estate Finance
 206-890-8911
russcree@glacier.com

-
- **More amenities.** More people support the smaller, locally-owned, independent retailers and uses with character.
- **Safety.** More people on the street mean **more eyes on the street.** No more walking through dark empty parking lots or along abandoned warehouses.
- I want to be able to live and work close to downtown and not have a significant commute. We need more housing downtown. Restricting heights is counterproductive.
-

Do it Right! Better planning now leads to a better future for ALL in our region.

- **If not in South Lake Union, then where else can we place future growth in Seattle?** Better planning is encouraging well-designed & constructed towers right outside of downtown, rather than more 6-pack townhouses and squat bulky apartment buildings encroaching on our residential neighborhoods.
- South Lake Union is central, blocks from downtown, and easy to get to from other neighborhoods. It's where we should plan for more growth.
-
- This means more housing options. More overall housing stock = more affordable housing.
-

Seattle needs to walk the talk on environmental sustainability and curb urban sprawl.

- Building tall in South Lake Union reduces sprawl. Reducing sprawl puts fewer cars on the road. It creates better access to all the city has to offer.
- Reduce emissions and make our cities more livable by building walkable neighborhoods instead of auto-dependent neighborhoods.
- Dense, compact, walkable neighborhoods is the most cost effective way to combat climate change

Thank you for your interest in submitting a comment on the *Please write comments in your own words and send from your personal email account.*

Don't take our city's economic development (and taxes) for granted.

- o Increased height and density in South Lake Union creates more ongoing revenue for the city through real estate tax, sales tax, utility tax etc.
- o It maximizes the investment the city has already made in the South Lake Union area. It is the most efficient use of tax dollars.
- o Large companies can better consolidate their employees. This means more people working out of one location and leads to greater efficiency.
- o Building densely in South Lake Union will lead to more construction projects, which means more family-wage jobs.
- o Building tall buildings allows more concrete and steel construction. Concrete and steel construction means more union labor. And buildings are usually sturdier, higher quality and longer-lasting.
- o

Call the city to action.

- o The city should seriously consider where the growth would go if not in SLU? There will surely be impacts to other Seattle neighborhoods if South Lake Union does not absorb that future growth.
- o The city should adopt Alternative 1, the most aggressive and progressive alternative because it benefits the most people and maximize our city resources. It's the right thing to do.
- o Please do the right thing for the long term future of our city and region. Do not hamstring the growth potential for South Lake Union as it will negatively impact the overall quality of life in Seattle.
- o Do right by our planet and support the greatest growth in the part of town where it makes the most sense.
- o Why only plan until 2031? 20 years is not nearly enough for long range responsible planning. Growth will continue to happen, we should plan appropriately for it now, rather than pay the dear cost of continued urban sprawl tomorrow. I urge our elected officials to consider the greatest good in the long term rather than the next election.
- o Please keep an open mind about taller buildings in the South Lake Union urban center.
- o Factor in existing buildings in the EIS future build-out scenarios. Many recently built structures today will not be redeveloped into towers in the next 50-70 years. Take those out and the impacts will be much different.

Written comments must be submitted before Monday, April 11 via email or post:

E-mail:

Post: **Seattle Department of Planning and Development**

Attn:

700 Fifth Ave., Suite 1900

P.O. Box 34019

Seattle, WA 98124-4019

Thank you again for your help

Russ Cree

Principal

Glacier Real Estate Finance

2800 156th Ave. SE, Suite 210

Bellevue, WA 98007

425-274-0281 (direct)

206-890-8911 (cell)

Holmes, Jim

From: Katharine Crossley
Sent: Thursday, March 31, 2011 1:27 PM
To: DPD_Planning_Division
Subject: Rezone of slu

Raising appraisals and assessments by increasing possible sq. footage in heights would seem to mitigate financial problems of both developers and city coffers, terrible at this point ,BUT IS A FLAWED FIX which will seriously degrade our city. Developers can move on, breathing free from the burden of debt a zone hike allowed them, but the havoc those changes allows remains the legacy for our citizenry.

EIS proposal outcomes:

Inability to build the 6 floor wood/concrete working family price range affordability in SLU

Loss of the priceless advertising draw our iconic views of space needle, mountains, water for our whole region

Extreme Congestion in area of severely lacking mass transit potential and already congested

No accommodation for child schooling planned or provided for families

Reduction of daylight, increase of wind strength, diminished human scale

Loss of views by towers, contrary to Lake WA zoning enforced rules, by Lake Union will not be mitigated by a payment of Discovery Center property adjacent to Denny Park which may be being reserved as a bargaining chip. Lake view protection should be inviolate otherwise it is a betrayal of the heritage we have had passed to us.

Gifted Kerry Park bears my Grandfather's words "That they may enjoy the view". His grand, great, and great-great grandchildren, my family, as many citizens locally and from around the world, continue to enjoy his legacy. I feel passionately we owe to those that follow to leave a legacy as best we can in stewardship to our beloved city that has been demonstrated at it's best by our predecessors . K. Kerry Crossley

These are but some of the negatives which collectively will achieve lower value not increased value for the city beyond the near term.

No step
Sent from my iPad

Holmes, Jim

From: Lori Mason Curran |
Sent: Monday, April 11, 2011 1:49 PM
To: DPD_Planning_Division
Subject: Comment regarding South Lake Union Height and density EIS

Dear Mr. Holmes:

After reviewing the draft South Lake Union Height and Density EIS, I was struck by what an amazing and unprecedented opportunity our city has to shape the way Seattle grows and develops in the coming decades. I also confess that it makes me nervous because the re-zone of South Lake Union will impact generations to come and I fear we might not get it right. I am in favor of a re-zone alternative that will bring the most benefits to the City and the Region through additional tax revenue and public benefits. I am in favor of dense development in the center city because it helps maintain the character of single family neighborhoods by directing growth where there is already infrastructure in place to support it. And I am in favor of flexible zoning that allows developers to choose how high they want to go and requires fair and commensurate payments in order to do so. I know there are some who oppose any additional height or density in South Lake Union. However we must remember, this is a critical economic decision that should not be weighed down by emotional arguments. | 1

I am a resident of the Maple Leaf neighborhood where between 2006-2010 residents successfully protested the proposed development of 39 townhomes on a 1.6 acre site known as Waldo Woods, an urban grove of mature, native Douglas firs. That process is a perfect example of why we need to direct growth in places like South Lake Union. The development of Waldo Woods would have destroyed dozens of mature trees, all for a low density development of 24 units per acre. Our land is too precious for that.

Waldo Woods illustrates why our city needs to promote dense growth and development in infrastructure rich areas like South Lake Union. Our city is growing rapidly and if businesses and residents aren't encouraged to populate dense urban centers, we will witness a devastating impact on our close-in single family neighborhoods and our coveted green spaces located further afield.

Current zoning in South Lake Union does not promote the kind of development that makes for a healthy community over the long run so I am pleased that a re-zone is being considered. While some developers build more responsibly than others, there are examples in the neighborhood that illustrate why we need to not only allow but encourage more height - and lots of it; because more height and density will translate to more benefits for the City and the community as a whole. I cannot fault the developers or architects of buildings like the Mirabella for following zoning guidelines, but the no action Alternative 4 will result in more buildings like that: lot line-to-lot line development with NO public spaces, NO public amenities, NO contributions to much needed affordable housing. It is ironic to hear residents of Mirabella opposing additional height and density in South Lake Union when they live in one of the most egregious examples of why we need new zoning. To allow this kind of continued development without the option to build something taller, more graceful and more environmentally responsible would be criminal. | 2

We cannot afford to short change ourselves by imposing height limitations that will dilute many important economic benefits. Allowing significant additional height such as that outlined in Alternative 1 will result in the greatest benefits for the city – significantly more tax dollars to support much needed services, significantly more contributions to affordable housing and environmentally friendly development that will include an abundance of pedestrian friendly open spaces throughout the neighborhood among other improvements. By encouraging the most density in places like South Lake Union, our single family neighborhoods will be spared from the kind of senseless development that was planned for Waldo Woods. And, economically, it is the right thing to do. Almost daily in the local newspaper I see articles addressing budget shortfalls, cuts in schools, the police force, libraries and other important social services. Let’s help narrow those gaps. Allowing the greatest height and density in South Lake Union can help by increasing tax revenue to fund critical services.

3

Let’s make Seattle even more special than it is today. Let’s add to its iconic skyline - let’s allow tall buildings at the Lakefront – truly graceful tall towers that complement the rest of Seattle’s skyline – the Space Needle, the new Courthouse, the Columbia Tower. Many world cities have successfully integrated tall towers along their waterfronts and I firmly believe that with proper planning and the accurate understanding of the resulting benefits, Seattle will enthusiastically follow in these footsteps.

The format of the draft EIS is such that many will be misled into believing that the images depict a realistic view of what could be developed over the next 20 years. I think the community and decision makers would be much more likely to make the right decision if they understand the likely pace of development as well as the quantifiable benefits that will result from the most density. Not all developers will want to build to the maximum height – but allowing them to choose will result in the best development profile for the neighborhood. Please do not limit developers in height. It will be up to them to decide whether or not to go higher. Let the design review process ensure that the development meets the needs of the community and the higher they go, the more benefits there will be for all to enjoy.

4

In closing, I hope the final EIS will quantify the many benefits that will arise from providing zoning that will allow the highest heights proposed and I hope it will provide a realistic visual representation of what Alternative 1 might look like 20 years in the future.

5

There won’t be any Mulligans here so let’s drive for a hole-in-one!

Sincerely,

Lori Mason Curran

King, Donna

From: Jared Curtis [jared.curtis325@gmail.com]
Sent: Sunday, April 10, 2011 8:12 PM
To: DPD_Planning_Division
Subject: SLU Draft Environmental Impact Statement (EIS)

Seattle Department of Planning and Development
Attn: Jim Holmes

I learned from Councilman Richard Conlin's recent newsletter that Seattle has adopted a goal of restoring and increasing our urban forest. He reported that "We have created an Urban Forestry Commission (UFC) that is reviewing current policies and developing new approaches that I hope will emphasize native vegetation, habitat restoration, and the benefits of trees in natural drainage." How realistic could this hope be if the City approves high density zoning in such areas as South Lake Union? Though not mentioned in the UFC's plans for their review, one great benefit that will accrue from restoring and increasing the urban forest will be to "restore and increase" the livability of neighborhoods. | 1

At risk under Alternatives #1 and #2 in the SLU Draft Environmental Impact Statement is the current level of livability in this large and diverse neighborhood. Of the plans remaining on the table, only Alternative #3 and the current zoning have any hope of at least sustaining that level and of affording opportunities for raising it for the benefit of the citizens who live and/or work in South Lake Union. Cascade neighborhood in particular already has a distinct neighborhood character that could not survive solid commercial and high-rise development, which would bring dramatic increases in traffic and noise, reduction or elimination of lake and city views for most residents, and a sharp reduction of the proportion of green-space acres (not presently very high) to numbers of inhabitants. | 2

Finally, the nearest public school is Lowell School on Mercer and 10th (Capitol Hill). Without any planning to include schools, more parks, adequate public transit, and diverse housing opportunities, how indeed will the area ever sustain its livability? | 3

Sincerely yours,
Jared Curtis

Jared Curtis
Graphic Designer and Editor,
The Mirabella Monthly
116 Fairview Avenue N
Unit 347
Seattle, WA 98109
206-254-1603 home
206-387-0530 cell

Holmes, Jim

From: Dasler, Josh @ Seattle [Josh.Dasler@cbre.com]
Sent: Monday, April 11, 2011 5:18 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS Comment Period

Hello,

As an employee in the South Lake Union area for the past 6 years, I have seen the dramatic improvements that have occurred and are occurring. However, after visiting some of the true urban centers in Portland's Pearl District and Vancouver BC, I am convinced there is much more that can be done to truly meet the needs of tomorrow both environmentally and economically.

I support Alternative 1 in the Draft EIS for a few specific reasons that I don't believe are truly emphasized or addressed enough in the Draft.

- The economic benefit to all layers of business is huge by increasing heights. Increased population and foot traffic in the area allows smaller businesses to flourish. Taller buildings allows more companies to move into the area and provide economic growth.
- Through this increase in density and downtown living options, we can greatly reduce the need for single occupancy vehicles and by concentrating people into a small area it allows for easier planning of Public Transportation in the future. We can truly focus our resources and transit options to help the most amount of people. With the tight budgets we are hearing about at Metro, our ability to consolidate people and make transit available to a greater number of individuals with minimal cost should be seen as a huge opportunity that we can't pass up.
- Seattle will grow. If Alternative 1 is not chosen, where will the growth go? There are negative impacts that could occur if growth happens in areas that are not designed accommodate this.

We have such a unique opportunity to truly be a leader and pioneer in urban development. We must look at the unintended consequences if we aren't aggressive and bold in our focused growth.

Joshua Dasler | LEED AP BD+C | Real Estate Manager
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Lloyd Douglas

1167 Republican St., #311

Seattle WA 98109

James Holmes

Senior Planner

City of Seattle Department of Planning and Development

700 Fifth Avenue, Suite 2000

Seattle WA 98124

April 11, 2011

Enclosed are my comments to the Draft Environmental Impact Statement, February 23, 2011.

Section 3.2 Air Quality

No mention of Denny Way traffic impacts to air quality in the neighborhood

1

Section 3.4 Plants and Animals

Even with the inadequate one day shadow studies there are large impacts to the newly restored natural habitat areas in Lake Union Park. Located in the southwest portion of the Lake, the natural shoreline is intended to aid in the restoration of fish and fowl populations in the Lake and to those transiting the area.

2

The one day figures do not measure the length and duration of the shadows over the lake and shoreline so there is no way to see if there is any degradation or mitigation(s) needed.

Further study is needed, especially in the Dexter and Fairview areas, of the impact of shadows on plant life and its supporting role in restoring water quality for wild life and people.

Page 3.4-7

"During the fall migration ... would experience barrier a few minutes earlier ... Alternatives 1 - 3 are in- fill do not extend downtown west or east...

3

Alternatives 1 and 2 excessive heights may cause the diversion of the bird flight paths into the take off lanes of the FAR 77 area. Since this is a critical time in flight and a bird strike could easily cause the loss of power thus endangering the plane's crew and passengers and if full power is lost people on the ground could lose their life through impact and/or burning of aviation fuel

3 cont

Section 3.8 Land Use

The step down to the water is established in City code already in the Downtown and Bell Town portions of the city. In fact the step down option works with the new flight path information. The step down approach does not preclude it from use along major (Aurora, Dexter, Denny) corridors. The heights available may or may not satisfy a developer's ambition for a particular parcel or parcels of land. There is enough height options studied to enable a step down to the lake to work.

4

The shadow studies are not useful in any impacts on Denny Park, Lake Union Park and Cascade Park. There is also no analysis done on shadow impacts to any open space options that maybe available in the future for policy and planning purposes.

5

Page 3.8-33

"This flight path represents a refinement by WASHDOT..." is insufficient to explain the loss of the South East FAR77 flight path. There is no information available to justify its exclusion for planning efforts.

6

Page 3.8-35

"A secondary route, used occasionally for approaches to Lake Union, is from the southeast over Fairview Avenue." This path is used more than occasionally. It is a fun thing to point out the plane from Cascade Park to the kids and other users of the park. The path is usually over Aurora/Uptown area to Denny Way turning left and another left over Fairview enabling the pilot to gage boat traffic patterns on the lake that will affect his landing.

7

For figures 3.8-5,6,7 the note that is added says the figures show the major wakes effects only and does NOT include turbulence eddies. **Note: I am interpreting the second half of the sentence to mean: residual effects such as turbulence eddies would extend further.** Since there is no analysis as to how much further out in the lake the changes to the wind patterns there is no way to determine mitigations. This analysis does not study the effects of changing wave patterns as they apply to ship repair operations (e.g. Lake Union Dry Dock), the float plane

8

operations in the South East corner of the lake, marinas, and House Boats. This analysis also does not study the impacts on sailing operations in the lake.

8 cont

Section 3.9 Housing

Housing Affordability – There are no study areas that apply to the cost of land after the extravagant up zones of Alternatives 1 and 2. The workforce, affordable and low income developer communities are having great difficulty under the present zoning to assemble the necessary funding to move forward. This rezone will have a major impact on whether there will be any of this necessary component to building a vibrant and sustainable neighborhood. There is a great likely hood that this will shift this further out in the City or encouraging more suburban sprawl. This will be exacerbated by the lack of frequent transit service to the neighborhood, with no relief in sight.

9

There is also no analysis of affordable housing in other urban centers or neighborhoods. Will this stifle development in other neighborhoods in the city?

10

There should be a study that includes the impacts from the historic resources section and how it may apply to the retention to existing structures and use of TDR's to help provide maintenance and preservation efforts.

11

Section 3.10 Aesthetics

Page 3.10-3 the first paragraph. The Neptune is NOT located in the Cascade neighborhood.

12

Page 3.10-20 - first bullet, last sentence. Older and Landmarked buildings are usually in a view corridor passing over them. They are also important points for way finding for visitors and new residents of the neighborhood.

13

Transitions – “it may be appropriate to address this potential issue by addressing the zoning of the Uptown Triangle and Southlake Lake Union neighborhoods together rather than independently.” This is a very good idea and should be done in 2014 when the growth target numbers are to be officially adopted by the City Council. Appropriate planning then can occur when residential and commercial numbers are known for the entire City.

14

Page 3.10-83 Cascade Park. The lawn area is also used 2 or 3 evenings and occasionally 1 weekend day for kick ball. During the week there are usually 2 games scheduled each day.

15

The “bread Loaves versus pin towers” has not been useful for discussion. The Vancouver towers used as examples are not available for use here mainly because of code issues. The pin tower conversation has been dubious at best. The claimed minimum in this study is 10,500 sq. ft. This is 2,500 or more sq. ft. larger than the Vancouver residential towers. The impression being left

16

that residential and commercial will be 'skinny' on top of a podium. Thus enabling more view corridors and less street effect.

| 16 cont

Podiums used as parking garages. It really doesn't matter if the building is wrapped in glass, other decorative wall hangings or ground related retail it still is a parking structure that will kill active 24 hour street use. Since there was no economic impact study done there is no way to gauge the impacts of banning above grade parking.

| 17

There is no mention of tower spacing in this document. The hope is that the towers will be built in the corners of the block diagonally across the alley from each other. This does not preclude the towers being built directly across an 18 foot alley from each other. This has already occurred in the city. There should be a 125' MINIMUM spacing REQUIREMENT. This will ensure that an oppressive feeling is avoided in the pedestrian realm. If these are residential towers there will be an increase in curtain sales!

| 18

Section 3.13 Transportation

The study did not identify Republican Street as the main exit from the Highway 99/Deep Bore Tunnel north bound. There are no mitigation strategies on how to route the traffic to Mercer and/or how to slow the speed to neighborhood pedestrian safety levels.

| 19

I also could not find any information that informs this study about the current traffic impacts of Denny Way and how such a drastic increase in height will affect the noise and air quality impacts to the neighborhood. It will also have a major impact to efforts to increase mass transit.

| 20

General Comment

There is no discussion of how the mitigations affect the concurrency requirements. There is no discussion if any of the mitigations will support any of the alternatives. Also, there is no discussion if any or all of the mitigations will prevent any of the alternatives from being implemented.

| 21

King, Donna

From: Marcella Morgan [mdoxsee77@hotmail.com]
Sent: Monday, April 11, 2011 2:31 PM
To: DPD_Planning_Division
Subject: I Support Alternative 1 for SLU

Hello,

My name is Marcella Doxsee and I am former resident of Seattle who often attends work functions, shops, and plays in South Lake Union. I used to live on the south slope of Queen Anne and have watched the transformation of South Lake Union over the last several years.

I would like to express my support for Alternative 1 in the draft EIS. While I have often read comments about concerns on the height increases this alternative allows, it is unrealistic to expect that the neighborhood will be dominated by these tall structures. I feel there are enough limitations in place with minimum parcel sizes, tower spacing, and the size of the towers allowed to allow for sufficient "breathing room" between these taller structures. More density means more jobs, better retail sales and support for smaller businesses in the neighborhood, and more opportunities for housing.

I have also heard with some amusement comments from others opposed to taller towers because of potential blockage of views. Views are NOT an entitlement, and the urban center should be expected to accommodate more such towers in the future. Density itself can be a great amenity, not only because of the environmental benefits that it generates, but also the pure excitement and the experience of urban living, with goods and services located within a short distance, and increased opportunities to live and work in the same place. When one thinks of the urban cores of New York, Chicago, and Boston, nobody who lives in those cores would think blockage of views from tall buildings is a major objection, but rather an acceptable sacrifice. And for folks living in closer in neighborhoods viewing the urban core, the skyline itself is considered a view premium, just as with mountains, the sound, the Needle, or Mt. Rainier. The denser the skyline, the more spectacular it becomes. So to say a denser population of buildings would result in a degradation of views is counter-intuitive.

I appreciate the chance to comment on this important planning document and hope the City will consider Alternative 1 for the new zoning for South Lake Union.

Thanks
Marcella Doxsee

Holmes, Jim

From: Mike Ehlebracht
Sent: Tuesday, April 05, 2011 2:46 PM
To: DPD_Planning_Division
Subject: South Lake Union Height & Density Draft EIS

To Whom It May Concern:

I have worked in the South Lake Union area for the past 24 years and have seen some exciting changes occur. While I was disappointed that the Commons vision was not realized, I've been pleased with the recent addition of the trolley, Lake Union Park, and the opening of the Amazon campus. I support increasing the population density and building heights in the South Lake Union area to create an even more vibrant neighborhood where I can safely walk to more restaurants, stores, and after-work entertainment options. As a commuter, I also hope that this increased density will support more direct express bus routes to the South Lake Union area. Thanks.

Mike Ehlebracht

Principal Geochemist
mike.ehlebracht@hartcrowser.com
206-324-9530 business

HART CROWSER, Inc.
1700 Westlake Avenue North, Suite 200
Seattle, WA 98109-3856

Holmes, Jim

From: brian estes
Sent: Monday, April 11, 2011 9:40 PM
To: Holmes, Jim; DPD_Planning_Division
Subject: Comments on SLU EIS

April 11, 2011

James Holmes
Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Avenue, Suite 2000
Seattle, WA 98124

Jim.Holmes@seattle.gov

Subject: DEIS for South Lake Union Height and Density Alternatives

Dear Mr. Holmes

The EIS is factually inaccurate, incomplete and/or misleading in a number of areas. As such, I recommend the problems listed below be corrected and a new DEIS be reissued.

Land Use. The EIS statement on page 1-15 that " the proposed action is generally consistent with adopted City plans, policies, and regulations" is incorrect as the household and job growth projections are substantially higher than targets in current urban center plans. South Lake Union is only 340 acres or 9.2% of the total land area of Seattle's 6 urban centers yet is absorbing a disproportionate share of housing and job growth, especially under alternatives 1 and 2. The final EIS should reconcile this with existing plans and justify the basis for such aggressive growth targets. | 1

Building Heights Near Waterfront. The EIS does not adequately address the fact that land use and building heights under Alternative #1 is inconsistent with land use policies that reflect a step down to the water approach for building heights in Seattle. | 2

Flight Paths. The draft EIS was not distributed to the federal FAA nor does it cite an opinion from the FAA on flight path issues which it should. The EIS is further inadequate since it does not address buffers in detail and lacks a wind analysis which should be completed to adequately assess land use or other impacts. | 3

Transportation, traffic analysis and parking. South Lake Union would be a virtual parking lot during commute hours under almost all the alternatives. Few EIS mitigation strategies would significantly alter that fact. Some number of mitigation strategies "could" be implemented but in fact are not required nor are they measures the City of Seattle has direct control over, such as mass transit. The final EIS should more clearly delineate the inadequacy of most transportation mitigation measures particularly those related to reducing vehicular trips. Also, the EIS does not detail how these mitigation measures would be funded. The travel demand management and parking strategies component of the EIS is particularly inadequate in this respect as both lack definitive analysis, are not adequately supported by data, and use flawed or rely on unspecified assumptions. | 4

Aesthetics. The Aesthetics portion of the EIS, especially Appendix D, is incomplete, wholly inaccurate, and very misleading. None of the graphical representations show the tens of 400 foot towers already permitted in the Denny Triangle or other development in Uptown which will occur in the next 20 years which will alter South Lake Union viewsapes significantly. The final EIS should include representations which clearly depict likely development in adjacent urban centers. Also no views from downtown are included as well. This will require a significant expansion of the view points and simulations stated on page 3.10-40 of the DEIS. These deficiencies in the visual and aesthetic analysis should require a redrafting of the DEIS, and recirculation for comments, prior to proceeding to the preparation of the FEIS. | 5

Shadow Effects. The EIS's conclusion that "shadow impacts are not expected to result in significant adverse environmental impacts" is simply incorrect and patently false. A close examination of figures 29-44 in appendix D shows significant shadow effects on open space, parks, and protected shorelines. The EIS analysis on shadow effects is therefore inadequate and should be redone. | 6

WA Shoreline Management Act. The DEIS is deficient in that it does not address a number of requirements of the state's Shoreline Management Act. The analysis does not address the Shorelines Management Act, RCW ch. 90.58; in particular RCW 90.58.320, which establishes height limits respecting permits. | 7

Sincerely,

Brian Estes

SLU Resident

--
Brian Estes

Holmes, Jim

From: Jill Estes [jillestes10@yahoo.com]
 Sent: Monday, April 11, 2011 9:17 PM
 To: Holmes, Jim
 Subject: DEIS Comments

Dear Jim Holmes,

I live in the South Lake Union neighborhood and enjoy its vibrant and eclectic atmosphere. We plan to reside here for many years. I support growth in this urban center but recommend it be tempered with thoughtful consideration for preservation of the essence of Seattle as a beautiful water oriented city.

Why do we need to concentrate housing and jobs in the South Lake Union area? The growth projections are questionable and the housing market is sluggish. It could remain so for a long time. There are 6 designated Urban Centers in the Seattle area able to absorb new populations. The growth could be distributed to these other locations, especially considering the traffic congestion. Already Westlake is clogged during rush hour. Have you tried getting to the freeway lately at that time? Amazon workers are not using public transportation. I share a parking structure with them in my condo building, Enso. Trust me-they are driving cars. 1

By building 300-400 foot towers in an area so close to the lake I fear we will lose the sense of beauty we have come here to enjoy. Lake Union is a gem in the midst of Seattle. What was once a working marine shoreline has morphed into a charming place to live and work. A 200' shoreline setback is not adequate to preserve the workings of Lake Union. The shadow affect next to the lake will adversely affect plants, fish, animals and human beings. Light is essential for all of the above to thrive. 2

Please consider a plan that will preserve a Step Down limit on heights from Denny Way to the Lake. And especially keep the height limits below 150 feet in the Mercer and Valley street areas. I hope the City will review the decision to alter height and density standards in South Lake Union and reassess the impacts of these decisions on this area for decades to come. We hope the City will consider itself the keeper of Seattle's legacy for future generations. 3

Sincerely,
 Jill Estes
 820 Blanchard Street
 Seattle, Washington 98121



DAVID R. EVANS, CHME & ASSOCIATES



April 7th 2011

James Holmes
Seattle Department of Planning and Development
700 5th Avenue, Suite 1900
PO Box 34019
Seattle WA 98124-4019

Subject: Taller Buildings in South Lake Union

Dear Mr. Holmes

I have been involved with the development and operation of the new Pan Pacific Hotel located at 2200 Westlake, a complex that is a wonderful addition to Seattle and Seattle's skyline "The corner stone of South Lake Union", since 2002".

Certainly, substantial improvement to the blight that was on this site for years and not withstanding the "Path Headquarters" across the street on the site a former car lot.

During this time I have seen South Lake Union (SLU) "rise from the "ashes" old warehouse's and general disrepair as a result of the Paul Allen's' vision and the team of professionals at Vulcan. The result today is new vibrant area with residences and offices; Seattle's "downtown" has expanded "uptown"

The addition of the "Gates Foundation" and "Amazon.com" add to the tax base, bring people to the city, these prestigious organizations may have just as well ended up in Bellevue, if SLU had not materialized.

Simply stated, will the future growth go across Lake Washington to Bellevue where there few restrictions on development and building height? Or will Seattle be the city of the future?

Therefore; the reason for this letter, Mr. Holmes, is to support any initiative that is in place to ensure that South Lake Union continues to grow, and in this case "upward" because, this will benefit the citizens of Seattle and maximize the cities resources

Attracting more global headquarters, large companies can better consolidate employees, adds to the prestige of the city, more people working out of one location and the tax base.

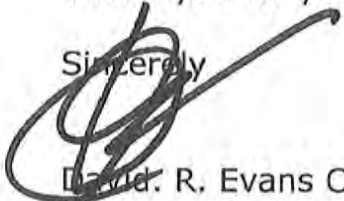
Going forward in order, for Seattle to prosper as vibrant city, the vision of South Lake Union needs continue and raising the current height to build higher buildings does just that. Unlike many other cities, Seattle has very serious director competitor in Bellevue, Washington.

Expanding the good work of the Vulcan that has given Seattle ,a new "downtown," in my judgment, is vitally important to the economy of the city, the people and visitors this great city.

In closing, we need to walk the talk on environmental sustainability and curb urban sprawl. Better planning now leads to better future for all in our region. Increasing the height of future buildings in South Lake Union is better planning

Thank-you for your favorable consideration on this issue.

Sincerely


David R. Evans CHME
Managing Director

I

I have been a resident of South Lake Union for the past three years and would like to comment on the draft EIS after attending the public hearing on March 28, 2011 at Seattle Unity Church.

There were a number of opinions voiced by residents, developers, business owners, construction tradesmen and others. A majority voiced reoccurring themes – density is good, creation of a vibrant diverse neighborhood and opportunity for huge job growth. Several planners spoke of the new jobs that are and will become a reality with the technology industry, medical research institutes, the Fred Hutch and Gates Foundation.

1

I believe I heard that approximate 20,000 plus new jobs are to be created and filled by individuals living in or within walking, biking or trolley distance to SLU. This assumes existing surface streets and the “fix” to the Mercer Mess are adequate to handle the car and delivery truck needs of the neighborhood.

I disagree with the transportation rationale. New employees will have a variety of problems confronting them when hired to the SLU area. Wherever they live at the time of hire, many will be dealing with rental agreements, leases and home ownership that must be dealt with in relocation. The state of the economy will be an enormous determinate of how many of these new employees commute by car or by other means. I would like to see the EIS or the revised EIS devote more creative thinking as to how we will get these new workers to and from work.

2

I think that density is an important part of the SLU development plan. I strongly prefer option 3, but am prepared to live with option 2 with some changes. Seattle has established precedence for a step down elevation requirement towards Lake Union along West & East Lake Avenues. Let us have our high rises starting in the Denny Triangle and sloping towards the lake and not have these towers suddenly springing up two or three hundred feet between the “Mercer Fix” and Lake Union.

3

The vibrant neighborhood concept must also have residents of different ethnic and economic backgrounds as well as different age groupings. There is a history of this type of diversity in SLU and it should be preserved. New residential construction should routinely have some units designated for low income. Furthermore, the neighborhood is definitely getting younger. This trend will continue because of the types of jobs being created. With a younger population base in this area, it is safe to project more babies and school-aged children. We will need a K thru 6th grade school in SLU.

4

Maybe the city of Seattle could work a land swap with Vulcan involving the square block where the Discovery Center is presently located. It could be rezoned for a school and would accommodate a multi-story building, staff parking and playfield. If this is not realistic, then the City must create this opportunity elsewhere in the development plan.

5

Thank you for your time and effort and commitment to making SLU truly a model for Seattle and other cities throughout the country.

Jim Felber



April 4, 2011

Mr. Jim Holmes
City of Seattle
Department of Planning and Development
700 Fifth Avenue, Suite 2000
Seattle, WA 98124-4019

Seattle
601 Union Street
Suite Number 5151
Seattle, WA 98101

206.224.3500 tel
206.224.3501 fax

Dear Mr. Holmes:

As you are already aware, the South Lake Union rezone provides the city of Seattle a great opportunity to accommodate growth in an area that has seen significant infrastructure investments.

From our perspective, our region's growth engines will continue to be computer technology, biotech and global health. My firm represents many of the area's most important technology and life science tenants (please refer to our website www.flinnferguson.com). As such, I am acutely aware of this potential growth and the benefit this may provide the city we all live and work in.

Today's significant technology tenants are attracted to urban neighborhoods like SLU, but require large floors for efficiency and collaboration often looking for floor plates in excess of 30,000 rentable square feet.

Please consider studying alternatives in the final EIS to accommodate towers that meet these programmatic needs. I understand that in some of the superblocks of 100,000SF+, two 35,000 SF floor-plate towers would still leave nearly an acre of public open space onsite. Hopefully this is enough of a balance to accommodate adequate development for high growth companies while serving the public need.

Thank you,

Dan Foster
Principal
Flinn Ferguson Corporate Real Estate

Holmes, Jim

From: Peter Ferretti [peter.ferretti@panpacific.com]
Sent: Monday, April 11, 2011 3:18 PM
To: DPD_Planning_Division
Subject: South Lake Union

Hello,

I am writing you as someone in favor of the proposed changes to the South Lake Union Height and Density Guidelines to allow taller and narrower buildings in the neighborhood.

As the Revenue Manager for a newer hotel in South Lake Union I can attest to the fact that the growth in SLU is adding to the local tax base. Hotel rates and occupancy have been on the rise recently – finally competing with downtown. Further growth will not only stimulate the local economy with construction and service industry jobs, it will add to the occupancy tax base collected.

As a hotelier, with a hotel (Pan Pacific) that has views of Lake Union, I can tell you that short, fat buildings (similar to the ones we currently have) can ruin the view of the lake. From just the 5th floor of the hotel you see the tops of buildings – dirt, old HVAC systems, standing water, etc. I would much rather have my guests see between tall, thin buildings than to have to see over short, unattractive ones.

As government leaders with the responsibility of making decisions that will benefit the most people in the long run, Alternative 1 is the right choice for you. Just walk thru SLU to see what proper planning can do! New restaurants by Tom Douglas, tree lined streets, a pedestrian mecca, if you will. This plan will bring small business and big business together and make SLU the model for future city growth in the Pacific NW.

Best Regards,

Peter Ferretti | Director of Revenue and Business Analysis
panpacific.com/seattle | panpacificseattletour.com



Pan Pacific Hotel Seattle

2125 Terry Avenue, Seattle, WA 98121

D: (206) 654 8170 | M: (408) 489-0163 | F: 206 654 5049 | peter.ferretti@panpacific.com

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Holmes, Jim

From: Bryan Fiedorczyk
Sent: Thursday, March 10, 2011 11:04 PM
To: DPD_Planning_Division
Subject: Support for increased height and density in SLU

I am a resident of Seattle and environmental/community planner by trade. Though I currently live in West Seattle, I recently lived in Queen Anne and interacted frequently in South Lake Union (SLU). I have often shopped at the REI flagship, played sports at Cascade Park, frequented local restaurants/bars, traveled the streetcar, and performed community volunteer work within SLU.

In certain areas, such as urban centers like SLU, increased height/density is a necessary tool for the future development and vitality of the area. Increased height/density is also in keeping with nearby Belltown and Downtown, where greater heights are part of the community. SLU also acts as a gateway for much of the region heading to the heart of the city for entertainment or events, and increased height/density would be consistent with that function. I personally would like to see more creatively designed built urban spaces that preserve and create open space and natural vegetation for aesthetic reasons and improved functionality of the community and environment. In my opinion, this can be better accommodated by increased heights, versus low rise lot-line to lot-line developments that contribute to the impervious surfaces of the area, increasing polluted runoff and urban heat island effects. | 1

While it is understandable that some local residents are concerned with the visual landscape and views from their property, it is also important in my view to provide a healthy, vibrant, and economically viable area for the entire community. Additionally, a view of the Space Needle or Lake Union is nice, but much of that viewshed also includes abandoned or under-utilized warehouses and blighted empty concrete expanses. Wouldn't a view of a blended landscape of vegetated open space, public art, and aesthetically pleasing high-rise buildings featuring pedestrian activity with peak-a-boo views of other cultural and natural landmarks be a much more inviting scene?

As a community, I feel we need to consider the greater good of our planning and development, which includes accommodating residential growth in keeping with Growth Management Act requirements, while maintaining as small a built environment footprint as feasible to conserve our surrounding natural resource areas. Increased building heights and density are vital in meeting those community goals, and the SLU area is a logical location for this type of development. I believe planning efforts need to serve the (far too often) "silent majority" of community interest and vision versus the special interests of a small but vocal/active group of neighbors opposed to change.

Thank you for your consideration of my comments. I hope to see a beautiful and vibrant SLU community emerge in the future!

Bryan Fiedorczyk, AICP

I am a South Lake Union resident and am very interested in and excited by all the changes occurring in our neighborhood today. Rarely does a city have such an opportunity as the one presented to Seattle now: to look at a large area of the city and plan its future development appropriately. There is only one opportunity to get it right, and there are too many extant examples of NOT getting it right in Seattle—even on Lake Union.

Below are my comments on the draft EIS. I sincerely hope you will give them great consideration as you draft a final EIS. I also hope you remain open to the possibility of producing a second draft if the scope and significance of comments received warrant this caution approach to rezoning South Lake Union.

1. I support Alternative 3 with modification. I believe Alternative 3 allows for sufficient height and density to match the area's designation as an urban center, while ensuring the maintenance of a livable, walkable neighborhood for all. The modification I suggest is the removing of the "Waterfront" neighborhood (as defined in the EIS, figure 2-2) from the urban center designation altogether. Lake Union's waterfront acreage should not be designated as an urban center. I realize this may not be in the scope of the draft EIS, but actions taken relative to the "Waterfront" neighborhood can effectively remove it from such a designation. Within this "Waterfront" neighborhood, the blocks should be quartered by pedestrian-only walkways, with no buildings allowed to impinge beyond one quarter. In keeping with the nature of such a pedestrian-friendly shopping, eating, entertainment "Waterfront" neighborhood, no building would be allowed to be taller than existing zoning permits. This could also be an area of pocket parks and grassy dog parks. | 1
2. I take issue with the 2031 growth target, based as it is on an overly ambitious 2004 growth target. It should be reined back to a more typical growth target. The South Lake Union need not take on all the projected growth—give some to some of the other urban centers appropriately. | 2
3. Consider pedestrian overpasses over Mercer Street. Mercer Street will be quite wide and quite busy once the Mercer Project is completed, and without good walkways, can serve as a barrier to pedestrian access to the park and to the Waterfront neighborhood. | 3
4. I think there is insufficient understanding and consideration of potential wind-tunnel effects from tall buildings—both for pedestrians and for seaplane traffic. | 4
5. Confining seaplane traffic to one area, the southwest section approaching the lake, will make it difficult for seaplanes to land safely. They must consider wind and boat traffic, among other considerations, when planning their landings, and need to have broader options for landing, as they currently have. | 5
6. I propose an iterative process for granting building permits. I think there is an opportunity for self-correcting as permits are granted over time. One cannot sit here today and project with great accuracy what the affects of building out such a large area will be. As permits are granted, as buildings are constructed, there should be, with each subsequent permit under consideration, a process for evaluation inclusive of each permit already granted, or each project built out. If it appears we are heading in a wrong direction, there needs to be a process for correction. | 6

7. Recognize and value the environmental aesthetics anticipated by current SLU homeowners and residents. We need a see-through neighborhood for all to enjoy. Make decisions based not solely or even primarily on economic bases. Make SLU a national model, incorporating aesthetics, environmental soundness, mixed use, density, schools, dog parks, etc—and developing in a way respectful of all these uses and capable of drawing visitors and admirers from near and far.

Judith Freeman

Seattle WA 98121

Seattle Department of Planning and Development
700 Fifth Avenue, Suite 1900
PO Box 3419

April 8, 2011

Dear Mr. Holmes,

The 600 plus page Environmental Impact Statement demonstrates a lot of work with its statistics but does not inspire creative invention. Where are the open spaces for people to congregate- -such as Westlake Square? The partially built mid rise sections of Amazon and Fred Hutchison Buildings do not invite strollers or places to congregate. Cities need focal points, a variety of scales for tables, chairs, awnings, umbrellas, coffee and ice cream, and pleasurable visual aspects which are the hallmarks of great cities.

1

How does pedestrian traffic traverse the high speed volume of cars along Mercer and Valley? Currently exiting from the South Lake Union Park, even in an automobile, is hazardous at best. The Alternative Plans #1 and #2 will make the Lakefront little more than a backyard for the tallest buildings. Instead of the earlier proposed Commons connecting the lake and downtown. The design of the Amazon buildings suggests we will have a grid of grim mausoleums of high rise commercial buildings, squared blocks adhering to lot lines. The focal point for the 300-400 foot towers will be the clubs, restaurants, penthouses at the top guarded by doormen and security systems- not conducive for diversity of families and children, or inviting of entrance by passers-by. For example the Fred Hutchison campus is not easily accessed or enjoyed by it's neighbors .

2

The Public Forum of March 23 showcased many speakers, most of whom do not live in the neighborhood and many do not even work in this area. Unfortunately time did not permit many who do live here to speak, so the result was a meeting dominated by developers who will benefit financially, but most of whom will not live in South Lake Union . I sincerely hope the future planning will contain more thought into community facilities and spaces which will attract an economically and culturally diverse population which lives in the area and doesn't just work in South Lake Union and then depart for the suburbs.

3

Respectfully yours,



Donald Frothingham, retired architect, former partner of Fred Bassetti and Co.

Active in Friends of the Pike Place Market, Westlake Square, Action Better Cities, Project Architect for the downtown Federal Office Building, Mercer Island Planning Commission for 6 years, Chairman for 2 years, MI Design Commission- 4 years, Chairman-1 year.

March 30, 2011

Seattle Department of Planning & Development
Attn: James Holmes
700 5th Avenue, Suite 1900
PO Box 34019
Seattle, WA 98124-4019

RE: Comment to DEIS & Support of Taller Buildings in South Lake Union (Alternative #1)

Dear Mr. Holmes:

When I first moved to Seattle from Nashville in 2004, I was driving on I-5 with a bird's eye view of South Lake Union. I couldn't help notice that particular area's flat buildings, parking lots and depressed appearance. I've lived all over the US and was discouraged with the appearance of this landscape in a City that boasts its progressiveness. I wondered why the City hadn't constructed taller more energy efficient buildings that have access to a beautiful lake and park – which would ultimately draw in more people to the area...especially if they could live in a building with great views of the lake and mountains. The scenery is breathtaking; but the city scape was not and its' right near Seattle's main attraction, the Space Needle.

By creating a more upwards flow with architecture and utilizing less land than a building spread out across valuable acreage; it gives the impression that Seattle's limits can reach the sky. Having taller buildings will allow for more "green scene" through landscaping and mature tree planting, provide space for wider sidewalks for pedestrians (safety) and bring in retailers who will enhance the economic stability of Seattle. By generating more revenue Seattle can use funds to better its schools, improve the transit system, provide more fire / police department services...all of which will draw in families to live in Seattle.

Now in 2011, I see some progress and upwards momentum in the South Lake Union area; but there's so much more that can be done to make it a point of destination for Seattle. New businesses, buildings, retailers, a grocery store, restaurants and condominiums/apartments have been added which is a wonderful start. It's nice to walk around that area, but it would be even better with the remaining undeveloped spots to add additional height and increase more green space.

I hope that Seattle City Officials will continue this positive momentum by allowing additional height and density in that area. Just look at what's being created and think about what can be created with this upwards mobility. It's exciting.

I feel confident that the decision makers of Seattle will make the right decision and allow for taller buildings in the South Lake Union area.

Respectfully, Lee Fulford

1

Holmes, Jim

From: Arnie & Pat Gaillard ,
Sent: Thursday, April 07, 2011 4:06 PM
To: DPD_Planning_Division
Subject: SLU EIS

Dear Mr Holmes,

We would like to express our thoughts about the SLU EIS.

- Please limit the growth targets for South Lake Union. This area should be developed as a neighborhood with parks and schools. | 1
- We are against Alternative #1 and #2. This would make this area either tall concrete buildings, or perhaps some residential buildings without the parks and schools mentioned above, and would also create an unacceptable traffic situation. Without schools, families with children would not be interested in moving into the area. This would also preclude low cost housing for low income or working families. | 2
- A real step-down to the lake would keep some visual access throughout SLU. Consider the views from existing buildings such as Miravella, Veer Lofts, Alterra Condos and Alley 24. Building towers near Lake Union would block everyone else's view of this lovely asset. | 3

Respectfully submitted,

Arnie and Pat Gaillard

GARNER CONSTRUCTION WBE, INC.

April 5, 2011

To Whom It May Concern:

My name is Jackie Garner and I am the owner of Garner Construction WBE Inc. , which has been operating cranes in Seattle for over 20 years. We are proud to bring quality crane and construction services with fully union crews to both private and public sector projects.

South Lake Union is headed in the right direction and needs additional height and density to get it right. Building tall in South Lake Union makes sense as it uses existing infrastructure. It makes the greatest use of public investments in existing transit, roads, parks, etc. Density in an urban center could be the catalyst for Seattle to have a wealth of public amenities in the urban core. It maximizes the investment the city has already made in the South Lake Union area. It is the most efficient use of tax dollars.

The current zoning encourages bulky buildings. But what we really need are interesting buildings with active retail. Much of South Lake Union is headed in the right direction. There are mixed-use buildings with pubs, restaurants and coffee shops at the street level. These give the neighborhood that sense of really being part of the city and not a warehouse wasteland. Allowing height means taller, thinner buildings that preserve light and air.

If we want to be a truly green, sustainable city – we need to say yes to density where it is appropriate. It's a simple solution to sprawl. Our future depends on it.

Why only plan until 2031? 20 years is not nearly enough for long range responsible planning. Growth will continue to happen, we should plan appropriately for it now, rather than pay the dear cost of continued

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urban sprawl tomorrow. I urge our elected officials to consider the greatest good in the long term rather than the next election.

2 cont

The city should adopt Alternative 1, the most aggressive and progressive alternative because it benefits the most people and maximize our city resources. It's the right thing to do. Please do the right thing for the long-term future of our city and region. Do not hamstring the growth potential for South Lake Union as it will negatively impact the overall quality of life in Seattle. Do right by our planet and support the greatest growth in the part of town where it makes the most sense.

3

Thank you,
Sincerely,



Jacquelin E. Garner
President, Owner
Garner Construction WBE, Inc.

9th and Aloha LLC
2317 Rosemont Place W.
Seattle, WA 98199

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019
southlakeunioneis@seattle.gov

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes:

We are owners of the office building at 753 9th Avenue North and we have reviewed the draft Environmental Impact Statement dated February 24, 2011. Our property is approximately 14,000 square feet and is located in the area identified as the Dexter sub district.

We are in favor of increasing the height and density in the South Lake Union area, agree with the stated objectives in the introduction to the Environmental Study and support Alternative 1 which provides the greatest potential density. Our comments pertain to the detail of the study and the alternatives.

1

Presented below are our comments and concerns:

1. Minimum Lot Size for Towers: Our property is located in the cross-hatched 60,000 SF per tower zone. The cost of acquiring 60,000 SF of land in this urban area will preclude tower development with the possible exception of the super wealthy whose projects don't need to make financial sense. If you calculate the amount of building that this provision allows on a 60,000 SF site, projects may not be financially feasible to build to the new code. Property owners in this zone will be limited to what they can do under the existing code. **Consider reducing the minimum SF for a tower to something more reasonable (say 30,000 SF) to provide some additional tower spacing without severely punishing those with property close to the lake.**

2

2. Lake Union Seaport Airport Flight Path: The Land Use section includes plans, policies and regulations for limiting the height of buildings within the FAA flight path; however the description of the flight path and required heights has not been determined. **This is a huge issue for effected properties and should be defined, vetted and presented to the public for comments prior to publishing the final EIS.**

3

3. Geology and Soils Mitigation: Mitigation Strategies state that there might be site – specific measures to deal with geology and soils impacts, which may include reducing the size of the project. **With the current technology available to solve geology and soils issues, there would be no reason to require reduction in the allowed building envelope.** It is up to the owner or developer to determine if it is worth the cost to implement necessary technology and earth science solutions.

4

4. Above grade parking: We agree with the provision allowing parking to be half above grade and half below grade. **Many if not most of the properties in South Lake Union have water table issues and the necessary parking for the various uses cannot be accommodated below grade only.**

5

5. Zoning Designations: There does not appear to be any direct benefit in the new zoning alternatives for a property owner with less than 22,000 SF on upland blocks and especially for 60,000 square feet on properties close to the waterfront. **It is imperative that the right to build under the existing code be retained especially for parcels that are too small to build a tower.**

6

In general the zoning alternatives presented in the draft EIS penalize the small property owner. Small properties contribute to the character of the neighborhood and the diversity and vitality of the pedestrian environment and should be given more consideration in the next stages of the process.


7

Thank you for the opportunity to participate and share or comments. We would appreciate your consideration of our comments as you move forward with the process.

Sincerely,
9th and Aloha LLC


Joseph Giacobazzi


Paul Fuesel


Nelson Davis

MARCY JOHNSON GOLDE

Seattle, WA 98109

April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019
southlakeunioneis@seattle.gov

RE: Comments on DEIS for South Lake Union - Height and Density Alternatives

Requested Action: Prepare a supplement to this DEIS, showing the expected economic impacts, both positive and negative, of each Alternative, including the percentages of expected housing in each of the Area Median Income (AMI) classes. Also add AMI classes for 250% and 500% AMI.

GENERAL COMMENTS:

The DEIS totally fails to analyze the varying economic impacts of the four alternatives, yet they will be absolutely and dramatically different under each alternative. This must be corrected.

I support the growth targets for South Lake Union (SLU) in the current comprehensive plan as well as the Affordable Housing Goals. Both of these need to be applied both for the 2024 and the 2031 estimate dates. The growth rate for SLU should not increase for the period from 2024 to 2031.

The blocks around Lake Union and the Lake Union Park need to be zoned for their impact on, and need to protect, the special nature of these natural amenity for all of the city. The height should scale down toward the lake, thus preserving the valued outlooks from the new and older buildings in the southern portion of SLU.

The Cascade Neighborhood needs to retain its residential character and its current height and density zoning. Add the family friendly zoning along 8th Ave. to Alternative 3.

In order to become the envisioned Urban Center some space provisions for children needs to be made up-front in all Alternatives. These include schools, daycare, play areas and libraries.

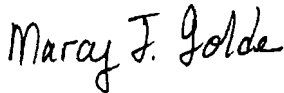
HOUSING ANALYSIS

The analysis of Housing, one measure of the economic impacts, is also very deficient in several ways.

1. The DEIS shows that Alternative 4 currently contains 679 units of affordable housing, which is 13% of the current 3,075 housing units. Yet Seattle's goals for affordable housing is 64%. This gap is not recognized.
2. No estimates are available for any of the other Alternatives, each of which will undoubtedly increase the percentages of housing for people well above the Area Median Income. This vital information needs to be included.
3. Most of the incentives for increased low and medium income housing and amenities are currently available, but have not resulted in SLU coming even close to Seattle's goals. What are the estimates for the amenities that will be provided with each of the alternatives.
4. Despite these omissions and shortcomings, the DEIS reaches the unbelievable conclusion that: "No significant unavoidable impacts to housing are anticipated." This conclusion is wrong and in conflict with even the modest information presented.

A supplemental DEIS is needed to address the variety of economic impacts, both positive and negative, of the proposed zoning changes to height and density.

Sincerely yours,



Marcy J. Golde

Holmes, Jim

From: BARRY GOODING
Sent: Friday, April 08, 2011 9:42 AM
To: DPD_Planning_Division
Subject: Comment on the Draft Environmental Impact Statement

Dear Mr. Holmes:

I work in a neighborhood in Seattle as well as enjoy spending time with family and friends in South Lake Union. I enjoy the local restaurants and amenities that the South Lake Union area has to offer. I do support taller buildings and more people in South Lake Union. Restricting heights is counter productive. We need more housing downtown and taller buildings will give us that. I believe more people will help the smaller, independent and locally owned retailers. More people also means more activity in the area which also means more eyes on the streets. I do not like walking in dark empty parking lots and more people and businesses would eliminate this.

We need better planning now in order to have a better future for all in this region. Well designed and constructed towers outside of the core downtown is better planning. I would rather see this than more six pack townhomes encroaching on our residential neighborhoods. South Lake Union is just blocks from downtown and should be where more growth is planned. We need more housing stock in the city and more tall buildings means more housing options and more overall housing stock means more affordable housing. Building taller requires developers to create public benefits such as childcare and pocket parks. This will be a win-win for everyone.

Seattle needs to walk the talk on environmental sustainability. Dense, compact, walkable neighborhoods reduce emissions and makes our city more livable. The South Lake Union neighborhood is along a transit corridor and will maximize transit use.

Building densely in South Lake Union will lead to more construction projects, meaning more family wage jobs. Concrete and steel construction is used when building taller buildings, which means more union labor. These types of buildings are usually sturdier, higher quality and long lasting. Increased height and density in South Lake Union creates more on-going revenue for the city through real estate tax, sales tax and utility tax. Living densely means that the city can serve more citizens at lower cost to taxpayers.

Please keep an open mind about taller buildings in the South Lake Union area. Please do the right thing for the long term future of our city and region. Do not constrain the growth potential for South Lake Union as it will negatively impact the overall quality of life in Seattle. The City should adopt Alternative 1, the most progressive and aggressive Alternative because it benefits the most people and maximizes our city resources. It's the right thing to do!

Thank you for your time and consideration!

Kim Gooding

Holmes, Jim

From: Gabe Grant [ggrant@halrealestate.com]
Sent: Friday, March 18, 2011 1:28 PM
To: Conlin, Richard; Rasmussen, Tom; Bagshaw, Sally; Burgess, Tim; Godden, Jean; Clark, Sally; Licata, Nick; Harrell, Bruce
Cc: DPD_Planning_Division; Holmes, Jim
Subject: Support the Alternative 1 Rezone in SLU

Dear City Council Members,

I'm writing to encourage you to support the Alternative 1 Rezone in South Lake Union with 35,000SF Technology Office Floorplates. Some of our region's biggest growth engines are tech, biotech and global health. There is an incipient cluster of these sorts of businesses in SLU, but further expansion will likely require large building floorplates for efficiency and collaboration. Unfortunately, the DEIS contemplates towers with a maximum of 24,000SF commercial office floor plates, which are inadequate for many users. We need to build the kind of space our growth companies want, or they won't stay here.

I've walked to work from Eastlake to Downtown for years, passing through SLU on almost a daily basis. It has transitioned from a light industrial and surface parking lot wasteland to a burgeoning neighborhood with multifamily housing (low and high end), jobs, a grocery store, small/independent businesses, a new park and museum, and most importantly an incredible global health/biotech jobs cluster that is among the most successful in the nation. Helping these existing organizations grow and prosper and attracting new ones to join them is a key to our regional success.

I believe that in exchange for 35,000SF floorplates, developers could be asked to provide street level amenities and public open space, break up larger blocks, and limit overall height, which seems to be a lightning rod issue for some in the opposition. In short, we need SLU to play a key role in accommodating employment growth in our region. I encourage you to be responsive to the needs of our growth tenants, zone for the kinds of buildings they need and create great amenities and public spaces for our community.

All the best and thank you for your consideration.

Gabe

Gabriel Grant | Vice President
HAL Real Estate Investments Inc
2025 First Avenue, Suite 700, Seattle, WA 98121
T 206 448 5080 F 206 448 5075

Holmes, Jim

From: Serge Gregory
Sent: Monday, April 11, 2011 6:45 PM
To: DPD_Planning_Division
Subject: Comment in support of increased height and density in South Lake Union

My name is Serge Gregory and I am a 40-year resident of Seattle. I am writing in favor of increasing the height allowances for new construction in the South Lake Union area. I recently returned from a visit to Vancouver, B.C. and was struck, after not visiting the city for several years, how much the energy and vibrancy of the city have increased. I attribute that to the taller and more concentrated residential development in the city. Vancouver now feels like a world-class city and I'm sure it's because so many more people now can live in the central downtown area. 1

I would like to see the same kind of urban residential density in Seattle. Tall office towers don't contribute to a city's livability if everyone leaves for the suburbs after working hours. But for obvious reasons tall residential buildings give life to a city 24 hours a day. I currently live in a house in Montlake, but I could see myself moving into a residential building in South Lake Union (especially after I retire) if I knew that I would be part of a vibrant urban neighborhood.

Serge V. Gregory

King, Donna

From: Cecelia Gunn [ceceliagunn@gmail.com]
Sent: Friday, April 08, 2011 1:01 PM
To: Holmes, Jim
Subject: South Lake Union Zoning Alternatives

I wanted to comment on the proposed zoning changes in the South Lake Union neighborhood. I am a Capitol Hill resident but live within a 2 minute walk across the freeway from South Lake Union so I spend a lot of time in that neighborhood.

I prefer Alternative 3 of the zoning proposals because of the lower heights directly bordering Lake Union. 300' tall buildings right on the lake shore will adversely affect the neighborhood feeling, creating a barrier (both physical and likely economically) with access to views and uses along Lake Union. Maintaining existing zoning along Fairview and within the eastern portion of the neighborhood will help temper the scale of redevelopment and help maintain some of the historic features in the neighborhood.

1

Creating an urban village with a diverse mix of uses, housing, and employment opportunities will best be served by alternative 3.

Thank you,
Cecelia Gunn
1004 Belmont Avenue East, #203
Seattle, WA 98102
206-491-2004

Holmes, Jim

From: Charlie Hafenbrack
Sent: Thursday, March 31, 2011 8:24 PM
To: DPD_Planning_Division
Subject: Comment on South Lake Union Height & Density Draft EIS

March 31, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Sent via e-mail: southlakeunioneis@seattle.gov.

Dear Mr. Holmes

My company operates in the South Lake Union area. I am writing to encourage the City of Seattle to adopt Alternative 1, the most aggressive and progressive alternate in the South Lake Union Height and Density Draft EIS. 1

Building tall in South Lake Union makes sense as it uses existing infrastructure – making the greatest use of public investments in existing transit, parks and roads.

Building tall in South Lake Union also reduces sprawl and helps create a vibrant, walkable neighborhood that will be a model for development in our region.

We are fortunate to have a burgeoning hub of technology, life sciences and global health in the South Lake Union area; economic drivers that any city in the US would cherish.

We need to support that activity with housing of all types. Building tall is the most efficient way to do that.

Sincerely,

Charles Hafenbrack

King, Donna

From: Julia Hailey [julia.hailey@gmail.com]
Sent: Sunday, April 10, 2011 9:45 PM
To: DPD_Planning_Division
Subject: SLU EIS

I have lived in Seattle and the surrounding areas my entire life, and I have seen SLU transform from a gray and shapeless collection of buildings to an area revitalized by globally recognized businesses and great restaurants. As a native Seattlelite, it would be both heartening and rewarding to see our city take advantage of its resources and reshape the area further by rezoning and allowing for a more efficient use of development space. By rezoning in favor of commercial and residential properties, the South Lake Union area can become a more pedestrian and commuter friendly area that caters not only to those driving into the city for the day, but residents who would prefer to live near city center. An added bonus of revising current building restrictions and zoning is that the city's already established amenities like public transportation and the natural layout of the adjacent neighborhoods can be seamlessly joined to the new development making it an even more useful part of our vibrant city.

Thank you,

Julia Hailey

Holmes, Jim

From: Charles Ryan Hastings
Sent: Tuesday, March 22, 2011 4:03 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS comment

To whom it may concern,

I work near South Lake Union and enjoy the many amenities the area offers – from the many dining options to the various retail shops. I admire the redevelopment efforts that have taken place and appreciate the city and community support that has already been provided to the area. It is my hope that the City will continue to support the growth of South Lake Union by adopting Alternative 1. This alternative will allow for smart and sustainable growth and will give the City of Seattle a wonderful location for its citizens to live, work, and play. | 1

Thank you,

Ryan Hastings

Holmes, Jim

From: Hamilton Hazlehurst [hamilton.hazlehurst@gmail.com]
Sent: Monday, March 28, 2011 9:27 AM
To: DPD_Planning_Division
Subject: Comment on the South Lake Union Height & Density Draft EIS

I have worked in South Lake Union for 10 years and lived in this great neighborhood for 4. I could comment on why I support EIS Alternative No. 1 from many perspectives, but I choose to focus my remarks on the benefits this alternative has on the environment. Since I moved from the East Coast to live full time in Seattle over 30 years ago, I have always held a high appreciation of the un-built environment of the Northwest. Much to my regret during this time I have seen significant sprawl that has steadily eroded the relatively unblemished nature that I treasure in the areas surrounding Seattle. The most effective way to stem this erosion is to concentrate growth in our cities where it belongs. There are few better places within Seattle's boundaries to accommodate this growth than the South Lake Union neighborhood. Millions of dollars have been invested in its infrastructure that need not be invested elsewhere on the edges of our greater community.

New development in South Lake Union has been and will continue to be constructed using highly sustainable technologies unparalleled in most neighborhoods in the country. Our environment will benefit from more building like this not less. We should maximize the opportunity for dense urban growth constructed in a cutting edge sustainable manner.

Since moving to South Lake Union, I have come to rely heavily on the public transit infrastructure to take me just about anywhere I want to go. I have sold my second car. My carbon foot print has become significantly lower and I am saving thousands of dollars annually in the cost of car ownership. Concentrating jobs and homes close to transit is good for the environment and reduces our carbon emissions.

With increasing density South Lake Union has become a safer, walkable neighborhood. It will become much more so with the influx of those who will live in new residential towers. We must be mindful that contrary to what the renderings of potential high-rise development illustrated in the draft EIS suggest, the neighborhood in reality has limited parcels of land available for new development. The new zoning code should therefore maximize the potential for development on the remaining blocks.

I live in a high-rise condominium where most of the walls, floor and ceiling are shared with other residents. These shared surroundings make my home 3 times more energy efficient than the freestanding home I occupied in Magnolia. My energy bills are much lower during the winter heating season because I share heat retained in the building structure with my neighbors.

The height and density limits indicated in Alternative 1 will have the most positive impact on the neighborhood's potential to best serve the well-being of the planet while at the same time making it a great place to live and work for generations.

Hamilton Hazlehurst



April 11, 2011

James Holmes, Senior Urban Planner
 Department of Planning and Development
 700 5th Avenue, Suite 1900
 PO Box 34019
 Seattle WA98124-4019

Dear Mr. Holmes:

Vulcan's comments on and response to the South Lake Union Height and Density Alternatives Draft Environmental Impact Statement (DEIS) are set forth in this letter and the attached Exhibits.

Since adoption of Washington State's Growth Management Act in 1990, the State's and Seattle's public policy focus has been on preventing urban sprawl, protecting natural resource lands and critical areas, and on directing development to urban areas where growth can best be accommodated. Seattle's Comprehensive Plan continues this direction by concentrating growth in Urban Centers.

For more than 10 years, the City and the South Lake Union Community Council and other stakeholders in South Lake Union have focused on the potential of this neighborhood to gracefully accommodate the people and jobs that continue to come to Seattle. Much has been accomplished over the last 10 years including:

- Seattle adopts the South Lake Union Neighborhood Plan in 1998
- Seattle designates South Lake Union as an Urban Center in 2004; the Comprehensive Plan targets South Lake Union for 16,000 new jobs and 8,000 new households between 2004 and 2024
- Seattle adopts the South Lake Union Transportation Plan in 2004
- Seattle rezones much of South Lake Union from auto-oriented Industrial-Commercial zoning to Seattle Mixed (5M), which allows a broad range of uses, including housing, in 2005
- The South Lake Union Design Guidelines are updated in 2005. The South Lake Union Community Council and Department of Planning and Development conduct the Urban Form Study in 2008; and in 2011, the City completes the South Lake Union Urban Design Framework.

A rezone of South Lake Union to accelerate the development of more homes, more jobs, and a higher energy street and pedestrian environment is the next logical step in this effort to fully realize South Lake Union's role as a dynamic and lively Urban Center.

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 Seattle, WA 98104

206 442 2000 Tel
 206 442 3000 Fax

Assuming that the eventual preferred rezone alternative will combine elements of Alternatives 1, 2, and 3, we would like to share our thoughts about each alternative and which will actually yield the type of neighborhood the community envisions.

1

Alternative 3

This alternative demonstrates the "step-down towards the lake" model. This "step-down" model poses significant challenges to the creation of a diverse, interesting skyline and pedestrian environment. If commercial buildings cannot exceed 85' (same as current zoning), the neighborhood will end up with many more bulky, boxy buildings with zero community benefits and few pedestrian improvements. In addition, stepping heights down to the north would primarily protect private views of those already living up high (i.e. penthouses), and will not yield interesting open spaces on the street level for the public. In short, elements of Alternative 3 may look like a viable scheme on a zoning map, but in reality this Alternative encourages more bulky, boxy buildings and produces few if any public benefits.

Alternative 2

This alternative is better at encouraging a true mix of uses and building types. However, the proposed zoning on the Mercer Blocks would not create the activated park-front that the community wants. In order to fully achieve the values of transit oriented development and having 'eyes on the park' that the community has repeatedly endorsed, the Mercer Blocks need to be zoned higher than 160' for residential and 85' for commercial.

Alternative 1

We believe that Alternative 1 offers the most benefits for the most people in our city and region. South Lake Union represents one of Seattle's best opportunities for accommodating growth while minimizing demands for public investment in infrastructure. The taller, more slender, towers allowed under Alternative 1 provide superior options for a high-quality built environment and the public realm. Alternative 1 means more new jobs and housing in our city, and more revenues for City-provided services for the community. Creating dense, compact, walkable neighborhoods, like South Lake Union will be under Alternative 1, the most cost effective way to combat climate change. Taller buildings accommodate more people, and concentrating more people in an area is one of the most effective ways to save our planet. Allowing the increased heights contemplated by Alternative 1 serves the greater good.

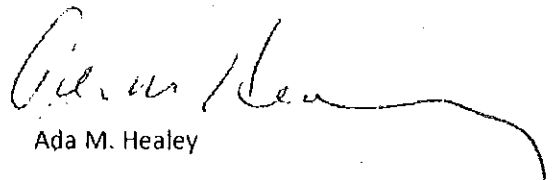
Attached to this letter you will find comments and suggestions that address a number of important issues and considerations including:

- Existing zoning should remain an option for developers who do not desire to take advantage of the upzone (Exhibit 1) | 2
- The Kenmore Air flight path and wind turbulence analysis should be based on sound aviation principles and correctly applied regulations (Exhibit 2) | 3
- The assessment of housing and the potential for housing displacement in the neighborhood (Exhibit 3) is inaccurate and should be revised. | 4
- To succeed, an incentive zoning program should incentivize, not penalize, and must be equitable (Exhibit 4). | 5
- There are additional development considerations (including parking, incentives, mid-block connectors, towers, minimum lot size, and others) that require further attention (Exhibit 5) | 6

South Lake Union is a critical economic engine for our City and region. Since 2004, \$3 billion has been invested in the area to develop a truly mixed-use community. In addition, there has been \$90 million of private investment in much needed public infrastructure improvements in Lake Union Park, the Seattle Streetcar and Mercer East Corridor. These investments are laying a solid foundation for the neighborhood's long-term growth. South Lake Union is a success story about re-inventing a people-friendly place that embraces its history and character while meeting the needs of the future. We must continue to grow smart which is why the right South Lake Union upzone is critical to the future of our community. The right upzone will ensure that South Lake Union is developed with the community in mind, with ample open spaces and pedestrian friendly plazas and more affordable housing. All of this will make South Lake Union's future even brighter than it is now. Experience shows that bold visions and courageous decision making are rewarded when the community and city work towards a common vision.

Thank you for the opportunity to comment on the Draft EIS.

Sincerely,



Ada M. Healey

EXHIBITS

- Exhibit 1 Development Under Existing Regulations
- Exhibit 2 Flight Path and Wind Turbulence/Wakes
- Exhibit 3 Housing
- Exhibit 4 Incentives
- Exhibit 5 Other Development Issues

Exhibit 1 Development under Existing Zoning Regulations

There should be a provision in the code that allows owners to develop to the regulations currently in effect even after the rezone. Department of Planning and Development (DPD) staff have repeatedly confirmed that this would be allowed, but it is not addressed in the DEIS. It should be explicitly stated that if developers were to choose this option, the zoning would be the same as it is today: there would be no new development standards and no changes to the existing code

Exhibit 2 Flight Path and Wind Turbulence

Flight Path

Kenmore Air has been providing float plane service out of Lake Union for 65 years and is a valuable part of the City of Seattle and the South Lake Union neighborhood. The continued safe operations of Kenmore Air are important, and Kenmore Air's operations must be considered in connection with any proposed rezone. Unfortunately, the discussion of the southerly flight path for Kenmore Air in the Draft EIS consists of inapplicable regulations incorrectly applied.

First, the Draft EIS states that FAA Part 77 regulations govern. But the FAA Part 77 regulations do not apply to the Kenmore Air seaplane base on Lake Union. The Part 77 regulations themselves make it clear that: "A *seaplane base* is considered to be an airport only if its sea lanes are outlined by visual markers." 14 C.F.R. §77.2. The NOAA Nautical Chart 18447 and the United States Coast Guard confirm that the sea lane for Kenmore Air is not outlined by visual markers. Therefore, this seaplane base is not an "airport" under FAA Part 77 regulations.¹ It may be appropriate to use some of the metrics in the Part 77 regulations, particularly the 1:20 approach surface slope that is commonly used in many aviation planning standards). But the City must do the necessary work to assess what is required for Kenmore's operations.

Second, WSDOT Aviation does not have "jurisdiction" to determine approach or departure surfaces. With respect to airplanes in flight, the federal government has completely preempted that area of regulation. *E.g., Gustafson v. City of Lake Angelus*, 76 F.3d 778 (6th Cir., 1996).

And with respect to land use regulation, the City of Seattle has the authority to zone and the responsibility to balance the various policies of the Growth Management Act. WSDOT Aviation's only role is to provide technical advice to the City. The City must verify that it is getting correct advice and cannot abdicate its responsibility under GMA to WSDOT.

Third, the flight path given to the City by WSDOT does not follow the FAA Part 77 criteria with one exception: the 1:20 approach slope. Everything else shown in that flight path is an improper application of Part 77. For example, it is twice as wide as a Part 77 path would be; and it curves while a Part 77 path would be straight. Because the flight path actually used by Kenmore does curve, and because Part 77 does not provide any guidance for curving or "offset" flight paths, the City must use other aviation planning criteria for this planning effort. There are FAA Advisory Circulars and applicable standards from the International Civil Aeronautics Organization that address such flight paths. Both use the same 1:20 approach surface slope. Using these standards will result in a flight path very similar to the one developed in cooperation with Kenmore in 2007, and similar to the flight paths that the City has been using for years for planning purposes.

¹ If the Part 77 regulations did apply, the result would be imaginary surfaces around South Lake Union identical to those shown in SMC 23.68 for King County International Airport (Boeing Field), and those surfaces would affect all of South Union, most of Downtown, the east slope of Queen Anne, the west slope of Capitol Hill, and much of Fremont and Wallingford.

The Draft EIS also assumes that some kind of additional buffer below the approach surface will be required because of wind wakes behind and over buildings. While it is fine to identify wind wake as a potential issue, the Draft EIS is completely useless in determining what to do about it because the size and shape of wind wakes from buildings depend on their particular designs. The supposed need for an additional buffer below the approach surface is, according to the EIS, also for "safety". However, neither FAA Part 77 nor the other aviation planning criteria mentioned above require any such additional buffer and, in fact the EIS acknowledges that no such additional buffer is required by FAA regulations. One reason why no such buffer is required is that planes do not fly at the lowest altitude of the approach surface; they fly substantially above it. For example, the EIS states that the Kenmore air flight path is 150' in elevation at the Lake Union shoreline. Kenmore has told us that their floatplanes are typically at least 300' high when they pass over the shoreline.

The key issue here is not what Part 77 of the FAA regulations requires, because those regulations do not apply to the Kenmore Air seaplane base on Lake Union. Rather, the City needs to work with Kenmore Air to determine a reasonable and safe flight path in and out of Lake Union when taking off to the south and approaching from the south. The City did this in 2007, and all the parties involved determined that the 2007 flight path accurately reflected the actual flight paths and was safe and sufficient.

Wind Turbulence

The Draft EIS makes some categorical statements about wind impacts that are inaccurate and misleading. The Draft EIS expressly acknowledges that the size of any building-induced wake zones "is defined by the shape of the building or structure. So any conclusions about wind impacts, including conclusions about the need for a "buffer" of lower building heights, are premature since there are no building shapes to be analyzed. Buildings should be analyzed at project permit level so that turbulence can be mitigated. The Draft EIS also fails to recognize that tall, slender buildings have a much different wake signature than wider, squatter buildings.

In order to give some more meaningful context to the overly broad and inaccurate statements in the DEIS, Vulcan has hired an expert wind turbulence consultant, Gradient Microclimate Engineering Inc. The comment letter from that expert firm is attached to this Exhibit and confirms the more general comments below.

Funnel Effects

The DEIS states categorically that buildings create funnel effects that could extend into the lake. This statement is overly broad and misleading. A significant funnel effect occurs only when the space between nearby towers is narrower than the width of buildings. We are all familiar with this in Downtown where there are towers 200 to 300 feet wide which are separated by an 80 foot right-of-way. This effect will be reduced in South Lake Union generally because the towers would be narrow. With respect to buildings in the Waterfront subarea of the Draft EIS, the funnel effect should not be a concern because only one tower per block is proposed under all EIS alternatives for that area, and those towers could be spaced far enough apart to avoid funnel effects.

Wake Effects Behind Buildings

The Draft EIS states that buildings would have an impact 10 times their height downstream. This statement is also misleading. It is true that the air stream is not fully restored until up to 10 times the height of a building, but 80 to 90 percent of that impact is typically dissipated within 3 times the height of a building. With buildings in the Waterfront subarea of the South Lake Union Draft EIS, this would mean that the great majority of the effect would not extend far into the lake. It is also possible to mitigate this wake effect by the shape and location of towers, which the Draft EIS neglects to mention.

Wake Effects Over Buildings

The DEIS states that buildings have a wake effect over their tops that might be a concern and then calls for a "buffer" below the Kenmore Air flight path. Without building designs, any need for or delineation of a buffer is premature. Wake effect over buildings can potentially reach up to one half the building heights. This potential effect can be mitigated by shape of the building, especially the building top. As noted in our comments on the Kenmore Air flight path, the EIS should also recognize that planes do not fly at the lowest altitude of an approach surface. Typically, planes both approach and depart well above this surface. This is yet another instance in which the City has simply not done the work necessary to support the conclusions in the Draft EIS, and where subsequent, project-specific review will be able to identify and mitigate impacts.



April 5, 2011

City Investors LLC
505 5th Avenue South
Suite 900
Seattle, Washington 98194

Dear Mr. Pearce:

Re: Review of Building Wakes Discussion
South Lake Union Height and Density Alternatives
Draft Environmental Impact Statement
GmE File: 11-023

City Investors LLC requested Gradient Microclimates Engineering Inc. (*GmE*) to review the wind wake analysis in the South Lake Union Height and Density Alternatives Draft Environmental Impact Statement (DEIS). The DEIS reviews potential rezoning alternatives that could allow increased building heights in the City of Seattle's South Lake Union Urban Center. *GmE* is a specialty service engineering company providing expertise in microclimate studies, including wind loading analysis and the effects on wind created by structures. We summarize herein our response to generic comments found in the EIS relating to the possible impacts of tall building wakes on the Lake Union area and seaplane flight operations in Lake Union.

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GME

Wind flowing over buildings creates effects in the lee of the building, generally referred to as wake effects. These include a 3-dimensional zone or bubble of reduced wind speed and increased turbulence, separated from the undisturbed wind by a shear layer where the properties of the oncoming wind are mostly unchanged. The shear layer represents a transition area between the outer and wake zones, the size and intensity of which becomes weaker with increasing distance downwind of the building.

The size and shape of building wakes, including the shear layer, are commonly defined by the distances in the downwind directions (vertical, horizontal, and lateral) in which the mean velocity is reduced and the turbulence is increased as compared to the oncoming wind. Information on the size of wakes is mostly derived from a limited number of generic model scale experiments.

On the basis of this limited experimental evidence, it is generally accepted that reduced wind speeds in the wake of buildings, referred to as 'the velocity defect', and increased turbulence, 'turbulence excess', can persist more than 10 times the building height downwind, two times the building height in the vertical direction; and up to three times the building width in the lateral (side-to-side) direction. Similar statements repeated in the Draft EIS are misleading for the following reasons.

First, the largest wake influences apply to cubical buildings which diminish substantially, relative to building height, for taller buildings with height to width ratio of 3 or more. Second, the stated size of the wake assumes that the velocity defect and excess turbulence are fully dissipated. In practice, the size of the wake is much smaller where a moderate velocity defect of approximately 20%, and excess turbulence of about 20% above the ambient levels are permissible. As such, for a tall building and a square cross plan form, the building wake influence would extend approximately: 4 building heights downwind, 50% of the building width on each side of the building, and not more than 50% of the building height above the building. These numbers could be reduced further by careful placement of the building on the site, and refined design of its plan form including consideration of edge and roof shape.

GmE 

Experimental evidence confirms that for tall slender buildings, the size of the wake is substantially smaller relative to building height as compared to cube-like buildings. This can be explained by the fact that the wake behind taller buildings will be filled with wind flowing down due to vertical pressure gradients.

The proximity of buildings can also create funneling of wind flow between buildings. The effect is primarily influenced by the spacing but also by building size, shape and edge details to a lesser extent. The DEIS states categorically that buildings create funnel effects that could extend into the lake. This statement is overly broad and misleading. A significant funnel effect occurs only when the space between nearby towers is narrower than the width of the buildings. You are familiar with this in the Downtown Seattle area, where there are towers 200 to 300 feet wide separated by an 80 foot right-of-way. This effect will be reduced in South Lake Union generally because the towers would be narrow. With respect to buildings in the Waterfront study area of the DEIS (north of Mercer Street), the funnel effect should not be a concern because only one tower per block is proposed under all EIS alternatives for that area, and those towers could be spaced far enough apart to avoid funnel effects. For a given gap between buildings, the funnel effect can be reduced by shaping the building plan form.

Wind statistics used in the DEIS are described by wind speed and direction probability maps derived from many years of airport wind data. Located approximately 5 miles south of downtown Seattle, Boeing Field provides the basic information necessary and appropriate for current considerations. Figure 1 illustrates a probability map of wind speed and wind direction derived by GmE from Boeing Field data. It is noteworthy, however, that the Waterfront area in the DEIS is at a distance of one mile in the wake of the Seattle downtown core, for southerly winds. Because of that, this area is already commonly exposed to significant ambient turbulence, more so than for other wind directions. Higher levels of ambient turbulence also assist with reducing the impact of wake effects, which is not pointed out in the DEIS.

Based on the foregoing discussion, we conclude as follows:

- (i) The practical extent of building wake effects is much smaller than the values stated in the DEIS document;
- (ii) The size of wakes behind tall slender buildings is much smaller than for cubical buildings relative to their respective heights.
- (iii) The size of the wake can be reduced by proper proportioning of the building height and plan form including shaping the edges and roof.
- (iv) Funneling of wind through buildings can be avoided and mitigated with proper placement of buildings on adjacent parcels and by shaping the plan form, especially in the Waterfront area where only one tower per block is proposed;
- (v) The final impact of any buildings in the South Lake Union Urban Center can only be determined and mitigated, if necessary, during conceptual and detailed design phases of the project.

Please advise us of any questions or comments.

Yours truly,

Gradient Microclimate Engineering Inc.



Vincent Ferraro, M.Eng., P.Eng
Principal
GME11-023

Exhibit 3. Housing Conditions

The Housing section (Section 3.9) of the DEIS does not accurately describe existing housing conditions within the South Lake Union Neighborhood. Nor does it accurately evaluate how future housing in the neighborhood would be affected under each of the proposed alternatives.

The neighborhood unit count is incomplete and the characterization of subsidized housing is misleading. The unique character of housing stock in South Lake Union, and the Cascade area in particular, results in a large number of relatively lower cost non-subsidized and non income restricted affordable housing units. Because the DEIS only accounts for subsidized and income restricted housing and fails to include a market survey of all housing in the neighborhood, the amount of housing affordable to people earning below 80% Area Median Income (AMI) is significantly understated. A comprehensive market study of all housing in South Lake Union should be undertaken to ensure an accurate description of existing housing conditions.

The DEIS states that "...development of residential towers through incentive zoning provisions would increase the potential for displacement of existing wood-frame buildings and older single family residences located throughout the neighborhood, but particularly in the Cascade subarea." This statement is provided without any additional details or back-up. Contrary to the statement, a complete study of such housing shows that none of these sites meet the minimum tower lot size established in the DEIS (22,000SF), and most could not achieve the minimum lot size even if assembled with adjacent properties. In fact, very few units are at risk of being displaced under any of the alternatives. Those properties thought to be at risk should be researched and the actual number of units truly at risk should be quantified and presented in the next draft of the EIS. Below is an analysis of existing housing in South lake Union.

Neighborhood Unit Count

Table 3.9-1 is a detailed list that only adds up to 2,680 units. Although the text acknowledges that "the table contains a listing of *most* [emphasis added] of the apartments and condominiums in the neighborhood," there is no explanation for why the list excludes a number of multi-family residential properties as well as several older single family residences and duplexes/triplexes. In addition, some of the unit counts are incorrect. Correcting these errors adds 216 more residential units to the neighborhood inventory:

Name/Location	Total Units
Nautica Condominiums	73
Alterra Condominiums	59
Republican Street Apartments 1114-1126 Republican	16
The Pontius 215 Pontius Ave N	14

Harrison Apartments 800 Harrison Street	12
Cascade Shelter Project 224 Minor	12
Neptune Apartments correct unit count is 234 not 222	12
Corazon Apartments 101 Eastlake Ave E	6
Art Stable 516 Yale Ave N	5
Triplex 417 Minor Ave N	3
Blue Duplex 1190 Republican	2
Duplex 766 Thomas Street	2
House 413 Minor Ave N	1
House 1206 Republican	1
David Colwell Building correct unit count is 124 not 126	(2)
TOTAL MISSING FROM TABLE	216

¹ Note: We have not included short-term housing at Pete Gross House (70 units), SCAA House (80 units) or the Immanuel Community Services Shelter (15 beds). We have not included former single family homes whose use has already been changed from residential to commercial.

Section 3.9.1 references 3,075 housing units in SLU (based on the DP D Urban Center/Village Residential Growth Report, 3Q 2010) but the 3,075 units appears to be in error – it includes approximately 179 units that we cannot locate in SLU.

It would be prudent for Table 3.9-1 to be comprehensive and for it to align with the 3,075 units identified in the 3Q 2010 DPD Urban Center/Village Residential Growth Report. Further, the units included in that report should be identified and verified for accuracy.

Subsidized Housing

Table 3.9-1 has an error. Borealis is shown as having 53 unrestricted units. This is incorrect. The project has only 3 unrestricted units. The majority of the units (50) are restricted to 80% of Area Median Income.

The reference in Section 3.9.1 to “more than 400 City-funded affordable housing developments” is both inaccurate and misleading. First, it is inaccurate because in Table 3.9-2, the number of units included in projects in the “City” column totals 522 (based on unit counts provided in Table 3.9-1 for those same projects), not 400.

Secondly, it is misleading because the intent should be to identify **all income restricted housing regardless of funding source**. In addition, Table 3.9-2 is missing several of the income restricted projects in the neighborhood. So, instead of 8 projects with 400 income-

restricted housing units representing 13% of total dwelling units, the statistics should correctly state that there are 15 projects with 727 units of income restricted housing representing 25% of total dwelling units in the neighborhood:

Name/Location	# of Income Restricted Units	Notes
Jensen Block	30	
Cairns	30	
Alley24	35	
David Colwell	124	
Kerner Scott	40	
Bart Harvey	49	Excluded from EIS Table
Canaday House	83	
Cascade Shelter Project	12	Excluded from EIS Table
Compass Cascade	34	
Brewster	35	
Casa Pacifica	65	
Lakeview	59	
Mirabella	31	
Denny Park	50	
Borealis	50	Excluded from EIS Table
Total Income Restricted	727	25% of total dwelling units in SLU

¹ Note: 25% is based on 727 divided by corrected total neighborhood units (2,680 from table 3.9-1 plus the 216 units missing from that table for a total of 2,869 residential units). In addition, only 100 of the income restricted units are located outside of the Cascade area; therefore, 34% of units in the Cascade area are income restricted.

“Income Restricted” vs. “Affordable”

The SLU neighborhood has a large number of non income restricted units that nonetheless are actually **affordable to people earning less than 80% AMI** based on rent limits established by HUD. Excluding these units from the study is misleading because it dilutes the real number of

housing units in the neighborhood that actually are "affordable" regardless of subsidy or income limitations.

Planning goals for growth of additional affordable housing is also expressed in terms of housing that is "affordable to" certain incomes, rather than a requirement that they be income restricted. Based on a market survey of current rents at non income restricted apartments in SLU, there are an additional 404 units of housing that are **affordable to** people earning between 0% and 80% of AMI:

Name/Location	# of "Affordable" non-income restricted units	Affordability
Carolina Court	72	50% to 80% AMI
Mercer View	67	50% to 80% AMI
Union Bay Apartments	53	50% to 80% AMI
Alcyone	47	50% to 80% AMI
Carlton Apartments	30	50% to 80% AMI
Grandview	25	30% to 50% AMI
Carolyn Manor	22	50% to 80% AMI
Republican Street Apartments	16	50% to 80% AMI
Dexter Lake Union	15	50% to 80% AMI
The Pontius	14	30% to 50% AMI
Harrison Street Apartments	12	50% to 80% AMI
502 Minor	11	50% to 80%

		AMI
Corazon Apartments	6	50% to 80% AMI
Alley24 (market units)	4	50% to 80% AMI
Triplex 417 Minor Ave N	3	50% to 80% AMI
Blue Duplex 1190 Republican	2	50% to 80% AMI
Duplex 766 Thomas St	2	50% to 80% AMI
Borealis (market units)	1	50% to 80% AMI
House 1206 Republican	1	50% to 80% AMI
House 413 Minor Ave N	1	50% to 80% AMI
TOTAL ADD'L AFFORDABLE UNITS	404	

Including ALL affordable units (not just those that are income restricted) the neighborhood actually has 1,131 units of affordable housing or nearly 40% of all dwelling units in the neighborhood.

Potential for Displacement

In Alternative 1, the Cascade area is contemplated for new zoning that would include incentive zoning. The following chart reviews housing in Cascade that is "relatively lower-cost affordable housing" [wording from EIS] and estimates the potential for displacement. It excludes existing subsidized/income restricted housing which would be protected as well as any housing constructed since 1990 since that is new product with considerable value that is unlikely to be redeveloped. As can be seen in the chart below, a number of the sites currently improved with older housing units are not suitable for redevelopment with towers because the sites do not meet the minimum lot size for towers (22,000 SF per the DEIS):

Cascade Area Housing Displacement Potential

Name	# of Units	Comments	Potential Units Lost
Carolina Court	72	Lot size <22k sf minimum	0

		(no assemblage potential)	
Grandview	25	Lot size <22k sf minimum Would need to be assembled with 3 adjacent parcels owned by 2 different property owners to be of an adequate size	25
Corazon	6	Lot size <22k sf minimum Would need to be assembled with 3 adjacent parcels owned by 3 different property owners to be of an adequate size	6
Carlton	30	Lot size <22k sf minimum (even if assembled with adjacent parcel)	0
Single Family House 1206 Republican	1	Lot size <22k sf minimum (even if assembled with adjacent parcels)	0
502 Minor Apartments	11	Lot size <22k sf minimum (even if assembled with adjacent parcels)	0
Blue Duplex 1190 Republican	2	Use already changed to commercial	0
The Pontius	14	Lot size <22k sf minimum (no assemblage potential)	0
417 Minor Ave N	3	Lot size <22k sf minimum (no assemblage potential)	0
Subtotal "lower-cost"	164		31
Income Restricted Units	628		0
TOTAL	792	Including both subsidized and non income restricted "lower cost" units	31

AFFORDABLE		identified above	3.9% of Affordable Units
1990+ Construction	1,062	Excludes restricted Units included above	0
TOTAL CASCADE	1,854		31 1.7% of Total

The table above identifies 31 units in two properties potentially at risk for displacement in Cascade; however both parcels would need to be assembled with adjacent parcels owned by multiple property owners which reduces their potential for being displaced. In addition, in Section 3.9.3 of the DEIS, under "Mitigation Strategies", the Grandview is on a list of older brick apartment buildings in South Lake Union, that could be potentially listed for historic preservation in exchange for TDRs (transferable development rights), drastically reducing its potential for displacement. Therefore, the most aggressive assumption is that both the Corazon and the Grandview units are displaced even though it is considerably less likely that the Grandview units will be lost. In the most aggressive assumption, potential displacement units represent just 3.9% of the "affordable" housing supply in the Cascade area and less than 2% of all housing in Cascade. Removing Grandview from the list would result in just 6 units of lower cost housing being potentially displaced in Alternative 1.

An expanded analysis beyond the Cascade area and throughout the entire SLU neighborhood has similar results. Since most of the housing stock outside of the Cascade area was constructed post-1990, very little housing would be subject to potential displacement:

Non-Cascade Area SLU Housing Displacement Potential

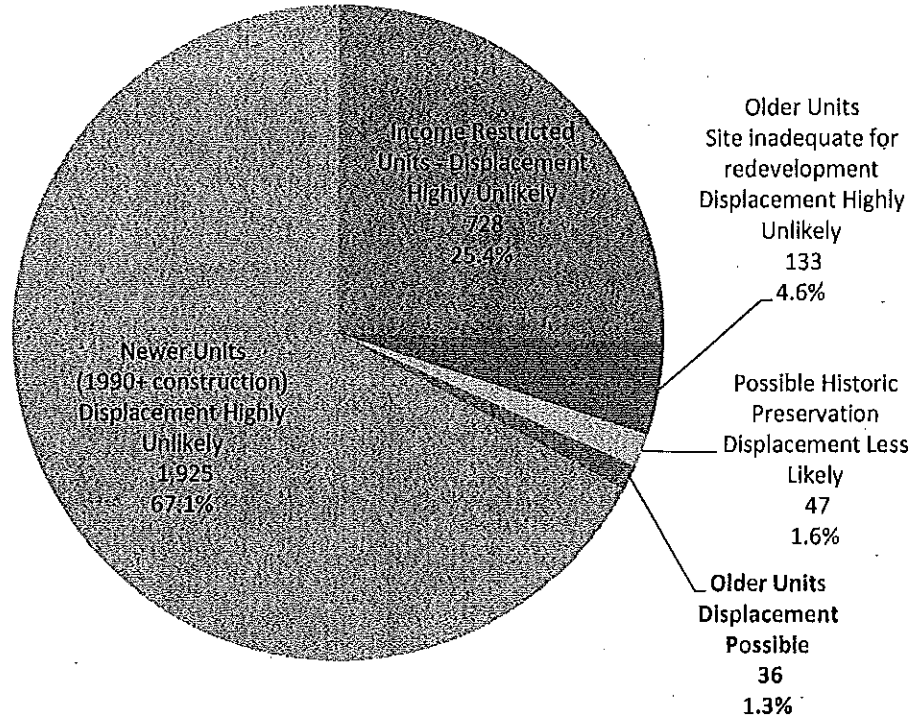
Name	# of Units	Comments	Potential Units Lost
Republican Street Apartments	16	Lot size <22k sf minimum Could be assembled with adjacent parcel to be of an adequate size	16
Harrison Apartments	12	Lot size <22k sf minimum Would need to be assembled with adjacent parcel to be of an adequate size	12
Carolyn Manor	22	Lot size <22k sf minimum Would need to be assembled with adjacent parcel to be of an adequate	22

		size	
766 Thomas	2	Lot size <22k sf minimum Could be assembled with adjacent parcel to be of an adequate size	2
Subtotal "lower-cost"	52		52
Income Restricted Units	100	(Borealis & Denny Park Apartments)	0
TOTAL AFFORDABLE	152	Including both subsidized and non income restricted "lower cost" units identified above	52
1990+ Construction	863	Excludes restricted Units included above	0
TOTAL NON-Cascade Area	1,015		52 5.1% of Total

We also note that the Carolyn Manor Apartments, like the Grandview in the Cascade area, is on a list of older brick apartment buildings in South Lake Union, that could be potentially listed for historic preservation in exchange for TDRs (transferable development rights), drastically reducing its potential for displacement. Therefore, in the most aggressive assumption, potential displacement units represent about 5% of the all housing in the non-Cascade area of South Lake Union.

Combining the results of both the Cascade area analysis and the non-Cascade area analysis shows that of 83 units that potentially could be displaced, more than half may be identified for historic preservation, leaving just 36 units that are likely to be displaced. That represents only 1.2% of total housing stock in South Lake Union. The following chart illustrates the potential for displacement of housing in all of South Lake Union under Alternative 1:

SLU Neighborhood Housing Displacement Potential - Alternative 1



In Alternative 2, most of the Cascade area retains existing zoning. The blocks south of John Street and east of Fairview are contemplated for new zoning that would include incentive zoning. Three apartment properties are located within those blocks. Both the David Colwell Building and the Brewster Apartments have already had their TDRs purchased, which preclude further height increases on those properties. Therefore, within the Cascade area, only one property with just 6 units (Corazon Apartments) would be at risk of displacement in Alternative 2. Therefore, the potential for housing unit displacement in Alternative 2 is similar to Alternative 1.

Alternatives 3 and 4 both retain existing zoning in the Cascade area of the neighborhood. Therefore, in each of these alternatives, there is equal risk of housing displacement due to normal development trends; in fact, **incentive housing provisions would create no additional potential for displacement of housing in Alternatives 3 compared to "no action" Alternative 4.**

Exhibit 4 Affordable Housing Incentives

We have long supported affordable housing in South Lake Union. A reasonable incentive zoning program, which contains *incentives* rather than penalties, can be a useful tool in helping to provide affordable housing. The EIS, however, should justify the heights at which incentive zoning payments begin for extra residential square footage. The Draft EIS assumes an 85-foot base height for all the alternatives, rather than leaving this decision to the City Council. The EIS should also recognize that unless sufficient bonus heights are allowed, the incentives will not be economically feasible.

The provision for affordable housing must be reasonable and equitable, including being equitable with similar locations in the City. When the City studied incentives for the Downtown zones immediately across the street from the South Lake Union Urban Center, it was determined that the base height for residential should be 290 feet. The situation is not different immediately across the street in South Lake Union. The base zoning heights before providing affordable housing incentives should be justified in the same manner in both the Downtown DMC zones just south of Denny Way and in the proposed South Lake Union SM zones just north of Denny Way.

Chapter 23.58A ("Incentive Provisions") is referenced multiple times throughout the DEIS, suggesting that the intent is for 23.58A to apply to SLU when it comes to affordable housing performance and/or payment in lieu incentive payments associated with an upzone.

The following table illustrates the material difference between incentive zoning payments for the DMC zone and incentive zoning payments under 23.58A if all development above 85 feet requires incentives, as suggested in the DEIS. The two "buildings" have exactly the same physical characteristics in terms of podium and total height, number of stories, average floor plate size etc.:

	23.58A	DMC Zoning
Stories	39	39
Height	400'	400'
Total SF	467,600	467,600
Average Floor Plate SF	10,500	10,500
# of residential Units	520	520
Bonus SF (incentive payment due)	325,500	125,500
Incentive Payment to 85'	Free	Free
Incentive Payment 85'-290'	\$3,977,400	\$100,000

Incentive Payment 290' + 4 floors	\$795,480	\$630,000
Incentive Payment Next 3 floors	\$596,610	\$630,000
Incentive Payment Final 4 floors to 400'	\$795,480	\$1,050,000
Total Incentive Payments	\$6,164,970	\$2,410,000
Total Incentive Payments after adjustment*	\$6,164,970	\$2,376,970
Total per Bonus SF	\$18.94	\$18.94
Total per Total SF developed	\$13.18	\$5.08
Total per Residential Unit	\$11,856	\$4,571

**In the DMC zone, incentive payment maximum is \$18.94/sf of bonus area; therefore the total incentive payment in this example would be adjusted downward*

The above example illustrates that it would be more than 2.5 times more expensive to develop an identical residential tower under 23.58A (with the incentives required for all residential over 85 feet as suggested in the DEIS) as it would under DMC zoning. We strongly encourage a review of the proposed incentive housing payment option so that it is on par with payments incurred for the same type of development in the adjacent Denny Triangle neighborhood

Exhibit 5 General Development Comments

Compare View and Massing Impacts to what COULD be built under current zoning

The view and massing analyses in the Draft EIS consistently compare views of full build-out potential under Alternatives 1, 2 and 3 to views of **existing** actual development in South Lake Union. This is incorrect and misleading. The correct comparison is what **could** be built out under current zoning (Alternative 4) to what could be built under a rezoned condition (Alternatives 1, 2 or 3). Rather than provide this correct analysis, the EIS compares each and every zoning and massing simulation to photographs of what is currently constructed in South Lake Union. This approach should be corrected in the Final EIS.

Reconsider Requiring another Survey of South Lake Union Historic Resources

A mitigation strategy proposed in the Historic Resources Section of the DEIS is to require developers to prepare another survey of South Lake Union historic resources. To date, there have been 7 surveys of historic buildings in South Lake Union, as follows:

- Steinbrueck and Nyberg, Eastlake/Cascade: An Inventory of Buildings and Urban Design Resources, 1975
- Seattle Commons EIS, 1995
- Addendum to the Seattle Commons/South Lake Union FEIS, 1995
- Department of Neighborhoods Historic Resources Survey, 2000
- Karin Link, Cascade Neighborhood Inventory and Survey, 2004
- Technical Report, South Lake Union Streetcar Project: Cultural and Historic Resources, 2005
- Mercer Corridor Project Environmental Assessment, which had to comply with the Federal 4F process and identify potential landmark buildings based upon Federal Register landmark criteria, 2008

This last survey in 2008, the Mercer Corridor Project Environmental Assessment, had to comply with the Federal 4F process and identify potential landmark buildings based upon Federal Register landmark criteria. These requirements are more stringent than local landmark criteria. We question what an eighth survey would yield that hasn't already been identified.

Allow One Tower per Block Regardless of Lot Size

We would like to clarify language regarding the one tower per block limit for blocks closest to Lake Union as depicted in Alternatives 1 and 2. Table 1-1 indicates the blocks with a one-tower limit would need to be at least 60,000 square feet in site area. In the DEIS descriptions of Alternatives 1 and 2, Sections 2.3.3 and 2.3.4 describe "a maximum of one tower block (equivalent to a minimum 60,000sf lot size)". We believe the intent of the one-tower requirement on these blocks is to limit towers to one per block, regardless of lot size. On blocks where a one-tower limit is enforced, a minimum lot size is irrelevant.

Incentivize Mid-Block Connectors

The Transportation Section (Section 3.13) includes a list of pedestrian and bicycle improvements on Page 3.13-82. One of the proposals is a **requirement** that projects developing above the base height implement a mid-block connector. Vulcan has incorporated mid-block connections in many South Lake Union projects. It can be used successfully in both commercial and residential projects. However, it is not universally applicable to all sites, either as a transportation/ connectivity mitigation or as an urban design measure. It should continue to be encouraged as an enhancement to connectivity and reviewed through the standard Design Review Process, where its potential benefits and drawbacks can be analyzed on a site-by-site basis. Alternatively, it could be encouraged as an incentive.

Take Into Consideration Availability of Alternative Modes of Transit in Meeting Parking Demand

Table 3.13-15 of the DEIS shows an assumed parking supply of 1 space per 1,000 SF of non-retail (office) development. This is consistent with the parking maximum allowed Downtown. Imposing this parking maximum in South Lake Union is not appropriate yet, since it currently has inferior transit service in comparison to Downtown. Since many employees cannot travel to their workplace via transit, this results in a greater need for parking. Over time, as transit service is expanded and improved in South Lake Union, it is reasonable to assume a parking ratio of 1 space per 1,000 SF of office development.

In the meantime, TMPs (Transportation Management Programs) should be used as individual projects are planned and developed. Some developers might provide lower parking ratios in exchange for a reduced Traffic Impact Fee.

Table 4-2
Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 55: Collins, Arlan and Woerman, Mark L.	
1	Support Alternative 1. The comments are noted.
Letter 56: Coney, Donald John	
1	Economic Development. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders and the public to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Economic development was not included as part of the EIS scope.
2	Joint Vision for Uptown and South Lake Union Urban Centers. The comments are noted.
3	Population Growth. The comments are noted.
4	Support Alternative 1. The comment is noted.
5	Benefits of Growth. The comment is noted. As the commenter states, the EIS does not discuss the economic benefits of the proposal. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts. Please see Final EIS Section 3.2 for a discussion of the City's Comprehensive Plan economic development policies.
6	Infrastructure Improvements. The comments are noted.
Letter 57:Corr, Saroj	
1	Support Additional Height and Density. The comments are noted.
Letter 58:Coulter, Jefferson	
1	Connect Height to Benefits. The comment is noted.
2	Adequate Infrastructure. The comment is noted.
3	Prefer Mid-Rise and Street-Level Activity. The comment is noted.
4	Improved Neighborhood Connections. The comment is noted.
Letter 59: Cree, Russ	
1	Support Increased Density. The comments are noted.

Comment Number	Response
2	Benefits of Growth. The comments are noted.
Letter 60: Crossley, Katharine	
1	Oppose Increased Heights. The comments are noted.
2	Impacts of Growth. The comments are noted. Please see the discussion of these topics in the EIS.
3	Views. The comments are noted. Please see the revised discussion of views in this Final EIS.
4	Conclusion. The comments are noted.
Letter 61: Curran, Lori Mason	
1	Support Density and Flexibility. The comments are noted.
2	Benefits of Height and Density. The comments are noted.
3	Support Alternative 1. The comments are noted.
4	EIS Images. The comment is noted. As established in the EIS scope, the aesthetics analysis is required to consider impacts of the alternatives at build-out.
5	Quantify Benefits. The comment is noted. As required in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
Letter 62: Curtis, Jared	
1	Urban Forest. The comment is noted. City of Seattle goals for tree preservation and planting in South Lake Union are consistent with its designation as an urban center.
2	Support Alternative 3 and Current Zoning. The comments are noted. Please note that existing zoning standards are maintained in the Cascade neighborhood under all alternatives except Alternative 1.
3	Availability of Services. The comments are noted. Please see the discussion of these topics in the EIS.
Letter 63: Dasler, Joshua	
1	Support Alternative 1. The comments are noted. As noted in the comment, economic benefits were not included in the scope of the EIS. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts. For a

Comment Number	Response
	<p>discussion of transportation impacts, please see Draft EIS Section 3.13.</p> <p>Please see also Final EIS Section 3.2 for a discussion of the City's Comprehensive Plan economic development policies.</p>
Letter 64: Douglas, Lloyd	
1	<p>Air Quality and Denny Way. The air quality implications of the proposed plan were addressed based on hot-spot modeling of the signalized intersections that would be most affected by project-related traffic. This included modeling of three intersections along the Mercer corridor because they were the most congested locations that are projected to be affected. No other specific roadways were considered in the air quality review, but traffic-related pollutant emissions would be less than at the locations that were considered and so would not be expected to be significant.</p>
2	<p>Shadows and Habitat. There are no one-day shadow studies. All 15 shadow graphic figures are contained in Appendix D to the Draft EIS – Figure 29 through 41. As shown, they depict possible shadow impacts for each development alternative at 9 am, noon and 3 pm -- for each of the four key solar days of the year.</p> <p>Based on the Draft EIS shading study, shading would only occur during mornings and evenings in the winter when many plants are dormant. None of the proposed alternatives would shade South Lake Union for the entire day, and most urbanized wildlife can move from shadier areas to sunnier areas as needed. In addition, the potential shading impacts to wildlife and potential mitigation measures (e.g., removing existing underwater debris that currently causes shade), would be assessed at a project level for each high-rise construction during the SEPA review process. Revisions to the shading analysis contained in Final EIS Section 3.4 do not alter this conclusion.</p>
3	<p>Flight Path and Birds. Please see the response to Letter 13, Comment 90 above.</p>
4	<p>Step Down. The alternatives described in the Draft EIS are based on public input and comment, but do not incorporate formal or de facto City of Seattle policy related to the concept of "step down." As described in the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.</p>
5	<p>Shadow Studies. The shadow analysis shows the impacts on Denny Park, Lake Union Park and Cascade Park. Please see the revised figures in Final EIS Section 3.4. The shadow images depict possible shadow impacts for each development alternative at 9 am, noon and 3 pm -- for each of the four key</p>

Comment Number	Response
	solar days of the year. Because the location of possible future open spaces is not known, a shadow analysis was not conducted.
6	<p>Flight Path. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
7	<p>Southeast Flight Path. The flight path that is referred to in the comment, and located near the southeast portion of Lake Union, is used for inbound aircraft when wind conditions are from the north. Proposed building heights are not a constraint to aviation in this area.</p>
8	<p>Wind Analysis. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p>

Comment Number	Response
	<p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable). <p>Wind wakes are not anticipated to affect wave patterns.</p> <p>The potential impact of wind wake on recreational sailing on Lake Union was not included in the scope of the EIS.</p>
9	<p>Housing Affordability. The discussion in Draft EIS Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of</p>

Comment Number	Response
	affordable units that are built in the neighborhood.
10	Impact on Other Neighborhoods. The comment is noted. The impact of potential future development of affordable housing in South Lake Union on affordable housing development in other neighborhoods was not included in the scope of the EIS. Because of the unique location and character of the South Lake Union neighborhood, development in the neighborhood is not anticipated to significantly impact development activity in other neighborhoods.
11	Historic Structures and TDR. As the commenter notes, there is a relationship between the affordable housing inventory and the preservation of historic buildings. However, data to support a quantitative analysis is not available. The use of TDR is identified as a potential mitigation strategy for preservation of local landmark properties.
12	Neptune. Mention of the Neptune has been deleted from the study.
13	Older Buildings. The comment that older buildings often create a view corridor over them and serve as important visual clues for orientation has been included in the Final EIS, see Section 3.4.
14	Transitions. The comment is noted.
15	Cascade Park. The comment is noted.
16	Bread Loaves Versus Pin Towers. The comment is noted; there is no reference to pin towers or the Vancouver model in the aesthetics discussion. It should be noted that limitations on both the number of towers per block and minimum lot size, combined with maximum average floor plate size under incentivized zoning, means that the areas of average tower floor plates will always be less than half – and sometimes as small as a quarter – of the lot size.
17	Podium Garages. The comment is noted. Above grade parking may be necessitated by specific site conditions (especially sub-surface conditions) on some properties within the neighborhood – if the property owner is to realize the full potential of the density and height allowed under incentive zoning. Please see Final EIS Section 3.4, which includes a mitigating strategy to discourage above-grade parking.
18	Tower Spacing. The comment regarding the need for spacing between towers is noted. A determination was made that this is a particular concern for residential buildings, since these are anticipated to be the tallest buildings allowed under incentive zoning and the building type where occupant safety is typically of the greatest concern. Residences are also the building type most

Comment Number	Response
	concerned with privacy issues. Consequently, a recommendation for a minimum tower separation of 60 feet, measured perpendicular to the face of the building, has been added as a potential mitigation in the Final EIS for residential towers built under incentive zoning.
19	Republican Street. The City's travel demand model includes the ramp from northbound SR 99 onto Republican Street. Based on the travel model output, there is no need to mitigate traffic on Republican Street since it would not trigger an impact. Including Republican Street as a study corridor would not change the outcome of the Draft EIS.
20	Denny Way and Mass Transit. Draft EIS Table 3.13-13 and Figures 3.13-19 through 3.13-22 show the Denny Way traffic impacts under all alternatives. The commenter correctly notes that increased traffic congestion causes increases to transit travel times, as is described in Page 3.13-31. However, based on the threshold of significance used to identify transit impacts, increased transit travel times do not necessarily affect load factors. Therefore, increased travel time does not, in and of itself, cause an impact.
21	Mitigating Measures. The relationship of mitigation to transportation concurrency is discussion in Draft EIS Section 3.13. The mitigating measures described in the EIS support the alternatives as described in each mitigation strategy section. None of the mitigating measures would prevent implementation of the alternatives.
Letter 65: Doxsee, Marcella	
1	Support Alternative 1. The comment is noted.
Letter 66: Ehlebracht, Mike	
1	Support Increased Density. The comment is noted.
Letter 67: Estes, Brian	
1	<p>Land Use Consistency. The comment refers to a summary statement in Chapter 1 of the Draft EIS. Chapter 3.8, Land Use, contains the full review of the City plans, policies and regulations considered in the Draft EIS. Please also see Final EIS Section 3.2 for a discussion of the Shoreline Management Program.</p> <p>The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity</p>

Comment Number	Response
	<p>needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
2	<p>Building Heights. The City of Seattle does not have a formal or informal policy of building height step down toward the water. As described in the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.</p>
3	<p>Flight Path. The EIS was circulated to WSDOT Aviation, the implementing agency for the FAA. Please see Comment Letter 1.</p> <p>This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are

Comment Number	Response
	<p>expected to have an impact on the flight path</p> <ol style="list-style-type: none"> 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
4	<p>Mass Transit Mitigation. Refer to comment #63, Letter #13 regarding mass transit as mitigation. An EIS is not required to identify funding for mitigation measures. The TDM and parking strategy analysis is based on the California Air Pollution Control Officers Association (CAPCOA)'s report Quantifying Greenhouse Gas Mitigation Measures. The relevant data is included in the appendix to the Draft EIS, and the full report is available on CAPCOA's website.</p>
5	<p>Impact of Neighboring Development. The comments are noted. The aesthetics analysis accurately displays potential impacts of development under the different alternatives and as described in the methodology in Draft EIS Section 3.10 and refined in Final EIS Section 3.4. It is correct that future potential development outside the study area was not projected. Such a projection would have been speculative and beyond the scope of this EIS.</p> <p>Downtown Views. The final scope for the EIS establishes that the view analysis will consider impacts to SEPA protected public viewpoints and corridors. View perspectives analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P. As noted, additional locations in and near the neighborhood have been included as part of the analysis, these include views from public or quasi-public viewpoints, as well as from designated scenic routes. As shown in Draft EIS Figure 3.10.22, a total of fifteen viewpoint locations were analyzed.</p>
6	<p>Shadow Effects. The comment is noted. Please see Final EIS Section 3.4 for a revised analysis of shadow impacts, including additional proposed mitigation</p>

Comment Number	Response
	measures. It should be noted that the analysis still concludes that, with appropriate mitigation, significant adverse shadow impacts are not anticipated.
7	Shoreline Management Program. Please see Final EIS Section 3.2.
Letter 68: Estes, Jill	
1	Jobs and Housing Concentration. As the commenter notes, South Lake Union is one of six urban centers in Seattle. The 2031 numbers discussed in Draft EIS Section 2.2 are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.
2	Building Heights. The comments are noted. Although the proposal does not include any changes to land use designations in the designated shoreline areas, Draft EIS Appendix D shows the potential for shading along the Lake Union shoreline. Shadows are discussed in Draft EIS Section 3.10.9 and shading impacts to plants and animals in Section 3.4.2. Please see also revised shadow images in Final EIS Section 3.4.
3	Preserve Step Down in Heights. The City of Seattle does not have a formal or informal policy of building height step down toward the water. As described in the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.
Letter 69: Evans, David R	
1	Support Increased Height. The comments are noted.
Letter 70: Felber, Jim	
1	Public Meeting Comments. The comment is noted.
2	Transportation. Draft EIS Appendix E presents the statistical evidence demonstrating that the MXD model is an appropriate tool available for analyzing dense mixed use environments, such as South Lake Union.
3	Prefer Alternative 3. The comment is noted.
4	Diversity. The comments are noted. Please refer to Final EIS Section 3.5 for a discussion of schools.

Comment Number	Response
5	School Facility. The comment is noted. Please refer to Final EIS Section 3.5 for a discussion of schools.
Letter 71: Foster, Dan	
1	Larger Floor Plate Size. The comment is noted. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 72: Ferretti, Peter	
1	Support Alternative 1. The comment is noted.
Letter 73: Fiedorczyk, Bryan	
1	Support Increased Building Height and Density. The comments are noted.
Letter 74: Freeman, Judith	
1	Support Alternative 3 with Modification. The comments are noted.
2	2031 Growth Estimate. The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis. In Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.
3	Pedestrian Bridge. The City of Seattle does not support any pedestrian bridges across Mercer Street as they were not incorporated as part of any adopted plans, such as the Pedestrian Mobility Plan, Bicycle Master Plan, or Mercer Way Corridor Plan.

Comment Number	Response
4	Wind Impacts. Consideration of potential pedestrian-level wind impacts was not included in the scope of this programmatic EIS. Such may be appropriate, however, for certain project-specific development within the study area.
5	Additional Flight Path. A secondary flight path is located near the southeast portion of Lake Union and is used for inbound aircraft when wind conditions are from the north. Proposed building heights are not a constraint to aviation in this area.
6	Iterative Building Permit Process. The comment is noted.
7	Value Environmental Aesthetics. The comment is noted.
Letter 75: Frothingham, Donald	
1	Community Character. An EIS differs from a planning document, which tries to establish the vision and policy direction described in the comment. WAC 197-11-400 requires that an EIS provide impartial discussion of significant environmental impacts and describe mitigation measures that could avoid or minimize adverse impacts.
2	Impacts of Building Heights. The comments are noted. Please see the EIS for discussion of the topics in the comment.
3	Public Meeting Comments. The comment is noted.
Letter 76: Fulford, Lee	
1	Support Additional Height and Density. The comment is noted.
Letter 77: Gaillard, Arnie and Pat	
1	Growth Target. The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis. Please see Final EIS Section 3.5 for a discussion of schools and Draft EIS Section 3.16 for a discussion of parks.
2	Opposed to Alternative 1 and 2. The comment is noted.
3	Step Down to Lake Union. The City of Seattle does not have a formal or informal policy of building height step down toward the water. As described in

Comment Number	Response
	<p>the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.</p>
Letter 78: Garner, Jackie	
1	<p>Support Height and Density. The comments are noted.</p>
2	<p>2031 Planning Horizon. A 20-year planning horizon is considered to be an appropriate time horizon to recognize changing conditions and technology, while still allowing for a long-range perspective.</p>
3	<p>Support Alternative 1. The comment is noted.</p>
Letter 79: Giacobazzi, Joseph, Paul Fuesel, Nelson Davis	
1	<p>Support Height and Density. The comment is noted.</p>
2	<p>Minimum Lot Size for Towers. The comment is noted.</p>
3	<p>Flight Path. Subsequent to issuance of the Draft EIS, WSDOT Aviation undertook additional review of the flight path. This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 (Aesthetics) for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development</p>

Comment Number	Response
	above the base height permitted under the Seattle Mixed zoning.
4	Geology and Soils. As the commenter notes, site specific mitigation will be defined as part of project specific review.
5	Above grade parking. The commenter is referring to a development assumption described in Section 3.10 that future parking would be one-half below grade and one-half above grade. This was intended as an assumption to allow an estimate of development envelope for the aesthetics analysis and not intended to suggest a standard for future development.
6	Minimum Lot Size. The existing underlying Seattle Mixed zoning designation would be retained for all property in the neighborhood.
7	Small Property Owner Consideration. The comment is noted.
Letter 80: Golde, Marcy J.	
1	<p>Economic and Affordable Housing Impact Analyses. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders and the public to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS, which does not include an analysis of economic impacts. Please see Final EIS Section 3.2 for a discussion of the City’s Comprehensive Plan economic development policies.</p> <p>The Draft EIS housing analysis provides a programmatic review of housing affordability goals; growth in affordable housing in the neighborhood, and a qualitative discussion of the difference between the alternatives in the potential for affordable housing development. Reliable data is not available to develop a quantitative 20-year forecast of affordable housing development under each alternative.</p>
2	Economic Analysis. Please see the response to Comment 1 in this letter, above. As indicated in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
3	Growth Estimates. The comments are noted. Affordable housing development levels to meet housing affordability goals under the 2031 growth estimate is shown in Draft EIS Table 3.9-5.
4	Building Heights. The comments are noted. As described in the Draft EIS, the alternatives do generally decrease in height from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which

Comment Number	Response
	includes building height increases in the block north of Mercer Street. Existing zoning standards are retained in the Cascade neighborhood for all alternatives except Alternative 1.
5	Provisions for Children. The comments are noted. Please see Draft EIS Section 3.16, Open Space and Recreation. See Final EIS Section 3.5 for a discussion of schools.
6	<p>Housing Analysis. Please see the response to Comment 1 of this letter, above. It is acknowledged and disclosed in the Draft EIS that the affordable housing goals in the South Lake Union are not currently being met.</p> <p>Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
7	Economic Impacts. Please see the response to Comment 1 of this letter, above.
Letter 81: Gooding, Kim	
1	Support Alternative 1. The comment is noted.
Letter 82: Grant, Gabe	
1	<p>Support Alternative 1/35,000 sf Floorplates. The comments are noted. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.</p>
Letter 83: Gregory, Serge	
1	Support Increased Height. The comment is noted.

Comment Number	Response
Letter 84: Gunn, Cecelia	
1	Support Alternative 3. The comments are noted.
Letter 85: Hafenbrack, Charles	
1	Support Alternative 1. The comments are noted.
Letter 86: Hailey, Julia	
1	Support Rezoning. The comment is noted. As described in Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. The underlying Seattle Mixed zoning designations and standards would not be rezoned. Under the three action alternatives, the existing Industrial Commercial zone would be rezoned to Seattle Mixed (SM). This change in zone is intended to achieve consistency within the neighborhood rather than to permit greater height or density.
Letter 87: Hastings, Ryan	
1	Support Alternative 1. The comment is noted.
Letter 88: Hazlehurst, Hamilton	
1	Support Alternative 1. The comments are noted.
Letter 89: Healey, Ada M	
1	Alternatives Comparison. The comments are noted.
2	Existing Zoning. As described in Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. Existing Seattle Mixed (SM) zoning designations and standards would be retained under all alternatives. Under the three action alternatives, the existing Industrial Commercial zone would be rezoned to Seattle Mixed (SM). This change in zone is intended to achieve consistency within the neighborhood rather than to permit greater height or density.
3	Flight Path. Subsequent to issuance of the Draft EIS, WSDOT Aviation undertook additional review of the flight path. This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and

Comment Number	Response
	<p>International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 (Aesthetics) for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
4	<p>Housing Data. Please see the revised inventory of affordable housing in Final EIS Section 3.6.</p>
5	<p>Incentive Zoning. The comment is acknowledged.</p>
6	<p>Additional Development Considerations. The comment is acknowledged. Additional zoning standards will be considered by the City in its future decision on the preferred zoning approach in South Lake Union.</p>
7	<p>Conclusion. The comments are acknowledged.</p>

Comment Letters 90-124

90.	Heffron, Marnie
91.	Hennings, Gloria
92.	Herb, Frederick and Margaret
93.	Hill, G. Richard
94.	Holberg, Hillary
95.	Holmes, Robert J.
96.	Howe, Douglas, and Hurd, A-P
97.	Hoy, Mary
98.	Huard, Brock
99.	Huberty, Dan
100.	Hughes, Brendan
101.	Hurd, A-P
102.	Ito, Doug
103.	Johnson, Annalisa
104.	Johnson, Jay
105.	Kaivola, Linda
106.	Kaylor, Courtney A.
107.	Kelly, James
108.	Kenny, Daniel
109.	Kenny, Dennis E.
110.	Kenny, Diane
111.	Kent, Mike
112.	Kinzer, Craig and Richey, Kris
113.	Kitto, Terri
114.	Kleinart, Jack
115.	Kleinart, Layne
116.	Koshy, Ben
117.	Kroll, Jeff
118.	Kushmerick, Martin
119.	Kushmerick, Patricia
120.	Langrand, Sylvain
121.	Larsen, Brian R.W.
122.	Lawless, Betsy
123.	Leabo, Dick A.
124.	Leland, Larry



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E-mail: southlakeunioneis@seattle.gov

**Subject: South Lake Union Height and Density Alternatives Draft EIS
Comments about Transportation Analysis**

Dear Jim,

Heffron Transportation has reviewed the Draft EIS for the South Lake Union Height and Density Alternatives, and presents these comments for your consideration. Foremost among these is the request to incorporate recommendations from the recently completed *South Lake Union/Uptown Triangle Mobility Plan* into the EIS's mitigation measures (attached). This plan was sponsored by four community organizations: the South Lake Union Community Council, South Lake Union Chamber of Commerce, Uptown Alliance, and the Queen Anne Chamber of Commerce. It also was coordinated with various public agencies including DPD, SDOT, WSDOT and King County Metro. We also have other comments related to the transportation analysis presented in the EIS. All of our comments are attached. | 1

If you need further information related to the Mobility Plan recommendation, please call me at (206) 523-3939.

Sincerely,
Heffron Transportation, Inc.

A handwritten signature in blue ink, appearing to read "Marni C. Heffron".

Marni C. Heffron, P.E., P.T.O.E.
President

MCH/mch

Attachments

South Lake Union/Uptown Triangle Mobility Plan

1. **The Mitigation Strategies should incorporate recommendations from the recent *South Lake Union/Uptown Triangle Mobility Plan*, which defines the transportation priorities for the South Lake Union Community Council and South Lake Union Chamber of Commerce.**

2

Almost all of the mitigation measures shown in Figure 3.13-23 are captured in the Mobility Plan. Key improvements in the Mobility Plan that are not listed include:

- Creating an enhanced transit station on Aurora Avenue N between Thomas Street and Harrison Street (once the North Portal is complete).
- Providing east-west transit service on Harrison Street connecting Uptown and Capitol Hill through the heart of South Lake Union. This could be a new or relocated route.
- Routing select existing downtown-bound transit service that uses Interstate 5 to the Mercer Street ramps and Fairview Avenue.
- Developing a Streetscape Concept Plan for Dexter Avenue south of Valley Street.
- Implement a comprehensive pedestrian wayfinding program using the already-adopted City Wayfinding System standards.
- Improve pedestrian-level lighting throughout the neighborhood.

A copy of the plan is attached for reference.

Comments on the EIS Transportation Analysis

2. **The “Threshold of Significance” used to define a Significant Impact on a roadway is lower than has been traditionally applied in Seattle. Given that the City of Seattle’s only adopted level of service standards are in its Concurrency Policy, those thresholds should be used to define significant roadway impacts.**

3

Section 3.14.4 of the EIS defines the thresholds for environmental impact. It states,

A significant transportation impact is said to occur if any of the proposed alternatives would: a) cause an increase in traffic demand that results in a study corridor, that operates acceptably under the 2031 No Action Alternative to operate unacceptably (d/c ratio of 0.90, which equates to LOS E or F conditions) or b) Cause an increase in traffic on a study corridor that operates unacceptably (as measured by d/c ratios and LOS) under the 2031 No Action scenario that results in the d/c ratio increase by at least 0.01 (increases in d/c ratios of less than 0.1 are no noticeable by drivers.)

Appendix E goes on to explain that a 0.01 increase in d/c [demand-to-capacity ratio] could relate to an increase in delay at the Mercer Street/Fairview Avenue N intersection of about 3.8 seconds per vehicle. However, this level of delay would not typically be considered a “significant impact” by City of Seattle staff. Although the City has no written level of service standards for individual intersections, City staff typically considers a significant impact to be those intersections that would experience an increase of 5 or more seconds of delay per vehicle.

3 cont

Furthermore, for the *Mercer Corridor Improvement Project NEPA Environmental Impact Statement* (City of Seattle, December 2008), even higher levels of delay were reported to not be significant impacts. In that document, detailed traffic analysis was performed to report both level of service impacts as well as travel time impacts of the Mercer Street widening project and conversion to a two-way street. The proposed Mercer project was reported to increase PM peak hour travel times in the eastbound direction by about 28%. (Travel time from Seattle Center to Interstate 5 was predicted to increase from 7.3 minutes to 10.2 minutes.) However, the text reported, “The slightly longer 2010 PM peak-hour travel times are not considered significant in the context of overall travel times for traffic using this corridor.”

The City’s only written policy related to level of service is the Concurrency policy of the Seattle Comprehensive Plan. Although the policy reflects screenlines across several arterials, and not individual roadway segments, the methodology of applying a volume-to-capacity (v/c) ratio is similar to the d/c method applied for the South Lake Union Draft EIS. The Concurrency policy, however, establishes an acceptable v/c limit of 1.20 for all of the urban area screenlines. The South Lake Union Draft EIS applied a 1.0 threshold to define a significant impact to a roadway, below the adopted standard.

Based on the above information, the thresholds of significance applied to the South Lake Union Draft EIS are too low. It has no precedent in application for individual projects, nor is it within limits previously accepted for corridors in this neighborhood. Therefore, the City’s adopted level of service standard in its Concurrency policy—with a v/c threshold of 1.20—should be applied to determine if any of the alternatives would create a significant impact. In addition, a 0.01 increase in d/c is also too low. A 3% to 5% increase may be more appropriate. Using a threshold that is too low could result in the identification of mitigation for vehicular traffic that is unnecessary in this very urban environment.

3. Include the widening Mercer Street under Aurora Avenue N to six lanes plus turn lanes as a “Reasonably Foreseeable Transportation Improvement.”

4

This portion of the West Mercer Project is a part of the City-State agreement for the Alaskan Way Viaduct Replacement Project (AWV), and was included as a committed project in all analysis for the AWV Replacement Project Supplemental Draft EIS (October 2010). It also has substantial funding commitments that were approved as part of the City’s recent commercial parking tax as well as other sources. The project’s needs and benefits were defined for the No Action Alternative, and it should not be treated as a “mitigation” project for the rezone alternatives.

4. Integrate program elements identified in the Seattle Department of Transportation's Report to the City Council on the South Lake Union Transportation Demand Management Program (December 2005).

5

This very detailed plan recommended many Transportation Demand Management (TDM) actions, including options for funding expanded transit service. Many of the elements suggested in the plan are similar to those recommended as Mitigation in the Draft EIS; however, it provided more detail related to implementation mechanisms.

5. Apply a portion of the Incentive Zoning bonus to improve the transportation system.

6

As noted on page 1-4 of the Draft EIS, Seattle Municipal Code Section 23.58A established conditions and process for development incentives. For buildings greater than 85 feet in height, at least 60% of the increased floor area would need to support provisions for affordable housing, and other City approved bonus options may be used for up to 40% of the increased floor area.

The City should consider tapping a portion of the 40% for "other approved bonuses" for area-wide transportation improvements that would encourage the use of non-automobile transportation. Projects that would be difficult to assess based on specific project impacts would be the best candidates for this type of funding source. It could include streetscape projects such as the Thomas Street Green Street, trails such as the Lake-to-Bay Loop Trail, improved pedestrian lighting, improved pedestrian wayfinding, and hillclimbs such as those proposed at John Street or in the north portion of the study area.

6. Account for the extensive use of private shuttles.

Eight existing businesses and institutions in South Lake Union operate private shuttles—some for commuting and others to connect facilities. The transit load analysis does not acknowledge this mode, which likely reduces the load on key public transit routes, particularly those that operate between the University District and South Lake Union.

7

Any mitigation program that is developed, whether as part of a revised Voluntary Impact Fee Program or as an incentive zoning program, should provide a mechanism to credit businesses that commit to ongoing private shuttle operations.

7. Balance the parking supply with the mode of travel expectations.

Table 3.13-15 of the EIS lists the assumed parking supply rates for three land uses. For non-retail/commercial uses, which would include office, the rate is listed as 1.0 space/ksf (1,000 square feet). This parking rate would reflect an auto use that is lower than assumed for the traffic analysis. The parking rates should be balanced with the traffic analysis.

8

According to the Institute of Transportation Engineers (ITE) *Parking Generation* (4th Edition, 2010), a typical suburban office building with little to no use of alternative modes of travel would, on average, generate a peak parking demand of 2.84 spaces/1,000 sf. Modeling performed for the EIS determined that about 50% of all peak hour trips would be made by automobile. If that mode of travel were applied to the typical suburban parking rate, then offices in South Lake Union would require an average of 1.42 parking spaces/1,000 sf.

However, the trip generation results from the model are not specific for each land use. It is likely that the office trips would have a slightly higher level of automobile use than the neighborhood's retail or residential uses since office would draw from a larger market area with longer trips that may be made by car. Therefore, the average parking rate could be higher, in the range of 1.5 to 1.6 spaces/1,000 sf. Analysis should be performed to balance the parking needs with the mode of travel assumptions to reduce the potential impact to on-street and short-term parking needs in the neighborhood. If a maximum parking rate is selected it should be set above the average rates to reduce adverse impacts associated with parking overspill.

8 cont

For individual projects, the amount of parking provided should also be balanced with the goals of each project's Transportation Management Plan. The City can incentivize reducing the parking supply within a project through its Traffic Impact Fee.

8. **Increase capacity used to evaluate Denny Way.** The capacity for Denny Way between Aurora Avenue and Stewart Street has been calculated assuming "1.5 through lanes." However, left turn movements are prohibited at most locations along this corridor where there is no auxiliary turn lane. Therefore, the capacity of this corridor has likely been underestimated. The total capacity values should be reviewed for this corridor based on Synchro models that the City has created for this corridor and/or the downtown core area.

9

9. **Include new King County Metro Route 309.** The existing and future transit analysis does not reflect the newly-implemented Route 309 from Kenmore to First Hill. This peak period route, which King County Metro started in February 2011, exits Interstate 5 at the Mercer Street ramps and uses Fairview Avenue/Boren Avenue to reach Harborview Medical Center.

10

10. **Revise discussion and analysis of the Urban Village Transportation Network (UVTN).** Text and tables on page 3.13-62-63 describe the City's UVTN. It states that "eight transit lines do not meet the UVTN frequency goal of 15-minute headways during the AM peak hour." However, the City's UVTN policies are not related to individual transit routes, but rather to corridors where high frequency transit service is desired. Those corridors could be used by more than one route. In the South Lake Union study area, the City has designated the following UVTN Corridors:

11

- UVTN ID #1: Fairview/Stewart/Virginia - Stewart Street to the University District
- UVTN ID #17.1: Aurora Avenue - Denny Way to N 45th Street
- UVTN ID #49: 5th Avenue N/Taylor Avenue N - Denny/5th Avenue to Queen Anne Ave
- UVTN ID #50: Dexter Avenue - Denny Way to Westlake Avenue
- UVTN ID #55: Denny Way - Western Avenue to Olive Way
- UVTN ID #61: South Lake Union Streetcar
- UVTN ID #69.1: W Mercer Place/Mercer Street - Elliott Avenue W to Westlake Avenue N
- UVTN ID #69.2: Mercer Street/ Lakeview Blvd E - Westlake Avenue N to Broadway.

The City monitors these corridors not just for headways, but also the hours of service, travel speed, reliability, and overloading. Past monitoring of these criteria is available from SDOT. Any assessment about how the proposed alternatives affect the UVTN should be based on these defined criteria.

11. Don't require implementation of a mid-block connector, but review them as part of the Design Review process.

12

The list of potential pedestrian and bicycle improvements on Page 3.13-82 includes "Require that projects which develop above the "base height" implement the mid-block connector concept consistent with the South Lake Union Urban Design Framework." However, universal application of this is not recommended since it could result in adverse transportation impact instead of functioning as a mitigation measure. Currently, the mid-block connectors are evaluated through the Design Review process, and that process should continue. Each site's context and location can then be considered. Design guidance could be provided to the review boards to evaluate the benefits and impacts of potential mid-block connectors. For example:

- Mid-block connectors should be reviewed in the context of major arterials since it may not be desirable to have a mid-block connectors intersect a high-volume vehicle route where no crossing could be provided.
- Mid-block connectors should be reviewed in relationship to a project's truck loading and service needs since a through pedestrian connection may compete with those functions.
- Mid-block connectors should consider proximity to major transit stops and stations since it might be preferable to increase plaza areas near transit stations along the edge of a site instead of in the middle of it.

12. Provide background data for use in subsequent SEPA analyses for individual projects.

13

The data and analysis that are currently presented in the EIS's Transportation section would not support future SEPA analysis that may be required for individual development permits. The following lists data that would be useful to have in an Appendix or on file at DPD to support future analyses:

- **Trip generation rates for various uses.** The trip generation results, which were modeled for this neighborhood and its specific features, were presented as a single value. In order to replicate these results for an individual project, it would be useful to have estimated trip rates for at least the three primary land uses (office, retail, and residential). Rates both without and with mitigation should be provided to assess the effect of transportation management strategies.
- **Traffic volume plots for Existing, No Action, and Build Conditions.** Traffic analyses for individual development projects will continue to rely on adjusting existing counts to reflect future roadway enhancements. For many years, data from the Mercer Corridor EIS were used for this type of analysis. The new travel demand modeling performed for this EIS would provide an updated basis for adjusting existing traffic volumes and should be available through DPD or SDOT.
- **Trip distribution pattern by land use.** Figure 3.13-18 shows the external vehicle trip distribution pattern for all trips. Having this pattern segmented by the three major land use types (office, retail, and residential) would be useful for application to future traffic analysis.

SOUTH LAKE UNION / UPTOWN TRIANGLE

DRAFT APRIL 8, 2011



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April 8, 2011

Dear City of Seattle and King County leaders:

We are proud to present and endorse the South Lake Union/Uptown Triangle Mobility Plan recommendations that will enhance walking, biking and using transit in these two Urban Centers. These transportation improvement recommendations are the result of many hours of participation by the South Lake Union Community Council, Uptown Alliance, South Lake Union Chamber of Commerce, and the Greater Queen Anne Chamber of Commerce.

The recommendations have been grouped into 7 key mobility themes:

- Connecting Communities
- Increased Transit Service
- Serve Regional Access & Mobility
- Encourage Walking
- Support Biking
- Leverage Private Transportation Investments
- Create Hubs for Mode Transfers

We would like to give special thanks to the Mayor's Office, Seattle City Council, King County Metro, Washington State Department of Transportation and Seattle Department of Transportation.

We look forward to partnering with our leaders and public agencies to recognize and implement the Mobility Plan recommendations.

Sincerely,

Jerry Dinndorf
South Lake Union Community Council

Damien King
South Lake Union Chamber of Commerce

John Coney
Uptown Alliance

Mary Chapman
Greater Queen Anne Chamber of Commerce

Working Committee Members

South Lake Union Community Council

Steven Paget
Robbie Phillips
Joshua Franklin
Michael McQuade
Jerry Dinndorf
John Savo
Bob Grossman

South Lake Union Chamber of Commerce

Monty Holmes
Matt Curry
Damien King
Lisa Verhovek
Fred Kiga

Queen Anne Chamber of Commerce

Mary Chapman
Don Lagerquist

Queen Anne Uptown Alliance

John Coney
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King County Metro

Jim Jacobsen
Victor Obeso
David Hull
Ira Limargo

Consultant Team

Heffron Transportation, Inc.
VIA Architecture
Nelson Nygaard
Cascade Bicycle Club

EXECUTIVE SUMMARY

The South Lake Union and Uptown neighborhoods will undergo a massive transformation in the next decade as the neighborhoods grow to accommodate more than 12,000 new residents and 24,000 new jobs.

In addition, three major infrastructure projects—the Alaskan Way Viaduct Replacement Project, the Mercer East Project, and the Mercer West Project—will change travel patterns in the area and provide key links between the two neighborhoods for pedestrians, bicycles, and transit.

There have been many independent planning studies performed in the two neighborhoods. This plan seeks to consolidate all of the prior planning efforts and adapt them to account for the major infrastructure projects.

This plan was created with substantial input from neighborhood interest groups, businesses, and various agencies. A detailed analysis and user survey was also performed by the Cascade Bicycle Club as part of this project. All plan recommendations have been vetted through the plan’s advisory committee.

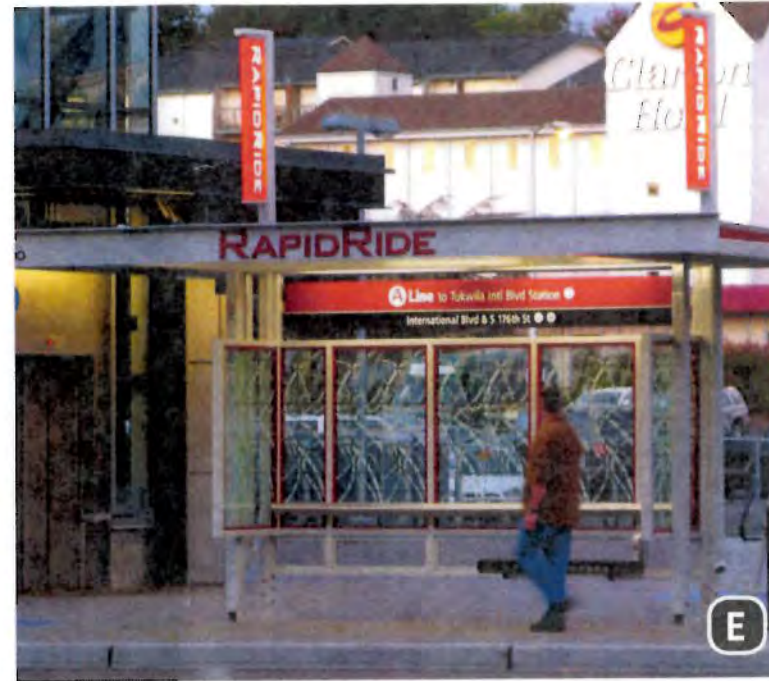
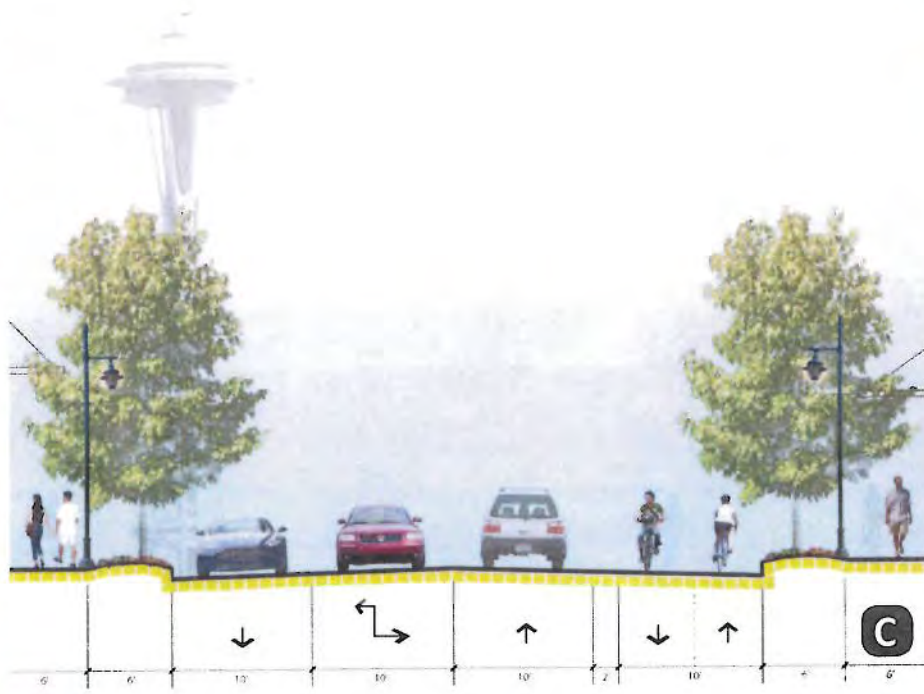
The mobility plan recommendations have been grouped into seven key themes. These themes are further described in subsequent sections below and detailed in the matrix at the end of this plan (pages 18-21):

- 1 **Connect Communities:** Connect South Lake Union, Uptown Triangle, Seattle Center and Uptown by re-establishing the east-west grid across Aurora Avenue at John, Thomas and Harrison Streets with attractive and safe “complete street” designs.
- 2 **Increase Transit Service:** Increase transit service to and through the Urban Centers with rerouted and extended bus routes.
- 3 **Serve Regional Access & Mobility:** Realize all regional and mobility improvements of the Mercer Corridor and North Portal projects for pedestrians, bicycles transit, freight and cars.
- 4 **Encourage Walking:** Create an active and safe pedestrian environment with green streets, active sidewalks, regional trail connections, and clear wayfinding.
- 5 **Support Biking:** Provide a safe, clear and convenient network of bike paths, bike lanes, and bicycle support facilities.
- 6 **Leverage Private Transportation Investments:** Partner with private businesses, institutions, and developers to leverage privately funded operational measures such as private shuttles, transit partnerships with King County Metro, and transportation management plans, as well as infrastructure investments in the street frontage, utility upgrades, and street enhancements.
- 7 **Create Hubs for Mode Transfers:** Create neighborhood transportation hubs—at the Aurora Avenue RapidRide Station and on Valley Street near Lake Union Park—that facilitate transfers between modes of transportation.



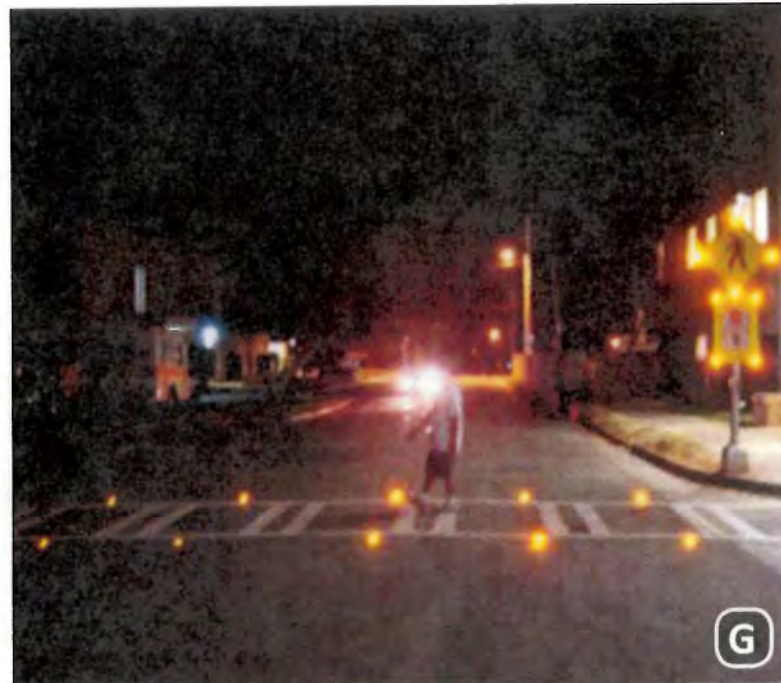
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CONNECT COMMUNITIES

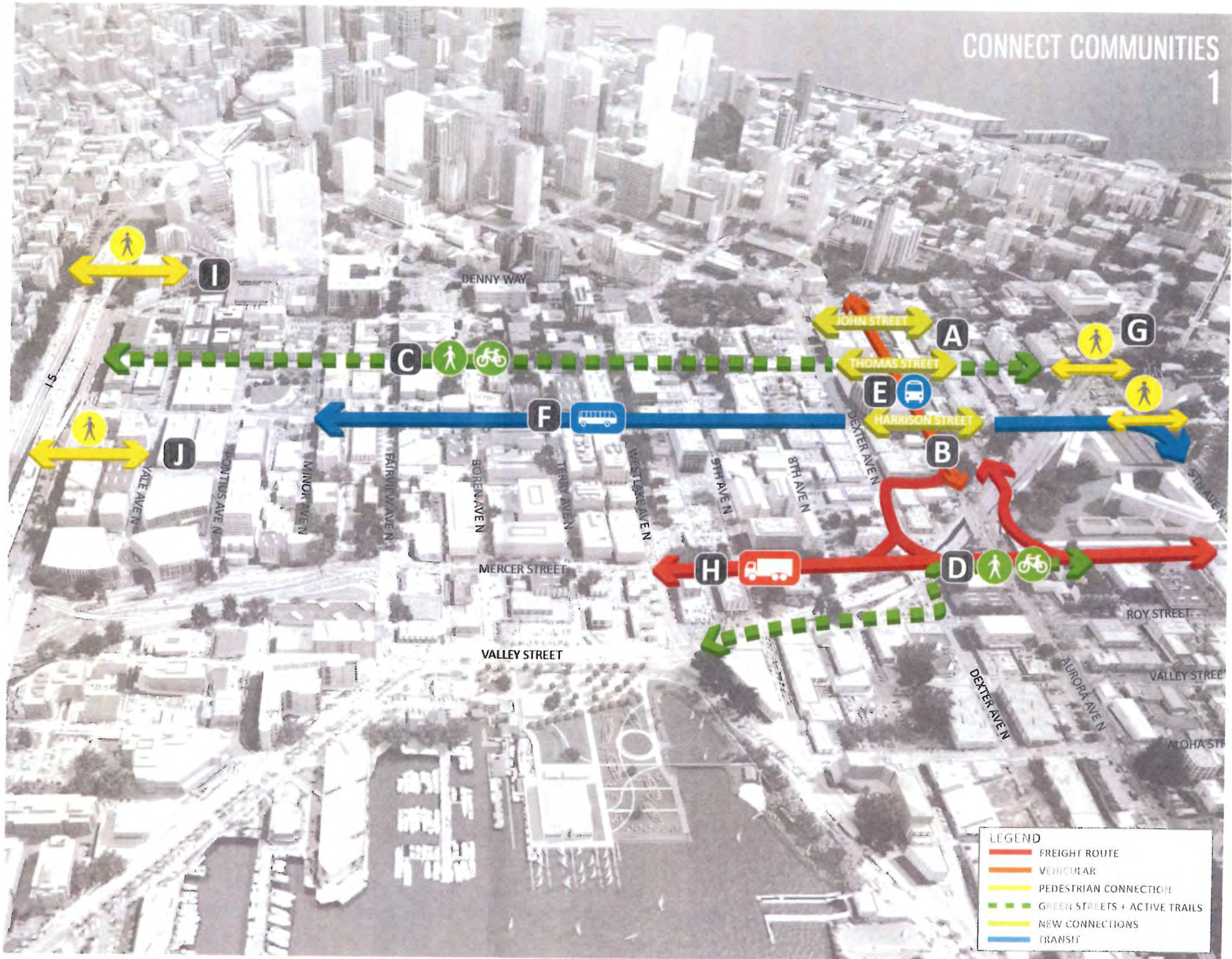


Connecting South Lake Union and Uptown across Aurora Avenue is these neighborhoods' top priority. The North Portal of the Alaskan Way Viaduct Replacement project tunnel will be north of Harrison Street, three blocks north of where the Battery Street Tunnel daylights today. This will remove a substantial volume of through traffic from Aurora Avenue N between Harrison Street and Denny Way and allow three existing streets—John Street, Thomas Street, and Harrison Street—to be reconnected across Aurora Avenue N.

These reconnected streets provide new opportunities for east-west transit service, pedestrian connections, and bicycle connections that are not possible today. In addition, the Mercer West project proposes to widen Mercer Street under Aurora Avenue including new facilities for bicycle and pedestrians.



- A** Re-establish the east-west grid across Aurora Avenue at John, Thomas and Harrison Streets with attractive and safe "complete street" designs.
- B** Rename Aurora Avenue N between Harrison and Denny Way to its historic name: 7th Avenue N.
- C** Provide pedestrian and bicycle facilities on Thomas Street consistent with the City's Street Concept Plan and Green Street designation. Thomas Street is part of the Lake-to-Bay Loop.
- D** Provide a pedestrian/bicycle trail under Aurora Avenue N on Mercer Street
- E** Create a RapidRide Station on surface Aurora Avenue N (to be renamed 7th Avenue N) between Harrison and Thomas Streets as well as new transit stops on Harrison Street to ease transfers between local and regional bus service.
- F** Design Harrison Street to accommodate future east-west bus service with stops at 7th Avenue N.
- G** Enhance the pedestrian crossings of 5th Avenue N at Thomas Street and Harrison Street with curb bulbs, special pavement, and pedestrian signal improvements.
- H** Provide turning radii for large trucks at key locations where trucks will access Mercer Street and the SR 99 ramps including Mercer Street/5th Avenue (southeast corner), Mercer Street/6th Avenue (southwest corner), and on the Republic Street off-ramp from northbound SR 99.
- I** Widen the Denny Way overpass of I-5 to provide bicycle lanes and a sidewalk on the north side of the overpass
- J** Evaluate other pedestrian connection opportunities between STU + Capitol Hill north of Denny Way, including improved stairs, trails, and/or a new pedestrian overpass of I-5.

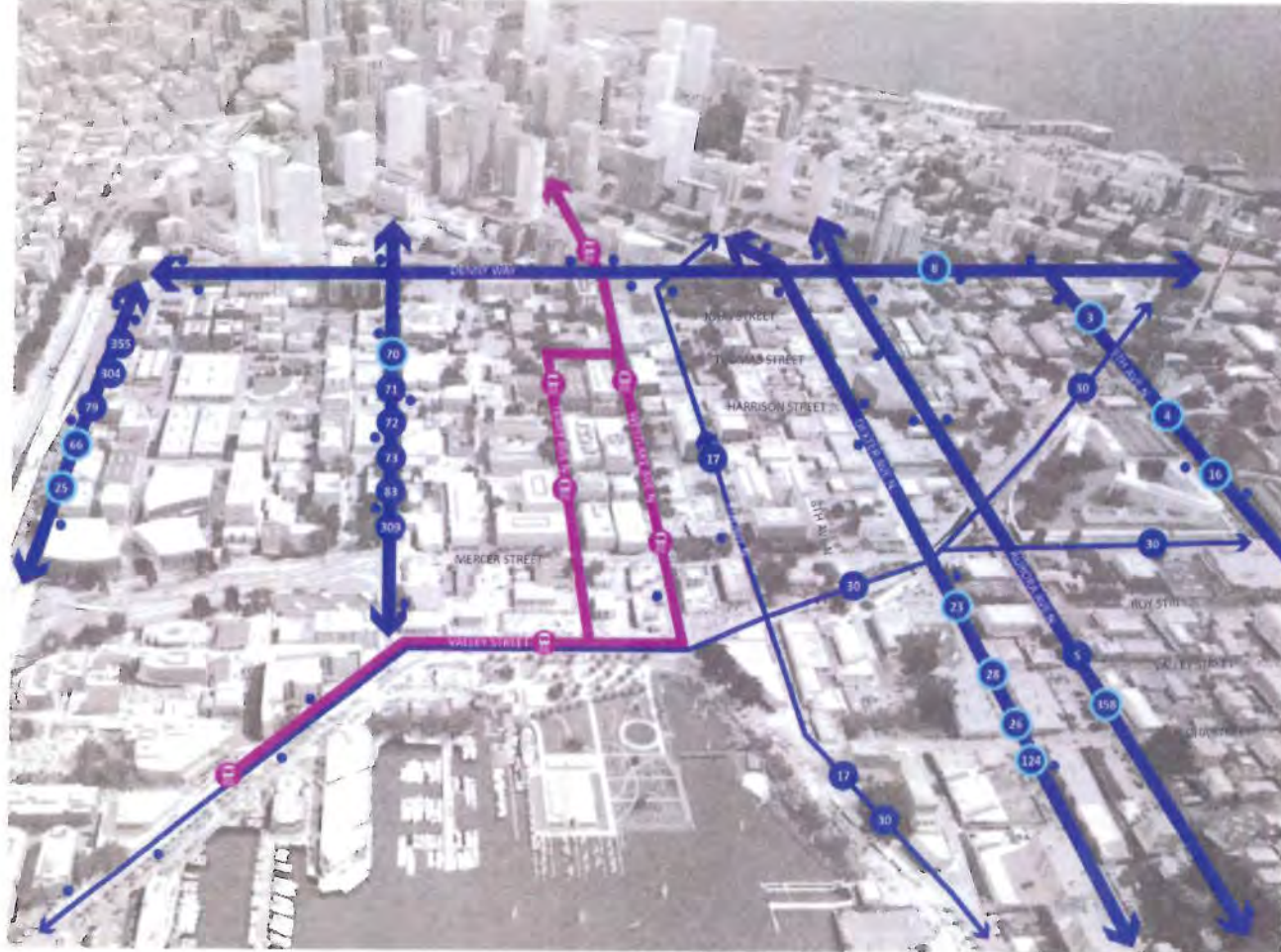


LEGEND	
—	FREIGHT ROUTE
—	VEHICULAR
—	PEDESTRIAN CONNECTION
- - -	GREEN STREETS + ACTIVE TRAILS
—	NEW CONNECTIONS
—	TRANSIT







2

IMPROVE TRANSIT SERVICE

EXISTING TRANSIT SERVICE



Existing transit service runs primarily north - south and at the edge of the neighborhoods

-  TRANSIT
-  STREETCAR
-  309 BUS ROUTE
-  17 "FREQUENT SERVICE" ROUTE
-  STREETCAR STOP
-  BUS STOP



J



F



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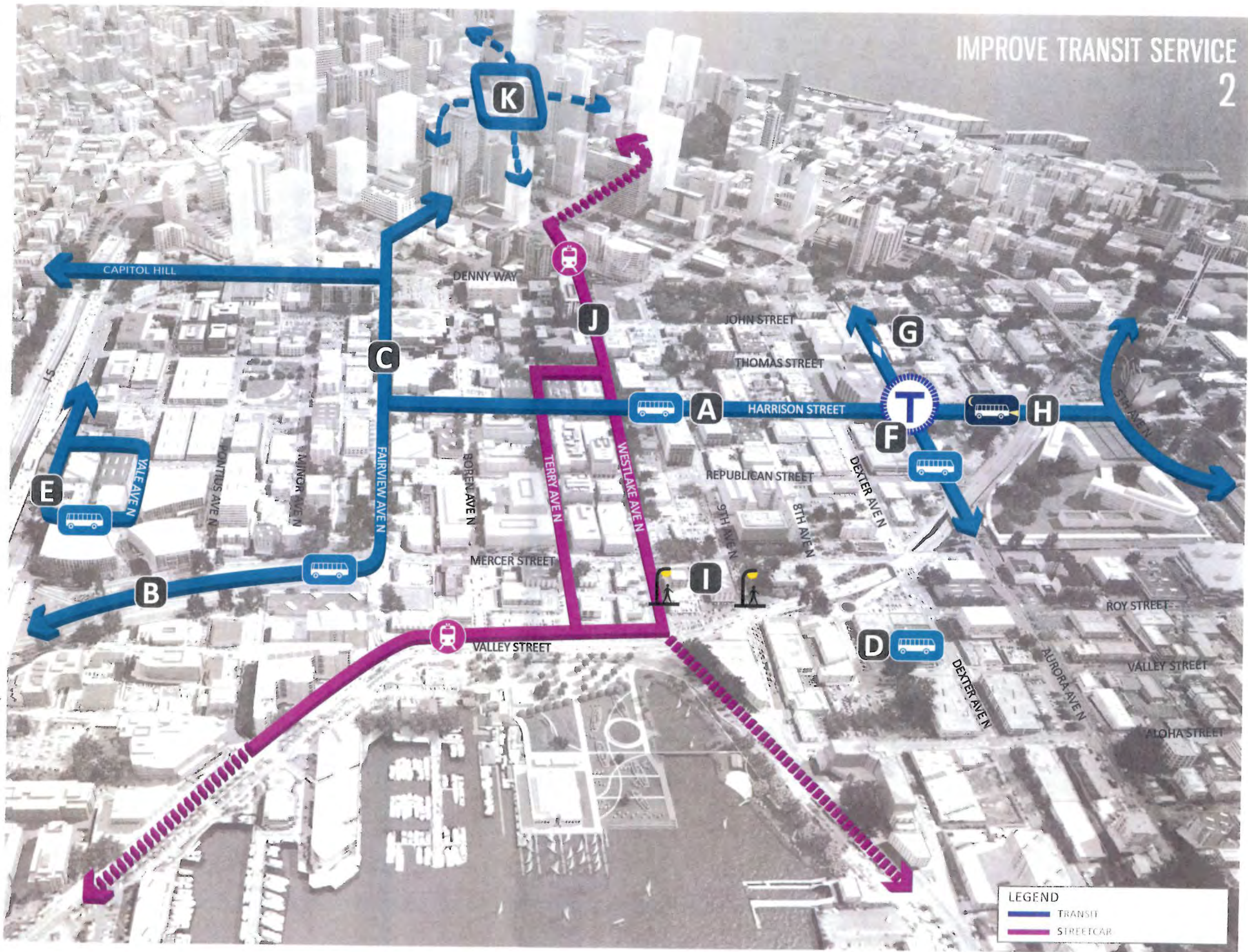
South Lake Union and Queen Anne Uptown are two of the fastest growing neighborhoods in the Pacific Northwest. Accommodating that growth demands a paradigm shift in how people travel—shifting from autos to foot, bike, and transit.

In its recent Seattle Transit Communities report, the Seattle Planning Commission identified both the South Lake Union and Uptown neighborhoods as two of 14 "transit communities with the most urgent near-term planning needs."

As South Lake Union grows, it will become a major transit destination. Transit service should adapt to treat the neighborhood as an extension of the downtown core rather than a separate neighborhood, and reduce the number of riders who must transfer to reach South Lake Union. However, in these tough economic times, it is unrealistic to expect that transit agencies could create new routes or make substantial changes in its operations. Therefore, this plan recommends several low-cost strategies to increase service to the neighborhood.

When funding is available, future opportunities to enhance transit service and integrate transit improvements could be made.

- A** Provide east-west transit service connecting Uptown and Capitol Hill through the heart of South Lake Union on Harrison Street.
- B** Increase transit service through South Lake Union by rerouting select I-5-to-Downtown routes to the Mercer Street ramps and Fairview Avenue N.
- C** Improve transit reliability and operating conditions on Fairview Avenue N to entice more transit to route through the South Lake Union neighborhood.
- D** Identify acceptable bus layover locations in the two urban centers in exchange for extending bus routes to these neighborhoods.
- E** Work with Sound Transit to have buses that now layover in the SLU neighborhood to make stops in the neighborhood as part of their route.
- F** Concentrate transit service near the future RapidRide Station on Aurora Ave N (to be renamed 7th Ave N), between Harrison and Thomas Streets.
- G** Add transit lanes on 7th Avenue N that connect to the Wall Street/Battery Street transit lanes.
- H** Increase nighttime and weekend service to better serve events at the Seattle Center and Lake Union Park, as well as the growing resident population in South Lake Union and Uptown Triangle.
- I** Improve pedestrian lighting and amenities at and approaching transit stops and stations.
- J** Support additional Streetcar routes. The highest priority would be to connect the First Hill Streetcar line to South Lake Union and the Seattle Center.
- K** Improve ability to use transit to circulate among the downtown neighborhoods.



LEGEND	
—	TRANSIT
—	STREETCAR

3

SERVE REGIONAL ACCESS + MOBILITY

PROPOSED STREET CLASSIFICATIONS



with Mercer East and Alaskan Way Viaduct Replacement Project

- MAJOR TRUCK STREETS
- PRINCIPAL ARTERIALS
- MINOR AND COLLECTOR ARTERIALS



In 2006, the Mercer Corridor Stakeholder Committee presented a package of 28 recommendations to the City of Seattle. Foremost among these was that the City establish a two-way Mercer Street corridor from I-5 to Elliott Avenue, and reconnect the east-west street grid across Aurora Avenue N, which is the key to making the entire system work.

Most of the original recommendations are now under construction as part of the Mercer East project which includes Mercer and Valley Streets east of Dexter Avenue N. The second part of this corridor project, Mercer West, is now in design and would complete the corridor between Dexter Avenue N and Elliott Avenue W. As of February 2011, all of the key elements from the original recommendation are being incorporated into either the Mercer West project or the North Portal of the Alaskan Way Viaduct Replacement project.

Some additional measures should be considered to focus regional and neighborhood through traffic to the Mercer Corridor and to manage traffic during construction.

SERVE REGIONAL ACCESS + MOBILITY

A Complete the Mercer West project, which would widen Mercer Street under Aurora Avenue to three lanes in each direction plus turn lanes, and convert Mercer Street west of 5th Avenue N to two way operations.

B Convert Roy Street west of 5th Avenue N to two-way operations and add bike lanes. Calm traffic and discourage through traffic on Roy Street.

C Improve pedestrian crossings at intersections along Mercer and Roy Streets, and consider special treatments, such as stamped and colored pavement at key intersections in the heart of Uptown (Roy and Mercer Streets at 1st Avenue N and Queen Avenue N) and at the Mercer Street/5th Avenue N intersection.

D Discourage through traffic from using Republican Street between Dexter Avenue N and Fairview Avenue N. Use signage, signal timing, and other traffic calming measures to direct through traffic to Mercer Street.

E Provide turning radii for large trucks at key locations where trucks will access Mercer Street and the SR 99 ramps including Mercer Street/5th Avenue (southeast corner), Mercer Street/6th Avenue (southwest corner), and on the Republic Street off-ramp from northbound SR 99.

F Provide signage for the future route from westbound Mercer Street to southbound SR 99 that would loop in a clockwise direction from Mercer Street to Taylor Avenue N to Valley Street and SR 99.

G Continue to engage community in planning for construction of the major infrastructure projects.



LEGEND

- FREIGHT ROUTE
- VEHICULAR
- PEDESTRIAN CONNECTION

4

ENCOURAGE WALKING

EXISTING PEDESTRIAN FACILITIES



- RECREATIONAL WALKING ROUTE FROM SEATTLE WALKING MAP
- GREEN STREETS
- LAKE-TO-BAY LOOP
- CHESHIAHUD LOOP TRAIL
- SIGNALIZED INTERSECTION

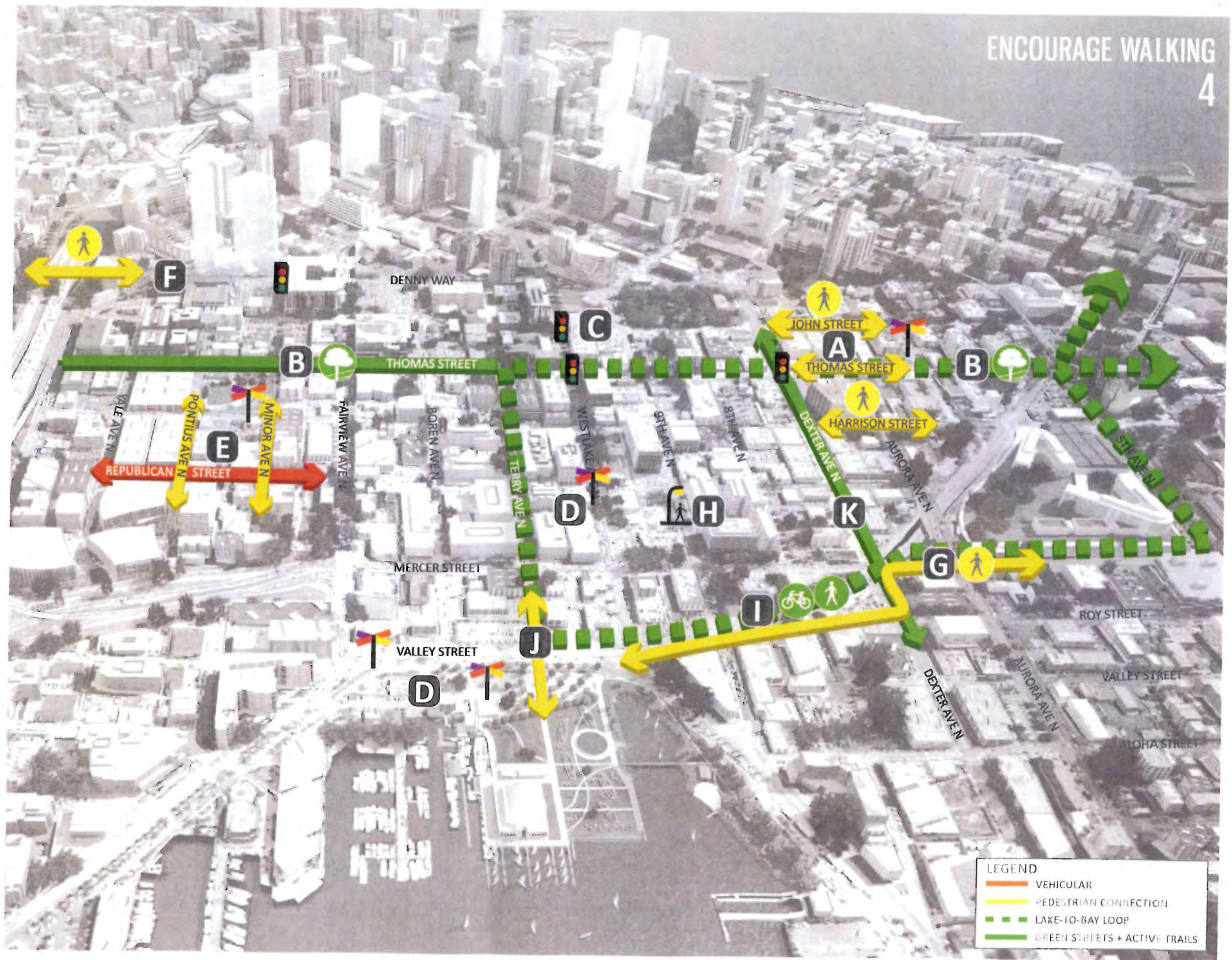


The pedestrian experience in and between neighborhoods **must** be enhanced for these neighborhoods to grow sustainably. The existing pedestrian connection between Uptown and South Lake Union is limited to the very narrow sidewalks along Mercer and Broad Street.

Many have said they now drive between these two neighborhoods because the walk is so forbidding. Poor lighting, unsignalized intersections, narrow sidewalks, and lack of wayfinding are other barriers to pedestrian travel.

All of the major infrastructure projects include pedestrian enhancements such as wider sidewalks and improved crossings. Very wide sidewalks or paths are proposed along Valley Street, along Mercer Street under Aurora Avenue, and along Thomas Street.

- A** Reconnect Harrison, Thomas, and John Streets across Aurora Avenue N.
- B** Implement Green Street improvements along Thomas Street between Eastlake Ave and 5th Avenue N.
- C** Signalize pedestrian crossings of Westlake Avenue N, particularly at Thomas Street and John Street.
- D** Implement a comprehensive pedestrian wayfinding program using the already-adopted City Wayfinding System standards.
- E** Address vehicular circulation impacts on pedestrian mobility in the Cascade Neighborhood particularly across Republican Street.
- F** Implement pedestrian improvements in the Denny Way Streetscape Concept Plan, including widening the Denny Way Overpass of I-5 to include a sidewalk on the north side, providing a signalized pedestrian crossing of Denny Way at Minor Ave N, and improving crossings at key intersections.
- G** Improve pedestrian facilities along the Mercer Corridor with a wide multi-use trail under Aurora Avenue, improving crossings of Mercer Street near the Seattle Center, and calming traffic at the Roy Street/Queen Anne Avenue intersection.
- H** Improve pedestrian-level lighting throughout neighborhood with priority along routes to major transit facilities.
- I** Complete the Lake-to-Bay Loop trail.
- J** Enhance the Ferry Avenue connection to Lake Union Park with enhanced pedestrian crossings of Mercer Street and Valley Street and pedestrian improvements along Ferry Avenue north of Mercer Street.
- K** Prepare a Streetscape Concept Plan for Dexter Avenue N within South Lake Union.



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SUPPORT BIKING

EXISTING BIKING FACILITIES



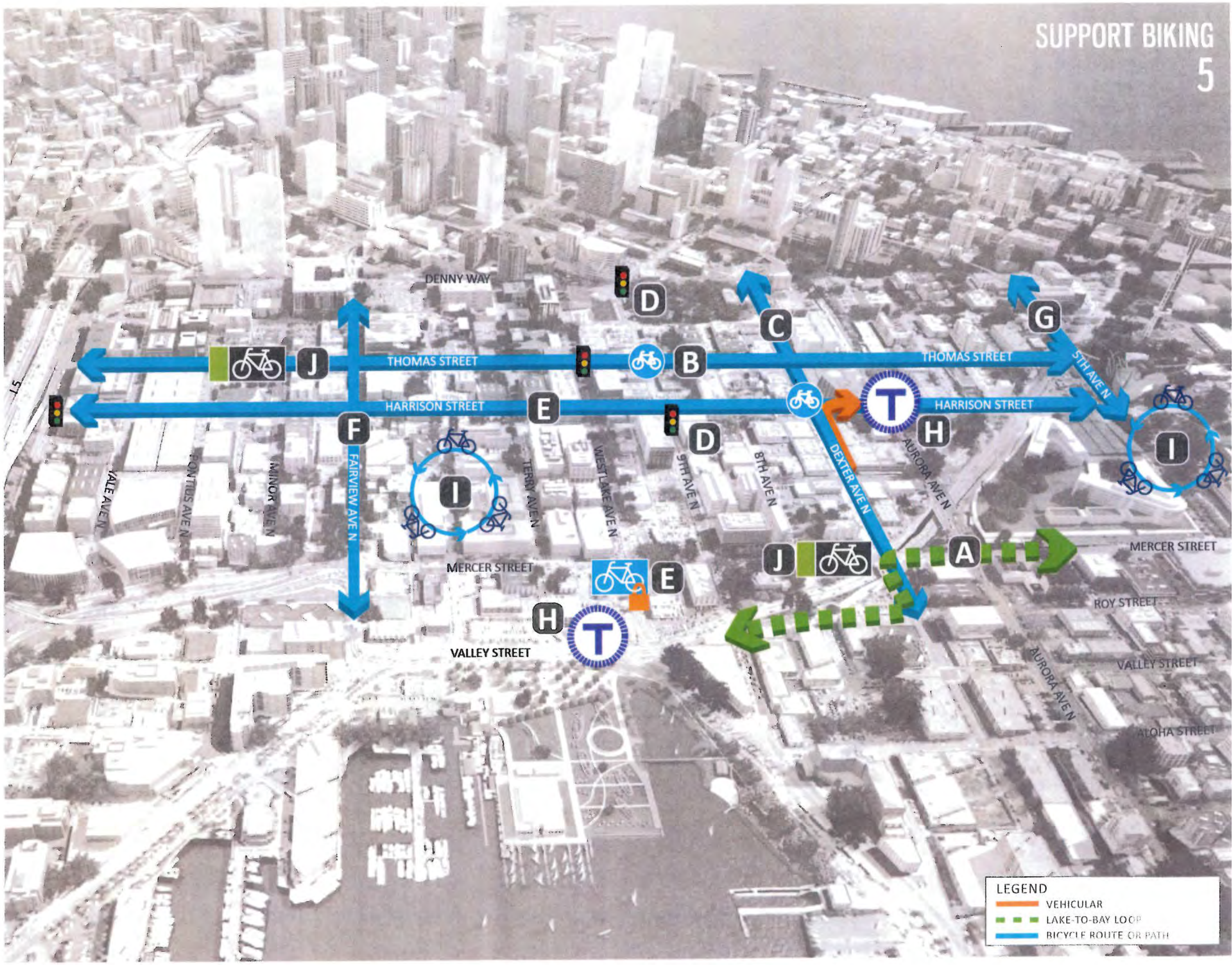
- PAVLD REGIONAL PATH
- ON-STREET BIKE LANE
- SHARED ROADWAY



The relatively flat topography and robust grid system make the South Lake Union and Uptown neighborhoods bike friendly. The current barriers that exist for pedestrians—primarily the limited crossings of Aurora—also affect bicyclists.

Once those barriers are removed, the neighborhoods could also support programs such as bike sharing that link key attractions as well as businesses.

- A** Make bicycle improvements planned for the Mercer Corridor project including a wide multi-use path on Mercer Street under Aurora Avenue and bike lanes on Roy Street.
- B** Provide for bicycles on Thomas Street between 5th Avenue N and Eastlake Avenue E. Install signals at arterial crossings of Dexter Avenue N and Westlake Avenue N.
- C** Improve the Dexter Avenue N bike lanes between Roy Street and Denny Way with treatments similar to those now being implemented north of Roy Street. Provide a southbound right turn lane on Dexter Avenue N at Harrison Street to separate right turns from the bike lane. At the Mercer Street intersection, consider treatments such as bicycle boxes and signal phasing treatments to improve the transitions between Dexter Avenue N and the Mercer Street bike path.
- D** Improve bicyclist safety along 9th Avenue with signal changes at Denny Way and at Harrison Street.
- E** Provide for bicycles on Harrison Street between Fairview Avenue N and 5th Avenue N. Install a signal at Eastlake Avenue N.
- F** Provide for bikes on Fairview Avenue N, including intersection improvements at Denny Way, Valley Street and Mercer Street. Fairview Avenue N is also targeted for transit enhancements. If a Business Access and Transit (BAT) lane is located on Fairview Avenue N, it could be shared with bicyclists.
- G** Evaluate 5th Avenue N as a potential north-south bicycle connection between Belltown/Downtown and Uptown/Lower Queen Anne Avenue.
- H** Locate bike storage near major transit stations.
- I** Create a bike sharing program for Uptown, South Lake Union and Seattle Center. Work with City of Seattle and King County Metro to apply a framework and business model being developed for Seattle.
- J** Consider bike boxes and bike signals along key bike routes, including Roy Street west of Taylor Avenue, and Thomas Street between 5th Avenue N and Eastlake Avenue N, and Dexter Avenue N.



LEGEND	
	VEHICULAR
	LAKE-TO-BAY LOOP
	BICYCLE ROUTE OR PATH

6

LEVERAGE PRIVATE TRANSPORTATION INVESTMENTS



Private transportation investments are being made by existing businesses, institutions, and developers. These include operational measures such as private shuttles, transit partnerships with King County Metro, transportation management plans, as well as infrastructure investments for street frontage, utility upgrades, and street enhancements. The investments are integral to creating a vibrant South Lake Union and Uptown Triangle transportation system. Public agencies can facilitate and leverage these public investments to complete the transportation system.

- A** Support private shuttles with passenger load zones along public streets at appropriate locations.
- B** Support changes to State laws related to private shuttles that would make it easier for private businesses to share shuttle resources.
- C** Incentivize frontage improvements that are beyond City code requirements with Street Design Concept Plans (such as along Thomas Street) and allowing developers to get "credit" for additional improvements against other transportation mitigation requirements.
- D** Entice private transit funding through transit partnerships with matching grants or other funding mechanisms.
- E** Coordinate street and utility work within the right-of-way by implementing strategies such as joint trenching policies, and aligning capital improvement programs between SDOT, SPU, City Light and private utility providers.
- F** Coordinate transportation demand management plans among businesses and institutions.
- G** Manage neighborhood parking resources to share parking among various uses that have different peak demand characteristics.

7

CREATE HUBS FOR MODE TRANSFER

There are two key locations where many transportation modes will intersect, and hubs to facilitate mode transfers could be created:

T1: Thomas/Harrison Mobility Hub -- This hub would be at the future Aurora Avenue RapidRide Station, between Harrison and Thomas Streets, where regional RapidRide service would meet local transit service. This node also connects with the Lake to Bay Loop trail, the Thomas Street Green Street and new east-west bike routes.

T2: Valley Street Mobility Hub -- This hub would be on Valley Street near Lake Union Park where the Lake Union Streetcar intersects with the Lake to Bay Loop trail and the Cheshiahud Trail. It is also in close proximity to Lake Union Ferry service and Kenmore Air Harbor.

Potential features include:

- Adjacent land uses that provides an inviting and safe walking environment
- Small-scale retail and services for transit riders
- Design amenities such as street furniture and artwork that create an identity for each node
- Convenient customer information about transit service
- Wayfinding to and from local attractions such as the Seattle Center, Lake Union Park, MOHAI, Center for Wooden Boats, United Tribes' Canoe Cultural Center, retail districts, Lake Union Water Taxi, Kenmore Air, and patient facilities at the Fred Hutchinson Cancer Research Center
- Good pedestrian connections with wide, well-lit sidewalks and signalized pedestrian crossings of major streets
- Bike storage
- Bike sharing facility



T1: THOMAS / HARRISON MOBILITY HUB



T1: Thomas/Harrison Mobility Hub - This hub would be at the future Aurora Avenue RapidRide Station, between Harrison and Thomas Street where regional RapidRide service would meet local transit service. The node also connects with the Lake to-Bay Loop trail, the Thomas Street Green Street and new east-west bike routes.



Most of the improvements can be implemented ahead of future development; a temporary bike station could be included at the corner to help establish a "Sense of Place"

TRANSIT + TRANSPORTATION

- A1** Enhanced Pedestrian/Rider amenities at RapidRide and Metro Bus stops
- A2** Designated bus lanes and priority signals
- A4** Shuttle bus stop
- A5** Transit and community information kiosk
- A3** East-West Bus service

PEDESTRIAN + BICYCLE

- B1** Activated building edges (cafes, shops, etc)
- B2** Safe pedestrian crossing with special intersection paving and treatments
- B4** Future Transit Oriented Development
- B5** Integrated bike station
- B6** Thomas Street concept design & green street improvements
- B7** Shared Bikeway
- B8** Pedestrian lighting
- B3** Wayfinding signs

T2: VALLEY STREET MOBILITY HUB

T2: Valley Street Mobility Hub - This hub would be on Valley Street near Lake Union Park where the Lake Union Streetcar intersects with the Lake-to-Bay Loop trail and the Cheshiahud Trail. It is also in close proximity to Lake Union Ferry service and Kenmore Air Harbor.

TRANSIT + TRANSPORTATION

- A1** South Lake Union Streetcar
- A2** Bus to Ballard, Fremont and Greenlake (Future potential streetcar)
- A3** Private shuttle bus stop
- A4** Transit information kiosk
- A5** Kenmore Air Harbor
- A6** Lake Union Foot Ferry

PEDESTRIAN + BICYCLE

- B1** Pedestrian amenities and improvements
- B2** Bike lanes
- B3** Lake to Bay Trail
- B4** Cheshiahud Trail
- B5** Bike Station

CIVIC + COMMUNITY

- C1** Lake Union Park
- C2** Center for Wooden Boats Education Center (Future)
- C3** Museum of History and Industry (MOHAI)
- C4** Northwest Native Canoe Center (Future)
- C5** Special event opportunity at surface parking



8

MOBILITY RECOMMENDATIONS MATRIX

1. Connect Communities	
A. Re-establish the east-west grid across Aurora Avenue at John, Thomas and Harrison Streets with attractive and safe "complete street" designs.	The North Portal of the Alaskan Way Viaduct Replacement project tunnel will remove a substantial volume of through traffic from Aurora Avenue N between Harrison Street and Denny Way and allow three existing streets—John Street, Thomas Street, and Harrison Street—to be reconnected across Aurora Avenue N. These reconnected streets provide new opportunities for east-west transit service, pedestrian connections, and bicycle connections.
B. Rename Aurora Avenue N between Harrison and Denny Way to its historic name: 7 th Avenue N.	The process to rename a street requires input from SDOT, and the Seattle Fire Department among others. It may also require City Council action.
C. Provide pedestrian and bicycle facilities on Thomas Street.	New facilities should be consistent with the City's Street Concept Plan and Green Street designation.
D. Provide a pedestrian/bicycle trail under Aurora Avenue N on Mercer Street.	This feature is proposed as part of the Mercer West project, which plans to widen Mercer Street under Aurora Avenue.
E. Create a RapidRide Station on surface Aurora Avenue N.	The RapidRide Station would be located on Aurora Avenue (to be renamed 7 th Avenue) between Harrison and Thomas Street. Other transit routes, such as those on Dexter Avenue N and 5 th Avenue N, should be diverted to Aurora Avenue to facilitate transfers. In addition, the station should integrate with other modes such as pedestrian and bicycle facilities on Thomas and Harrison Streets.
F. Design Harrison Street to accommodate future east-west bus service with stops at 7 th Avenue N.	The Alaskan Way Viaduct Replacement Project should incorporate features (such as increased pavement strength and sidewalk widths) for future transit service on Harrison Street between Dexter Avenue N and 5 th Avenue N.
G. Enhance the pedestrian crossings of 5 th Avenue N at Thomas Street and Harrison Street.	Existing traffic patterns—with a dual right turn from Harrison Street to 5 th Avenue N—create difficult pedestrian crossing conditions in the vicinity of Seattle Center. The signal cycle is also very long, which delays pedestrian crossings. In the future, the removal of Broad Street and reconnection of the east-west grid of streets across Aurora Avenue will change traffic patterns and eliminate the dual-right turn movements. The North Portal design should address pedestrian crossings at the intersections of 5 th Avenue N/Harrison Street and 5 th Avenue N/Thomas Street/Broad Street, and consider pedestrian curb bulbs and special pavement treatments. Pedestrian countdown signals should be considered for all new intersections.
H. Provide turning radii for large trucks at key locations where trucks will access Mercer Street and the SR 99 ramps.	The Alaskan Way Viaduct Replacement Project and Mercer West project should include corner radii suitable for large trucks at Mercer Street/5 th Avenue (southeast corner), Mercer Street/6 th Avenue (southwest corner), and on the Republic Street off-ramp from northbound SR 99.
I. Widen the Denny Way overpass of Interstate 5 to provide bicycle lanes and a sidewalk on the north side of the overpass.	This is recommended by the <i>Seattle Bicycle Master Plan</i> to improve the connection to Capitol Hill.
J. Evaluate other pedestrian connection opportunities between South Lake Union and Capitol Hill.	There are limited connection points between the two neighborhoods north of Denny Way. Improvement opportunities could include stairs, trails, and/or a new pedestrian overpass of Interstate 5.
2. Improve Transit Service	
A. Provide east-west transit service on Harrison Street connecting Uptown and Capitol Hill through the heart of South Lake Union.	There is no east-west transit service between Uptown and South Lake Union north of Denny Way. Such service would be viable once the Viaduct Replacement project is complete and the grid of streets is reconnected across Aurora Avenue. New east-west transit should be located on Harrison Street between 5 th Avenue N and Fairview Avenue N to serve the heart of South Lake Union and the Uptown Triangle. This street should have physical features needed to accommodate buses including adequate pavement, wide sidewalks at bus stops, and good pedestrian-level street lighting.

B. Increase transit service through South Lake Union by rerouting select Interstate 5-to-Downtown routes to the new Mercer Street ramps and Fairview Avenue N.	Explore opportunities in conjunction with transit agencies to increase transit service through the South Lake Union neighborhood by rerouting select existing Interstate 5 transit routes to the Mercer Street ramps. Metro, Sound Transit and Community Transit operate many routes from North Seattle, Snohomish County, and the Eastside that use I-5 and exit to downtown at the Stewart Street ramps. The Mercer East project provides the opportunity to divert routes to exit at Mercer Street and then travel on Fairview Avenue to reach the downtown core.
C. Improve transit reliability and operating conditions on Fairview Avenue N to entice more transit to route through the South Lake Union neighborhood.	Faster and more reliable transit travel speeds along Fairview Avenue could make it a more attractive path for transit, and create opportunities for increased service levels described in #2B above. Enhancements could include signal coordination and signal priority as well as transit-only lanes and on-street parking removal/restrictions or queue-jump lanes at key intersections.
D. Identify acceptable bus layover locations in the two urban centers in exchange for extending existing bus route service to these neighborhoods.	A few all-day routes that serve destinations south of downtown Seattle "layover" in the Belltown area between trips. The layover provides a driver rest break and also allows buses to stay on schedule. There are a couple dozen peak commuter routes that could be extended to begin and end in South Lake Union/Uptown if on-street or off-site layover space were provided in the South Lake Union/Uptown neighborhoods. Riders using these buses would no longer need to transfer downtown.
E. Work with Sound Transit to have buses that now layover in the South Lake Union neighborhood to make stops in the neighborhood as part of their route.	There are several Sound Transit routes to and from Pierce County (Route 590, 592, 593, 594, and 595) that layover on the east side of Eastlake Avenue E. These routes use Republican Street to return to Eastlake Avenue E and their first stop on Stewart Street near 9 th Avenue. Service for South Lake Union riders could be improved by creating a stop along Republican Street or Eastlake Avenue E.
F. Concentrate transit service near the future RapidRide Station on Aurora Avenue N between Harrison and Thomas Streets.	Once the Viaduct Replacement Project North Portal is complete, a RapidRide Station for the E-Line would be located on Aurora Avenue (to be renamed 7 th Avenue) south of Harrison Street. The curb lanes in each direction on Aurora Avenue would be dedicated as Business Access & Transit (BAT) lanes that would connect to the transit lanes on Wall Street and Battery Street and link to the Third Avenue transit corridor through downtown. These new features provide an opportunity for other north-south routes in the area (Routes 26 & 28 that use Dexter Avenue and possibly routes on 5 th Avenue) to use Aurora Avenue via Harrison Street to create a transit transfer point. In addition, the community desires new east-west transit service along Harrison Street. This concentration of transit service would enhance transfer options and likely improve passenger safety by increasing the number of people in the area.
G. Add transit lanes on Aurora Avenue N (7 th Avenue N) that connect to the Wall Street/Battery Street transit lanes.	The curb lanes in each direction on Aurora Avenue (7 th Avenue N) should be dedicated as Business Access & Transit (BAT) lanes that would connect to the transit lanes on Wall Street and Battery Street and link to the Third Avenue transit corridor through downtown.
H. Increase nighttime and weekend transit service.	South Lake Union is transitioning and will have up to 12,000 residents in the future. This change from mostly an employment center to a mixed-use neighborhood will require more all-day and weekend transit service. In addition, patrons to Seattle Center and Lake Union Park events could be enticed to use more transit if it was available at the end of evening events and on weekends.
I. Improve pedestrian lighting and amenities at and approaching transit stops and mobility hubs.	Provide wide sidewalks with continuous pedestrian-scale lighting along major walking routes to major bus stops and transit stations. Add weather protection at bus stops. Pedestrian wayfinding signs should include information about major transit stations such as the Aurora RapidRide or Streetcar stations.
J. Support additional Streetcar routes.	Consider extending the South Lake Union Streetcar to other neighborhoods, including downtown, Uptown, Fremont and the University District. The highest priority would be to connect the First Hill Streetcar line to South Lake Union and the Seattle Center, most likely through downtown.
K. Improve ability to use transit to circulate among the downtown neighborhoods.	As residential and employment growth continues in South Lake Union and the Uptown Triangle, there will be increased need to circulate among the downtown neighborhoods at all hours of the day. New transit and/or an extended streetcar may be needed to facilitate this downtown circulation.

3. Serve Regional Access and Mobility	
A. Complete the Mercer West project.	This project proposes to widen Mercer Street under Aurora Avenue to three lanes in each direction plus turn lanes, and convert Mercer Street west of 5 th Avenue N to two way operations.
B. Convert Roy Street west of 5 th Avenue N to two-way operations and add bike lanes.	This is also proposed as part of the Mercer West project. It is intended to calm traffic and discourage through traffic on Roy Street.
C. Improve pedestrian crossings at intersections along Mercer and Roy Streets.	The West Mercer project should improve pedestrian crossings at the Queen Anne Avenue/Roy Street intersection by eliminating the dual left and right turn lanes on westbound Roy Street. Improving pedestrian flow and safety at this intersection is one of Uptown's highest priorities. In addition, the Mercer West project should provide signalized pedestrian crossing on Mercer Street between 1 st Avenue N and 3 rd Avenue N to improve the pedestrian connections to the Seattle Center. Key pedestrian crossings (Queen Anne Avenue N/Roy Street and Mercer Street/5 th Avenue) should be enhanced with special treatments such as stamped and colored pavement, in-pavement flashers, and other treatments.
D. Discourage through traffic from using Republican Street between Dexter Avenue N and Fairview Avenue N.	The new northbound off-ramp from SR 99 would connect to Republican Street. Although it is classified as an arterial, there are many local driveways and pedestrian crossings along it that would be adversely affected by high through volumes. The neighborhood desires that through traffic be diverted to Mercer Street with the use of signage, signal timing, and other traffic calming measures.
E. Provide turning radii for large trucks at key locations where trucks will access Mercer Street and SR 99.	See 1.H. above.
F. Provide signage for the travel route from westbound Mercer Street to southbound SR 99.	Left turns from westbound Mercer Street to southbound 6 th Avenue and on to the SR 99 southbound on-ramp will not be allowed. One alternative route would loop in a clockwise direction from Mercer Street to Taylor Avenue N to Valley Street and SR 99. This travel route to SR 99 should be signed.
G. Continue to engage community in planning for construction of the major infrastructure projects.	Construction management plans and procedures established for the Mercer East project should be continued and expanded for the Mercer West and North Portal projects. This planning should consider Seattle Center event traffic needs as well as appropriate detours for all modes of travel.
4. Encourage Walking	
A. Reconnect Harrison, Thomas, and John Streets across Aurora Avenue.	See 1.A. above.
B. Implement Green Street improvements along Thomas Street between Eastlake Avenue and 5th Avenue N.	Thomas Street is currently designated as a "Green Street" between Fairview Avenue N and Eastlake Avenue E, and could be extended west through the study area to 5 th Avenue N. In collaboration with neighborhood groups, property owners and individuals, the City of Seattle is developing a streetscape concept plan for Thomas Street from Eastlake Avenue E to Elliott Avenue W. A streetscape concept plan is an urban design plan to help guide future streetscape and public realm improvements that can be implemented over time either through frontage improvements by private development or through capital projects. The Thomas Street Streetscape Concept Plan incorporates the major changes that are part of the design for the north portal of the Alaskan Way Viaduct Replacement project, which will reconnect the street grid across Aurora Avenue N. The plan also accommodates the Lake-to-Bay Loop that will use a portion of Thomas Street via an extra-wide sidewalk on the north side of the street. Designated east-west bicycle facilities are desired on Thomas Street between 5th Avenue N and Eastlake Avenue E and should be incorporated into the streetscape concept plan.
C. Signalize pedestrian crossings of Westlake Avenue N at Thomas Street and John Street.	A signal is currently being installed at Westlake Avenue N/Thomas Street intersection, and will facilitate crossings of this two-way arterial. Future signalization of Westlake Avenue N/John Street intersection is also desired. Traffic signal warrants (minimum traffic and pedestrian volumes) would need to be met before SDOT would install this signal.

D. Implement a comprehensive pedestrian wayfinding program using the already-adopted City Wayfinding System standards.	Wayfinding signs will be needed along the area's proposed Loop Trails, and should also be provided for key neighborhood destinations such as retail nodes and parks. Hard-to-find destinations, such as the Fred Hutchinson Cancer Research Center, could also be signed. Seattle's Wayfinding System, which includes sign design standard, should be extended to the South Lake Union neighborhood. Key locations where signs should be installed include: <ul style="list-style-type: none"> • Lake Union Park • Aurora RapidRide Station • Seattle Center – at base of Monorail • On Westlake Avenue at Streetcar stations • Along the Lake-to-Bay Loop Trail • Along routes to Fred Hutchinson
E. Address vehicular circulation impacts on pedestrian mobility in the Cascade Neighborhood.	Several improvements are recommended to reduce vehicle-pedestrian conflicts in the Cascade neighborhood. <ol style="list-style-type: none"> 1. Evaluate vehicle traffic control throughout neighborhood – There is a mix of two-way and all-way stop-controlled intersections in the Cascade Neighborhood that can be confusing to motorists and pedestrians alike. The existing traffic control measures should be reviewed given the substantial growth and change in traffic patterns that have occurred in recent years. Intersections that remain two-way stop-controlled (stop signs on just the side street) could be enhanced with repainted stop bars. All-way stops may be warranted at other locations. 2. Implement traffic calming techniques on non-arterial streets with cut-through traffic – Republican Street is the only designated arterial that passes through the Cascade Neighborhood. The other east-west streets—Harrison Street, Thomas Street, and John Street—are local streets. Traffic calming measures and special pedestrian crossing treatments, such as raised crosswalks and curb bulbs, could be considered to reduce traffic speeds and cut-through traffic between Eastlake Avenue E and Fairview Avenue E. 3. Consider all-way stop or traffic signal at Republican Street/Pontius Avenue E to improve pedestrian crossings and provide for local circulation to the arterial street. This treatment would require that warrants for a traffic signal or all-way stop be met.
F. Implement pedestrian improvements in the Denny Way Streetscape Concept Plan.	This includes widening the Denny Way Overpass of Interstate 5 to include a sidewalk on the north side, providing a signalized pedestrian crossing of Denny Way at Minor Avenue N, and improving crossings at key intersections. A new signal at Denny Way/Minor Avenue N would need to meet signal warrants and be approved by SDOT.
G. Improve pedestrian facilities along the Mercer Corridor.	There are many opportunities to improve pedestrian and bicycle mobility in the corridor. Key areas include: <ol style="list-style-type: none"> 1. Provide wide pedestrian/bicycle path on Mercer Street under Aurora Avenue – This feature is included in West Mercer project. 2. Improve pedestrian crossings at the Queen Anne Avenue/Roy Street intersection – See 3.C. above. 3. Provide signalized pedestrian crossing on Mercer Street between 1st Avenue N and 3rd Avenue N – See 3.C. above.
H. Improve pedestrian-level lighting.	The priority for improved lighting should be key pedestrian streets and routes to major transit facilities.
I. Complete the Lake-to-Bay Loop trail.	Originally imagined as the Pottlatch Trail, this 3.2-mile, pedestrian route between Lake Union and Elliott Bay would link several parks—Lake Union Park, Seattle Center, the Olympic Sculpture Park and Myrtle Edwards Park. After Mercer Street is widened under Aurora Avenue N, there would be a wide, multi-use path on the north side of that street that would provide the initial link among destinations. The loop would be complete once the Alaskan Way Viaduct Replacement project is completed and the grid of streets is reconnected across Aurora Avenue N. A wide sidewalk is proposed on Thomas Street along the north side to complete the loop route. A new pedestrian bridge across the BNSF mainline railroad tracks at Thomas Street will link the loop to the Elliott Bay shoreline. The loop would use a combination of sidewalks and separated trail along with wayfinding signs and maps to guide users along the route.

J. Enhance the Terry Avenue connection to Lake Union Park.	Terry Avenue is the main access to Lake Union Park. South of Mercer Street, Terry Street is being improved with streetscape improvements. The segment between Mercer Street and Valley Street should be improved with enhanced pedestrian crossings and sidewalk enhancement.
K. Prepare a Streetscape Concept Plan for Dexter Avenue N within South Lake Union.	Dexter Avenue N between Mercer Street and Denny Way has a very wide (106-foot) right-of-way. A Streetscape Concept Plan should be developed to guide extensive pedestrian, bicycle and landscape enhancements that could be made in this right-of-way.
5. Support Biking	
A. Make bicycle improvements proposed for the Mercer West project.	There are many opportunities to improve pedestrian and bicycle mobility in the Mercer Corridor west of Dexter Avenue N. Key elements include: <ol style="list-style-type: none"> 1. Provide wide pedestrian/bicycle path on Mercer Street under Aurora Avenue – This feature is included in the project to widen Mercer Street under Aurora. 2. Provide bike lanes on Roy Street – The West Mercer project proposes to convert Roy Street to two-way operation and locate bike lanes on both sides of the street. 3. Provide trail connection through Lower Kinnear Park – A trail that meanders through Lower Kinnear Park proposed to link Roy Street, Mercer Street, and Prospect Street at Elliott Avenue. This would provide a non-motorized connection between Uptown and Elliott Bay Park via the pedestrian bridge that crosses the railroad tracks at Prospect Street.
B. Provide for bicycles on Thomas Street between 5th Avenue N and Eastlake Avenue E.	Several east-west streets will be reconnected across Aurora Avenue N once the North Portal is complete: John Street, Thomas Street and Harrison Street. Thomas Street is also proposed to be a Green Street, and will likely have the lowest vehicular traffic. Bicycle facilities should be incorporated into the Street Concept Plan.
C. Improve the Dexter Avenue N bike lanes between Roy Street and Denny Way.	SDOT is currently improving the north segment of the Dexter Avenue N between Roy Street and the Fremont Bridge. This project includes many features to improve the bike lane, including a buffer between the bike lane and the travel lane. Some of these treatments could be extended to the segment of Dexter Avenue between Roy Street and Denny Way. <p>One improvement that should be considered as part of the Dexter Avenue N bike lane is to add a right-turn pocket to the right side of the bike lane on southbound Dexter Avenue N at Harrison Street to reduce conflicts with right-turning vehicles destined to SR 99 via Harrison Street. A green bike lane at this location could also be considered.</p> <p>At the Mercer Street intersection, consider treatments such as bicycle boxes and signal phasing to improve the transitions between Dexter Avenue N and the Mercer Street bike path.</p>
D. Improve bicyclist safety along 9 th Avenue with signal changes at Denny Way and at Harrison Street.	Three improvements are recommended to enhance mobility along and across 9 th Avenue: <ol style="list-style-type: none"> 1. Improve street lighting – stakeholders report that existing lighting is dim. 2. Operate the traffic signal at 9th Avenue/Harrison Street at all times – This signal sometimes operates as a signal, and sometimes in a flashing mode where the side street traffic on Harrison Street must stop. Both pedestrians and motorists are confused about who has the right of way. 3. Provide a separate southbound left turn phase at the 9th Avenue/Denny Way/Bell Street intersection – 9th Avenue and Bell Street do not align across Denny Way, but operate on the same signal phase. Southbound left turn traffic is supposed to yield to oncoming northbound through traffic on Bell Street; however, bicyclists report that motorists often turn in front of them. Providing a separate left turn phase would improve this condition.
E. Provide for bicycles on Harrison Street between Fairview Avenue N and 5 th Avenue N. Install a signal at Eastlake Avenue N.	These projects are from the <i>Seattle Bicycle Master Plan</i> .

F. Provide for bikes on Fairview Avenue N between Valley Street and Denny Way.	The <i>Seattle Bicycle Master Plan</i> calls for improvements along Fairview Avenue N, including intersection improvements at Denny Way, Valley Street and Mercer Street. Fairview Avenue N is also targeted by the South Lake Union Mobility Plan for transit enhancements. If a Business Access and Transit (BAT) lane is located on Fairview Avenue N, it could be shared with bicyclists. Special treatments would be needed on northbound Fairview Avenue N approaching Mercer Street because of the dual right-turn lane in this location.
G. Evaluate 5 th Avenue N as a potential north-south bicycle connection.	Depending on right-of-way availability a two-way cycle track may be an appropriate facility type for 5 th Avenue N.
H. Locate bike storage near major transit stations.	Bicycles can link transit to areas that might be beyond a comfortable walking distance. Secure bicycle storage at major transit stations that support this mode change.
I. Create a bike sharing program for Uptown, South Lake Union and Seattle Center.	The two Urban Centers of Uptown and South Lake Union are an ideal location for a Bike Share program. The neighborhoods are relatively flat, have (or will have) a robust grid for bicycling, and have major attractions that could be linked by bike. Successful bike share programs provide closely-spaced locations where users can access bicycles. Bike share facilities could be located at the major attractions, including Seattle Center, Lake Union Park, the Aurora Transit Station, and Denny Park, as well as at other locations such as near retail districts, major employment centers, and community facilities. The neighborhoods should work with the City of Seattle and King County Metro to develop a framework and business model.
J. Consider bike boxes and bike signals along key bike routes	For signalized intersections that require side-street detection of vehicles or pedestrians, provide in-pavement or video detection for bicycles. Key locations could include Roy Street west of Taylor Avenue, Thomas Street between 5 th Avenue N and Eastlake Avenue N, and Dexter Avenue N.
6. Leverage Private Transportation Investments	
A. Support private shuttles with passenger load zones along public streets at appropriate locations.	There are many companies and institutions that use private shuttles to transport employees and patients to sites in South Lake Union. They are not able to use public transit stops for loading and unloading. Several entities have worked with the City of Seattle to locate passenger load zones adjacent to transit stops, which makes it easier for shuttles to maneuver to and from the curb. The City should work with the neighborhoods to identify appropriate load zone locations and curb lengths. A new type of load zone—one that can only be used by authorized shuttles—should also be considered.
B. Support changes to State laws related to private shuttles that allow for private businesses to share resources.	State laws restrict operations for businesses operating private shuttles so that they do not compete with public transit. This can limit the ability for entities to share private shuttle services.
C. Incentivize frontage improvements.	Many desired frontage improvements are beyond City code requirements. This could include more extensive improvements than are typically required in order to comply with Street Design Concept Plans (such as along Thomas Street or Denny Way). Developers should be encouraged to enhance their frontages through credits against other transportation mitigation requirements or through other bonus programs.
D. Entice private transit funding through transit partnerships with matching grants or other funding mechanisms.	Businesses and institutions in South Lake Union have helped to fund past transit improvements through King County Metro's transit partnership program. That program or others should be continued and/or expanded.
E. Coordinate street and utility work within the right-of-way.	Construction disruptions related to street and utility upgrades should be minimized by implementing strategies such as joint trenching policies, and aligning capital improvement programs between SDOT, SPU, City Light and private utility providers.
F. Coordinate transportation demand management plans among businesses and institutions.	Businesses and institutions may be able to enhance travel demand management by coordinating plans and services including shared carpool or vanpool matching, coordinated private shuttle service (see 6.B. above), and leveraging key transit improvements that would serve multiple site needs.

G. Manage neighborhood parking resources to share parking among various.	Consider a program to manage parking resources to serve uses that have different peak demand characteristics. This could include sharing office parking that is needed on workdays with events that need parking in the evening or on weekends.
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7. Create Hubs for Mode Transfers

A. Create hub around the Aurora Avenue Rapid Ride Station.	There are two key locations where many transportation modes will intersect. One hub would be at the future Aurora Avenue RapidRide Station, between Harrison and Thomas Streets, where regional RapidRide service would meet local transit service. This node also connects with the Lake-to-Bay Loop trail, the Thomas Street Green Street and new east-west bike routes.
B. Create hub on Valley Street near Lake Union Park.	This hub would connect the South Lake Union Streetcar with the Lake-to-Bay Loop Trail, Cheshiahud Trail, and Valley Street bike paths. It would also be in close proximity to Kenmore Air Harbor and the proposed Lake Union Foot Ferry.

Holmes, Jim

From: Gloria Hennings |
Sent: Wednesday, March 02, 2011 11:43 AM
To: DPD_Planning_Division
Subject: South lake Union

Please consider keeping the height restrictions at the current restrictions. The additional height would hinder airplane paths as well as cause a strong impact on the neighborhood.

Thank you for your consideration.

Gloria Hennings

1

Frederick & Margaret Herb
116 Fairview Ave N. Apt. 616
Seattle WA, 98109

April 8, 2011

Seattle Department of Planning and Development (DPD)
Attn: Jim Holmes
700 Fifth Ave., Suite 1900
PO Box 34019

RE: South Lake Union Environmental Impact Statement

Dear Mr. Holmes

We are residents of South Lake Union and have also lived in Belltown for 18 years. In reviewing the South Lake Union (SLU) EIS and its proposed alternatives, it is our opinion that there are several shortcoming or oversights. The important ones are:

- No provision for families in the community. There are no schools and limited playgrounds! Yet, Amazon plans to have 6000 employees working in SLU within five years, per a Dec 22, 2007 Seattle Times article. Supporting services and other businesses will add substantially more employees to the 6000. According to 1996 Department of Labor data approximately 40% of these employees will have school age children. Where are they going to live? Not in SLU, unless schools are added to the neighborhood. If not, they will have to commute from family friendly communities. | 1
- Limited and expensive parking – Given the densities the EIS is proposing, the current ground level parking lots will likely be built on. This will result in fewer and/or more expensive in-building parking. This will harm the many patients and visitors to the biotech and other health care services in the area. Car parking for lesser paid employees will be prohibitive, and resident street parking permits may be in jeopardy. | 2
- Poor commuter access into and out of SLU. While north/south transit service is adequate, the east/west service is limited to a single Metro bus, route #8. This bus has a dismal on-time record because it travels on highly congested Denny Way and originates 10 miles away on the east side at S. Henderson and Rainier Ave S. It is not unusual for three buses to arrive at the same time at a stop. Denny Way is one of the most congested streets in Seattle. | 3
- The proposed densities will create a community with shallow roots. New housing will be apartments and costly high-rise condominiums. Most of the residents will be transients, yuppies, empty-nesters, and second or third home occupants. Most will be short-timers or occupied with interests outside of the community. | 4
- The proposed densities and setbacks are reminiscent of the planning mistakes made in the last decade in north Belltown and the Denny Triangle, where high-rise building are adjacent | 5

with little or no setback. A walk or drive along Western or Elliot Avenues in Belltown is like going through concrete canyon where you will rarely see your shadow. Eighty-five foot high podiums as identified for Alternative 1 and ten foot upper level setbacks as shown in the SLU Design Framework do not make any sense in perpetually cloudy Seattle. Further, we would strongly urge limiting towers to one per block. If developers acquire full blocks they should be allowed to vacate the alleys, center their towers and go as high as they care to with correspondingly wider setbacks.

5 cont

- High-rise condominiums at the base of Lake Union will block the lake view and diminish the value of residential building behind them. As a consequence the cumulative value of the neighborhood will likely be less than if step-down zoning to the lake were enforced.
- There does not appear to be a requirement that all of the additional height bonus benefits be used in South Lake Union. It seems inappropriate to derive benefits from one neighborhood and to apply them to another.
- Our general observation is that the EIS document is long on information but short on mitigating solutions. There is a lot of work remaining to be done.

6

7

8

We trust that the Department of Planning and Development will consider our concerns and suggestions as they continue their future planning for South Lake Union.

Sincerely,



Frederick Herb



Margaret Herb

Cc: Seattle City Council Members

McCULLOUGH HILL LEARY, PS

April 11, 2011

Dept. of
Planning & Development
APR 12 2011
RECEIVED

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Avenue, Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Re: South Lake Union
Height and Density Alternatives
Draft EIS

Dear Mr. Holmes:

Thank you for the opportunity to comment on the Draft EIS for the South Lake Union Height and Density Alternatives proposal. This comment is on behalf of Touchstone Corporation.

Touchstone, other property owners and a number of locally headquartered companies have commented on the proposed 24,000 sf floorplate limitation on commercial towers. They have explained that this proposed limitation is unworkable for today's high tech tenants. Rather, a maximum 35,000 sf floorplate should be studied under Alternative 1. | 1

It is fully appropriate that the Final EIS evaluate this modification of Alternative 1. Indeed, it is required. "The lead agency shall prepare a final environmental impact statement [and] shall consider comments on the proposal and shall respond [to those comments]" WAC 197-11-060(1). Possible responses are to: (a) **modify alternatives including the proposed action**; and (b) develop and evaluate alternatives not previously given detailed consideration by the agency. Id. See also 2003 SEPA Handbook at Section 3.5.1 ("The lead agency **must consider comments received during the draft EIS comment period, and respond to them in the final EIS**" (emphasis added)). | 2

Because such a modification to Alternative 1 would result in no increase in allowed FAR, it would appear that an environmental analysis of this modification could be limited to the issues of aesthetics and open space. No additional impacts to geology and soils, air quality, water quality, plants and animals, environmental health, noise, energy, land use, housing, historic or cultural resources, transportation, public services, or utilities would be expected.

Thank you for your consideration of this comment.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Richard Hill". The signature is written in a cursive, somewhat stylized font.

G. Richard Hill

cc: AP Hurd
Douglas Howe
Diane Sugimura

Holmes, Jim

From: Hillary Holberg
Sent: Monday, April 11, 2011 1:31 PM
To: DPD_Planning_Division
Subject: South lake union

I grew up in the greater Seattle area and attended college in the city. I now work throughout Seattle and dine and shop in the south lake union area. I am in support of the expansion of the neighborhood because more people in the area will mean more people to support the retailers and restaurants. This expansion also reduces the need to live and work in different areas and will make it more attractive to those looking to relocate. Please consider rezoning the South Lake Union neighborhood. 1

thanks,

Hillary

Holmes, Jim

From: Robert J. Holmes | The Holmes Group (THG, LLC) [rholmes@thgadvisory.com]
Sent: Thursday, March 24, 2011 8:01 PM
To: DPD_Planning_Division
Subject: MY VIEW ON SOUTH LAKE UNION ZONING

I support the proposed zoning changes in SLU.

My reasons are many but most importantly is that density is good. Density supports mass transit and walkable communities as well as housing affordability and housing choice.

This zoning will send a positive message through the USA development community as well as the finance community. Seattle is open for business. It sends a positive message and hopefully counteracts the foolish musings of a mistaken misguided Mayor. Money, and access it, is the fuel that makes the economy run. We need jobs, better yet higher paying jobs, and the SLU neighborhood has demonstrated an ability to attract job producing industry and implement same (SBIR, Children's, NBBJ and Skanska to name a view).

It not only a time for action but a time for the Council to lead. Being against is easy, being supportive is courageous. Time to lead.

Thanks for the opportunity to comment.



April 6, 2011

Jim Holmes
 City of Seattle
 Department of Planning and Development
 700 Fifth Ave, Suite 2000
 Seattle, WA 98124-4019

Dear Mr. Holmes,

Touchstone is supportive of zoning that is consistent with EIS Alternative 1 with the addition of larger commercial office floorplates of 35,000SF.

Touchstone is a leading regional developer of transit-oriented, mixed-use projects. We pride ourselves on delivering exceptional value to tenants with a focus on technology and biotechnology companies. Furthermore, we have a 30 year commitment to the region and its communities and we strive to create legacy neighborhoods that strengthen those communities. We have developed award winning commercial buildings in Seattle, including in the Denny Triangle and Belltown. Most recently, our Kirkland Park Place redevelopment project (in Kirkland, WA) was recognized by the Quality Growth Alliance as a leading example of a project that meets our regional development goals with sensitivity to community, context and environment.

We control two properties in the South Lake Union and Cascade neighborhoods and have reviewed the Draft EIS. While there are many aspects of the DEIS that are worthy of comment, we limit our suggestions in this letter to three key issues that we feel are critical to the successful growth of this neighborhood and to the city as a whole:

1. The analysis framework for CO2 impacts is flawed.
2. A mismatch exists between the employment program of growth tenants and max office floorplates.
3. The analysis of Aesthetics and Open Space should evaluate alternatives to podiums.

1. Analysis framework for CO2 impacts is flawed

The analysis of Air Quality on p.1-11 of the DEIS and of Energy/GHG emissions on p. 1-14 of the DEIS is flawed because of a problem with the system boundary for the analysis. The DEIS leads readers to believe that limiting growth in urban centers improves our air quality and carbon footprint. This analysis is only correct if the growth that is limited in urban centers doesn't occur anywhere else. In reality, growth that is not accommodated in urban centers occurs instead at the fringe of the city which leads to far higher GHG emissions from travel (since trips to and from the fringe are longer and less likely to happen on non-SOV modes) and infrastructure (since the infrastructure needs to cover longer distances and is used less intensively).

1

2



A more appropriate analysis framework would either account for a fixed amount of growth and examine the CO2 impacts of having it clustered in an urban center (vs. more dispersed in the lower density alternatives). Another option is to look at the CO2 profile of the region and evaluate different options for clustering growth, with non-SLU growth being accommodated elsewhere.

2 cont

This is not unlike balancing a budget-- money for a budget needs to come from somewhere, and growth for a region needs to go somewhere. It's erroneous to just ask people about the impact of more money for schools (and show that schools do better with more money) without thinking about where the extra money will come from and what will be the negative impact of *those* cuts.

2. A mismatch exists between the employment program of growth tenants and max office floorplates

3

South Lake Union has gained prominence as a choice location for companies in the information technology and biotech industries and is the logical "expansion valve" for downtown to accommodate our region's high growth companies.

The four alternatives in the DEIS contemplate maximum floor-plate sizes of 24,000 SF for commercial office towers. This is inadequate to meet the program requirements of companies in the information technology and biotechnology sectors. At Touchstone we work closely with these companies in developing technology office projects and we consistently hear them looking for floorplates in the 35,000 to 40,000 SF range. This is frequently a major filtering criterion for tech. and life science enterprises in selecting a location. They prefer large floorplates because they are more mechanically efficient and they enable more collaboration and innovation within and among their workgroups.

Given the growth that these industries have--and will-- catalyze in our region over the next two to three decades, it seems critically important to preserve the opportunity to zone in a way that is consistent with their program needs. In fact, if we zone in a way that does not meet their needs, we will push these companies to locate elsewhere to the detriment of:

- our City's economy,
- our ability to reach our GMA growth targets in South lake Union, and
- our City's ability to access funding for low income housing through the incentive zoning program.

The final EIS must account for larger floor plate studies. We recognize that including such study may incur some additional costs (even though FAR and height would be held constant). However, it seems clear that losing these tenants to another region would be an unacceptable price to pay for a few dollars saved. At a minimum, the Fairview employment corridor (both sides of Fairview) is an important micro-region in which to conduct such a study.

3. The analysis of Aesthetics and Open Space should evaluate alternatives to podiums

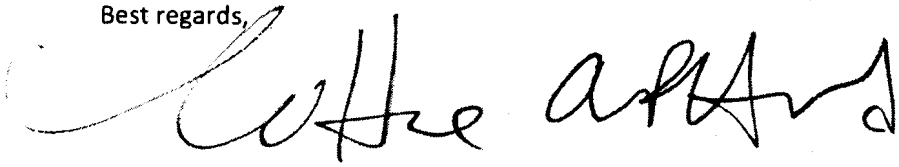
4

The 4 Alternatives contemplated in the DEIS all allow full-block podiums of varying heights. In the case of nearly every block, exploiting the full FAR available depends on building out the full podium. This creates a strong incentive to do full-block podiums which are not ideal from an urban design perspective *particularly* on the 100,000+ SF blocks along Fairview.

We suggest that the final EIS consider creating more ground floor open space as an alternative to 100,000SF podiums, in exchange for being able to exploit the FAR in larger (35,000SF) floor-plate towers. We strongly suspect that the Aesthetics and Open Space impacts from the public pedestrian level would be substantially reduced, even with the marginally larger floorplates. On the whole, this would be a configuration that mitigates impacts while still deploying FAR to support our region's GMA goals.

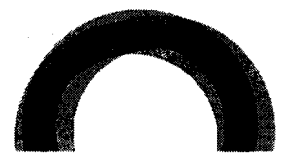
We appreciate your consideration of these comments.

Best regards,

Handwritten signatures of Douglas Howe and A-P Hurd. The signature of Douglas Howe is on the left and the signature of A-P Hurd is on the right.

Douglas Howe

A-P Hurd



Holmes, Jim

From: Mary Hoy
Sent: Monday, April 11, 2011 3:37 PM
To: Holmes, Jim
Subject: Re: South Lake Union Height & Density Draft EIS Comments

April 11, 2011

James Holmes, Senior Urban Planner
City of Seattle Department of Planning & Development
700 – Fifth Avenue, Suite 1900
Seattle, WA 98101

Re: South Lake Union Height & Density Draft EIS Comments

Dear Mr. Holmes:

My name is Mary Hoy and I'm a business owner and resident in the Roosevelt Neighborhood. What's compelled me to comment on the South Lake Union DEIS is that I'm a big fan of transit oriented development and support the concept of greater residential/job density near the Roosevelt Light Rail Station. We have our share of a few vocal neighborhood activists who oppose increased building density just to preserve the status quo and protect private views.

I've observed the opposition to "smart growth" by the Lake Union Opportunity Alliance (LUOA) who state they embrace development, welcome vibrancy, are excited for growth, and will do everything they can to make sure the people living in and around South Lake Union can say: *"It was Done Right In My Back Yard!"* How ironic that this so-called community group strongly opposed the expansion of the University of Washington School of Medicine Research Facility in South Lake Union and take an out-dated approach of supporting lower building heights as you get closer to Lake Union. Protecting private views is not in the best interest of the City of Seattle and South Lake Union will become even greater in the near future by adopting Alternative 1.

The growth of the South Lake Union neighborhood has been one of the few bright spots for the entire City during this recession – retaining and expanding the Amazon Campus, growth of the UW School of Medicine Research Facility, and Museum of History of Industry calling Lake Union Park it's new home. I look forward to the day when I can take my grandchildren on a streetcar ride to Lake Union Park that is activated by quality taller buildings along Valley Street with active retail and great plazas.

Please support and adopt Alternative 1 that will benefit my grandchildren and citizens of Seattle.

Thank you for the opportunity to comment.

Mary Hoy

Holmes, Jim

From: Brock Huard [bhuard@espenseattle.com]
Sent: Tuesday, March 29, 2011 9:05 PM
To: DPD_Planning_Division
Subject: Density in SLU

As an owner in South Lake Union I want to make clear my support of Alternative A-1. I would like to see higher commercial zoning for 8th Ave. North and an upzone will benefit many. The upzone will provide for more efficient land use, should reduce urban sprawl, and will maximize density and height. 1

It is clear that South Lake Union is on the cutting edge of growth and development as SLU has the existing, paid for infrastructure, especially when it comes to transportation, to push for proper growth. While at the same time it's proximity to the downtown core is invaluable.

With affordable housing, biotech and tech companies adding jobs, it is clear South Lake Union is thirsty and capable of more density and growth.

In summary, if not more density in South Lake Union, WHERE?

Sincerely,

Brock Huard

Holmes, Jim

From: Huberty, Dan [r]
Sent: Monday, March 28, 2011 8:51 AM
To: DPD_Planning_Division
Subject: South Lake Union Height and Density Draft Environmental Impact Statement

When the voters rejected the proposed South Lake Union Park, there was concern about what the future of the area would be. Change was inevitable given the value of the land and its proximity to the City Center, Seattle Center and the University of Washington as well as the investments already made in the area by the Hutch and other businesses. Since then the investments by the City and the planning by the City, neighborhood and property owners has resulted in development of public and private projects that have seemingly achieved many of the objectives envisioned in the original Park plan.

Over the last ten years the South Lake Union neighborhood has evolved from a collection of basically one story buildings into a collection of midrise buildings providing an environment for work, home and play. As I look at the scale model of the area it is apparent that this area could absorb much more density, not unlike the central business district. Such density would make use of the existing infrastructure in lieu of investing in new infrastructure elsewhere, maximize the use of scarce land and place development where there is access to a variety of transportation options. The added density will also support the businesses that have already located there as well as encourage new business and increase the diversity of office tenants.

I support the increase height and density proposed in the subject Impact Statement and encourage the City to plan for the long term future and to capitalize on the investments the City and the private sector has already made in the area.

Dan Huberty ZGF ARCHITECTS LLP
 FAIA D 206.521.3402 F dan.huberty@zgf.com
 Partner 925 Fourth Avenue, Suite 2400
 Seattle, WA 98104

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Holmes, Jim

From: Brendan Hughes
Sent: Monday, April 11, 2011 9:51 AM
To: DPD_Planning_Division
Subject: SLU EIS

I'm a North Seattle resident and frequently spend time with friends in South Lake Union after work or on the weekends. Over the past year, I've noticed the streets filled with more people as more employers like Amazon move into the neighborhood and new restaurants open. I think it is just a glimpse of what is possible in this urban center. There are many reasons I support taller buildings in South Lake Union, but ultimately it comes down to how our city can best accommodate people into the urban core instead of outlying neighborhoods - i.e. growing up instead of out. If not in South Lake Union, where else do we expect to place growth that is coming in Seattle whether we like it or not? The city should support the alternative #1 because it is the most aggressive and the most responsible option to ensure we grow smart. 1

Thank you,

Brendan Hughes

Holmes, Jim

From: A-P Hurd
Sent: Monday, April 11, 2011 11:02 AM
To: DPD_Planning_Division
Subject: Support the Alt 1 Rezone in South Lake Union with 35,000SF Technology Office Floorplates
Attachments: Touchstone Support Letter.pdf

Dear Mr. Holmes,

Touchstone is supportive of zoning that is consistent with EIS Alternative 1 with the addition of larger commercial office floorplates of 35,000SF.

Touchstone is a leading regional developer of transit-oriented, mixed-use projects. We pride ourselves on delivering exceptional value to tenants with a focus on technology and biotechnology companies. Furthermore, we have a 30 year commitment to the region and its communities and we strive to create legacy neighborhoods that strengthen those communities. We have developed award winning commercial buildings in Seattle, including in the Denny Triangle and Belltown. Most recently, our Kirkland Park Place redevelopment project (in Kirkland, WA) was recognized by the Quality Growth Alliance as a leading example of a project that meets our regional development goals with sensitivity to community, context and environment.

We control two properties in the South Lake Union and Cascade neighborhoods and have reviewed the Draft EIS. While there are many aspects of the DEIS that are worthy of comment, we limit our suggestions in this letter to three key issues that we feel are critical to the successful growth of this neighborhood and to the city as a whole:

1. The analysis framework for CO2 impacts is flawed.
2. A mismatch exists between the employment program of growth tenants and max office floorplates.
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A more appropriate analysis framework would either account for a fixed amount of growth and examine the CO2 impacts of having it clustered in an urban center (vs. more dispersed in the lower density alternatives). Another option is to look at the CO2 profile of the region and evaluate different options for clustering growth, with non-SLU growth being accommodated elsewhere.

This is not unlike balancing a budget-- money for a budget needs to come from somewhere, and growth for a region needs to go somewhere. It's erroneous to just ask people about the impact of more money for schools (and show that schools do better with more money) without thinking about where the extra money will come from and what will be the negative impact of *those* cuts.

2. A mismatch exists between the employment program of growth tenants and max office floorplates

South Lake Union has gained prominence as a choice location for companies in the information technology and biotech industries and is the logical "expansion valve" for downtown to accommodate our region's high growth companies.

3
cont

The four alternatives in the DEIS contemplate maximum floor-plate sizes of 24,000 SF for commercial office towers. This is inadequate to meet the program requirements of companies in the information technology and biotechnology sectors. At Touchstone we work closely with these companies in developing technology office projects and we consistently hear them looking for floorplates in the 35,000 to 40,000 SF range. This is frequently a major filtering criterion for tech. and life science enterprises in selecting a location. They prefer large floorplates because they are more mechanically efficient and they enable more collaboration and innovation within and among their workgroups.

Given the growth that these industries have--and will-- catalyze in our region over the next two to three decades, it seems critically important to preserve the opportunity to zone in a way that is consistent with their program needs. In fact, if we zone in a way that does not meet their needs, we will push these companies to locate elsewhere to the detriment of:

- our City's economy,
- our ability to reach our GMA growth targets in South lake Union, and
- our City's ability to access funding for low income housing through the incentive zoning program.

The final EIS must account for larger floor plate studies. We recognize that including such study may incur some additional costs (even though FAR and height would be held constant). However, it seems clear that losing these tenants to another region would be an unacceptable price to pay for a few dollars saved. At a minimum, the Fairview employment corridor (both sides of Fairview) is an important micro-region in which to conduct such a study.

3. The analysis of Aesthetics and Open Space should evaluate alternatives to podiums

The 4 Alternatives contemplated in the DEIS all allow full-block podiums of varying heights. In the case of nearly every block, exploiting the full FAR available depends on building out the full podium. This creates a strong incentive to do full-block podiums which are not ideal from an urban design perspective *particularly* on the 100,000+ SF blocks along Fairview.

4

We suggest that the final EIS consider creating more ground floor open space as an alternative to 100,000SF podiums, in exchange for being able to exploit the FAR in larger (35,000SF) floor-plate towers. We strongly suspect that the Aesthetics and Open Space impacts from the public pedestrian level would be substantially reduced, even with the marginally larger floorplates. On the whole, this would be a configuration that mitigates impacts while still deploying FAR to support our region's GMA goals.

We appreciate your consideration of these comments.

Best regards,

A-P Hurd

 touchstone

2025 First Ave, Suite 1212
Seattle, WA 98121

Holmes, Jim

From: Doug Ito [dito@smrarchitects.com]
Sent: Thursday, March 31, 2011 1:41 PM
To: DPD_Planning_Division
Subject: SLU EIS comments

Seattle Department of Planning and Development

Attn: James Holmes

700 Fifth Avenue, Suite 1900

P.O. Box 34019

Seattle, WA 98123-4019

March 31, 2011

Re: South Lake Union EIS.

Mr. Holmes

The following comments reflect my personal concerns and comments concerning the EIS for the South Lake Union area in Seattle. As an architect that was born and raised and lives and works in this city, I have a vested interest in what our city is, and will become in the future.

Seattle's "downtown core" is limited by a number of geographical features, Capitol Hill to the East, Puget Sound to the West, on the Northwest is Queen Anne Hill, and South edge of downtown is bordered by a historic district, stadiums built on fill. That leaves South Lake Union neighborhood as our City's best option to expand its vital and exciting urban center, while limiting that impact on Seattle's great neighborhoods.

This expansion area is also very limited and to maximize the opportunity for Seattle to grow the best option as see it is to allow for taller structures. Height equals Density. To allow for added growth via height and density in South Lake Union would do a number of things:

It's environmentally sound – walk-able districts close to jobs are less auto oriented and also increases the use of bikes and transit.

Reduces urban sprawl – and thus protects farmlands and wilderness areas

Economically sound – It creates jobs, and increases the tax base.

In summary my comments are to increase density, and height in this area.

Thank you

Holmes, Jim

From: Annalisa Johnson
Sent: Monday, April 11, 2011 11:02 AM
To: DPD_Planning_Division
Subject: SLU EIS Comment

I work in South Lake Union but I also enjoy the neighborhood for its abundance of great restaurants. Over the past five years the neighborhood has changed significantly. Where before it was relatively unknown and underutilized given its proximity to downtown Seattle, it now boasts of global employers and famous chefs' restaurants. The neighborhood is eclectic and energized – more so every day.

In order to continue to build a great neighborhood to live, work and play in we need to allow for more efficient development so that it can support both business and residential needs. This type of development is environmentally conscious. If a person can live and work in the same area the need for a car is reduced. It allows for more direct and useful transit options which are greatly needed in the Seattle area.

Please consider rezoning the South Lake Union neighborhood. Make South Lake Union a national example of sustainable urban growth.

Thank you,

Annalisa Johnson

March 17, 2011


To Whom It May Concern:

I am writing this letter in support of the South Lake Union Height & Density Draft Environmental Benefits Statement. I firmly believe that it is in the best interest of the City of Seattle and surrounding Metro area to allow growth in the downtown areas by increasing the density in our Cities and slowing down the urban growth that has put undue pressure on the outlying areas roads and infrastructure. I also believe that the City of Seattle needs to expand the downtown area north into South Lake Union and taller buildings that may result would be a positive not negative impact for the City and region. Many recent studies point to the need to have live/work neighborhoods within our Cities and South Lake Union is a prime example of what this can and will look like in the future. South Lake Union has long languished in the shadow of downtown and now is the time to tie the sub-areas together and respond to the demands of our employers and employees who want to live and work downtown.

While I don't live in the City of Seattle, I have worked, shopped and enjoyed the cultural events there for over forty years and seeing the redevelopment of South Lake Union has been an exciting process that I believe is just the beginning for Seattle as other areas (SODO for example) see the positives and move forward with their own development initiatives. The jobs that are being brought to the area would most certainly be lost to urban locations or possibly other States without these proposed increases and the tax dollars and employee spending would be lost at a time when the City of Seattle needs it the most. I believe the projects that have been ongoing in the South Lake Union area even in these very tough economic times are a testament to the allure of working, living and playing in a downtown area and the City should build upon what they have started not restrict it with low-rise construction and low FAR's (as compared to downtown).

The timing is right, the location is a natural, the City needs room to grow and this proposal should be approved.

Sincerely,



Jay-S. Johnson

April 9, 2011

Dear Seattle Department of Planning and Development:

In response to the EIS Comment Period - SLU Height & Density, I am writing in support of additional height and density in South Lake Union. I represent a specific community/perspective regarding the South Lake Union neighborhood.

I was born in Seattle and I have lived in the Seattle area all of my life. I believe that I am familiar with Seattle and the general history regarding the SLU neighborhood. Several years ago, I worked in the SLU area and lived on Queen Anne for approximately 5 years. In the past, I spent a lot of time sailing, which has from time to time involved visiting South Lake Union via the Lake to enjoy some of the local restaurants. The home office of the company where I am currently employed, and have worked at for approximately 4 years is located in the SLU neighborhood.

I support a neighborhood in SLU because of its location to DT Seattle and other attractions. SLU is an area where families can live, easily utilize public transportation, walk or bicycle to work, school or play. The neighborhood is located in a wonderful area & until the recent development of the area; the neighborhood was pretty much "deprived" from being enjoyed by Seattle for business opportunities and any desirable places to live. The SLU neighborhood has been energized over the past few years – this has benefited Seattle. The neighborhood no longer appears to be "dying on the vine," it has come to life.

My request to the City and decision makers is to move forward in fostering the future development of SLU neighborhood & to stimulate growth and prosperity of the neighborhood. I believe this would benefit the people of Seattle by continuing to revive a beautiful area into a neighborhood where people live, work, and go to school and play. With strategic and careful planning, taller buildings would minimize urban sprawl and bring even more life to the neighborhood. Due to the growth targets and balance it provides, I prefer Alternative 1.

Thank you,

Linda Kaivola

1

MCCULLOUGH HILL LEARY, PS

April 7, 2011

VIA ELECTRONIC AND REGULAR MAIL

Seattle Department of Planning and Development
 Attn: James Holmes, Senior Urban Planner
 700 Fifth Ave., Suite 1900
 P.O. Box 34019
 Seattle, WA 98124-4019
 Email: southlakeunioneis@seattle.gov

Re: Comments on Draft EIS, South Lake Union Height and Density Alternatives

Dear Mr. Holmes,

We are writing on behalf of the Boris V. Korry Testamentary Trust ("Korry Trust") to provide comments on the Draft Environmental Impact Statement ("Draft EIS") for the South Lake Union Height and Density Alternatives. The Korry Trust owns four properties located within the 8th Avenue Corridor at the intersection of Thomas Street and 8th Avenue North (Parcels 1991201080, 1991201085, 1991201095 and 1991201400) ("Korry Properties").

The Korry Trust supports the increased densities in the South Lake Union area discussed in the Draft EIS. The Draft EIS fails, however, to consider the practical and legal limitations that will prevent these densities from being realized on many properties, including the Korry Properties. The purpose of an EIS is to provide "the full disclosure of environmental information so that it can be considered during decision making." *Barrie v. Kitsap County*, 93 Wn.2d 843, 854, 613 P.2d 1148 (1980); *Mentor v. Kitsap County*, 22 Wn. App. 285, 291, 588 P.2d 1226 (1978) (An EIS should "serve to inform lawmakers of the environmental consequences of the proposal before them."). In order to support informed decision making by the City, the Draft EIS must be revised to identify these limitations and their consequences. The EIS must also consider alternatives that mitigate the impacts of these limitations on development capacity. WAC 197-11-400 (An EIS shall "inform decision makers and the public of reasonable alternatives . . . that would avoid or minimize adverse impacts or enhance environmental quality." (Emphasis added.)).

Minimum Lot Size

Alternatives 1-3 all assume that a minimum lot size of 22,000 square feet ("s.f.") for towers outside the shoreline area is necessary to ensure a maximum of two towers per block. Draft EIS, p. 1-5. This assumption is faulty and unreasonable because it fails to take into account divided property ownership within blocks, the existence of properties that are unlikely to develop due to their current use, and legal constraints on the development of landmark properties. For example, on the block containing the Korry Property, almost half the block is owned by the Denny Park Lutheran Church

and is unlikely to redevelop.¹ An additional parcel is occupied by a potentially eligible landmark structure.² The remaining five parcels are in three separate ownerships and total only 39,600 s.f., with less than 22,000 s.f. located on each side of the alley (21,600 s.f. in the contiguous three lots owned by Korry on 8th Avenue North, and 18,000 s.f. in the two lots in two ownerships on Dexter Avenue North).³ Thus, on the block that includes the Korry Property, the 22,000 s.f. minimum lot size has the unintended consequence of limiting the number of towers to a maximum of one – in theory (assuming a large assemblage can be made and the alley vacated). In actuality, the imposition of this new minimum lot size requirement will motivate owners with properties totaling less than 22,000 to vest and develop under existing regulations, thwarting the City's goal of accommodating increased density in slender buildings. If owners do not develop under existing regulations, they will need to consolidate ownerships and obtain an alley vacation in order to develop even a single tower on this block. These limitations will likely result in delayed redevelopment and blighted conditions in the interim.

2 cont

The Draft EIS must clearly disclose the impacts of the 22,000 s.f. minimum lots size to development capacity on this and other similarly situated blocks. These impacts include the following:

- Land use. The minimum lot size results in a diminished ability to satisfy the City's goals of a dense vibrant mixed use community in the South Lake Union area.
- Housing. The minimum lot size increases the value of the properties able to be developed with a tower, thereby reducing housing affordability. The minimum lot size also decreases the supply of housing by limiting towers to one – or none – per block on some blocks.
- Aesthetics. The minimum lot size reduces the benefits achieved through the use of incentives, since fewer towers will be constructed than anticipated. In addition, the inability to construct more than one tower on a block is compounded by the extremely restrictive podium height in the 8th Avenue Corridor (ranging from 45 to 20 feet for Alternatives 1-3). The prospect of such a drastic downzone for "remnant" properties (the Korry Properties, at 21,600 s.f., would be a very large remnant) unable to be developed with towers makes it more likely that property owners will submit permit applications to vest to the current zoning regulations, resulting in buildings with bulkier profiles, the very result the new regulations are intended to avoid. In the alternative, remnant properties that are unable to develop under existing regulations will likely remain undeveloped under the extremely restrictive podium heights imposed on the 8th Avenue Corridor, resulting in deterioration and blight. In particular, this adverse impact to the environment surrounding Denny Park (one of the primary jewels of the South Lake Union area) would have far reaching negative

¹ The church owns two lots totaling 3,240 s.f. The church property is also potentially eligible for landmark designation. Draft EIS, pp. 3.11-8-3.11.9. The Draft EIS acknowledges that properties owned by churches and landmark properties are unlikely to develop. Draft EIS, Appendix B, pp. 2-3.

² This is the Holly Press property. Draft EIS, pp. 3.11-8-3.11.9.

³ Two of the lots are undersized due to their frontage on Dexter Avenue N.

consequences.

- Historic resources. The minimum lot size increases the development pressure on historic properties in blocks in which these properties are necessary to achieve the 22,000 s.f. minimum.

The Draft EIS does not meaningfully address these issues, as it fails to identify the current assemblages of less than 22,000 s.f., or the impediments to creating such assemblages. In order to inform decision makers of the consequences of their actions, the Draft EIS must perform a more fine-grained analysis of the development capacity of the South Lake Union area.

In addition to identifying the impacts identified above, the Draft EIS must identify reasonable alternatives to allow achievement of full development capacity, including a reduction in the minimum lot size, for blocks with development constraints.

Urban Design Framework

The Korry Properties are located at the corner of 8th Avenue N and Thomas Street and on 8th Avenue North just south of Thomas Street. The Final Urban Design Framework (December 2010) ("Framework") designates 8th Avenue North between John Street and Roy Street a "Woonerf Street." Framework, p. 12. These streets

substantially reduce auto capacity of a street to emphasize the pedestrian or bicycle user. They may be closed to all vehicles except deliveries or emergency vehicles. They may act as linear open spaces, utilizing the ROW for active or agricultural uses like P-Patches. These are primarily residential corridors, or areas where limited auto use is expected.

Id. Thomas Street is designated as a Green Street, which "are low intensity streets that prioritize pedestrian and bike mobility over automobiles." *Id.*

The Draft EIS fails to take into account the impact of these significant proposed restrictions on automobile movement. *See* Draft EIS, Figure 3.13-13 (Reasonably Foreseeable Transportation Improvements); Figure 3.13-15 (Pedestrian and Bicycle Improvements Not Assumed Under Future Conditions). Vehicular access to some properties may be precluded (one of the Korry Properties, for example, is developed with a parking lot that is accessed from a portion of 8th Avenue North proposed to be closed as a Woonerf Street).⁴ The traffic that now travels on 8th Avenue North will be diverted to other streets. These proposals are significant and should have been analyzed in the Draft EIS. The nontraditional traffic analysis methodology employed by the Draft EIS fails to take these street modifications into account and does not adequately analyze the traffic impacts of

⁴ This parcel is sandwiched between properties housing newly developed low income housing, which is unlikely to be redeveloped, and a church, which is either unlikely to be developed or, if developed, already exceeds the 22,000 s.f. threshold. As a result, the Korry parking lot parcel is extremely unlikely to be included in a larger assemblage totaling more than 22,000 s.f. The drastically reduced height limit for this property, combined with the restricted vehicular access, will deprive it of all reasonable economic use.

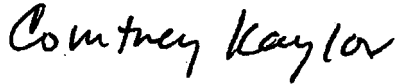
James Holmes
April 7, 2011
Page 4 of 4

increased density, particularly in the absence of significantly increased public transportation. Absent environmental review of these street modification proposals, they cannot be implemented by the City.

3 cont

Thank you for your consideration of these comments.

Sincerely,



Courtney A. Kaylor

CAK:ldc

Holmes, Jim

From: James Kelly
Sent: Wednesday, April 06, 2011 6:35 AM
To: DPD_Planning_Division
Subject: South Lake Union

Dear Members of Seattle Department of Planning and Development:

Here are responses that I think are workable, preserve multiple use functions of SLU and have the potential of adding dignity and uniqueness to the SLU.

1. It is important for the future development to plan for influx of families. Planning for schools, families and playgrounds defines multiple uses.
2. Preserve visual access to the Lake itself to preserve the views of the Lake which marks the identity of SLU. Without views and access to the Lake the meaning of SLU as a neighborhood is compromised.
3. Plan for Mass Transit to reduce traffic congestion created by any possible increase in automobile traffic which further decreases pedestrian access and presence.
4. Restrict the building of towers adjacent to the Lake which destroys the access and meaning of being apart of a South Lake Union community.
5. For present buildings and future planned buildings consider the impacts of building height and density upon views.
6. Maintain current zoning in the Cascade area, including the blocks between Fairview and Minor. This area already has developed it own character.
7. Preserve the concept of step down to the Lake itself to retain visual access of the Lake; a quality that preserves the individuality and uniqueness of the SLU.
8. Alternatives #1 and # 2 destroy the concept of multiple use housing AND deprive SLU of its uniqueness by removing pedestrian and visual access to the Lake itself AND produce unacceptable traffic congestion These are regressive proposals for a genuine SLU.
9. A Step Down concept for any new building is essential to preserve what has been promoted as a unique means of multiple uses and community identity.

Thanks for listening!. I do hope the above comments and recommendations can be viewed as practical, reasonable and all in the spirit of defining fair and user friendly concepts of SLU as a unique, vibrant and multiple use community that can accommodate to diverse interests.

James G. Kelly

Holmes, Jim

From: Kenny, Daniel
Sent: Monday, April 11, 2011 9:23 AM
To: DPD_Planning_Division
Cc: kennydaniel@gmail.com
Subject: South Lake Union Height and Density Draft Environmental Impact Statement -- COMMENT

April 11, 2011

James Holmes
 Seattle Department of Planning and Development PO Box 34019 Seattle, WA 98124-4019

Dear Mr. Holmes,

I am writing to comment on the South Lake Union Height and Density Draft Environmental Impact Statement.

I am a 28 year old law student who grew up in Seattle. I left the city to attend college in California and stayed to work both in Los Angeles and San Francisco. My two years working in San Francisco opened my eyes to the many benefits of in-city living. San Francisco has a culture where everyone walks, takes public transit, and enjoys the amenities of in-city life. When I moved back to Seattle for school the contrast was shocking. Seattle needs more in-city communities for young and active people.

People like myself value being close to those things we want in our daily lives. We want to walk or take the bus to work to avoid parking costs, restaurants round the corner, vibrant and cutting-edge employers in the area and, we want nightlife, museums, and the arts at our finger tips. Finally, we are not willing to live outside the city in order to be in a home. We are content living in condos within the communities that offer the amenities we desire.

Alternative 1 within the South Lake Union Height and Density Draft Environmental Impact Statement helps to make Seattle a place where all these things can happen.

In looking at the options within the city to make these types of changes, South Lake Union is the obvious choice for three reasons.

1. South Lake Union is in a valley of sorts which means the increased heights can be permitted without making it seem like downtown is expanding north. These height increases should not hinder the needed development and revitalization of the area. The increases allow for multi-use development that will maximize the potential of the neighborhood.
2. The area already has some of the most dynamic and progressive employers located there and the changes would only attract more. If the area gets the jobs the rest will follow.
3. The South Lake Union area is an integral part of the city and if built up properly it could connect Queen Anne, Capital Hill, East Lake, and Downtown to the South Lake Union area to form a walkable and vibrant in-city network of neighborhoods. This is exactly what Seattle needs to be attractive to young professionals like myself.

I ask that the city approve the Environmental Impact Statement and adopt Alternative 1 because the city needs it. This is an amazing way to ensure that Seattle is a desirable place for companies to make their home and for young professionals to live and take advantage of in-city amenities.

Sincerely,

Daniel Kenny
 Seattle University School of Law

Sent via email to: southlakeunioneis@seattle.gov

April 11, 2011

James Holmes
Seattle Department of
Planning and Development
PO Box 34019
Seattle, WA 98124-4019

Re: South Lake Union Height and Density Draft EIS – Support for Alternative 1

Dear Mr. Holmes,

I am writing to comment on the South Lake Union Height and Density Draft EIS. I am a Denny Triangle business owner whose office overlooks South Lake Union. And before moving to our current office we ran a business for many years in the South Lake Union neighborhood, itself.

I strongly encourage adoption of Alternative 1 – and failing that, Alternative 2. I oppose Alternatives 3 and 4 and urge that those options not be selected.

I'm writing as someone who supported and worked for The Commons bond issue back in the 90's. Long before that, my wife and I actively supported the three Farmland Preservation bond issue efforts in 1978 and 1979.

I mention my support of King County's Farmland Preservation Program because I strongly believe there is a direct link between preserving open space and accepting designated areas of urban density. The Seattle-King County region needs to grow and will continue to grow – that's a given. The question becomes: where best and how best to locate urban density.

The City's designation of the South Lake Union neighborhood as an Urban Center largely answers the question, "where." And to my thinking, SLU is an excellent choice. Lake Union, itself, is an incredible (and, so far, under-used) amenity. And even without The Commons, Lake Union Park, South Lake Union Wharf, and the ongoing redevelopment of the neighborhood make SLU a compelling focus for combined commercial and residential development.

The four distinct alternatives laid out in the Draft EIS go to the question of "how" increased density will be pursued in the SLU neighborhood. In my judgment, Alternative 1 – and, to a lesser extent, Alternative 2 – best meets the goal of creating a vibrant urban community.

Alternative 3 or 4, on the other hand, would each represent a half-way measure that would fall short of doing what designation of SLU as an Urban Center sets out to do.

| 1 cont

I am not an urban planner – far from it. But I appreciate the concept of critical mass. It seems clear that a vibrant urban neighborhood depends on density for thriving businesses, job creation, proximity of jobs to homes, and so on. Portland, San Francisco, and Vancouver B.C. all boast high-quality-of-life, walk-to-downtown, urban neighborhoods. Approving Alternative 1 will insure that Seattle’s South Lake Union neighborhood develops along that same model.

I strongly urge the City to approve the draft EIS with height limitations and development density consistent with creating as many new jobs and residential units in the South Lake Union neighborhood as practical.

Sincerely,

Dennis E. Kenny

Holmes, Jim

From: Diane Kenny
Sent: Monday, April 11, 2011 9:09 AM
To: DPD_Planning_Division
Subject: SLU Height & Density EIS

Attn: James Holmes

Please accept this email as comments on the SLU Height & Density EIS, specifically supporting Alternative # 1. I am a lifetime Seattle resident, with strong connections to the SLU community for over 50 years. My family had an ownership interest during the 1960's in Washington Athletic, located at 1123 Valley Street. That interest evolved during the 1970's to Athletic Supply located on Westlake Avenue – in both instances my father was an athletic salesman, and I spent a fair amount of time in both businesses.

In 1989 my husband and I started our own business in healthcare communications, and after 10 years downtown, relocated to 426 Yale Avenue North. We then moved in 2005 to the Denny Building at 2200 Sixth Avenue. So during most of my 62 years I have had a fairly direct contact with SLU and its immediate environment. Needless to say, since the 1960's I have viewed many changes in the area. While I was in favor of The Commons effort many years back, and still wish that had gone forward, I view positively the growth and development that has occurred in the area, in particular the fabulous South Lake Park ! As a former staffer for Councilwoman Phyllis Lamphere, I applaud her leadership on that public/private effort.

I am not afraid of change, and I am not afraid of density and height. The energy challenges confronting our country and community at this time require that we become much more creative with efficiency opportunities. We need to get out of cars and embrace public transportation and our feet/legs. We encourage our employees to use Metro by reimbursing them for ORCA cards; we encourage our employees to get out of the office and move around in the neighborhood, taking walking breaks; all of us frequent Whole Foods at some point during the week for some shopping – the exciting changes in the SLU neighborhood make it easier for us an employer to encourage healthy commuting and lifestyle behaviors among our employees. And we are comfortable encouraging these behaviors because we view a populated, busy neighborhood as a safer neighborhood.

We just renewed our lease for another 5 years, looking forward to what evolves in our community, which we hope will include more people, more opportunities to connect with one another, and a vibrant urban connection between Lake Union and the downtown core.

Thanks for your work on this important effort.

Diane Kenny
Vice President

 IlluminAge Communication Partners

1

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Communications professionals dedicated to serving clients in aging services and health care.

South Lake Union DEIS TestimonyMike Kent

Thank you for the opportunity to testify. I am an urban planner, Director of Kent Planning Solutions, and an actively engaged resident of Capitol Hill.

Seattle has the potential to become a model for sustainable urban development, and few neighborhoods are more central to Seattle's growth – both literally and figuratively – than South Lake Union. Therefore, we must seize every opportunity to make it the vibrant neighborhood it has the promise to be. In order for the neighborhood to reach its full potential, the City must allow South Lake Union to absorb higher density, mixed-use development, as is studied in the DEIS. The benefits of a future rezoning will extend well beyond South Lake Union's borders, positively impacting the entire city and Puget Sound region.

Encouraging higher-density development in South Lake Union is among the most beneficial measures the City can take as it aspires to become increasingly pedestrian-, bicycle- and transit-focused. In order to limit suburban sprawl, we must concentrate housing and jobs in our highly walkable urban core. South Lake Union presents an unmistakable opportunity to accommodate this new development, as it is located within walking distance of Downtown and more established neighborhoods like Queen Anne and Capitol Hill. Furthermore, both public and private investments have already enhanced the neighborhood's viability as a hub for housing and job growth, from the South Lake Union Streetcar, to the new Amazon headquarters, to Lake Union Park; we cannot afford to squander this opportunity.

The impacts identified in the DEIS are largely positive. The Puget Sound Regional Council forecasts 1.7 million new residents in the region by 2040, and under Alternative 1, South Lake Union could accommodate 21,000 new housing units. We must not sell this opportunity short. I look forward to the day when high-rise development extends north from Downtown through South Lake Union, enhancing our city's already remarkable skyline. Finally, a future rezoning would positively impact transportation conditions, bringing more Seattleites within walking distance of jobs, retail, parks, and other destinations. Moving forward, the City must continue to provide necessary public infrastructure, from police and fire protection, to schools, to road and sewer upgrades.

Thank you again for the opportunity to testify.



April 7, 2011

Mr. Jim Holmes
City of Seattle
Department of Planning and Development
700 Fifth Ave, Suite 2000
Seattle, WA 98124-4019

Dear Mr. Holmes,

At Kinzer, we consult to and represent many of the region's strongest and fastest growing tenants to identify creative real estate solutions for their business needs. Representative clients include Seattle Children's, Fred Hutchinson Cancer Research Center, Bill & Melinda Gates Foundation, and Russell Investments.

Over the past few years, we have witnessed a trend among life sciences, high tech and global health biotech tenants who are looking for larger floorplates for their office and research and development programs. This seems to be driven by increased interdisciplinary work and more intense collaboration and innovation among high-growth companies. Larger floorplates can also reduce cost of already high cost of construction due to efficiencies in ventilation systems and shared services supporting larger lab modules. Ideal floorplates for the industry are generally in the 30,000-40,000 range.

We have noticed that the South Lake Union Draft EIS does not reflect this trend, limiting office floorplates to 24,000SF in an area of the city that seems otherwise destined to take a disproportionate amount of technology and biotechnology job growth.

We would strongly encourage the final EIS to look at larger floorplates in the 35,000-40,000 SF range. This would preserve the opportunity to zone South Lake Union in a way that is consistent with the needs of its "growth engine" tenants.

Best Regards,

A handwritten signature in black ink, appearing to read "Craig Kinzer".

Craig Kinzer
Principal

A handwritten signature in black ink, appearing to read "Kris Richey".

Kris Richey
Vice President

Holmes, Jim

From: Kris Richey
Sent: Thursday, April 07, 2011 4:13 PM
To: Holmes, Jim
Cc: DPD_Planning_Division; Sugimura, Diane; Conlin, Richard; Rasmussen, Tom; Bagshaw, Sally; Burgess, Tim; Godden, Jean; Clark, Sally; Licata, Nick; Harrell, Bruce; McGinn, Michael Patrick; Craig Kinzer
Subject: Support the Alt 1 Rezone in South Lake Union with 35,000SF Technology Office Floorplates
Attachments: Letter to Jim Holmes regarding SLU rezone 4.4.11.doc

April 7, 2011

Mr. Jim Holmes
City of Seattle
Department of Planning and Development
700 Fifth Ave, Suite 2000
Seattle, WA 98124-4019

Dear Mr. Holmes,

At Kinzer, we consult to and represent many of the region's strongest and fastest growing tenants to identify creative real estate solutions for their business needs. Representative clients include Seattle Children's, Fred Hutchinson Cancer Research Center, Bill & Melinda Gates Foundation, and Russell Investments.

Over the past few years, we have witnessed a trend among life sciences, high tech and global health biotech tenants who are looking for larger floorplates for their office and research and development programs. This seems to be driven by increased interdisciplinary work and more intense collaboration and innovation among high-growth companies. Larger floorplates can also reduce cost of already high cost of construction due to efficiencies in ventilation systems and shared services supporting larger lab modules. Ideal floorplates for the industry are generally in the 30,000-40,000 range.

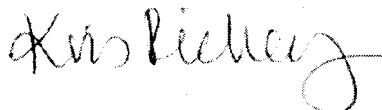
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We would strongly encourage the final EIS to look at larger floorplates in the 35,000-40,000 SF range. This would preserve the opportunity to zone South Lake Union in a way that is consistent with the needs of its "growth engine" tenants.

Best Regards,



Craig Kinzer



Kris Richey

Holmes, Jim

From: Terri Kitto
Sent: Monday, April 11, 2011 10:11 PM
To: DPD_Planning_Division
Subject: EIS comment

Re: South Lake Union EIS

Very simply put, I truly believe that urban density is the way to provide for growth in an environmentally responsible way. I support greater building heights in South Lake Union as the best way to make that happen. | 1

Thank you for the opportunity to provide input.
Terri Kitto

Comment on South Lake Union EIS Public Hearing 3-28-11

As the owner of property developed into a live/work condo on Yale Ave N (3 blocks north of REI) and an attendee of numerous planning meetings, it seems like there is a massive push to build tall. 1

We conformed to our zoning designation and there were many opportunities for the Planning Department to accommodate and be flexible – but there was no flexibility. Now we hear that there has been an ongoing plan to increase building heights in all of South Lake Union, including the Cascade area. We went through all the required processes and think that the Cascade area should remain at the present zoning.

Another troubling trend is the granting of more height for more social services located in the area – like drunk housing, delinquent youth services, etc. So for increased blockage of sun and views, we get more graffiti and vagrants sleeping, urinating, and trashing everywhere. That does NOT make our neighborhood more desirable or safe.

Basically we want to live, work and play in a clean, light and safe environment, not at the bottom of a canyon spawned by new zoning.

Keep the existing zoning in the Cascade area.

Thank you,

Jack Kleinart

During the 2011 South Lake Union Environmental Impact Statement Public Hearing on March 28, the room seemed stacked full of people with a vested interest in maximum height and density growth. From union workers to real estate sellers, developers, builders, urban designers, architects, planners, and property owners, they lined up to speak in support of the economic benefits of 'going the max'.

1

Their perspective is understandable, if predictable, but that doesn't mean that they represent the feelings of the residents who actually live and work in the area. One reason for the lack of comment from homeowners can be attributed to the over abundance of renters currently living in South Lake Union, especially in the Cascade area. In many cases, this is a temporary economic solution to the development of housing in a down market, and there are hopes for attracting many future owners.

The frenzy of interest and fast growth potential in this area has presented the City with a rare opportunity and duty to direct and orchestrate the type of expansion in South Lake Union that will have a much more lasting impact on the livability, desirability, and ultimate viability of this area than short term individual gains.

2

To revitalize city living, think about the people you want to attract, then design for them. Study the successes and failures of other cities. Don't obscure what makes this particular area of the city unique. Determine how it can be expanded in the most elegant way while retaining the natural beauty that makes Seattle famous. These simple parameters should drive the process.

Regarding the seaplane flight paths, I didn't see or hear any mention of the landings having been studied, only take offs. As an owner of a live work condo (designed by Tom Kundig) on Yale Ave N, I face west and watch the daily seaplane approaches to landing, as they fly north. Planes descend steeply over the Cascade neighborhood before landing on the lake, and this will have a critical impact on heights and needs to be studied carefully.

3

My vote is for Alternative 3, but in any scenario to keep the existing zoning in the Cascade area unchanged. It's the oldest residential neighborhood in South Lake Union and draws more families. Yale Avenue North is planned as a walking corridor of retail activity, so the lower heights and density will enhance pedestrian quality at the street level by allowing more light, air and view. With its park, schools, churches, and sloping terrain, the Cascade neighborhood is more 'urban rural' and acts as a transition buffer between areas of greater height and density. It needs to retain the people friendly feeling of open space, and development should scale down toward the lake from all directions.

4

Thank you,

Layne Kleinart

206-362-0286
jacklayne@webtv.net

Holmes, Jim

From: Ben Koshy
Sent: Monday, April 11, 2011 4:41 PM
To: DPD_Planning_Division
Subject: SLU EIS Comments

The South lake Union Revitalization effort has brought about many jobs and new businesses. The environment is urban chic with new condos and modern office buildings. Heightened zoning will allow for a higher density while still preserving views due to smaller floor-plate design. Additionally, the "Live/Work/Play" environment in SLU will foster more controlled growth in the area and its surrounding businesses. Rather than have townhomes appear everywhere in the surrounding areas, South Lake Union can become a vibrant community filled with new bars, restaurants, boutique shops, and recreational centers to accompany Seattle's legacy businesses and biotech/non-profit ventures. 1



April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019
southlakeunioneis@seattle.gov

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes;

We have an interest in property that is located in the area identified as the Dexter sub district and would like to offer comments on the draft Environmental Impact Statement dated February 24, 2011. We support increasing the height and density in the South Lake Union area, agree with the stated objectives in the introduction to the Environmental Study and favor Alternative 1 which provides the greatest potential density. Our comments pertain to the detail of the study and the alternatives. Presented below are our comments and concerns:

- 1. Podium Height: Podium heights vary with the alternatives but are generally a maximum of 45 feet. Some flexibility with podium heights should be allowed through the design review process given the variety of lot conditions and slopes. Perhaps allow some areas to go higher by averaging.
2. Floor Plate Size - Commercial: 24,000 SF is not large enough for many users that would consider locating in South Lake Union. The biotech companies particularly generally need larger floor plates to accommodate the infrastructure and core space required to support the laboratory environments. Please consider increasing commercial floor plate maximums to 35,000 SF.
3. Lake Union Seaport Airport Flight Path: The Land Use section includes plans, policies and regulations for limiting the height of buildings within the FAA flight path; however the description of the flight path and required heights has not been determined. This is a huge issue for effected properties and should be defined, vetted and presented to the public for comments prior to publishing the final EIS.
4. Geology and Soils Mitigation: Mitigation Strategies state that there might be site -specific measures to deal with geology and soils impacts, which may include reducing the size of the project. With the current technology available to solve geology and soils issues, there would be no reason to require reduction in the allowed building envelope. It is up to the owner or developer to determine if it is worth the cost to implement necessary technology and earth science solutions.
5. Above grade parking: We agree with the provision allowing parking to be half above grade and half below grade. Many if not most of the properties in South Lake Union have water table issues and the necessary parking for the various uses cannot be accommodated below grade only.

Seattle Department of Planning and Development

Attn: James Holmes

April 11, 2011

Thank you for the opportunity to participate and share or comments. We would appreciate your consideration of our comments as you move forward with the process.

Frontier  Renewal

Sincerely,



Jeff Kroll
Vice President
Frontier Renewal LLC

King, Donna

From: Martin Kushmerick [kushmeri@u.washington.edu]
Sent: Sunday, April 10, 2011 2:13 PM
To: DPD_Planning_Division
Subject: Draft EIS

Dear Mr. Jim Holmes

I live in the cascade neighborhood and walk to and from my office at UW SLU campus. I spoke at the public hearing on March 28th and wanted to make several additional points.

Citizens of Seattle and City Council realize that the blocks around Lake Union are special - the area is iconic Seattle Water. Our part of the city has a very special feel. For me maintaining this environment while developing as an urban center means maintaining visual access of spectacular views of the mountains and Seattle Center to the west, to Lake Union to the north and to the slope of apartments to the east. Growth rate in SLU is projected to be TWICE that in downtown and to be almost THREE times current density by 2031, and significantly larger than any other area in the city of Seattle. I believe growth of this magnitude within current planning is neither realistic nor desirable for SLU. The sole reason is to drive the highest density planning and developer's building needs. I respectfully ask is this really what City Council intended. Does it really want this uniquely high growth rate for his very special part of the city?

In order to proceed in a more optimal manner toward the irresistible growth in SLU, I raise four points that are not addressed in the current planning and were not discussed much at the meeting.

1. SLU will become a high-density urban center with a substantial population living within or near SLU, unless city planning reverses the current course. That planning necessarily includes local businesses and offices, high-rise apartments and condos, parking, transportation and living amenities as coffee shops, restaurants and the like. However if Seattle Council is serious about people living within SLU, the current planning will be suitable only for singles, seniors, DINKS (double income, no kids) or commuting executives. Folks planning on having children will necessarily have to move out as their child outgrows preschool; this includes not only the highly paid but especially most of the workers, clerks, coffee servers. A grammar school is essential for this purpose within a reasonable distance, if not within SLU boundaries then close. Playgrounds, grocery stores, post office, banks and other essential supports for family living are needed. None of this thinking or evaluation is included in current alternatives #1, #2 or #3. If city planners mean to make SLU like the human-sterile downtown business corridors, at least have the honesty to say so. Assuming city planners mean what they say, much more than considerations of resident density and height of high-rise pencils on top of 3 - 5 story pedestals needs to be analyzed and discussed. .

2. Transportation is a problem currently. Page 443ff of EIS gives mitigation strategies that are applicable to all current growth plans. Alternative #1 states it offers the least impact; apparently it assumes most people who work in SLU will actually live in the newly built residential units and walk to work. Apparently that assumption is the only way to achieve the very high growth rate without transportation gridlock. This assumption is not realistic as discussed in my first point if minimal amenities for families are absent. Furthermore if realistic, no current plan offers the necessary support for residential living, as grocery stores, parks for their children, schools, post-office, library, etc. Therefore the highest density planned by alternatives #1 and #2 I believe is not what City Council envisioned and these plans are inconsistent with the living goals and life style stated above.

3. We need to consider esthetics early on; it is virtually absent now. So far discussion is focused on buildings, how high and how many. I strongly believe that these issues come AFTER a general plan for the area is in place. At the Public Hearing, how high and how many were virtually the only matters that concerned builders and business people, and the arguments were couched that we have either growth or stagnation. The sentiment expressed by a few that nothing should be build is not a realistic plan. So please move beyond that simplistic dichotomy to sensible and realistic assessment and planning for people living in SLU. What should the region look like when built out in a decade, two and more decades after that? Density of residents has been answered in part: housing density should double by 2024 and triple by 2031. Obviously a number of high-rise condos are needed to reach those density targets; but these should not be located without a lot of thinking about esthetics and livability with respect to the other human needs discussed above, parks, green spaces and views.

All current plans place more or fewer high rises scattered throughout to meet the density goals. A planned urban center with jobs, workspaces and living spaces for upwards of triple the current living density needs more planning and analysis than the number and maximal height of high-rises. Locations of living amenities, low and middle income housing, green areas, parks, etc need to be considered early, not as an after thought. Look at the SLU area from Gas Works Park. One sees a spectacular lake with the land rising gradually more or less as a bowl on the south, east and to some extent on the west. Surely 2 to 3-fold higher density of living is compatible with a plan of step-up heights along the center line from the south shore to downtown, and similarly spreading east and west from the center line. This would create a spectacular scene and likely propel Seattle into the ranks of extremely well planned and designed cities. One need not discard the planning for the various alternatives. Significant rearrangements are essential if we are to avoid a faceless and feature-less urban center. If this type of broad esthetic planning is done, I imaging property values of residential units, presumably within and along the edges of the bowl-design for SLU will rise because of exquisite vistas in all directions. My last point will only enhance this goal.

4. Consistent with the preceding, I suggest that the several blocks currently empty due to construction and rerouting of Mercer and Valley be converted into parks, Patches, ball fields and playgrounds, i.e. totally for comfort, pleasure and recreation of the population. The need is extraordinary; more than 180 are on the waiting list for plots in the Cascade PPatch. This would extend the current SLU park and make this area a dramatic focal point for the entire region offering essential human amenities. Obviously one can imagine the objections, even screams, from developers of the very special and certainly very expensive high rises planned in alternative #1. I suspect a clear initiative from City Council along the lines I suggest here will draw virtually total support of the Seattle populace and certainly of the SLU residents. We need another substantial park area in SLU besides the Cascade and Denny parks. Small green areas amidst Amazon and UW Medicine buildings are nice touches but not anywhere near sufficient. Let's creatively design a public campaign to secure this land from Allen Enterprises. I have not forgotten and I hope city planners have not forgotten about the vision put forward by Paul Allen years ago and voted down, for a green vista and boulevard of sorts from the south short of Lake Union to Westlake center. While this is obviously not possible now, I suggest the essence of this concept can be accomplished if some sense of esthetics and planning for a population living within SLU is incorporated, as discussed here and above.

I hope my comments help this process. I follow myh resolution for 2011 below. Sincerely

Marty Kushmerick

Martin Kushmerick, MD, PhD

kushmeri@u.washington.edu
206 543 3762

Professor Emeritus of Radiology and Physiology&Biophysics University of Washington School of
Medicine Translational Center for Metabolic Imaging Brotman 142 Box 358050
815 Mercer Street
Seattle, WA 98109-4714

Resolution for 2011: May evidence-based policy triumph over policy-based evidence. (R.
Schenkel, Science 330, 1749, 2010)

Patricia Kushmerick, SLU Resident

10 April 2011

South Lake Union (SLU) has a potential for housing and business far greater than currently exists. There is much undeveloped land. **My expectation is that such growth will enhance not detract from the uniqueness that is SLU.**

Lake Union Access and Views

- Lake Union is a “Seattleites” Lake. The only way to provide real lake access for the multitudes is by preserving access and views. **I am most distressed** by the part of the alternatives that include towers just across from SLU Park between Valley Avenue and Mercer Street. What can be more off putting? Lake Union belongs to all of us, not just those in the towers. The inevitable barrier that towers and pedestals create will have a negative impact on Lake Union access and views.
- From the southern border of SLU (Denny Way) to the lake Mother Nature has created a cascade lending itself to a grand approach. This visual effect will be lost by Alternatives #1, #2, #3 because there is no step down appearance.
 - Alternative #1 devastates its potential step down with the 300 ft. height proposed at the lake.
 - Alternative #2 has no cascading step down and towers.
 - Alternative #3 makes the best attempt but not a real step down **and** 125 ft towers (12 stories) between Mercer and Valley creates the barrier referred to above.

Affordable living for several income levels:

- I know that the income created by incentive zoning is targeted for affordable housing. As worthy as is this cause and need, as a skeptic, it seems to me that this justification is an example of Seattle Officials deciding that height and density is what they want and this rationale will be accepted by the populace “who is against helping everyone have a roof over his/her head”?
- If the City Fathers and Mothers really meant this commitment to affordable housing within SLU, they would not have allowed Amazon to get off so cheaply. The \$5M or so that Amazon paid to “build up” is pocket change for Amazon. If the city was serious the cost to Amazon would have been significantly greater and should have included mandatory constructed affordable housing dwellings within SLU. To my knowledge there is no stipulation where the affordable housing units will be constructed.

Patricia Kushmerick, SLU Resident

10 April 2011

- On the topic of Affordable Housing I see only lip service by the DPD. With the proposed heights, construction consistent with affordable houses is excluded. Building the heights proposed require expensive construction costs which precludes “affordable” sales or rental options. Will developers assign a number of their tower condos as affordable housing? I don’t think so.

4

Family Livability

- **Affordable housing is not equivalent to affordable living unless it is planned for.** From what I have read I conclude that this urban center will realistically only be populated with well to do singles, DINKs, seniors and commuters. Although these groups are valuable components of a community, no neighborhood is complete without children of all ages and backgrounds. Few of those who will be employed will be the high income employees (able to afford these expensive condos). Many employees will receive middle and lower incomes. Thus without affordable housing such employees will be forced to become commuters ending the expectation of a diverse community with minimal auto commuters. Perhaps wealthy individuals employed far from SLU will move to the condos and auto commute to work.
- What is missing from this EIS is the **non revenue producing** components of family life that includes **at a minimum** grammar and middle schools, a library, sufficient safety services and recreation areas, community spaces, improved public transportation, walkability and economical grocery shopping (Whole Foods does not meet that criteria).
- Currently SLU is limited to one **Pea Patch**. No where in this EIS did I find mention of additional Pea Patch opportunities. Even with the current population there is a long wait (years) for a patch. This lack also impacts the interest of families to settle here for the long term.
- Towers will shade the P-patches; veggies and flowers don’t do well in shade. Mother Nature provides more than ample shade; let us not block the sunshine that we get.
- Without the above components to foster family living, SLU will never meet the expectations of the developers, city planners or business investors.

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Residents or commuters?

- It is a nice fantasy to imagine that people will live/work/play within SLU and travel on foot, bike or public transportation. The supposition that there

10

Patricia Kushmerick, SLU Resident

10 April 2011

will be limited out of area auto commuters living in SLU is perhaps wishful thinking. Current traffic across our floating bridges in **both directions** primarily at rush hours belies that dream. People don't necessarily choose to live and work on the same side of a bridge. If this population plan is premised on changing that pattern the results can be financially disastrous.

10 cont

Population:

- Creating the expectation of the 2030 target is unduly burdensome to this neighborhood and particularly unpalatable because it is so disproportional to the other Seattle Urban Centers.

11

Cascade Neighborhood West Boundary:

- The Cascade Neighborhood is a unique area within all of SLU. The current zoning should be kept. In addition, to keep the current west border with heights extended potentially to as much as 240 ft mid block makes little sense. **I urge you to move the west border of the Cascade Neighborhood ½ block west to the west side of Fairview Avenue N.**

12

Infrastructure:

- There is little opportunity to increase bus transport. The EIS refers to multiple bus lines. This is at best an exaggeration since some of the lines referred to travel on Aurora. Aurora is hardly the heart of SLU.
- There is not adequate provision for auto traffic and parking.
- The anticipated increase in businesses truck traffic on which Alternatives #1 & #2 are premised, will present an undue amount of traffic and noise. EIS statements to the contrary, I live in SLU and I am aware of the traffic impact created by Amazon.

13

In Conclusion:

Alternatives #1 and #2 will:

- Change the character of SLU such that our crown jewel will lose its special place in the hearts of the citizenry and appeal to visitors.
- Create a childless neighborhood
- Have unacceptable traffic congestion

14

Patricia Kushmerick, SLU Resident

10 April 2011

- Not be a location for citizens of all economic levels which will automatically add many commuters to the community and deprive the community of diversity.

14 cont

I urge the DPD to:

- Maintain the growth population to the 2021 target
- Reject Alternatives #1 and #2
- Modify Alternative #3 **to at a minimum:**
 - Omit towers at Lake Union and keep the current zoning height (40 ft) north of Mercer Street
 - Move the west boundary of the Cascade Neighborhood to the west side of Fairview Avenue N
 - Include in the planning requirements that SLU have:
 - *Assured affordable housing
 - *Neighborhood public schools
 - *A library
 - *Additional play grounds, fields, Pea patches, Community Centers
 - *A post office
 - *Walkability in a neighborhood that is not encumbered by heavy traffic that brings with it increased pollution and unacceptable noise.

King, Donna

From: Sylvain Langrand [sylvainlangrand@live.com]
Sent: Sunday, April 10, 2011 9:59 AM
To: DPD_Planning_Division
Subject: South LAke Union EIS proposal - please read - No to Alternative 1 & 2

Importance: High

Hi,

I'm a current resident at the Live 2200 residence (2200 Westlake), have happily lived there for 3.5 years and was recently made aware of the new South Lake Union development plans.

I would like to share with you my strong concerns about the current plans allowing 300 - 400 foot buildings that will negatively impact the quality of life of this great new neighborhood (i.e. Denny already completely saturated today traffic wise).

I love the development made on Westlake avenue and would encourage the city planners to limit all structures of this new neighborhood to 5-6 story high structures. I don't believe extending the downtown high-rises will improve the quality of life in South Lake union but creating a unique new beautiful neighborhood will.

I urge you to not consider alternative 1 & 2 and would encourage you to consider alternative #3. I believe option 3 will allow great growth in density, activity, visual attractiveness and quality of life of all current residents making South Lake Union a unique, beautiful, clean and "must live-in" neighborhood.

Thank you for your consideration

Sylvain Langrand

1



April 8, 2011

Seattle Department of Planning and Development

Attn: James Holmes

700 Fifth Ave., Suite 1900

P.O. Box 34019

Seattle, WA 98124-4019

Dear Mr. Holmes:

I am writing in support of additional height and density in South Lake Union. As a business owner (South Lake Union Dentistry) and resident (the 2200 Westlake complex) my opinion is that increased height and density is good for a neighborhood adjacent to a dense urban core. Often people gravitate to areas rich in urban amenities, and then become an opposing voice for further growth once they arrive. I felt it important to voice my opinion to tell those of influence that the "not in my back yard" set does not accurately represent all residents here.

This area I call my home is gaining in vibrancy, but it has yet to reach that ideal which causes pride and loyalty to place. When I moved here 3 years ago I chose to get rid of my car. Nervous at first, I quickly learned that it is a better life. Access to car sharing, along with a lot more walking, has made life easier and healthier. The car culture of other cities separates people and removes a fondness of place. When people covet living in an interesting environment, employers follow. It's easy to recruit talent when the location sells itself in desirability.

Seattle is a growth city of the future. We have an enviable opportunity to dictate our trajectory with a clean slate. Lets make sure we align ourselves with forward thinking urban centers for future generations, not with the car culture of past generations. We live differently now.

Sincerely,
Handwritten signature of Brian R. Larsen in black ink.

1
BRIAN R. LARSEN, D.D.S., P.S.
OWNER, WESTLAKE DENTISTRY
2200 WESTLAKE AVENUE
SEATTLE, WA 98124
206.465.1234
www.westlakedentistry.com
BRIAN R. LARSEN, D.D.S., P.S.

March 27, 2011

Seattle Department of Planning & Development
Attn: James Holmes

Mr. Holmes,

I am writing you today to share my thoughts about the possibility of rezoning the South Lake Union area of Seattle. During recent visits with friends who live and work in the area, I have seen amazing changes to what was previously sort of a drab and somewhat forgettable part of Seattle. There are more restaurants, coffee shops, boutique store and galleries which really showcase the revitalization of this portion of the city. The addition of the Streetcar and wider, pedestrian-friendly sidewalks has made it so much easier to get around and visit all the new businesses. I love Seattle and am pleased to see the community involvement this has inspired. I see people taking pride in where they live and wanting to become a part of the exciting things that are happening.

It has recently come to my attention that there is some feeling that supporting an upzone allowing additional vertical development, such as condo and/or apartment towers, will negatively impact the area. I believe that it will be exactly the opposite. By allowing taller buildings, we would be essentially creating more usable, workable space in a smaller area with an equally smaller footprint. Taking advantage of this opportunity to create additional housing, office, and businesses will result in attracting more people to the area. The addition of these people will also help to fully utilize the wealth of existing parks and open spaces that are currently, in my opinion, being under-used.

I also feel that bringing folks into this kind of environment will encourage a healthier lifestyle, which is so important in this day and age. If people are within walking, biking, or even a short streetcar ride to their destination, they will be much more likely to utilize that mode of transportation. More walking and riding means less cars on the road, which leads to a greener and more environmentally-friendly way of living.

As a caring citizen, I am writing to encourage the City to adopt Alternative 1 of the proposed rezone of the South Lake Union area of Seattle.

Thank you for taking the time to consider my comments on this important issue.

Sincerely,

Betsy Lawless



THE UNIVERSITY OF MICHIGAN

SCHOOL OF BUSINESS ADMINISTRATION

ANN ARBOR, MICHIGAN 48109-1234

Dick A. Leabo
Fred M. Taylor Endowed
Distinguished Professor
of Statistics, Emeritus

8 March 2011

Seattle Department of Planning and Development

Attn.: James Holmes

700 Fifth Avenue, Suite 1900

P.O. Box 34019

Seattle, WA 98124-4019

Sir:

My wife and I have only lived in Seattle for 20 months but we have been interested in the development of the South Lake Union area long before we invested in the area. We invested a lot of money in our new home at Mirabella just as have 300 other individuals. Another 250 people will be doing the same in a couple of years.

All of us relied on the knowledge that the current zoning would remain the same. Now we are told that it is a fait de accompli that any one of three revisions to the zoning will change to allow structures 300 to 900 feet high.

That is ridiculous to destroy the views of South Lake Union and Gas Works Park. My wife and I and the rest of the current residents of Mirabella favor Option 4 which would retain the current zoning. We all urge you in the interest of maintaining the current beauty of the area and in fairness to the tax payers now living at Mirabella to do the realistic thing. If the city has any interest in having another 250 taxpayers move into the area, not counting other developments, now and in the future, the decision before your group should be obvious.

Thank you for your consideration on our behalf as you make a tremendously significant decision that could negatively change the appearance of the area for years to come.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. Leabo', written over a horizontal line.

Dick A. Leabo, Ph.D

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PERKINS
+ WILL

April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019
southlakeunioneis@seattle.gov

RE: South Lake Union Height and Density Draft EIS

I am a native Seattleite, and an architect who has spent my career working in my hometown. I've observed the remarkable transition toward a mixed-use neighborhood that has occurred in South Lake Union, have been able to participate professionally in the development of key projects in the area, and have great optimism about the district's future. I'm extremely glad the City is taking a serious look at incentive zoning, which can make a significant contribution toward enabling the neighborhood to reach its potential as a great urban center.

I fully support the twin vehicles of increased height and density in South Lake Union.

1

- A disciple of Jane Jacobs, I believe in the principles of street-level activity, eyes on the street, and diversity in land use. Density is the key contributor to a rich and varied urban streetscape.
- Increased density supports sustainability goals, with the ability to facilitate more energy-efficient buildings, reduce demand on infrastructure, and increase use of alternative transportation.
- Rights-of-way in SLU are very wide. Consequently relatively tall podium structures can be accommodated without compromising light and air at street level.
- Height is not to be feared. The alternatives described in the Draft EIS all include limitations on tower size and spacing. By including bulk and open space limitations, incentive zoning can ensure access to light, air and views.
- Street level character is the most important feature of urban development – building height is secondary. Scale, diversity of use, pedestrian amenity are all established at the street. The interface between private development and public realm is where urban character is made, and is where zoning regulations traditionally fail to adequately define.

I also support incentive zoning as a strategy to encourage density while ensuring that growth contributes to livability and sustainability. Incentivizing developers toward increased height and density, in exchange for contributing to coordinated public improvements, is a fair, reasonable and desirable trade-off:

2

- The public realm is the connective tissue of neighborhoods. Publicly-owned right-of-way comprises a significant area in SLU, consequently has the greatest potential for creating a coordinated, pedestrian-supporting urban environment. To the greatest extent possible development bonuses should support urban amenities in the existing rights-of-way. Too much of recent downtown development consists of individual buildings – what is needed is the creation of neighborhoods by way of a thoughtfully crafted public realm.
- The City's resources to devote to public amenities have become seriously constrained, and likely will be for the foreseeable future. Linking increased development capacity to developers' support is a viable way of funding these essential components.
- Urban relief in the form of well-designed and usable open space can be incorporated into individual projects in ways that complement the public realm.

2 cont

I encourage the City to evaluate the EIS alternatives in the broadest possible light. We're at a threshold in urban development where past practice and current trends are inadequate to predict future needs. For example next-generation workspaces for the information technology, biotechnology and global health sectors increasingly look to large floor plates to encourage intellectual synergy, provide infrastructure and suit corporate culture needs. These needs must be reconciled with sustainable design strategies such as natural light, ventilation and energy efficiency that are also necessary elements off the future workplace; with the resultant urban character; and with short- and long-term economics of development. Rightly or wrongly, the zoning criteria established by this effort will become default design parameters for the next generation of development in SLU. It's critical for the EIS analysis to thoroughly examine the economic, physical and social consequences of all viable alternatives if the result is to be truly forward-looking. The zoning tools ultimately need to offer the flexibility needed to adapt to changing needs.

3

Seattle has an unfortunate history of adopting overly prescriptive land use requirements, which have resulted in unintended consequences (remember skinny houses?). The process underway in SLU presents the opportunity to get it right: to outline the over-arching principles that establish a vision of SLU as a dynamic, future-oriented urban center. The process should purposefully avoid becoming prescriptive. For example floor plate sizes in podiums should be a function of the urban characteristics of block size, street definition and light-and-air access combined with functional requirements of building users, rather than arbitrary square-foot limitations which ultimately become practical minimums as well as maximums. Zoning should clearly identify and articulate the vision of *what* wants to be achieved over the next generation of development in South Lake Union. *How* that vision becomes realized needs to be left up to the creativity of the developers, designers, and other participants in the processes that follow.

Sincerely,



Larry Leland, AIA, LEED AP
Perkins+Will
larry.leland@perkinswill.com

C:\Documents and Settings\leland\Desktop\SLU_EIS_04_11_2011.docx

Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 90: Heffron, Marni	
1	South Lake Union/Uptown Triangle Mobility Plan. The comments are acknowledged. Please see responses to comments in the balance of this letter.
2	Mitigation. See response to Letter 18 Comment 33.
3	Threshold of Significance. The city has reviewed the thresholds of significance considered in the DEIS and has made a revision related to roadway operations impacts. The strict demand to capacity (d/c) ratio threshold has been removed in place of a more holistic evaluation of overall vehicle trip generation in the South Lake Union area. Please see the errata for the changes to the DEIS language.
4	Mercer Street Underpass. The Mercer Street undercrossing under Aurora Avenue is not a fully funded project and therefore was not assumed as a background improvement. The undercrossing improvement is part of the Mercer West Corridor project.
5	Mitigation. Similar to the concept of incorporating the mitigation measures from the South Lake Union/Urban Triangle Mobility Plan, the City is open to incorporating elements of the South Lake Union Transportation Demand Management Program. However, given the programmatic nature of this EIS, specific elements of the South Lake Union Transportation Demand Management Program.
6	Incentive Zoning Bonus. The City supports applying a portion of the Incentive Zoning bonus program toward transportation improvements, so long as the improvements are consistent with those identified as part of the Urban Design Framework.
7	Private Shuttles. The use of private shuttles may be included as part of a mitigation program. This does not change the outcome of the Draft EIS.
8	Parking Supply. The parking supply estimates included in the DEIS were developed following a methodology applied in the South Downtown Height and Density EIS. As pointed out by the commenter, there is not a direct relationship between mode of travel expectations and parking supply estimates. Note that the parking supply estimates presented in this DEIS were intended to give a rough estimate of total supply and are not intended to be used to define parking ratios or limits. Parking requirements will be defined on a project specific level.

Comment Number	Response
9	Denny Way Capacity. The commenter suggests increasing the capacity assumed for Denny Way due to the left turn restrictions. Although it may be reasonable to assume a higher capacity, resulting in lower d/c ratios, this would not change the outcome of the Draft EIS impact identification.
10	King County Metro Route 309. Route 309 was not in service during the time this analysis was completed and would not change the findings. Therefore, it is not included in the Draft EIS.
11	Urban Village Transportation Network. While we agree with the commenter regarding the UVTN transit analysis, it is not used to assess impacts, and therefore would not change the outcome of the Draft EIS.
12	Mid-block Connectors. Given the programmatic nature of this EIS, the method to implement the recommended mid-block crossings has not been determined. Specific mid-block pedestrian accommodations will be identified as part of individual project reviews or the requirements may be incorporated as part of the land use code or development standard.
13	Data for SEPA Analyses. The City will provide example trip generation rates for residential, retail, and office uses that are consistent with the EIS methodology.
Letter 91: Hennings, Gloria	
1	Keep Current Height Restrictions. The comment is noted.
Letter 92: Herb, Frederick and Margaret	
1	Provisions for Families. The comments are noted. Please see Draft EIS Section 3.16, Open Space and Recreation. See Final EIS Section 3.5 for a discussion of schools.
2	Parking Availability and Pricing. While parking spillover is defined as a potential impact, cost is not considered an environmental impact.
3	East/West Transit Access. Please see Draft EIS Section 3.13 for a discussion of transit service and recommended mitigation.
4	Residential Character. The character and duration of tenure of potential future residents is unknown.
5	Building Height and Density. The comments are noted.
6	Building Height Near Lake Union. The City of Seattle does not have a formal or informal policy of building height step down toward the water. As described in the Draft EIS, the alternatives do generally decrease in height

Comment Number	Response
	from the south boundary of the neighborhood toward the north. The one exception is Alternative 1, which includes building height increases in the block north of Mercer Street.
7	Incentive Benefits. The comment is noted. The geographic focus or distribution of public benefit will depend on the type of benefit provided. Financial contributions are required to be used to within the vicinity of the neighborhood.
8	Additional Mitigation. The comment is noted. Mitigation strategies address identified impacts.
Letter 93: Hill, G. Richard	
1	35,000 SF Floorplates. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 94: Holberg, Hillary	
1	Support Expansion of the Neighborhood. The comment is noted.
Letter 95: Holmes, Robert J.	
1	Support Proposed Zoning Changes. The comments are noted.
Letter 96: Howe, Douglas, and Hurd, A-P	
1	Draft EIS Comments. The comments are noted. Please see the responses to comments in this letter, below.
2	AQ and GHG Analyses. The air quality assessment for the project was focused on traffic-related emissions of the criteria air pollutant carbon monoxide (CO), using CO as an indicator of potential impact. The CO analysis examined the potential for local "hot spots" due to project related traffic in a manner consistent with EPA guidance for such assessments. While the analysis shows that increased development in the neighborhood is associated with increased GHG emissions, the conclusion is not that limiting growth in urban centers has a positive impact on GHG emissions. The analysis acknowledges that GHG emissions can only be considered on a global cumulative basis and neighborhood-wide totals are difficult to put into perspective. As a more meaningful measure, the analysis considers per capita

Comment Number	Response
	emissions. As shown in the Draft EIS Table 3.7-6, the analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.
3	35,000 SF Floorplates. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
4	Podiums. The comment is noted. Please see the response to Comment 3 this letter, above.
Letter 97: Hoy, Mary	
1	Support Alternative 1. The comment is noted.
Letter 98: Huard, Brock	
1	Support Alternative 1. The comment is noted.
Letter 99: Huberty, Dan	
1	Support Increased Height and Density. The comment is noted.
Letter 100: Hughes, Brendan	
1	Support Alternative 1. The comment is noted.
Letter 101: Hurd, A-P	
1	Draft EIS Comments. The comments are noted. Please see the responses to comments in this letter, below.
2	Greenhouse Gas Emissions. While the analysis shows that increased development in the neighborhood is associated with increased GHG emissions, the conclusion is not that limiting growth in urban centers has a positive impact on GHG emissions. The analysis acknowledges that GHG emissions can only be considered on a global cumulative basis and neighborhood-wide totals are difficult to put into perspective. As a more meaningful measure, the analysis considers per capita emissions. As shown in Draft EIS Table 3.7-6, the analysis concludes that on a per capita basis the

Comment Number	Response
	<p>three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.</p>
<p>3</p>	<p>35,000 SF Floorplates. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.</p>
<p>4</p>	<p>Podiums. The comment is noted. Please see the response to Comment 3 this letter, above.</p>
<p>Letter 102: Ito, Doug</p>	
<p>1</p>	<p>Support Increased Height and Density. The comments are noted.</p>
<p>Letter 103: Johnson, Annalisa</p>	
<p>1</p>	<p>Support Rezoning. The comment is noted. As described in Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. The underlying Seattle Mixed zoning designations and standards would not be rezoned. Under the three action alternatives, the existing Industrial Commercial zone would be rezoned to Seattle Mixed (SM). This change in zone is intended to achieve consistency within the neighborhood rather than to permit greater height or density.</p>
<p>Letter 104: Johnson, Jay</p>	
<p>1</p>	<p>Support Increased Height and Density. The comments are noted.</p>
<p>Letter 105: Kaivola, Linda</p>	
<p>1</p>	<p>Support Increased Height and Density. The comments are noted.</p>
<p>Letter 106: Kaylor, Courtney A.</p>	
<p>1</p>	<p>Disclosure of Impacts. The comment is noted. The environmental consequences of the proposal and alternatives are fully disclosed in the Draft EIS. Please see the response to comments in this letter below.</p>

Comment Number	Response
2	<p>Minimum Lot Size. Please see the development assumptions described in Draft EIS Section 3.10.1 and further clarified in Final EIS Section 3.4. As described in these sections, a set of realistic assumptions were developed to identify potential development footprints, locations and orientations. Assumptions included site aggregation to achieve minimum lot sizes and development consistent with underlying zoning for lots with less than 22,000 sf. City staff and the consultant team used the development assumptions as a framework to development full development capacity under each alternative.</p> <p><i>Land Use and Housing.</i> The density and capacity information provided in the Draft EIS uses the minimum lot size assumptions. Capacity and density under these assumptions is fully disclosed in the Draft EIS.</p> <p><i>Aesthetics.</i> Please see Final EIS Section 3.4 for updated birds-eye view images of the study area showing cumulative development anticipated under each alternative. Also see the street-level and view perspectives that depict potential development with the minimum lot size requirement.</p> <p>Please note that properties with less than 22,000 sf would not be downzoned, but would retain development potential under the current existing zoning. Individual property owner decisions regarding development are based on a variety of factors, including individual financial goals, perceptions of market conditions and development costs, among others. It would be speculative to anticipate how these individual decisions will be made.</p> <p><i>Historic Resources.</i> Future development potential under any alternative may increase pressure for redevelopment on existing small scale structures eligible for historic designations. It is acknowledged that the minimum lot size requirement may reduce the pressure on those structures located on lots smaller than 22,000 sf.</p>
3	<p>Urban Design Framework. The commenter raises concerns that the plans for Eight Avenue N and Thomas Street in the Urban Design Framework were not considered in transportation analysis. The UDF provides potential guidelines, but they are not adopted in any City plan. It is speculative to assess impacts based on potential designs without clear sources of funding. Both of these streets are included in the Seattle travel demand model which indicates that there is capacity for vehicles and no other impacts are expected.</p>
Letter 107: Kelly, James	
1	<p>Alternatives 1 and 2 Regressive. The comments are noted.</p>
Letter 108: Kenny, Daniel	
1	<p>Support Alternative 1. The comments are noted.</p>

Comment Number	Response
Letter 109: Kenny, Dennis E.	
1	Support Alternative 1. The comments are noted.
Letter 110: Kenny, Diane	
1	Support Alternative 1. The comments are noted.
Letter 111: Kent, Mike	
1	Support Higher Density Development. The comments are noted.
Letter 112: Kinzer, Craig and Richey, Kris	
1	35,000 SF Floor Plates. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 113: Kitto, Terri	
1	Support Greater Building Heights. The comments are noted.
Letter 114: Kleinart, Jack	
1	Keep Existing Zoning in Cascade Area. The comment is noted. Please note that existing zoning is retained in Alternatives 2, 3 and 4. Alternative 1 would allow increased height through incentive zoning provisions.
Letter 115: Kleinart, Layne	
1	Public Meeting. The comment is noted.
2	Long Term Livability. The comment is noted.
3	Southeast Flight Path. The flight path that is referred to in the comment, and located near the southeast portion of Lake Union, is used for inbound aircraft when wind conditions are from the north. Proposed building heights are not a constraint to aviation in this area.
4	Support Alternative 3. The comment is noted.
Letter 116: Koshy, Ben	
1	Support Higher Density Growth. The comment is noted.
Letter 117: Kroll, Jeff	
1	Flexibility in Podium Heights. The comment is noted.

Comment Number	Response
2	<p>Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.</p>
3	<p>Flight Path. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
4	<p>Geology and Soils Mitigation. As the commenter notes, site specific mitigation will be defined as part of project specific review.</p>
5	<p>Above Grade Parking. The commenter is referring to a development assumption described in Section 3.10 that future parking would be one-half below grade and one-half above grade. This was intended as an assumption to allow an estimate of development envelope for the aesthetics analysis and not intended to suggest a standard for future development.</p>

Comment Number	Response
Letter 118: Kushmerick, Martin	
1	<p>2031 Growth Estimate. As described in Draft EIS Section 2.2, the 2031 estimates are intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Draft EIS Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
2	<p>Neighborhood Facilities. The comments are noted. Please see the South Lake Union Neighborhood Plan, which includes the following neighborhood character goal:</p> <p style="padding-left: 40px;">Goal 1: A vital and eclectic neighborhood where people both live and work, where use of transit, walking and bicycling is encouraged, and where there are a range of housing choices, diverse businesses, arts, a lively and inviting street life and amenities to support and attract residents, employees and visitors.</p> <p>As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.</p>
3	<p>Neighborhood Amenities. Please see the response to Comment 2 in this letter, above. Regarding the transportation methodology, please see Draft EIS Appendix E, which presents statistical evidence demonstrating that the MXD model is an appropriate tool available for analyzing dense mixed use environments, such as South Lake Union.</p>
4	<p>Aesthetics and Neighborhood Plan. The comment is noted. Please see the South Lake Union Urban Center Neighborhood Plan (2007), which discusses many of the planning issues mentioned in the comment. The EIS was specifically focused on a proposal to use incentive zoning measures that would allow increased height and density if certain public benefits are provided.</p>

Comment Number	Response
5	Parks and Open Space. The comments are noted.
Letter 119: Kushmerick, Patricia	
1	Growth Should Not Detract from Uniqueness. The comment is noted.
2	Lake Union Views. The comment is noted. Please see the revised view analysis images in Final EIS Section 3.4.
3	Affordable Housing. The comment is noted. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including affordable housing.
4	<p>Affordable Housing and Towers. The comment is noted. Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units.</p> <p>The discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
5	Demographics and Housing. The comment is noted. Please see the South Lake Union Urban Center Neighborhood Plan (2007), which addresses the broader planning issues identified in the comment. The EIS was specifically focused on a proposal to use incentive zoning measures that would allow increased height and density if certain public benefits are provided.
6	Community Services. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.
7	Pea Patch. The comment is noted. Please see the South Lake Union Urban Center Neighborhood Plan (2007) Parks and Open Space goals, policies and strategies. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, which could include a pea patch or other open space facilities.
8	Shading. Please see Final EIS Section 3.4 for a revised discussion of shadow

Comment Number	Response
	impacts, which considers shading on public parks in South Lake Union.
9	Family Living. The comment is noted.
10	Transportation Analysis. The comment is noted. The methodology and assumptions contained in the transportation analysis are described in Draft EIS Chapter 3.13. Draft EIS Appendix E presents the statistical evidence demonstrating that the MXD model is an appropriate tool available for analyzing dense mixed use environments, such as South Lake Union.
11	2031 Growth Estimate. As described in Draft EIS Section 2.2, the 2031 estimates are intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.
12	Cascade Neighborhood West Boundary. The comment is noted.
13	Infrastructure. The comments are noted. Please see Draft EIS Chapter 3.13, transportation analysis for a discussion of these issues.
14	Conclusion. The comments are noted. Please see the responses to comments in this letter, above.
Letter 120: Langrand, Sylvain	
1	Consider Alternative 3. The comment is noted.
Letter 121: Larsen, Brian R.W.	
1	Support Additional Height and Density. The comment is noted.
Letter 122: Lawless, Betsy	
1	Support Alternative 1. The comment is noted.
Letter 123: Leabo, Dick A.	
1	Support Alternative 4. The comments are noted. Please note that the greatest building height proposed under any of the alternatives is 400 feet.
Letter 124: Leland, Larry	
1	Support Increased Height and Density. The comments are noted.
2	Support Incentive Zoning. The comments are noted.
3	Broad Perspective. The comments are noted. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the

Comment Number	Response
	EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City finalized the scope of the EIS.

Comment Letters 125-159

125.	Link, Kristen
126.	Littlel, John
127.	Loacker, John
128.	Lust, Todd
129.	Malaspino, Joe
130.	Markley, David D.
131.	Masson, Chris
132.	Masson, Diane
133.	Matthews, Carrie
134.	Matthews, Tim
135.	McKay, JJ
136.	McLaughlin, Jan
137.	Miller, Terry
138.	Moss, Christine
139.	Mulica, Thomas
140.	Munger, Jeffrey
141.	Muratore, Michael
142.	Naprawrich, MaryAnn
143.	Norton, Ruthe and Frank
144.	Novy, Richard
145.	Nottingham, Sarah Rose
146.	O'Brien, Kathleen
147.	Ostergaard, Paul B
148.	Parente, Kini
149.	Parrish, Brad
150.	Parsons, Craig
151.	Pavlovec, Brian and Giselle
152.	Pearson, William
153.	Pehrson, John
154.	Penn, Steve
155.	Petrie, Mark
156.	Pope, Charles E.
157.	Potter, William W.
158.	Rabe, Jeff
159.	Randall, Jaime

Holmes, Jim

From: Kristen Link
Sent: Sunday, April 03, 2011 12:40 PM
To: Holmes, Jim
Subject: Comment on South Lake Union DEIS

Jim,

I would just like to comment on the DEIS proposed for SLU. Looking at the alternatives I am in favor of alternative 3. Alternative 1 has heights that block views from I-5 of the water and space needle. Even though the topography goes down I can't believe that you would allow up to 300 foot buildings along the waterfront of lake union. With the zoning in alternative one you are allowing zoning equal to downtown highrises for large style office buildings and high end condos, hotels, and apartments only the more wealthy can afford also permanently blocking views of some of Seattle's greatest visual assets the space needle and south lake union waterfront. South Lake Union isn't downtown and doesn't need a height increase that will dominate development in the area creating high end buildings for a few in Seattle at the cost of the public views and south lake unions current neighborhood feel and charm. Mid-rise development in that area given all of Seattle's other neighborhood urban centers and villages is more than enough to handle density projections and development and more neighborhood scales. I will be really disappointed for Seattle if alternative 1 passes for developers, construction, and design community members at the cost of the public views and what has started as a great neighborhood/bio tech life sciences neighborhood at a perfect scale for creating that kind of community.

--
 Kristen Link

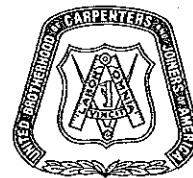
Pacific Northwest Regional Council of Carpenters



Affiliated with
United Brotherhood of Carpenters and Joiners of America

John Littel, Political Director

25120 Pacific Hwy. S., Suite 200 • Kent, Washington 98032
(253) 945-8823 • Fax (253) 839-4908 • jlittel@nwcarpenters.org



Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019
southlakeunioneis@seattle.gov

RE: South Lake Union Height and Density Draft Environmental Impact Statement (DEIS)

Dear Mr. Holmes;

This letter is a comment on the Draft EIS for South Lake Union.

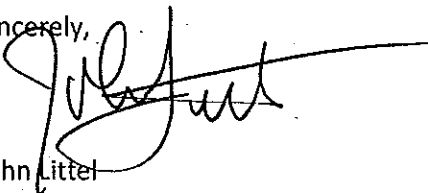
For many years, the Seattle Carpenters have followed South Lake Union's redevelopment with great interest. We share the community's vision for South Lake Union as a commercial and residential Urban Center. As such, we have supported public and private investment in the South Lake Union streetcar line, Mercer Corridor Project and Lake Union Park:

This investment has set the stage for zoning changes to allow a greater intensity of jobs and housing units in this vibrant community. You are encouraged to take the following factors into consideration as you prepare the Final Environmental Impact Statement:

- Taller buildings and getting out of Type 5 construction will result in higher quality structures.
- Incentive zoning can bring additional resources for community identified civic infrastructure and more affordable housing.
- Height increases can increase the housing supply and generate public benefits to make housing more affordable.
- Increasing jobs and residents adjacent to significant public investment in transportation and parks will make sure the city and region benefits from its investment in the community.
- Height and density will allow more people to locate in this urban center and live a healthier and more environmentally friendly lifestyle.

We have an opportunity to do it right in South Lake Union. We should take advantage of this opportunity for all of Seattle.

Sincerely,



John Littel

Holmes, Jim

From: John Loacker
Sent: Wednesday, March 09, 2011 1:00 PM
To: DPD_Planning_Division
Subject: SLU re-zone

Hello,

I wanted to voice my support for Alternatives #1 and #2 as a means to strengthen, for the long term, our Seattle Central Business District. Downtown needs a shot in the arm that will encourage quality housing and commercial development and these measures could be just "the shot in the arm" that we need to give our downtown some added energy. Already in place is the SLU Streetcar and plans to improve and widen the Mercer Street Access. This area can handle the growth that we need to provide jobs and housing. 1

I am a 3rd generation owner of two small family businesses (Kroll and Metsker Maps) and we have not only watched, but mapped the growth in this area for decades (100 years). I can't think of an area that more ready and capable of handling high-density growth.

I am also a (near) life-long resident of Queen Anne. I remember in the 1970's there was an organization called the USSR (i.e., the United South Slope Residents) which protested building heights on Queen Anne. This led to needed protection for property owners from high-rise development that was strategically placed to maximize the view of the new development, without regard for the existing property owners. In my opinion the height issues being discussed in the SLU are totally different since these (higher) structures will blend in with the existing cityscape. This is only my opinion but I have not been shown any information that contradicts this.

I don't see any negatives, just positives such as vibrant housing close to the potential workplaces, existing and unique public transit, a new park, and expanded freeway access.

Thank you for your consideration of this.

John Loacker

King, Donna

From: Todd Lust [tlust99@hotmail.com]
Sent: Friday, April 08, 2011 3:25 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS

I am an individual who has worked in the South Lake Union for the past 8 years. I have enjoyed seeing the progress in South Lake Union area. It is amazing to see the area change in the past 5 years. The area has transformed from a small industrial sector to a great place for many great companies to work. The amount of housing options has also increased, giving people many reasonable housing options just north of downtown.

I think adding density to an underutilized area is a great opportunity for Seattle to create better housing options and attract some great businesses. After seeing the progress that has already taken place in the area, I think we should continue the momentum and allow more density in the area. The area is headed in the right direction, but the current building heights are limiting the new buildings to shorter buildings taking up the entire block. It would be great to allow new buildings to grow in height and reduce their footprint.

I would like to see the city adopt Alternative 1. I think it is time to maximize our City's resources and attract as many businesses and people to the South Lake Union area.

Thanks.

Todd Lust

Holmes, Jim

From: Joe Malaspino [jbspino@msn.com]
Sent: Monday, April 11, 2011 4:48 PM
To: DPD_Planning_Division
Subject: South Lake Union Height & Density Draft Environmental Impact Statement.

To whom it may concern,

I am a lifelong resident of the City of Seattle, 40 plus years, currently living in West Seattle and working in the South Lake Union neighborhood. I spend a considerable amount of my time in the neighborhood both at work and at play. I love the new park, sailing on the lake and now with the new restaurants opening, dining on the weekends. As I watch the neighborhood change from the one I remember as a kid growing up, I think of how great an area this can and will be. To keep headed in the right direction we will need additional height and density in our developments. The area is in a perfect location to support this type of growth so please keep an open mind about taller buildings in the South Lake Union neighborhood.

Thank you,

Joe Malaspino



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April 11, 2011

Diane Sugimura, Director
City of Seattle, Department of Planning and Development
700 Fifth Avenue, Suite 2000
P.O. Box 34019
Seattle, WA 98124-4019

Subject: South Lake Union Height and Density Alternatives –Transportation Section Review

Dear Ms. Sugimura,

This letter is intended to offer comment and input to the South Lake Union Height and Density Alternatives, Draft Environmental Impact Statement (DEIS). I am writing this on behalf of Clise Properties, Inc. who is very supportive of developing properties of greater height and density in the South Lake Union neighborhood. These comments are intended to be constructive rather than critical with the understanding that the long term health of the South Lake Union neighborhood, the City and the Central Puget Sound region must be balanced and integrated to be successful.

To that end, this letter identifies areas that we believe warrant further examination to ensure viable development in the South Lake Union neighborhood without creation of unintended consequences that impact other Seattle neighborhoods. My comments focus on the Transportation Element of the DEIS as they relate to the broader range of development considerations, policy development, and infrastructure improvements.

Study Area Definition - The study area defined for the transportation element of the DEIS should be expanded. Much of the increased height and density is targeted for the southwest corner of the South Lake Union neighborhood which runs along Denny Way, the southernmost boundary of the study area. It is only logical that the transportation systems and network supporting this edge of the South Lake Union neighborhood will extend into the Downtown, Belltown, and Denny Triangle neighborhoods. This is illustrated by the fact that traffic forecasts show that d/c ratios (traffic demand-to-road capacity ratios) on Denny Way reach 1.54. These findings suggest extraordinary levels of congestion (54 percent overcapacity) and unrealistic levels of delay.

1

Imbalance of Traffic Impacts - The traffic forecasting model should be recalibrated to reflect a more balanced distribution of the forecasted traffic volumes. There is a significant difference in the congestion levels forecasted in corridors leading to and from the regional highway system. As noted above, there is a high level of congestion along the south edge of the South Lake Union neighborhood, yet, the Mercer Street corridor is forecasted to operate just below capacity (d/c = 0.98 – 0.99). Our experience suggests that drivers try to find the

2

path of least resistance and will not endure the high levels of congestion in the Denny Way corridor when they have a less congested alternative route that is only minutes away. As noted above, some of this traffic demand may also spill over into the Downtown area but impacts are not disclosed due to the self constrained definition of the study area.

2 cont

Assessment of Realistic Congestion Levels - Traditional intersection or corridor level of service analysis should be performed at selected critical intersections (up to 10 intersections in the area). While the demand-to-capacity ratio (d/c ratio) method of corridor analysis is a generally accepted tool for long range planning comparisons, it does not reasonably reflect actual traffic operations - what the driver sees or what the City requires when evaluating development proposals. We believe this is particularly critical in this EIS because there are thousands of new bicycle and pedestrian trips. Reflection of these non-motorized modes of travel at intersections creates added impedance and delay that is not reflected by the d/c ratio analysis and will likely add to the congestion forecasted.

3

Complete Impact Comparison – The traffic forecasts for the adopted land use density and the height and density alternatives should be compared against existing conditions to reflect the true level of mode shift required by the proposed changes. The forecasted travel demand associated with the height and density alternatives are compared against the height and density under adopted policy. While this is a valid comparison, it only illustrates a small portion of the significant changes implied by the increased density associated with the three development alternatives. We believe that the comparison should also include mode split data for existing conditions. Such a simple comparison is presented on Table 1 below. As noted in comments below, we question whether the proposed mitigation can cause the PM Peak Hour automobile mode to drop from 59% today to 37% (a 38% decrease from existing conditions).

4

Table 1 – PM Peak Hour Mode Split Comparison

Alternative	Auto Trips	Internal, Bicycle & Pedestrian	Transit
Existing Conditions	59%	10%	23%
No Action Alternative - Current Zoning	51.4%	26.9%	21.7%
Alternative 1			
Without Mitigation	50.5%	27.8%	21.7%
With Mitigation	37.5%	36.2%	26.3%
Alternative 2			
Without Mitigation	50.4%	27.8%	21.7%
With Mitigation	37.4%	36.2%	26.3%
Alternative 3			
Without Mitigation	50.3%	28.0%	21.7%
With Mitigation	37.4%	36.4%	26.2%

Pragmatic Mitigation – Provide increased evidence that the proposed mitigation can realistically achieve the mode split changes that are forecasted. While we would all like to believe people’s travel behavior will change, such change is typically very gradual and requires a strong combination of incentives and disincentives to change that behavior. We are concerned that the findings from a single research study from Southern California, negligible increase in King County Metro Transit service (if any), decreases in the short term and long term parking supply, negligible cost assumptions for reserved parking (\$100/month), and participation in the “Voluntary” Traffic Impact Fee Program managed by a public agency with dwindling staff resources, will have the desired effect. Thus, we suggest that more realistic estimates of mode split reduction be developed and then the resultant traffic congestion be considered relative to the development feasibility for accomplishing the proposed densities.

5

Transportation Capacity – The proposed increased densities must be evaluated in the context of the rest of the city and the region. While the DEIS discloses very significant impacts, and identifies potential mitigation, there appear to remain conditions where traffic, parking and transit demands substantially exceed their respective capacities.

6

If the proposed South Lake Union densities are accomplished, will the resultant impacts usurp planned and desired development in other parts of the city by using either 1) the available market demand for that development or 2) using all of the transportation capacity in the area? Accordingly, we believe one test that appears to be missing from the analysis is the feasibility of development approval using the development standards (whether adopted or administratively applied) that are applied to a new development application. Can current development standards be met? One option is to change those standards. If such change is a contemplated, then the impact of such policy changes should be evaluated in this EIS. In simple terms, can State Environmental Protection Act criteria be met.

Highlighting this concern is the screenline analysis found in Appendix E-8 which shows that several adopted screenline standards are exceeded. If these screenline volumes are exceeded with the increase in volume from this neighborhood alone, will there be any real or theoretical capacity for any other development in the City. The adopted screen line standards are already at a d/c ratio of 1.2 which means that all the bridges over the ship canal are, on average operating at 20% over capacity. Congestion can be an effective disincentive but at the forecasted levels, it can also strangle the quality development that is the very objective of these height and density alternatives. Possibly a logical resolution to this issue would be for the City to review and update the Transportation Concurrency Standards to correspond with desired land use objectives.

I trust this provides you with an understanding of our current perspectives relating to transportation impacts that may not be fully disclosed. We trust this helps to inform further realistic and common sense examination of these issues within the City, among stakeholders and by the FEIS. If you have any question, I encourage you to contact me at your convenience so I can provide necessary clarification.

TSI

Transportation Solutions, Inc.

Diane Sugimura

April 11, 2011

Page 4 of 4

Sincerely,
Transportation Solutions, Inc.



David D. Markley
Principal

King, Donna

From: Chris Masson [chrismasson2000@yahoo.com]
Sent: Monday, April 11, 2011 7:57 AM
To: DPD_Planning_Division
Cc: Chris Masson
Subject: EIS

EIS does not show an accurate depiction of what the three alternatives will look like in scale to each other or to the surrounding elevations. Better graphics or even a scale model should be developed. |¹

Of all alternatives, no change in heights and only rezone of use is appropriate. Of the three alternatives, alternative #3 is the next best choice. |²

Resectfully submitted,

Chris Masson
206-650-6206

King, Donna

From: Diane Masson [dmasson2004@yahoo.com]
Sent: Saturday, April 09, 2011 2:50 PM
To: DPD_Planning_Division
Subject: EIS Comment

I have been part of South Lake Union neighborhood planning for 6 years and was an original founding member of LUOA. LUOA was never against heights, it was about adding height smartly and making a better neighborhood for more families to move into.

Alternative 3 was morphed from the original LUOA alternative, but is the best of the three choices. The majority of public comment to date has requested no changes in the Cascade Neighborhood and that includes from I-5 to Fairview. Alternative 3 has height on the East side of Fairview and that is unacceptable. The height needs to be far enough away from Cascade park, so that park can have light year round. We need families, dogs and children playing. Don't destroy this park by putting height too close. | 1

The original LUOA alternative had lower height right next to the lake. All 3 plans are aggressive by the lake. It's great for developers, but not for those in the bowl between Queen Anne Hill and Capitol Hill. Again the sunlight will be blocked from a brand new 12 acre park that is supposed to attract families etc. The EIS actually talks about building heights affecting wind on the lake. Why destroy boating on the lake? Put the higher height buildings South of Mercer Street. Keep heights low North of Mercer Street. | 2

The City Council and Mayor will now have the power to destroy the South Lake Union Park and Cascade Park by picking any of the 3 alternatives. Please create a compromise that keeps Cascade Neighborhood intact all the way to Fairview to protect Cascade park sunlight and lower heights next to a very small lake, so everyone can enjoy the view, boaters could still have the wind in their sails, the planes could land properly and families could enjoy Lake Union Park - even in the winter - with Seattle's limited sunlight. | 3

Think about each City Council member as they walk to work. The sidewalks are cold and dark by your offices, because there is no sunlight on the sidewalks. Please don't make the South Lake Union Neighborhood like downtown - protect our natural assets - parks and lakes. Create a neighborhood. | 4

Please listen to the neighborhood of South Lake Union, you have one chance to get this right. Don't build another tall Belltown with no parks, no families with small children and no sunlight.

Diane Masson
206-853-6655

Holmes, Jim

From: Carrie Matthews
Sent: Thursday, March 10, 2011 3:57 PM
To: DPD_Planning_Division
Subject: Comment on the South Lake Union (SLU) Height & Density Draft Environmental Impact Statement

My name is Carrie Matthews and I would like to submit a positive comment on the South Lake Union (SLU) Height and Density Draft Environmental Impact Statement.

I live in the Ballard neighborhood of Seattle. Work in the Stadium/International District of Seattle and like to spend time in the many neighborhoods of our city.

Recently, the upcoming SLU neighborhood of Seattle has undergone great change and I find myself spending time there often. I dine in SLU at Paddy Coyne's, Flying Fish, SeaStar, RE:Public and Lunchbox Laboratory (formerly South Lake Union Grill). I have visited the new Lake Union Park with co-workers and friends. I have shopped at the Whole Foods and Spa Vida on Denny Way and I enjoy attending the annual SLU Block Party every summer.

I support more people and taller buildings in SLU for good reasons. For example, my neighbor has been out of work for over six months. He works in construction management. By allowing density and height in SLU, more construction projects will create more construction/family-wage jobs that could in turn help my neighbor.

Additionally, our nation's President (President Obama) in his State of the Union address in 2011 discussed at length the need to invest in our own future. Creating and building dense urban areas fosters new businesses and ideas, makes it easier to recruit/retain educated employees which results in greater innovation and economic strength for not only SLU and Seattle but King County and Washington State.

I strongly encourage you to embrace growth, progress and Seattle's future by embracing development and taller buildings in SLU. It is the prime neighborhood to absorb such needed growth. It would benefit the most people by generating short-term and long-term jobs, by bringing tax payers into the city and by reducing sprawl into other neighborhoods and/or outlying areas.

Thank you for reading and considering my statement in favor of height and density in SLU.

Sincerely,
 Carrie Matthews

Holmes, Jim

From: timmat timmat [
Sent: Friday, March 11, 2011 3:58 PM
To: DPD_Planning_Division
Subject: South Lake Union Height & Density Draft Environmental Impact Statement

My name is Tim Matthews and I would like to submit a comment on the South Lake Union (SLU) Height and Density Draft Environmental Impact Statement.

The South Lake Union area has undergone a huge transition. As a Seattle resident, this was a part of Seattle I previously never considered for work or entertainment. This rebirth is still evolving, and I hope you allow SLU to reach its full potential and positive impact on our city.

As our region struggles with urban sprawl, transportation issues, horrible traffic, and unemployment, South Lake Union is positioned to become a part of the solution to these issues.

Allowing taller buildings and creating the capacity for more residences and workplaces would create a true 'live and work' community. This could take thousands of commuters off of the roadways, allowing more folks to live comfortably in the same neighborhoods as their workplace. Additionally, the construction projects alone could create hundreds of jobs, putting many folks back to work at family-level wages.

Instead of the endless talk about solutions, let's enable the South Lake Union district to evolve into a leader and example of Seattle's forward thinking perspective on functional urban development.

Thank you,
Tim Matthews

Holmes, Jim

From: JJ Mckay
Sent: Wednesday, March 23, 2011 11:32 AM
To: DPD_Planning_Division
Subject: South Lake Union

I live in Belltown and spend time in South Lake Union as a volunteer with two organizations in the area, as a diner in the increasingly active restaurant scene, as a biker in the neighborhood and as a business person in some of the many companies that are located in the area.

The direction of more people living in SLU is a sound choice for our community. I have several friends of all ages living in the area...including families and retirees who are downsizing their lifestyle and want a "city experience".

Increased density in SLU would be benefit for all concerned. It uses existing city infrastructure and reduces urban sprawl and plight. It would also reduce commutes with the use of the tram/bus system opening up all of downtown. With fewer empty asphalt lots, you would have fewer eyesore and heat islands. In addition, you could encourage developers to increase the number of pocket parks that are very popular.

This would also allow our city to expand its "walkability" factor like NYC, DC, San Francisco and other areas.

I only hope we continue forward with an increased density plan for SLU which not only is positive for their neighborhood, but benefits downtown, Belltown, and Queen Anne.

Thank you very much,

JJ McKay

Holmes, Jim

From: Jan McLaughlin
Sent: Sunday, March 20, 2011 11:26 AM
To: DPD_Planning_Division
Subject: Comment on the draft Environmental Impact Statement for South Lake Union

Seattle Department of Planning and Development
 Attn: James Holmes

It has come to my attention that the City has released the *South Lake Union Height & Density Draft Environmental Impact Statement*, beginning the process of upzoning South Lake Union. I wanted to share with you my perspective.

Downtown Seattle and the nearby neighborhoods have been a part of my life my entire professional life—and before when I used to visit regularly from the Eastside. Growing up on the Eastside, I have seen what sprawl can do.

Today I walk or take the bus downtown to my athletic club, to meet friends for dinner and a movie, to shop and to take in the museum, parks and other cultural amenities. I will frequently walk from the downtown core to South Lake Union and then catch the #8 bus home. I am especially eager to see MOHAI relocate to the historic Naval Reserve Building in Lake Union Park. It will help continue the revitalization of the neighborhood just as Lake Union Park and the Olympic Sculpture Park have for their respective waterfronts. Just as the Sculpture Park and Downtown Public Library finally put Seattle on the national and international map for architecture and innovation, an aggressive and progressive choice in South Lake Union will do the same. More buzz leads to more visitors and more residents and businesses relocating here. More people and more businesses lead to more tax revenue, helping to support public benefits.

Of course, we need more people and taller buildings in South Lake Union to support the shops, stores, restaurants and other amenities it has to offer—and will offer. As a member of the baby boomer generation, I know many who are downsizing and are eager to move into the city. More multi-family housing options and more amenities will encourage them to chose South Lake Union. With this realized, we will finally see a greater synergy among Downtown and it's immediate neighbors—Uptown, Queen Anne, Belltown, Denny Triangle, Capitol Hill, and more.

South Lake Union is central—blocks from Downtown and easy to get to from other neighborhoods. It's where we should plan for more growth. I am writing in support of Alternative #1 because it allows the most flexibility in building design and would accommodate the most people and jobs.

Sincerely,

Jan M. McLaughlin, CSP

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Check out our blog: <http://www.JanMcLaughlin.blogspot.com/>

Holmes, Jim

From: Terry Miller
Sent: Thursday, March 31, 2011 8:36 AM
To: DPD_Planning_Division
Subject: South Lake Union

Dear Seattle DPD,

As co-owner of the building at 9th Avenue North and John Street in South Lake Union and as a tenant of the building that serves as headquarters for my company, Schultz Miller, Inc., I am writing to support Alternative 1 in favor of greater allowable height and density in South Lake Union.

Greater height and density favors those of us in South Lake Union, where everything is already in place for more people:

- Bus and streetcar service
- More than a dozen new eateries
- Whole Foods supermarket
- Ample parking on-street and in lots
- Plenty of open space with Denny Park and the upgraded Lake Union Park
- Easy access to nearby shopping malls, Belltown, Seattle Center, and downtown

It also makes sense to increase height and density in South Lake Union, which has already been designated an Urban Center, to enable other neighborhoods to remain at lower densities.

For these reasons, I strongly support Alternative 1.

Thank you for your time and consideration.

Sincerely,
Terry Miller, Partner
Schultz Miller, Inc.

Terry Miller
Schultz | Miller
Office: (206) 281-1234 x802
Cell: (206) 551-9660
Fax: (206) 233-9060

As a South Lake Union resident I would like to express my concern over the height and density rezoning proposals of the draft EIS. I understand that this area has been declared an urban center and huge increases in housing and employment targets were set in 2004. Even these targets could be met by the existing zoning so there was no justification for the growth target projected out to 2031 being even steeper than that already approved.

1

I cannot believe anyone would seriously consider the first alternative proposed with its potential for 300 foot towers in the first block above the lakeshore park and restaurants. Neither alternative 1 nor 2 has any real step down to allow the taller towers at the south end of the area to be developed with common areas such as lounges and roof-top gardens on their upper levels that would enjoy panoramic views of the lake and be selling points for units on lower levels. Even alternative 3 has the potential for towers just above the lake that are as tall as the tallest buildings allowed in the current zoning and has much too large an area from John to Mercer with no step down at all.

2

I would hope the existing zoning would be preserved as in alternatives 3 and 4 for the Cascade neighborhood all the way to Fairview. This area is already largely developed with a pleasing variety of buildings that accommodates some affordable housing, churches, a park and p-patch and some newer apartment complexes and businesses.

3

I did not choose to move downtown, but wanted to be close to the downtown area. It seems these plans allow for excessive growth without infrastructure. If one wants to attract families to maintain residential diversity throughout the area, plans should be made before development proceeds for at least an elementary school and a library and more park space. A public open area such as that at the UW Medicine building has absolutely no appeal for the public. Mitigating factors for exceeding height limits such as a payout for affordable living to be provided elsewhere is totally unacceptable.

4

Traffic would likely be a nightmare with the build out of any of these proposals. I love being able to walk downtown and use buses whenever I can, but I have not given up my car. I drive to areas that are not conveniently served by bus routes, especially in the evening, and to leave Seattle proper. I am sure that would be true for many potential residents. Along with the proposed opening of John and Thomas to Seattle Center, I fear the traffic will become unacceptable throughout the neighborhood.

5

Thank you for considering my comments.

Christine Moss

Holmes, Jim

From: Thomas Mulica [tommulica@gmail.com]
Sent: Friday, April 08, 2011 9:06 AM
To: Holmes, Jim
Subject: ALT 1 SUPPORT SLU

Hello,

I wanted to write a quick note in support of greater density in SLU and specifically for ALT 1. Density will do much to improve the safety and livability of this area. | 1

Thanks,

Tom Mulica

Holmes, Jim

From: Jeffrey Munger
Sent: Monday, April 11, 2011 10:52 AM
To: DPD_Planning_Division
Subject: Greater height / density in South Lake Union

As a resident of the City of Seattle (Fremont) and with a professional focus on urban planning and economic development, I wanted to pass along my support of greater heights and densities in the South Lake Union Urban Center. 1

At this critical stage of the area's development / redevelopment, I feel it is important to create a dense, walkable neighborhood with a rich variety of uses and heights. Portland's Pearl District serves as a striking example of an area with these characteristics, as there you will find an impressive mix of residential, retail, and office uses in a very diverse collection of buildings (from old warehouse facilities to modern high-rise condominiums / apartments). South Lake Union has an even more impressive corporate presence, but now that the vast Amazon.com campus is getting built-out (as well as the Gates Foundation campus nearby), it is now imperative that the city not "promote" a sterile suburban office park atmosphere through overly restrictive building ordinances.

I also feel it is also important to allow higher densities and building heights to support the existing transportation network (i.e. - streetcars), as well as fuel that network's expansion. I would like to see the streetcar system expanded to the University District, as well as Fremont / Ballard. Future expansion would converge in South Lake Union, thus the city should capitalize on this investment by supporting density and creating a thriving business and residential urban center.

Thank you for your consideration.

Best regards -

Jeffrey Munger

Holmes, Jim

From: Michael Muratore [mmuratore@panpacific.com]
Sent: Monday, April 11, 2011 2:57 PM
To: DPD_Planning_Division
Subject: Comments on proposed zoning changes

Hello,

I would like to offer my comments on the proposed zoning changes in South Lake Union. I have worked in downtown Seattle since 1995 and in South Lake Union since 2008.

Currently I am employed at a hotel located in the Denny Triangle and have personally experienced the recent flourishing of the area and would like to see this continue.

Being able to build taller buildings will create opportunities for more housing options as well as bringing more businesses to the area.

In the past 16 years of working in Seattle, I have seen a number of significant changes for the better; new stadiums; new hotels; expanded convention center and a number of new commercial and residential buildings.

It makes sense to me to allow for additional growth by updating the zoning in this area.

Thanks for your consideration.

Michael Muratore | Director of Finance

panpacific.com/seattle | panpacificseattletour.com

Pan Pacific Hotel Seattle

2125 Terry Avenue, Seattle, Washington 98121

D: 206-654-5020 | F: 206-654-5048 | mmuratore@panpacific.com



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Seattle Washington
April 9, 2011

Seattle Dept. of Plan. + Dev.
Attn: Jim Holmes
700 Fifth Ave. Suite 1900
P.O. Box 34019

Dear Jim

My name is Mary Ann Napravnik. I am very interested in South Lake Union and its future as many Seattleites are.

I have been a member of Immanuel Lutheran Church since 1970 when my husband (dec.) and I joined. Our home was at Lakeview Lane in Madison Park right next to Washington Tower. I remember all of the structural damage issues etc. Not that it has all that much to do with the current and future issue of high rise in S.L.U. - but I'd like to believe that no one wants to change the character of our community.

I know and believe that change and building will come. To make S.L.U. a look alike to centers or downtowns with masses coming to work and

leaving again at the end of the day is not community.

I've certainly not read every word of the document but levels 1st + 2nd seem over the top. Growth will continue - making it not just another office building should be a consideration.

Sincerely,
Mary Ann Napravnik

Holmes, Jim

From: RuthenFrank [ruthenfrank@nortonmiddaugh.com]
Sent: Monday, April 11, 2011 2:55 PM
To: DPD_Planning_Division
Subject: South Lake Union Draft EIS

James Holmes,

As residents, we have a direct and vital interest in the development and growth of the South Lake Union area. This is a special opportunity for planning of a Seattle Urban Center. It deserves careful consideration and some restraint so as not to become just another high-rise "downtown".

Alternative #3 is the most acceptable option although it, too, falls short of ideal. Current zoning should be maintained in all of Cascade, including the area between Fairview and Minor, in order to provide light to that neighborhood. There should be a step down of building height from Denny to the lake. There should not be towers in the Mercer/ Valley strip. There should be provision for school, libraries and amenities to make this a true neighborhood. It also means that zoning must be such that it encourages a real diversity of residents. Any bonuses allowed through contributions to affordable housing should stay in the South Lake Union neighborhood and support diversity. | 1

Alternative #1 goes much too far. It destroys the existing Cascade neighborhood and overwhelms the area. Having structures up to 300 feet high rimming Lake Union would be a disaster.

Respectfully,

Ruthe and Frank Norton

Holmes, Jim

From: Richard Novy
Sent: Monday, April 11, 2011 1:25 PM
To: DPD_Planning_Division
Subject: Lake Union

As new residents to the SLU area we are very concerned to what is proposed. We moved there because we love the area and believed in the great potential for the area. When considering for the future you have only one chance and need to make it right. The beauty of the area and the lake views must be preserved for all. Buildings that have both style and functionality should be allowed not boxes and squares. The increased traffic density begs for more light rail with the density comes air quality concerns. The residents need shopping a smaller version of U Village is do-able. I am saying please think of the beauty of the area and concerns of the residents; when something is planned make it do the area proud. We are proud to say we live there now and want the future to be even better.

Rich and Ann Novy

Sarah Rose Nottingham

April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Ave., Suite 1900
P.O. Box 34019
Seattle, WA 98124

Mr. Holmes:

It's time to develop South Lake Union. Seattle's population is growing and SLU is the perfect place for people to invest in.

Microsoft, Amazon, Tom Douglas, Christine Keff and many more have taken an interest in this prime location and it's time for individuals to have that opportunity as well.

Walking through SLU during the day is like walking the streets of thriving city. There are people going to work, walking their dogs, running, walking, biking, shopping, etc.

Walking through SLU after 6:00 PM, however, is another story. Business is [mostly] done for the day and everyone has gone home. The sidewalks are empty and there is an unsafe atmosphere. People don't take advantage of the restaurants, businesses and nightlife in the SLU neighborhood because no one lives there. People bring money, safety, active lifestyles and more people.

We need "people-sized buildings", parks, local retail and restaurants, nightlife. The Development of SLU is offering all of this.

Few people want to live in the heart of downtown because the skyscrapers aren't "people friendly", and even less want to live in SODO because there seems to be nothing available for pedestrians.

I'm looking forward to South Lake Union building high and becoming a bustling, successful community where people live shop and enjoy their surroundings.

Thank you,

Sarah Rose Nottingham

Holmes, Jim

From: Kathleen O'Brien <kathleen@obrienandco.com>
Sent: Monday, March 28, 2011 4:11 PM
To: DPD_Planning_Division
Subject: Comment on Rezoning of South Lake Union

O'Brien & Company, Inc, founded in 1991 is the oldest green building consultancy in the Northwest. We have been a proponent of sustainable development such as that exemplified by the South Lake Union District and have had the privilege to provide guidance on many of the green buildings in the District, including those developed by Schnitzer and Vulcan Real Estate.

Done well, density is key to making neighborhood services work, reducing car travel, and providing urban "vibrancy." This project has been used in other parts of the country as a best case scenario. It is a good use of existing infrastructure investments, while enhancing livability. It does not make sense to hamstring future development that builds on this good solution. I support progressive and thoughtful use of density and height. I do not support Alternative 4. My preferences are Alternative 2, 3, and 1.

Kathleen O'Brien, LEED AP, CSBA

kathleen@obrienandco.com · 206-621-8626 EXT 115 Tel · 206-621-8649 Fax

Principal, O'Brien & Company · 811 First Avenue, Suite 380 · Seattle, WA 98104

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URBAN DESIGN ASSOCIATES

8 April 2011

James Holmes
Seattle Department of Planning and Development
700 Fifth Avenue, Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Re: Draft DEIS Comments

Dear Mr. Holmes:

My firm is an urban design consultant for Vulcan, one of the stakeholders in South Lake Union. We were retained by Vulcan in 2004 to explore urban design and planning concepts for South Lake Union. Our studies recommended the reconfiguration of Valley and Mercer, the creation of a new waterfront district, new connections across Aurora, a street car, and development guidelines for new research and office development in SLU. It is rewarding to see the dramatic transformations that have occurred in this exciting part of Seattle.

Vulcan invited our firm to independently review the draft DEIS and offer constructive comments to aid you in your efforts. Knowing that your approach to understanding urban form in this document may influence future zoning changes, we wish to challenge the validity of the "Podium" as an appropriate and feasible development model for SLU.

"Podiums"

Extract from page 3.10-17

Height, Bulk and Scale

Alternatives 1 through 3 propose a relatively new building typology for the South Lake Union neighborhood. The new building type would feature a high-rise tower with a limited floor plate area positioned atop a bulkier low-rise podium that would potentially fill the site from property line to property line.

1

PRINCIPAL
DAVID J. HARRIS, AIA, LEED AP
PAUL R. DAVENPORT, LEED
CONSTRUCTION
ERIC J. WASHINGTON, AIA
DAVID J. HARRIS, AIA

MANAGING DIRECTOR/LEAD DESIGNER
JAMES H. BISHOP, AIA, LEED AP
ERIC J. WASHINGTON, LEED AP
HARRISON M. BRADLEY, LEED AP

Extract from page 3.10-18

Podiums at the base of the towers would provide the towers with a visual base and create a clear edge along the street.

The DEIS introduces the concept of a “podium,” a low-rise bulky building mass potentially filling a block with towers positioned above it. This is not new to planning in SLU. Previous studies for the Mercer Blocks have utilized the podium concept to provide the basis for determining appropriate building heights and tower placement. These studies have illustrated low rise buildings that form a monolithic base with towers located on top sometimes 50’ or more back from the nearest street. We challenge this model.

Developers do not build podiums. They build buildings. Very seldom will a developer build a single mixed-use building that fills an entire development block. Blocks in South Lake Union including the most recent developments by Vulcan are developed on a building-by-building basis. Office/research buildings with ground floor retail are almost always financed separately from residential projects. A typical block may be built in two or more phases of construction depending on market timing and tenant availability. Blocks are almost always divided into parcels.

Podiums as described in the DEIS create the false premise that entire blocks can be filled with a building mass and towers above can float to deep mid-block locations divorced from the street and entirely lacking a street address. This places unrealistic constraints on building massing and practically mandates a very complex approach to development that can’t be financed in today’s markets. The podium concept separates the residential tower from the street with an intermediate low rise building mass. It proposes stacked buildings rather than side-by-side buildings. Developers seldom build stacked buildings.

“Building Types”

A far more sound approach to regulating form is based on building types acceptable to South Lake Union that are known to the development world and

1 cont

2

commonly built in the Seattle area. These may include retail buildings, office/research buildings, mixed-use building, single-family houses, townhouses, apartment buildings and civic buildings. Rules can be created for these building types to control their siting, massing, street frontage, and character. This form-based approach to zoning can be drafted to eliminate confusion and doubt about what is permitted. Essentially, your code can clearly delineate by-right building form and use. Ambiguity about what the code permits is minimized.

For example, a normal "apartment building" will have a set of design controls that may include a minimum parcel size, access controls, a required street entrance, mandated building setbacks, mandated upper story stepbacks and permitted building heights. Form controls for residential buildings can include limited floor plate sizes above a certain level as proposed in the DEIS. This same approach can apply to other building types. These regulations are based on realistic parcel sizes and building types that can be developed as individual building projects.

The podium concept will yield regulations that place unreasonable massing controls that do not work on a parcel basis. In addition, they have the potential of unintentionally creating a miserable environment of massive building walls, little block porosity, inhuman building scale and boring streets.

We hope this information is useful to your team as you refine your recommendations.

Sincerely,



Paul B. Ostergaard, AIA
Executive Vice President

2 cont

3

Holmes, Jim

From: Kini Sanborn Parente
Sent: Monday, April 11, 2011 8:02 PM
To: DPD_Planning_Division
Subject: Pro - SLU Height & Density

Dear Mr. Holmes:

I work in the SLU neighborhood and have for more than a year now. In such a short amount of time, this tiered - previously sleepy area has transformed into a such a vibrant area garnering national attention. The density of people is so so important to the grown of downtown Seattle. Small businesses need residents to strive, offices are essential to the dynamics of the local economy, and open spaces where people can gather are a part of any successful city planning.

It is my great hope that you will encourage the density and height proposals for the neighborhood. It is so exciting to see the current development and I can really see that with more opportunity for growth such as this, SLU will become the new 'South of MOMA' (South of Market in San Francisco) or the new 'Yorktown' (Vancouver) of our city. If we do not continue to develop in this manner, we will continue to loose out to the eastside where this development and planning are fully underway. When I travel to NYC and tell them about SLU and all the exciting developments, it is building attention and interest to bring new visitors to our city. For increased revenues from tourism, increased tax prosperity of the region, and for successful urban living, the develomement in SLU should be a no-brainer. Our surrounding neighborhoods demand its growth for their own survivals.

Please take these comments seriously as you make your decisions about the Environmental Impact of this area. It is the future of Seattle and the future of so many jobs for our region. In these times, most cities would dream to have this sort of opportunity in front of them.

Most Sincerely,

Kini Parente

Holmes, Jim

From: Brad Parrish [mailto:bparrish@standardparking.com]
Sent: Monday, April 11, 2011 4:33 PM
To: DPD_Planning_Division
Subject: South Lake Union Height & Density Draft EIS

To Whom It May Concern:

I strongly support the height and density proposal for SLU as an individual resident of Seattle and a long time business operator in the SLU for the past 11 years. My background in urban planning, desire to have a vibrant city and concern for the cost of sprawl leads to my support. Specifically I support what is proposed for the following reasons:

- More people living and working in the SLU area creates a vibrant community for retail density that promotes walking and biking as opposed to vehicles.
- The height and density will use the existing infrastructure effectively and allows for more innovative design that would include pocket parks as opposed to block buildings with no open space.
- The height and density will allow for a greater range of housing choices and prices.
- We cannot take what has happened in SLU for granted with the likes of Amazon.com, Path, Microsoft and Group Health choosing to locate there – for this area to thrive there needs to be an even greater push to build upon what has already begun. Companies have multiple choices of where to locate in the new economy.
- If the growth does not go into SLU where will it go – there are limited locations that have such a great infrastructure as that which is provided in SLU.

Thank you,

Brad

Brad Parrish
 VP Regional Manager
bparrish@standardparking.com
 206.381.8552 ext.11(Direct)
 206.381.8557 (Fax)

 **Standard Parking**
 530 Dexter Avenue N.
 Suite 101
 Seattle, WA 98109

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King, Donna

From: Craig Parsons [craigp@senecagroup.com]
Sent: Friday, April 08, 2011 3:13 PM
To: DPD_Planning_Division
Cc: Holmes, Jim; LaClergue, Dave
Subject: South Lake Union DEIS Comments

Dear Sirs;

I reside in the Ravenna neighborhood and work in downtown Seattle. To curb both residential and commercial sprawl, I support the increased density proposed in the Draft EIS. The proper development of that neighborhood will be benefit from the flexible zoning proposed herein, and from the removal of archaic block-by-block zoning differences. As a former Seattle Design Review Board member (NE), I believe that the increased density will allow for a variety of uses and building forms that will enable a richness and diversity in South Lake Union.

With my support, I must also offer some concerns that I hope may be addressed:

- Peoples' ability to relocate to SLU is severely limited by the absence of public school alternatives there. It makes no sense to live there, only to have to commute back to neighborhood schools. As a customer of an over-burdened and under-funded Seattle Public Schools system, I believe that added residential density here must be coupled with a vehicle to fund designated school projects in the immediate SLU vicinity. I believe this is in part the obligation of developers adding residential capacity in the heart of this underserved region.
- The power infrastructure in the SLU neighborhood is widely known to be insufficient – even abhorrent according to some. City Light has been burdening developers with providing network-ready transformer vaults. However, it is unclear whether any progress has been made to design or fund the network electrical service to the neighborhood. Overtaxed substations already provide sub-optimal power quality, and this situation will only worsen until real investment is made in the infrastructure.
- Lastly, I do not want my support for added density to be misconstrued as support for the street car system. I believe this system to be have much higher cost that a bus/BRT system, yet the infrastructure costs are extreme. I also know firsthand that the tracks pose serious hazards for bicycle commuters and the disabled.

Thank you.

Craig Parsons

Principal

SENECA GROUP

1191 Second Ave., Suite 1500 | Seattle, WA 98101

📞 206-628-3150 | 📠 206-808-7866 | 📠 206-355-6911

www.senecagroup.com

Holmes, Jim

From: Giselle Pavlovec
Sent: Thursday, April 07, 2011 8:10 PM
To: DPD_Planning_Division

Dear Mr. Holmes:

Our family strongly supports the rezoning proposed in the South Lake Union Height and Density Draft Environmental Impact Statement, especially Alternative 1.

We have lived and worked in Seattle since 1994. Our home is in Capitol Hill, and our sons attend school in the neighborhood. We love living in the City, and we almost exclusively frequent stores and restaurants in Capitol Hill, South Lake Union (SLU) and other Seattle neighborhoods.

Brian is a structural engineer who contributed to the design several Seattle landmarks, including Seattle City Hall. His projects in SLU include Seattle Cancer Care Alliance, Fred Hutchinson Cancer Research Center and UW Medicine Lake Union.

Since we have moved to Seattle, the changes in SLU have been amazing. Fred Hutch has grown; REI, UW Medicine, Amazon and others have moved into the area. If the City adopts Rezoning Alternative 1, SLU will become even better.

SLU needs more housing to create a thriving neighborhood. The entire city also needs more housing downtown to create a more sustainable metropolitan area. Too many people spend too much energy and time commuting.

The current zoning encourages massive low-rise buildings that are too common in Capitol Hill. Allowing taller buildings in SLU will lead to more people and more revenue. Taller buildings also result in more elegant design and public benefits such as open space and affordable housing.

Please adopt Alternative 1.

Sincerely,

Brian and Giselle Pavlovec

Holmes, Jim

From: william.pearson
Sent: Wednesday, April 06, 2011 8:44 PM
To: DPD_Planning_Division
Subject: eis

The proposed growth in the next twenty years would destroy our whole Seattle landscape. The height of the buildings is too extreme. The Space Needle will be a "needle in a haystack." There needs to be a height limit an a limit of towering buildings in the downtown corridor. Perhaps going South, eg: SODO area for buildings. We do not have enough schools or roads to accommodate all the increased demands of transportation. | 1

Sincerely,
W.Pearson

Holmes, Jim

From: John Pehrson
Sent: Monday, April 11, 2011 9:19 AM
To: DPD_Planning_Division
Subject: South Lake Union Height and Density EIS
Attachments: DEIS response-final.doc

Jim Holmes,

Attached are my comments on the subject. They are extensive, but the document is 659 pages long.

I would add one overall impression. The document deals with issues in 'silos' on each environmental element, but the impact of multiple issues or elements counts. I have tried in my comments to integrate some of those elements in specific areas of interest. Such fusion, I believe is instructive on where specific kinds of growth is prudent and where it isn't. | 1

thank you.

John Pehrson

April 8, 2011

Comments on SLU Rezone Draft EIS
John Pehrson, Past President, LUOA Board of Directors

A. Section 1.7

On page 1-55, it states "There are no significant unavoidable adverse impacts identified for any of the elements of the environment, except Transportation." This is absolutely false for other elements beyond Transportation. The following is only a sample of impacts that are 'significant and adverse'. They are avoidable only if the underlying Alternative is materially changed.

1. Building heights allowed that would impinge upon airspace and aircraft flight
2. Wind wakes from buildings that would make landing and takeoff on the lake unsafe
3. Wind wakes from buildings that would adversely affect sailing now enjoyed by thousands on the Lake Union.
4. Building towers in an area of potential liquefaction
5. Destroying the 'step-down' zoning of concept of SLU and thereby adversely impacting the environment of existing residents and workers (in SLU and adjacent neighborhoods) that is currently protected by zoning regulations
6. Impacting the views from designated Scenic Routes.
7. Noise impacts on occupants of buildings allowed by these alternatives that would surround the landing and takeoff paths of aircraft
8. Lack of any tower spacing requirement for residential and commercial towers
9. Shadow impacts on Lake Union Park and SLU residents
10. Proposing population increases of up to 30,000 and no provisions for children (schools, play grounds, affordable family housing).

B. Growth Target Analysis

On Page 2-7 "Growth Targets" the City has assumed extremely aggressive growth targets for SLU for the period from 2024 and 2031. These are inappropriate and should not be used or considered for any purpose. First, they are not a part of a rationale, comprehensive allocation of growth beyond the 2024 growth targets across Seattle and they are not a part of the City Council approved Seattle Comprehensive Plan. Second, with the very aggressive growth targets for SLU through 2024, SLU would clearly be the urban Center with the most intense development (housing and commercial) outside of Downtown and about 50% beyond those adjacent Urban Centers. Charts on this have been provided to the City under previous cover and are attached. Use only growth targets from the Seattle Comprehensive Plan.

C. Tower Spacing and limitations

1. There is no tower spacing proposed, so towers could be 18' apart. There should be an absolute tower spacing requirement of 100'. Otherwise the environmental impact of 400' towers 18' apart must be considered.

April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

2. Limiting towers to lots of 22,000 sq. ft. does not limit to 2 towers per block. If developers get or have an alley vacation, blocks can be as much as 79,000 sq. ft., allow 3 towers per block.

D. Flight Path issues

1. On page 1-35 there should be a safety buffer beyond the defined flight paths both vertically and horizontally.
2. Wind analysis should clearly show the limitations on tower height in the blocks surrounding Lake Union and Lake Union Park.
3. Wind analysis should result in definitive reductions in height from Denny Way to water. It is only addressed in general.
4. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats, will be much more widespread.
5. On Page 2-9, in section 2.2.3, Figure 2-4 only shows the flight path to and from the Southwest portion of Lake Union. We have understood, and have certainly observed, flights over the Southeast portion of Lake Union. Why is this not shown and taken into account?
6. Page 1-13 Noise impacts, inadequately differentiates between Alternatives #1 and #2 from the existing zoning. In the former, the aircraft would be landing and taking off between 240' or 300' towers. In #4 all buildings are below the flight paths. Remember the 'third runway issues'. This factor is also ignored on page 1-32 and clearly mitigation is necessary if towers are to surround the flight paths. This environmental issue is real, whether Seattle's noise codes recognize it or not.
7. Page 1-15 states that there is no problem because building height limits would remain, as they currently exist. This is false. There is no problem because the current zoning limits do not impinge on or surround the flight path.

E. Step-down to the Lake

1. Step down is de facto Seattle Policy (see downtown and Belltown and current SLU zoning) so should be recognized. Benefits of step-down should be more clearly stated.
2. Page 1-18 the top row is full of falsehoods in characterizing Alternative #1 and #2 as step-down. See attached three Step-down charts that clearly show that fallacy. This must be corrected.
3. Page 1-35 "Wind Analysis" should specify some degree or scope of the step down required to eliminate wind impacts on aircraft landing and taking off and on sailboats on the lake.
4. The impact of destroying the 'step-down' zoning concept of SLU and thereby adversely impacting the environment of existing residents and

April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

workers (in SLU and adjacent neighborhoods) that is currently protected by zoning regulations must be recognized in the final report.

F. Cascade Neighborhood Zoning

All of Cascade should be protected, as it is about 75% built out and has developed its own neighborhood character, with diverse housing, market rate housing, small commercial buildings and human services.. All the blocks of Cascade should be included, including all those between Fairview and Minor.

G. Diverse Housing

1. On Page 1-16, the report needs to explain how increasing the allowed zoning density (increasing the land values) increases the amount of low-income housing.
2. On page 1-16, the report needs to explain how increasing the allowed zoning density increases the construction of affordable housing. High-rise housing is the most expensive per square foot and has no record of its use as low-income housing. Alternative #1 and #2 zoning would eliminate new low-income housing in SLU.
3. On page 1-16, it says Alternative #4 would reduce development of low income housing, even though zoning of 65', 75' and 85' encourages wood over concrete, a more affordable housing construction, and universally used in Seattle for subsidized housing. This zoning has encouraged significant low-income housing in Cascade and the rest of SLU. Correct this false statement.

H. Schools and Family Friendly issues

Schools and family-friendly issues should be addressed under Public Services and Utilities per SMC 25.05.444. Per the Draft EIS there are, as of 2009, about 2940 Housing Units (about 4410 people based on 1.5 people per housing unit). The residential capacities and increases from 2009 numbers is shown below:

Alternative	Residential Capacity	Increase from 2009
#1	35,874	31,464
#2	32,943	28,533
#3	26,941	22,531
#4	21,636	17,226

These kinds of population growth represent the equivalent of a small City. We see no provisions for a family-friendly environment, like schools and sports playfields and special considerations for multi-bedroom, affordable units. Further, particularly for Alternative #1 and #2, the predominate residential building form will be a high rise apartment/condo tower, the most expensive form of housing and the most unaffordable for young families. Does the City plan for this neighborhood to be devoid of children, with the resultant negative impact on

April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

community (stability, safety and comfort)? What provisions are there for school sites, playfields for children and young adults, more economical housing types like townhouses or five floors of wood over concrete? This void must be corrected in the Final EIS.

I. Aesthetics

1. Sections 2.3.3, 2.3.4, and 2.3.5 define the three alternatives with increased zoning. All allow about a 75% increase in bulk and scale for commercial buildings throughout most of SLU. Current zoning allows FAR of 3, 4, 4.5 and 5 for an average of 4. These alternatives allow FAR's up to 7 with bonuses. There is only one building currently in SLU with this bulk/FAR, and that is on Boren between Thomas and Harrison. A second such building is just starting on Boren between Thomas and John. These are a result of a special concession granted to Vulcan/Amazon, increasing the FAR from 3 to 7. The impact of 20 to 25 such buildings in SLU, two or more to the block, has not been adequately considered in this EIS. Not only is the bulk oppressive, but by taking credit for a large lot, they can also be high. The alternatives allow these 24,000 sq. ft. floor plates up to 240' high! Compared to residential towers of similar height, these buildings (using the example of the current building) are bland with no decks so they lack life and have over twice the horizontal impact or bulk. In addition their street level facades are monotonous for entire blocks. This is inherent, as the architects design a solid base to mount the bulky tower. All the emphasis seems to be the impact of residential towers on aesthetics, light, glare, shadows, air circulation and wind impacts on others. These analyses must also include a representation of these bulky, boring commercial buildings throughout SLU and their impact on the environment.
2. Page 1-18, second row, gives a very misleading statement, implying that the towers proposed are slim. Towers in Vancouver are about 6,000 sq. ft.. Towers in Belltown are from 7000 to 8000 square feet. In Belltown, 8,000 sq. ft. towers not a legacy of the past; 8000 sq. ft. towers up to 240' in height are being proposed today. These SLU towers are 10,500 square feet on top of bulky podiums of 45' to 85'. This document should reflect these appropriately. Two or more of these per block, and on tens of adjacent blocks would be oppressive and that impact must be considered.
3. Page 1-17 ignores the impact on adjacent neighborhoods of the residential towers on the area context and view. This includes Capital Hill, Denny Triangle, Belltown and Uptown.
4. Page 1-17 ignores the impact on area views within SLU that are currently protected by current zoning and would be totally destroyed in different amounts by Alternatives 1,2 and 3.
5. Page 1-17 ignores the fact that for some blocks, the proposed podiums are twice as high as the total allowed height under current zoning. (e.g. blocks between Mercer and Valley)

April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

6. Page 1-17 trivializes by statements like "similar to but less than Alternative 1". Professionals should be able to do better than that.
7. Page 1-18 'Viewsheds' is just plain false. These alternatives do impact views; they just don't totally wipe them out. Losing the supporting structure of the Space Needle is an impact on the view of the Space Needle. Views from carefully selected points that 'frame' the Space Needle between distant towers is 'cherry picking'.
8. Page 1-18 'viewsheds' should also take into account view impacts from within SLU and from non-designated viewpoints. This is a potential rezone, and not an individual project; so all views are in play.
9. Page 1-18 'viewsheds' says all view impacts from all alternatives are similar. This is false to any reasonable person. This must be corrected.
10. Page 1-18 'viewsheds' must list impacts to each scenic route specifically and the extent, by alternative, that these are compromised.
11. Page 1-39 discusses views from protected viewpoints, but this area rezone must consider general views also.

I. Shadows -

1. Page 1-19 Shadows is entirely unacceptable. To say that the shadow impact of Alternative #1 and #4 are similar throughout the day is not factual.
2. Page 1-19 Shadows should be based on quantified data in some manner. Professionals should be able to quantify by sq. ft. of shadows or blackness of the area to allow rational comparisons to be made.
3. Page 1-19 shadows on Lake Union Park should be highlighted for all four seasons but particularly from September to March, critical months for light in Seattle.
4. On page 1-30, 'Plants and Animals', the different shadow impacts of the 4 alternatives on plants should be discussed. Obviously Alternatives #1 and #2 have greatest and most profound impact.
5. On page 1-40 under 'Shadows', it merely lists what is in the land use code. Which of those is recommended in this general case and how much to mitigate the huge increase in shadows?

K. Blocks South of Lake Union Park, between Valley and Mercer

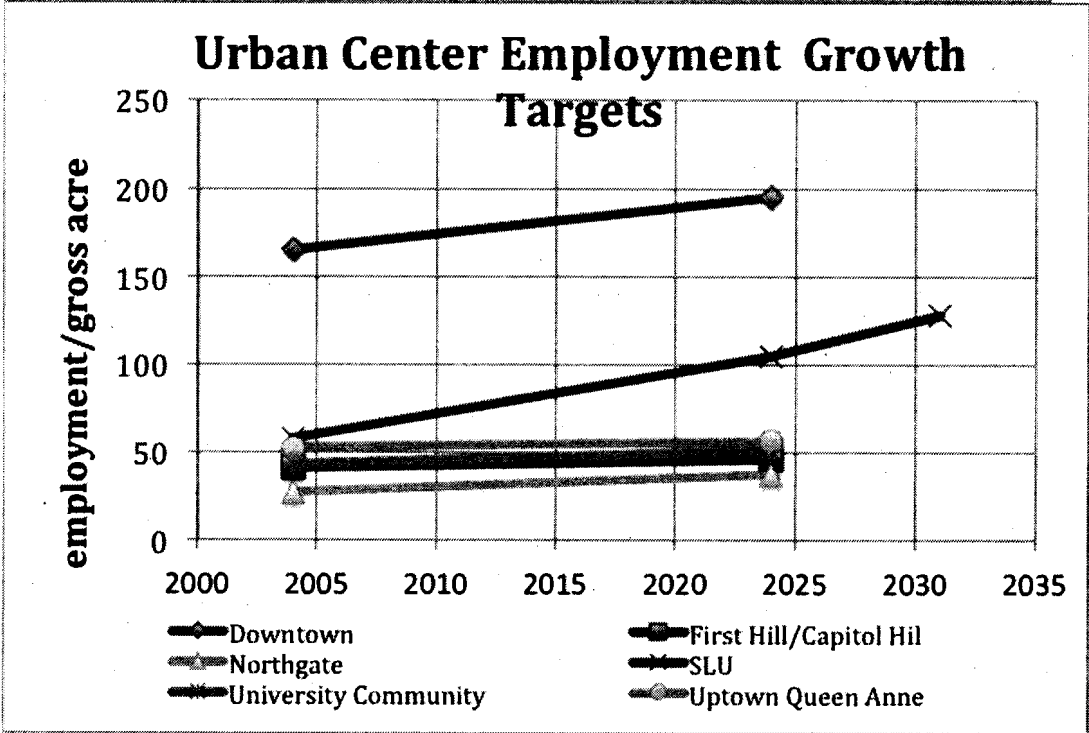
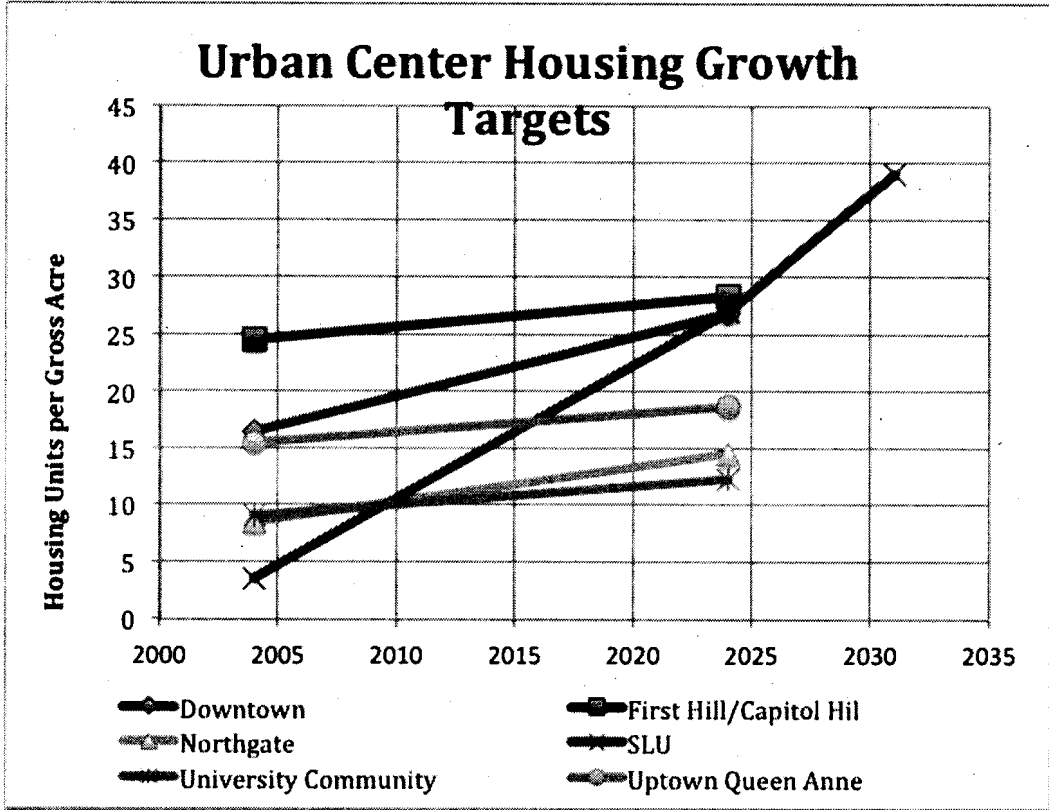
1. The impact of building wind wakes on aircraft landing and taking off should limit building heights to existing zoning.
2. Page 1-19 shadows on Lake Union Park should be highlighted for all four seasons, but particularly from September to March, critical months for light in Seattle. The mitigation for these damaging shadows should be to limit building heights between Valley and Mercer to eliminate them.
3. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats,

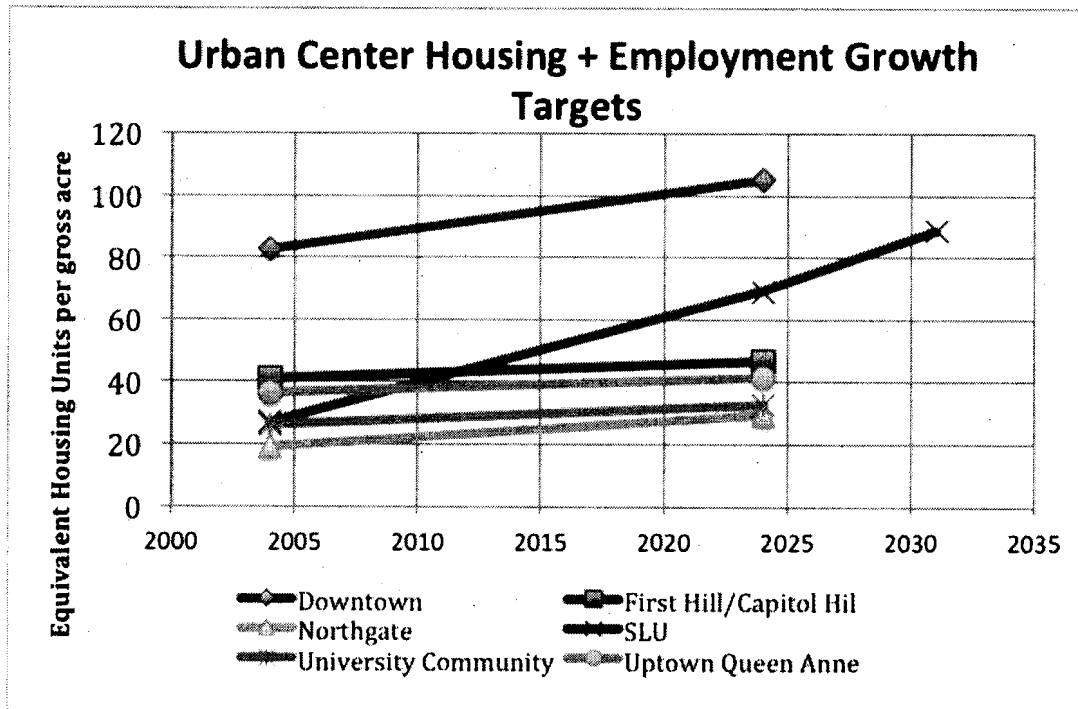
April 8, 2011
Comments on SLU Rezone Draft EIS
John Pehrson

-
- will be much more widespread. The logical mitigation is limiting building heights in this area to existing zoning.
4. All of the issues outlined above under Step Down call for limiting the heights in this area to existing limits.
 5. Page 1-28 should identify mitigation to account for the risk of the Liquefaction zone surrounding Lake Union. Should build mass be limited? Should certain kinds of construction be called for?
 6. Page 1-9 Geology and soil should state that in areas close to Lake Union, ground water will likely limit underground parking to one floor, so with a tower, much parking will have to be above ground which is damaging to the esthetics and pedestrian environment.
 7. The SLU growth targets in the Seattle Comprehensive Plan do not justify increasing the allowable building heights in this area from 60' to 160' to 300'.

L. Blocks West of Lake Union and Lake Union Park

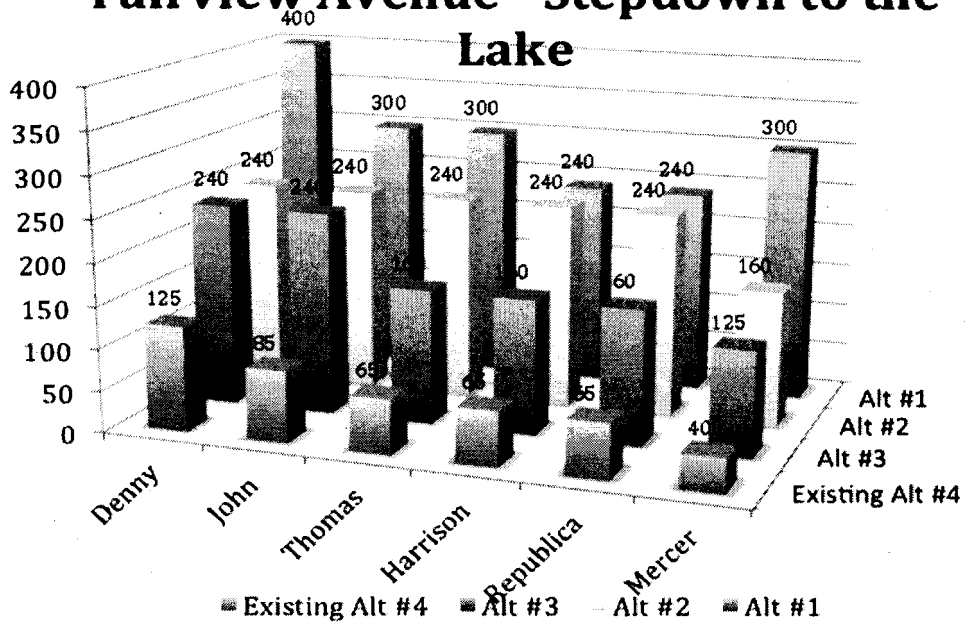
1. Steep slopes, slide areas, and the flight path should limit zoning on the west side of Lake Union Park/Lake Union from Mercer north to the current zoning of S/M 65.
2. The impact of building wind wakes on aircraft landing and taking off should limit building heights to existing zoning of 65'.
3. The impact of building wakes on sailboats all over Lake Union must be considered. Those impacts, because subtle changes can affect sailboats, will be much more widespread. The logical mitigation is limiting building heights in this area to 65'.
4. All the issues outlined above under Step Down call for limiting the heights in this area to existing limits.
5. Limiting zoning in this area to the current S/M 65 would not only recognize these hazards, but protect the existing views from the east side of Queen Anne toward Lake Union.



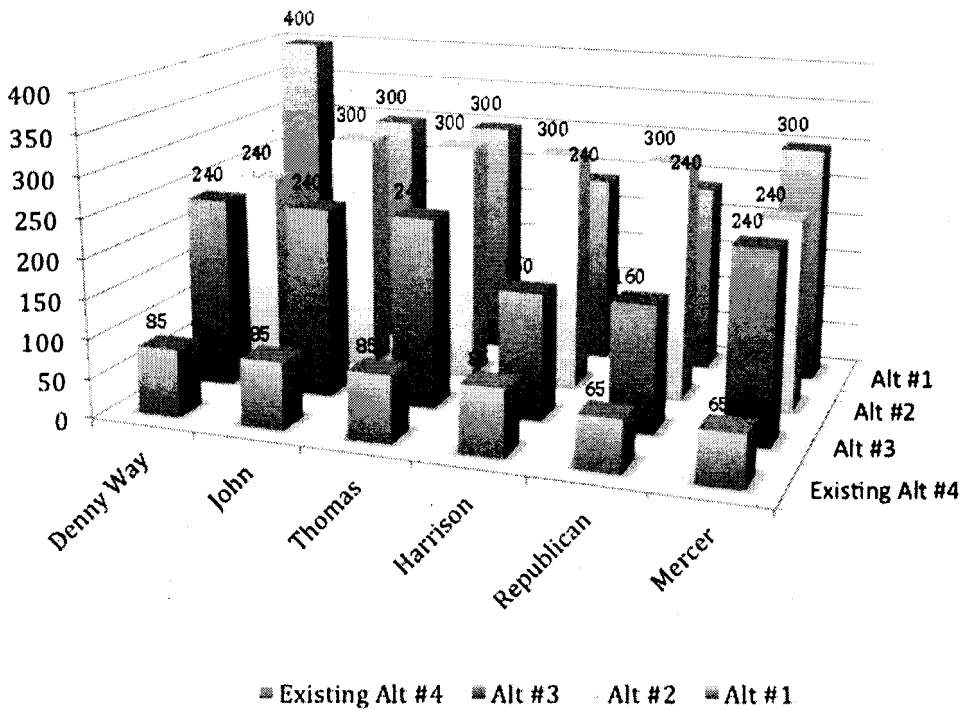


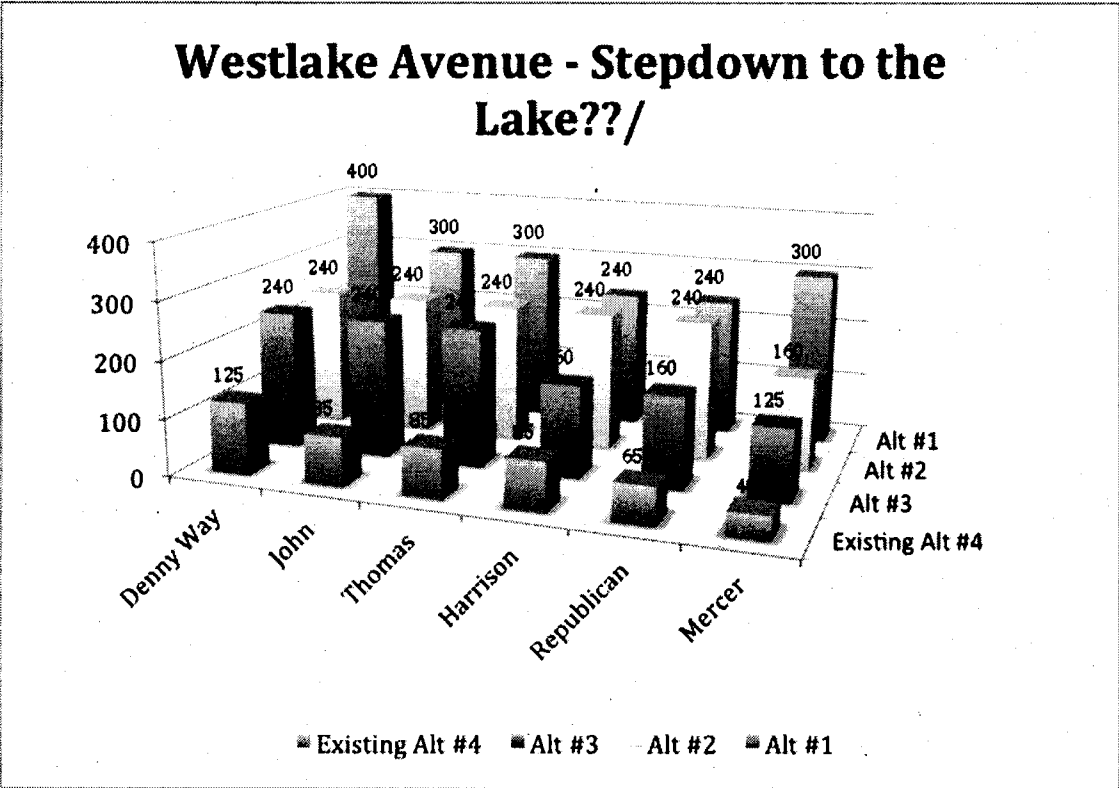
April 8, 2011
 Comments on SLU Rezone Draft EIS
 John Pehrson

Fairview Avenue - Stepdown to the Lake



8th Avenue - Stepdown to the Lake????





King, Donna

From: Penn, Steve @ Seattle [Steve.Penn@cbre.com]
Sent: Sunday, April 10, 2011 9:32 PM
To: DPD_Planning_Division

To whom it may concern,

As a long time Seattle area resident and having spent over 20 years in the Seattle real estate industry, I am writing to offer my support for updating the South Lake Union Height and Density Draft EIS. 1

Since the SLU area was designated an Urban Center in 2004, actually close to a decade before that, the South Lake Union Area has evolved into Seattle's most vibrant place for residents, business and visitors to gather, to work and to live. By allowing for more people and taller buildings to continue in this "district", the city, its residents and business community will benefit from the following:

- Increased amenities, improvements to current transportation, efficient use of precious resources (energy and water to name two), and additional sustainable measures for all.
- Increased revenue through taxes, spending and investment.
- Focused and sensible growth in the SLU Area creates a "bookend" to the Financial District. This will result in growth and redevelopment in the area between these two districts. Again offering improved amenities, transportation solutions and sustainable features to residents, visitors and businesses.

Seattle is an innovative, engaging, educated and dynamic City. As a result, many of the nation's top corporations have chosen Seattle as their home as well as attracting strong interest from the investment community. To continue this positive momentum in the SLU District while improving the area for all, adopting the most aggressive alternatives is the right thing to do.

Thank you,

Steve

Stephen Penn | Managing Director
CB Richard Ellis | Asset Services
1420 5th Avenue, Suite 1700 | Seattle, WA 98101
T 206 292 6065 | F 206 292 6033 | C 206 730 7507
steve.penn@cbre.com | www.cbre.com



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Holmes, Jim

From: Mark Petrie [mailto:mark.petrie@copiersnw.com]
Sent: Tuesday, March 29, 2011 10:06 AM
To: Holmes, Jim
Subject: EIS for S Lake Union

Hi Jim,

I was at the public meeting last night but got there too late to have my name in for the public comment. I am in total support of option #1. 1

This is a great chance for the City of Seattle to get it right and not do it half way. Think of the growth this area will have in the next 50 years. Why not make it the most diverse, dense, safest area of the city. It would be great for many of my employees to work live and play right here in South Lake Union. We have over 200 employees and are growing. The City of Seattle is one of our customers with managed HP printers.

This is a great chance to reduce carbon footprint and help save fossil fuels from being burned. We have replaced all our old lighting here with new LED and HO florescent lighting in our building here that we have occupied since 1989, and owned since 1997.

I would also urge the DPD to look at the positive economic impacts that option #1 will provide and not just look at the negative that is in the EIS.

Please do not do this opportunity half way. Let's have the City maximize this rare opportunity for smart contained growth for the good of all its citizens.

Than you,

Mark Petrie
CEO

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206-286-5508 - Direct
206-658-2808 - Fax

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King, Donna

From: popec@rockisland.com
Sent: Saturday, April 09, 2011 2:08 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS

Dear DPD,

As a 79 year old resident of the South Lake Union neighborhood, I would like to comment on the EIS. The need for growth in our area is recognized and the need for tall buildings is obvious in order to increase the number of future inhabitants. What upsets me, even though I will probably not be alive when it happens, is the plan to put high rises immediately around Lake Union. What ever happened to step-down planning? Alternative 3 is the least harmful, but they all have this defect. High rises-yes. Around the lake-NO.

1

Charles E. Pope II, MD
116 Fairview Avenue North #512
Seattle, WA 98109

King, Donna

From: Bill Potter [williamwpotter@gmail.com]
Sent: Sunday, April 10, 2011 2:16 PM
To: DPD_Planning_Division
Subject: Draft EIS Statement, comments

"Hello,

I am a current resident of Mirabella and a member of LUOA. I don't think South Lake Union knows what it wants to be since the area was designated a City Urban Area. The proposed EIS Statement Alternatives #1 and 2 will take away the chance to be anything other than an extension of downtown. The thought of "Towers" 300 to 400 feet in areas that now only have a maximum height of 125 feet would seem to me to be increasing the density to downtown areas with its resultant crowding and parking problems. | 1

One of the desirable features of the current height regulations is the reduction in the allowed height as the blocks approach the Lake, resulting in a better view of the main feature of the area: Lake Union. | 2

I believe that, due to the current financial and employment conditions, there is no need to rush into such a drastic realignment of the building conditions. If we settle back and see what becomes of the "Mercer Mass" reconstruction, we will have a better idea of what the area can tolerate when conditions improve. | 3

I believe the best current resolution is a compromise between Alternatives 3 and 4, with a reduction in the height as the distance to the Lake decreases. I particularly deplore the disregard of the existing regulations in the case of Amazon and the UW Research Center. What's the use of having regulations if they can be breached by a simple vote of the City Council? However, admittedly, it will take some effort for this area to devise a plan as to what it wants to be, without having draconian building heights imposed on it. Further, I believe LUOA has a role in this planning effort. | 4

Sincerely,

Potter #926
254-9108

William W
(206)

Holmes, Jim

From: _____
Sent: Wednesday, March 16, 2011 8:27 PM
To: DPD_Planning_Division
Cc: jeff.rabe@ottorosenau.com
Subject: South Lake Union EIS

If the continued re-development of the South Lake Union area is dependant upon zoning changes that allow greater height and density in that neighborhood then I am all for it. I believe the proposed changes will bring additional development which is not only an economic boon to the city in forms of new jobs and taxes, but will also encourage people to live closer to work and reduce congestion and commuting into and out of the city.

1

There is also another issue I am very concerned about: Public Safety. Currently the area between Aurora and I-5 in the SLU neighborhood seems to be a haven for prostitution and drug related activity. I have frequent business trips to some of the new buildings that have recently been constructed. My hours vary but are frequently quite early in the morning and sometime after dark in the late evenings. I don't think it is safe to walk even a few blocks through much of this area until I get close to where the newer buildings have been constructed. The whole atmosphere tends to change there and I see normal working people instead of pimps and prostitutes and other undesirables that are heavily present only a few blocks away, especially near Denny Park.

2

I don't see any down side to having high rise buildings full of normal working people in that area. There is a big downside in letting the area continue to decay.

Sincerely,

Jeff Rabe
206 700 5670

Holmes, Jim

From: Jamie Randall
Sent: Thursday, April 07, 2011 8:20 AM
To: DPD_Planning_Division
Subject: EIS

To whom it may concern,

I am writing to express my concern about a proposal to build 300-400 ft. tall buildings in the South Lake Union Area. As a resident of SLU some of my favorite things about the area are the neighborhood feel, the views of the lake and the mountains, and the sunlight that comes streaming in my window to wake me in the morning. I know this is just another project for developers but for me it is so much more; it will affect my every day quality of life. I strongly oppose any plan to build towers in the area and encourage you to pursue EIS plan number three instead, which offers a more sensible approach to growth and density. I believe this compromise can make everyone happy and I sincerely hope you will consider it above all others as you move forward with this project. | 1

Sincerely,

Jamie Randall

Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 125: Link, Kristen	
1	Support Alternative 3. The comments are noted.
Letter 126: Littlel, John	
1	Support Greater Intensity of Jobs and Housing. The comments are noted.
Letter 127: Loacker, John	
1	Support Alternatives 1 and 2. The comments are noted.
Letter 128: Lust, Todd	
1	Support Alternative 1. The comments are noted.
Letter 129: Malaspino, Joe	
1	Support Additional Height and Density. The comments are noted.
Letter 130: Markley, David D.	
1	Study Area. The commenter requests that the study area of the analysis be expanded. In response, the project team performed a second look at the distribution of the trips expected from the proposed height and density increase and determined that the study area defined in the EIS is adequate.
2	Recalibration of Travel Model. The City's official calibrated and validated travel demand model was used in the analysis. A recalibration of the travel model is not appropriate given that Denny Way and Mercer Street serve different destinations. Mercer Street provides access to I-5 and Denny Way provides access to Capitol Hill and First Hill, so they do not act as equivalent travel paths to many travelers.
3	Intersection Analysis. At the outset of this project, we elected to analyze corridors to capture impacts and propose mitigation on a larger scale. We feel this technique is appropriate given that intersection analysis may focus too narrowly on intersection impacts and mitigations.
4	Existing Mode Split. The purpose of the Draft EIS is to compare the No Action and Action Alternatives. The existing mode split is not relevant to this analysis.
5	Mitigation's Effect on Mode Split. The effectiveness of the mitigation measures suggested in the Draft EIS are based on a study commissioned by the California Air Pollution Control Officers Association (CAPCOA) which performed a meta-analysis of other studies around the country. These multiple academic studies provide reasonable assumptions for the South Lake Union

Comment Number	Response
	neighborhood.
6	Citywide Development. The commenter raises an issue related to concurrency. The City is beginning an update to the Comprehensive Plan and will address this issue as part of that process.
Letter 131: Masson, Chris	
1	Graphics. Please see Final EIS Section 3.4 for views of the neighborhood in the context of the surrounding area from Gas Works Park and a birds-eye view over Lake Union. In this same section, please see the street-level views which show the potential building height and mass in the context of existing structures.
2	No Change in Heights. The comments are noted.
Letter 132: Masson, Diane	
1	No Increased Height on East Side of Fairview. The comment is noted.
2	Low Heights North of Mercer. The comment is noted.
3	Keep Cascade Neighborhood Intact. The comment is noted.
4	Not Like Downtown. The comment is noted.
Letter 133: Matthews, Carrie	
1	Support Height and Density. The comments are noted.
Letter 134: Matthews, Tim	
1	Support Increased Height and Density. The comments are noted.
Letter 135: McKay, JJ	
1	Support Increased Density Plan. The comments are noted.
Letter 136: McLaughlin, Jan	
1	Support Alternative 1. The comments are noted.
Letter 137: Miller, Terry	
1	Support Alternative 1. The comments are noted.
Letter 138: Moss, Christine	
1	2031 Growth Estimate. As described in Draft EIS Section 2.2, the 2031 estimates are intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity

Comment Number	Response
	needed to meet a future growth target for South Lake Union, both 2024 and 2031 are considered in the analysis.
2	Building Heights. The comments are noted. Please see Final EIS Chapter 2 for an illustration of proposed maximum building heights under each alternative.
3	Support Cascade Neighborhood Existing Zoning to Fairview. The comment is noted.
4	Neighborhood Facilities. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.
5	Transportation Analysis. The comment is noted. Please see Draft EIS Section 3.13 for the transportation analysis of each alternative.
Letter 139: Mulica, Thomas	
1	Support Alternative 1. The comment is noted.
Letter 140: Munger, Jeffrey	
1	Support Greater Height and Density. The comments are noted.
Letter 141: Muratore, Michael	
1	Support Additional Growth. The comments are noted.
Letter 142: Naprawrich, MaryAnn	
1	Not Like Downtown. The comments are noted.
Letter 143: Norton, Ruthe and Frank	
1	Alternative 3 Most Acceptable. The comments are noted.
Letter 144: Novy, Richard	
1	Beauty of Area. The comments are noted.
Letter 145: Nottingham, Sarah Rose	
1	Support Growth. The comments are noted.
Letter 146: O'Brien, Kathleen	
1	Density is Key. The comments are noted.
Letter 147: Ostergaard, Paul B	
1	Podiums. The comments are noted.

Comment Number	Response
2	Form-based Approach. The comments are noted.
3	Feasibility and Character. The comments are noted.
Letter 148: Parente, Kini	
1	Encourage Height and Density. The comments are noted.
Letter 149: Parrish, Brad	
1	Support Height and Density. The comments are noted.
Letter 150: Parsons, Craig	
1	Support Increased Density. The comment is noted.
2	Public Schools. Please see Final EIS Section 3.5 for a discussion of school impacts.
3	Power Infrastructure. Pending input from SCL
4	Not Supporting Streetcar System. The comment is noted.
Letter 151: Pavlovec, Brian and Giselle	
1	Support Alternative 1. The comment is noted.
Letter 152: Pearson, William	
1	Building Heights. The comments are noted.
Letter 153: Pehrson, John	
1	Integration of Environmental Elements. The comment is noted. For the balance of this letter, please see responses to Comments 24 through 53 in Letter 13.
Letter 154: Penn, Steve	
1	Support Height and Density. The comments are noted.
Letter 155: Petrie, Mark	
1	Support Alternative 1. The comments are noted.
Letter 156: Pope, Charles E.	
1.	Height Near Lake Union. The comments are noted.
Letter 157: Potter, William W.	
1	Extension of Downtown. The comment is noted.

Comment Number	Response
2	Lake Union View. The comment is noted.
3	Wait for Mercer Reconstruction. The comment is noted.
4	Compromise Between Alternatives 3 and 4. The comments are noted.
Letter 158: Rabe, Jeff	
1	Support Greater Height and Density. The comment is noted.
2	Public Safety. The comment is noted.
Letter 159: Randall, Jaime	
1	Support Alternative 3. The comment is noted.

Comment Letters 160-194

160.	Redman, Scott
161.	Reel, Richard
162.	Reel, Richard
163.	Reel, Richard
164.	Rivera, Chris E.
165.	Roewe, Matthew H.
166.	Rusch, Scott
167.	Russell, Eric
168.	Sather, Katherine
169.	Saucier, Lyn
170.	Schauer, Tom
171.	Sevart, Ron
172.	Sharp, Jeff
173.	Shushan, Stephanie
174.	Simonetti, Martin
175.	Sleicher, Charles
176.	Smith, Patricia
177.	Smithhart, Noelle
178.	Snorksby, Paul
179.	Starr, Scott
180.	Stepherson, Josh
181.	Stoner, Mark
182.	Sullivan, David
183.	Surdyke, Scott
184.	Suver, Joanne
185.	Symonds, Drew
186.	Tangen, John
187.	Thordarson, Michelle
188.	Timpson, E. Diana
189.	Trainer, Steve
190.	Tung, Beatrice
191.	Turner, John
192.	Tweedale, Kelly
193.	Twill, Jason
194.	Umali, Tino

Holmes, Jim

From: Scott Redman [Scott.Redman@sellen.com]
 Sent: Monday, April 11, 2011 3:47 PM
 To: DPD_Planning_Division
 Subject: South Lake Union Height & Density Draft Environmental Impact Statement

Importance: High

Mr. James Holmes
 Seattle Department of Planning and Development
 700 Fifth Avenue, Suite 1900
 PO Box 34019
 Seattle, WA 98124-4019
southlakeunionels@seattle.gov

RE: South Lake Union Height & Density Draft Environmental Impact Statement

Dear Mr. Holmes:

Sellen Construction is a privately held company located in the South Lake Union area of Seattle. Our business has been located in this neighborhood since our founding in the early 1940's. We've seen a lot of changes in the neighborhood since our early days-from the early industrial warehouses to the now bustling information technology, biotechnology, corporate and non-profit organizations that we call neighbors. Almost weekly, we're welcoming new businesses to the area; residents are moving-in; pedestrians are taking to the streets to walk to cafes, restaurants, and grocery stores; and construction trucks are rolling along constructing new buildings for Amazon.com, MOHAI, and University of Washington's School of Medicine. It's an exciting time to work and live in South Lake Union!

I understand that height and density limits for South Lake Union are under review and I wanted to take a moment to tell you why Sellen and I support height and density revisions to our neighborhood:

- We need more housing and more people in our neighborhood. More people living in the area means more activity on the street afterhours, safer neighborhoods, more amenities, and better success for businesses.
- Sellen is committed to living and working sustainably and increasing the density of our urban neighborhoods will allow our employees to live closer to work, reducing our environmental footprint. The more housing and amenities we add to our urban neighborhoods, the more options we'll be able to provide for those who work here. A shorter commute can dramatically reduce everyday costs and leave more time for family and community.
- As a former board member for the Seattle Parks Foundation, I understand the importance of building and advocating for green space, but it is a shame that we don't have more people living and working near parks like the new South Lake Union Park. We've made an effort to build amenities to attract people to our urban centers, but now we need to allow for infrastructure to welcome more residents to our neighborhoods that can use them.

Thank you for the excellent work you are doing to make Seattle a livable, workable city for us and future generations. Please approve increased heights and higher density for South Lake Union-it benefits the most people and maximizes our city resources. It's the right thing to do.

Sincerely,

Scott Redman



Scott Redman
President

Sellen Construction Company

w. www.sellen.com

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c. 206.321.7133

f. 206.805.7233

e. scott.redman@sellen.com

Holmes, Jim

From: rhreel@aol.com
Sent: Tuesday, March 29, 2011 9:54 AM
To: DPD_Planning_Division
Subject: Draft EIS for South Lake Union

My name is Richard Reel. I have been a small business and property owner in the South Lake Union (SLU) neighborhood since 1984. I have seen many changes, mostly positive. Now we have, as a city, a chance to make more improvements to the neighborhood that will greatly benefit the entire city.

I support the A-1 Alternative in the draft environmental impact statement.

I also support allowing greater commercial height and density in the 8th Avenue and 9th Avenue corridor.

South Lake Union has been designated an Urban Center since 2004. It is part of the Comp Plan. In all the city, it is a logical area for the coming growth to Seattle.

The plan to Upzone the area will mean more efficient use of our downtown land. This will require greater density and height. This will result in less, future sprawl in Seattle.

The SLU area already has the paid for infrastructure, including transportation. You can walk to the downtown core.

The plan will provide for much more Affordable Housing.

It will also encourage more BioTech and HighTect companies to locate in Seattle. This means jobs and tax revenues.

The plan to create more height and density in this neighborhood has been studied and advocated for by many people and leaders in Seattle. It make tremendous sense on all levels.

So if not in South Lake UnionWHERE?

I urge your support. Rich Reel

1

Holmes, Jim

From: rhreel@
Sent: Wednesday, April 06, 2011 10:33 AM
To: DPD_Planning_Division
Subject: Draft EIS Comments

I am writing to give you a couple of comments on the draft EIS for South Lake Union. They are:

- 1) The Final EIS should very explicitly mention that the current zoning remains as an option, should you choose not to take advantage of the incentive zoning. | 1
- 2) The view analysis in section 3.10 is flawed in that the alternatives are compared to existing conditions. The alternatives should be compared against the full build out under existing zoning. | 2

Thanks, Richard Reel, Property owner South Lake Union

From: RHREEL@aol.com [mailto:RHREEL@aol.com]

Sent: Monday, April 11, 2011 11:37 AM

To: Holmes, Jim; DPD_Planning_Division

Subject: Draft EIS Comments

Attached is an Environmental Benefits Statement (EBS). Its purpose is to articulate the wide range of benefits that can result from responsible urban development. More specifically, its goal is to supplement the information that is furnished by the Environmental Impact Statement (EIS), and bring breadth and balance to the public debate. It attempts to inform the conversation by holistically focusing on the potential benefits to the community and environment, providing appropriate attention to all there is to be gained—at the neighborhood, city, and regional levels.

163

This Environmental Benefits Statement was funded by: Equity Office, Fred Hutchinson Cancer Research Center, The Kenney Family, PEMCO, Rich Reel, The Seattle Times Company, Touchstone Corporation, and Vulcan Inc.

With Participation from other SLU Property Owners Group Members: The Blume Company, John Goodfellow, The Justen Company, The Lowen Family, Sellen Construction, and Walsh Construction.

Thanks for your efforts to make Seattle an even greater city.

Richard Reel



ENVIRONMENTAL BENEFITS STATEMENT

South Lake Union Urban Center
Seattle, Washington

Prepared by GGLO
March 2011



From: RHREEL@aol.com [mailto:RHREEL@aol.com]

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Thanks for your efforts to make Seattle an even greater city.

Richard Reel

CONTENTS

SUMMARY	2
THE SOUTH LAKE UNION NEIGHBORHOOD	3
HOUSING AND JOBS	4
ECONOMICS	6
TRANSPORTATION	7
LIVABILITY AND URBAN DESIGN	8
QUALITY OF LIFE	9
CLIMATE CHANGE	10
ENERGY AND WATER	11

What is an Environmental Benefits Statement?

The purpose of an Environmental Benefits Statement (EBS) is to articulate the wide range of benefits that can result from responsible urban development.

More specifically, a key goal of an EBS is to supplement the information that is furnished by a typical Environmental Impact Statement (EIS), and bring breadth and balance to the public debate.

Development is inherently controversial, simply because it entails change. Unfortunately, that built-in controversy has a tendency to obscure the potential benefits. Significant land use actions typically require an EIS, a document that frames the debate in terms of the potential negative impacts, often aggravating the unconstructive dynamic of contention.

An EBS, in contrast, attempts to inform the argument by holistically focusing on the potential benefits to the community and environment, providing appropriate attention to all there is to be gained—at the neighborhood, city, and regional levels.

SUMMARY

This Environmental Benefits Statement is a discussion of the potential benefits of height and density increases in the South Lake Union (SLU) neighborhood. The City of Seattle has been exploring options for updates to SLU's zoning since 2008, and in February 2011 published a draft environment impact statement (DEIS) that analyzes four alternatives. The purpose of this document is to explore positive impacts that are beyond the scope of the DEIS, and to inform and enhance the debate concerning these vital policy decisions. The key points are summarized below:

- **The core benefit of new development in SLU is the creation of housing and jobs.**
- **Between 2005 and 2025 a cumulative tax revenue of \$1.3 billion could be generated by development in SLU.**
- **SLU represents one of Seattle's best opportunities for accommodating growth while minimizing demand on roadways.**
- **Taller buildings provide superior options for a high-quality built environment and public realm.**
- **The redevelopment of SLU will benefit the neighborhood, the city, and the region.**
- **SLU presents an unmatched opportunity to create an urban center that fosters low-carbon lifestyles.**
- **New development in SLU can reduce regional energy demand and reduce stormwater runoff pollution.**

The prospects for achieving each of the above benefits will be determined by the amount of new development that occurs. Maximizing the chances for that outcome calls for zoning that allows the greatest development capacity and flexibility. Of the alternatives studied in the DEIS, Alternative 1 provides the greatest heights and densities, and therefore is the best choice for providing the most benefits to the local community, the City of Seattle, and the greater region.

THE SOUTH LAKE UNION URBAN CENTER



The South Lake Union Neighborhood Plan envisions an urban center that will:

- balance housing and job growth, providing a live/work neighborhood;
- provide a model for sustainable redevelopment and infrastructure;
- respect the neighborhood's marine and industrial past, but welcome change;
- be easy to get around on foot, bike, boat, transit and car;
- attract innovative industries and organizations; and
- be safe and attractive to a diverse range of families and households.



Hemrich Brothers' Brewing Company, c.1900, once located on Yale Ave N between Republican and Mercer Streets.

The South Lake Union (SLU) neighborhood comprises 340 acres bounded by Interstate 5 to the east, Denny Way to the south, Aurora Avenue to the west and the Lake Union shoreline to the north (up to Galer and Ward Streets). In 2004, SLU was designated an “urban center,” and in 2007 the City adopted the South Lake Union Urban Center Neighborhood Plan, which articulated the vision summarized in the sidebar to the left.

SLU—one of Seattle’s oldest neighborhoods—has long been characterized by its dynamic range of uses. It is the site of Seattle’s first public school, and is still home to the St. Spiridon and Immanuel Lutheran churches, both established in the 1890s. Through the early 20th century the neighborhood was made up of a mix of housing and industry, including a Ford Model T factory and Boeing’s first facility. The neighborhood went into decline in the post-WWII years, and through the 1960s and 1970s was considered “blighted.”

Recovery began in the 1980s as the prime location began to attract new uses, and in recent decades the neighborhood has undergone significant redevelopment. Over the the last six years alone, South Lake Union has seen \$3.0 billion in public and private investment, and has become an established biotech center, as well as home to thousands of new residents.

What’s next for SLU?

SLU’s growing importance as a job center, together with its central location adjacent to downtown Seattle, presents one of the City’s best opportunities for high-intensity, mixed-use redevelopment. Recognizing this potential, in 2008 the City proposed increases in allowed building height and density, and in parallel crafted an Urban Design Framework, which states:

“South Lake Union has the potential to demonstrate smart growth at its best – a livable, vibrant urban neighborhood that builds on its history and physical setting, continues to grow an innovative local economy, supports a mix of residents of all ages and incomes, and provides rich cultural opportunities.”

The proposed increase in height and density required review under the State Environmental Protection Act, and the Draft Environmental Impact Statement (DEIS) that analyzes four alternatives was released for public comment in February 2011. The final EIS will be published Summer 2011.

The heights and densities studied begin with Alternative 1 as the highest, followed in order by Alternatives 2 and 3. Alternative 4 studies the existing zoning. Maximum heights for residential towers in certain zones are 400, 300, and 240 feet for Alternatives 1, 2, and 3, respectively. For heights above 85 feet, all three alternatives would require participation in an incentive zoning program that would grant additional height in exchange for public amenities provided by the developer.

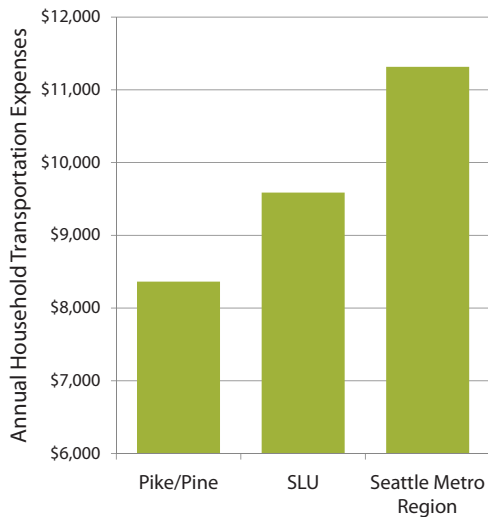
HOUSING AND JOBS

The core benefit of redevelopment in SLU is the creation of new housing and jobs. In 2004, Seattle set growth targets of 16,000 new jobs and 8,000 new households in SLU by 2024. King County recently issued 2031 growth targets which, if allocated proportionally to SLU, translate to 21,900 new jobs and 11,900 new households.¹ Accommodating this growth will depend on zoning that allows capacity for much more than those targets, because not all properties will be redeveloped by 2031 due to a host of economic and ownership factors. Furthermore, the region will not stop growing in 2031, and rezones should reflect the fact that these are 50 to 100-year decisions.

DEIS Alternative	Capacity	
	Households	Jobs
1	21,000	31,500
2	19,000	30,500
3	15,000	23,000
4 (no action)	11,500	20,000



The Denny Park Apartments in SLU, completed in 2005, provide 50 units affordable to households earning 30, 50 and 60 percent of area median income. Photo: Dan Bertolet



The chart above shows household transportation costs as estimated by the Center for Neighborhood Technology. Today, the Pike/Pine neighborhood has the lowest costs because it has the most complete set of characteristics that enable less driving. Future development in SLU has the potential to match or surpass those savings. Source: <http://htaindex.cnt.org>.

Housing

Between 2000 and 2010, the number of permanent housing units in SLU grew from 849 to 2,980. In a 2003 report authored by economist Paul Sommers,² housing units were forecasted to grow by more than 10,000 between 2000 and 2020. For comparison, estimated housing unit capacities given in the DEIS are shown in the adjacent chart. **Alternative 1 has capacity for 6,000 additional residential units compared to Alternative 3, and provides greatest potential to achieve the growth targets under real world conditions.**

Affordable Housing

As is typical for growing cities, lack of affordable housing is a vexing problem in Seattle. According to the DEIS, as of 2007 SLU had more than 400 City-funded affordable housing units, equivalent to 13 percent of total housing units. (More recent data collected by private property owners reflects a total of 527 subsidized units out of a total of 2,980 units, or 18 percent City-funded affordable units.) For all three alternatives, assuming the City's current incentive zoning system is expanded to SLU, any development above 85 feet would require either on-site affordable housing, or a contribution to fund low-income housing somewhere within SLU. According to the DEIS, **Alternative 1 would create the greatest potential benefit for affordable housing in the neighborhood.**

The Car-Free Advantage

The American Public Transit Association estimates that the average annual cost of owning a car in Seattle is \$11,185. **In urban neighborhoods like SLU, car-free living can be a viable option for residents, a choice that can significantly reduce household expenses.** Studies have shown that on average, U.S. households in auto-dependent suburban neighborhoods spend 24 percent of their income on transportation, while those in walkable, transit-rich neighborhoods spend 12 percent.

1. DEIS

2. Potential Economic and Fiscal Impacts of South Lake Union Redevelopment, Paul Sommers, for City of Seattle Office of Policy and Management, July 2004



Completed in 2010, this mixed-use office building located on Boren Ave N between Mercer and Republican Streets provides 158,000 square feet of office for Amazon.com, along with 14,000 square feet of street level retail.



Small, pedestrian-oriented businesses are an important ingredient of a vibrant neighborhood, and the Yellow Dot Cafe in SLU is an example of how such businesses are supported by new residential development.



Alley 24, a full-block mid-rise development located adjacent to REI in SLU, is one of the City's best examples of true mixed-use development, providing office, retail, and rental housing, with 20 percent of units affordable to households earning less than 60 percent of area median income. Photo: Dan Bertolotto

Jobs

Employment in SLU has been rapidly evolving over the last decade. Our region's growth industries—technology, biotechnology, and global health—are creating a knowledge hub in SLU, which is becoming a magnet for new businesses. Since 2004, 4.4 million square feet of new commercial space has been completed in SLU. Newly constructed offices in the neighborhood are bringing more than 9,000 additional jobs between 2010 and 2013 (though some of these are not new jobs for the City). Recent headlines report that Amazon will be hiring an additional 1,900 positions.

Each alternative has capacity to meet the estimated minimum job growth target of 21,900 new jobs in SLU by 2031. However, the Sommers report (cited previously) projected much higher job growth, with the potential for more than 22,000 new jobs as early as 2020, and actual job growth exceeded Sommers' 2010 high-end projection by 29 percent.³ Therefore, **if it is deemed important that job growth in SLU not be hamstrung by land-use regulation, then DEIS Alternative 1 is the best option.**

Small, Independent Businesses

Small, independent businesses are an important ingredient of vibrant, equitable neighborhoods. More people living and working in SLU will lead to increased foot traffic—the lifeblood of small, independent businesses—and will create demand for the everyday products and these businesses provide. Reflecting this potential, the Sommers report projected that **new development in SLU could result in the creation of nearly 7,000 new retail jobs by 2020.**

Jobs-Housing Balance

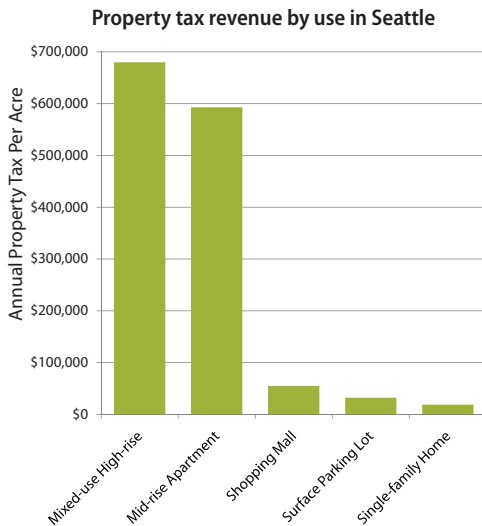
When jobs and housing are geographically separated, more people end up traveling long distances to get to work, a trend that has a host of well-known negative impacts. **Redevelopment in SLU has the potential to create a healthier jobs-housing balance at both the city and regional scales.**

Locally, new housing created in SLU will provide the opportunity for residents to live “next door” to jobs in SLU, and in very close proximity to the region's largest job center in downtown Seattle. New jobs created in SLU will offer more opportunities for short, car-free commutes from Seattle's residential neighborhoods. From the regional perspective, job growth in SLU will help reverse the decades-old trend of employment centers moving to the suburbs. The region's clogged freeways are a testimonial to the extended commutes caused by the segregation of jobs and housing. The potential for ameliorating the jobs-housing imbalance would be maximized by zoning that allows for the highest capacity of both housing *and* jobs in SLU.

3. DRAFT Update to Potential Economic and Fiscal Impact of South Lake Union Development, Paul Sommers and Mike Mann, 2011



The City of Seattle and SLU property owners invested \$52 million in the Seattle Streetcar, which began operation in 2008 and has achieved ridership levels 40 percent higher than the initial forecast. Photo: Dan Bertolet



Source: Downtown Seattle Association



Lake Union Park, rendered above, is a \$30 million public investment that provides open space for a growing South Lake Union neighborhood.

ECONOMICS

New development in SLU has the potential to provide significant economic benefits in many different ways. The extent of each benefit is proportional to the intensity of redevelopment, a dynamic that favors the adoption of Alternative 1, since it allows for the greatest capacity and flexibility.

Jobs

As noted in the previous section, redevelopment in SLU will create new jobs—as many as 17,000 between 2008 and 2020 (see page 5). The creation of jobs in SLU will also stimulate the creation of additional jobs throughout the region. The Sommers report estimates that between 2008 and 2020 **indirect economic impacts from job growth in SLU could result in approximately 39,000 new jobs statewide**, of which 58 to 70 percent would be in Seattle. Redevelopment in SLU will also create construction jobs. Between 2004 and 2010, real estate development alone generated 996 annual construction jobs, 46 percent more than the high-end projection in the Sommers report.

Tax revenue

Based on a projected 2000-2020 scenario of 23,700 new jobs and 10,000 new housing units, the Sommers report estimates that **between 2005 and 2025 a cumulative tax revenue of \$1.3 billion could be generated by SLU development activities**. From 2004 to 2010 new development in SLU resulted in an additional \$35 million in tax revenue to the City of Seattle. Analysis by the Downtown Seattle Association has shown that a typical mixed-use high-rise building generates annual property taxes of \$680,000 per acre of land, compared to just \$32,000 per acre for a surface parking lot (see adjacent bar chart).

Investment

Since 2004, an estimated \$2.7 billion has been invested in private development in the SLU neighborhood. An additional \$289 million was invested in infrastructure, including affordable housing, parks, streets and transit, 35 percent of which came from the private sector. Major projects include the Mercer corridor (\$161 million), the Seattle Streetcar (\$52 million), and Lake Union Park (\$30 million). As redevelopment continues over the coming years, it can be expected to catalyze further synergistic investment from both the public and private sectors.

Maximizing Return on Public Investment

A high return on public investments in SLU hinges on enough people to enjoy the benefits provided by those investments. For example, the City has recently invested in three parks in the neighborhood, bringing total open space in SLU to 15.7 acres. Based on the City's guidelines, this is more than enough open space to serve the estimated 2031 targets for housing and jobs. Similarly, the streetcar has additional capacity, and streetscape improvements throughout the neighborhood are setting the stage for more pedestrians and cyclists.

TRANSPORTATION

SLU has great potential to become an urban neighborhood in which walking, biking, and transit are attractive and widely used alternatives to the private automobile. This will help reduce both environmental impacts and household living expenses.

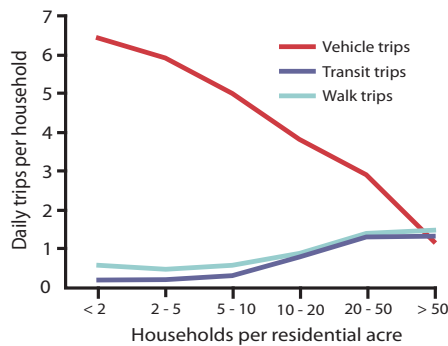
Outside of the downtown core, **SLU represents Seattle's best opportunity for accommodating growth while minimizing the increase of vehicular traffic on the City's roadways.** Fully leveraging that opportunity hinges on robust private development, and Alternative 1 offers the flexibility that will be key to making this happen.

Providing Transportation Choices

SLU is particularly well-situated to embrace alternative transportation because:

- It is centrally located, adjacent to the downtown job center, close to the University of Washington, and surrounded by residential neighborhoods to north, east, and west.
- The existing street block network is relatively dense, an important ingredient for walkability.
- It has a streetcar line that will likely be expanded.
- It has jobs that provide opportunities for people to live and work in the same neighborhood.

There are several factors that correlate with reductions in travel by single occupant vehicles, including population density, jobs/housing balance, transit service levels, intersection density, and bicycle and pedestrian infrastructure. It turns out that residential density is a good proxy for these factors, and the relationship to travel mode shown in the graph to the left is typical of what has been observed in cities nationwide: In short, *more density = less driving*.



Research in cities nationwide has shown that as residential density increases, travel mode shifts from cars to transit and walking. Source: John Holtzclaw, Metropolitan Transportation Commission, "1990 Household Travel Survey" (1997)



The streetscape pictured above on Terry Ave south of Republican St in SLU received major upgrades as a result of adjacent redevelopment. Enhancements include widened sidewalks, curb bulbouts, and overhead weather protection.

Photo: Lesley Bain

What's missing in SLU

The most important piece of this puzzle that's still missing is a sufficient population of neighborhood residents and workers to take advantage of the above opportunities. In recent years, development has brought new homes and jobs to the neighborhood, but there is room for much more. Progress to date is revealed by pedestrian counts conducted by the Downtown Seattle Association in late 2010 that show pedestrian traffic at Westlake and Harrison in SLU was up 59 percent from 2009.

LIVABILITY AND URBAN DESIGN



When building heights are limited, the most viable design solution is often a bulky, monolithic form that fills the available zoning envelope, as exemplified in SLU's Mirabella Retirement Community, pictured above. Photo: Dan Bertolet



These residential buildings located in Vancouver, BC, illustrate how slender towers built on podiums can both create opportunities for open space, and preserve long-range views between the towers. Photo: Bing.com, courtesy of USGS



Street-related entries and a tower set back above the second floor creates a pleasant streetscape in front of the 2200 Westlake mixed-use high rise, located just south of the SLU neighborhood boundary. Photo: Dan Bertolet

New development in SLU presents a huge opportunity to enhance livability through thoughtful urban design. **Taller buildings facilitate superior options for a high-quality built environment and public realm.** Alternative 1, because it is most flexible with respect to height, is the best choice for enhancing livability.

Height and Form

Urban neighborhoods benefit from a rich diversity of building form. One of the most important design considerations for achieving that end is the trade-off between bulk and height. Restricted height results in uniformly squat, bulky buildings. In contrast, greater height enables tall slender towers atop relatively short podiums, a building form that can provide benefits in many areas, including:

- *Pedestrian environment:* The average person on the street is aware of the podium portion of the building only, and the result is a more open-feeling streetscape.
- *Open space:* When building floor space can be accommodated in tall towers, it is possible to pull back the base of the building from the property line to create wider sidewalks, plazas, or pocket parks.
- *Views:* Tall, slender towers can actually have less impact on views because views are preserved between towers. In contrast, shorter, bulkier buildings tend to wall off views.
- *Shadows:* Tall buildings cast longer shadows, but compared with the shorter, bulkier alternative, the tower/podium form typically has reduced shadow impacts on the public right-of-way because the towers are set back.

Real-World Versus EIS Scenarios

To explore worst-case scenarios the DEIS analysis assumes buildout to full capacity, with the caveat that "it is unlikely that full build-out would ever occur..." But even under those conditions, **the DEIS finds "no significant adverse environmental impacts" with respect to views or shadows for any of the alternatives.**

In the real world, maximum buildout is improbable—a continuous wall of towers, for example, is a highly unlikely outcome. In addition, all three DEIS alternatives include a provision that sets a maximum of two towers per block (reduced to one tower on blocks near Lake Union). Even when zoning allows taller buildings, redevelopment occurs slowly over time, and the combination of newer buildings with existing buildings would maintain a diverse built environment.



Cascade Playground, located adjacent to a mid-rise apartment building, provides an important neighborhood amenity for families with children.



Restaurants and cafes that spill out onto the sidewalk bring life to the neighborhood streets, creating a safer and more enjoyable experience for pedestrians. Photo: Dan Bertolet

The benefits that new development in SLU can provide to the City of Seattle include:

- preservation of Seattle's lower-density neighborhoods if a greater share of the City's growth is directed to SLU
- provision of affordable housing in a neighborhood where car-free living is an attractive option
- reduced traffic impacts and less greenhouse gas emissions, because on average, future residents of SLU will drive less
- reestablishment of connections that will knit together surrounding neighborhoods of Capitol Hill, Eastlake, Queen Anne, and the Denny Triangle

QUALITY OF LIFE

The redevelopment of SLU will benefit the neighborhood, the city, and the region. And the key to maximizing these benefits is zoning that offers the greatest capacity and flexibility.

A Complete Neighborhood

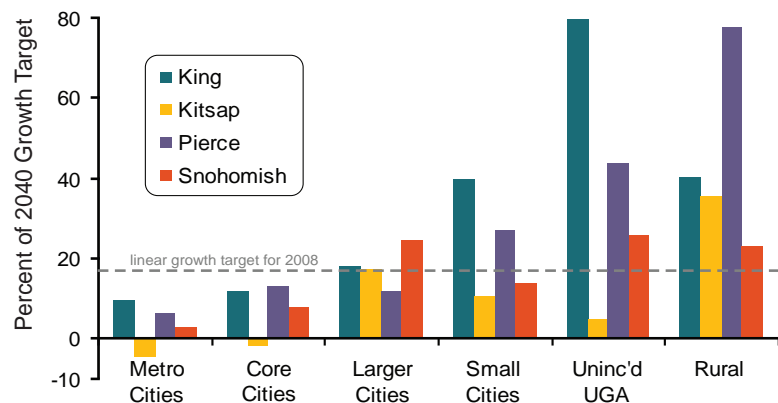
Success for SLU is the achievement of a vibrant, healthy neighborhood that offers a high quality of life to people of all incomes, ages, ethnicities, and cultures. Creating such a place requires a balanced combination of uses, services, amenities, building form, and open space.

Today SLU already has jobs, parks, transit access, and a desirable location. But it lacks many of the services and amenities typically found in a residential neighborhood because revitalized blocks are often separated by many underused blocks that have fallen into disrepair. Increased development, including significant housing, will act as a catalyst for new businesses that will round out the neighborhood. And as more and more people live, work, and play in SLU, it will evolve into a complete neighborhood, where the streets are active most hours of the day, and evenings are safer because there are "eyes on the street." And last but not least, a walkable SLU will help enhance the physical health of its residents.

The Central Puget Sound Region

At the regional scale, the quality-of-life benefits of new development in SLU include:

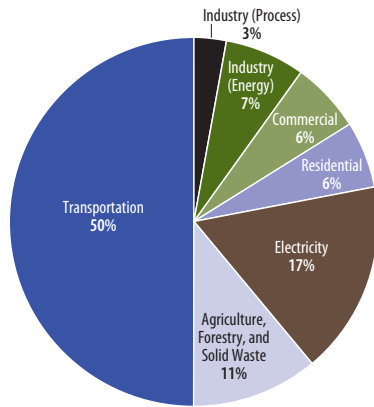
- preservation of farms and forests, because accommodation of growth in SLU would reduce development pressure at the urban fringe
- reduction of the "drive till you qualify" effect by providing centrally located housing and jobs
- reinforcement of Seattle as the hub of the regional transit network
- reduced demand on already overcrowded regional roadway networks.
- progress towards the goals of regional growth management (see chart below)



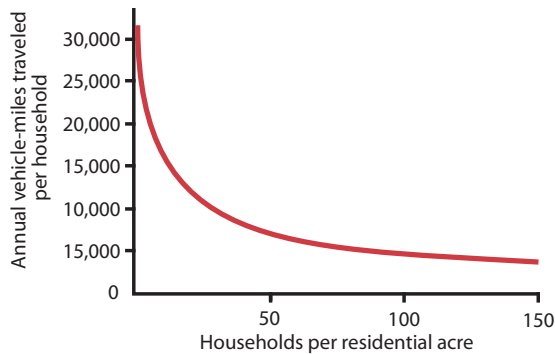
The chart above shows how growth in the central Puget Sound region has been occurring at the highest rates in small cities, unincorporated land outside urban growth boundaries, and rural areas. Meanwhile metro, larger, and core cities are lagging behind their growth targets. Achieving regional sustainability will depend on a reversal of this trend, with more growth being accommodated in existing urban centers such as South Lake Union. Source: Puget Sound Regional Council.

CLIMATE CHANGE

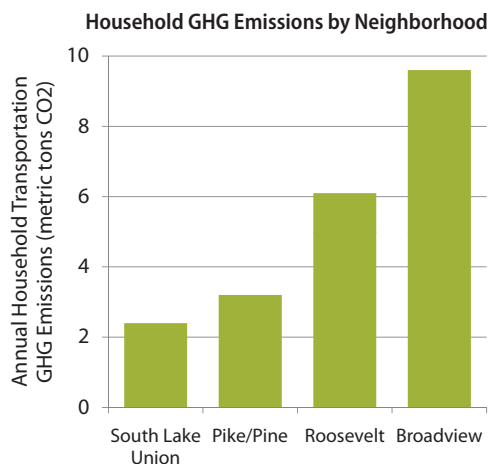
Climate change is the defining environmental challenge of our time, and **SLU presents an unmatched opportunity to create an urban center that enables low-carbon lifestyles.** The critical factor in achieving that end is sufficient new development to bring a high concentration of housing and jobs to the neighborhood, and success will depend on zoning that facilitates that outcome.



Sources of greenhouse gas emissions in the central Puget Sound region
Source: Puget Sound Clean Air Agency (2000)



In cities worldwide, research has shown that as density increases, people drive less. Source: John Holtzclaw et al., "Location Efficiency: Neighborhood and Socio-economic Characteristics Determine Auto Ownership and Use," (2002)



Source: Center for Neighborhood Technology; <http://htaindex.cnt.org/>

Greenhouse Gases and Driving

In the central Puget Sound region, transportation is the largest source of greenhouse gas (GHG) emissions (see adjacent pie chart). And in cities worldwide, researchers consistently find that as residential density increases, people drive less, which directly translates to reduced GHGs (see adjacent graph).

The Center for Neighborhood Technology has developed a model that estimates household automobile GHG emissions based on land-use characteristics and transit access, and their Chicago-based studies have shown "78 percent reductions for households living in central business districts." Household GHGs estimated by their model for four Seattle neighborhoods are plotted in the adjacent bar chart. SLU scores the best because of its high number of jobs and good transit access, demonstrating the opportunity it presents for accommodating low-carbon households.

DEIS Analysis

The DEIS projects increases in *total* greenhouse gas (GHG) emissions under all three alternatives, which would be expected, given that there will be more activity and buildings. However, it is more relevant to consider emissions on a per-capita basis, because if those new homes and jobs did not go to SLU, they would most likely end up in a less urbanized area elsewhere, resulting in significantly more climate-changing emissions. According to the DEIS, **per-capita peak travel GHG emissions in SLU under the Alternative 1 buildout scenario would be 15 percent lower than emissions in the Bel-Red corridor in Bellevue and Redmond.**

Embodied Carbon

The GHG emissions that result from the construction of buildings are known as embodied carbon. In general, compact development can be expected to have relatively low embodied carbon simply because fewer materials are required. Concrete has more embodied carbon than other construction materials, but when considered on a per-capita basis, high-density building types can more than make up for that. For example, a 2006 Toronto-based study estimated that the **embodied carbon per resident was 35 percent lower in the high-rise residential case compared to the single-family case.** Assuming that high-density development in SLU would absorb growth that otherwise would have resulted in lower-density development elsewhere, the net impact would be reduction of embodied carbon region wide.

ENERGY AND WATER

Energy

The operation of buildings, including those in industrial use, accounts for nearly half of all energy consumption in the U.S. **New development in SLU can reduce the impact of our regional growth on energy demand.** And allowing for the the highest buildout capacity in SLU will help maximize this benefit.

Compared to typical low-density suburban development, high-density buildings in SLU are inherently more energy-efficient because of the shared wall effect, and because housing units tend to be smaller. For example, a 2011 EPA study found that on average, energy consumption by multifamily homes is half that of single family homes.

In addition, SLU's incentive zoning will likely require LEED certification, which studies have shown can reduce building energy consumption by at least 20 percent. And lastly, because Seattle's energy code is the most stringent in the svtate, buildings developed in SLU can be expected to be more energy-efficient than those outside the city limits.

Water

New development has the potential to reduce toxic runoff to Lake Union and Puget Sound. Today the SLU urban center is almost entirely covered by impervious surfaces, such that nearly all precipitation becomes runoff, with very little infiltration or ground-water recharge. About three-quarters of the neighborhood is connected to a combined sewer system, and in the remaining area, stormwater flows untreated into Lake Union. In either case, the reduction of stormwater flows would help reduce water pollution.

Every new development project in SLU will present opportunities to mitigate the negative impacts of impervious surfaces and associated stormwater runoff. Green roofs, rain gardens, and pervious pavement are three of the most common strategies. Green roofs have the greatest potential, and can reduce stormwater runoff by two-thirds or more. Seattle's "Green Factor" code, which will become applicable to SLU when a rezone is adopted, will require new projects to implement some combination of these strategies.

The DEIS notes that increased vehicle traffic to support new development could result in more runoff pollution from streets. But that assessment is short-sighted because it ignores the regional picture. As discussed previously, the increased density that will come with redevelopment in SLU can be expected to reduce *per-capita* miles driven in the greater Seattle area, resulting in less runoff pollution overall.

Lastly, redevelopment will increase potable water consumption at the local level. However, because new buildings can be expected to be more water-efficient than existing buildings, per capita water consumption would actually be reduced.



The Terry Thomas office building in SLU, completed in 2008, incorporates passive heating/cooling strategies, which eliminate the need for air conditioning, and will lead to an estimated 30 percent reduction in energy use. Photo: Dan Bertolet



Green roof on the Bart Harvey, an apartment developed by the Low Income Housing Institute in 2010 that provides 49 units of affordable housing for low-income seniors. Photo: Michael Seidl



Rain gardens infiltrate stormwater runoff at Taylor 28, a new mixed-use multi-family housing project at the corner of Denny Way and Taylor Ave in SLU. Photo: Dan Bertolet



About this document

This Environmental Benefits Statement was funded by: Equity Office, Fred Hutchinson Cancer Research Center, The Kenney Family, PEMCO, Rich Reel, The Seattle Times Company, Touchstone Corporation, and Vulcan Inc.

With Participation from other SLU Property Owners Group Members: The Blume Company, John Goodfellow, The Justen Company, The Lowen Family, Sellen Construction, and Walsh Construction.

For more information on the South Lake Union height and density alternatives, please visit the Seattle Department of Planning and Development website: http://www.seattle.gov/DPD/Planning/South_Lake_Union/Overview/

For more information on the neighborhood, please visit the South Lake Union Community Council website: <http://www.slucommunitycouncil.org/>

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2324 Eastlake Avenue East ♦ Suite 500 ♦ Seattle, WA ♦ 98102
 (206) 732-6700 ♦ (206) 732-6701 Fax ♦ www.washbio.org

April 8, 2011

City of Seattle
 Department of Planning and Development
 700 Fifth Ave., Suite 2000
 Seattle, WA 98124-4019

Dear Mr. Holmes,

Over the past few years South Lake Union has become a powerful nexus of research for some of our region's leading growth tenants in biotechnology and global health.

We were surprised to find out that the EIS for the South Lake Union rezoning contemplated maximum office tower floor plates of 24,000SF. Many of the tenants in life sciences have complex ventilation requirements and collaboration needs which make floor plates of 30,000-35,000 much more optimal. This programmatic requirement is one we hear again and again from growth companies looking for space in the region.

The life sciences represent one of Washington's five largest and fastest-growing sectors spanning the state, with the majority of those companies in Seattle. A recent report by the Washington Research Council states, "From 2007 through 2009, the number of life sciences jobs grew nearly five percent to 26,300. Over the same period, jobs in Washington's other private sectors decreased by four percent." A majority of those jobs are in Seattle, many of them in South Lake Union.

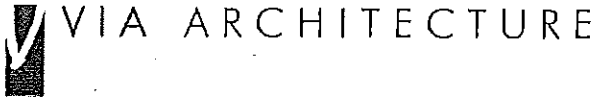
States and nations are, as Congressman Inslee recently said, "...in a knife fight to attract the industry." We have a solid base of life sciences here in Seattle. Continue growth of the industry in South Lake Union is good for Seattle and the region.

Please consider studying alternatives in the final EIS to accommodate towers that meet these programmatic requirements.

Sincerely,

Chris E. Rivera,
 President

The Washington Biotechnology & Biomedical Association (WBBA) is an independent, non-profit 501(c)(6) trade association serving the life sciences industry in the state of Washington. Our members include organizations engaged in, or supportive of, research, development and commercialization of life science technologies.



April 11, 2011

James Holmes, Senior Urban Planner
City of Seattle Department of Planning and Development
700 Fifth Ave., Suite 1900
Seattle, WA 98101

Re: South Lake Union Height and Density Draft EIS Comments

Dear Mr. Holmes

Congratulations on the issuance of the draft EIS. We are pleased to see the city and the neighborhood advance the study of more intensive building form in South Lake Union. Ultimately we feel this neighborhood is the right place for growth given the close proximity of downtown, the amount of underutilized land and the intensive investment in public infrastructure and private sector development.

I have been actively involved in South Lake Union over the last 7 years providing countless hours of civic participation and professional input on urban design, planning and city building. This includes contributions to The SLU Framework Plan, The Uptown/SLU Joint Visioning Charrette, Two-Way Mercer Stakeholder Committees and as Chair of the SLU Seattle Design Review Board. My firm, Via Architecture is currently collaborating in the crafting the SLU Mobility Plan and has over 25 years of experience shaping communities in Canada and the Western US including the Masterplans for Vancouver, BC's Concord Pacific, and S.E. False Creek's Olympic Village. We bring an informed range of experience in municipal, transit and community planning and a deep understanding of public and private sector development and implementation around urban re-zoning initiatives.

We are very supportive of alternative 1 as it yields the most public benefits and the best outcome for the community. The key at this point is to strengthen the viability of the EIS so we can eventually compose development standards and write ordinances that strive for improved livability and uphold best urban design principals appropriate to this neighborhood.

Thank you for reviewing our enclosed comments. Feel free to contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Roewe', is written over a grey rectangular redaction box.

Matthew H. Roewe, AIA, LEED AP
Director of Mixed Use and Major Project

Alan Hart AIA
Graham McGarva AIA

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Suite 800
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o@via-architecture.com
www.via-architecture.com

Current zoning: The South Lake Union neighborhood has rapidly outgrown the current zoning, which was intended to be a transition from industrial to commercial. Clearly this place wants to be and is becoming a more vibrant and complete community. The proposed concept in the EIS of one or two small floor plate towers per block on low podiums is a good premise to assure a more welcoming distribution of urban form, light, air, sun and views.

1 cont

We are very supportive of alternative 1 as it yields the most public benefits and the best outcome for the community. As with any incentive based system, the devil is in the details. We offer recommendations to improve the outcome in our comments below. The key at this point is to strive for improved livability and to establish great, yet flexible development standards that uphold best urban design principals appropriate to this neighborhood.

In our review of the draft we have the following comments, clarifying questions and recommendations for you and your team to consider or address in the final EIS report.

Chapter 1 & 2 - General Issues

1. The nature of a programmatic EIS is to examine impacts and suggest mitigation. In general this study appears to focus more on the negative aspects of the alternatives rather than the more beneficial outcomes. There are no economic development benefits such as increased job creation, private sector investment, and subsequent forms of business, sales and property tax revenue generation resulting from the alternatives. Also, the environmental impacts of doing less intensive development elsewhere in the city has not been compared with the EIS alternatives. The draft study has put considerable weight on issues like traffic impacts, public services and utilities in this location, but there is no comparison of the same impacts created by the same number of new residents and commercial activity in another, less dense, less infrastructure rich and transit served location.

2

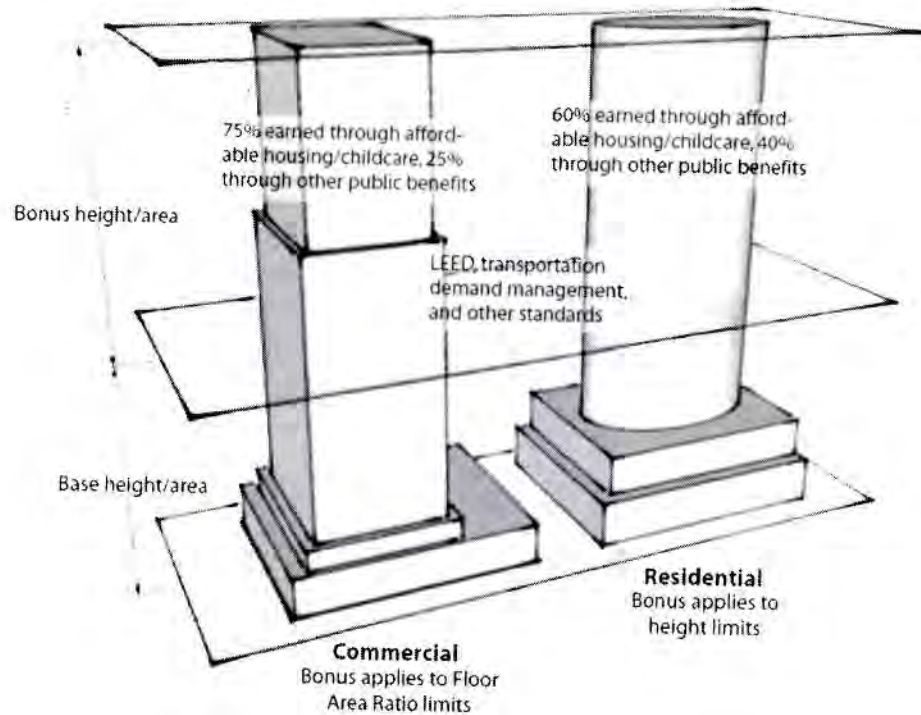
This study, in the spirit of the comprehensive plan objectives stated in section 1.3, must answer the questions regarding growth:

- i. *If not here, where?*
- ii. *What is the economic and environmental difference between accommodating growth here vs. someplace else?*

2. **South Lake Union Mobility Plan** - Transportation Sections: Please refer to and incorporate the strategies recently published in the South Lake Union Mobility Plan into the final EIS. This plan was thoroughly vetted with the community and with stakeholders and it responds to the unique set of evolving development, infrastructure and transportation circumstances in the district. The Mobility Plan was not available for the draft EIS study, but now it offers new recommendations, strategies and sheds new light on how the neighborhood and governing agencies can better respond to these proposed opportunities in the EIS Alternatives. 3
3. **Uptown/SLU Joint Visioning Stakeholder Charrette:** Continue to reference and use The 2008 Uptown/SLU Joint Visioning Stakeholder Charrette recommendations. The participation of over 40 groups in this effort was very balanced and comprehensive. Specifically to this EIS the group supported: 4
- Developing density around public investment.
 - Create a flexible neighborhood based incentive program.
 - Develop a strategic housing plan for the entire city and craft specifics for SLU.
 - Use TDR's for historic properties and affordable housing within the neighborhood.
- The SLUCC has this document on their web site:
http://www.slucommunitycouncil.org/docs/UptownSLU_JointVision.pdf
4. **The 2010 SLU Framework Plan:** Please also continue to reference and use The 2010 SLU Framework Plan. However, we find that the view corridor upper level setbacks in that document are unnecessarily deep, onerous on smaller property owners and need further examination in the crafting of the post EIS ordinance. 5
5. **Incentive Programs, Page 1-4, 1-5:** The study should roughly quantify the amount of affordable housing dollars established by incentive programs by each alternative. Our own rough estimation finds that this number is very substantial. 6
6. **Incentive Programs, Page 1-4, 1-5:** The study should calculate and state an approximate dollar value on the other public amenities (other city bonus options) generated from the 40% factor of the increased capacity in the incentive program. The "other city bonus options" should be stated as "public amenities and/or benefits" with listed examples such as open space, public plazas, wider sidewalks, landscaping, community facilities, etc. Ideally this program would provide more flexibility than past city incentive standards by establishing a menu of choices that can be defined by the neighborhood plans (SLU Framework Plan and Joint Visioning Charrette) and with the discretion of the design review board for project specific suitability. We suggest that the detail of these issues wait until after the Final EIS and be further vetted in the follow up development standard ordinances. 7

7. **Incentive Programs**, Page 1-5 per 23.58A: The following diagram was published by DPD in the 2010 SLU Framework Plan, page 32. Please clarify if just the 60/40% rule applies to all structures or if the 75/25% rule for commercial buildings is intended to apply to that use as well. The percentages affect both issues list above.

8



8. **Affordable Housing**, Page 1-6 Bullet 5: Our research of the neighborhood indicates that there are few, if any, housing units that would be displaced in these alternatives. There is a clear lack of older housing stock in the up-zone areas. We believe these are limited to one small triplex on Harrison Street and 8th Avenue and four small multifamily structures totaling 16 units on the block of Republican between Boren and Fairview. There are a few older apartments in the Cascade District, but they are likely to end up protected by landmark status or they are not on large enough lots to support high-rise. Other than these, the housing in the neighborhood up-zone areas are all relatively new, multi-floor construction and they are very unlikely to be removed. We think this lack of impact is not worthy of a summary bullet point inclusion. If this bullet point must remain, the claim that existing housing would be displaced should be equally applied to any alternative including Alternative 4 as current zoning could also affect the same limited number of housing units in the neighborhood.

9

9. **Schedule:** Please describe the anticipated next steps including the process to translate the EIS into an approved ordinance and the anticipated approximate schedule. South Downtown's rezoning has taken 5 ½ years and counting which has not helped that community evolve and develop. Uncertainty about any land owner or their neighbors can do with their property could kill the momentum underway in the neighborhood and literally put the district on hold until there is resolution of the change. Please advance this process along as quickly as possible. | 10
10. **Flight Path,** Section 2.2.3 and figure 2-4 and throughout: Please rationalize why the flight path has more than doubled from the initial flight path shown on the original scoping maps. | 11

See next page

Chapter 3: Aesthetics

1. **Environmental Impacts Assumptions, 3.10.2– Tower Development Extent:** 12
From the text of the Draft EIS:
 - *All undeveloped and under-developed sites will redevelop in the future. Under-developed sites are defined as those that contain development square footage that is 40 percent or less than currently.*
 - *Where individual parcels with separate ownership are contiguous and can be assembled to create a lot size of 22,000 SF or greater, a developer or property owner will do so in order to build the maximum gross building area allowable.*

We find these two assumptions above would not necessarily motivate demolition of an income producing property, given permitting takes years of entitlement process and expenses, the risk associated with our new economy markets and the unpredictable nature of construction financing needed to develop a high-rise. These assumptions should be scrutinized more deeply in a qualitative valuation (assessed land to building value ratio). This will likely reduce the total amount of towers and the overall impacts and mitigation across the study spectrum.
2. **Photo Image Dates, Figures 3.10-2, and pages 3.10-9 thru 3.10-12:** Photo images using the specific date “2031” based on 2031 growth targets is speculative and may give the viewer a sense of certainty. These labels should be either stated as a percentage of the total build out or as “Targeted Growth 2031”. 13
3. **Realistic Growth Illustration, Pages 3.10-13 through 3.10-16 Environmental Impact Images:** The study states on page 3.10-44 that: *All of the alternatives assume that every vacant or underdeveloped site is built out to its maximum potential.* Thus, a full build out time horizon is indefinite and may never happen. However, the viewpoints photomontage visuals are shown with 100% build-out. In all fairness, there should also be a complimentary image with the modeling of the “Targeted 2031” year projections in a third photomontage (similar to the aerial comparisons shown on pages 3.10-9). 14
4. **Graphic Clarity, Figure 3.10-2 and elsewhere - Environmental Impact Images:** Please indicate what each color in the modeling represents. The purple and blue appear to be commercial but it is not clear what they specifically represent and how they are different from each other. 15
5. **Photo Images, Pages 3.10-22 through 3.10-38 Environmental Impact Images:** The massing studies shown in these images should show upper level setbacks concurrent with the concept of a podium and with the design review guidelines for this area. Additional levels of detail to show more sense of scale would also be welcome. 16

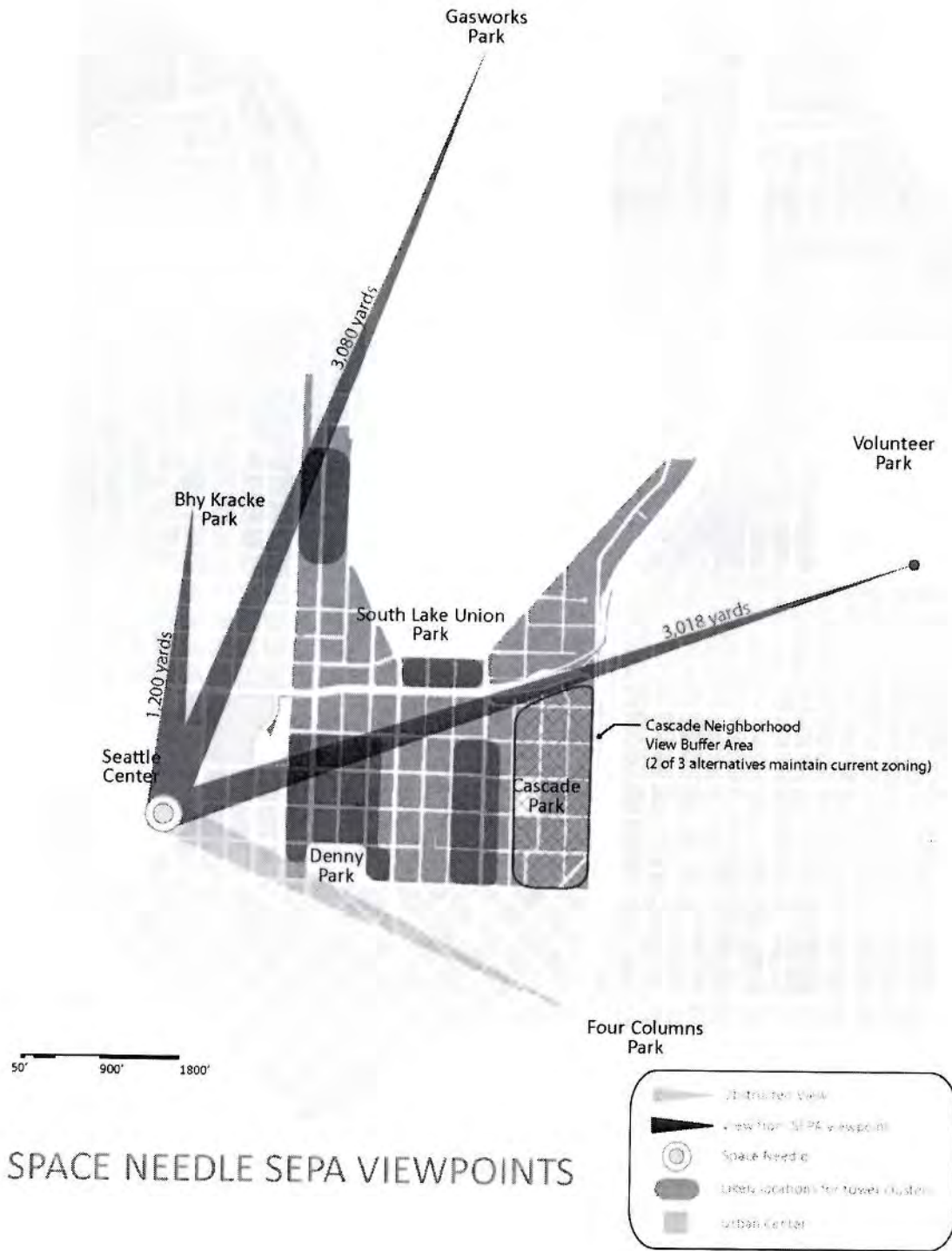
6. **Viewsheds & The Space Needle** 3.10-5 & Page 3.10-42:

It is important to clearly note in the Draft EIS that private views are not protected by the City of Seattle and Seattle Municipal Code Section 25.05.675 contains view protection policies that apply only to specified public view points, certain scenic routes and designated landmarks.

The Draft EIS should identify and reference the view protection policy in SMC 25.05.675.P, which was amended in 2001 to address views of the Space Needle. The background report, "Seattle View Protection Policies – Space Needle View Inventory & Assessment" (Volumes 1 & 2) identified locations where SEPA may be used as a basis for protecting views of the Space Needle.

Our review of this issue indicates that the Space Needle has only three protected "City-designated" public viewpoints through the study area (Volunteer Park, Bhy Kracke Park & Gas Works Park). Of these sites, only one (Volunteer Park) is situated where the rezone alternatives for the heart of South Lake Union could have a negligible effect of the view of the Space Needle. The FEIS study should clearly reference this document and delineate this condition in writing and with a precise map similar to the one on the following page:

See image next page

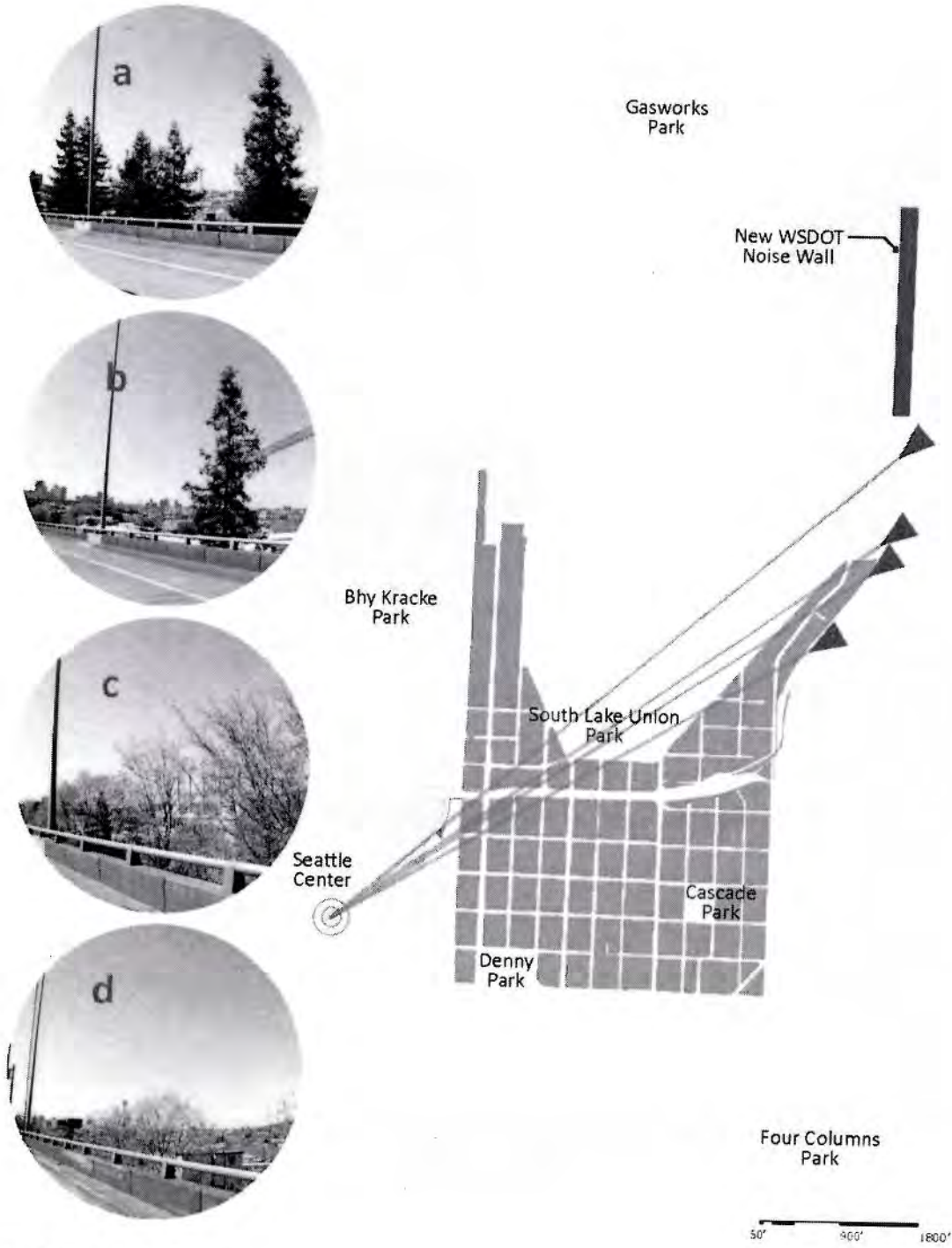


7. **I-5 Scenic Routes Realistic Vistas**, Page 3.10-43: The image on the next page indicates that south bound I-5 scenic route views toward the Space Needle are often blocked by obstructions that include both vegetation and man-made features.

In 2009, the Washington State Department of Transportation installed the Eastlake/Roanoke noise wall along the western edge of I-5 from E. Hamlin St. to E. Newton St. and eliminated views west toward the Space Needle.

Other current visual obstacles that obstruct views to the Space Needle include evergreen and deciduous trees, the Zymogenetics building and smokestacks plus the Cancer Care Alliance Building. We recommend this information be included in the FEIS.

See image next page



I-5 SCENIC ROUTE SOUTH BOUND
VIEW CONDITION

8. **Realistic Volunteer Park Vista**, Figure 3.10-23: The image below appears to be a cropped or telephoto lens. The actual human eye will more likely see this in a panoramic fashion similar to the image at the bottom. The FEIS study should represent this view point more as a wider angle view.

19

Figure 3.10-23
Volunteer Park - Alternative 1

Existing



Proposed

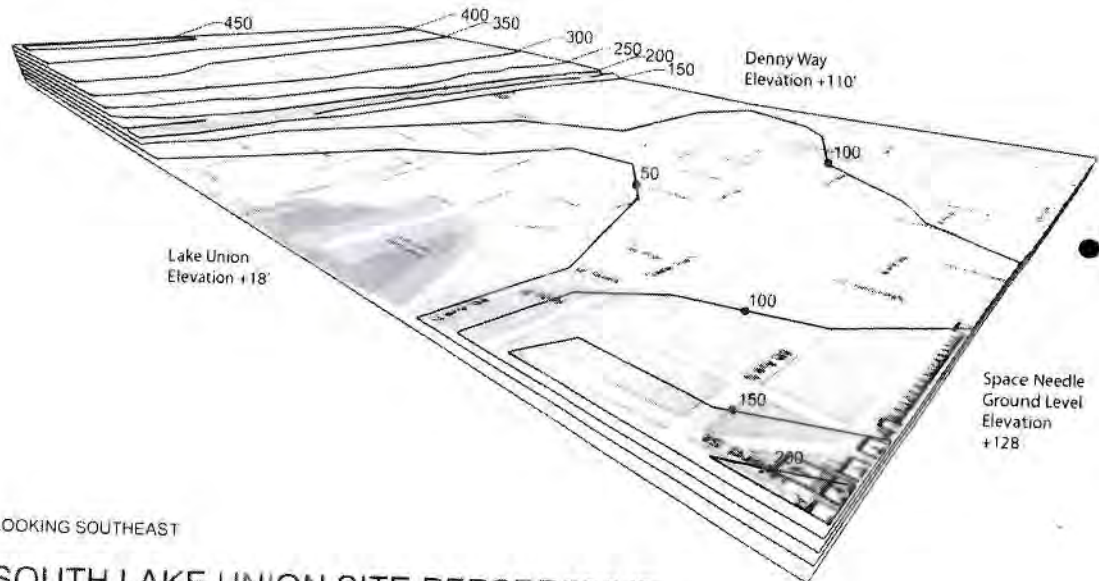


Source: NBBJ, 2010.



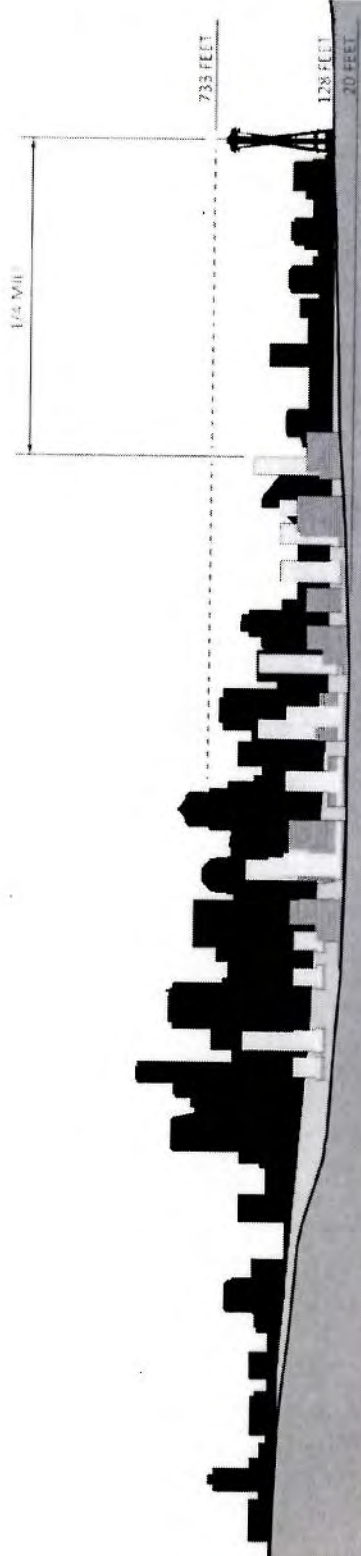
Actual Image from Volunteer Park's Tower with full horizon shown

9. Relative Cross Section Study: The South Lake Union neighborhood sits in a bowl shaped depression that drops over 100' from Denny to the lake. See Image Below:



Cross section studies of the district that include both existing buildings and the alternatives should be included in the FEIS.

Cross section studies would be a useful communication tool to allow better understanding of the aesthetic and view impacts of the proposed alternatives. We are providing the image on the next page as a sample. This image shows EIS Alternative 1 relative to the downtown skyline, the elevations of the lake and The Space Needle ground plane.



Cross Section From Capitol Hill To The Space Needle

Chapter 4: Reference, Appendices & Tables

1. **Clarify Commercial Parking Assumptions**, Appendix C, development capacity assumptions - parking: What assumption was made for commercial parking? Please clarify. | 21
2. **Consistency of Metrics**, Appendix C, development capacity assumptions – ratio of uses: The mix of residential to commercial is stated as 55% residential and 45% Commercial. However per Table 2-2, it's 60% jobs and 40% housing units. Then on a per square foot basis the numbers calculate to 70% residential and 30% commercial. Please explain the rationale behind this assumption and what the intent is, or will be, in future development standards. | 22

Development Standards

The following recommendations relate to ways the development standards can be adjusted to assure better livability and overall outcomes for the public. These issues can be further studied after the FEIS in the follow up development standard and ordinance writing process. | 23

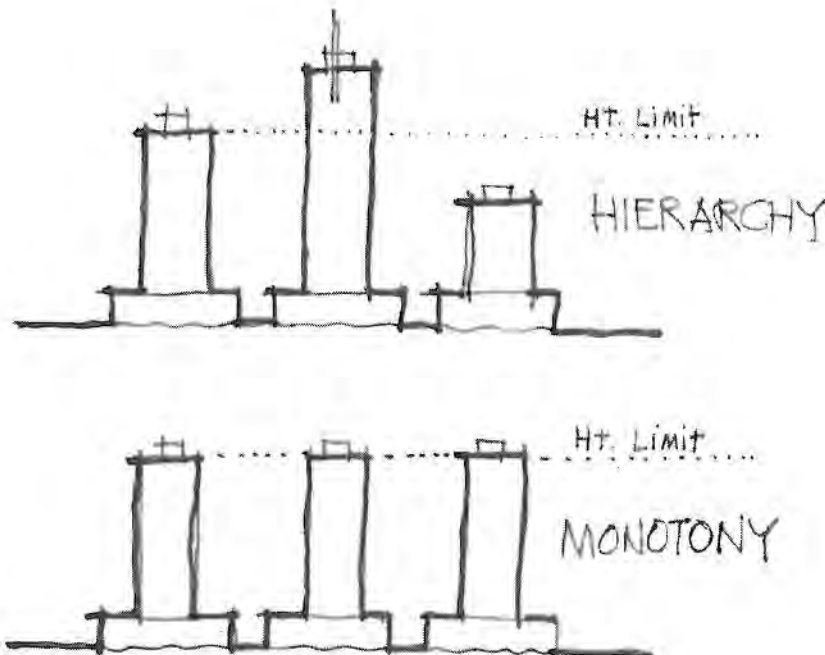
1. **Upper Level Setbacks**: The UDF recommendations for upper level setbacks (which range from 150' to 10') are often too deep, thus becoming onerous, anti-urban and overly prescriptive, especially for smaller properties that can't take advantage of the height incentives. We recommend reducing these setbacks. This can be further studied after the FEIS in the follow up development standard and ordinance writing process

2. **Height Averaging:** Our examination of likely development sites shows that a pattern of tower clusters could easily occur in the district. Although this is a radical departure from the elements of the EIS, establishing a method to allow averaging heights between multiple clusters of towers should be considered after the FEIS in the follow up development standard and ordinance writing process. This may also require either a single ownership and/or agreements under one MUP application or development agreement.

Height averaging can offer improved public realm benefits and considerable relief to the monotony of a grouping of same size towers. This type of departure could be structured through rigorous design review for the right types of conditions in certain places. The total number of floors & floor area between the towers would remain the same.

Effectively Height Averaging can provide:

- Hierarchy & variety of form
 - Better shadow control in the right places (pocket parks & plazas)
 - Improved views through the site.
 - Allows the development of iconic towers that can serve as beacons or landmarks.
- See image below:



END



April 5, 2001

Seattle Department of Planning and Development
Attn: James Holmes
700 Fifth Avenue, Suite 1900
P.O. Box 34019
Seattle, WA 98124-4019

Dear Mr. Holmes:

South Lake Union Height and Density Alternative – Draft EIS

Thank you for the opportunity to comment on the Draft EIS for the South Lake Union Height and Density Alternatives proposal. Fred Hutchinson Cancer Research Center (“Hutchinson Center”) has participated actively through all stages of the development of the proposal, and appreciates the time, energy and effort that have been put forth by staff in bringing the proposal to its current state of development.

With two exceptions, the Hutchinson Center supports Alternative 1 as set forth in the Draft EIS. The two exceptions are:

- 1) Commercial floor plate size limitation, and
- 2) The suggestion that the Center be required to pay cash to the City in exchange for height increases.

1

Commercial Floor Plates

Alternative 1 would limit the size of commercial floor plates to a maximum of 24,000 square feet (sf). (Draft EIS at 2-19) Under current zoning, there is no maximum size of commercial floor plate on the Hutchinson Center property.

2

For the type of work (cancer research) conducted by the Center, 24,000 sf is an unreasonable limitation on the size of floor plate. Most of the current buildings on the campus are in the 30,000-40,000 sf range. Up to 40,000 sf floor plates are needed to provide appropriate efficiencies and scientific coordination among staff.

It would be unfortunate if the positive goals of the South Lake Union Height and Density Alternatives proposal were obtained at the cost of the Hutchinson Center’s mission to find a cure for cancer.

The current Hutchinson Center campus has received uniform design acclaim. There is no need to artificially reduce the size of commercial floor plates in order to obtain an aesthetic return. As our campus demonstrates, large floor plates, needed for high technology research and development uses, can coexist with pedestrian friendly, human scaled design.

2 cont

Incentive Zoning

Under Alternative 1, maximum height limits on the Hutchinson Center property would be increased to 125 feet. (Draft EIS at 2-18) The Center strongly supports this change. However, the Draft EIS suggests that this height increase would be available only in exchange for a cash payment from the Hutchinson Center to the City. (Draft EIS at 2-16) The Center expresses no opinion as to the propriety of such a scheme in connection with private commercial development. However, imposing such a charge upon the Hutchinson Center would run contrary to public policy.

3

The incentive program described in the Draft EIS states that “an incentive program offers development bonuses, usually in the form of additional height or floor area, for development projects that offer public benefits and amenities.” (Draft EIS at 2-16) In the case of the Hutchinson Center, the additional height should be allowed in exchange for the ground-breaking cancer research conducted at the Center each day. To require the Center to pay millions of dollars to the City as payment for the right to build to 125 feet frustrates the goal of maximizing our limited resources for the pursuit of its central mission.

The Hutchinson Center therefore respectfully asks the City to provide that its mission – to find a cure for cancer – constitutes the necessary “public benefit” which justifies the height increase to 125 feet. No additional cash payments to the City should be required.

We appreciate the City’s consideration of these comments.

Sincerely,



Scott Rusch, Vice President
Facilities and Operations

Holmes, Jim

From: Eric Russell [mailto:eric.russell@cityofseattle.gov]
Sent: Monday, March 28, 2011 10:01 AM
To: DPD_Planning_Division
Cc: Eric Russell
Subject: DEIS comment

I began working in downtown Seattle in 1991 and have watched the development of the city ebb and flow since that time. During that time the city has gone from discouraging height and density in the downtown core to encouraging and welcoming the vitality it brings. There is now an opportunity for this same transformation to take place in the South Lake Union neighborhood by adopting Alternative 1 in the draft environmental impact statement. The additional density that would result from the increased building heights will create affordable housing due to greater housing stock, as well as incentive payments from developers. It will allow greater open space on the street compared to what is encouraged under the current zoning. It will also encourage greater use of transit and/or walking as more employment opportunities and retail stores are available in a compact area with adjacent housing.

Concern over view impacts from a few private locations should not be allowed to alter the greater good of increased heights. Building taller and skinnier actually would protect more views, by opening up sight-lines from areas that would be impacted by the current bulky buildings constructed from sidewalk to sidewalk. In addition, taller buildings will create a more interesting skyline, rather than block after block of 5 and 6 story buildings.

Adoption of Alternative 1 is the right thing to do to provide the most benefits and to maximize the city's resources.

Eric Russell

Holmes, Jim

From: Katherine Sather [ksather@gmail.com]
Sent: Friday, March 25, 2011 3:06 PM
To: DPD_Planning_Division
Subject: comment on urban density

To whom it may concern:

I work at an environmental nonprofit in downtown Seattle. Previously I lived and worked in the Southlake Union neighborhood.

I support more people and buildings in South Lake Union to prevent suburban sprawl. Our population is growing all the time. Now is the time to make good plans for that growth. South Lake Union has so much potential. It's close to downtown, the heart of the city. And there is room for plenty of local shops and businesses. We just need to help make it happen.

By allowing for urban density in South Lake Union, we'll support walkability, less dependence on cars and much more community transit.

While living in SLU, I was inspired by the new, independent businesses, the young people and the energy. But I often felt uncomfortable in some areas that needed more light, life and activity at night. We need to create more housing, jobs and opportunities in this neighborhood so it's safer and can support more people.

Please do the right thing and support growth in South Lake Union. It's the smart and sustainable way for Seattle's future.

Katherine Sather

Holmes, Jim

From: Lyn Saucier
Sent: Thursday, April 07, 2011 12:22 PM
To: DPD_Planning_Division
Subject: Support For SLU Height and Density Alternative 1

Hello,

My name is Lyn Saucier, and I am a commercial property manager for Chiles & Company. Our office is located in South Lake Union. My purpose in writing is to support height and density increases in commercial and residential development in the South Lake Union neighborhood, specifically Alternative 1. My reasons for supporting Alternative 1 are as follows:

- More density will provide South Lake Union businesses the "population" they need to survive.
- More density and activity will result in "safer" streets and more amenities.
- Using the existing infrastructure makes good economic sense.
- Taller buildings leverage our use of transit, roads and walkways.
- Taller buildings will result in more public benefits like contributions to affordable housing, pocket parks and open spaces.

I strongly urge you to adopt Alternative 1. This alternative provides the greatest potential for height and density increases, and therefore is the best choice for providing the most benefits to the South Lake Union Community and the City of Seattle.

Thank you for the opportunity to be heard.

Lyn Saucier
Senior Property Manager
Chiles & Company, Inc.
901 Fairview Avenue North, Suite A100
Seattle, WA 98109
Direct Line: 206 270-4998
Fax: 206 270-4991
Cell: 206 380-9797
Email: lsaucier@chilesandco.com

Holmes, Jim

From: Tom Schauer [tom.schauer@gmail.com]
Sent: Monday, April 11, 2011 2:32 PM
To: DPD_Planning_Division
Subject: South Lake Union Height and Density Alternatives Draft EIS

My name is Tom Schauer and I am a resident of West Seattle.

Regarding the City of Seattle's South Lake Union Height and Density Alternatives Draft EIS, I wanted to pass along my support for Alternative #1 (greatest height and density relative to the other alternatives). Seattle should maximize the opportunity uniquely afforded by South Lake Union, so greater height and density should be supported and encouraged. 1

The area of Downtown Vancouver, BC fronting Burrard Inlet, and between the Convention Center and Stanley Park, provides a great example of the successful implementation of greater height and density, while preserving green space and views. Office and residential towers front on large park spaces and waterfront promenades; public and private spaces are energized and used to their highest potential. South Lake Union is one of the few places, if not the ONLY place, in Seattle where similar dynamics could be achieved. Simply, the true potential of the area around Lake Union would be realized with greater heights and density.

Tom Schauer

April 11, 2011

Jim Holmes
City of Seattle
Department of Planning and Development
PO Box 34019
700 Fifth Avenue, Suite 2000
Seattle, WA 98124-4019

Re: Comment Letter on Draft EIS for South Lake Union Urban Form Study

Dear Mr. Holmes:

On behalf of the Space Needle Corporation (SNC), thank you for the opportunity to comment on the Draft Environmental Impact Statement (EIS) for the South Lake Union Urban Form Study. The urban form study is of vital interest to us, because some of the alternatives under consideration have the potential for severely impacting the Space Needle and Space Needle area. For example, we are very concerned with the areas bordering the south and west of Lake Union, because an increase in height there has a significant potential for adverse impacts by walling off views both to and from Lake Union and the Space Needle area.

This letter addresses three topics. First, this letter begins with some background information on this city's most prominent landmark structure, so that you will have a better understanding of the importance of the Space Needle to our economy and the urban form of the city. Second, we ask the city to step back and identify specific objectives that should define the nonproject proposal studied in the DEIS. Third, we identify specific environmental impacts that must be studied further in the Final EIS so that our elected leaders can avoid any alternative that harms the Space Needle and Seattle Center areas.

As you review this comment letter, we want to highlight a paramount concern to us and that is the erroneous conclusion in the Draft EIS that there are no significant adverse impacts to views of Space Needle. This statement is made despite pictures in the Draft EIS showing very severe impacts to such views. The DEIS conclusion seems to be based on the erroneous belief that the Space Needle's legs are an insignificant part of our structure. As discussed further below, the tripod shape and steel legs are an integral part of the iconic shape and landmark structure. An alternative that cuts off our legs would be an alternative with a significant adverse impact warranting mitigation measures or new alternatives in the Final EIS.

1

A. The Space Needle Is The Most Recognizable Icon of Seattle. It Should Remain the Dominant Feature Of The City's Urban Form. To accomplish this, heights should step down from the urban core to the shores of Lake Union.

The Space Needle was built in 1962 for the World's Fair. Today, the Space Needle is undeniably the most recognizable symbol of Seattle. At 605 feet, it is not the tallest tower in the city; however, it is the most prominent, often appearing in photographs to tower over the rest of the city and even Mount Rainer. The Space Needle is one of two renowned steel tower structures in the world, the other being the Eiffel Tower in Paris. The prominence of the Space Needle is due in large part to the current urban form of the city. The city's height, bulk and scale policies have always created an urban form that accomplishes two things. First, it steps down from the city-center to Lake Union, allowing the Space Needle to serve as the counterpoint symbol of the city. Second, the policies are intended to reinforce natural topography so that the prominence of Queen Anne Hill and Capitol Hill are not dwarfed. (SMC 25.05.675G). We urge the city leaders to retain these policies, and an urban form that steps down in wedding cake tiers from the urban core to the shores of Lake Union.

2

1. The City's Landmark Designation Recognizes the Significance of the Space Needle Views, including its full length, hourglass shape and tri-pod legs.

In 1999, the city designated the Space Needle as a landmark, satisfying all of the city's criteria. The criteria include its prominence of spatial location, contrasts of siting and scale, and it is an easily identifiable visual feature, which contributes to the distinctive quality or identity of the city. Ordinance 119428. The Analysis of Significance described the importance of the Space Needle as an Urban Icon:

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Anchoring the southeast corner of the Century 21 exposition site, the Space Needle embodied the beliefs of the time. Engendering awe due to its futuristic form and height, it was immediately seized as the new landmark for Seattle. Rivaling other familiar symbols of the region -Boeing's jets, Jimmy Hendrix's guitars, the mountains and waters that surround the city - over the years the Space Needle has remained the defining urban icon of Seattle. It has exerted aesthetic influence also in the fields of literature, art, film, and urban myths. The Needle is a pervasive presence within the city and is used as a geographical marker by visitors and Seattleites. Thus, it has become the identity symbol of Seattle for travelers from other regions, states or countries.

...

The Space Needle provides encompassing views of the city for visitors to its upper levels. Its exterior has been utilized continuously for display and

special events that affect the city or the region, such as holidays, sporting events, or fireworks celebrations. Through these festivities the Needle exhibits itself to the public. In return, it has become bound, as a civic image, with Seattle.

(Analysis of Significance, at page 6, July 10, 1997).

Thus, the city has recognized that both views *to* the Space Needle and *from* the Space Needle are important to locals and visitors alike. We must also point out that the Space Needle's significance relates to its *total* form; thus, the legs of the Needle and its unique shape from base to top create the icon. The legs are specifically called out in the Statement of Significance.

Some of the preliminary designs can be categorized as elaborations upon the "tethered balloon" or the "spiked flying saucer" concept. It was Ridley's idea of the cruciform shape and disk structure that focused the design efforts of the entire team for the rest of the schematic stage. Further development of the tripod structural system that was to evolve into the familiar image of the Needle is attributable to Victor Steinbrueck.

The Space Needle, as originally conceived, embodies in its form and construction that era's belief in commerce, technology and progress. Three pairs of slender steel legs curve inwards from a 102' diameter base to the 373' "waist" level and flair out into an hour glass form to hold a disc-shaped structure at the top, which is comprised of revolving restaurant, a mezzanine, and an observation deck.

...

The steel legs that make up the Needle were fabricated independently up to the 410 foot level by welding three, 36 inch wide flanges into triangular shapes. Above that level, the legs were comprised of two flanges, which fan out in a Y-shape and continue upwards to support the base of the restaurant level.

(Analysis of Significance, page 3-4.)

2. The City's SEPA Policies Protect Space Needle Views.

In 2001, the city recognized the importance of the Space Needle in adopted view protection policies set forth in its SEPA ordinance. In adopting these policies, the city recognized that because of its size and siting in the urban landscape, the Space Needle is

unique among Seattle's view protected landmarks. It further recognized that the Space Needle contributes in no small way to the legacy of vistas and views that define the city and give shape and character to its identity. (Seattle View Protection Policies, Vol. 1, Space Needle Executive Report & Recommendations, April 2001).

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At the neighborhood level, at least two adopted neighborhood plans contain specific policies that serve to protect views to the Space Needle. For example, the South Lake Union Neighborhood Plan contains a policy to "[e]ncourage building designs that allow for public view corridors through the neighborhood to Lake Union and the Space Needle and natural light at street level." Policy 45, Page 78. The Eastlake Neighborhood Plan contains a policy to "[a]dopt development standards and guidelines to preserve or improve public views and view corridors along public rights-of-way and at street ends. View corridors and views would be identified, including existing and potential views of distant places like...the Space Needle..." Policy CD-2, Page IV-21.

It is vital that views to and from the Space Needle remain accessible, but it is also important that the Space Needle remain physically accessible, as well. The Space Needle is an important feature of the Seattle Center economy, which currently is at a crossroads since the untimely loss of our basketball franchise at a point that the macro economy degradation looks to bleed into the Seattle area. The Space Needle attracts 1.3 million visitors per year, and generates at least \$280 million per year in economic benefit to the region. If increasing development capacity brings traffic that increases the obstacles and delays for people to access the Seattle Center, then this would be a significant adverse impact to city revenues.

To be clear, we are not "no growth" advocates; to the contrary, we strongly believe in growth that improves the quality of life for our neighbors and the tax base for the City of Seattle. We do however believe that any future growth must occur consistently with our long-held policies on urban form and must be accomplished in a way that preserves the prominence of our city's premiere landmarks. With that in mind, please consider the following as you define the scope of the DEIS.

B. Properly Define the Objectives of the Proposal in the Final EIS.

At the outset of scoping, we asked why now, why here, why change? What purpose is being served by changing the urban form that has defined this city for so long? Have we not already just zoned downtown for greater density and height? Wouldn't we want to encourage that to fill in first to ensure a healthy downtown, before creating even more competition in South Lake Union?

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These are not theoretical questions, but questions that should be answered in the Final EIS. The city's adopted SEPA rules state that the threshold step is properly defining the nonproject action to be studied in this DEIS. "Agencies are encouraged to

describe public or nonproject proposals in terms of objectives rather than preferred solutions.” SMC 25.05.060.

In our scoping letter, we also asked the city to define the objective the city is seeking to obtain that it cannot obtain by the current zoning. Section 1.3 of the Draft EIS sets forth some general objectives of the proposal. One goal for example is to advance the comprehensive plan goals to use limited land resources more efficiently, to pursue a development pattern that is economically sound, and to maximize the efficiency of public investment in infrastructure and services. We support these objectives. Yet, we have yet to see any analysis of why the existing zoning in our urban center does not already provide for implementation of the adopted Comprehensive Plan goals. We believe that the first step of the Final EIS effort should be to step back and assess if there is really any legitimate *public* objective to this effort.

If a legitimate public objective can be defined, then we believe there are some additional objectives that should be used to define the proposal; as set forth below, you should only study alternatives in the FEIS that:

- Reinforce *natural topography* by controlling the height, bulk and scale of development consistent with SMC 25.05.675G.
- Retain the urban form that steps down from downtown to the shorelines of the city.
- Preserve the importance of the Space Needle to the urban form of South Lake Union and the city as a whole.
- Preserve views to and from the Space Needle.
- Enhance the Seattle Center economy.
- Reduce traffic congestion along the Mercer Corridor to ensure that the Seattle Center is accessible.
- Avoid piecemeal planning by ensuring that any alternatives are coordinated with the Shoreline Master Program update and evaluated in the same SEPA and GMA documents.

C. South Lake Union Urban Form Study DEIS- Alternatives

1. Modify Alternatives Studied in FEIS to Account for FAA Restrictions.

5 cont

As discussed above, the city's current height, bulk and scale policies seek to reinforce natural topography, and seek to step down from the city center to the shorelines. These principles appeared to be threatened by several of the alternatives initially under consideration. The Draft EIS reduced the heights of the alternatives, eliminating from consideration 400 foot towers in most areas, with the exception of Alternative 1 that would allow 400' for residential towers between Denny and John streets. This is a step in the right direction; however, we are still very concerned about the heights. There appears to be no alternative (other than the No Action Alternative) that meets FAA requirements given the flight path and wake zone information contained in the Draft EIS. Therefore, we ask that the heights of all alternatives be modified in the Final EIS to account for this identified impact on flight safety.

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2. Executive Summary of Impacts Should be More Meaningful.

As many people noted at the Draft EIS hearing, a better and more meaningful executive summary of the document would be helpful. Table 1-2 attempts to provide a comparison of the Alternatives and their impacts; however, the table is vague and misleading. First, the table does not really spell out any specific impacts. Second, the table states under most elements of the environment that the impacts are "similar" for all alternatives. (For example, under viewshed impacts, the chart suggests that the impacts are all "Similar" to Alternative 1, when it is clear that the impacts of Alternative 1 with its towers on the lakeshore are much more significant.) The Final EIS should do a more accurate, detailed and meaningful analysis to distinguish among the alternatives. Otherwise, perhaps new alternatives are necessary to really present the appropriate range of options as required by SEPA.

7

3. Elements of the Environment that Require Further Study.

We have comments on the following elements of the environment.

Section 3.8 Land Use:

- **General Land Use Policy Review Should Include the Shoreline Management Act.** The Land Use Section begins with a general land use policy review. There is one glaring omission from the list and that is the Shoreline Management Act. The city is currently undergoing a mandatory review of its Shoreline Master Program. It appears that this proposal will have direct impacts to the shoreline. If so, the city seems to be improperly segmenting the SLU study from the Shoreline Master Program effort, which would run afoul of the SMA, GMA and SEPA. The SLU alternatives appear to affect land use and development regulations within the 200-foot shoreline zone and most certainly affect land use adjacent to the shoreline environment. Under the SMA, use policies must be examined not only for the shoreline area, but also for lands adjacent to the shoreline. RCW

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90.58.340. Under the GMA, the shoreline master plan and the zoning code development regulations need to be internally consistent. RCW 36.70A.070. Under SEPA, related actions should be studied in the same environmental document. WAC 197-11-060(3). Therefore, this SLU FEIS should be integrated with and processed with the planning effort underway for the Shoreline Master Program. We do not see that the SMA or SMP was even listed in Section 3.8.1, which discusses relevant state, regional and local planning policies. At a minimum, the Final EIS must add significant analysis on Shoreline Use, either as a separate chapter or as part of the Land Use chapter.

8 cont

- **Flight Path:** The second major topic of the Land Use section is focused on regulations and potential impacts associated with the flight path of float planes in and out of Lake Union. The topic includes FAA regulations, and a wind analysis that looks at wind shear and mechanical turbulence in the lee of buildings. This section of the EIS identifies that all of the action alternatives have a significant adverse impact. Yet, the mitigation is not fully identified or analyzed. The view sections do not show us what the modified urban form will be when buildings are lowered to meet this height limit. The Final EIS must modify all of the action alternatives to address the impacts identified in the Draft EIS. The Final EIS should fully evaluate alternatives with lower height limits in the area affected by the flight path and wake zone that will not run afoul of the FAA regulations.

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Section 3.9 Housing: The city has a growth target, and contrary to statements in the Draft EIS, it would appear that a dramatic upzone in South Lake Union is not required to meet these targets. The existing adopted growth target for South Lake Union is 8,000 households by 2024. Comprehensive Plan, Appendix A. This number will likely be increased based on recent targets established for 2031 by King County and its Cities in order to accommodate population growth. The City of Seattle has not yet adopted its allocation for the 2031 targets; nor has it allocated portions of those targets to individual urban centers or urban villages. Seattle is expected to take up its allocation as part of the 2014 Comp Plan update. Because these allocations have not yet been adopted, the DEIS has assumed a target proportionate with the existing adopted plan for the purpose of the DEIS analysis.

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Considering existing adopted growth targets, and even the DEIS estimated growth targets for 2031, it is not clear why the density proposals in the action alternatives are justified. The no action alternative alone appears to exceed the existing adopted growth target for South Lake Union, and only falls short of the DEIS estimated 2031 target by 400 units. DEIS at 1-16 and 2-8.

The city has recently upzoned downtown; yet, downtown is still well below its adopted growth targets. Would we be better off to allow for downtown to infill

before biting off a new upzone that will compete with downtown? Should the urban form help guide where density is appropriate to preserve and protect our views and our lakeshore area? These are some questions our policy makers will need to answer.

10 cont

Section 3.10 Aesthetics:

- **Height, Bulk and Scale:** The city's current SEPA policy states that a purpose of the city's land use regulations is to "*reinforce natural topography* by controlling the height bulk and scale of development." SMC 25.05.675G. This policy is reiterated in the Comprehensive Plan, which seeks to establish "predictable maximum heights that respond to varying topographical conditions." LU 120. The city has always stepped down heights as it goes away from downtown toward the lakefront of Lake Union, responding to the flat valley between Capitol Hill and Queen Anne Hill. Moreover, the maximum legal height limit in the shoreline district is **35 feet**. How can the proposed heights of Alternatives 1 and 2 be considered consistent with this philosophy, or provide for adequate transitions?
- **Viewshed Analysis.** It is the city's policy to protect public views of the Space Needle from specific locales. Projects may be conditioned or denied to protect such views. Mitigating measures may include changes to the height, bulk, or profile of a development, requiring view corridors, relocating development on a project site and other measures. As discussed above, the city protects views to the Space Needle, but has also recognized that views from the Space Needle are important to preserve as part of our heritage, as well as part of our tourism economy and Seattle Center economy. Current Alternatives 1 and 2 show robust development that rings the Lake, no doubt resulting in adverse view blockage particularly in the areas to the south and west of the shoreline area.

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We appreciate the view analysis of the Draft EIS and Appendix D; however, the *text* of the Draft EIS completely misstates the impacts to the Space Needle from the alternatives and erroneously concludes "no significant impacts have been identified relative to protected viewpoints as a result of this programmatic analysis and therefore no mitigation is necessary." See, DEIS at Section 3.10.7. This is incorrect and must be changed in the FEIS. For example, under Alternatives 1 and 2, View #1 from Volunteer Park (a Space Needle protected viewpoint under the city's own SEPA policies), the base of the Space Needle would be screened up to about **one-third** of the tower height! See Figures 3.10-23, 3.10-31. Yet, these impacts are not identified by the DEIS as significant. The same is true for the other views depicted in the Draft EIS, including but not limited to Figures 3.10-29, 30, and Appendix D Figures 5. 25.

We urge you to revisit all of the view studies in the Final EIS and note the adverse impacts in the Final EIS. SEPA defines significance to be both about context and intensity. WAC 197-11-794. Here, part of the context is the landmark nature of the structure that is being protected. The legs of the Space Needle are a critical part of its form, and are specifically part of its historic landmark designation.

The pictures of the Draft EIS clearly demonstrate significant impacts cutting off over a third of this form and the entirety of the legs; the text of the Draft EIS is simply in error when it concludes this is not significant. The loss of Space Needle views as depicted in the Draft EIS is a significant adverse impact that must be identified in the Final EIS. Mitigation measures and alternatives must be developed that mitigate for this impact. In some cases, lower heights may be the appropriate solution. In other cases, such as for views down street corridors (such as Thomas, John or Harrison streets), upper level setbacks and view corridors may be a solution.

We also note that there appears to be no views of the Space Needle from the new South Lake Union Park. This is most unfortunate. As we have said, the City should adopt lower heights along the shoreline; spacing, view corridors or setbacks should also be required to allow for such views to the Space Needle. The City should also consider adding the new South Lake Union Park to the SEPA protected Space Needle viewpoints.

Another view issue is the views from the Space Needle. Appendix D (Figures 17-20) does include visual depictions of views from the Space Needle. The Final EIS should label where these views are from, for example the observation deck if that is the case. The Final EIS should also add such view studies for the 100 foot level. At that level, we have a banquet facility that is heavily used by the people of Seattle and visitors; we would like to better understand how the views from that level would be impacted by the alternatives.

Finally, we concur with the statements at the hearing asking that the Final EIS view studies correct a few technical issues. The FEIS should include the cumulative impacts of future tower developments in the Denny Triangle and Uptown area. The baseline conditions of the DEIS view studies appears to be in error, because it assumes no such future development. The FEIS should also include view studies from the human viewpoint, rather than just the bird's eye viewpoints of the Draft EIS.

- **Light and Glare:** The Space Needle is a prominent feature in the night sky. Often, it will be lit for special events, such as the Legacy Lighting for

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our 9/11 tribute. This lighting has become part of the culture of Seattle. The Final EIS should provide a discussion of the impact of the action Alternatives on the night sky, and the visibility of the Space Needle.

13 cont

Section 3.11 Historic Preservation: Given the scope of the proposal, the impacts to the Space Needle and its landmark status should be evaluated for each of the alternatives. This should not be a cursory examination but should be in the scope of the city's urban form as a whole, and the landmark designation of the Space Needle. At present, the Draft EIS does not identify landmarks outside of the subject area. See, DEIS Figure 3.11-1. Given the impacts to and from the Space Needle from the view blockage discussed in the Draft EIS, the FEIS should provide a thorough discussion.

14

Section 3.13: Transportation/Parking: This is one of the most critical sections of the DEIS. We need to better understand how this DEIS will be coordinated with studies underway for the Mercer Corridor, and whether infrastructure and transit will be available concurrent with the development scenarios being studied, especially in light of the extreme density increases over and above adopted growth targets. We are also concerned about the precedent set by the new methodology for the traffic study. We agree with others at the hearing who pointed out that the information in the Draft EIS does not really explain how the consultant arrived at the new MIX model assumptions. For example, the assumptions about mode share appear to be very optimistic. We are also concerned that traffic impacts may be understated, for example by failing to account for bikes and pedestrian movements and conflicts with turning movements, as could occur on Mercer.

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Section 3.14 Public Services and Facilities: The Seattle Center is in the process of redefining itself. It is no secret that the loss of the Seattle Supersonics has left a hole in the Seattle Center economy. The Center is a public facility and any action taken in South Lake Union has the potential to positively or negatively impact the health of our Center. The DEIS must study all impacts to the Center carefully. In addition, the new infrastructure required to support this density creates a financial obligation on the city for maintenance and programming at a time that the Seattle Center and area businesses are fighting to replace the lost visitation and revenues from the loss of the Supersonics with new events that benefit both tourists and Seattle residents.

16

Elements Not Addressed but Needed in FEIS:

Economics: While economics are generally not a required part of an environmental study, in this case it is because the opening objective establishes a goal to have an "*economically sound*" development pattern. DEIS, Section 1.3. Without an economic study, the City cannot know if it is achieving its objective with the alternatives. In this era of global recession, we believe it is also a prudent part of the study either as part of the DEIS or a separate study. As discussed above, the

17

financial impact to the greater Seattle Center area economy and tourism economy to the city must be fully understood.

| 17 cont

Construction Impacts: We believe it is of paramount importance to examine the interactive and compounding impacts of the multitude of projects that are expected to take place over the next 10 years both in and near the SIU development area including two-way Mercer, the Gates Foundation, replacement of the Alaska Way Viaduct, shifting of the Cruise terminal, addition of new public transportation systems as well as the Century 21 Plan for the Seattle Center. A separate chapter or appendix on Construction Impacts would be warranted in the FEIS.

| 18

D. Conclusion

Once again, we thank you for the opportunity to comment on the Draft EIS. To summarize, we are not "no growth" advocates. We do, however, believe that any future growth must occur consistent with our community's long-held policies on urban form and must be accomplished in a way that preserves the prominence of the Space Needle as our city's premiere landmark. Specifically, any preferred alternative must be consistent with long-established policies that step down to meet the lower height limits of the shoreline zone. Alternatives must not wall off Lake Union, local parks, neighborhoods or the Space Needle.

| 19

We would like to be included on all future mailing lists and be kept apprised of all public meetings and hearings on this matter. As you can see from this letter, we consider it a matter of vital importance to the future of the Space Needle.

Very truly yours,

Ron Sevan
Chief Executive Officer

cc: Mayor
Seattle City Councilmembers
Lynn Claudon, Lynn Claudon Consulting

King, Donna

From: Jeff Sharp [sharpjds@gmail.com]
Sent: Sunday, April 10, 2011 11:20 PM
To: DPD_Planning_Division
Subject: Comments - SLU draft EIS

To Whom it May Concern –

I am writing in support of greater height and density in the South Lake Union neighborhood as laid out in the draft EIS submitted to the city. I believe height and density offer the greatest benefits not only to the city but to the greater western Washington region.

I came to Seattle in the early 1980s to study architecture and urban planning and have been involved in countless projects in the western United States. I have seen great successes as well as run of the mill, average projects. To really work well, planning policy needs to provide a comprehensive framework that will create the right environment for good development. The zoning changes that allowed the resurgence in Belltown in the late 1980s had potential but ultimately did not succeed. While economic growth has stalled, it will recover at some point. Where do we want that growth to occur? When applied appropriately height and density increases can provide many advantages from an urban planning perspective. Among them are:

1. **Transportation.** Greater density near the downtown core allows more options for transportation including access to multiple modes (walking, biking, street car, bus, light rail) all without getting into your car and turning the key. With petroleum prices on the rise once again, it would be foolish to push the next phase of growth to the suburbs and beyond.
2. **Infrastructure.** The dot com boom/bust was certainly dramatic but remember, with all the torn up streets, there was a huge amount of fiber and other infrastructure installed. Greater density, both residential and commercial, will be able to leverage these existing assets and spark economic growth. Infrastructure is expensive, but when installed in dense settings it provides much more capacity to more people for less cost than the corresponding rural scenario. Think about it. Lay fiber, sewer and power down one city block and you can provide services for what – 1,00 residences? How many miles of pipe and conduit would have to be laid in half acre suburban zoning? For five acre rural zoning? In these economic times, it would be foolish to encourage wasteful growth in suburban and rural areas (Not only is it more expensive per capita, but it encourages sprawl and results in destruction of rural areas. Pretty soon, we'll have asphalt covering most of western Washington). The bonus of course is that much of this infrastructure already exists in the urban core and is ready to be put to use.
3. **Energy Efficiency.** Multifamily dwellings and concentrated business cores are inherently more energy efficient both in terms of first cost and life cycle cost. Why would we want to build more structures in suburban and rural areas that will be less efficient and consume precious energy resources? Home many acres of rural western Washington do we need to destroy before we understand the mistakes we've already made? Gas is once again approaching \$4.00 a gallon. Density is the more energy efficient option and height is the key to density.
4. **Quality of Life.** When I first moved to Seattle my friends and I would often joke about the carpets being rolled up at 8:00 PM in downtown. After 10 to 15 years, there was finally some new housing in Belltown, but things were still pretty sleepy. Ever go on a trip to truly vibrant city? Manhattan, Rome, London, Los Angeles? Seattle Eh....not so much. South Lake Union is already making an impact. I worked in the area for about six years. At first, there was very little pedestrian activity during the day (never mind the evenings). Gradually – with projects like Whole Foods, Tommy Bahama, the improvements at South Lake Union Park, the street car – the neighborhood started to come to life. These development efforts were different than what took place in the Regrade. Belltown's resurgence was based on bulky, massive buildings that had little connection to the streets – not a lot of retail, not much in the way of nightlife beyond a few dance clubs, not much in terms of amenities like grocery stores, hardware stores and other services to meet day-today needs. In contrast what has taken place in South

Lake Union is a more organic growth of services, businesses, transportation options, night life and just generally a more livable environment. It's fun to walk down the streets, people watch, figure out where you can buy what you need, find the services that support your life. It's a great start and the city needs to support even more innovation. I believe that greater height and density is part of the answer.

In conclusion, the city has an opportunity to be truly courageous and innovative. Please don't repeat the milquetoast approach that doomed the redevelopment of Belltown. There was such great promise and it came close, but the result was way short of its potential. Look to the great, vibrant cities of the world for your direction. Look at New York, Rome, Los Angeles, Vancouver BC – there are many examples. These are inspiring cities that are full of life, full of color and character. Density and height play a role in all of these environments. The alternative is a middle of the road approach that misses a great opportunity. When I first moved to Seattle, transportation was a huge issue. Now more than thirty years later we're still talking about transportation and barely moving the ball forward. Take a bold step here and reach for something really great that has so many positive benefits – transportation, economic growth, vibrancy, creating a real heart and soul identity. Not to mention preserving a lot more rural space in western Washington.

Come on – you can do it! Don't be afraid of height and density – it is key to many of the questions of how to continue to grow and support a thriving Seattle for years to come!

Thanks - Jeff Sharp

Holmes, Jim

From: Stephanie Shushan
Sent: Monday, April 11, 2011 7:54 PM
To: DPD_Planning_Division
Subject: South lake union development

Hello:

I totally support development in the South Lake Union area, however I think that height restrictions should stay close to the 65 foot range. I think that keeping lower restrictions will keep the character of the area as a more open space in the city. Additionally, I think that many of the excessively tall buildings in the downtown are an eye sore. Many of these buildings are still unused and I hate walking by the empty buildings/store fronts that still remain since the buildings were completed. | 1

Stephanie



307 Westlake Ave North
Suite 300
Seattle, WA
Tel: 206-262-5500
Fax: 206-262-5599

April 6, 2011

City of Seattle
Department of Planning and Development
700 Fifth Ave, Suite 2000
Seattle, WA 98124-4019

Dear Mr. Holmes,

VLST Corporation is a privately held biotechnology company dedicated to the streamlined discovery and development of novel therapeutics for the treatment of inflammatory and autoimmune disorders. We are located in South Lake Union and hope to remain there for years to come.

We have noticed that the EIS for the South Lake Union rezone contemplates maximum office floorplates of 24,000SF. This seems a little on the small side given the programmatic needs of many biotechnology companies today. The need for efficiency in ventilation and space planning as well as interdisciplinary collaboration groups tends to push ideal floor-plate size into the 30,000-35,000SF range. Given how many biotech companies have clustered (and continue to cluster) in the South Lake Union neighborhood, it seems that it would be important to preserve the possibility of new buildings with these larger floor plates.

It seems useful then to study an option in the final EIS that corresponds to larger floor plates in the 35,000SF range in order to preserve the possibility of zoning that best accommodates the programmatic needs of our large and vibrant biotechnology community.

Sincerely,

A handwritten signature in black ink that reads "Martin A. Simonetti". The signature is written in a cursive, flowing style.

Martin Simonetti,
CEO & President
VLST Corporation
307 Westlake Ave N, Suite 300
Seattle, WA 98109

Charles Sleicher

116 Fairview Ave. N. # 310, Seattle, WA 98109
charles@sleicher.net

tel 206-254-1576

4-9-2011

Seattle Department of Planning and Development (PDP)
Attn: Jim Holmes
700 Fifth Avenue, Suite 1900
PO Box 34019
Seattle, WA 98124

I am a resident of South Lake Union, where I live and work full time, and wish to express my strong opposition to most of the proposals for the rezoning of South Lake Union. I would like to make three points.

1

First, the rezoning options 1 and 2, and possibly 3 as well, would be aesthetically disastrous. To wall off the area anywhere near the shoreline with building rising some 100 or more above ground would make the area ugly when seen from any angle. It would also cause Seattle to be viewed nationwide as an example of how not to develop a waterfront area. I think other cities would react with scorn and incredulity that the Seattle DPD would permit such an outrage. (Remember the outrage when Park Shore was built on the shore of Lake Washington?)

2

Second, the increased density of living in SLU from rezoning will make the area far less desirable as a place to live and work. I know that some proponents claim that the increased population density would increase "livability," but those statements should be discounted because most of them are made by outsiders who will continue to live in their suburban homes with lots of greenery and low population density. The suggestion that 21,000 new households would live in SLU is a nightmare! Crowded open areas and streets are no one's idea of livability. Just think of what such numbers would mean to South Lake Union Park, the only significant park in the area.

3

Third, to the best of my knowledge, all of the proponents of the proposed rezoning (1) work and live outside of the area and (2) plan to gain financially from the rezoning, some of them by multiple millions of dollars. I resent this opportunistic intrusion by outsiders and their exploitation of SLU; they are carpetbaggers who want to gain at the expensive of those of us who actually live in SLU.

4

I know, of course, that many people in DPD have worked long and hard to bring rezoning to SLU, for which they should be appreciated and honored, but that should not be reason to actually carry out the proposed rezoning.

4 cont

Sincerely,

A handwritten signature in blue ink that reads "Charles Sleicher". The signature is written in a cursive, slightly slanted style.

Charles Sleicher

Holmes, Jim

From: Smith Don [mailto:]
Sent: Wednesday, April 06, 2011 3:47 PM
To: DPD_Planning_Division
Subject: SLU Height and Density Rezoning Plan

I am a resident of the South Lake Union area and, like most of my neighbors, I am discouraged about our future. The prevailing sentiment is that, once again, the big money (Vulcan) will prevail and win the extreme building heights of Alternative One. It may be hopeless, but I will at least raise my voice and try to be heard over the loud, well-organized, well-financed clamor of Vulcan and the other commercial property owners -- who do not LIVE here, and whose only interest is to squeeze the maximum profit from their properties.

As much as we worry about losing our sense of community and the livable scale of our surroundings, it is even more critical to preserve the visibility and accessibility of Lake Union. Alternatives Three and Four are the only choices that allow for heights that step down to the lake, and low heights along the lake front. Lake Union is a treasure that should be enjoyed and appreciated by all -- not just by the wealthy occupants of high-rise condos and offices.

The current height limits of Alternative Four are sufficient to allow the growth and density that has been mandated. However, since an increase in building height limits seems inevitable, please choose the more reasonable Alternative Three.

Thank you for your consideration,

Patricia Smith

Holmes, Jim

From: Noelle Smithhart
Sent: Monday, April 11, 2011 4:51 PM
To: DPD_Planning_Division
Subject: Draft EIS Comment

RE: South Lake Union Draft Environmental Impact Statement

To Whom It Concerns:

This is what I read at the Public Hearing. Due to time constraints, a few sentences were not included, so I am submitting this in writing:

My name is Noelle Smithhart. I live in South Lake Union and I've worked here for Vulcan for about 6 years. I also sit on the South Lake Union Chamber of Commerce Board of Directors. This comment is from my personal point of view.

I was born in Seattle, and I grew up in unincorporated King County, near Covington, WA. I moved into the city 13 years ago. In my youth, I experienced the epitome of suburban sprawl – watching chain stores move into strip malls, encouraging a culture reliant on the use of single occupancy vehicles. Since moving to South Lake Union over 2 years ago, I've gotten rid of my car.

I'm a huge supporter of smart growth and I fundamentally believe in density. I walk the walk, literally, and I'm thankful the city is studying the impact of increasing density in my neighborhood. I moved here specifically for the vibrancy and vision of the stakeholders for this urban center. I experience the increased activity and a growing sense of community daily. I do wish the city would also look at the benefits to the local economy and environment that is brought by offering more opportunities to live, work and play in our urban neighborhood.

I'm aware of a small group of residents who don't fully share this vision of increased capacity, but they are not a voice for all residents. When I chat with folks around the neighborhood about increased height and density in SLU, it's a no-brainer. We're an urban center, and this is where height should go. We moved here for this reason. More people living and working in my neighborhood will support small, local businesses and arts and cultural events.

I'm personally very excited about seeing more diversity in the forms of buildings in my back yard. I eagerly anticipate taller buildings with great design. As the city adopts progressive new zoning, I also hope they will consider developing and adopting new design guidelines for South Lake Union. These will help to both maintain and enhance our built environment. Increased height offers more flexibility and ways to incorporate great plazas and opens spaces into building design. I also hope the city will consider appointing a Design Review Board more specific to South Lake Union. We are currently part of the Queen Anne and Magnolia district, and I believe that SLU has a different aesthetic and future than these neighborhoods. It might make sense to also be in the same Design Review district as Uptown, another Urban Center.

I love my neighborhood and I eagerly anticipate new zoning that encourages more people in South Lake Union.

King, Donna

From: Paul Snorsky [SnorskyP@hswc.com]
Sent: Friday, April 08, 2011 4:40 PM
To: DPD_Planning_Division
Subject: South Lake Union Draft EIS

To whom it may concern:

I am writing as an interested party with regard to the Draft EIS for potential re-zoning to increase densification of the South Lake Union (SLU) neighborhood. After reviewing the EIS I'd like to voice my support of the densification alternatives. I have worked in the South Lake Union neighborhood for 15 years, I live on the North side of lake union and look across the lake at SLU and I frequently visit the neighborhood with my family for activities other than work. I used to frequently travel through SLU as a kid (I grew up in Seattle) when going to Sonics games and going to the Seattle Center. 1

The changes made in recent years have improved the quality of life tremendously in this neighborhood. It is beginning to develop an identity that is positive for our community. I remember as a kid being afraid to stop at the Denny's on Mercer after ball games because the neighborhood was scary. Now I take my own kids to REI, restaurants and parks in the neighborhood frequently.

After seeing this identity begin to develop and a resulting cleanup of the neighborhood occur, I am convinced that further densification of the area will only increase the positive effects. Additionally, after scanning the EIS, I didn't see any environmental impacts that outweigh what I feel would be the positive impacts. Thank you for your consideration in this manner.

Paul Snorsky

Holmes, Jim

From: Scott Starr SMR
Sent: Monday, April 11, 2011 4:52 PM
To: DPD_Planning_Division
Subject: South Lake Union

I would like to write in support of increased density in South Lake Union neighborhood. I believe that increased density in Urban areas will help to control sprawl in the suburbs and help to preserve our farmland and natural habitat. A taller residential building could accommodate an entire subdivision's worth of housing, preserving acres of undeveloped land. Increased development in the city should also help to reduce the cost of housing in the region by increasing the supply of housing and reducing pricing pressure on single family housing. A denser, mixed use neighborhood should also help to reduce traffic congestion, gasoline usage and wear and tear on our road infrastructure by locating jobs in close proximity to new housing.

I personally do not think that taller buildings are an aesthetic concern when they are located in a downtown neighborhood like South Lake Union. Aesthetic impacts from taller buildings could be mitigated through thoughtful zoning - perhaps lot coverage could be limited over a certain height to preserve views similar to what was done in Vancouver BC. Developers could also partner with the city to improve public infrastructure, provide public parks and add affordable housing to the neighborhood. Incentive zoning could be used to encourage developers to provide those needed public benefits.

South Lake Union has been transformed into a vibrant neighborhood by the new development in the area. I am continually surprised by how many people are walking on the streets during the day and at night. I think that new development will only add to the vibrancy of the neighborhood.

Scott Starr

Holmes, Jim

From: Josh Stepherson [mailto:jstepherson@slu.wa.gov]
Sent: Tuesday, March 29, 2011 5:37 PM
To: DPD_Planning_Division
Subject: comment eis

To whom it may concern,

My name is Josh Stepherson. I am writing as a Seattle citizen and small business owner with an office located in the South Lake Union area.

I am writing in regards to the city of Seattle's Draft Environmental Impact Statement.

I would like to make several comments:

- This area is a designated Urban Center that is targeted to receive a significant percentage of the city of Seattle's overall growth and density. The present zoning (no change option) was put in place prior to this zoning change and does not help to encourage the creation of a true mixed use Urban Center that meets our regional and city growth goals.
- Any zoning recommendation and change should increase building capacity and provide developers with sufficient flexibility to create a diverse range of housing, commercial and retail spaces.
- Retail spaces – consider expanding retail zoning on 8th Avenue and Fairview. It should not just be at corners.
- More transit and basic infrastructure will be needed to support this Urban Center
- Ensure that the new zoning encourages more and a broader mix of residential
- Protect the view corridors, especially the view to the north from Valley Street

In looking at the options and the significant role this area will have in creating jobs and providing housing I am in support of alternative 1. It does the most to advance our collective goals for the area.

I look forward to continuing to stay involved in this process and supporting city efforts to create a great SLU neighborhood.

Josh Stepherson

Holmes, Jim

From: Mark Stoner
Sent: Thursday, April 07, 2011 5:47 PM
To: Holmes, Jim
Subject: South Lake Union EIS Comment

I would like to submit the following comment on the South Lake Union EIS:

I fully support Alternative 1 and all of the greatest potential increases in height and density that come with it. The current zoning in South Lake Union is woefully inadequate for utilizing the future potential of the neighborhood. Among the city's most underdeveloped neighborhoods, South Lake Union is the closest to Downtown and Capitol Hill and has the best transportation connections. To waste the opportunity of this neighborhood on 65' and 85' buildings is a crime against the future of the city. Seattle's planners realized in the late Nineteenth Century that Downtown should expand towards Lake Union, and they went to the trouble to raze an entire hill to make sure that would happen. Now, over a hundred years later, Seattle's zoning code is preventing that expansion from happening appropriately. It is much more preferable to concentrate as much of the city's population and job growth close to downtown rather than in far-flung areas of the city, as this will be the most sustainable approach in terms of energy use, transportation access, and quality of life. Allowing Alternative 1 to become law does more than the other alternatives to make Seattle a sustainable city. |1

Mark Stoner

PeterStonerArchitects LLC

1121 Dexter Ave N

Seattle, Wa 98109

P. 206.284.2205 - F. 206.284.9749

www.stonerarch.com

Holmes, Jim

From: David Sullivan [mailto:dsullivan@panpac.com]
Sent: Monday, April 11, 2011 4:18 PM
To: DPD_Planning_Division
Cc: David Sullivan
Subject: South Lake Union - EIS Comments

Importance: High

Dear Mr. Holmes,

I am the General Manager of the Pan Pacific Hotel located at the corner of Denny and Westlake in South Lake Union. The purpose of this e-mail is to formally give my support to the proposed Alternative 1 in the "Height and Density Environmental Impact Statement".

The Pan Pacific Hotel Seattle opened just over 4 years ago. While we are very excited to be a part of one of the fastest growing and most dynamic neighborhoods in the country, the entire neighborhood still suffers from a lack of density that would make our hotel and other local businesses successful. The truth is that even though we have some big name corporations moving into the neighborhood, we still need to attract and develop the residential component to balance out the area. With more residents also comes more amenities in the form of restaurants, service providers and night life. All of this together will make South Lake Union a much more desirable place to live and work as well as a more profitable area to do business.

At first, I was concerned that high-rises would obstruct the view from our hotel guest rooms. I now understand that the intent is to develop tall, thin buildings with plenty of space in between allowing for continued open views. The buildings in fact will not restrict the view as much as they will "become part of the view".

Being a native of Vancouver, BC I witnessed this very transformation first-hand when the decision was made to allow more height in the old warehouse district of "Yale Town". What was once the most run down part of town has become the most sought after area of downtown Vancouver. The buildings have added beautifully to the Vancouver skyline and the numerous new restaurants, bars and retailers have added a completely dynamic new feel and electricity to a once undesirable area. Simply put, the decision "to go up" in Yale Town totally transformed a derelict neighborhood into the envy of the city. There are incredible similarities between South Lake Union and Yale Town and I see no reason why a similar decision here won't deliver the same results.

I am also concerned that if we don't continue to develop and grow South Lake Union with a strategic plan for density, then that development will just go somewhere else. In our case, that "somewhere else" will likely be Bellevue.

As a business operator in South Lake Union I am very excited for this zoning change to take place. The sooner, the better.

Thank you very much for your time.

Sincerely,

David

David Sullivan | General Manager
panpacific.com/seattle | panpacificseattletour.com

Holmes, Jim

From: Scott Surdyke [mailto:scott@slu.com]
Sent: Monday, April 11, 2011 11:30 AM
To: Holmes, Jim
Subject: SLU Comments

Below are my comments on the SLU Plan, and the recent presentation:

With very limited land in Seattle, it only makes sense to go up.. I am for the height increase proposed in Alternative 1, however I have some concerns about the scope of the EIS and the product it will encourage. | 1

- **Tremendous Benefit:** Note that such a substantial height increase will give tremendous financial benefit (value) for current property owners and developers. In exchange for the City "giving" this benefit, there should be some substantial public benefits, including: | 2

- **Sustainable Development:** Minimum of LEED Silver. It doesn't make sense to argue that this upzone is a "sustainable" thing to do unless the City and developers work together to ensure that the new towers in this built environment will be state of the art, innovative and sustainable development.
- **Public Open Space:** What makes Vancouver BC so livable is that developers provided **A NETWORK OF NEW, PUBLICALLY ACCESSIBLE OPEN SPACE** at the base and adjacent to their projects. The EIS's assessment that SLU already has more than enough open space "per person" does little to encourage or incentivize developers to provide any landscaped space at the base of the buildings (publically accessible). This will merely encourage full-block development with "privatized" open space on rooftop decks. Considering that the neighborhood population could easily rise by more than 10,000, the argument that SLU already has enough open spaces seems like a weak one and is out of touch with the reality of what makes a downtown neighborhood livable (see the examples in Portland and Vancouver).
- **Design/Architecture quality:** The property owners and developers who stand to gain the most from this up-zone should be held to a higher standard of development than what is allowed under typical design review. The incorporation of sustainable elements, masonry and plenty of glass should form a newer, higher standard of development than what is typically built in Seattle's urban centers.

- **Land Use/Building Code Changes:**

- **Ground Floor Residential Should be allowed outright:** We don't need another Belltown, where too much ground floor commercial has resulted in decades of street level vacancies. Developers of SLU should be able to opt for real ground floor residential (townhomes), without having to do this under the guise of "live/work." Again, what makes downtown Vancouver and Portland's Pearl District so livable is that there are actual homeowners right at street level. These townhomes provide 24-hour "eyes on the street" and really encourage community and a real neighborhood feel. Let the market decide what uses can work on the ground floor, and give the developers flexibility to do live-work and townhomes instead of endless strips of linear commercial/retail. | 3
- **Make a real effort to LISTEN to developer and architects who have code recommendations to make high-rise construction more cost and energy efficient:** A new high-rise condo shouldn't have to cost | 4

\$1000 a foot to purchase. Unfortunately the City of Seattle's obsession with energy codes and reluctance in relaxing some of the energy restrictions have made our city one of the most expensive to build in on the West Coast. High-rise architects and other design subs for years have pointed to Vancouver and Portland's high-rise building codes, which allow more flexibility in overall energy code and performance. This translates in buildings that are cheaper to build, and include more glass on the exterior (which is more desirable to owners, and frankly more attractive). If the City is going to make such a sweeping upzone, then perhaps it's time to consider what code changes could be incorporated or changed that make more sense from both a design and financial standpoint. Really listen to builders, architects and developers regarding what changes could be made to support rather than hinder the development of high rises.

4
cont

- **Other areas in the Shoreline environment:** If the City is going to allow such a substantial change on a former industrial/commercial area so close to the waterfront, then perhaps it's time to take a more "updated approach" to land use planning in similar areas such as north Lake Union (Fremont, Wallingford, Eastlake, etc), Interbay and Pier 90/91. If there are low rise, non water-dependent uses in other areas that are sitting vacant or that are underutilized, then perhaps it's pertinent to examine these areas as well (as a separate scope). Why should a developer who wants to build a mixed use development near a marina get "shot down" by DPD just because he or she is planning a mix of uses and increases of heights? Other neighborhoods have been deprived of open space and the opportunity to enjoy areas near the shoreline. It only makes sense to really look at opportunities (like SLU) where water-dependent uses are prioritized within the shoreline, but then allowing mixes of commercial, retail, residential, open space and industrial to concentrate. This will ensure consistent and vibrant shoreline neighborhoods, and will provide flexibility as the market changes.

5

Scott Surdyke,
Seattle, WA

Holmes, Jim

From: Allen and Joanne Suver
Sent: Monday, April 11, 2011 5:19 PM
To: DPD_Planning_Division
Subject: EISI

If I understand correctly, your responsibility is to submit options for the development of South Lake Union. I urge you, implore you, to be aware of the tremendous power you have to shape this decision. | 1

Lake Union should be framed as a natural treasure. Don't choke the life out of the environment with a dense forest of hard-edged concrete and glass buildings. Think how impoverished our whole country would be without our national parks. Lake Union needs to be looked at with the same wisdom and vision.

I understand South Lake Union is an extension of downtown Seattle and development is realistic, but don't sell out for short-term gains.

Joanne Suver

Holmes, Jim

From: Drew Symonds
Sent: Monday, April 11, 2011 11:30 AM
To: DPD_Planning_Division
Subject: SLU EIS

I currently work in downtown Seattle and live in Woodinville, but plan to move to South Lake Union this summer. I have also been spending more time in the area with the new park and different shops and restaurants that are now open, which I usually get to by the streetcar. I was attracted to South Lake Union as a place to live because it will finally allow me to walk or take transit to work, and because it is becoming more active during both the day and night as more workers and residents move to the neighborhood. I would like to see increased heights that allow even more activity and people in South Lake Union because it helps make the area safer, supports the local retail businesses and provides more housing options for people in the downtown core so that they can get to work or recreation by walking, biking or transit. Seattle is a world-class city that will only continue to attract more people from all over the globe, and we need taller, aesthetically pleasing buildings in areas that make sense such as South Lake Union where we have the capacity to accommodate growth. For those reasons, I support the option/alternative that allows for the tallest building heights in the South Lake Union urban center. | 1

Drew Symonds

Holmes, Jim

From: john tangen
Sent: Thursday, April 07, 2011 1:24 PM
To: DPD_Planning_Division
Subject: South Lake Union

To Seattle Department of Planning and Development

Attn. James Holmes

Dear James, I was born & raised in West Seattle a long time ago. Back when the Smith Tower was the tallest building in the city skyline. I'm sure there was more than a few people who would have liked to keep it the tallest but that didn't happen. We are now building in South Lake Union & taller would be better. We will continue to attract Hi Tech & Bio Tech companies which means more construction jobs, more local long term jobs & increased tax revenue. This also means more people living in the area. At a time when the trend is to move back to the city taller buildings mean more housing options. Please give careful thought to any new developments in South Lake Union & do what's best for Seattle.

Thank you, John Tangen

Holmes, Jim

From: Michelle Thordarson
Sent: Friday, April 08, 2011 8:42 AM
To: DPD_Planning_Division
Subject: SLU Rezone Comments

I work in Seattle and also enjoy coming into the city to spend time with friends and family to enjoy the culture and dining experiences that Seattle has to offer. I support additional height and density zoning in the South Lake Union neighborhood. By increasing building heights in South Lake Union, we can reduce the spread of building into rural areas and cities nearby. Commuting traffic into Seattle is already horrible; it would make better sense to increase the density in the city and encourage people to live close to their jobs. Creating jobs and housing along existing transit routes makes sense. This would also allow more people to support small, locally owned businesses, as well as the local artists and theaters. Growth in Seattle is going to continue. I would strongly urge our elected officials to plan appropriately for the anticipated growth now.

Regards,

Michelle Thordarson

Holmes, Jim

From: Diana Timpson
Sent: Monday, April 11, 2011 11:02 PM
To: Holmes, Jim; DPD_Planning_Division
Subject: 2011-04-11 Timpson comments SLU EIS

SLU EIS

Dear Sirs,

The following are my comments on the “South Lake Union Height and Density Alternatives” Draft EIS dated February 2011. The comments are general in nature, and not in a particular order. Also, though I have experience in the design and construction, the comments represent a personal point of view.

The rezoning of this neighborhood must be one of the greatest opportunities anywhere in the US right now to change the face of a world-class city. It needs rezoning to increase its potential. As a neighborhood it is unique and should be treated so. It is not a blank slate, and should retain some of its character and heritage. | 1

As an initial statement on cars and traffic: there will likely be plenty of public opinion on vehicle access and traffic issues due to simply the Mercer project, and adding density to the neighborhood will obviously exacerbate traffic. In my opinion living in a higher density area requires sacrifices in order to create that density. Increased density should by definition absolutely discourage personal vehicle use, especially for commuters. If public transit is not an option, then changes need to occur: but that should not affect the rezoning if this neighborhood. That is an issue for all jurisdictions within a commutable distance to Seattle. | 2

Increasing height limits does not necessarily equal density. There are cities that have high densities that are not associated with tall buildings. Taller buildings do not equate to affordable housing - residential towers are much more costly for developers and are typically high end condos. | 3

Incentive zoning seems to be very dependent on the economic climate and real estate proformas, which may leave too much beyond the city's control. The incentives should include options that greatly benefit the public, and enhance the streetscape and long-term aesthetics of an urban center. The bulk and shadow mitigation measures listed early in the report should be taken to a specific level of detail within a rezoning proposal. | 4

As one example, the concept of POPS is great: as long as they are actually something that the public would feel invited into and would want to access and use. The pass-through at UW III fails to do either. This space should not have created any incentives to the developers. There is nothing there for the public except the feeling that you're not supposed to be there and probably someone is watching.

The mixed use zoning is troublesome. Being so close to downtown with lower land value will encourage commercial development. The opposite is true for residential development in a city core. The city may want to consider more detailed zoning even to a block by block basis, to ensure the mixed use that will continue to enliven SLU in the evenings and weekends. The alternative may be a series of 'office parks' that leave the neighborhood dead during non-business hours. This would be poor use of a neighborhood that is part of the city core - and dining establishments, retail, and cultural activities are encouraged by the local population of residents. The city currently has the opportunity to create a vibrant neighborhood, and not leave it up to economics and zoning incentives.

The possibility of a sea of 85 foot office park developments across SLU should be a serious concern.

If there is to be substantial growth in residents in SLU, more family oriented amenities need to be included in planning, such as schools, parks, wider sidewalks, green streets with traffic slowing, pedestrian crossing yield areas, overall pedestrian and bike oriented design of streets, areas for public activities, or other special zoning. Seattle needs downtown core parks, and there are not many places left to do this.

Podium heights of 40 ft do not create a welcoming city street. Any setback for a tower above this height podium would not be obvious from the street. An 85 ft podium does nothing for the street level, and a setback would not make much difference unless you are in the adjacent 95 ft building. Podium heights above 20 ft will not serve the neighborhood.

A good example of a well thought out development with respect to activating the street level (in my opinion) is the block at Whole Foods. The sidewalk is substantially widened, a wide set of steps and covered escalator serve to bring the public up to a plaza with restaurants, boutique shops and the hotel. The towers are unimposing to the pedestrian, leaving sunshine and blue sky visible from wherever you are standing. Except from Denny, with it's bus stop and loud hot vent out of Whole Foods. It is unfortunate there is short term parking up there, beyond accessible and hotel / restaurant drop off, when there is parking below grade. But it has created a nice public amenity.

The increased heights (very generally) seem to step down from Denny to the lakefront. The potential for towers in the last block before the lake is not very well thought out. The rendering on the cover of the document (which is as far as many would get in this report) should not show the current view from SLU park to the highrises back at Denny. This rendering, if any of the renderings in the entire report do, should realistically show the option with the biggest impacts, unless the impacts of all four options are shown. There is no point including a photo of what the current view is without a side by side comparison of the proposals. The development of these blocks is going to have a powerful effect on pedestrians in the experience of both getting to and being in the park.

The renderings of views up Mercer and Valley each show the towers on the opposite side of the street view. Neither show the actual effects of the towers being on the street side of the block. A fair number of renderings appear to be misleading throughout the report. Podium heights, overall heights, setback distances, and floor plate dimensions are unclear. I understand professionally the

effort required to produce renderings for multiple rezoning scenarios from various vantage points. | 11
 cont

I believe that the allowable podium heights and the actual effects and visibility of various setback | 12
 conditions should be a serious concern to the city.

If the EIS is serving the public, it should be clear to the point of being blunt in its representations of | 13
 potential development. These visual renderings are the limit of what the majority of report readers
 are going to be able to digest. I am not entirely opposed to raising heights closer to the lake, but
 these blocks should be treated very sensitively.

The “mitigation strategies” for height and bulk should be a big concern for the future of this | 14
 neighborhood, and closely defined in any rezoning decision.

A 30 story building will clearly need to have parking to be feasible to a developer. The water table | 15
 just below the surface (notably lakeside, but throughout the neighborhood as you approach the
 lake) would create huge and possibly untenable expenses to develop a parcel with underground
 parking. This is downplayed in the soils chapter. The logical step for a developer is parking above
 grade. I strongly believe there should be no parking above grade in a new structure allowed under
 the new zoning. It destroys street character.

Parking at or above grade in the re-zoned SLU could have strong detrimental effects on the future |
 vibrancy of this neighborhood.

General questions on the soils section of the report:

The water table is just a few feet below grade at the lakefront. Soils on the lakefront blocks are | 16
 subject to liquefaction.

How much will relative costs between building high rise on liquefaction-prone soils vs good soils |
 affect developers decisions?

Likewise, the relative cost between building a high rise with 2+ levels below grade parking without |
 water table issues and tower with water 10 ft below grade will affect the type of development.

The report mentions “permanent dewatering”, which I don't know about. Is this required and or | 17
 feasible when your garage is well below the water table? Relative costs in a building life cycle?

Report talks about possible “changes to native soil conditions.” It seems pretty obvious this will | 18
 occur whenever there is high rise construction. Why do we care?

Is this a matter of changes to groundwater flow? Are changes to groundwater flow possible to |
 mitigate with any certainty, or may have unknown / detrimental consequences?

These questions need to be taken into consideration where height increases are being considered – a
 developer may opt to build lower and forgo setbacks or any other incentives.

I believe in increased heights in the neighborhood. It is so close to downtown, and should be dense. Upon the (inevitable) economic rebound, which will likely be occurring right around the time final rezoning proposals may be under review, we should be concerned about a development "rush" that is unsustainable in the short term, and might drain Downtown, Belltown, Lower Queen Anne of their vitality. Belltown for one is very clearly on the decline, and we have seen businesses running to SLU. 19

I like to call SLU "Sim City." It's as if we all have the opportunity to build a whole urban area exactly as we have envisioned it.

Thank you for your time and consideration.

Sincerely,
E. Diana Timpson
PE, Structural Engineer, owner at Veer Lofts

Diana

Your \$20 Donation will bring clean water for life to one deserving person who needs it.

<http://www.firstgiving.com/fundraiser/diana-timpson/wilde-foundation>

Holmes, Jim

From: Steve Trainer
Sent: Monday, April 11, 2011 2:09 PM
To: DPD_Planning_Division; Holmes, Jim; Sugimura, Diane; Conlin, Richard; Rasmussen, Tom; Bagshaw, Sally; Burgess, Tim; Godden, Jean; Clark, Sally; Licata, Nick; Harrell, Bruce; McGinn, Michael Patrick
Subject: South Lake Union Draft EIS Comment Letter

In response to the draft environmental impact statement (EIS) recently published by the City of Seattle and as an owner of property in South Lake Union, I am writing to support greater height and density within the South Lake Union (SLU) neighborhood. People are essential to an interesting, vibrant, and safe neighborhood. Through channeling growth to urban centers, we are able to preserve rural areas and reduce pressure on industrial land. South Lake Union is perfectly poised to accommodate such growth, with the right zoning. Increased height and density will allow more people to locate to this urban center. 1

Additionally, increased height and density creates more ongoing revenue for the City of Seattle, maximizes the return on the investment the City has already made in the neighborhood, and allows the City to serve citizens at a relatively low cost to taxpayers. South Lake Union is a growing hub of life science, technology and global health organizations that are changing the world. These organizations are drawn to urban centers like SLU because they encourage collaboration and innovation. The ability to continue to recruit talented people to these organizations, and newly created ones, is critical to our economic future.

Alternative One provides for the greatest density in South Lake Union; the City should adopt it provided it is willing to address the following revisions:

- A limitation on floorplate size above the podium level limits a building's appeal to potential commercial tenants. Currently commercial tenants are pursuing building floorplates that approximate 40,000 s.f.. This limitation will severely impact buildings' ability to attract long-term, viable tenants. 2
- All of the proposed alternatives are essentially a downzone; currently the zoning is SM 85'. Alternatives 1-2 (the alternatives with the highest density) downzone the base height to 20 feet and require extensive bonus payments to develop above this base. Base heights should either be raised or kept the same (85) feet to ensure that the result is not a downzone. 3
- The height limit on 8th Avenue for commercial development will prevent the logical expansion of important users in the emerging biotech, global health and life sciences industries. 4
- It appears that the alternatives and the urban design framework foresee the 8th Avenue corridor as a residential-type street. As an owner of property along 8th Avenue, I do not support a residential-focus on this street. Instead, the focus should be on a mix of uses, including viable large commercial tenants that can sustain the type of jobs/housing balance the SLU neighborhood plan foresees in the neighborhood. 5
- A "Woonerf" along 8th Avenue restricts access for successful retail tenants (which are encouraged along 8th Ave). Retail tenants require a certain amount of vehicular and "outside of the neighborhood" traffic; limiting 8th Avenue to a neighborhood focused street will not help create the type of retail environment the City is envisioning. 6

Thank you,

Steve Trainer
 Managing Member
 9th Avenue Investors, LLC

King, Donna

From: Beatrice Tung [tungbst@gmail.com]
Sent: Saturday, April 09, 2011 12:00 AM
To: DPD_Planning_Division
Subject: EIS

Dear City Council Members;

The growth and development of South Lake Union is inevitable, so the new zoning law is necessary. But the new zoning changes should be fair and good for all SLU residents and businesses involved so that we won't create a dead zone, which not many of us will be able to see the blue sky, the surrounding mountains and the open water front. The zoning changes need a vision with careful thinking and planing.

More than 100 years ago, when Chicago lake front area was destroyed by fire, the city had the foresight to rebuild in a way to preserve the open lake front area for everyone. So I am strongly against the zoning alternative #1 and #2 just for the massive buildup. The monstrous commercial buildings and lofty residential towers will destroy the neighborhood. Now you have the chance and power to make SLU a desirable area for the future generation to treasure. When the Viaduct came down, the whole Seattle downtown included SLU will have most beautiful water front for everyone to enjoy.

Thank you!

Beatrice Tung, the resident of SLU



325 Eastlake Avenue East
 PO Box 778
 Seattle, WA 98111-0778

April 11, 2011

Seattle Department of Planning and Development
 Attn: James Holmes
 700 Fifth Ave., Suite 1900
 P.O. Box 34019
 Seattle, WA 98124-4019

RE: South Lake Union Height and Density Alternatives Draft Environmental Impact Statement (EIS)

I'm writing on behalf of PEMCO Insurance, which supports Alternative #1 from the EIS for the flexibility and greatest opportunities by allowing the highest and most-dense zoning changes.

PEMCO Insurance and School Employees Credit Union of Washington are residents and land owners in the Cascade neighborhood of South Lake Union. We've been here since our founder, Robert J. Handy, built our first structure in 1949. Since then PEMCO has been continuously involved with the Cascade area, striving to be a good neighbor and help maintain and improve this community.

As a local company dedicated to Northwest residents, and a mutual company owned by our customers – not stockholders – we support Alternative #1 because it's in ours and our customers' best interests.

PEMCO partnered with other property owners in South Lake Union (SLU) to build Alley 24, a full-block mid-rise development that opened in February 2006 next to PEMCO and REI. It represents PEMCO's commitment to responsible, mixed-use development that provides office, retail, and market-rate rental housing. Sustainable resources and green building techniques were used, and historical structures such as the New Richmond Laundry building were incorporated into the design. The property also features four rooftop gardens for commercial and residential tenants to enjoy. Mid-block pathways divide the property for easy pedestrian access, and artwork and landscaping are incorporated throughout.

Alley 24 fits the description of what the Draft EIS recommends for all future development. However, Alley 24 was limited in height by current zoning limitations. Without the additional height and density that comes with it, it's been difficult for street-level shops and restaurants to survive. Additional people would help support these businesses and attract more new ones.

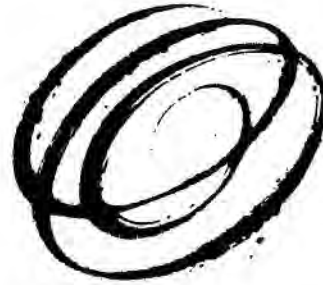
PEMCO has more than 600 employees who work, dine, shop, and play in this area every day, including some who now live in the Cascade area and are excited about the potential of SLU. Additional market-rate housing will increase the opportunities for PEMCO employees to live closer to work; more people living and working in the area will improve neighborhood safety, as well. With height and density come more shops, restaurants, parks, and culture that will entice our employees to stay and play in SLU after work, rather than immediately drive to their homes elsewhere. As SLU becomes more enjoyable, it also will entice prospective employees to apply at PEMCO.

Alternative #1 gives developers the flexibility needed to build structures that include the most public amenities, create the most jobs, and create housing for a mix of residents of all ages and incomes.

Sincerely,

John Turner
 Real Estate Facilities Manager
 PEMCO Insurance

Memo



SEATTLE OPERA
SPEIGHT JENKINS GENERAL DIRECTOR

To: South Lake Union Height & Density DEIS
From: Kelly Tweeddale, Executive Director
 1020 John Street, PO Box 9248
 Seattle, WA 98109
 206-676-5515
Date: 4/11/2011
Re: Comments for DEIS

Please accept this memo as comments in response to the South Lake Union Height and Density DEIS recently distributed. Seattle Opera administrative offices are located at 1020 John Street between Boren and Terry Avenue North and John and Thomas Streets. It has been a long-term tenant in the South Lake Union community since the early 1990s. The varied and complex nature of our business model which includes light industrial with access for load-in and load-out of trucks hauling a 40' to 53' trailers are essential to our ongoing operations and our ability to produce quality opera in our community. Our present location offers us appropriate access from the major transportation corridors of State Route 99 and I-5, an adequate turning radius for large scale trucks and trailers, and a Terry Avenue N. streetscape that is freight/light industrial friendly.

We want to reiterate the importance of retaining the current uses of Terry Avenue N. in any height and density changes that may occur as proposed in the alternatives in the Draft EIS. With the increase of density proposed in the EIS alternatives, we have concerns in the following areas: freight/trucking access, parking, safe pedestrian routes, and retaining the character of the mixed use neighborhood.

Freight/Trucking access:

The ability to find appropriate trucking corridors that are essential to a vibrant mixed use area. The EIS refers to several documents including (add them here) that describe the uses of Terry Avenue N. in somewhat conflicting terms. The South Lake Union/Uptown Triangle Mobility Plan recommends making Terry Avenue a pedestrian link to the South Lake Union Park. We recommend that the pedestrian improvements be focused north of Thomas Street, as the core of industrial use on Terry Avenue N. is between Denny Way and Thomas Street. In addition, the reference of Terry Avenue N. as a "festival" street in the South Lake Union Urban Design Framework released in December 2010 refers that the street design "needs to allow ways to close down to auto traffic, transforming from road to open space." Again, this would be detrimental to allowing for the current Seattle Opera use unless it was restricted to Terry Avenue N. from Thomas Street north. The recommendation of curbed sidewalks on the west side of Terry Avenue N. as well as incorporating parallel street parking pose critical issues for our current use as it relates to turning radius and access of large trucks and trailers. Our current operations are described below and we need to retain that minimum access:

- Scenery and rehearsal gear come to 200 Terry Avenue N. in trailers that are 53' Long, Tractors add up to 22' for a total of around 75'.
- Currently in order to access our load-in/out bays, we use every inch between our building and the cars parked across the street (on the West side of Terry). That is 50' between the Seattle Opera building and the cars across the street or 65' from the loading door to the cars across the street. We are only able to park in this small a space because some of our docks are at an angle.

- We do park a 45' trailer at one of our "straight in" docks. That leaves 20' to 25' for traffic down Terry Avenue N. and room for our tractor to hook up when we move that trailer. This is an absolute minimum to get this trailer in and out.

2 cont

The addition of curbed sidewalks and increased parking would need to retain this minimum footprint of access. *Note: We have had drivers who were not able to get trailers into our angled docks without moving either the cars across the street or some cars in front of the Seattle Opera Building. We have often had to shuffle trailers by pulling one trailer out and moving it so that the driver could get in to the "easier" slot. These maneuvers are not usually parking or pedestrian friendly. It is also essential to preserve the two-way traffic pattern on Terry Avenue N. from Thomas Street to Denny Way.*

Seattle Opera currently uses the following trucking routes to access Terry Avenue N.:

Routes to 200 Terry Avenue N. from I-5 Mercer St exit

- 1- Left on Fairview, Right on Thomas, Left on Westlake, Left on John, Left on Terry.
- 2- Right on Fairview, Left on Valley, Left on Westlake, Left on John Left on Terry.

From 200 Terry Avenue N. to I-5

Left on Thomas, Right on Westlake, Right on Mercer

Similar routes are used to travel to Mercer Street in order to access Seattle Center/McCaw Hall.

Parking:

It is essential that we retain the ability to use the space at the South end of the Seattle Opera building to park the following vehicles which are essential to a major opera company:

- 2 @ 53' trailers at the South end of the building.
- 2 @ 53' trailers at the angled loading doors at the North end of the building.
- 1 @ 45' trailer at a "straight in" loading door
- 1 @ 40' trailer at a "straight in" loading door
- And our 16' van at a loading door

3

As referenced above, it is important that any curbed sidewalks or bollard systems on the west side of Terry Avenue N. not encroach or reduce the current access for both active load-in/out and large trailer/vehicle parking. With the addition of higher density, it is important to provide long-term (10-hour) parking options and evening/night parking options that can be used by performers, crafts people, that often work at times that transit systems do not service.

Safe Pedestrian Routes:

The transportation plan in the EIS calls for higher pedestrian access on many streets including Terry Avenue N. Because of the trucking and loading requirements, we propose that pedestrian corridors are proposed that do not narrow the current parking and load-in/out access that exists on Terry Avenue N. between Denny Way and Thomas Street. Large trucks and pedestrians are not an easy mix.

4

In addition, we are not opposed to the proposed hill climb pedestrian access that connect to John Street, but it is important that such an improvement which would require structural improvements or renovations to existing buildings are fully funded by an outside source.

Character of Existing Neighborhood:

As a civic partner to the community, we believe the alternatives need to honor the tenants that have invested in our community and reflect uses that are not only based on development potential, but also to adding to the character of the neighborhood. We endorse the concept of transferable development rights that might help preserve uses such as the opera's rehearsal and manufacturing facilities, but still allow financial incentives to be explored elsewhere in the neighborhood to encourage smart development.

5

Holmes, Jim

From: Jason Twill
Sent: Monday, April 11, 2011 1:12 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS Comments

I am a Seattle resident and a real estate practitioner. I am also an ex-New Yorker and have a fairly opinion about the value of proper density. South Lake Union is clearly an emerging mix-use city center and extension of the downtown core of Seattle. A high-level and long term (2100 plan) strategy for city right now should be to capture future population growth and new businesses in high-density urban core which the South Lake Union neighborhood is poised to do if taller buildings are allowed. This would mitigate new infrastructure stress on surrounding residential neighborhoods and promote more mass transit. Any increased density being proposed should be inextricably linked to walkability, future energy/water needs, and reduced vehicular trips. Mass transit and the current level of daily SOV commutes to and from downtown are the Achilles heel of Seattle right now and proper urban density is the right tool to address this issue. Taller buildings would also allow for more open space at pedestrian level, more pocket parks, dog parks, simple corner parks with benches and outside eating table which is sorely needed downtown. 1

Any incentives mechanisms for taller buildings should consider community uses for the local area where increased density is being considered. For instance, in New York, developers are allowed to increase their FAR if they provide a community use facility within the development that the neighborhood needs such as a dentist/doctor office, dry cleaner, pharmacy, child care facility etc.. One thing that SLU is lacking is schools which would motivate school age families to repopulate downtown and move into the urban core. Perhaps a school funding mechanism could be tied to density plan being considered for SLU? 2

Thanks

Jason S. Twill

Holmes, Jim

From: Tino Umali [seattledarling@gmail.com]
 Sent: Monday, April 11, 2011 3:53 PM
 To: DPD_Planning_Division
 Subject: Comment about SLU EIS

Hello,

I am a native Seattlite, having been born at Virginia Mason in 1979 and have seen our fair city grow and blossom over the past 3 decades. I've lived in Magnolia, West Seattle, Queen Anne, Uptown and most recently, currently reside in the Denny Regrade. South Lake Union has become my adopted neighborhood as I do much of my grocery shopping at Whole Foods, attend yoga classes at Be Luminous, and frequently patronize the ever-growing number of restaurants and bars. Though, geographically I live closer to Belltown, I prefer the more neighborhood-feel of South Lake Union (SLU) and as a result spend a fair amount of my leisure time there. Another reason I prefer SLU over Belltown is I've noticed many of the businesses in the area are locally owned and run, and as a reflection of that, cater to people who work and live in that neighborhood. By contrast I feel many places in Belltown cater to a more boisterous crowd that swells during the weekends, indicating most of those patrons do not live or work in that zip code.

I am in full support of Alternative 1 for maximizing the increase in density for both commercial and residential projects. We need to take advantage of the momentum already in place thanks to the likes of Fred Hutch, Amazon and PATH, increasing density will make future projects that much more lucrative for developers and investors. With the recent waves in the economy, nationally and locally, other regional cities are vying for a greater slice of the economic pie, so to speak, Seattle must stay competitive with rebuilding our local economy and attracting not only companies who will offer high-paying positions, but also continue to attract the high-level of talent to fill those positions. Sometimes it is a catch-22, the more talent we have available, the more incentive for a company to do business in our city, the more employment opportunities available, the more talent we attract. We must also keep in mind although Washington state does not have an income tax, Seattle does have one of the highest sales tax rates in the nation, with that challenge it is imperative for us to be creative in thinking of ways for our city to appear more business-friendly. Allowing for taller, denser buildings, thus increasing a developers return on their investment is one way to do so.

Of course those taxes are necessary to maintain the infrastructure and services that contribute to the quality of life we enjoy here in the Emerald City. Having already invested in the SLU Streetcar line, it only makes sense to increase density in that area so that mode of transit can efficiently serve even more residents and employees with getting to and from the retail core and financial district, home to their neighborhood. At present, it appears that the Streetcar line is unfortunately, fairly underused.

With density also comes diversity, diversity in businesses as well as in residents, which will have a positive effect on area retailers. Residential diversity adds to a neighborhoods fabric and gives it more depth and texture. There is a reason why Seattle is Seattle and not Bellevue. Retail diversity is key in attracting shoppers and with increased residential density, foot-traffic will improve, not only that, if SLU can establish itself as a retail destination, shoppers from the retail core can also utilize the Streetcar to access all the shops, services and amenities SLU has to offer, so the line will be used more effectively in both directions. Aside from SLU being connected to mass transit, but by being bordered by Interstate 5 and Highway 99 it also makes it a smart choice for potential employers, as well as potential residents who have to commute, due to the ease of freeway access.

Growth is inevitable, but how that growth takes shape we can influence. Our region has no more room what-so-ever for increased sprawl, the only way to adequately and efficiently accommodate an increase in growth is upwards, with more density. Also, talented urban professionals, are a highly desirable demographic for a myriad of reasons, they often are in favor of creating and sustaining community, understand the infrastructure and services necessary to do so and the costs associated with doing so. South Lake Union has more or less sprung up as a neighborhood that fosters a community of such urban professionals and high-level talent, many of whom more and more choose to live close to the heart of the city. Queen Anne, I don't think will welcome much more density, nor will North Capitol Hill. Though, SLU, like most of Seattle has its fair share of history, I don't think there are as many complications to inhibit potential projects that a developer might encounter in say, Pioneer Square, which also features mass transit and close proximity to downtown, but is very strict with development partly due to being designated a Historic District. Oftentimes, if something is too complicated or not economically viable, one will look elsewhere, I suspect that is why Pioneer Square has stagnated for so long and has yet to grow into its full potential.

1
cont

The infrastructure is there and so is the momentum, let us take full advantage of where we are at and take steps now to ensure Seattle remains progressive in smart growth and far-sighted sustainable urban planning. Raise both commercial and residential density in South Lake Union as much as possible.

Thank you for your time,

Tino Umali

Table 4-2
Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 160: Redman, Scott	
1	Support Height and Density Revisions. The comments are noted.
Letter 161: Reel, Richard	
1	Support Alternative 1. The comment is noted.
Letter 162: Reel, Richard	
1	Underlying Zoning. The comment is noted. Please see Final EIS Chapter 2 for clarification that existing underlying Seattle Mixed zoning is retained under all alternatives.
2	View Analysis. The view analysis was conducted in a manner consistent with the City of Seattle SEPA policies and as established in the EIS scope.
Letter 163: Reel, Richard	
1	Environmental Benefits Statement. The comment is noted.
Letter 164: Rivera, Chris E.	
1	Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 165: Roewe, Matthew H.	
1	Support Alternative 1. The comment is noted.
2	Benefits of Growth. As the commenter states, the EIS does not discuss the economic benefits of the proposal. As noted in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts. Please see Final EIS Section 3.2 for a discussion of the City's Comprehensive Plan economic development policies. As described in Draft EIS Chapter 2, the proposal considered in the EIS is the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits, but is not focused on overall growth citywide. Although it is recognized that growth that does not occur in South Lake Union

Comment Number	Response
	may locate in other parts of Seattle or the region, it would be speculative to estimate how much or where this growth might locate.
3	Mitigation. See response to Letter 18 Comment 33
4	Uptown/SLU Joint Visioning Stakeholder Charrette. The comment is noted.
5	Urban Design Framework Plan. The comment is noted. Please see references to the Urban Design Framework Plan in Final EIS Chapter 2 and Section 3.4 (Aesthetics).
6	Affordable Housing Incentive. The analysis of potential incentive benefits is dependent on individual developer decisions. Therefore, it would be speculative to quantify the potential for use of the affordable housing incentive. From a qualitative perspective, Draft EIS Section 3.9.2, Housing, describes that use of the incentive zoning provisions, have the potential to result in an increased number of affordable units than the No Action Alternative. The discussion in Section 3.9.2 further states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.
7	Other Public Amenity Incentives. The analysis of potential incentive benefits is dependent on individual developer decisions. Therefore, it would be speculative to quantify the potential for use of incentives for public amenities. Comments are noted related to potential flexibility in any future incentive program.
8	Residential/Commercial Incentives. The alternatives assume that existing City policy at the time of a adoption of a future rezone would be reflected in the public benefit requirements. At this time, the 60/40 split applies to residential projects and 75/25 applies to commercial projects.
9	Housing Displacement. The comment is noted. Please note that the proposal under any of the action alternatives would not upzone any of the Seattle Mixed (SM) zoned areas. Instead, the proposal would provide the potential for increased height and density through an incentive zoning program. Under the action alternatives, the opportunity to use the incentive zoning would apply broadly to the majority of the neighborhood. Any older housing stock in this area could be impacted.
10	Schedule. Comment noted.

Comment Number	Response
<p>11</p>	<p>Flight Path. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
<p>12</p>	<p>Assumptions. The comments are noted. The EIS scope required that the aesthetics analysis be conducted for a build-out scenario. In addition, area-wide images show a 2031 scenario that based on future growth estimates. The minimum lot size is based on the alternatives description, as defined through the scoping process. The intention of this element of the alternatives is to limit the number of towers built on any block to a maximum of two, and to recognize the minimum lot size typically associated with major commercial construction.</p>
<p>13</p>	<p>Targeted Growth 2031. The comment is noted. The figures titles have been revised per the comment, please see Final EIS Section 3.4.</p>
<p>14</p>	<p>Views Showing Full Build Out. Please see response to Comment 13 in this letter, above. Area-wide images show a 2031 scenario. Resources, however, were not available to provide a build-out and 2031 scenario for each image. As required by the scope and in order to illustrate the most significant</p>

Comment Number	Response
	potential impacts, the analysis focused on the build-out scenario.
15	Graphic Clarity. Please see Section 3.4 of the Final EIS that includes a key code of the colors used in the study and what they signify (see Fig.3.4-2).
16	Photo images. Setbacks were not included in the proposed zoning alternatives and therefore were not included in their modeling in either the DEIS or the FEIS. However, building setbacks are being added as a desired mitigation on selected streets and adjacent to public parks. These setbacks meet or exceed the recommendations contained in the UDF.
17	Viewsheds and the Space Needle. The Draft EIS already references SMC 25.05.675.P in the Viewshed Section under 3.10-5. This section describes the protected viewpoints in some detail, including Volunteer Park. The impacts of the various alternatives on views of the Space Needle are contained in 3.10-6.
18	1-5 Scenic Routes Vistas. The comment is noted. Language has been added to Final EIS Section 3.4 noting that some view obstructions already exist
19	Volunteer Park Vista. The photograph was cropped to make clear the potential impact of the alternatives on the protected view of the Space Needle. Use of the broader perspective of a panoramic view distracts from and makes it difficult to evaluate, the impact on the Space Needle.
20	Relative Cross Section Study. While multiple cross-section studies are not included in the EIS, the relationship to surrounding grade is highlighted in the views from Gas Works Park that is shown for each alternative at the beginning of the Draft EIS Aesthetic Section in 3.10-2 (Figures 3.10-3, 3.10-5, 3.10-7 and 3.10-9).
21	Commercial Parking Assumptions. It was assumed commercial projects would maximize floor area up to an FAR of 7, and no explicit assumption about commercial parking was made for the capacity or Aesthetics analysis.
22	Metrics. The referenced assumptions relate to development of a capacity estimate for the neighborhood and are unrelated to future development standards. Please see the footnotes in Table 2-3, which are consistent with the 55% residential new development and 45% commercial new development assumptions in Appendix C. As noted in the comment, this equals a ratio of 60% jobs and 40% housing units, as shown in the table.
23	Development Standards. The comments are noted.

Comment Number	Response
Letter 166: Rusch, Scott	
1	Support Alternative 1. The comment is noted.
2	Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
3	Public Benefit. The comment is noted.
Letter 167: Russell, Eric	
1	Support Alternative 1. The comment is noted.
Letter 168: Sather, Katherine	
1	Support Growth. The comments are noted.
Letter 169: Saucier, Lyn	
1	Support Alternative 1. The comments are noted.
Letter 170: Schauer, Tom	
1	Support Alternative 1. The comments are noted.
Letter 171: Severt, Ron	
1	View to Space Needle. The concern is noted and it is acknowledged that the Space Needle is the most recognized historic landmark in the City. It is also acknowledged that South Lake Union is one of the City's six designated Urban Centers where future concentrations of employment and housing are planned to occur. The City recognizes that it is unreasonable to expect that views of the Space Needle are to be protected from all of public locations without consideration of City policies regarding Urban Centers and the concentration of employment and housing. As noted in the <i>Seattle's View Protection Policies, Volume One</i> , ² "[c]ompeting policy objectives require that

² Seattle, city of; Department of Design, Construction and Land Use and the Strategic Planning Office. 2001. *Seattle View Protection Policies, Volume One – Space Needle*

Comment Number	Response
	we consider the merit of protecting a particular view corridor with other objectives for growth management, housing development, transportation and utility infrastructure and open space.”
2	Urban Form. It is acknowledged that the Space Needle is the City’s most recognized landmark. As noted with regard to Comment #1, the City’s view protection policies must also reflect the City’s growth management policies. The City’s height, bulk and scale policies have not specifically focused on creating an urban form that establishes an openness proximate to the Space needle. What is perceived as a step-down in South Lake Union has as a basis the historical light industrial/manufacturing uses that occurred in this part of the City.
3	Space Needle Landmark Status. While background information associated with the Landmark designating ordinance addresses a broad range of factors, the designating ordinance does not specify elements of the structure’s form that contribute to its significance nor does the ordinance attach significance to views from the structure.
4	Space Needle Views. The analysis entitled <i>Seattle’s View Protection Policies, Volume One</i> and <i>Volume 2</i> ³ focused on the Space Needle and views of the Space Needle from a broad range of designated public viewpoints. The focus of the analysis was to address “implications for the preservation of Space Needle views from adjacent neighborhoods and the implications and comparative values associated with preservation of those views.” The study resulted in legislation that modified the City’s Public View Protection policies (25.05.675 P.) and specifically identified locations in which public views of the Space Needle are to be protected. While three public viewpoints either in or east of South Lake Union were considered (Cascade Playground, Lake Union Park and Four Columns Park), it was concluded that none of those viewpoints would be included as designated Space Needle view protection locations. This was largely due to a recognition that build-out to the then allowed zoning could significantly obstruct views of the Space Needle from those locations.
5	Proposal Objectives. The additional objectives of the proposal proposed by the comment are noted. It is also recognized that the South Lake Union area

Executive Report & Recommendations and Volume Two – Space Needle View Inventory & Assessment.

³ Ibid.

Comment Number	Response
	<p>has been designated as one of the City's six Urban Centers. These are key areas of the City in which concentrations of employment and housing are planned and are to be encouraged.</p> <p>As described in Chapter 2, the continuation of existing zoning would preclude the use of zoning incentives as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. Among the objectives listed in the EIS, the potential to provide public amenities and to achieve neighborhood plan goals would result in a public benefit that is directly related to the use of incentive zoning provisions for increased height and density. Please see Section 2.3.2, for a discussion of possible incentives.</p>
<p>6</p>	<p>Flight Path and FAA Requirements. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
<p>7</p>	<p>Summary Section. Please see revisions to the summary section in Chapter 1 of this Final EIS. The summary section is intended to be just that – an</p>

Comment Number	Response
	<p>overview of the project and salient points with regard to impacts of the alternatives. As noted at the beginning of the section, the information is intentionally brief and the reader is encouraged to refer to Chapters 2 and 3 for more detailed information. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
8	<p>Shoreline Management Act. Please see Final EIS Section 3.2 for discussion of the City's Shoreline Management Program as it relates to the proposal.</p>
9	<p>Flight Path. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path.</p> <p>Final EIS Section 3.4 provides revised images showing urban form and views with the revised flight path.</p> <p>This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these are building heights, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development in the subarea. Therefore, the programmatic analysis contained in the EIS describes</p>

Comment Number	Response
	<p>a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning is recommended. The approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at that site, with the surrounding physical context (i.e., existing buildings, topography, etc.) 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analysis to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future) • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
<p>10</p>	<p>Growth Estimates. The 2031 numbers discussed in Draft EIS Section 2.2 are not targets, but are estimates intended to provide additional context for understanding potential long-term growth in South Lake Union. As noted in the discussion in this section, the estimate is for analysis purposes only and does not represent policy intent by the City. In order to disclose the potential range of capacity needed to meet a future growth target for South Lake</p>

Comment Number	Response
	<p>Union, both 2024 and 2031 are considered in the analysis.</p> <p>In Draft EIS Section 3.8, additional discussion of the Seattle Comprehensive Plan Urban Village Element states that formal City action to establish a growth will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union 2031 growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall development capacity.</p>
<p>11</p>	<p>Building Height Transition. The comment is noted. Please refer to Draft EIS Section 3.10 for a discussion of building height and impacts of the alternatives.</p>
<p>12</p>	<p>Viewshed Analysis. See response to Comment # 1 and #4 above. As indicated previously, there are no officially-designated City public viewpoints either in the South Lake Union area or immediately east of South Lake Union relative to the protection of public views of the Space Needle. Street-level right-of-way corridor views of the Space Needle would not be affected by the proposed alternatives.</p> <p>Although the viewshed analysis did not find that there were “significant unavoidable adverse impacts” from view blockage of the Space Needle, views of the Space Needle are highly valued in the surrounding communities and mitigation measures are included in this Final EIS to recognize views to the Space Needle from both inside and outside South Lake Union.</p> <p>These recommended mitigation measures include increased tower spacing and upper level setbacks on both John and Thomas Streets consistent with the recommendations of the South Lake Union Urban Design Framework. Building heights would also be lower to the Northeast of the Space Needle as a result of the revised flight path for take-offs and landings associated with Lake Union Airport, which could further improve views between Lake Union and the Space Needle.</p> <p>The requested views toward the Space Needle from the new Lake Union Park were provided in Appendix D of the Draft EIS (Figures 5 through 8). Views depicted in Appendix D demonstrate that views to the Space Needle could be totally blocked from a majority of the park area in the incentive zoning alternatives (Alternatives 1–3) and partially blocked under current zoning (Alternative 4). The reverse view shown in Figures 17 through 20 suggests that the upper portion of the Space Needle would remain visible from other locations within the park – to a greater or lesser degree depending on the alternative. (Note that the 3-D model and views already take the flight path restrictions into account.)</p>

Comment Number	Response
	<p>As noted, views from Lake Union Park toward the Space Needle are not currently addressed by the City's SEPA ordinance and a change to that ordinance would be required to protect views between the park and the Space Needle.</p> <p>The views from the Space Needle Observation Deck have been labeled in Section 3.4 of the Final EIS.</p> <p>Views from the Banquet Level and impacts from future growth in the Denny Triangle and Uptown area are not within the scope of this study.</p> <p>All of the views included in the viewshed analysis are from street-level at the location designated in Figure 3.10-22. Bird's eye views provided at the opening of the Aesthetic section are intended only to show the entire neighborhood in context with the surrounding area.</p>
13	<p>Light and Glare. Discussion of the potential impact of future building lighting on views of the Space Needle is included in Final EIS Section 3.4.</p>
14	<p>Historic Preservation. The Space Needle is a designated Seattle Landmark. None of the proposed alternatives would have an effect on the landmark status of the Space Needle.</p> <p>While overall potential impacts related to historic preservation within the study area are discussed in this programmatic document, potential impacts to individual landmarks would be considered more specifically and in greater depth at such time as specific projects are proposed.</p> <p>Regarding the concern about potential view blockage "to and from" the Space Needle, please refer to the Aesthetics section for a more complete viewshed analysis. Public views of the Space Needle are protected from certain public places (as set forth in SMC 25.05.675 P2c) and potential blockage of the protected views is considered more specifically for each proposed project. Seattle SEPA policies do not afford protection of views from private property, such as the Space Needle.</p>
15	<p>Transportation Analysis. As described in Draft EIS Section 3.13.2 and Figure 3.13-13, planned projects associated with the Mercer East and Mercer West projects were incorporated into the transportation analysis.</p> <p>For response to comments regarding the MXD methodology, please see Letter 13, responses to Comments 93 and 94. For comments related to mitigation feasibility, please see Letter 12, response to Comment 15.</p>
16	<p>Impacts to the Seattle Center. The comment is noted. Although impacts to the Seattle Center were not identified as part of the analysis in the final scope of the EIS, the potential adverse impacts associated with views to the Space Needle are disclosed in the Draft EIS. Although not discussed in the Draft EIS,</p>

Comment Number	Response
	<p>it is reasonable to expect that there would be a potential positive impact of an increased residential and office population to replace lost visitation and revenues, were such losses to occur.</p> <p>Impacts to public services and facilities are disclosed in the EIS. Infrastructure mitigation identified in the Draft EIS assumes implementation of existing plans and policies for transportation facilities, and project-specific mitigation for sewer, water and stormwater facilities.</p>
<p>17</p>	<p>Economic Analysis. The comment is noted. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Subsequently, the City worked with neighborhood stakeholders to address concerns raised in the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Based on this process, analysis of the current economic conditions were not included as</p> <p>Analysis of economic conditions were not included as part of the EIS scope. Because this EIS considers a 2031 planning horizon, review of current economic conditions was not considered to provide information that would help inform decisions about long-term height and density standards in the neighborhood.</p>
<p>18</p>	<p>Construction Impacts. Construction impacts were not included in the scope of this programmatic EIS. Potential, planned and existing facilities described in the comment could occur regardless of the South Lake Union Height and Density alternatives. It would be speculative to anticipate the magnitude and timing of future redevelopment in the South Lake Union neighborhood. As site-specific development is proposed, project level SEPA analysis will identify construction impacts and appropriate mitigating measures.</p>
<p>19</p>	<p>Summary. The comment is noted.</p>
<p>Letter 172: Sharp, Jeff</p>	
<p>1</p>	<p>Support Greater Height and Density. The comments are noted.</p>
<p>Letter 173: Shushan, Stephanie</p>	
<p>1</p>	<p>Support Lower Height Restrictions. The comment is noted.</p>
<p>Letter 174: Simonetti, Martin</p>	
<p>1</p>	<p>Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to</p>

Comment Number	Response
	24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 175: Sleicher, Charles	
1	Strong Opposition. The comment is noted.
2	Heights Near the Shoreline. The comments are noted.
3	Opposed to Density Increase. The comments are noted.
4	Proponents. The comments are noted.
Letter 176: Smith, Patricia	
1	Support Alternatives 3, 4. The comments are noted.
Letter 177: Smithhart, Noelle	
1	Design Review. The comments are noted.
Letter 178: Snorksby, Paul	
1	Support Densification. The comments are noted.
Letter 179: Starr, Scott	
1	Support Increased Density. The comments are noted.
Letter 180: Stepherson, Josh	
1	Support Alternative 1. The comment is noted.
Letter 181: Stoner, Mark	
1	Support Alternative 1. The comment is noted.
Letter 182: Sullivan, David	
1	Support Alternative 1. The comment is noted.
Letter 183: Surdyke, Scott	
1	Support Alternative 1. The comment is noted.
2	Benefits. The comments are noted.
3	Ground Floor Residential. The comment is noted.
4	Construction Costs. The comment is noted.

Comment Number	Response
5	Shoreline Uses. The comment is noted.
Letter 184: Suver, Joanne	
1	Lake Union Natural Treasure. The comment is noted.
Letter 185: Symonds, Drew	
1	Support Tallest Building Heights. The comment is noted.
Letter 186: Tangen, John	
1	Support Increased Building Heights. The comment is noted.
Letter 187: Thordarson, Michelle	
1	Support Additional Height and Density. The comment is noted.
Letter 188: Timpson, E. Diana	
1	Retain Character and Heritage. The comment is noted.
2	Transit Use. The comment is noted.
3	Density, Height, Affordability. The comment is noted.
4	Incentives. The comment is noted. Regarding shadows, the mitigation strategies call for a detailed shadow analysis as part of site-specific environmental review of development proposals. As identified by Seattle Municipal Code 25.05.675Q2e, there are a range of measures to address shadow impacts of specific development proposals.
5	Mixed Use. The comment is noted. Existing zoning for the majority of the South Lake Union is Seattle Mixed, which allows for a wide range of uses. Overall, residential development under all of the action alternatives would have the potential to achieve greater building height than office development, which may serve as an incentive for residential development, particularly under Alternative 3. As described in Section 2.3.5, Alternative 3 focuses potential height increases on residential uses and retains existing maximum building heights for office uses in much of the neighborhood.
6	Office Park Development. The comment is noted.
7	Family-oriented Amenities. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.

Comment Number	Response
8	Podium Heights. The comment is noted.
9	Whole Foods Block. The comment is noted.
10	Lakefront Towers. The comment is noted.
11	View Images. Please see Final EIS Section 3.4 for revised view and street-level images.
12	Podium Heights. The comment is noted.
13	View Images. Please see Final EIS Section 3.4 for revised view and street-level images. These images are based on a build-out scenario, which is a conservatively high assumption about potential development levels.
14	Mitigation Strategies. Please see Final EIS Section 3.4 for a revised discussion of mitigation strategies that incorporate recommendations of the Urban Design Framework.
15	Above Grade Parking. The comment is noted.
16	Cost of Development. The relative cost of development on liquefaction prone soils depends on the size and type of building. Such decisions are project specific in nature.
17	Dewatering. Permanent dewatering involves locally lowering the groundwater table (often using pumps) to minimize the effects of seepage on underground portions of a structure. It is not necessarily required at a site; there are other options to minimize the effects of seepage, including installation of liners. Permanent dewatering can be an expensive alternative, particularly when the costs of long-term maintenance are considered. However, it is certainly a viable option for managing groundwater, and is a widely used technique in western Washington. The decision on whether permanent dewatering would be necessary, effective, or economically feasible would need to be made on a site-by-site basis.
18	Changes to Native Soil. While a change to native soil conditions may not have a visible effect, it does constitute a significant change to the existing natural environment (and thus is appropriate to mention in an EIS). Changes to existing soil conditions could have impacts such as changing the pattern of groundwater flow or infiltration in an area. The paragraph to which this comment refers (paragraph 1 on 3.1-6) also points out that the native/existing soil may need to be replaced with suitable material. The process of replacing the soil might result in greater construction traffic as trucks are required to haul away unsuitable material and import suitable material.
19	Support Increased Heights. The comment is noted.

Comment Number	Response
Letter 189: Trainer, Steve	
1	Support Increased Height and Density. The comment is noted.
2	Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
3	Podium Heights. The comment refers to the podium height, which varies from 20 feet to 85 feet under the action alternatives. Because the podium would be used in conjunction with a tower, it is not a downzone, or reduction in allowed height. In all cases, the underlying Seattle Mixed zoning and development standards remain intact for situations where the incentive zoning provisions are not used.
4	8th Avenue Height Limit. The comment is noted.
5	Oppose Residential Focus on 8th Avenue. The comment is noted.
6	Retail Environment on 8th Avenue. The comment is noted.
Letter 190: Tung, Beatrice	
1	Opposed to Alternatives 1 and 2. The comment is noted.
Letter 191: Turner, John	
1	Support Alternative 1. The comment is noted.
Letter 192: Tweedale, Kelly	
1	Retain Current Uses of Terry Avenue North. The comment is noted.
2	Freight Access. The Seattle Opera brings up a variety of specific freight concerns related to their property. This Draft EIS examines an increase in the overall height and density throughout South Lake Union and identifies a significant and unavoidable impact to freight. However, it is outside the scope of this project to evaluate specific truck movements for specific properties. These concerns are noted, but would need to be addressed as part of a specific project when and if redevelopment occurs adjacent to the property.
3	Please see response to Comment 2 in this letter, above.
4	Please see response to Comment 2 in this letter, above.

Comment Number	Response
5	Support TDR. The comment is noted.
Letter 193: Twill, Jason	
1	Support High Density. The comment is noted.
2	Incentives and Community Uses. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Final EIS Section 3.5 for a discussion of schools.
Letter 194: Umali, Tino	
1	Support Alternative 1. The comments are noted.

Comment Letters 195-206

195.	Van Til, Steve
196.	Vice, Jodie
197.	Walker, Dewey
198.	Warren, Robert. P.
199.	Waymire, Jim
200.	Weber, Brandon G.
201.	Williams, Susanna
202.	Winges, Linda D
203.	Wood, Stephen
204.	Yamamoto, Julianna
205.	Yamamoto, Mike
206.	Zak, Gary

April 11, 2011

Seattle Department of Planning and Development
Attn: James Holmes

Dear Mr. Holmes,

I have worked in downtown Seattle for over 15 years and appreciate the many benefits afforded by the dense, efficient development of downtown. I encourage the City of Seattle to adopt new zoning in the South Lake Union neighborhood that will encourage the greatest potential for increased height and density for the benefit not only of those working and living in the SLU neighborhood, but also for the benefit of the region. 1

The benefits of a dense urban core are obvious to most. It allows for efficient investment in and maintenance of public infrastructure, including roads, utilities, and transit. It leads to sustainable and diverse retail and dining choices. It supports a wide range of housing alternatives, close to where jobs are being created. It sustains delivery of public services in an efficient manner.

The South Lake Union neighborhood has been transformed over the past 10 years into a thriving community under the existing moderate zoning, but every new building constructed under existing zoning locks-in a lost opportunity to maximize the benefits of density for the long-term. We need to have a vision for the neighborhood and for Seattle for the next 50-100 years, not just the next 10. With the right zoning, SLU can accommodate a significant share of Seattle's near-term job and household growth and it is a logical place to encourage this growth. The neighborhood will benefit from increased amenities, safety, and vibrancy, the City will benefit from growth of its tax base, and the region will benefit from reduced sprawl.

Encouraging increased density in SLU has obvious benefits and is perhaps the easy part. But what about increased height? I know there are some people that are discouraging increased height and density in SLU because they are concerned about impacts to their views. While there will be a few views that are negatively impacted by taller buildings, ironically, if we seek to increase density in the neighborhood without proportionately increasing height, then far more views will be significantly impacted and it will result in less open space. From a public policy perspective, the City should not seek to protect a few private views at the expense of overwhelming public benefits. 2

As the City considers potential changes to zoning in the South Lake Union neighborhood to help achieve the Neighborhood Plan goals, I strongly encourage a long-term vision that supports neighborhood vitality, economic prosperity for the City, and environmental sustainability for the region. I believe encouraging the greatest potential for increased height and density is consistent with this long-term vision. With the development momentum occurring in SLU today, you have one shot to get this right for many generations to come. Thank you for your consideration. 3

Sincerely,

Steve Van Til

Holmes, Jim

From: Jodie Vice [jodievice@yahoo.com]
Sent: Sunday, April 03, 2011 12:14 PM
To: DPD_Planning_Division
Subject: SLU Height & Density Draft EIS - Public Comment

To City of Seattle DPD,

As a City of Seattle resident and supporter of good city planning, density, and walkable communities, I am formally submitting comments on the Draft EIS for the South Lake Union height and density study. I believe Seattle needs to be bold in our leadership to support urban infill. Giving more people the opportunity to live in close proximity to where they work, is going to support the City's goals to reduce carbon emissions and sprawl. As the former Chair of the Seattle Pedestrian Advisory Board, I understand that density helps create a pedestrian-friendly, safe neighborhood - more "eyes on the street." South Lake Union provides a unique neighborhood with good transportation and open space. Proximity to Lake Union and downtown creates an oasis complete with recreational and urban experiences that should have a maximum amount of density. Everyone in the City will benefit from more height in South Lake Union - more people paying property taxes and more opportunities for job creation.

Seattleites tend to be "NIMBYS" when it comes to density. It's time to focus more density including taller buildings right near our downtown because history shows, we will not get tall buildings in our residential neighborhoods. This is the right time and place to get it right NOW. That is why I support Alternative 1 - Let's be bold in at least one Seattle neighborhood. We do have to lose? Let's support density, livability, reduced emissions and jobs in the City.

Sincerely,
Jodie Vice

Beacon Hill resident, supporter of density
Former Chair of the Seattle Pedestrian Advisory Board and former Futurewise Boardmember

820 Blanchard Street, #1404
Seattle, WA 98121
April 6, 2011

Seattle Department of Planning and Development
700 Fifth Avenue, Suite 1900
Seattle, WA 98124-4019 Attention: Jim Holmes

Dear Mr. Holmes,

As a resident of the South Lake Union community and as a registered voter, I am writing to express my opinion about the current EIS alternatives. I will also propose my vision for the neighborhood.

South Lake Union community has unparalleled possibilities. I envision a village, which I am naming Lake Union Village or LUV (Imagine the signage: SHARE THE LUV or WHAT YOU NEED IS LUV). The concentrated area of the village could extend down Terry and Westlake where already quality restaurants are blossoming, to the four Mercer-Valley blocks that are perpendicular to Terry/Westlake. Several pedestrian bridges across Mercer would negate the traffic barrier of Mercer and ensure ease of mobility as well as safety. Across Valley is the new SLU Park and the museum slated for opening in 2012. Add residential towers built to a maximum of 200 ft, to protect the step-down height limits already a precedent for Seattle. Furthermore stores like ones at University Village would attract shoppers. The area is already teeming with Amazon employees during the day. We need to add attractions for the evenings and weekends. Picture this, residents, shoppers, stores, a museum, children, fountains and open space for the people of the community as well as tourists and suburbanites to gather and enjoy the entire expanse from town via the trolley down to the waterfront. And there is even a boat ride to be had! The foundation for a vibrant village has been laid. To complete this crown jewel, we need to add the attractions and structures and control the balance of financial interests versus aesthetics.

I favor EIS Alternative 3 with the addition of pedestrian quarters between Mercer and Valley. Maintaining the precedent of step-down heights of buildings from the city to the lake is both desirable and provides a sense of balance to the space. Furthermore, multiple plots of property exist in the Denny triangle that could be developed into office space and or residences absorbing some of the perceived need for maximum density in South Lake Union. Building South Lake Union to the maximal tolerated speaks only to financial interests and not necessarily to aesthetics and creative urban development.

Thank you for your important work.

Sincerely,

Dewey Walker

Dewey Walker

King, Donna

From: bob warren [bob.warren@yahoo.com]
Sent: Monday, April 11, 2011 8:01 AM
To: DPD_Planning_Division
Subject: Comments on the EIS Draft

I want to address the EIS proposal and join the overwhelming voices against Alternatives 1 and 2. Both of these proposed are calculated to severely impact the neighborhood and only visit the worst of air, transportation, and urban visual blite on our community. Our neighborhood can not support the traffic and huge influx of residents that Alternative 1 & 2 create. The city infrastructure does not support these two draft proposals. A more thoughtful and modest proposal like Alternative 3 or what I believe is best, Alternative 4, are much more in line with the nature and scope of our community. Both Alternative 1 and 2 would create horrible visible pollution and block the wonderful views of the city and its surrounding. Seattle is not a city of concrete and glass but a community steeped in the tradition of preserving and placing a high value on the beauty of nature. After a full review of the EIS, I urge you to completely reject Alternative 1 and 2 and to find a compromise between Alternatives 3 and 4.

Thank you for this opportunity to comment on the South Lake Union EIS.

Robert P. Warren
900 Lenora Street, Apt W1203
Seattle, WA 98121

Holmes, Jim

From: Jim Waymire
Sent: Monday, April 11, 2011 10:29 AM
To: Holmes, Jim
Subject: SLU Draft EIS - Pedestrian Safety
Attachments: Mercer Crossing.pdf

Jim,

Thanks for the opportunity to comment on the Draft EIS for the re-zone of the South Lake Union.

I am an architect with decades of experience supporting public and private initiatives to improve the South Lake Union Neighborhood. Among those efforts was my planning and design leadership of the West Lake Union Center project for Fisher Properties. That project included the Westlake Avenue Pedestrian Bridge and the connecting Galer Street Hillclimb. Those amenities provide pedestrian access to the Lake Union shoreline for residents of the Queen Anne Neighborhood. The route was later enhanced by construction of the Aurora Avenue Pedestrian Bridge. Families can now enjoy a safe walk from their homes to the amenities of the lake, facilitated by grade-separated crossings of the Aurora and Westlake Avenue arterials. The City of Seattle, in particular the Parks Department, was an active partner in those planning efforts. The City went on to support the extension of the Galer Street pedestrian route with the planning of the pedestrian bridge now spanning the rail lines which finally completes the pedestrian link to Elliott Bay.

I enthusiastically support the intentions of the SLU Re-zone, and in particular the objective to make South Lake Union "home" to thousands of Seattle families. However, I am dismayed to see so little consideration in the Draft EIS for the safety and experience of those family members who will make their ways to the amenities of the Lake Union shoreline. Specifically, the Draft EIS seems blind to the obvious and potentially deadly conflict between the objectives of expediting the heavy east-west auto and freight traffic to and from the interstate freeway system along Mercer Street, and the inclusion of the Lake Union amenities into the quality of family life for those living south of Mercer. The resolution of that conflict requires the construction of one or more "accessible" and enclosed pedestrian bridges across Mercer Street.

The attached pdf document summarizes the case for pedestrian bridges as the only reasonable mitigation for Mercer Street's impacts.

Even in its current state, the collective negative impacts of the 4-lane Mercer Street are grim. However, the impending combination of Mercer's east bound flow and Valley Street's comparable west bound flow into a new 6-lane Mercer Street will create a torrent of truck, bus and auto flow to and from the interstate freeways that will create a pedestrian-unfriendly environment that dwarfs the impacts of other SLU Neighborhood arterials:

- Mercer Street volumes will be more than 4 times heavier than Denny Way's
- Mercer Street's city-designated status as a "Major Truck Street" will amplify the impacts of its high volume with a significant inclusion of heavy, diesel-powered trucks.
- It is clear by observation that, between Westlake and Fairview Avenues, Mercer is a virtual freeway on-off ramp where drivers' speeds and impatience contribute additional risks to pedestrian safety.

Clearly, no new significant impediments to Mercer vehicle flow can, or should, be imposed on behalf of pedestrian safety. The solution is to eliminate the deadly conflict by offering pedestrians a safe, accessible, and unimposing route over the torrent of Mercer Street traffic.

I recently attended the public meeting and presentation of the SLU Draft EIS, and attempted to engage the representative of the DEIS traffic consultant in a serious discussion about the Mercer/Pedestrian issue. His response was a round shrug of the shoulders and the assurance that the City Council will never approve a pedestrian bridge. He may, in fact, be right about the Council's final say in the matter, but DPD and your consultants must seriously assess the impending risk and prescribe your professional judgment of appropriate mitigation.

My hope is that both of us will be able to sleep well the night after the first infant stroller is mowed down in a Mercer Street crosswalk by an impatient driver.

Thanks for your consideration of the matter.

Respectfully,

Jim Waymire, Architect

Jim Russell Waymire
Waymire Consulting
(206) 779-1293
waymire.arch@comcast.net

**SLU - Mercer Street Crossing - Pedestrian Safety and Experience
Please Get Serious about Safety Crossing Mercer.
Consider 1 or 2 Accessible Enclosed Pedestrian Bridges**

April 7, 2011 - Waymire Consulting

Current SLU Arterial Traffic Volume Comparisons:

(from SLU Re-zone Draft EIS)

Denny Way (east & west) 1,233 Vehicles



Westlake Avenue (north & south) 1,169 Vehicles



Fairview Avenue N (north & south) 1,186 Vehicles



Mercer/Valley Couplet (east & west) 5,301 Vehicles *



Current Mercer St. Volume Component - 2,929 vehicles

+



Current Valley St. Volume Component - 2,372 vehicles



SLU Residents south of Mercer



Lake Union amenities north of Mercer



Mercer Street

* Mercer and Valley Volumes soon to be combined on a 6-lane 2-way traffic Mercer Street. City consultants indicated "a trickle" of traffic will remain on Valley Street.

Other Considerations:

Shockingly, the proposed pedestrian improvements shown on page 29 of the SLU Urban Design Framework make no gesture at all to address the safety or experience of pedestrians wanting to cross the unique torrent of steel, speed, and pollution that is Mercer Street. The SLU DEIS is also blind to the problem.

Timing traffic lights to give residents (including the elderly, young, and disabled) appropriate frequency and duration to make safe (if intimidating) grade-level crossings will impede and frustrate commercial and private vehicle drivers trying to make their ways to and from the interstate freeway system.

Mercer's designation as a "Major Truck Street" gives the mix of high volume traffic an added level of incompatibility with a safe and positive pedestrian experience. The air quality issues associated with those heavy diesel powered vehicles also adds to the concerns for pedestrian safety.

Between Westlake and Fairview, Mercer Street is a "Virtual Freeway On-Off Ramp". Commercial and private vehicle speeds and drivers' behavior have little regard for traffic laws or common courteous behavior. East-bound rush-hour enforcement is impeded by drivers' escape to the actual uncontrolled freeway on-ramps.

Access to the Lake Union shoreline provided by the Galer Street Hillclimb and the connecting Westlake Avenue Pedestrian Bridge is a valued neighborhood asset, and was enthusiastically supported by the City of Seattle.

CBRECB RICHARD ELLIS
1420 Fifth Avenue
Suite 1700
Seattle, WA 98101-2384206 292 6013 Tel
206 300 5866 Cell
206 292 6033 FaxOwen.Rice@cbre.com
www.cbre.com**Brandon G Weber**
CB Richard Ellis, Inc
Corporate Real EstateApril 8th 2011City of Seattle
Department of Planning and Development
700 Fifth Ave, Suite 2000
Seattle, WA 98124-4019

Dear Mr. Holmes,

My partner Owen Rice and I work closely with many of the region's leading technology tenants. In fact, before I moved to CBRE, I personally worked at Microsoft for 6 years as a Program Manager on the Excel team and was one of those "tech tenants".

In studying technology user trends from the Seattle area and the Silicon Valley, it is unquestionably clear that these users strongly favor large floor plates of 35,000-40,000SF. It also appears that the Draft EIS for South Lake Union contemplates only 24,000SF floor plates for commercial office towers.

This mismatch is no doubt an oversight, and it is an important one to correct. 24,000SF floorplates would significantly limit technology company growth in South Lake Union and instead motivate them to look elsewhere to satisfy their space needs.

I would urge the City to evaluate the impact of the 35,000SF or even 40,000SF floor plates in the Final EIS so that the ultimate zoning that is put in place has the flexibility to address the needs of this very critical growth segment of our economy. I appreciate the opportunity to provide my feedback and look forward to an updated EIS that supports this incredibly area of Seattle.

Sincerely,



Brandon G. Weber

CB Richard Ellis | Corporate Real Estate
1420 Fifth Avenue, Suite 1700 | Seattle, WA 98101-2384.
T. 206 292 6139 | F. 206 292 6033 | C. 206 300 5866
brandon.weber@cbre.com | www.cbre.com

Holmes, Jim

From: Susanna Williams
Sent: Thursday, March 10, 2011 5:09 PM
To: DPD_Planning_Division
Subject: Density in South Lake Union

I am writing in support of increasing the height restrictions in South Lake Union and allowing for greater density in this burgeoning neighborhood. Cities should feel dense, close, full. For Seattle to continue to be affordable for young people and middle income families, we MUST increase density and in a city with limited land, going up makes the most sense. Unlike other neighborhoods in Seattle, South Lake Union doesn't have blocks and blocks historically significant single family Craftsman homes. A former industrial area on the lake, it has long been home to businesses and industry. As Seattle evolves and prioritizes mixed use development, South Lake Union has the potential to become a model for other neighborhoods, showing how you can have all the "neighborhood" things that people love about living in Seattle in multi-family condo and apartment buildings. 1

South Lake Union is the most vibrant and exciting neighborhood in Seattle, poised to stretch downtown all the way to Lake Union, and ready to grow with workers who want to live close to their jobs, families who want to give their children a real urban experience, and a community that is forging strong bonds already amongst its pioneer "settlers". South Lake Union neighbors know each other. They do things together. They support their local businesses. This is the best of Seattle-- and it needs to keep growing.

Sincerely,
Susanna Williams

Holmes, Jim

From: Wings, Linda D [winges@battelle.org]
Sent: Monday, April 11, 2011 4:05 PM
To: DPD_Planning_Division
Subject: Comments on Draft EIS for SLU

I live in the Denny Triangle (2200 Westlake) and work in South Lake Union (Dexter and Aloha). My business will not be impacted by the proposed rezoning and increase in population. I write as a citizen who spends significant time in the SLU neighborhood. My primary concerns with the draft EIS are the sections on transportation, views, and shadows.

Transportation. My experience at 2200 Westlake is that residents do have cars (one or two per unit), and that while they may drive less than suburbanites, it is unrealistic to assume that half of the trips will be done by bike, walking or mass transit. What other city has those statistics? (Even cities with subway systems – for example, Washington DC and Boston – show that only 13-14% of workers commute by transit, so why would we expect that 23% of peak hour trips would be transit in SLU, served by one streetcar line and buses?).

Phase II of the Seattle Department of Transportation Transit Master Plan should be released at the end of this summer. It will be important to look at these results, and the growth assumptions used in the Transit Master Plan, to compare with the proposed options under the SLU EIS. The EIS compares four options but does not address the increase in transit, bike lanes, and pedestrian walkways needed to support the increase in residential and employment population from today's level to any of the options.

The Mercer Mess – in existence when I moved to this area in 1981 – is about to be fixed. Let's not create another transportation mess in its place. Let's plan carefully – and realistically – for transportation before SLU is developed.

Views. One of Seattle's best features is the outstanding views of mountains, water, and our iconic Space Needle. Planning should consider the importance of preserving some of these views for pedestrians walking in the downtown, Denny Triangle, Cascade, Belltown, and SLU neighborhoods. It is not enough to preserve partial views from a few hilltop locations. 2

Shadows. The EIS should have modeled the taller stacks occurring on the Valley side rather than the Mercer side, since the residential towers will be taller (not obligated to conform to FAR) and it is unlikely that the residential towers would be located on the busy Mercer side. Moving the taller stacks closer to the lake will cast more shadows over SLU park. We need to preserve the park in as much sunshine as Seattle receives, especially since the streets will be mostly shaded by the tall buildings. 3

Thank you for an opportunity to comment.

Sincerely,
 Linda Wings

CENTURY PACIFIC, L.P.

STEVEN L. WOOD
MANAGING DIRECTOR

April 6, 2011

James Holmes
Seattle Department of Planning and Development
700 Fifth Avenue, Suite 1900
PO Box 34019
Seattle, WA 98124-4019

RE: Comment Letter
South Lake Union Height and Density Alternatives Draft Environmental Impact
Statement

Dear Mr. Holmes,

We are real estate advisors to the Seattle Times Company (STC). STC has been a property owner in South Lake Union for many decades. It owns over 7.5 acres of land in three large "super blocks" between Denny to the south, Harrison to the north, Boren to the west, and Fairview to the east. STC also leases some 155,000 square feet in the 1000 Denny Building located at Denny and Boren. There are over 850 STC employees located in South Lake Union. STC, as both a major employer and property owner, wishes to offer comments on the City's South Lake Union DEIS. Our comments are as follows:

Failure of DEIS to analyze whether an "incentive zoning" regime will satisfy comprehensive plan goals.

The DEIS, at 2.2.2, projects Comprehensive Plan growth targets allocable to South Lake Union. It also asserts at 3.8.7, 3.8.8, 3.8.9 and in other sections that the three (3) action alternatives would increase residential and employment density in South Lake Union and will meet these growth targets. The DEIS reaches this conclusion by assuming, at 3.10.5, that owners will utilize the zoning incentives to build to the maximum gross building area. We believe these conclusions are fundamentally flawed.

The three (3) action alternatives are not rezones, they are so-called "bonus height and density." This height and density is only available if the user pays the City of Seattle a significant fee or in the alternative provides "affordable housing." The DEIS blindly assumes, without analysis,

that developers/property owners will pay such a fee. There is no discussion of the reasonableness of the fee or its impact on developability.

1 cont

We believe the DEIS should analyze whether programs like this have been successful substitutes for rezones. While such a program exists in Seattle's downtown zone, it is hardly comparable since the base, height and density was far greater. Further, we're only aware of one example where the incentive zoning provision has actually been used in the downtown zone. Without this type of analysis, the proposed three (3) incentive zoning alternatives should be deeply discounted to reflect the fact that many developers may elect not to buy the additional density and, therefore, the assumptions about these alternatives accommodating projected growth are likely unfounded.

The DEIS assumes that proposed development standards related to tower spacing, podium height and floor plate size will be applied to existing zoning.

2

The DEIS is vague on the issue of whether development standards evaluated as part of the incentive zoning alternatives, would be applicable to the underlying zoning. The statement is made at 3.10.18 that "owners with properties of less than 22,000 sf would still have the option to develop projects to the standards of the underlying zoning." Does this mean that owners of properties in excess of 22,000 sf, who choose not to buy height or density from the City, would never-the-less be forced to utilize the development standards (tower spacing, podium height, maximum floor plates) developed for use with the incentive zoning alternatives?

We believe the imposition of the incentive zoning development standards on the underlying zoning would be potentially unfair and has not been evaluated from a SEPA standpoint. In many cases it would result in "downzone." Further, it puts the owner in the unenviable position of either being forced to "buy" zoning from the City or risk an effective downzone of its property. The DEIS needs to clear on what the development standards will be for the underlying zones.

The existing South Lake Union zoning is not compliant with the City's Comprehensive Plan.

3

The DEIS makes the assertion at 3.8.30 that Seattle's Land Use Code implements the goals and policies of the City's Comprehensive Plan. It fails to mention that the City amended its Comprehensive Plan in 2008 to eliminate the IC designation in South Lake Union. The City, in violation of a clear Growth Management Act mandate, has failed to conform its zoning to this change in the Comprehensive Plan.

The DEIS posits at Section 2.5 that the existing IC zone would be retained in the event the imposition of incentive zoning is delayed. We believe the City must take steps to conform the zoning for this area to the Comprehensive Plan regardless of what happens to its "incentive zoning" regime.

Development Standards developed in conjunction with Alternatives I, II, and III do not reflect property characteristics or market reality.

4

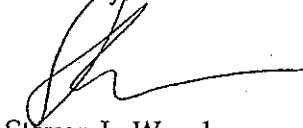
The Seattle Times parcels are "super blocks" of almost 2.5 acres per block (110,000 SF). These blocks have the capacity, given the small floor plates proposed, to accommodate three (3) and even four (4) towers per block. Even at three (3) towers, only a third of the block would be developed in a residential scenario. An arbitrary limitation of two (2) towers per block is untenable. Tower count should depend on property size, type of product, floor plate size and project design.

The limitation of floor plates to 10,500 sf and 24,000 sf for residential and office towers, respectively, do not reflect market or development realities. Technology and bio-technology users prefer 35,000 sf to 40,000 sf floor plates. These users have many choices from a location viewpoint and will locate elsewhere if South Lake Union does not meet their needs. The imposition of an arbitrary 24,000 sf floor plate, without regard to lot size, does not serve the neighborhood's interest. The DEIS should independently analyze whether the proposed floor plate limitations make sense from a development or market sense. We are not aware of any high-rise residential tower in Seattle with a floor plate of 10,500 sf or less.

We believe development standards should have the flexibility to respond to market and developer realities. For example, an office building with a larger floor plate, say 35,000 sf, may have a reduced height. Likewise, two 35,000 sf floor plates may work nicely on a 110,000 sf "super block," but not on an 85,000 sf normal block. When one considers that two (2) 35,000 sf floor plate buildings on a "super block" still leave almost an acre of open-space, the role of flexibility becomes apparent. Part of such flexibility could eliminate "podiums" where large floor plates are used.

Thank you for your consideration. We are available to answer any questions you may have in regard to our comments.

Sincerely,



Steven L. Wood
Managing Director
SLW/jlp

Cc: Jill Mackie
Vice President, Public Affairs
The Seattle Times

King, Donna

From: Julianna D'Angelo Yamamoto [julianna.dangelo@gmail.com]
Sent: Sunday, April 10, 2011 8:44 PM
To: DPD_Planning_Division
Subject: South Lake Union EIS

I work in South Lake Union but I also enjoy it for its restaurants and shops. It is my belief that the recent development in SLU has not only made the neighborhood safer, but it has also attracted more residents and businesses. More people equal a safer neighborhood and drive the economy of local and small businesses. The neighborhood is currently working towards these goals but it needs more flexibility in zoning to achieve them. I think the city should adopt Alternative 1, because it will bring more people to the neighborhood, keeping the businesses thriving and the area safer.

Thank you for your time,

Julianna Yamamoto

King, Donna

From: Mike Yamamoto [mikeyy1133@gmail.com]
Sent: Sunday, April 10, 2011 9:50 PM
To: DPD_Planning_Division
Subject: SLU EIS Comment

I serve clients located in the South Lake Union neighborhood and I also spend time there outside of work. I have enjoyed the new and livelier community as well as the greater selection of restaurants and shops while spending time there. I support the notion of more people and taller more efficient buildings as I believe they led to the great neighborhood SLU has become. The neighborhood needs more density and the flexibility of additional height to get there. Please consider doing the right thing for the future of this community. Limiting the growth potential of this neighborhood will have a negative impact on the surrounding neighborhoods and on Seattle as a whole.

Thank you,

Michael Yamamoto

Holmes, Jim

From:
Sent: Monday, April 11, 2011 1:06 PM
To: DPD_Planning_Division
Subject: south lake union rezone

to: Seattle DPD,

I would like to see Seattle develop a wonderful urban environment, and the growth of downtown to encompass more mixed use with an emphasis on residential development is an important part of that transformation. The alternative is clearly more sprawl on the urban fringe and more packing of multi-unit residential development in our traditional single family neighborhoods. If demand necessitates multi-unit residential development, why bastardize our existing neighborhoods with six-unit boxes when the more efficient solution is to build real highrise and create a vibrant residential urban center? I live in San Francisco for many years, and saw the South of Market district come alive with thousands of new residents in high rise buildings, with the accompanying retail and entertainment venues to support them. The transportation and related pollution benefits are well known. Taller towers with space inbetween them for views and sunlight to reach the streets is a proven successful urban form. It leaves more room for street level plazas and open space that pedestrians can enjoy. The current zoning will probably force developers to maximize area by filling up the entire site with boxy buildings. Why go halfway toward density, and discourage flexibility and quality design at the street level. Please support the zoning that allows the tallest options and most flexibility at the street, which also supports skylight view and plazas at the ground level, and our environmental goals.

Thank you,
Gary Zak

Table 4-2

Responses to Public Comments Received During the Comment Period

Comment Number	Response
Letter 195: Van Til, Steve	
1	Support Greatest Potential Height and Density. The comment is noted.
2	Increased Heights. The comment is noted.
3	Achieve Plan Goals. The comment is noted.
Letter 196: Vice, Jodie	
1	Support Alternative 1. The comments are noted.
Letter 197: Walker, Dewey	
1	Support Alternative 3. The comment is noted.
Letter 198: Warren, Robert P.	
1	Compromise Between Alternatives 3 and 4. The comment is noted.
Letter 199: Waymire, Jim	
1	Pedestrian Bridge. The City of Seattle does not support any pedestrian bridges across Mercer Street as they were not incorporated as part of any adopted plans, such as the Pedestrian Mobility Plan, Bicycle Master Plan, or Mercer Way Corridor Plan.
Letter 200: Weber, Brandon G.	
1	Floor Plate Size. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.
Letter 201: Williams, Susanna	
1	Support Height and Density. The comment is noted.
Letter 202: Wings, Linda D.	
1	Mode Split and the Seattle Transit Master Plan. For response to comments regarding the MXD methodology, please see Letter 12, response to Comment 10, and Letter 13, response to Comments 58 and 93. The Draft EIS identifies areas where more pedestrian and bicycle infrastructure

Comment Number	Response
	<p>is needed; however, implementation is not discussed in an EIS.</p> <p>For response to comments regarding the feasibility of transit mitigation, please see Letter 13, response to Comment 66.</p> <p>Given the timing of this Draft EIS, the findings from the Seattle Transit Master Plan could not be included, but they will be considered during the implementation process if the City proceeds with the height and density rezone.</p>
2	<p>Views. The comment is noted. Please see the discussion of views in Final EIS Section 3.4.</p>
3	<p>Shadows. The view analysis for Alternative 1 located the residential towers adjacent to Valley. The text has been clarified to note this distinction. Please see Final EIS Section 3.4.</p>
<p>Letter 203: Wood, Stephen</p>	
1	<p>Feasibility of Incentives. As the commenter notes, the No Action Alternative assumes no changes to existing zoning designations, including the existing IC zone. The No Action alternative is an EIS SEPA requirement, but does not preclude the City from rezoning the IC zone to Seattle Mixed, as shown in the action alternatives.</p>
2	<p>Underlying Zoning. Under all alternatives, the underlying Seattle Mixed zoning standards would remain in effect. Under the action alternatives, property owners who do not qualify for or elect to use incentive measures would follow the underlying SM zoning standards.</p>
3	<p>Industrial Commercial Zone. Please see response to Comment 1 in this letter, above.</p>
4	<p>Development Standards. The comment is noted. Beginning in late 2008 and continuing through 2009, the City worked with interested citizens and other stakeholders to define the alternatives to be studied in the EIS. Through this public process, the standard for commercial floor plate size was reduced from 35,000 sf to 24,000 sf. Please see the discussion of alternatives eliminated from consideration, Draft EIS Section 2.3.7. Conceivably, larger floor plate size may be appropriate in certain areas of the study area and localized study may be warranted.</p>
<p>Letter 204: Yamamoto, Julianna</p>	
1	<p>Support Alternative 1. The comment is noted.</p>

Comment Number	Response
Letter 205: Yamamoto, Mike	
1	Support Greater Height and Density. The comment is noted.
Letter 206: Zak, Gary	
1	Support Tallest Options and Most Flexibility. The comment is noted.

Public Hearing Responses

CHAPTER 5 PUBLIC HEARING RESPONSES

5.1 Public Hearing

Chapter 5 of this Final Environmental Impact Statement (Final EIS) contains public comments provided on the Draft Environmental Impact Statement (Draft EIS) during the public hearing meeting.

<i>Public Comments</i>	<i>1</i>
<i>Responses to Comments</i>	<i>3</i>

SOUTH LAKE UNION
HEIGHT AND DENSITY ALTERNATIVES
PUBLIC MEETING

MARCH 28, 2011

HELD AT: UNITY CHURCH
200 8TH AVENUE NORTH
SEATTLE, WASHINGTON 98121

REPORTED BY:
EMILY K. NILES, RMR, CRR

2

1 MR. FOSTER: Good evening everyone and thank you
2 for being here.

3 My name is Marshal Foster. I'm the city planning
4 director with Seattle's Department of Planning and
5 Development. And this evening is a very important milestone
6 for the South Lake Union neighborhood. Tonight we are going
7 to be taking your thoughts and comment on the South Lake
8 Union Draft Environmental Impact Statement. So I want to
9 move quickly through our program, but I would like to give
10 you a few just sort of context setting points as we begin
11 this evening. So bear with me and then I'm going to turn it
12 over to our project team to kind of walk you through some of
13 the analyses here.

14 First and foremost, I know many of you have been
15 involved in planning South Lake Union for many years. We
16 started really in the early 2000's with a process to update
17 the South Lake Union neighborhood plan. That resulted in
18 2004 with a new neighborhood plan for South Lake Union that
19 really looked out over the next 20, 25 years at how this
20 neighborhood could come together as a place for jobs, as a
21 place for housing, and really most importantly as a
22 mixed-use community that was vibrant, that really embraced
23 its place in the city as a growing hub in Seattle. And also
24 really connected with South Lake Union itself and the
25 neighborhoods around it, Queen Anne, Capitol Hill, Denny

3

1 Triangle, and the downtown.

2 As you all know South Lake Union has been changing
3 at a dramatic pace, a lot of new buildings, a lot of new
4 people enjoying this neighborhood. And I think we're
5 fortunate in a city that we have a pretty smart and
6 forward-looking strategy for how we manage growth in
7 Seattle. It really concentrates on the opportunity that

8 neighborhoods like South Lake Union present to create new,
9 very vibrant and livable neighborhoods for the City, similar
10 to many of the other neighborhoods that we enjoy in Seattle.

11 So I appreciate all of you who have been part of
12 this process for many years. Also those of you who are new
13 to this, I hope you'll bear with us as we're really going to
14 be getting into a lot of specifics in terms of how we take
15 some of those goals and policies and some of that vision
16 from the neighborhood plan and begin to turn it into some
17 more specific physical visions for the future of South Lake
18 Union.

19 In terms of the Draft Environmental Impact
20 Statement, what is it and what is it not? The goal of this
21 work is to provide you and City elected officials, the mayor
22 and the City council, with the tool to really assess the
23 pros and cons of a range of development potentials for
24 South Lake Union.

25 I want to be very clear on one point. What you

4

1 are going to see tonight, the range of options do not
2 represent proposals for rezoning this neighborhood. They
3 really represent a range of options from large to small that
4 the city council and the mayor will have to consider as they
5 look at what an ultimate rezoning proposal could look like.
6 And we were very intentional about showing that range and
7 many of you talked with me outside about your feelings about
8 different points along that scale and I know we'll hear more
9 from you this evening on that.

10 Second point I'll make is that while this is a
11 very complex document, I hope you'll take the time to read

12 it, to review it. I know it can be challenging at times.
13 Please use the City staff who are here this evening --
14 Jim Holmes who's our project manager for South Lake Union --
15 as a resource to help you understand it. It needs to be
16 complex for a variety of reasons. The issues that we're
17 facing are complex. And we'd like to do everything we can
18 to help you understand this work so that you can also use it
19 to inform your thinking.

20 And so with that, the last thing I'll say is as we
21 go forward, the work that's in this Environmental Impact
22 Statement really will be a foundation for ultimately the
23 work that we as a city planning staff will do with you to
24 develop an ultimate proposal for the future of this
25 neighborhood. As I mentioned before, this is not a

5

1 proposal, but ultimately a tool that we will use over the
2 next year as we work with you on the future of that.

3 So this isn't the last you're going to see us.
4 You'll be seeing a lot more of us as we carry this work
5 forward the rest of this year and early in 2012.

6 Without further ado, I'd like to introduce our
7 project team, and I will begin with Deborah.

8 MS. MUNKBERG: Good evening. Can you hear me?

9 UNIDENTIFIED SPEAKER: No.

10 MS. MUNKBERG: No?

11 Can you hear me now?

12 THE AUDIENCE: Yeah.

13 MS. MUNKBERG: All right.

14 My name is Deborah Munkberg and I am with the firm
15 of EA|Blumen. We were the lead for preparing the EIS, which
16 means that we are not the technical expert on all the issues

17 but we were able to pull it all together into a single
18 document. So we're going to walk through some of the --
19 just the high points of the EIS. We're certainly not going
20 to try and go through everything. I'm going to try and move
21 fairly quickly.

22 I wanted to start by first, I guess, following on
23 what Marshal just said, emphasizing that this is a
24 programmatic EIS, which means it is not a project level,
25 project specific EIS.

6

1 And the similarity between a project EIS which is
2 done for a specific development -- and you may be familiar
3 with a programmatic EIS -- the similarity is that both are
4 intended to disclose the potential for significant adverse
5 impacts of the alternatives.

6 And then they start to differ after that. A
7 programmatic EIS is typically area wide. In this case, the
8 South Lake Union neighborhood, or even jurisdiction wide as
9 opposed to a project EIS; it looks at a specific site. In a
10 programmatic EIS we're looking fairly broadly and
11 cumulatively at the impacts as opposed to, again, very
12 site-specific impacts. And the idea is to allow the
13 public -- interested members of the public and decision
14 makers to be able to compare between alternatives in a fair
15 and affordable way.

16 And then a programmatic EIS, while it's not --
17 does not provide specific enough information to make a
18 decision on a specific development proposal, for example, it
19 does provide a pretty broad-based foundation of information
20 that future site-specific proposals can sort of leverage off

21 of and use. So tonight we'll talk about this programmatic
22 area-wide kind of broad analysis of comparison of the
23 alternatives.

24 Just kind of an overview of the proposal. The
25 City is trying to achieve -- there are two major goals here.

7

1 One is to allow increased height and density so that the
2 South Lake Union neighborhood can provide the capacity for
3 population and employees as its designation as an urban
4 center requires, and at the same time to contribute to the
5 overall livability and sustainability of the neighborhood.

6 And the proposal to achieve that is to use
7 incentives that would allow development if it's able to
8 provide certain public benefits to go above the biggest
9 height limits in the neighborhood. The incentives aren't
10 currently applicable in the South Lake Union neighborhood,
11 but the existing city code could be expanded to include this
12 neighborhood and, in addition, the urban design framework
13 that you saw some boards on out there and may be familiar
14 with, provide some thoughts on incentive bonuses that could
15 be provided as well.

16 So the EIS looks at three action alternatives and
17 one no action. The alternatives have some common features.
18 The first being that the -- much of the area will continue
19 to be zoned Seattle mixed, as it is right now. A portion of
20 the neighborhood under the three action alternatives that's
21 currently zoned IC along Fairview --

22 MR. HOLMES: Between Fairview and Westlake.

23 MS. MUNKBERG: -- Fairview and Westlake will be
24 rezoned SM, Seattle mixed, and we'll look at that in just a
25 minute, put the maps up.

1 In all cases the tower lot size is consistent in
2 all three action alternatives, and that allows -- for most
3 of the neighborhood it allows one tower per 22,000 square
4 feet or roughly two towers per block. As you get closer to
5 the lake, one tower per block or one tower per 60,000 square
6 feet. We'll show that on a map in just a moment also.

7 Under all the alternatives there is no change to
8 the shoreline designation. So that 200 feet back from the
9 shoreline that is under the shoreline master program is not
10 affected by any of the alternatives.

11 And then the last item I wanted to mention is the
12 Lake Union seaport flight path. Some of you may have seen
13 that out on the boards in the lobby area. There is a flight
14 path coming out of the general purpose airport off of
15 Lake Union, and that does dictate some height limits. The
16 building heights would continue to be limited by the FAA
17 rules there regardless of what -- the City zoning proposals
18 you see on the alternatives.

19 Where do the alternatives differ? Well, first
20 here, I want to take a look at this map and just kind of
21 orient you because all the maps are very similar. You can
22 see the -- kind of the gridded area that's near the
23 shoreline. That's the area where the limit is 60,000 square
24 feet per tower, or one tower per block. If you look at the
25 numbers and you see -- for example, you see 85/300. What

1 that means is -- the number to the left is the maximum
2 height for commercial use and the number to the right is the

3 maximum height for residential use under the incentive
4 zoning.

5 I think those were the key things. Oh, I wanted
6 to just mention the flight path as well. So you see the red
7 flight path there rising up out of Lake Union. The
8 lowest -- the first kind of crossbar there is 125 feet and
9 it rises up to about 225 feet as it passes out of the
10 neighborhood to the southwest.

11 What we're looking at here is Alternative 1, which
12 is the alternative with the greatest heights provided. The
13 tallest buildings here would be along Denny Way to the south
14 part of the neighborhood. You can see that 400-foot
15 residential height. There are lower heights -- generally
16 lower heights as you go toward Lake Union, although you see
17 the slightly taller heights there between Valley and Mercer,
18 300 feet for residential, and the lower heights in the
19 Cascade and Fairview neighborhoods.

20 Alternative 2, again slightly lower heights. You
21 see the tallest heights along Aurora Avenue, 300 feet for
22 residential and moving down toward the lake. Existing
23 zoning remaining in the Cascade neighborhood.

24 And then Alternative 3, again, this is the --
25 going down in height again. Tallest buildings are around

10

1 240 feet, kind of around the perimeter of the neighborhood,
2 and existing zoning is retained in the Cascade and Fairview
3 neighborhoods.

4 And then this is the no action alternative. You
5 can see the building heights and you can also see the IC,
6 the Industrial Commercial zoning in the central part of the
7 neighborhood that's rezoned under the three action

8 alternatives. So that's kind of a quick overview of the
9 alternatives.

10 The EIS itself looks at a full range of
11 environmental topics. We are going to touch on the four --
12 I would say the most substantive discussion in the EIS, and
13 that's land use, housing, aesthetics, and transportation.

14 And I think we're going to start with
15 transportation with Chris Breiland.

16 MR. BREILAND: My name's Chris Breiland and I work
17 with Fehr & Peers as a transportation engineer and we work
18 with EA|Blumen and the City on analyzing the transportation
19 impacts of the three height and density alternatives act
20 kind of like bookends as Deborah described them and compare
21 that against the no action alternative.

22 So when we started this process, the City
23 presented us with a challenge, really. They said what can
24 we do if the City's goal is to increase the height and
25 density of South Lake Union? What can we do to accommodate

11

1 the additional folks that are going to be living and working
2 in this neighborhood but do so in a way that doesn't
3 continue the traditional trend of transportation analysis in
4 the City, which has generally been to focus on what auto
5 impacts are there at intersections and roadways and what can
6 we do to move more cars through the neighborhood.

7 So our approach was quite a bit different. We
8 looked at working with existing policies that the City has
9 which focus on a thing -- many issues beyond autos,
10 including pedestrian mobility, the idea to have different
11 amounts of people travel by different modes, be it by

12 walking or their bike. There's goals that the City has.
13 The City also has goals related to climate change to make
14 sure that future development is done so in accordance with
15 State goals to manage the amount of greenhouse gas emissions
16 set forth. And then there's also the City comprehensive
17 plan and other plans in place. So we wanted to really focus
18 within those plans and implement those plans as the
19 mitigation measures or the things that would have to be done
20 to accommodate a new development from the transportation
21 perspective.

22 So, again, like I mentioned, we focused on all the
23 modes, not just traffic and cars. So we started off by
24 looking at what's there today? What's the existing
25 pedestrian and bicycle system which is shown up behind me.

12

1 The pedestrian system looks more at the facilities that are
2 missing under today's condition and the bicycle map shows
3 what's there today.

4 We took a pretty extensive look at the transit
5 service provided in the area so that we could know what
6 might needed -- what might need to be done to improve that
7 in the future. And, of course, travel, traffic, freight,
8 and good movement is an important part of South Lake Union.
9 We certainly spent a lot of time looking at that, and the
10 map behind me showing all the colors looks at the roadway
11 network in our assessment of existing conditions on the
12 roadway network.

13 So with that framework, in terms of what's there
14 on the ground today, what are the plans for the different
15 modes that the City has, and what are the goals that the
16 City wants to achieve within South Lake Union, we assess the

17 impacts and develop the mitigation strategy.

18 The impact assessment method that we used, we took
19 a different approach. A lot of times fairly suburban, what
20 are called, traffic analyses is -- are done in these urban
21 areas. That doesn't work in a place like South Lake Union.
22 We developed a new model that more accurately looks at how
23 do people travel in a dense area; for example, how do people
24 travel in Belltown, we looked at that. They travel -- they
25 don't drive as much. They take transit more. They walk

13

1 more than folks who live out in Issaquah.

2 So we built this model that looks at how people
3 travel in an urban area and applied it to South Lake Union
4 so that we could understand how people might travel there
5 under all four of those no action alternatives and how does
6 that change in land use character affect how people travel
7 in the neighborhood. It's -- that's an important departure
8 from how transportation analyses have been done in other
9 projects in the city.

10 The approach we used is not made up. It's backed
11 by a lot of research which showed that folks in urban areas
12 travel differently, and it is -- has been used in a lot of
13 environmental documents around the country. And what's
14 showing on the screen is that compared to traditional
15 transportation techniques, the method that we use more
16 accurately reflects those urban travel characteristics. And
17 those are that people drive a lot less, 30 to 45 percent
18 less in a dense urban area. And that's important to
19 consider when we're looking at how transportation will
20 change when we add so many jobs and houses into the area.

21 So what did our tool which we call the MXD method
22 consider? Consider the density of the development; the
23 diversity of the land uses, meaning how much commercial,
24 office, and residential space is there; the design of the
25 pedestrian bicycle system, which is an important aspect of

14

1 how we work with mitigation as I'll describe in a moment;
2 the distance to high-quality transit, things that are
3 frequent transit, things like the proposed Aurora ramp, bus
4 system, the South Lake Union street car, for example;
5 demographic characteristics of the residents; the demand
6 management programs, meaning what programs are there in
7 place to try and shift how people commute to work. Seattle
8 has a lot of demand management programs in place already and
9 we could consider more of those; and then distance to major
10 destinations. South Lake Union's right adjacent to
11 downtown. A lot of people have the opportunity to walk or
12 bike to work if they were to live there, and our model makes
13 sure to capture that.

14 So, again, Deborah mentioned that we don't have
15 time to get through in a lot of detail, but from an impact
16 summary what we found is that all three of the height and
17 density alternatives have similar impacts on the
18 transportation system. All of them will have more traffic
19 congestion than there's -- would be the case if nothing were
20 done in that neighborhood. All of them add more transit
21 demand, which is expected. More people would be riding the
22 bus so there would be more impacts to transit capacity.
23 There will be some short-term parking impacts as the
24 neighborhood transforms. There will be impacts to freight
25 mobility. More traffic slows down freight. And there could

1 be impacts to traffic safety as well.

2 So the point of the EIS is to disclose these
3 impacts so that decision makers and you as the public can
4 understand that, and then to come up with a way that
5 could -- a mitigation strategy that could be done to help
6 address or reduce the significance of those impacts. So I'm
7 going to quickly go through the strategy that we undertook
8 to try and reduce those impacts that I just showed you.

9 First and foremost, we proposed to improve the
10 bike and pedestrian network in the area. And, again, with
11 our theme of following plans, we looked to the existing
12 planning that has already been done for South Lake Union and
13 sought to implement all those improvements that currently
14 have no means of getting in place. And those are
15 outlined -- those plans are outlined on the screen.

16 We looked to expand the travel demand management
17 strategies within South Lake Union, and those could include
18 some restrictions on how much parking can be provided by
19 landowners and how parking is offered to residents, and also
20 expand these commute trip reduction programs that are
21 already in place in South Lake Union and downtown to be more
22 encompassing and provide folks with more resources and more
23 options to driving in downtown. We recommended expanded
24 transit service and we also recommended limited roadway
25 capacity expansion and again, planned projects only and the

1 most notable one is the implementation of the Mercer West
2 project which would complete this transformation of Mercer

3 Street to two ways from its current proposed terminus at
4 Dexter out towards Queen Anne.

5 So automatically that's out in the lobby and the
6 EIS lists all the mitigations that we recommend for all
7 three alternatives. All three alternatives have similar
8 impacts. We had similar mitigations. And here's the bottom
9 line, with those mitigations in place, we expect that we
10 could get about a 21 percent reduction in vehicle trips as
11 compared to doing nothing with those alternatives. We just
12 left them to be built as they were. And what that does is
13 it actually allows us to get vehicle trip generations be
14 less than doing nothing. If the mitigations are in place,
15 if there's a more attractive way to walk or bike to work, if
16 there's more transit service, if some of the congestion
17 that's out there is relieved, more people can get around
18 without their car and that's an important benefit that this
19 project can provide. So with that, I'm going to turn it
20 back over to Deborah.

21 MS. MUNKBERG: Okay. I'm going to just try and
22 move quickly through land use, housing, and aesthetics so we
23 can get to your comments.

24 For land use, the key impact that we looked at had
25 to do with compatibility with the Lake Union seaport airport

17

1 and the size and elevation of the flight path that rises
2 over the neighborhood as it heads out to the south and to
3 the west. And you'll see that on the screen. The -- as I
4 mentioned earlier, describing the alternatives, the City
5 will continue to regulate heights based on the FAA
6 requirements which are shown here starting at about 125 feet
7 coming off the lake and going up to about 250 feet as you

8 exit the neighborhood.

9 The other piece that the EIS looked at was the
10 potential for wind turbulence associated with the taller
11 buildings as the planes are coming over the top of them.
12 Looked at the amount of wind turbulence that's vertical over
13 the top of the buildings as well as leeward on the downwind
14 side. And you may have seen out in the lobby area there was
15 some board there that showed recommended mitigation that
16 dealt with how to make sure that both the wind turbulence
17 and the protrusion into the flight path elevation is
18 addressed.

19 For housing, looked at overall -- all of the
20 alternatives will increase housing capacity in the
21 neighborhood. For affordability issues I think the
22 conclusions were a little mixed. On the positive side, the
23 greater capacity, greater housing capacity in the
24 neighborhood provides more opportunity for affordable
25 housing to develop in a neighborhood, particularly when

18

1 there is an incentive to encourage that to happen.
2 Similarly, because there are minimum lot size requirements
3 for each of the new towers, as those lots are aggregated
4 there are likely to be some remnant lots left behind that
5 will not be large enough for tower use and could be made
6 available for affordable housing.

7 On the sort of negative side related to
8 affordability, we heard a lot from a number of developers
9 that the construction types, the taller towers does not
10 permit for affordable housing. And that there may be some
11 increased potential for displacement of some of the smaller

12 buildings, the lower scale buildings that provide affordable
13 housing right now.

14 You saw the mitigation strategies proposed that
15 relate to some existing programs that the City offers as
16 well as some potential for some new programs.

17 I wanted to touch on aesthetics. That's a fairly
18 large section in the EIS, and it looks at four different
19 topics: height, bulk, and scale; viewsheds; potentials for
20 increases to shadows; and light and glare. There's a
21 number -- or there's quite a number of view models in there.
22 There's a few perspectives that are on the boards out there
23 that looked at from an area-wide perspective provided both a
24 bird's eye view and a view from Gas Works Park. There's
25 some selected street-level perspectives, and there's 15

19

1 different viewpoint locations, some of which are from
2 designated projected views of the City, and then there's a
3 shadow analysis.

4 These are out in the lobby but just wanted to
5 highlight them. This is a bird's eye view of the
6 neighborhood. Alternative 1, again, just to mention, this
7 is the alternative that provides for the greatest height you
8 see existing at the top. The orange buildings that you see
9 there are residential development and the purple are for
10 commercial development. As you can see, the orange taller
11 buildings are consistent with the way the alternatives are
12 framed.

13 2031 shows what this would look like if this
14 neighborhood were built out and met. This is an estimated
15 housing target for the city in 2031, and build-out is if the
16 neighborhood were to build out to full capacity. That's the

17 tallest.

18 We're showing the other action alternative that's
19 at the other end of the scale, which provides for the least
20 amount of height. And Alternative 2 falls in between those
21 two. So you see existing again and then build-out under
22 Alternative 3. You can see the difference.

23 And then Alternative 4, that's existing zoning.
24 Again, you'll see the scale of buildings that are permitted
25 under current zone.

20

1 And as I mentioned there were a number of view
2 locations modeled that you can see in the EIS. This is just
3 a map of all the different viewshed perspectives that were
4 taken of the neighborhood.

5 So what were the conclusions? Basically, one of
6 the major impacts of this proposal would be the visual
7 expansion of the downtown towers to the north towards
8 Lake Union. And we saw that in the area-wide pictures.

9 The incentive zoning would provide new building
10 type in the neighborhood, and that is a podium with a taller
11 tower on top of that. And I was reminded as I sat down that
12 we needed to mention that the floor plate size for
13 residential units would average 10,500 square feet and for
14 commercial unit -- or commercial buildings 24,000 square
15 feet.

16 Overall the views to designated viewpoints are not
17 obstructed, which is not to say that they're not impacted.
18 There is definitely some framing and some intrusion into
19 those views, but they're not obstructive. And then in terms
20 of shadows, there is an incremental increase in public open

21 spaces, shadows, but at midday the centers of the parks, for
22 example, are all still in the sun.

23 Going to turn it over to you, Jim.

24 MR. HOLMES: All right. I'll be quick so we get
25 to public comment.

21

1 I just wanted to let a lot of you know that after
2 tonight we will take -- well, after April 11th when our
3 comment period actually formally closes, we will take all
4 the comments, identifying analysis, revisions necessary, and
5 prepare our final Environmental Impact Statement which we'll
6 release this summer. DPD as Marshal said will be working
7 with the community to develop a rezone recommendation which
8 we have hopefully by the end of this year, and the City
9 Council's planning on considering this rezone proposal in
10 2012.

11 So tonight's a public hearing and the subject is
12 the Draft Environmental Impact Statement. Of course, people
13 can offer any comment they want, but the most relevant
14 comments will focus on the analysis of the Draft EIS, some
15 of the conclusions, a few might disagree with some, but
16 really focus on what's in the Draft EIS and help us to make
17 the final EIS a strong document that will help inform our
18 decision. You can offer comments tonight or you can offer
19 them in writing. We have comment forms up front if you want
20 to fill them out here and leave them here, but you have
21 until April 11th to submit public comments. And a comment
22 offered tonight or sent to us in writing, they carry the
23 same weight. We will read, consider every comment.

24 Let's see. Just for tonight, speakers will have
25 two minutes to speak and to be fair for everybody's time, we

1 will enforce that fairly strongly. About a minute in to
2 your speaking time you'll see this sign. Lets you know you
3 have another minute. And then when you have ten seconds
4 left I'm going to hold this sign up, which means you have
5 ten seconds to wrap up and then to allow the next speaker.

6 We will be calling up three or four speakers at a
7 time, and I'm going to call them up right now to the podium.
8 The first four are John Coney, Mike Peringer, A-P Hurd, and
9 Don Bennett.

10 MR. CONEY: I'm John Coney. I'm co-president of
11 the Uptown Alliance. I'm speaking for myself this evening.

12 I want to remind folks that 50 percent of the new
13 population coming to Seattle is slated at this point to go
14 into Seattle's urban centers. The most buildable expandable
15 urban center is actually South Lake Union. I think that
16 South Lake Union can provide an attractive neighborhood with
17 a broad range -- for a broad range of residents considering
18 a move from the suburbs or the exurbs down to the center
19 city and that it can provide urban necessities for
20 employment, transportation, recreation, education,
21 healthcare, and public open space.

22 EIS documents focus on the negative impacts of
23 development and mitigations for growth impact. I'm
24 suggesting that the EIS study, the benefits per capita
25 flowing from a dense urban center in the impact areas of air

1

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1 quality, environmental health, noise, land use, housing,
2 aesthetics, household resources, transportation, open space,

3 and recreation, you know, what are the impacts per person in
4 a denser, therefore, more populated neighborhood.

2 cont

5 Ongoing infrastructure improvements which you've
6 seen a little taste of but not really the totality will
7 provide major opportunities for enhanced pedestrian, bike,
8 transit for both South Lake Union and the Uptown Urban
9 Center, which our Uptown Alliance is concerned with. I am
10 concerned that the DEIS did not look at economic
11 development. The Downtown Seattle Association has
12 demonstrated tax benefits of mixed-use developments in urban
13 areas. Please analyze the economic developments, impacts of
14 these alternatives.

3

15 In 2006, 35 community stakeholders from both
16 Queen Anne and South Lake Union were involved in a joint
17 vision for Uptown and South Lake Union urban centers, and
18 the outcome of that is the recommendation to locate taller
19 buildings close to transit corridors, particularly street
20 car routes, encourage residential density around parks, such
21 as Lake Union Park, Denny Park, Cascade playground, Seattle
22 Center.

4

23 Thank you.

24 MR. PERINGER: My name is Mike Peringer. I'm the
25 founder/president of the SODO Business Association.

24

1 It was a rather warm day on Independence Day 1855
2 when on a farm located just north of here on Fifth and about
3 Roy, a gentleman had a picnic where he invited some 100
4 folks that he knew in the city, about the entire population
5 of the city at that time. Among them, of course, were names
6 we all know, David Denny, Doc Maynard, Henry Yesler,
7 Dexter Horton to name a few.

5

8 You made some remarks that -- this gentleman made
9 a few remarks at that time, and he decided looking down from
10 his property on to Lake Union to the east that he would
11 think it would be a good idea to rename that lake from the
12 Indian name it had been to Lake Union. And, in fact,
13 that -- from that very day on it became Lake Union. That
14 gentleman's name was Thomas Mercer. He was my great uncle.
15 And from that point on, the balance of development down here
16 from his property which started over on Fairview Lakeview --
17 or Fairview and Eastlake all the way over to Queen Anne
18 Avenue from where we're standing now to what is now the ship
19 canal, which he also envisioned that day as being something
20 to connect the two lakes together, that, in fact, happened
21 in 1917, just a year after The Boeing Company developed its
22 first airplane on Lake Union.

23 So there's a lot of history here that I think we
24 need to consider, and that history is that we need to have a
25 balance. We need to have everybody considered. Hence, the

25

1 people are here tonight to talk about it. And so when you
2 look at your plan and your DEIS, be sure to look at all
3 aspects of it, not just one or two.

4 Thank you very much.

5 MR. HOLMES: I'd like to call Lee Newgent,
6 Keith Weir, Paul Chiles, and Hellmut Golde.

7 MR. NEWGENT: My name is Lee Newgent. I'm with
8 the Seattle Building & Construction Trades Council. I'm an
9 Irishman, recovering Catholic. So this is probably not the
10 best venue for me.

11 I'm here today to speak on behalf of supporting

| 6

12 the expansion in South Lake Union. I think that we are a
13 unique perspective with South Lake Union. Geographically it
14 is a very flat, very buildable part of our city. It's a
15 natural progression, and in looking at the environmental
16 studies I see that there's a lot of thought that went into
17 it.

18 And I think that we have an opportunity to build
19 for the future and only limiting that to a 20-year vision or
20 a 15-year vision will be our downfall. We need to have that
21 longer expansion, that longer vision. We need to make sure
22 that we can allow for the population in 2030 and 2040. We
23 would like to see the increased height limits. And then we
24 would like to see the residences that are built being able
25 to support the industries that are being built up around

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1 South Lake Union, specifically with U-Dub research facility
2 coming on the line, the Amazon building and the street car
3 and some of the Fred Hutch. We'd like to see that become a
4 thriving economy that will be self-supporting and will limit
5 the amount of people that have to commute to or from. We'd
6 like to see the people that have an industry that's
7 supported by the people that live in that residence. I
8 appreciate your time for taking my comments.

9 MR. HOLMES: Thanks.

10 Next we want to hear from A-P Hurd and then
11 Don Bennett.

12 And I'd like to ask everybody as their names are
13 called to line up behind the microphone so that we can hear
14 comments in the order that people signed in.

15 MR. HURD: Thank you.

16 I'm A-P Hurd. I'm with Touchstone, and I'm also a
Page 22

17 Runstad research fellow and alum at the
18 University of Washington.

19 I read the Environmental Impact Statement and as
20 usual I'm a bit dismayed to find that environmental impact
21 statements always equate more growth with more negative
22 environmental impact and generally more negative impacts in
23 every way.

24 But I think that's only part of the story. In my
25 role as a Runstad fellow, I just got back from a week in

27

1 Hong Kong, which is certainly not a city that has the scale
2 of Seattle but a city that has three great strengths. It
3 thinks in mutual terms, it supports growth, and it preserves
4 rural lands. Seattle is part of a globally competitive
5 world. We're a net attracter of talent. We are growing
6 economies and companies that are the envy of other regions,
7 and we are poised to succeed. But we cannot succeed if we
8 don't find a way to grow our urban center. We will not
9 succeed if we choke out space for our growth companies and
10 the talent that is part of their ecosystem. More to the
11 point, my fellow Gen X and Gen Y-ers will not stay in a city
12 that persists in clinging to Pete Seeger's 1960's Little
13 Boxes On the Hillside.

14 Let's find a way to make great places for people
15 in growth companies, lots of people and growth companies,
16 and let's do it in a way that preserves our rural and
17 working lands. Let's zone for something that looks like
18 Alternative 1, a vibrant, compact, and intensively urban
19 South Lake Union.

20 Thank you.

21 MR. BENNETT: I'm Don Bennett. I'm a member of
22 this church as well as a member of the LUOA board of
23 directors.

24 In reading the Environmental Impact Statement, I
25 was disturbed by the public services section both for its

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1 emphasis only on fire and police services as well as
2 misrepresenting of statistics in these areas.

3 For the fire stations listed as covering
4 Lake Union, Figure 314-3, the incident numbers for 2004
5 through 2008, Stations 2 and 8, show a 10 percent increase
6 by a 1-year decrease in 2009. It looks like '09 is an
7 anomaly and there is no reason to expect that it is
8 representative. Additionally, all the figures listed relate
9 to all calls at fire stations and do not break out the
10 results for calls to South Lake Union.

11 This is not a South Lake Union information about
12 the environmental impacts. As South Lake Union is at the
13 extreme end of the coverage districts for these three
14 stations, it makes sense to guess the majority of the
15 failure to meet time expectations would be in the South Lake
16 Union neighborhood.

17 With regard to the police services, there is also
18 no breakout of calls to South Lake Union. There is the
19 additional noted problem that due to budget problems, the
20 SPD has not been able to staff to current expectations. All
21 of this is without consideration of the additional problem
22 of responding to problems on the 30th or 40th floor of a
23 high-rise.

24 As a recreational sailor on Lake Union, there's a
25 large dead airspace at the side of the AGC building which is

9

10

1 only 10 stories high. I hate to think what it would be if
2 there are 30 and 40-story buildings of indeterminate for a
3 place along Mercer.

10 cont

4 Thank you.

5 MR. CHILES: Good evening, everyone. My name is
6 Paul Chiles. I am a commercial real estate broker and my
7 office is in South Lake Union.

8 I'm here tonight to speak in support of taller
9 buildings, specifically Alternative 1. The one thing I
10 don't want to do is be redundant. I think I've heard some
11 very good comments from a number of people and I'm not sure
12 that it's necessary to reiterate those, but I would agree
13 with the speakers who have called on all of us to think
14 about the economic impacts. Clearly taller buildings and
15 any development in South Lake Union is going to result in
16 jobs. And we are hopeful that we all see that and figure
17 out a way to take advantage of this well-defined opportunity
18 to do something right and to eliminate urban sprawl.

11

19 I'm particularly interested even though this is my
20 business that we take advantage of the bonuses that are
21 offered that give us an opportunity to provide for more
22 affordable housing. And many of you may not know, but there
23 is a budget that's been proposed for affordable housing
24 that's currently in the legislature. Historically that
25 number's been about \$250 million. With that budget

1 shortfall, we are going to be lucky if we're able to get
2 half of that. As most of you know, there's no shortage of

12

3 demand for affordable housing, and the cost to the
4 developers in South Lake Union will be to provide dollars
5 for affordable housing and that may very well help the
6 shortfall.

12 cont

7 Thank you for listening.

8 MR. HOLMES: I'd like to call down Marcy Golde,
9 Bob Messina, Mike McQuaid, and Marty Bluewater.

10 And I ask that you stand in line behind the
11 microphone. Thank you.

12 MR. WEIR: Hi. Good evening. My name is
13 Keith Weir. I'm here representing the Seattle King County
14 Building & Construction Trades Council. As well, I'm an
15 IBEW member, electricians. So --

13

16 UNIDENTIFIED SPEAKER: Slow down.

17 MR. WEIR: We represent the folks who will build
18 these buildings and make the infrastructure what it will be
19 for the future and forthcoming.

20 The comment was made earlier, my feeling on this
21 being a Seattle lifetime resident, is that you only have one
22 chance to do it right. So let's get it right and build it
23 so it lasts. So we're not having to come back and rezone
24 and rezone to make it fit. It is the best way to make our
25 city vibrant. The South Lake Union neighborhood with the

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1 biotech corridor in there providing people with work, they
2 don't have to walk very far to their work. They can hop on
3 a street car. They can leave their car for the weekend.
4 Even maybe move down without a car, reducing carbon
5 emissions. The best thing I think will be Alternative 1.

6 Thank you.

7 MR. GOLDE: Good evening. My name is

8 Helmut Golde. I'm a resident of the neighborhood.
9 I'd like to address two issues very briefly. The
10 EIS should work with Metro to address precisely public
11 transportation proposals for each of the alternatives. What
12 I saw out there and talked to people out there on the boards
13 is really not sufficient to understand what the future of
14 public transportation will be, how to integrate the
15 South Lake Union trolley into Metro, and work with Metro to
16 give additional bus transportation.

14

17 Secondly, a vibrant neighborhood as is envisioned
18 by the plans requires that families with children move in.
19 I haven't heard a word said about children and where they
20 should go to school. The EIS should specify possible school
21 locations, possible locations for libraries, for each
22 alternative, otherwise it would be impossible to attract
23 families with young children to live in the neighborhood.

15

24 Thank you.

25 MS. GOLDE: My name is Marcy Golde and I'm a

32

1 resident of the Cascade neighborhood.

2 My real concern is the economic mix of the
3 population that is going to move into this area. I hear the
4 developers saying, and that certainly seems a reasonable
5 assumption, that those high-rise buildings are going to be
6 very expensive and the residents that are -- can live there
7 will have to pay very high either condo or rentals to be
8 there. The population estimate of increase if we stayed
9 with what is exactly in the plans for South Lake Union as
10 they're currently designed would be about 18,000 new people.

16

11 If you went to the larger number that someone

12 suggested to me from your staff, about 12,000 housing units,
13 that would be about 27,000 additional people. How those --
14 what their economic mix is is very important, and what we
15 don't want to see is a place for 18,000 of Paul Allen's rich
16 friends. This is not a mix. We need a mix here that at
17 least maintains, probably your bonuses will maintain if
18 you're lucky, the amount of mid and low-income housing.
19 They're not going to expand it.

16 cont

20 Thank you.

21 MR. MESSINA: Hello. My name is Bob Messina.

22 I'm a frequent walker of the neighborhood as well
23 as the downtown waterfront. So I'm approaching this from
24 the standpoint of looking at Lake Union in the same light as
25 we see the -- our downtown waterfront. But I see that the

17

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1 300-foot-high buildings appear to be treating what I call a
2 waterfront, downtown waterfront, and not a -- like a lake --
3 like Lake Union's often described as, I see it as a
4 waterfront. That the 300-foot height allowance is really
5 too much and too close, especially between Mercer and
6 Valley.

7 And I'm okay with other aspects of it, probably
8 more in favor of the Alternative 3 height limits. I can
9 sort of live with that as I see it. But Alternative 4 is
10 kind of a shock to me that someone would consider allowing
11 the 300-foot-high buildings so close to, again, what I'm
12 going to call is a downtown waterfront and not just call it
13 Lake Union, because you've got large ships that come in
14 there. There is a sloping character, a bowl-like profile to
15 the neighborhood, but the build-out as you show it actually
16 shows building heights going down and then at the end close

18

17 to the shoreline coming up again. And I think for a lot of
18 people that's kind of a shock.

18 cont

19 And so I do support the elements of this plan in
20 general, Alternative 3, like I said, but specifically those
21 300-foot-high buildings I'm very much opposed to.

22 Thank you.

23 MR. BLUEWATER: Hello. My name is
24 Marty Bluewater. I'm a current board member and former
25 director of United Indians of All Tribes Foundation, and

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1 we're located at the Daybreak Star Center in Discovery Park.
2 And we were founded in the early '70s to provide
3 educational, social, economic and cultural programs for
4 urban natives and, of course, for the nonnative population
5 too.

6 And we're excited about being a stakeholder in
7 South Lake Union Park and about the quality growth that is
8 developing in the area in general. On our piece of land at
9 the park we are planning the Northwest Native Canoe Center,
10 and this will celebrate the canoe culture of the northwest
11 tribes, and this will be at the western end of the park in a
12 real exciting building that we'll have a lot of activities
13 and open, available for rentals and so forth as we
14 eventually raise the money, of course.

19

15 And we're also looking forward to working and
16 partnering with The Center for Wooden Boats and the Museum
17 of History and Industry and, of course, the Parks Department
18 in providing programs. Having very many citizens accessing
19 and enjoying the park will make it a great success and a
20 priceless resource. The area needs to be a 24-hour

21 neighborhood with large and tall enough buildings to support
22 the necessary services for everyone, and we think that in
23 the public good would be -- smart growth and planned density
24 should be the priority over other issues such as the maybe
25 the loss of some views and things like that.

19 cont

35

1 We urge the city to adopt Alternative 1 and
2 believe it will be a best benefit, the most citizens and
3 maximize the city resources.

4 Thank you.

5 MR. McQUAID: Good evening. My name is
6 Mike McQuaid. This is my wife Shannon.

7 I'm a lifelong resident of Seattle and fourth
8 generation of my family to live in the city. Shannon and I
9 live on Queen Anne Hill over on the east side with a
10 beautiful view of Lake Union, downtown Seattle, and the
11 South Lake Union neighborhood. We also have family members
12 that live on Capitol Hill looking in the opposite direction
13 over Lake Union and the South Lake Union neighborhood. In
14 the community I'm a trustee with a local nonprofit
15 organization at Lake Union Park, and I'm also a neighborhood
16 activist and a South Lake Union Community Council member.

20

17 I'm old enough to remember the excitement in this
18 city when we developed new modern office buildings in the
19 '60s in downtown Seattle. The excitement that came after
20 the World's Fair in 1962 and the excitement that came after
21 new transportation systems were put into place to move
22 people in and out of our city. I'm also young enough to
23 have an open mind and to look to the future and to get
24 excited about the opportunity that we have before us.

25 Since moving to the area twelve years ago we
Page 30

20 cont

1 recently have seen an amazing amount of change in the
2 South Lake Union neighborhood. We can now walk to buy
3 groceries in South Lake Union and we meet our friends on the
4 streets. There are multiple new restaurants that have
5 opened in the neighborhood, and there are smaller
6 family-owned businesses, boutique stores, restaurants and
7 the like that we visit on a day-to-day basis and on the
8 weekends.

9 Where once there were buildings in decline,
10 abandoned railroad tracks lined the streets, and concern for
11 our safety, there's now a wonderful community taking shape.
12 I'd like to share with you what I've learned. It's people
13 that make our community, a lot of people. To house people,
14 to make this work, we have to go up.

15 For my work on the community council I've learned
16 that taller buildings bring setback variances that actually
17 create a wider street level experience, and I've also
18 learned that there's something about the economics of
19 building in the neighborhood that creates opportunity for
20 low income housing. I'd like to consider you -- I'd like to
21 ask you to consider Alternative 1 and to keep an open mind
22 in this process as we move forward. This is an exciting
23 time for us.

24 Thank you.

25 MR. HOLMES: I'd like to call Dominick Lucia,

1 Jeffrey Rowe, Shefali Ranganathan.

2 MR. LUCIA: Hi. My name is Don Lucia, and I work

21

3 and reside in Cascade neighborhood, South Lake Union. And
4 although I'm involved in some community activities here as
5 an activist, I'm here speaking on behalf of just my own
6 personal view. And that view is to support Alternative 1.

7 And the reasons for that, and even though they
8 have been stated, I will have to reiterate since so many
9 people have spoke eloquently about the advantages of
10 Alternative 1. I think that it allows for the greatest
11 amount of density, economic opportunity that will translate
12 into what Seattle aspires to be, have a very vibrant
13 community, street life. I also think it gives the largest
14 opportunity to actually create some diversity.

15 So what I'd rather speak to since so many people
16 spoke about the positive aspects of that, is that some of
17 the concerns that people have for maybe some of the things
18 that can go wrong, I think that we have to rely upon the
19 human spirit, the entrepreneurial spirit that things such as
20 looking for low income housing, for more economic
21 opportunity and some comment that this neighborhood would
22 only be for wealthy people, I want to challenge it that
23 actually the opposite way. By having a more dense, highly
24 populated area, I think that actually will allow a larger
25 distribution of wealth and provide a larger opportunity for

21 cont

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1 people that may not be afforded that now. So I think that
2 this is an exciting time for Seattle. We have a great
3 opportunity here, and I really want to encourage everyone to
4 support Alternative 1 for those reasons.

5 MR. HOLMES: Call on Jeffrey Rowe, Lori Mason
6 Curran and Joe Fugere.

7 MS. RANGANATHAN: Good evening. My name is

8 Shefali Ranganathan and I am the director of programs for
9 Transportation Choices Coalition.

10 Transportation Choices Coalition is a statewide
11 nonprofit working to bring residents more opportunities to
12 take the bus, the train, walk, or bike safely. I am here
13 tonight in support of Alternative 1 in increasing zoning
14 capacity and flexibility to maximize housing and job growth
15 potential in South Lake Union.

22

16 South Lake Union provides the best opportunity to
17 create neighborhoods that are connected both by great
18 housing choices as well as great transportation choices,
19 great walkability opportunities, access to transit via the
20 street car, buses, as well as easy walking access to the
21 Westlake transit hub. Accommodating housing and jobs with
22 good transportation choices will lead to reduced air
23 pollution including greenhouse gases, lower transportation
24 expenses, more active and healthy lifestyles, as well as
25 better connection to jobs and homes for people at all income

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1 levels. However, to create a great community with real
2 transportation choices, the City has to invest in
3 transportation. TCC strongly supports recommendations that
4 were made in South Lake Union Uptown Mobility Plan including
5 connecting these communities with better east-west
6 pedestrian bike connections across Aurora Avenue as well as
7 implementing the street car plan which would connect the
8 South Lake Union street car with the First Hill street car
9 as well as future expansions.

23

10 I want to thank DPD tonight as well as the city
11 council for your attention. We should remember that

24

12 20 percent of the overall growth for the city in terms of
13 housing and jobs is coming in this neighborhood. There's an
14 opportunity to do it right and by allowing flexibility and
15 strengthening your transportation choices, there is an
16 opportunity to create neighborhood growth that leads to a
17 higher quality of life for residents as well as
18 environmental and societal benefits for the entire region.

24 cont

19 Thank you.

20 MS. MASON CURRAN: Hello. I'm Lori Mason Curran
21 with Vulcan Real Estate and I am speaking on behalf of
22 Vulcan tonight.

25

23 People, jobs, and businesses continue to come to
24 Seattle because it really is a wonderful place to live and
25 work. The City has dedicated South Lake Union as an urban

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1 center, which means it is intended to absorb much of this
2 growth. South Lake Union can continue to grow sensibly if
3 we embrace new ideas and avoid outdated notions of urban
4 planning.

5 Seattle needs to grow up, not out, and South Lake
6 Union is the place to build taller buildings. Taller
7 buildings are the graceful solution to growth. They bring
8 the greatest benefits to the greatest number of people, and
9 not just in South Lake Union, but throughout the city.
10 Growing up is the best way to fight global warming, protect
11 our historic buildings and single-family neighborhoods, and
12 preserve views of our surrounding mountains and water for
13 the most people. Taller buildings generate more revenue for
14 the City to fund public services such as community centers
15 and libraries and allow more interesting public spaces at
16 the street level.

17 We look forward to continuing to work with the
18 community on applying these principles and shared values,
19 particularly on the Mercer blocks located between
20 Mercer Street and Lake Union Park. We wholeheartedly agree
21 it ought to be a special place for our city.

22 We have dedicated over ten years of our resources
23 to help realize the new Lake Union Park, the new street car
24 line that brings people to the park, and the greatly
25 improved pedestrian and bike-friendly neighborhood

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1 Valley Street, and we will continue our efforts to bring you
2 the greatest benefits to our neighbors in South Lake Union
3 and greater Seattle on those Mercer blocks.

4 Allowing taller buildings is urban planning for
5 the greatest good. Seattle is going to get bigger; this is
6 a chance to make sure it gets better.

7 Thank you.

8 MR. HOLMES: Call on Mike Kent, Noelle Smithart,
9 and Ann Art.

10 MR. FUGERE: Hi, my name is Joe Fugere. I'm an
11 owner of a restaurant at 2200 Westlake at the Pan Pacific
12 Hotel called Tutta Bella Neapolitan Pizzeria.

13 I'm a fourth -- like our early speaker, fourth
14 generation Seattleite, being the great grandson of Italian
15 immigrants. Born and raised on Beacon Hill. My mother and
16 sisters attended school on Capitol Hill and I attended
17 school on First Hill. I lived through the height of the
18 post-'62 World's Fair cultural explosion here in Seattle,
19 Boeing's booms and Boeing's busts, and the dot-com booms and
20 busts as well.

21 I currently live in the Mt. Baker neighborhood and
22 I'm considering a move to either downtown Capitol Hill or
23 South Lake Union. These locations are mostly driven by my
24 desire to be near multi-mobile transportation options and a
25 desire to live and work in a community with walkable options

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1 for groceries, entertainment, and essential services.

2 My experience as a business owner here in
3 South Lake Union has certainly had its ups. Working with
4 Vulcan is one of those ups. They're an example of a very
5 responsible developer, and they worked with me just to work
6 on how we can build a great neighborhood together and how to
7 do it right. I can personally attest to their credibility
8 as a responsible developer.

9 But in 2007, things were tough. A lot of
10 buildings were vacant. Many of my friends and fellow
11 business owners opened new businesses only to find
12 themselves closing them down a few months later. It wasn't
13 until worker and residential density increased that my
14 business began to thrive. For three years the 2200 location
15 was hanging on by a thread. Last year we turned the corner,
16 began to have a positive cash flow mostly due to Amazon,
17 Pac, U-Dub Medicine, Tommy Bahamas, and the continued
18 increase in occupancy of residential condos, apartments, and
19 office buildings.

20 I strongly support thoughtful and responsible
21 height density improvements, particularly Alternative 1. I
22 believe that the current draft proposal will continue to
23 make South Lake Union a vibrant and exciting community for
24 everyone. I love this city. Born and raised here. This is
25 a neighborhood and a city that I plan on living in, playing

26

1 in, working in, and owning a business in for the rest of my
2 life.

26 cont

3 Thank you.

4 MR. KENT: Thank you for the opportunity to
5 testify. My name is Mike Kent, and I'm an urban planner and
6 an actively engaged resident on Capitol Hill.

7 Seattle has the opportunity to become a model for
8 sustainable urban development, and few neighborhoods are
9 more central to Seattle's growth, both literally and
10 figuratively, than South Lake Union. Therefore, we must use
11 every opportunity to make it a vibrant neighborhood it has
12 the promise to be. In order for the neighborhood to reach
13 its full potential, the City must allow South Lake Union to
14 observe higher density mixed-use development as is studied
15 in the DEIS.

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16 The benefits of the future rezoning go well beyond
17 South Lake Union's borders positively impacting the entire
18 city and Puget Sound region. Encouraging higher density
19 development in South Lake Union is among the most beneficial
20 measures the City can take as it aspires to become
21 increasingly pedestrian, bicycle, and transit focused.

22 In order to limit suburban sprawl we must
23 concentrate housing and jobs in our highly walkable urban
24 core.

25 South Lake Union has an unmistakable opportunity

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1 to accommodate this new development as it is located within
2 walking distance of downtown and more established

3 SLU DEIS Public Hearing Comments.txt
neighborhoods like Queen Anne and Capitol Hill.
4 Furthermore, both public and private investments have
5 already enhanced the neighborhood's viability as a hub for
6 housing and job growth, from the South Lake Union street car
7 to the new Amazon headquarters to Lake Union Park. We
8 cannot afford to squander this opportunity.

9 The impacts identified in the DEIS are largely
10 positive. The Puget Sound Regional Council forecasts
11 1.7 million new residents in the region by 2040 and under
12 Alternative 1 something that could accommodate 21,000 new
13 households. We must not sell this opportunity short.

14 I look forward to watching high-rise developments
15 extend north from downtown through South Lake Union
16 enhancing our city's already remarkable skyline.

17 Finally, the future rezoning would positively
18 impact the transportation conditions, bringing more
19 Seattleites within walking distance of jobs, retail, parks,
20 and other destinations. Moving forward, the City must
21 continue to provide public infrastructure, from police and
22 fire protection, to schools, to road and sewer upgrades
23 needed for a complete neighborhood.

24 Thank you.

25 MS. SMITHHART: Hi. My name is Noelle Smithhart.

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1 I live in South Lake Union and I worked here for Vulcan for
2 about six years. I also sit on the South Lake Union Chamber
3 of Commerce board of directors, and today I'm speaking as a
4 resident from my own perspective.

5 I was born in Seattle and I grew up in
6 unincorporated King County near Covington, Washington. I
7 moved into the city years and years ago. In my youth I

8 experienced the epitome of suburban sprawl. Since moving to
9 South Lake Union over two years ago I've gotten rid of my
10 car. I fundamentally believe in density. I walk the walk
11 literally and I'm thankful the City is studying the impact
12 of increasing density in my neighborhood. I moved here
13 specifically for the vibrancy and vision of the stakeholders
14 for this urban center.

15 I do wish the City would look at the benefits to
16 the local economy and environment that is brought by
17 offering more opportunities to live, work, and play in our
18 urban neighborhood. I'm aware of some residents who don't
19 fully share this vision of increased capacity, but they are
20 not a voice for all residents. When I chat with folks
21 around the neighborhood about increased height and density
22 in SLU, it's a no-brainer. We're an urban center and this
23 is where height should go.

24 We moved here for this reason. More people living
25 and working in my neighborhood will support small local

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1 businesses and arts and cultural events. I'm personally
2 very excited about seeing more diversity in the forms of
3 buildings in my backyard. I eagerly anticipate taller
4 buildings with great design. As a city of [unintelligible]
5 zoning, I also hope they will consider developing
6 [unintelligible] design guidelines for South Lake Union.
7 Increased height offers more flexibility and ways to
8 incorporate great plazas and open spaces into building
9 design.

10 I also hope the City will consider appointing a
11 design review board more specific to South Lake Union. We

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12 are currently part of Queen Anne and Magnolia district, and
13 I believe that South Lake Union has a different aesthetic
14 and future than these neighborhoods. It might make sense to
15 also be in the same design review district as Uptown,
16 another urban center.

17 I love my neighborhood and I eagerly anticipate
18 new zoning that encourages more people in South Lake Union.

19 MR. HOLMES: Marty Goodman, Marni Heffron, and
20 Gloria Hennings.

21 MR. ROWE: Good evening, everyone. My name is
22 Matthew Rowe. I'm an architect and a resident of Queen Anne
23 Hill, and I'm an active participant over the last seven
24 years with multiple stakeholder groups in this neighborhood.

25 I'd like to thank the City and this neighborhood

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1 in its efforts to move this initiative forward. The
2 neighborhood has rapidly outgrown the current zoning which
3 is intended to be transitional from industrial to
4 commercial. Clearly this place wants to be more vibrant and
5 a more complete community.

6 The visual and aesthetic impacts shown in the
7 Draft EIS may appear significant to the average citizen, but
8 the EIS is required to go to the worst case and show full
9 build-out. The reality is there is no precedent for this
10 much development in a similar sized area, Portland, Seattle,
11 or even Vancouver, B.C. Construction of this much
12 development in 35 years will be remarkable. Hence the
13 impacts scale will be far less in our lifetimes.

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14 With that being said, it's still a lot of
15 development even if you have the numbers. You're talking
16 5,000 housing units and 6,000 jobs built over the no-build.

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17 But it comes down -- all these things come with
18 benefits. There will be an incentive system which yields
19 tremendous public benefits paid for by developers, which
20 would include affordable housing, day care, open space, and
21 improved public [unintelligible]. The current zoning offers
22 none of this.

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23 South Lake Union has both underutilized land and a
24 huge investment of infrastructure in a centralized walkable
25 location. No neighborhood is better suited to accept this

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1 growth, and I would say no other neighborhood is more
2 willing to take this much responsibly for smarter growth.
3 If not here, where? Certainly not Magnolia, Laurelhurst, or
4 Seward Park.

5 We calculated the equivalent land required for the
6 difference in this upzone would take four and a half
7 Discovery Parks, single-family, suburban office park
8 densities.

9 Finally, the GHG and VMT calculations in this
10 Draft EIS are calculated only for the differences between
11 the alternatives. The study should include a comparison of
12 consequences with this growth accommodating places like
13 Magnolia, Laurelhurst, or Seward Park. I think you'll find
14 the outcome much less appealing.

35

15 I support Alternative 1 as it yields the most
16 public benefits and the best outcome for our community.
17 This is a very responsible solution for the City of Seattle.

36

18 MR. GOODMAN: Hi. My name's Marty Goodman, and
19 I'm a real estate development consultant.

20 And over the last 20 years I've represented a

21 number of property owners and a number of construction
22 projects in the South Lake Union area. And I think we have
23 a tremendous opportunity here, and I think that's reinforced
24 by reading the Draft EIS. And I'm here to support the
25 rezone in the highest density that is put out in the EIS,

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1 and I want to make a couple of comments on that.

2 You've got three alternatives. The greatest
3 density is Alternative 1. As I look at it, I don't think
4 that is very dense for an area like South Lake Union. Along
5 the lakefront you have a requirement that you have to own
6 60,000 square feet of land in order to build a tower.
7 That's well over an acre, and in an urban environment an
8 acre is a tremendous amount of land.

9 I also want to point out that the buildings you're
10 proposing here are different than what's been built down
11 here before. We're talking about bulk versus height. We
12 were building bulk. Now you're proposing podium buildings
13 with towers, and the towers have to be tall in order to make
14 them financially viable. So I would encourage you to go as
15 tall as you can. Three hundred feet is not very tall. In
16 the downtown periphery the DMC zone, they -- buildings,
17 residential buildings can go 400 feet. So this is a nice
18 transition at 300 feet.

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19 So, I guess, in a nutshell I think it's great that
20 you're rezoning it. I strongly encourage a focus on
21 Alternative 1, and let's make the most of this. We have an
22 opportunity here where businesses want to move here, people
23 want to move here, the infrastructure's already in place.

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24 So thank you very much.

25 MR. HOLMES: Gloria Hennings, Joe Kenney, and
Page 42

1 John Pehrson.

2 MS. HEFFRON: Good evening. My name is
3 Marni Heffron, and I'm the principal of Heffron
4 Transportation.

5 And for the past eight months I have been leading
6 a preparation of what is known as the South Lake
7 Union/Uptown Triangle Mobility Plan. This is a neighborhood
8 transportation plan that's being sponsored by four community
9 groups, the South Lake Union Community Council, South Lake
10 Union Chamber of Commerce, the Uptown Alliance and the
11 Queen Anne Chamber of Commerce. As part of this plan we've
12 worked with DPD, with the Seattle Department of
13 Transportation, the Washington State Department of
14 Transportation, and King County Metro to develop a plan that
15 integrates all prior planning, transportation planning
16 projects, as well as updating those to account for new
17 infrastructure of projects, such as the bored tunnel to
18 replace the Alaskan Way Viaduct. We will be submitting the
19 recommended plan to you as our comments on the EIS so that
20 you can incorporate these recommendations into your
21 mitigation measures.

22 While there's many similarities between what is
23 listed as mitigation measures in our plan, we have much more
24 detail related to transit service enhancements as well as
25 infrastructure to support transit. We also worked with the

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1 Cascade Bicycle Club to develop a complete bicycle
2 enhancement program for the neighborhood. We agree that the

3 major infrastructure improvements that are already under way
4 or even under construction, the Mercer East project, the
5 Mercer West project, and the reconnected grid that will be
6 achieved with the north portal of the Alaskan Way Viaduct
7 Replacement Program would provide what is needed for the
8 vehicle needs in this neighborhood.

40 cont

9 But more needs to be done for the pedestrians, the
10 transit, and bicycles. And as noted in the EIS, the
11 combination of all of these improvements would mitigate the
12 adverse impacts associated with the growth of any of those
13 alternatives.

14 Thank you.

15 MR. KENNEY: Hi, I'm Joe. I've been -- wrong
16 notes. Okay.

17 My name's Joe Kenney. I'm a resident of
18 South Lake Union for 34 years, business owner in South Lake
19 Union for 43 years, and so I've got to see this neighborhood
20 from a day when it was extremely vibrant, just prior to the
21 World's Fair, and when this community had multiple
22 businesses that fed off one another and took care of one
23 another.

41

24 And then in the '70s, it -- when Boeing kind of
25 went downhill, so did our little neighborhood here. It kind

52

1 of rendered this neighborhood insignificant and -- for a
2 number of years. And to see what's going on here now, it
3 just -- it's a big opportunity I think for us to bring back
4 a vibrancy that -- it's an opportunity that's unmatched.

5 So I'd like to throw my support to
6 Alternative No. 1 personally, although I'd Accept 1, 2, or
7 3. Just make something happen.

8

Thank you.

9

10 MR. HOLMES: Jeffrey Rowe, Mahlon Clements,
Craig Hanway.

11

12 MR. PEHRSON: I'm John Pehrson. I live in
13 South Lake Union. I'm a member of the board of LUOA. I
want to cover quickly three points.

14

15 The impact of the huge increase in density
16 proposed for commercial buildings has been inadequately
17 recognized in this EIS. This proposal, all three
18 alternatives allow a 75 percent increase in the floor area
19 ratio or bulk of commercial buildings compared to existing
20 limits. The only example we have of something like that in
21 South Lake Union is the tallest of the Amazon buildings on
22 Boren between Thomas and Harrison. This building is clearly
23 too big to be called a breadbox. It could only be called a
24 double breadbox. The alternatives that were studied, all
25 three of them, would allow such buildings on 60 half blocks
in South Lake Union. This must be recognized in the

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1 aesthetics section and is in my view a huge negative impact.

2

3 Second point, in Section 1.7, in summary, and I
4 quote here, There are no significant unavoidable adverse
5 impacts identified in any of the elements of the environment
6 except transportation. I don't understand that section
statement and it will be used out of context.

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7

8 For all of the alternative studies, buildings will
9 impinge on actual airspace, windbreaks will make landings
10 and takeoffs unsafe. There's huge increase, although
11 unquantified, of shadows. Lake Union Park will be in
shadows a significant number of months, and the views of

44

12 Lake Union and the Space Needle from an existing residence
13 in this neighborhood or other neighborhoods that are
14 currently protected by zoning will be eliminated. The
15 statement is wrong and should be changed.

44 cont

16 Thank you.

17 UNIDENTIFIED SPEAKER: I've been a resident of
18 South Lake Union for about four years, almost entirely in
19 the Cascade neighborhood.

45

20 One of the things that I find most engaging,
21 vibrant, important is the foot traffic that has come from
22 apartments and developments in that neighborhood. And as an
23 artist and a resident, I'm a big fan of density. More
24 people, more interaction, more connection, and more
25 importantly, I think, to get away from big box, big

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1 retailers and allow mom-and-pop shops or individuals
2 requires a certain amount of density to have them be able to
3 sustain their environment, their work, and their ability to
4 grow within the neighborhood. And because of that I
5 understand the concept about view, but it seems like
6 throwing the baby out with the bath water. It's give up a
7 little bit, we can probably gain a lot by creating an
8 environment that allows more people to engage with each
9 other.

10 Thank you.

11 MR. CLEMENTS: My name is Mahlon Clements and I am
12 a resident of Lake Union.

46

13 I live just east of Gas Works Park and I'd like to
14 point out that the views will not be impacted by any of the
15 scenarios of the beloved Space Needle and hopefully the
16 views of the city will become better just as the views are

17 better now than they were in 1940. So I look forward to the
18 growth and development.

19 But I'm here to speak tonight about a series of
20 six workshops I led three years ago as an urban designer
21 with representatives of over 40 community groups of the
22 neighborhood. And we met in a series of three and four-hour
23 sessions talking about what their vision for the future was,
24 and they concluded -- they concluded that there were seven
25 priorities: Connecting two centers; create more housing of

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1 all types; integrate and expand transit; density around --
2 create density around public investments that already exist,
3 such as parks and transit; make great streets; and create
4 shared community facilities; and, lastly, commit to the
5 environmental sustainability.

6 This group very much understood that this long
7 wish list required financing, and it was a conversation
8 about -- it was a question of how, not if, and quality of
9 the buildings and design standards, not just mass quantity.
10 And very much endorsed the notion of a significant amount of
11 development which would be required to create all these
12 communities, but didn't certainly preclude the quality of
13 life of the community. In fact, required it to grow into
14 the place that these people wanted it. The letter -- the
15 conclusions were endorsed in a letter to city council and
16 signed by representatives of all 40 groups, many of who
17 continue to support Alternative 1.

18 Thank you very much.

19 MR. HOLMES: Brandon Weber, Jerry Dinnendorf, and
20 Dan Foltz.

21 MR. HANWAY: I'm Craig Hanway. I am a Queen Anne
22 resident and I chair the Queen Anne Community Council Land
23 Use Committee.

24 Over the last five years I've worked on many
25 planning efforts in South Lake Union and Uptown, including

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1 Mercer Street Stakeholder Group, the Queen Anne/South Lake
2 Union Envisioning Charette, the South Lake Union Urban
3 Foreign Study, and the South Lake Union/Uptown Mobility
4 Study.

5 Queen Anne and the South Lake Union community
6 group have worked closely together to make connections
7 between our two urban centers and to manage increased
8 density. We already know that growth is coming. The
9 citywide targets are for about 120,000 new jobs and 70,000
10 new residential units by 2031. I support the City's policy
11 to concentrate more than half of that density in the six
12 urban centers including South Lake Union. We are expecting
13 higher growth targets for the Uptown Urban Center as well,
14 and I support that.

47

15 I feel strongly the best chance we have to manage
16 density is to increase density in urban centers. We have an
17 opportunity to create a real successful urban neighborhood
18 which utilizes existing infrastructure, avoids urban sprawl,
19 protects single-family neighborhoods, and allows people the
20 opportunity to live closer to where they work.

21 The EIS document I think is misleading in a way
22 because it only looks at impacts of density in South Lake
23 Union. It would be more useful as a document if it compared
24 the impacts in South Lake Union to the impacts if the
25 density was in other parts of the city.

48

1 We are looking at a similar concept across Aurora
2 in the Uptown Urban center. The deep bore tunnel allows us
3 to connect the street grid and look at new transit
4 opportunities. So I support Alternative 1 in order to focus
5 density in urban centers.

49

6 MR. DINNDORF: Is there someone in front of me?

7 MR. HOLMES: Go ahead.

8 MR. DINNDORF: Good evening. My name is
9 Jerry Dinndorf. I'm the current president of the South Lake
10 Union Community Council.

11 As the city's designated steward of the
12 neighborhood plan, it is our responsibility to represent the
13 diverse interests of our community on public policy and
14 development issues impacting the neighborhood plan, and I
15 invite you if you're not familiar with the community council
16 to visit our Webpage and find out who we are.

17 Over the past 15 years the community council has
18 been involved in numerous planning efforts, including
19 development of the urban design framework that was
20 previously mentioned earlier tonight, and which there are
21 copies of out in the vestibule. The vision documented in
22 the framework is for a highly livable, vibrant, urban
23 neighborhood that capitalizes on the growth that is coming
24 to provide neighborhood amenities currently lacking in this
25 community. These include improved parks and increased open

1 space, streetscape improvements, a community center, market
2 rate and affordable housing, schools and day care, green

3 buildings, view protection, historic preservation, bike and
4 pedestrian trails.

5 In reviewing the EIS, the South Lake Union
6 Community Council came to a few high-level observations.
7 Growth is coming. People may dispute the growth
8 projections, but the current growth is outstripping the
9 forecasted growth. Zoning needs to be changed now to
10 capture the benefits of growth or forgo the opportunity.
11 Any building that is put in place will be here for 40 to 50
12 years.

13 The growth assumptions for jobs, households,
14 office, and retail square footage are the same for each of
15 the alternatives over the existing alternatives. As a
16 result, the differences in the environmental impacts for
17 these alternatives as -- are almost insignificant and the
18 EIS notes there are no unavoidable adverse impacts due to
19 height, bulk, scale, viewsheds, light and glare, these
20 alternatives.

21 So the only question that remains is how high or
22 how the neighborhood wants to see growth distributed. Is
23 low-rise buildings built property line to property line with
24 few, if any, community benefits, or in high-rise buildings
25 it can help achieve community goals. South Lake Union

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1 Community Council supports the City's intention to use
2 incentive zoning whereby property owners will receive height
3 [unintelligible] baseline zoning. In return for providing
4 these neighborhood improvements it will help achieve the
5 community vision.

6 Thank you.

7 MR. HOLMES: Mike Kenney, Michael Blumson and
Page 50

8 David Hiller.

9 MR. FOLTZ: Good evening. I'm Dan Foltz. I am a
10 principal of Weber Thompson so I work in the neighborhood.

11 I'm one of the -- I was one of the leads for the
12 urban design framework for South Lake Union, and I'm a
13 member of the board as well of the community council. I
14 happen to live on Capitol Hill. I enjoy a fantastic view
15 near St. Marks out towards Elliott Bay and beyond. My view
16 will be impacted by Alternative 1, which I personally favor,
17 but I'd rather focus on a few technical items as a member of
18 the South Lake Union Community Council.

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19 For many of us that reviewed the document, the
20 Draft EIS is less technical, analytical, or concerned with
21 detailing mitigations than expected and hoped. It actually
22 seems to some of us to be more of a compendium of or
23 reference to other studies over the years, definitions of
24 terms and conditions, policy quotes, and so on. We really
25 wanted to see more meat in the actual analysis. Among other

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1 things, my colleagues and I were expecting to see much more
2 connectivity to and reliance on the urban design framework
3 as stated in the very same scoping documents from the city.

4 The UDF already represented a lot of heavy lifting
5 and analysis, potential mitigations and the like, which
6 could have contributed significantly to the EIS. The SLU
7 community counsel is strongly in support of the principles
8 of the UDF.

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9 Height, bulk, and scale. The EIS presented
10 numerous graphic presentations of the various proposed
11 heights but did nothing with regards to analyzing bulk,

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12 i.e., floor plate size options, or scale of podiums as well
13 as of towers and their associated mitigations.

54 cont

14 The UDF worked extensively on dozens of various
15 building typologies, tower heights, podium heights,
16 proportions, floor plate sizes, FAR's, et cetera. The EIS
17 simply accepted the proposed parameters and modeled them
18 with different heights showing at times questionable views
19 of tower development potential.

20 Thanks.

21 MR. KENNEY: My name is Mike Kenney.

22 I live in South Lake Union. I am a small business
23 owner in South Lake Union. I'm on the board of the South
24 Lake Union Community Council. I walk around the South Lake
25 Union. Ride my bike around South Lake Union. I guess I got

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1 a dog and a kayak; I'd be like the ultimate South Lake Union
2 resident.

3 But I was going to speak first on behalf of the
4 South Lake Union Community Council. I looked specifically
5 at the transportation section and we felt that -- I guess
6 our main issue was we wanted to see a mobility plan -- the
7 South Lake Union mobility plan incorporated more into that
8 section. I know members of the community council spent
9 quite a few hours working on that and we just kind of want
10 to see that incorporated more in there.

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11 On a totally different note, just for me
12 personally, just taking a look at the pros and cons of
13 overall density, it's really astounding to me to see the
14 differences in what people think. There's the density
15 option where there's going to be bringing more people, more
16 jobs, more commerce, more pedestrian-friendly streets versus

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17 it's messing up my view. And then there is -- you know,
18 with more commerce, with more cash there is the ability to
19 create better transportation options, you know, more bus
20 lines, more street cars. There's going to be more, you
21 know, intelligent people coming to our community, more
22 business professionals coming in versus it's messing my view
23 up. To me it just makes total sense to add more density.
24 It's a positive thing. I think overall either of the first
25 three options look good to me. So thank you for your

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1 considerati on.

2 MR. BLUMSON: Hello. Thank you. My name is
3 Michael Blumson. I'm a member of the South Lake Community
4 Council and also work in affordable housing in the
5 neighborhood and represent many of the low income residents
6 of our community.

7 First of all, I wanted to thank the city staff who
8 did the work on this. I know it's a lot to put something
9 like this together. So I wanted to appreciate that.

10 I was on the community council's housing review
11 team for that section and I would like to highlight a few
12 points that we'd like to bring up.

13 First of all, the community council would like the
14 City to conduct a more complete inventory of housing in
15 South Lake Union. Many of the buildings referred to in the
16 Draft EIS is not rent restricted, making it attractable,
17 affordable, and might represent opportunities for housing
18 preservation resources. Having a more accurate snapshot of
19 housing affordability in South Lake Union would be helpful.

20 Second, we would like to see more creative

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21 solutions in the mitigation section. Let's find other ways
22 to preserve our existing housing stock and keep them
23 affordable, such as utilizing TDI's and making renovations
24 easier and faster than building codes.

58 cont

25 Third and lastly, an additional level of analysis

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1 to help interested parties make distinctions between various
2 alternatives would be appropriate. The current language
3 simply declares that all alternatives meet the City's grow
4 targets but does not adequately describe what impacts the
5 alternatives might have on the development potential for
6 both market and affordable housing development. This
7 analysis is needed because of the body that represents the
8 interests of low income residents and workers in the
9 neighborhood. The community council is interested in
10 seeking policies that enhance the potential for utilizing
11 the incentives only program.

12 We have heard from the City that there may be up
13 to 33 million in funds generated by that program. Incentive
14 zoning is one of the few tools of the city disposal to make
15 sure that affordable housing is developed within South Lake
16 Union and not pushed to the peripheries of the city.
17 Similarly, the funds would also go to developing a community
18 center which is one of the community council's priorities
19 and which would fulfill an important need for low income
20 individuals and families in the communities. The Draft EIS
21 needs to provide guidance about which alternative would best
22 serve these needs.

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23 Thank you.

24 MR. HOLMES: Saintz Crossley, Patricia Kushmerick,
25 and Giacomo Licciardi.

1 MR. HILLER: Good evening. For the record my name
2 is David Hiller and I'm advocacy director for the
3 14,000-member Cascade Bicycle Club.

4 I stand before you this evening to offer our
5 support for Alternative 1, but I will mostly speak to the
6 transportation element. Throughout the last decade Cascade
7 has been deeply involved in the neighborhood between Mercer
8 Corridor Stakeholder Project, the Neighborhood Vision
9 Charette, South Lake Union Mobility Plan, and on the street
10 car project.

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11 We've been around. We've worked with most of the
12 employers in the neighborhood. We worked with Fred Hutch,
13 SBRI. We're working with Amazon, CTR people, Group Health.
14 Thousands of our members work in this neighborhood,
15 community group neighborhood. So when we talk about the
16 transportation element, our little bone to pick is first and
17 foremost it's the wrong E -- it's the wrong level of
18 service.

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19 Vehicles capacity isn't the level of service we
20 use in the City of Seattle. Adopting our comprehensive plan
21 and development is streamlined [unintelligible]. So why
22 [unintelligible] capacity in intersections in a community
23 where more than half the trips are done by bus and walking
24 transit is beyond me.

25 And all the growth. We've had 46 percent growth

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1 [unintelligible] downtown in three years. Most of that's
2 driven by the land use in Belltown, Capitol Hill,

3 Denny Triangle. That brings us in part to our support for
4 Alternative 1. That density brings resorts designations
5 closer together and provides more travel options
6 [unintelligible] travel time.

63 cont

7 Also, we're a bit disappointed in the lack of
8 multi-mobile analysis. With having seen the Bellevue
9 Multimodal Concurrency Study [unintelligible], Eastside
10 Concurrency Study, the new multi -- the new urban arterial
11 LOS and 2010 highway capacity manual, there are a number of
12 peer-reviewed tools that could have been used to do a more
13 fine grain analysis of travel demand in the city. The City
14 of Seattle [unintelligible] definitely specifies
15 improvements for the region, and with respect to your time
16 I'll cut it short generally, but in addition to that, we
17 have a recently completed study at the South Lake
18 Union/Uptown Mobility Plan which we'd like included in the
19 official record and potentially for a list of mitigations
20 [unintelligible].

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21 Thank you.

22 MS. CROSSLEY: Katharine Crossley, fourth
23 generation on both sides. Seventy-five years my family on
24 Capitol Hill.

25 This is just a warning. I've seen it from

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1 long-term. Think about the Suez Canal being widened,
2 Panama Canal being widened. This traffic that's going to go
3 up in the north, which -- to the north pole. No mitigation
4 can compensate the loss of -- to our city of a priceless
5 inherited treasure countless cities can only dream of.
6 Crowned cities of the world draw multitudes with our unique,
7 magnificent architecture, London, Paris, Rome. And Seattle,

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8 too, blessed with nature's supreme architectural
9 achievement. Mountains, lakes, hills spread before us in
10 views which we and visitors experience but are now
11 threatened. A fleeting victory in property appreciation
12 pushed by speculation which is threatened by renewal
13 demanded by these leveraged financing should be recognized
14 for what it is, not in the long-term interest of Seattle.

15 The Volunteer Park Water Tower as a designated
16 view when few venture the arduous climb while below crowds
17 gather, photo, and enjoy the view from SAM by its camels and
18 on the wall below demonstrates to me and many examples in
19 your report, the slanted report of the EIS.

20 Thank you.

21 MR. HOLMES: Christine Licciardi, Marty
22 Kushmerick, and Dewey Walker.

23 MS. KUSHMERICK: My name is Pat Kushmerick. I
24 live in South Lake Union.

25 I have read much of the EIS and some of it I

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1 disagree with, but tonight my focus is the realistic ability
2 for families of all income brackets to live in South Lake
3 Union. From what I have read I conclude that this urban
4 center will realistically only be populated with singles,
5 [unintelligible], seniors, and commuters. These groups are
6 a valuable component of the community, but no neighborhood
7 is complete without children of all ages.

8 What is missing from this EIS are the nonrevenue
9 producing components of family life that include at a
10 minimum grammar and middle schools, a library, sufficient
11 safety services and recreational areas, community spaces,

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12 improved public transportation, walkability, and grocery
13 shopping in addition to whole paycheck. Currently
14 South Lake Union is limited to one P-Patch. Nowhere in this
15 EIS did I find mention of additional ones. Even with the
16 current population there is a long waiting list to get a
17 patch. Towers that might be built along the east side of
18 Fairview will create shadows. Vegetables and flowers do not
19 do well in shadows. My conclusion is that without these
20 components to foster family living, South Lake Union will
21 never meet the expectation of developers, city planners, or
22 business investments.

67 cont

23 Finally, I have enough candles on my birthday cake
24 that I can realistically expect never to experience the full
25 growth of South Lake Union. I'm doing this not for me but

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68

1 for the generations to come. For them I want in the words
2 of the Lake Union Opportunity Alliance, it done right in my
3 backyard.

4 Thank you.

5 MS. WALKER: Good evening. My name is Dewey
6 Walker, and I'm new to Seattle and I'm a current resident of
7 South Lake Union area.

69

8 I am here to support Alternative 3. In
9 particular, I want to lend my support to your preserving the
10 long established precedent of step down heights of buildings
11 as they go down towards South Lake Union -- down towards
12 Lake Union. It just doesn't make sense to me to have three
13 and 400-foot buildings right at the base of the stepdown
14 towards Lake Union.

15 Thank you.

16 MR. HOLMES: Brian Estes, Judith Freeman, and
Page 58

17 Lloyd Douglas.

18 MS. KUSHMERICK: Hi. Thank you for allowing me to
19 speak.

20 I'm Marty Kushmerick. I live in Cascade
21 neighborhood, and I have an office in UW South Lake Union
22 campus. So I walk back and forth quite a lot.

23 The city council realizes, I believe, that the
24 blocks around Lake Union, among short anyway, is -- are
25 iconic to Seattle. In fact, a special Seattle water view,

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1 you might say. Our part of the city has a very special
2 feel. For me, maintaining this environment while developing
3 an urban center means that visual access to spectacular
4 views of the mountains and Seattle Center and Queen Anne to
5 the west, Lake Union on the north, and the slopes to the
6 east must be maintained. Most of the current plan with
7 height -- with increased heights obliterates this and I
8 believe that it should be possible to maintain, as a
9 previous speaker said, a stepdown, maintain view corridors
10 while consistent with greatly increased density.

11 My next point is that the density increase in the
12 South Lake Union neighborhood is, in fact, the highest of
13 any neighborhood at all, and so my question to council is
14 doesn't -- is, in fact, South Lake Union going to absorb
15 most of the increase in Seattle within the next 20 to 30
16 years.

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17 And lastly I want to address transportation. And
18 you heard mitigation efforts, and Alternative 1 in
19 particular states that it has the least impact apparently
20 because it's planned that all people who live in Seattle

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21 will walk. I want to know if, in fact, that's realistic.
22 Are they -- Amazon and others, do they have some incentive
23 to have people not drive, walk, et cetera, because as the
24 previous speaker, if we're going to have a mixed community,
25 they need space for families, et cetera, and all the things

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1 that families need.

2 Thank you very much.

3 MR. ESTES: I'm Brian Estes, a resident of
4 South Lake Union and I work downtown for 30 years.

5 The EIS is inaccurate and incomplete in several
6 areas. First, land use. The EIS statement on Page 115 that
7 the proposed action is generally consistent with adopted
8 city plans and policies and regulations is incorrect as the
9 household and growth projections are substantially higher
10 than the targets in current urban center plans. South Lake
11 Union is only 340 acres, or 9.2 percent of the total land
12 area of Seattle's six urban centers. It is absorbing a
13 disproportionate share of housing and job growth especially
14 under Alternatives 1 and 2. I think the EIS should address
15 this.

73

16 The EIS does not adequately address the fact that
17 land use under Alternative 1 is inconsistent with land use
18 policies that reflect the stepdown to the water approach for
19 building heights in Seattle.

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20 Flight paths, the EIS is inadequate since it does
21 not address buffers in detail and [unintelligible] the wind
22 tunnel, wind analysis which should be completed to
23 adequately assess land use and other impacts.

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24 The aesthetic portion of the EIS, especially
25 Appendix D, is incomplete and therefore misleading. None of

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1 the graphical representations show the tons of 400-foot
2 towers already permitted in the Denny Triangle or other
3 development in Uptown, which will occur in the next 20
4 years, which will also alter South Lake Union's views
5 significantly. The EIS should address these representations
6 as well.

76 cont

7 The EIS conclusions that the shadow impacts are
8 not expected to result in significant adverse to
9 environmental impacts is incorrect. The close examination
10 of Figures 29 through 44 in Appendix D show significant
11 shadow effects on open space parks and protected shorelines.
12 The EIS should address this as well.

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13 In closing, let's not let jumbo-sized towers that
14 clearly belong in downtown Seattle and the Denny Triangle
15 run rampant to the north all way to the lake as
16 Alternative 1 and 2 suggest. Let's keep South Lake Union
17 with unique shoreline character north of downtown, home to
18 future growth and density that represents smart development
19 but not on a human scale.

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20 Thank you.

21 MS. FREEMAN: Hello. My name is Judith Freeman.
22 I live in the neighborhood and I intend to submit my
23 comments but I wanted to make one or two points.

24 First of all, I completely support the stepdown
25 Alternative 3 version. While I understand that this is

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1 designated an urban area and it'll be dense, it seems to me
2 that this South Lake Union area really consists of more than

3 one area. And specifically I'm talking about the Mercer to
4 Valley and around to the west being wrapped up into this
5 urban density and, you know -- and I'm most concerned about
6 that particular area. And I'd like to point out that
7 putting my concern there makes me where I live very
8 vulnerable to the loss of view.

79 cont

9 But my loss of personal view is not as important
10 to me as maintaining that area around the lake. I don't
11 know if there's a way to separate it out when they designate
12 those areas. It's hard for me to imagine that you have an
13 urban area that goes all the way up to the lake. So I would
14 just urge -- I know you've taken some care with that but not
15 sufficient care with recognizing that that's a unique zone.
16 You only get one chance to do it right.

17 One comment on transportation, does anybody drive
18 down Westlake at 5:00 o'clock today? Now?

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19 MR. HOLMES: Ron -- excuse me. Lorie Groth, Chris
20 Gemmill, and Martin Kaplan.

21 MR. DOUGLAS: Good evening. My name's
22 Lloyd Douglas. I'm a member of the Cascade Neighborhood
23 Council, member of the South Lake Union Community Council,
24 and a member of the -- and board member of Lake Union
25 Opportunity Association.

73

1 And tonight I'm going to speak about the housing
2 portion of the study. Extreme upzone of Alternatives 1 and
3 2 will inflate land prices beyond what could be affordable
4 for our workforce and affordable development organizations.
5 Since most of the half blocks are owned by several single
6 owners, there would be few opportunities for partial block
7 development for workforce and family housing resulting in

81

8 further homogenization of the neighborhood. The goals
9 outlined in this section are logical and should be
10 considered as a minimum. Requiring funds to stay in the
11 neighborhood could also be explored.

12 Thank you.

13 MS. GROTH: Hi. My name is Lorie Groth and I'm a
14 resident of this neighborhood and am on the South Lake Union
15 Community Council. I'm the part of [unintelligible] board.
16 I'm still on Cascade Neighborhood Council and
17 [unintelligible].

18 Anyhow, tonight I want to address the Draft EIS
19 and some of the things I'd like to see in the next version
20 of the EIS, specifically around transportation and around
21 the details, the metrics that we can better understand.

22 When it comes to transportation, for example, it
23 was so complex that we actually had to hire a consultant to
24 help us understand it. To be more exact, when we looked
25 into the models, what the MXD model does and how it was

81 cont

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1 validated against the IC model, even our transportation
2 consultant who's been working, who's a doctor who's worked
3 in this field for 15 years, all he could come back with was
4 where's the meat. I don't understand how they came up with
5 the most optimistic conclusions you see in some of the most
6 aggressive models.

7 As a layperson in tran -- in public land and
8 these -- building of things like that, I really would like
9 these kind of things to be addressed in both the
10 [unintelligible] summary so that when I read the first few
11 pages I understand what's going to happen in my neighborhood

12 and we have open and honest conversation related to what
13 building heights should be. I don't want to see red boxes.
14 I also don't want to see downtown, and I think South Lake
15 Union blocks are -- by the park are quite special.

82 cont

16 Thank you.

17 MR. GEMMILL: Good evening. My name is
18 Chris Gemmill. I'm a South Lake Union resident, small
19 business owner also in South Lake Union.

20 As I listen tonight as a resident here I want to
21 point out that I've also moved here with, you know, great
22 expectations of what South Lake Union could be. I moved
23 here in 1999 when there was virtually nothing going on. Of
24 all the people that I talked to, vibrancy and things like
25 that are key issues. Nobody really likes the current zoning

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1 plan, Alternative 4, and I really have yet to talk to too
2 many people who are very excited about Alternative 1 either.
3 Zoning's a sensitive issue and we know that's not the topic
4 tonight, so I want to hit on other aspects of the EIS that
5 are of concern.

6 Lorie just mentioned issues with the
7 transportation section. There's also issues with the air
8 quality section if the transportation section is off base.

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9 The air quality section only addressed three
10 intersections, all on Mercer. There's nothing in there
11 addressing Fairview and Denny, nothing addressing Fairview
12 and Dexter. And if the transportation study is off, a lot
13 of the [unintelligible] emission, calculations in the air
14 studies might be off as well. If you're traveling on
15 Westlake tonight, I walk Dexter every day and with the
16 addition of the red turn arrow at Dexter and Mercer due to

17 the addition of the bike lane on Dexter which made Dexter a
18 three-lane road, I smell gas all day. Three months ago,
19 didn't happen. So you can claim not put too much weight
20 into the current idea that there's nothing wrong with the
21 potential air quality damage.

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22 Additionally, I think the -- just the way the EIS
23 is written, the taxpayers put a lot of money into paying for
24 that and it should be -- there should be at least an
25 executive summary that is relatively comprehensible by the

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1 average taxpayer.

2 Thanks.

3 MR. HOLMES: Jim Goodspeed, Don Miles, and
4 Mary Bacarella.

5 MR. KAPLAN: Good evening.

6 I'm going to join a lot of others tonight and tell
7 people I'm pretty excited about Alternative 1. And my
8 name's Martin Kaplan. I'm an architect. I'm a Queen Anne
9 resident, a long-time member of the community council. I'm
10 a member of our Seattle Planning Commission, the stewards of
11 our comprehensive plan. And I will join my colleagues in
12 the next few weeks to issue our complete comments on the EIS
13 where we'll look at every single section, give you our
14 detailed comments soon, but tonight I'm speaking as an
15 individual in my own opinions, not representing anybody but
16 myself.

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17 For years I and scores of other concerned
18 citizens, professionals, neighbors, together with city hall
19 worked tirelessly together in analyzing and identifying
20 where best to focus our forecasted future growth in jobs and

21 housing. People and jobs are coming to Seattle and we're
22 pretty excited. It is our future. The most critical step
23 in protecting and enhancing our future is to strategically
24 and smartly plan for this route within dense and diverse
25 neighborhoods that are close to all services and supported

77

1 by 21st century infrastructure.

2 The focus of our future growth in housing and jobs
3 will be within our six urban centers. Among those six,
4 South Lake Union by far possesses the greatest adjacencies
5 to downtown jobs, multimodal transportation choices, active
6 urban open spaces, and tremendous future land use and
7 transportation opportunities for businesses, housing, parks,
8 and families.

9 The completion of the north portal will knit
10 together -- knit back together our grid, provide fabulous
11 connection to the Center and beyond for walk, bike, and
12 ride.

13 In conclusion, following months there will be time
14 to visit seriously about land use regulation, building
15 height, incentive zoning, and other related opportunities,
16 but today we should all agree that South Lake Union is the
17 one urban center that can and should accommodate the largest
18 growth in jobs and housing and we should embrace the
19 incredible opportunities that lie ahead. We cannot afford
20 to be shy about pushing new envelopes and inspiring the
21 growth of what may be our largest neighborhood and providing
22 the supporting incentives necessary to actually achieve our
23 dreams in one very right and ripe place in Seattle.

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24 Thank you.

25 MR. GOODPSEED: Hi. Jim Goodspeed. Resident in
Page 66

1 the neighborhood and I am an architect.

2 I would like to say -- kind of reiterate the past
3 couple comments that I think the summary is written a little
4 big. It's a 600-page document and I think the goal would be
5 to educate the public with it. To expect the public to read
6 through the 600 pages -- I mean, I'm glad that meat is
7 there, but for the layperson who doesn't work in this area,
8 they should be able to read a summary that has more depth to
9 it, such as there's statements that say the shadows or the
10 glare in Version -- Alternative 4 versus Alternative 1 are
11 much different. That's what it says in the summary and I
12 think that can -- I think that's just too vague for comment,
13 people to read that.

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14 Also, as an architect I think that the models
15 shown in the aesthetic section don't appear to be accurate,
16 from what I'm seeing. Looking at the idea of the two towers
17 per block. So we, the community, have actually modeled that
18 ourselves using Google Earth, and that is available to you
19 if you contact us, LUOA.org. And I would urge that the City
20 also makes your model available to people to zoom around or
21 select the views that are relevant to them. I think that
22 the views are kind of vague and from a bird's eye
23 perspective or they're right down in the street.

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24 I also have noticed that some of the shadows are
25 rendered incorrectly. Particularly in Appendix D, Figure 29

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1 on 12:00 a.m. for Alternative 1. The shadows on the Mercer
2 blocks don't look correct. I would like to look at the

3 rest, but if I could get -- see the model, see what the rest
4 of the mistakes are.

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5 And one last point I'd like to make is that dense
6 cities such as Chicago and New York build their urban
7 centers naturally around rapid transit stops. The EIS
8 states that there not only is no rapid transit stop now,
9 which we know, but there isn't even one planned in the
10 future. So -- I know. I questioned, though, that point and
11 that the traffic talked about in the traffic section says
12 that it's not going to be that much more traffic in
13 Alternative 1 than Alternative 4. I could believe that if
14 there was going to be a rapid transit stop, but with a
15 Manhattan-like neighborhood density that's proposed in
16 Alternative 1, I doubt that would happen.

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17 Thanks.

18 MS. BACARELLA: Good evening. My name is
19 Mary Bacarella. I'm the vice president of Brand Management
20 for the Space Needle. And I want to thank you for the
21 opportunity to comment on the Draft EIS.

22 This urban forum study is a vital interest to us
23 as some alternatives could severely impact the Space Needle.

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24 The Space Needle attracts 1.3 million visitors a
25 year and generates \$280 million per year in economic benefit

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1 to the region. This needle is the city's most recognized
2 symbol of Seattle. The Space Needle's landmark status is
3 due in part to its unique hourglass shape, its tripod legs,
4 and the fact that it's the only one of two steel towers in
5 the world. The other being the Eiffel Tower in Paris.

6 We're very concerned because the visual depictions
7 in the Draft EIS show that views to the Space Needle will be

8 impacted by Alternative 1 and 2. Yet, the language of the
9 Draft EIS concludes that there's no significant adverse
10 effect to the views of the Needle. The thinking behind the
11 Draft EIS conclusion seems to be that, well, it's okay to
12 cut off our legs. I urge you to re-read the landmark
13 nomination of our iconic structure and you'll see that the
14 totality of our beloved Space Needle and its tripod legs
15 make it an icon. Lopping off a significant portion of this
16 view is an adverse impact that must be recognized in the
17 final EIS. Mitigation measures and perhaps new alternatives
18 must be developed to avoid this impact. We believe that
19 growth in the South Lake Union neighborhood should occur in
20 a way that preserves the prominence of our city's premier
21 landmark.

22 Thank you.

23 MR. HOLMES: Catherine Benotto, Steven Wood, and
24 Chris Masson.

25 MR. MILESON: I'm Don Miles. I'm a 35-year

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1 resident of Queen Anne. One of my daughters went to the
2 Center School, was a graduate of Center School. I'm a
3 member of The Wooden Boat Center. I've been involved in
4 most of the stakeholder groups that have been discussed, and
5 I've also been involved in the design guidelines for the
6 Uptown Urban Center and the urban village at the top of
7 Queen Anne.

8 I wanted to stress that the EIS and -- is really
9 not a design document. And the design guidelines that was
10 something that was mentioned earlier and the involvement of
11 the community in the design guidelines is what's really

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12 important. The characterization of towers and podiums and
13 so forth don't really describe the level of design detail
14 and the opportunity for wonderful design in the South Lake
15 Union area that we're all anticipating.

16 I very strongly support Alternative 1. Taller
17 tower buildings ensure higher quality construction and
18 design and give us the flexibility to create the intimacy,
19 the pedestrian orientation, the stress on the public realm
20 and not the car that we've heard so much about tonight.
21 That kind of approach to maximizing will give us the maximum
22 amount of opportunity to create the public realm that is so
23 important to the district.

24 Thank you.

25 MS. BENOTTO: My name is Catherine Benotto. I'm

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1 principal at Weber Thompson here in South Lake Union. I
2 have a sister on the planning commission but my comments are
3 not on behalf of the planning commission; they are my
4 opinions only.

5 I have two comments both related to open space.
6 And the first one is related to the distribution of open
7 space through South Lake Union. The EIS notes a couple gaps
8 of some areas that are poorly served, but I urge you to have
9 a finer grain analysis in looking at the open space to some
10 of the smaller areas that are needed, and particularly
11 looking at the city's need for neighborhood development
12 documentation for South Lake Union. And that neighborhood
13 development criteria relates to the livability of an area,
14 and South Lake Union currently falls short in providing
15 those smaller open spaces, parks and plazas in close
16 proximity, very close proximity to where people live and

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17 work.

18 I should add that Weber Thompson assisted the City
19 in looking at that analysis and I saw generally one was
20 needed on about every block.

21 Which is related to my second point, which is on
22 public open space as an amenity for increased density. The
23 3D models assumed that that would not be as an option and
24 the pedestrian-level views, it showed that it wasn't really
25 building height that was the most impactful but the

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1 [unintelligible] relentless unbroken base of the building
2 because none of them assumed that the open space would be an
3 option. So my point would be -- is should -- if that is the
4 worst-case scenario going forward, then perhaps the open
5 space should be a requirement for the increased density a
6 nonoption.

7 MR. HOLMES: Brian Ramey, Renee Staton, and
8 Alan Hart.

9 UNIDENTIFIED SPEAKER: I want to thank you for
10 providing this forum for us to give public comment. I guess
11 I really wasn't aware that this was going to be a big vote
12 for your favored alternative.

13 But I work here in South Lake Union. I have a
14 middle-to-low income here. I've heard lots of talk about
15 affordable housing; I've heard lots of talk about tall
16 highrises, which mean very expensive housing; I have heard a
17 whole lot of talk about something, I can afford to have my
18 family live here, get rid of my car, and stop supporting
19 urban sprawl. So that's something I think that really needs
20 to be addressed very, very seriously.

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21 If we're going to have an overall community, this
22 involves -- I heard talk about some kids. I heard talk
23 about schools, you know, to really make a rounded community.

24 Also heard somebody else mention about, you know,
25 thousands of people commuting to work, which is probably why

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1 because, you know, you really can't afford to live here.
2 And it would be nice. I'd love to help contribute to
3 greening up our city and not driving a car into work or
4 taking up parking spaces and that type of thing.

5 The second thing I'd like to address is the
6 pictorial view of what the density is going to look like.
7 I'd like to see it in a more fair end scale with each other
8 comparing the different alternatives. And it'd even be
9 nicer to see it in a 3D format that was to scale, Queen Anne
10 Hill and Capitol Hill beside it so we could have a true
11 picture of what that was really going to look like.

12 And time is up. Thank you very much.

13 MR. REMY: Hi. My name is Brian Remy. I live in
14 Eastlake.

15 And I'm going to stick to the environmental
16 impacts here. The State of Washington Shorelines Management
17 Act recognizes that the shorelines of the waters in the
18 state are among the most valuable, fragile of the state's
19 natural resources, and the State requires that the cities
20 recognize the importance of this and protect the shorelines.
21 The Draft Environmental Impact Statement states that birds
22 and fish species dependent upon the lake will be adversely
23 impacted by the build-out. The Draft EIS fails to explain
24 how during the development of South Lake Union the City will
25 protect against the adverse impacts to public health, the

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1 land, the vegetation, the wildlife that are part of the lake | 98 cont
2 environment.

3 The Draft EIS states that there will be | 99
4 unavoidable combined sewage and storm water overflows into
5 the lake. None of these negative impacts have been
6 adequately addressed for mitigation proposed in the
7 Draft Environmental Impact Statement. The Draft EIS fails
8 to explain how development will be placed to prevent
9 interference with air, water, navigation in Lake Union.
10 This includes seaplanes and sailboat navigation.

11 The DEIS ignores the rights of recreational and | 100
12 commercial users of the lake for reliance upon wind currents
13 which provide public enjoyment of sailboat, recreation, and
14 tourism. The proposed height, bulk, and numbers of
15 buildings allowed under Alternatives 1, 2, and 3 will have a
16 major impact on the future viability of the Tuesday's Duck
17 Dodge due to major buildings shielding natural wind currents
18 over the lake, creating a deadzone where none existed
19 before.

20 The creation of shadows will have a major | 101
21 environmental impact on public spaces in the Denny Park,
22 Cascade, and Lake Union park. No mitigations are proposed.

23 We are not going to be creating a vibrant retail, | 102
24 recreational, residential community here with Alternatives
25 1, 2, and 3, and I urge you to go back and look again at the

1 way this is planned out. I am for density but maybe without
2 parking garages in work, okay?

SLU DEIS Public Hearing Comments.txt
Thanks.

3

4 MS. STATON: Hi. My name is Renae Staton. I'm a
5 member of Leadership for Great Neighborhoods.

6 Leadership for Great Neighborhoods appreciates the
7 opportunity to comment on the DEIS. LGN is a broad-based
8 coalition of neighborhood leaders, residents, business
9 members, and other stakeholders. We're dedicated to
10 affecting change and achieving the greatest possible social,
11 economic, and environmental benefits for all Seattle
12 neighborhoods.

13 Some of our comments -- and I've included -- I've
14 given you a letter that's more extensive than my comments
15 right now, but some of our comments do not address the
16 specific impacts of the DEIS; rather, they suggest
17 alternative ways of measuring, quantifying, and reporting
18 impacts of the various alternatives.

103

19 Although there's no requirement for an EIS to
20 examine positive benefits of an action, LGN recommends
21 identifying in the document how each of the growth
22 alternatives can help address adopted goals for carbon
23 reduction and for growth management through compact urban
24 neighborhoods.

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25 A second concern is that the DEIS does not look at
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1 economic development. You are encouraged to analyze
2 economic development impacts of the alternatives.

3 Thank you.

4 MR. HART: My name is Allen Hart. I am an
5 architect and planner and have been a resident in
6 Lower Queen Anne for the past ten years.

7 Before that, I lived in Vancouver,
Page 74

8 British Columbia, and the type of development that's being
9 considered in this area is very similar to one that we were
10 involved in out there. I'd just like to share some of the
11 experience there, and that's at Falls Creek, which is -- was
12 a transitional area in a bowl very similar to this around a
13 body of water.

14 And at the time it was first planned, the body of
15 water was seen really as an asset but for people in other
16 communities. But what has developed over time is the bike
17 paths and the access to the waterfront and the number of
18 people. It has really become a hotbed of activity. If
19 you've been up there, it's pretty much a success.

20 But some of the things that's really important,
21 it's not just a focus on height and density. It's looking
22 at form and character and the rules of engagement that are
23 identified somewhat in the EIS but really should be looked
24 at more carefully and be more specific about the aspects of
25 the podium, the towers, and so on. Because of that, I think

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1 Option No. 1 is the right option but with the right rules.

2 The other thing is livability. And from the
3 standpoint of having a facility such as schools and day care
4 and community centers, it's really important to have that as
5 the heart, and that will get you the mix that you need.
6 It'll draw the people from all ages.

107

7 And the last thing is that the quality of
8 development is really the most important in public spaces.
9 In order to make it successful, it has to be the
10 investment -- private investment to be able to continue
11 those -- kind of that quality of environment and again that

108

12 SLU DEIS Public Hearing Comments.txt
will create the livability.

13 Thanks very much.

14 MR. HOLMES: Kevin McCarthy, Brock Howell, and
15 Michael Hall.

16 MR. McCARTHY: Hello. My name is Kevin McCarthy.

17 And this study uses the most aggressive
18 methodology to come up with the most optimistic conclusions.
19 And as a board member of the Lake Union Opportunity
20 Alliance, I have some specific concerns.

21 I'm going to be talking about groups that are
22 disenfranchised by this EIS. The EIS states the wildlife in
23 this study is limited -- is likely limited to species
24 adapted to urban areas and birds migrating through the study
25 area. That is incorrect. It further states that the

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1 Mercer Valley focus area wildlife is likely limited to
2 highly urbanized species and that this proposal will not
3 directly result in an enhanced or planned animal habitat.

4 This is incorrect. I'm very familiar with the
5 blue herons, wood ducks and freshwater turtles that reside
6 in the south end of South Lake Union. And I can tell you
7 for sure that 300-foot towers rimming Westlake as well as
8 Valley would create a permanent shadow zone in that area and
9 my daughter and I wouldn't get to enjoy freshwater turtles
10 sunning when there is no sun.

11 The EIS states that affordable housing, from 2004
12 to 2009 housing unit growth for people making 0 to
13 80 percent of the median income range grew at 19 percent, as
14 opposed to the City's existing goal of 37 percent. That
15 means we're already failing by 50 percent to the affordable
16 housing goals that we're trying to hit. And by upselling

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17 this land, it's going to be so expensive that any affordable
18 housing dollars that come into this area, that come into the
19 South Lake Union area will not end up spent in this area.
20 So it is my contention that affordable housing will not
21 happen in this area because the price of land will go up so
22 high when you take land that is currently 85 feet and move
23 it to 300 feet.

24 Thank you.

25 MR. HOWELL: Thank you. My name is Brock Howell.

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1 I'm the King County program director for Futurewise, a
2 statewide advocacy nonprofit working to protect our rivers,
3 lakes and Sound, save local parks and habitats and build
4 great, healthy communities. We are often seen as the
5 defenders of the Growth Management Act and Shoreline
6 Management Act, but we are also very active in promoting
7 smart policy from federal legislation to individual
8 projects.

9 South Lake Union presents an unmatched opportunity
10 to create an urban center that creates new housing and jobs
11 while fostering low carbon lifestyles. I'll make a few
12 points in that direction.

112

13 First, South Lake Union represents about 2 percent
14 of the city's land area, but according to the city's
15 comprehensive plan it is expected to accommodate about
16 20 percent of the growth. Upzoning presents an unparalleled
17 opportunity to both provide more housing and jobs in
18 South Lake Union and [unintelligible] as well.
19 High-performing transit-oriented communities typically have
20 60,000 jobs and more than -- houses and more than 50,000

21 jobs on a 300-acre area. This project -- or this is
22 projected to have a -- sorry. The projected 2020 housing
23 availability for this area is supposed to be about 10,000.
24 The upzone capacity for another 21,000 units if the
25 Option No. 1 is picked. In addition, it would provide

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1 another 31,000 or so jobs.

2 Next, this will provide opportunity to decrease
3 transportation trips, not increase as DEIS shows. Building
4 high-performing transient-oriented communities such as this
5 typically decreases it. We have seen over the past decade a
6 reduction in the EMT and we would consider that to continue.
7 The DEIS uses projections based off of current transit -- or
8 past experience, not future.

113

9 I'll make one -- two final points. One, that this
10 is an opportunity to reduce global warming, pollution, not
11 increase it. One of the major feelings of the DEIS is that
12 it only focuses on existing development without --
13 concerning a comparison to development elsewhere. And so it
14 looks like it's increasing global warming, pollution, when,
15 in fact, the net effect is reducing it.

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16 And, second, that the way to solve housing
17 affordability isn't to decrease the number of housing units;
18 it's to increase it. And so we would urge support for
19 Option No. 1.

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20 MR. HOLMES: Michael Hall, Ann Pearce,
21 Dick Wagner.

22 MS. PEARCE: Hello. My name is Ann Pearce, and
23 I'm representing the Greater Queen Anne Chamber of Commerce
24 this evening.

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25 We have had the pleasure of working with the

1 South Lake Union community on many shared issues for the
2 past eight years. From the Mercer Corridor Stakeholder
3 Committee to the Joint Visioning Charette, and most recently
4 on the mobility plan. We have worked collaboratively with
5 the South Lake Union Community Council, South Lake Union
6 chamber, and the Uptown Alliance. The Queen Anne business
7 community looks forward to the day when our two urban
8 centers can be reconnected through Mercer/Harrison, Thomas
9 and John Streets and to expand an economic development
10 resulting for more people working and living in South Lake
11 Union. We see a bright future in our dynamic duo urban
12 centers and urge the City to continue to think of Uptown and
13 Queen Anne in the planning of South Lake Union.

116 cont

14 Thank you.

15 MR. HOLMES: Jeff Gundlach Goodluck, Blaine Weber,
16 and Sue Pruner.

17 MR. WAGNER: I'm Dick Wagner, founding director of
18 the Center for Wooden Boats. Center for Wooden Boats is a
19 nonprofit organization. Our mission is to teach people
20 about their maritime heritage through direct experience,
21 putting your hands on the helm of a boat and sailing it,
22 putting your hands on the tools and learn how to build it.
23 Our maritime history comes alive through direct experience,
24 and it's passed on to our younger generations. Especially
25 we teach about 5,000 kids to sail every year and about 2,000

1 adults. Young is good.

2 As a resident of South Lake Union for over 30

3 years, The Center for Wooden Boats has seen many changes in
4 the neighborhood, and we were encouraged by and excited by
5 what is on the horizon. When we first came to our site at
6 the south end of the lake it looked like it was a -- a war
7 had just completed and everybody was using flame throwers.
8 So it's a big difference for us that we were planning -- or
9 hoping for.

10 The board of trustees of The Center for Wooden
11 Boats is pleased to express its support for the South Lake
12 Union urban design framework and for the proposed height and
13 density Alternatives 1 and 2 included in the draft
14 environmental statement.

15 Visitors to The Center for Wooden Boats come from
16 all around the area and the world. The most important thing
17 is our local community. Engaging them makes The Center for
18 Wooden Boats a place that helps keeps us all afloat for year
19 to year. So really looking forward to increased residents
20 as well as increased people working there. A strong and
21 vital community means healthy businesses, a diverse
22 residential population, active and welcoming pedestrian
23 environments. And they are essential to the health of any
24 organization that endeavors to preserve our cultural
25 heritage.

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1 We are excited about the dense, vital
2 pedestrian-oriented and mixed-use visions of the future
3 growth of South Lake Union. It's a -- we appreciate the
4 emphasis on visual and physical access to Lake Union through
5 open space strategies, view corridors, and pedestrian links.
6 We appreciate the view corridors along Terry and Boren, the
7 pedestrian-oriented retail use on Valley Street, and the

8 proposed festival street designations for Valley and Terry
9 streets as well as the focus on green storm water
10 infrastructure to help improve water quality and the aquatic
11 habitat in Lake Union.

117 cont

12 My time is up? Thank you.

13 MR. WEBER: Good evening. My name is
14 Blaine Weber. I'm a founding principal of Weber Thompson
15 Architects.

16 We are close to celebrating our 25th anniversary
17 in the South Lake Union neighborhood, and I love this
18 community. I'm a former downtown design review board chair,
19 but I'm here to speak for myself this evening in support of
20 Alternative No. 1. South Lake Union is one of our most
21 important urban centers. We have an opportunity of a
22 lifetime to create a fantastic, vibrant community, but we
23 must ensure zoning that affords adequate development
24 capacity to meet growth targets, and also to ensure excess
25 capacity to accommodate growth into the future.

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1 For this reason I support Alternative No. 1 as a
2 means for achieving the kind of density that is appropriate
3 for South Lake Union. This is the right choice for our
4 community, for our city. It is the responsible choice from
5 a sustainability perspective. It is the right choice for
6 the greater good of our region.

7 There's nothing more sustainable than density, but
8 density cannot be accommodated everywhere. South Lake Union
9 is one of the few areas of the city that can indeed allow
10 for real urban density. Let's do it right in a manner that
11 promotes livability.

12 I'd like to promote the continued incentivization
13 of residential. Vibrant communities are diverse. They are
14 symbiotic. They create uses that support each other. They
15 are 24/7. They accommodate young and old. We have, again,
16 the opportunity of a lifetime to create a spectacular
17 community. This is the right choice for our region.

119

18 I'd like to close with a comment on the
19 superblocks of the Fairview corridor area and encourage the
20 implementation of an overlay district that will accommodate
21 appropriate employment goals. Those blocks are capable of
22 supporting the larger floor plates, provided there is open
23 space as well.

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24 Thank you.

25 MS. PRUNER: Good evening. My name is Sue Pruner

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1 and I'm a resident of 2200 Westlake North Tower, which was
2 one of the first projects that Vulcan built down here in
3 South Lake Union. And I'm here tonight to explain to you
4 why I'm dead set against Alternative No. 1.

121

5 In late 2004, Vulcan held a preview party, presale
6 party for condominium units in the 2200 Westlake project,
7 and at that preview party was Michael Milton who was the
8 original developer on Vulcan's behalf of this project, as
9 well as Julie McAvoy and her team from the Urban Realty
10 Group who were the sales agents. And I'm speaking on behalf
11 of not only myself but several of my neighbors in the north
12 tower in telling you that we all asked questions at that
13 party and after as well as to what was going to happen with
14 our views because all of us have terrific views, from -- 180
15 views from North Lake Union all the way to the Space Needle,
16 Seattle Center, and downtown. Now, I think we all got the

17 bait and switch from Vulcan and that's why I am against this
18 particular alternative.

121 cont

19 I'd also like the people on your planning
20 commission to reexamine the FAA flight pattern. No one has
21 seemed to come up with this tonight. One person mentioned
22 the float planes, but I strongly disagree with your flight
23 plan in your diagrams up there. I have a view of watching
24 Kenmore take off and land all day from my kitchen window,
25 and I've never once seen Vulcan use that flight -- or I'm

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1 sorry, Kenmore use that flight plan. So, please, maybe talk
2 to the folks at Kenmore and determine whether these building
3 heights will affect their coming and going out of
4 Lake Union.

5 Thank you.

6 MR. HOLMES: Dan Munro, Cyrus Khambatta, and Fred
7 Herb or Herb.

8 MR. GUNDLACH: Good evening. I'm Jeff Gundlach, a
9 homeowner [Unintelligible] condos of Dexter, and I moved in
10 here about two years ago, you know, young. I live, I work
11 in downtown.

12 And the reason -- what attracted me so much to
13 South Lake Union is it's growing. It's exciting. I want to
14 be a part of it. That's what I was looking for. Just even
15 tonight before this, you know, going to the restaurants and
16 it's a very vibrant neighborhood. You know, looking at, you
17 know, where else can these highrise -- you know, where else
18 can we do this zoning at. So I just want to come and say
19 that I'm pro, you know, high zoning and I support it.

123

20 So thank you.

21 MR. KHAMBATTA: Hi. I'm Cyrus Khambatta, the
22 artistic director of the Khambatta Dance Company.
23 And we're the organizers of the Seattle
24 International Dance Festival which takes place in South Lake
25 Union every June. As part of the dance festival you may

98

1 have seen the Art on the Fly that features dance
2 performances happening along the street car line, including
3 2200 Plaza and the open space in front of Pac. It's quite a
4 treat for the public to be able to enjoy free performances
5 by world-renowned dance companies and dancers alongside
6 local artists right here from Seattle along the streets and
7 open spaces in South Lake Union.

8 This year we're thrilled to bring back Art on the
9 Fly and even expand its reach up to the new McGraw Square
10 Park and all the way down to Lake Union Park.

11 I must say, there were many reasons that we
12 decided to re -- to locate the festival in South Lake Union,
13 but one that's most particular to and relevant to the public
14 hearing today. Without the varied plazas and open spaces
15 created by new development in the area, the Art on the Fly
16 would not have been able to take place on all these great
17 built-in stages.

18 I understand that if the buildings in the
19 neighborhood are allowed to go taller, that would create
20 more flexibility provided in the space at the ground level.
21 That is a tremendous public benefit from my perspective, as
22 opposed to seeing buildings where there's no space and
23 they're right up against each other.

24 I would encourage a stronger community feeling
25 where things like our festival can happen and bring people

124

124 cont

1 together. I myself have lived in three major metropolitan
2 areas: Washington, D.C., New York City, and Paris, France.
3 And the thing that's really the common feature that creates
4 a sense of community in all of those places is the people
5 themselves.

6 Creating an aesthetic and pleasing environment
7 that provides places for people to meet, chat, meet with
8 friends, have a bite to eat and, of course, seek cultural
9 events is important to that community. People like to be
10 around other people and the more densely populated areas
11 with aesthetically carved spaces are where people like to
12 be.

13 In addition, dense urban neighborhoods like
14 South Lake Union are very effective at attracting supporters
15 for the arts. As a lifelong dancer and choreographer, I've
16 spent a great deal of time visualizing aesthetics and I
17 think taller, more slim buildings are aesthetically more
18 pleasing than the boxy, squat buildings.

19 Thank you very much.

20 MR. MUNRO: I'm so impressed I haven't seen any of
21 you yawn tonight and I don't know how you manage that.

22 My name's Dan Munro along with my wife Suzanne and
23 our two daughters. We own Nollie's Cafe over in the Cascade
24 neighborhood.

25 And I may be one of the few people in this room

100

1 tonight who remember what South Lake Union was like in the
2 1970's. I met John Wayne on Republican Avenue when he was

3 filming here in 1973. My family has worked on a property in
4 this neighborhood for four decades and three generations. I
5 recently decided to start my own family business where my
6 parents did after they immigrated to this country. Compared
7 to what I recall as a kid, South Lake Union has transformed
8 into a vibrant neighborhood on its way to reaching its
9 highest potential. I remember what it was like when this
10 area was mostly industrial and manufacturing. The
11 neighborhood was essentially different shades of gray. But
12 today you see bursts of color in the neighborhood coming
13 alive with people walking in the streets, dining at outdoor
14 cafes and restaurants like ours.

15 As a small business owner in Cascade, we rely on
16 steady foot traffic. Thanks to the major employers who
17 decided to stay or to relocate in South Lake Union, we're
18 doing pretty well on weekdays. However, evenings and
19 weekends, business is still not enough. If the City wants
20 the family businesses like Nollie's to thrive in South Lake
21 Union, then we need to stay committed to increasing the
22 overall population and density here, especially a healthy
23 residential base that could support evening and weekend
24 business.

25 Our family has seen South Lake Union change over

101

1 generations from a gray, dusty light industrial hub into an
2 exciting modern neighborhood, but I think there's still a
3 lot of work to be done. If we don't get the zoning right,
4 if we fail to capture the maximum opportunity or lose sight
5 of South Lake Union's priority as an urban center, then I'm
6 afraid South Lake Union will fail to fulfill its potential.

7 Please incorporate as much of Alternative 1 as

8 possible in the preferred alternative. It will enable more
9 family businesses like ours to open and, more importantly,
10 to stay open in South Lake Union.

125 cont

11 Thank you.

12 MR. HOLMES: John Little and Brandon Weber.

13 MR. HERB: Good evening. I'm Fred Herb, and I
14 currently a resident of South Lake Union. Prior to that I
15 lived 18 years in Belltown.

16 And during that time I've noticed some good zoning
17 from the City and some poor zoning. Good specifically was
18 the stepdown approach from Capitol Hill along Pike Street to
19 Elliott Bay. Poor planning was the concrete towers along
20 Elliott and Western where condominiums were elbow to elbow,
21 and if you walked along those areas you'd never seen the sun
22 shining on the street.

23 I'm concerned that some of the higher density
24 plannings in the EIS will duplicate that problem with regard
25 to eliminating sun and air and open spaces, and I'm not

126

102

1 against high towers but I think they should be limited to
2 one per block.

3 And in particular, I noticed that there was a
4 ten-foot setback along some of the streets, and I think that
5 should be increased significantly. I mean, I'm 6 feet tall
6 and another 4 feet, that seems awfully small setback in my
7 judgment. So I would implore the City to consider reducing
8 the number of towers, make them taller and lots of space
9 between them.

127

10 Another thing I'd like to suggest is the bonus
11 points that you provide for extended height, that those be

128

12 spent in South Lake Union.

13 Thank you.

14 MR. LITTLE: Good evening. My name is
15 John Little. I'm a resident of the Highland Park
16 neighborhood in West Seattle, and I'm the regional director
17 for the carpenters union here in the northwest.

18 For many years the Seattle carpenters have
19 followed South Lake Union's redevelopment with great
20 interest. We share the community's vision for South Lake
21 Union as a commercial and residential urban center. As
22 such, we have supported public and private investment in the
23 South Lake Union street car line, Mercer Corridor Project,
24 and Lake Union Park. This investment has set the stage for
25 zoning changes to allow a greater intensity of jobs in

103

1 housing units in this vibrant community.

2 You are encouraged to take the following factors
3 into consideration as you prepare the final Environmental
4 Impact Statement. Taller buildings and moving away from
5 tight, flat construction will result in higher quality
6 structures. Incentive zoning can bring additional resources
7 for community identified civic infrastructure and more
8 affordable housing.

129

9 Height increases can increase the housing supply
10 and generate public benefits to make housing more
11 affordable. Increasing jobs and residences adjacent to
12 significant public investment in transportation and parks
13 will make sure the city and region benefits from its
14 investment in the community. And height and density will
15 allow more people to locate in this urban center and live a
16 healthier and more environmentally friendly lifestyle. We

17 have an opportunity to do it right in South Lake Union. We
18 should take advantage of this opportunity for all Seattle.

129 cont

19 Thank you.

20 MR. WEBER: I think I'm last.

21 My name's Brandon Weber. I was recruited by
22 Microsoft from the east coast and that's why I'm in Seattle.
23 I left Microsoft because I didn't want to be in Redmond, and
24 I -- as a young person, I -- you know, I highly value being
25 in an urban center where I've got all of my amenities, my

104

1 work, my play within walking distance. I ran here. Live
2 just down the street.

3 And I think what we're thinking about here, we're
4 not talking about what buildings are we designing; we're
5 creating what I would call kind of an opportunity maximum.
6 And I feel like we need to build an opportunity maximum
7 that's as high as possible, which is why I'm for Alternative
8 1.

130

9 It gives us an envelope to design within, but I
10 think really gives us the best opportunity for the next 20
11 years to see the next Amazon and support the next Amazon,
12 kind of all these great local businesses that are going to
13 flourish around it. So as someone who works just down the
14 street, who lives just down the street, I really feel like
15 now is our opportunity to look out for the next 25 years and
16 create a design space that's going to give us a place to
17 make South Lake Union pretty special. So, again, I'm for
18 the Alternative 1, and I really appreciate you guys taking
19 your time tonight. Thank you.

20 MR. HOLMES: Is there anyone who has not spoken

21 who would like to speak?

22 Anybody want to add to their comments?

23 You may.

24 MR. FOLTZ: Dan again.

25 A couple of points I didn't make -- I didn't get

105

1 to.

2 Tower spacing, there is -- appears to be no
3 meaningful reference to or study of tower spacing in the
4 documents. Having a minimum of four parcels satisfying the
5 22,000 square foot minimums for towers may limit towers to
6 two per block, but it does nothing to control which four or
7 more contiguous lots are developed. What if a neighbor
8 wants to develop the very same four lots directly across the
9 alley from another? What if they're both mid block sites?
10 It appears that we are all left to hope the two same block
11 towers will always get developed on opposite ends of the
12 block from each other. But that seems like quite a guessing
13 game.

14 In addition, the Seattle Times/Whole super blocks
15 are approximately 110,000 square feet. What then?

16 Fred Lowe's versus towers. We've been debating
17 this for some time. Fred Lowe's or otherwise midrise
18 buildings are synonymous with local relief as they are
19 assumed to be for the most part built out to their respected
20 property lines to maximize their yield. Conversely, towers
21 have been synonymous with not only vertically but also with
22 creating open spaces or providing other public benefits in
23 exchange for being able to go higher than the underlying
24 zoning. Podiums, there seem to be a lack of attention in
25 the documents towards aesthetic in building bases, or lack

131

132

1 of podiums, i.e., open space.

2 Reorienting of blocks. In the UDF there was great
3 early support for having the ability to rotate how blocks
4 are oriented, allowing buildings to two towers per block to
5 orient in an east-west axial relationship instead of north
6 to south like most of Seattle; thereby, improving solar
7 angles, increasing space between towers, and having other
8 positive benefits such as greater veracity towards the Space
9 Needle and the sound. Why has this issue not been addressed
10 in the EIS? Is it that it is no longer being considered?

133

11 And then lastly, someone had just touched on this
12 recently, a notice that there wasn't really any reference
13 tonight I think much to the Lake Union flight operations,
14 which is the latter third of Chapter 3.8, Land Use. The EIS
15 reports that this flight -- quote, this flight path
16 represents a refinement by Wash DOT of earlier flight path
17 information that was available, unquote. It's regrettable
18 that this information was not known before the EIS options
19 were created, let alone very late before publishing the
20 document. The flight path envelope now looks much wider
21 than previously shown, but I'm told that it is not.

134

22 That said, there are several -- five to be
23 exact -- additional factors that could intensify its newly
24 represented volume. One, a vertical safety buffer will
25 likely get added in lowering heights which has not been

107

1 quantified and is not reflected in the diagrams. Two, a
2 wind sheer buffer will likely get added, presumably widening

3 the flight path diagram further, which has also not been
4 quantified yet. Three, a turbulence buffer may likely get
5 added presumably widening the flight path further. It too,
6 again, has not been quantified. Four, the 25-foot height
7 increments that you see in the flight path diagram are based
8 on the lake elevation, so as the envelope rises so does the
9 ground, thereby diminishing the amount of actual height
10 under the envelope. And five, the zoning heights typically
11 have a 10 percent or so additional height allowance for
12 rooftop, mechanical, et cetera.

13 The final flight envelope and its buffers will be
14 absolute numbers. So subtractions from potential tower
15 heights will need to be made for rooftop appurtenances.
16 What does the flight path envelope and its buffers mean
17 moving forward? If the west side of the neighborhood is
18 challenged to support appropriate density due to the final
19 flight path envelope, which we don't -- I'm not sure when
20 that will be, and if the Cascade neighborhood doesn't
21 particularly want density, is it possible that the
22 alternatives might need to be modified? We ask that this
23 section be brought back for public comment if the changes to
24 the buffer areas become substantially different from what's
25 presented in the EIS.

134 cont

108

1 Thank you.

2 MS. GROTH: Hi. I left something out of my
3 earlier comments.

4 A lot of the times especially in the
5 transportation section of the EIS and the other ones, the
6 metrics that were presented are not actually applies to
7 applies metrics, and I would urge those who are revising the

135

8 EIS or finding the final draft of the EIS to actually
9 provide us apples to apples metrics.

135 cont

10 For example, when it is studied, let's say
11 Alternative 1, the difference between the mitigations that
12 would suddenly come into play when it comes to
13 transportation. Those mitigations are not even studied with
14 the no alternative [unintelligible]. So, again, furthering
15 it for all sections of the EIS, give us a real strong apples
16 to apples comparison in addition to coming to the aesthetic
17 side of things, give us views that would actually -- could
18 be seen not from a seaplane but from actual people on the
19 ground or real estate viewpoints. I'd love to see a lot
20 more viewpoints so we really understand where our
21 neighborhood's going.

22 Thanks.

23 MR. BENNETT: For the record that was Lorie Groth.

24 I'm Don Bennett. I've been a participant in the
25 process for about five, six years now, and my original

136

109

1 thought coming into this five years ago was it looks like
2 we're going to have a trade-off of either affordable housing
3 in this neighborhood or height development. It -- and from
4 everything that I have heard tonight it sounds like it is
5 still absolutely that trade-off; that if there -- if they go
6 with Alternative 1, with the maximal development, there will
7 be a lot of money going into the Seattle housing fund,
8 affordable housing fund, which will be spent places other
9 than South Lake Union because of the economics of the land
10 grants.

11 Thank you.

12 MR. HOLMES: All right. That is our final comment
13 of the night. The comment period remains open until
14 April 11th, 5:00 p.m.

15 Thank you.

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Table 5-1
Public Comments Received During the Comment Period

Comment Number	Response
1	Future Growth. The comment is noted.
2	<p>Benefits of Growth. The comment is noted. As the commenter states, the EIS does not discuss the environmental benefits of the proposal. As required in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.</p> <p>With respect to climate change, it should be noted that the GHG analysis does incorporate a per capita analysis. As shown in Draft EIS Table 3.7-6, the analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.</p> <p>In addition, many of the policies cited in the Plans and Policies analysis of the proposal describes the benefits of the proposal in the context of the City's adopted comprehensive plan.</p>
3	<p>Economic Development. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Economic development was not included as part of the EIS scope.</p> <p>This Final EIS includes a summary of applicable economic development policies contained in the City's comprehensive plan and the South Lake Union Neighborhood Plan. Please see Final EIS Section 3.2.</p>
4	Prior Planning. The comment is noted.
5	Neighborhood History. The comment is noted.
6	Support Growth. The comment is noted.
7	Focus on Negative Impacts. As required in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
8	Support Alternative 1. The comment is noted.
9	Public Services. Table 3.14-3 of the Draft EIS illustrates the incident responses for fire stations that serve the South Lake Union Neighborhood and are representative of annual activity for the Seattle Fire Department in this area. As described on Draft EIS pages 3.14-9 and 3.14-10, the Seattle Fire Department calculated the projected number of EMS service calls that could occur in the South Lake Union Neighborhood under the

Comment Number	Response
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Action Alternatives and No Action Alternative and determined that additional EMS companies could be required for the South Lake Union neighborhood with or without development under the Action Alternatives.

Draft EIS Table 3.14-6 illustrates the number of calls for the West Precinct between 2005 and 2009. The West Precinct is divided into 12 sectors/beats and the South Lake Union Neighborhood generally comprises the D1 and D2 sector areas. The D1 sector generally includes the western portion of the South Lake Union Neighborhood, while the D2 sector generally includes the eastern portion of the South Lake Union Neighborhood. Refer to the table below for a breakdown of calls for service in the D1 and D2 sector areas.

2005-2009 Calls for Service – D1 and D2 Sector

	D1 Sector	D2 Sector
2005	12,114	7,959
2006	12,735	7,440
2007	12,583	6,995
2008	9,448	7,753
2009	9,141	8,189

Source: Seattle Police Department, 2010.

Draft EIS Page 3.14-12 acknowledges that the hiring of new officers under the *Neighborhood Policing Staffing Plan* has been delayed due to recent budget issues. However, the Seattle Police Department anticipates that the remaining new officers identified in the *Neighborhood Policing Staffing Plan* would be hired prior to the assumed buildout date under the Action Alternatives (2031).

10	Recreational Sailing. . The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. The potential impact of wind wake on recreational sailing on Lake Union was not included in the scope of the EIS.
11	Support Alternative 1. The comment is noted.
12	Affordable Housing. The comment is noted. Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative. The discussion in Draft EIS Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.

Comment Number	Response
13	Support Alternative 1. The comment is noted.
14	<p>Public Transportation. The Draft EIS transportation analysis includes a review of existing transit service based on load factor, the ratio passengers to seating capacity during the peak hour. This is the key performance measure identified by King County Metro for this study. Load used to evaluate impacts of the proposal on transit service. The analysis also includes mitigation strategies to address transit impacts.</p> <p>It is true that King County Metro is the transit provider and the current funding picture for King County Metro is constrained. However, the Draft EIS is a forward-looking document, and assumes the regionally accepted levels of future transit as directed by the Seattle Department of Transportation and defined by the Puget Sound Regional Council. It should be noted what while transit funding fluctuates on the short-run, transit funding and service over the last 20 years has expanded substantially in the Puget Sound Region.</p>
15	Schools. Please see Final EIS Section 3.5 for a discussion of schools.
16	<p>Economic Mix. EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Draft EIS Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
17	Height Near Lake Union. The comment is noted. Alternative 1 considers residential tower heights of 300 feet between Mercer and Valley streets. The remaining alternatives consider lower building heights in this area.
18	Support Alternative 3. The comment is noted. Please note that Alternative 4 is the No Action Alternative, which would maintain a maximum building height of 40 feet in the area between Mercer and Valley streets. Alternative 1 would allow a tower height of 300 feet for residential uses in this area.
19	Support Growth. The comment is noted.
20	Consider Alternative 1. The comment is noted.
21	Support Alternative 1. The comment is noted.
22	Support Alternative 1. The comment is noted.
23	Support South Lake Union/Uptown Triangle Mobility Plan. The comment is noted. The South Lake Union/Uptown Triangle Mobility Plan was ongoing during preparation of the Draft EIS and has been incorporated in the comments and responses to the Draft EIS.

Comment Number	Response
	Please see the Comment Letter 90, which includes the Mobility Plan.
24	Future Growth. The comment is noted.
25	Support Taller Buildings. The comment is noted.
26	Support Alternative 1. The comment is noted.
27	Support Higher Density. The comment is noted.
28	Support Growth. The comment is noted.
29	Benefits of Growth. Please see response to Comments 2 and 3, above.
30	Design Review Board. The comment is noted.
31	Visual Analysis. The commenter is correct in stating that the scope of the EIS required analysis of views and urban form at a buildout stage of development. This analytic approach was established in the EIS scope.
32	Future Growth. The comment is noted.
33	Incentive Benefits. The comment is noted. The specific benefit package associated with the proposed incentive zoning package has not been determined.
34	Capacity for Growth. The comment is noted.
35	Greenhouse Gas Analysis. For a greenhouse gas analysis, please refer to Draft EIS Section 3.7. This analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. While a comparison is not provided to other Seattle neighborhoods, a comparison to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, shows that the action alternatives would result in GHG emissions that are about 15 percent lower per capita.
36	Support Alternative 1. The comment is noted.
37	Support Alternative 1. The comment is noted.
38	Support Increased Height. The comment is noted.
39	Support Alternative 1. The comment is noted.
40	South Lake Union/Uptown Triangle Mobility Plan. The comment is noted. Please see the Comment Letter 90 related to the South Lake Union/Uptown Triangle Mobility Plan.
41	Support Alternative 1. The comment is noted.
42	Height and Bulk. The Draft EIS analysis was based on a buildout development scenario, which assumes that all undeveloped and underdeveloped properties will redevelop in the future. Underdeveloped properties are defined as those that contain development square footage at 40 percent or less than currently allowed by zoning. Please see the discussion of development assumptions in Draft EIS Section 3.10.2.

Comment Number	Response
	<p>In addition, the aesthetics analysis has been updated to respond to Draft EIS comments, clarify assumptions and revise images. In general, the revisions to the images are to ensure that all figures are as technically accurate as possible, but do not change the overall analysis or conclusions of the aesthetics section of the Draft EIS. For example, in the Valley/Mercer blocks, two towers per block were shown, when in fact only one tower per block is proposed in the action alternatives. This correction, which results in less building bulk than shown in the Draft EIS, ripples through many of the images. Please see the revised Aesthetics section, including images, in Final EIS Section 3.4.</p>
<p>43</p>	<p>Significant Unavoidable Adverse Impacts. The referenced statement is a summary statement based on the analyses contained in the Chapter 3 of the Draft EIS and accurately represents the conclusions of the analyses as stated in the “Significant Unavoidable Adverse Impacts” section for each element of the environment. Please refer to the analysis of each element of the environment for a discussion of impacts, mitigation and significant unavoidable adverse impacts.</p>
<p>44</p>	<p>Aircraft Safety and Shadows. Regarding airspace, this programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these relate to: building height, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development that may occur within the subarea. Therefore, the programmatic analysis that is contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure is recommended -- requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning. It is anticipated that the approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at the site, with the surrounding physical context (i.e., existing buildings, topography, etc.); 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project; 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path; 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions; 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft

Comment Number	Response
	<p>actually used at this location.</p> <p>In addition, the City may consider requiring additional analyses to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future); and/or • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable). <p>Regarding shadows, a discussion of shadow impacts of each alternative on neighborhood parks, including Lake Union Park, can be found in Final EIS Section 3.4. This programmatic analysis does not quantify shadow impacts by square footage. Such an analysis would be developed as part of the project-level SEPA review for specific development proposals</p>
45	Support Density. The comment is noted.
46	Support Alternative 1. The comment is noted.
47	Support Density in Urban Centers. The comment is noted.
48	Consider Density in Other Parts of City. As described in EIS Chapter 2, the potential use of incentive zoning as a strategy to achieve neighborhood plan goals and other public benefits. Incentive zoning would allow increased height and density if public benefits defined in City code are provided. Review of this proposal does not require an analysis of potential growth impacts in other neighborhoods of the City.
49	Support Alternative 1. The comment is noted.
50	Support Incentive Zoning. The comment is noted.
51	Support Alternative 1. The comment is noted.
52	<p>EIS Analysis. The analysis in the Draft EIS is consistent with the programmatic scope of review established for this project. It is acknowledged that the analysis provides an area-wide review of the elements of the environment, which is appropriate for review of a subarea-wide analysis.</p> <p>The Draft EIS references the Urban Design Framework in Chapter 2, where the overall framework of the UDF is described and incentive strategies are described. The UDF is further referenced in the Draft EIS aesthetics analysis. In addition, Final EIS Section 3.4 provides further incorporation of UDF recommendations into the aesthetics analysis.</p>
53	Urban Design Framework. The comment is noted. Please see the response to Comment #52, above.
54	Height Bulk and Scale. The comment is noted. It is acknowledged that the UDF considered a variety of building typologies. The analysis was based on the assumptions established for the podium and floor plate size established in the alternatives.

Comment Number	Response
55	South Lake Union Mobility Plan The South Lake Union/Uptown Triangle Mobility Plan was ongoing during preparation of the Draft EIS and has been incorporated in the comments and responses to the Draft EIS. Please see the Comment Letter 90, which includes the Mobility Plan.
56	Support Density. The comment is noted.
57	Inventory of Housing. Resources were not available in the Draft EIS process to conduct a complete housing inventory. However, based on comments on the Draft EIS, the housing inventory has been updated. Please see Final EIS Section 3.3.
58	Housing Mitigation. The comment is noted. Please see Comment #6, Comment Letter #17.
59	Housing Market. The Draft EIS housing analysis provides a programmatic review of housing affordability goals; growth in affordable housing in the neighborhood, and a qualitative discussion of the difference between the alternatives in the potential for affordable housing development. Reliable data is not available to develop a quantitative 20-year forecast of affordable housing development under each alternative. In addition, because Alternatives 1 and 2 are similar with respect to development potential, it is unlikely that impacts on the affordable housing market would be significantly different. Alternative 3 differs from Alternatives 1 and 2 in that it provides less overall development capacity and a relatively greater emphasis on residential development.
60	Use of Incentive Benefits. The use of funds associated with incentive zoning programs is a policy decision to be determined by the City as part of adoption of an incentive zoning program. Any of the action alternatives could support an incentive zoning program, so the alternative, or combination of alternatives, that is ultimately selected, would not be a determining factor in how funds would be used.
61	Support Alternative 1. The comment is noted.
62	Level of Service. As pointed out by the commenter, an intersection level of service analysis may not be an appropriate approach for South Lake Union. Because of this, the transportation analysis used a corridor-based analysis. Please see the discussion of methodology on page 3.13-25 of the Draft EIS.
63	Future Growth. The comment is noted.
64	Multi-modal Analysis. The transportation analysis was based on a multi-modal approach that incorporated consideration of transit, pedestrian, bicycle and vehicular circulation. Mitigation strategies focused on improvements to the bicycle and pedestrian network, expanding travel demand management strategies, expanding transit service and roadway capacity enhancements. Please see the transportation analysis in Draft EIS Section 3.13.
65	View Impacts. The comments are acknowledged. The aesthetics analysis included viewpoints from designated viewpoints, such as the Volunteer Park water tower, as well as numerous additional public view perspectives.

Comment Number	Response
66	<p>Demographics. The comment is noted. Please see the South Lake Union Neighborhood Plan, which includes the following neighborhood character goal:</p> <p style="padding-left: 40px;">Goal 1: A vital and eclectic neighborhood where people both live and work, where use of transit, walking and bicycling is encouraged, and where there are a range of housing choices, diverse businesses, arts, a lively and inviting street life and amenities to support and attract residents, employees and visitors.</p> <p>As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including facilities for children. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.</p>
67	<p>Community Services. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, which could include a pea patch and other similar amenities. Please see Final EIS Section 3.4 for a revised discussion of shadows.</p>
68	<p>Future Neighborhood Character. The comment is noted.</p>
69	<p>Support Alternative 3. The commenter's preference for decreasing heights moving toward Lake Union are noted. However, it should be noted that the City of Seattle does not have a formal or informal policy of stepping down in building heights toward shoreline areas.</p>
70	<p>View Preservation. The comment is noted. The City of Seattle does not have a formal or informal policy of stepping down in building heights toward shoreline areas.</p>
71	<p>Growth Capacity. As one of the six urban centers in the City, it is anticipated that South Lake Union will continue to absorb more growth than neighborhoods that are not designated as urban centers. Formal City action to establish a growth target will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall citywide development capacity.</p>
72	<p>Transportation Analysis Assumptions. The comment is noted.</p> <p>The transportation analysis uses a mixed use development (MXD) model to analyze future transportation impacts of different land use scenarios. This approach supplements conventional trip generation methods to capture effects of density, diversity of land use, destinations, development scale, distance to transit and demographics on trip generation. This method avoids overestimating the number of vehicle trips that infill projects generate and provides a more realistic picture of how travel characteristics change over time.</p> <p>The MXD methodology has been reviewed and validated by academics as part of submissions to peer-reviewed scholarly journals. As part of this academic review process, the methodology, validation, and applicability of this model to a variety of environments was deemed to be adequate. In addition to this academic review, the MXD tool has been officially adopted by the San Diego Council of Governments and the US EPA as their</p>

Comment Number	Response
	<p>preferred methods of calculating trip generation for mixed use developments in urban and suburban settings. MXD has also been successfully applied in several Environmental Impact Reports in California.</p>
<p>73</p>	<p>Growth Capacity. As one of the six urban centers in the City, it is anticipated that South Lake Union will continue to absorb more growth than neighborhoods that are not designated as urban centers. Formal City action to establish a growth target will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall citywide development capacity.</p>
<p>74</p>	<p>Step Down to Lake Union. The comment is noted. The City of Seattle does not have a formal or informal policy of stepping down in building heights toward shoreline areas.</p>
<p>75</p>	<p>Wind Analysis. This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these relate to: building height, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development that may occur within the subarea. Therefore, the programmatic analysis that is contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure is recommended -- requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning. It is anticipated that the approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at the site, with the surrounding physical context (i.e., existing buildings, topography, etc.); 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project; 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path; 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions; 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analyses to address the following questions:</p>

Comment Number	Response
	<ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future); and/or • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
76	<p>Visual Analysis. The visual analysis contained in this EIS accurately represents building heights and estimated development patterns at full buildout of the neighborhood.</p> <p>In addition, the aesthetics analysis has been updated to respond to Draft EIS comments, clarify assumptions and revise images. In general, the revisions to the images are to ensure that all figures are as technically accurate as possible, but do not change the overall analysis or conclusions of the aesthetics section of the Draft EIS. For example, in the Valley/Mercer blocks, two towers per block were shown, when in fact only one tower per block is proposed in the action alternatives. This correction, which results in less building bulk than shown in the Draft EIS, ripples through many of the images. Please see the revised Aesthetics section, including images, in Final EIS Section 3.4.</p>
77	<p>Shadow Impacts. The EIS accurately addresses and characterizes shadow impacts, consistent with the City of Seattle SEPA policies (SMC 25.05.675.Q).</p>
78	<p>Unique Character. The comment is noted.</p>
79	<p>Support Alternative 3. The comment is noted.</p>
80	<p>PM Peak Hour Traffic Congestion. The comment is noted.</p>
81	<p>Housing Analysis. The comment is noted. Draft EIS Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
82	<p>Transportation Analysis. Please see the responses to comments from the transportation consultant in Comment Letter #13, responses 91 through 94. It is acknowledged that transportation analysis in an urban environment is complex. However, the Draft EIS clearly defines the existing conditions for traffic congestion, transit, and bicycle/pedestrian travel. The most accurate trip generation methodology available was used to estimate trip generation and potential "with action" transportation impacts, and a series of mitigation measures to reduce the significance of the impacts was identified. The final conclusion of the Draft EIS is that there will be significant and unavoidable transportation impacts as a result of the height and density increase.</p>

Comment Number	Response
83	Zoning Alternatives. The comment is noted.
84	<p>Air Quality. As described in the Draft EIS, carbon monoxide (CO) is used as an indicator of potential air quality issues related to transportation sources. EPA guidance indicates CO assessments that consider conditions at up to the three most project-affected intersections are adequate for evaluating potential impacts. This was the approach used in the air quality review, and the potential for air quality impacts at all other less-affected locations would be lower than indicated by this worst-case evaluation. Consequently, no additional analysis is necessary or warranted.</p> <p>It is also worth noting that trends in CO concentrations in the Puget Sound region have been downward for many years. As stated in the Draft EIS, there have been no measured violations of the CO standards in many years, and the former CO problem is thought to have been resolved. It is therefore highly unlikely that project-related traffic would result in any CO issues at any affected intersections in the project area. Currently, the focus of EPA and other air quality agencies is turning towards other transportation-related pollutant emissions such as NO₂, fine particulate matter, and other substances emitted in engine exhaust. But there are as yet no requirements or guidelines for assessing such emissions or resulting concentrations, and air quality monitoring has not detected any problems with these pollutants in the Puget Sound region except as discussed in the Draft EIS.</p>
85	<p>EIS Summary. The summary section is intended to be just that – an overview of the project and salient points with regard to impacts of the alternatives. As noted at the beginning of the section, the information is intentionally brief and the reader is encouraged to refer to Chapters 2 and 3 for more detailed information. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
86	Support Alternative 1. The comment is noted.
87	Support Growth. The comment is noted.
88	<p>EIS Summary. The summary section is intended to be just that – an overview of the project and salient points with regard to impacts of the alternatives. As noted at the beginning of the section, the information is intentionally brief and the reader is encouraged to refer to Chapters 2 and 3 for more detailed information. To the extent that quantitative data is available, the summary section attempts to incorporate such data. In other cases, the qualitative and comparative conclusions of the analyses are included.</p>
89	<p>Aesthetics Images. Please see the Comment Letter #13, response 59 for specific comments on the figures in the aesthetics analysis. The aesthetics analysis has been updated to respond to Draft EIS comments, clarify assumptions and revise images. In general, the revisions to the images are to ensure that all figures are as technically accurate as possible, but do not change the overall analysis or conclusions of the aesthetics section of the Draft EIS. For example, in the Valley/Mercer blocks, two towers</p>

Comment Number	Response
	per block were shown, when in fact only one tower per block is proposed in the action alternatives. This correction, which results in less building bulk than shown in the Draft EIS, ripples through many of the images. Please see the revised Aesthetics section, including images, in Final EIS Section 3.4.
90	Shadow Analysis. Please see response to Comment #89, above.
91	Urban Densities and Potential Transit Service. The comment questions the findings of the transportation analysis because of a perceived lack of existing and future transit service in the area. The results of the transportation analysis, with respect to mode split, are not dissimilar to other neighborhoods in the area. Capitol Hill, for example, has the highest residential population densities in the City (based on US Census Bureau data) and achieves mode shares of 25 percent transit and 42 percent walk/bike for commute trips. Capitol Hill's mode shares occur in an area with similar transit characteristics that are similar to those expected in South Lake Union (no light rail, no BRT). Note that existing transit use and walk/bike mode share in Capitol Hill are considerably higher than what is forecast for South Lake Union under 2031 conditions. Given these existing conditions results, the future mode share forecasts for South Lake Union are reasonable.
92	Space Needle Impacts. The concern is noted and it is acknowledged that the Space Needle is the most recognized historic landmark in the City. It is also acknowledged that South Lake Union is one of the City's six designated Urban Centers where future concentrations of employment and housing are planned to occur. The City recognizes that it is unreasonable to expect that views of the Space Needle are to be protected from all of public locations without consideration of City policies regarding Urban Centers and the concentration of employment and housing. As noted in the <i>Seattle's View Protection Policies, Volume One</i> , ¹ "[c]ompeting policy objectives— require that we consider the merit of protecting a particular view corridor with other objectives for growth management, housing development, transportation and utility infrastructure and open space."
93	Support Alternative 1. The comment is noted. It is acknowledged that the EIS is not a design document.
94	Open space Analysis. It is acknowledged that the open space analysis was conducted on an area-wide basis. Resources were not available for a more detailed review of block-by-block open space needs.
95	Open Space Incentives. The comment is noted.
96	Affordable Housing. Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable

¹ Seattle, city of; Department of Design, Construction and Land Use and the Strategic Planning Office.2001.*Seattle View Protection Policies, Volume One – Space Needle Executive Report & Recommendations* and *Volume Two – Space Needle View Inventory & Assessment*.

Comment Number	Response
	<p>units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 also states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
97	<p>Images of Density. The bird's eye and Gasworks Park images are intended to provide a view of the South Lake Union neighborhood as a whole in context with the surrounding area. Based on comments on the Draft EIS, these images have been updated. Please see Final EIS Section XX.</p>
98	<p>Shoreline Habitat. Please see Draft EIS Section 3.4.3, Plants and Animals, which contains proposed mitigation measures for plant and animal impacts.</p>
99	<p>Combined Sewer Overflows. As described in the Draft EIS Combined Sewer Overflows (CSOs) not a function of development density. The amount of storm water discharged from the area to the combined sewer system is a function of the area of the basin and the amount of rainfall in a given storm, neither of which will change in these development scenarios. There is no baseline CSO volume for this area and review of King County annual reports for Combined Sewer Overflows reveals no patterns to the size and frequency of overflow events.</p> <p>Under current stormwater regulations, the stormwater load on the public sewers will likely be reduced by redevelopment. New development will be required to provide stormwater flow control in the area collected by the Combined Sewer. Flow control systems can take the form of Green Infrastructure (green roof, rain gardens, cisterns, etc.), or conventional underground tanks, or a combination of systems. Whichever system is used, these methods will hold collected storm water on-site longer, allowing the public piped system to flow at lower volumes, reducing the likelihood of a CSO. Each individual redeveloped site that is over 10,000 sf will be required to reduce the peak flow rates from the site to approximately 25% of the uncontrolled flow rates. The existing, older, development in this area generally has no on-site flow control facilities.</p>
100	<p>Recreational Sailing. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS.</p> <p>The potential wind wake impact on recreational sailing was not included as part of the Final EIS scope.</p>
101	<p>Shadows. A detailed and specific account of the shadow impacts of each alternative can be found in the Aesthetic Shadows section (3.10.9 – 3.10.12). Project specific mitigation strategies are identified in Draft EIS Section 3.10.11.</p> <p>Additional mitigation strategies to reduce shadow impacts have been identified based on policy guidance contained in the Urban Design Framework and are included in Final</p>

Comment Number	Response
	EIS Section 3.4.
102	Reconsider Approach. The comment is noted.
103	Alternative Ways to Evaluate Impacts. The comment is noted. Please see Comment Letter #16.
104	Benefits of Proposal. As the commenter states, the EIS does not discuss the environmental benefits of the proposal. As required in WAC 197-11-402, EISs are required to identify potential significant adverse impacts, but are not required to address beneficial environmental impacts.
105	Economic Development. The City issued the Scoping Notice for this Draft EIS on November 18, 2008 and invited comments on the EIS scope through December 18, 2008. Through 2009, the City worked with neighborhood stakeholders to address concerns raised by the scoping comments. Based on this process, the City revised the EIS alternatives and finalized the scope of the EIS. Economic development was not included as part of the EIS scope. This Final EIS includes a summary of applicable economic development policies contained in the City's comprehensive plan and the South Lake Union Neighborhood Plan. Please see Final EIS Section 3.2.
106	Support Alternative 1. The comment is noted. It is acknowledged that the EIS analysis was conducted on an area-wide basis.
107	Livability. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment. Please see Draft EIS Section 3.16 for a discussion of open space and recreation facilities and Final EIS Section 3.5 for a discussion of schools.
108	Public Spaces. The comment is noted. As described in Final EIS Chapter 2, a fundamental objective of the proposal considered in the EIS is to use incentive zoning to achieve public benefits, including those listed in the comment.
109	EIS Methodology. Although the specific methodology that the comment refers to is unknown, the Draft EIS generally incorporated conservative assumptions and methodologies intended to ensure that potential adverse impacts were not minimized. As relevant, specific methodologies for the corresponding element of the environment are described in Chapter 3 of the Draft EIS.
110	Shoreline Shading. Although the proposal does not include any changes to land use designations in the designated shoreline areas, Draft EIS Appendix D shows the potential for shading along the Lake Union shoreline. Shadows are discussed in Draft EIS Section 3.10.9 and shading impacts to plants and animals in Section 3.4.2. In addition, the aesthetics analysis has been updated to respond to Draft EIS comments, clarify assumptions and revise images. In general, the revisions to the images are to ensure that all figures are as technically accurate as possible, but do not change the overall analysis or conclusions of the aesthetics section of the Draft EIS. For example, in

Comment Number	Response
	<p>the Valley/Mercer blocks, two towers per block were shown, when in fact only one tower per block is proposed in the action alternatives. This correction, which results in less building bulk than shown in the Draft EIS, ripples through many of the images. Please see the revised Aesthetics section, including shadow images, in Final EIS Section 3.4.</p> <p>Consistency with the Shoreline Management Act will be considered by the City in determining the future policy and regulatory direction.</p>
<p>111</p>	<p>Affordable Housing. It is acknowledged and disclosed in the Draft EIS that the affordable housing goals in the South Lake Union are not currently being met.</p> <p>Section 3.9.2, Housing, describes that incentive zoning provisions, including developer financial contributions to affordable housing, may be used to achieve increased residential building heights. Through use of these incentives, the action alternatives may have the potential to result in an increased number of affordable units than the No Action Alternative.</p> <p>The discussion in Section 3.9.2 also states that there are a number of factors that impact the potential for affordable housing, including development costs, property values, market demand, individual property owner goals, and opportunities for financing affordable housing. Under any of the alternatives, these factors will affect the actual number of affordable units that are built in the neighborhood.</p>
<p>112</p>	<p>Future Growth. As one of the six urban centers in the City, it is anticipated that South Lake Union will continue to absorb more growth than neighborhoods that are not designated as urban centers. Formal City action to establish a growth target will occur in the future based on an analysis of the capacity of all of the urban centers and other areas of the City. Consistent with the Washington Growth Management Act, the South Lake Union growth target that is ultimately proposed and adopted by the City will reflect an understanding of overall citywide development capacity.</p>
<p>113</p>	<p>Transportation Analysis. The conclusions of the transportation analysis are that, with mitigation, trip generation under all of the action alternatives would be lower than the projected no action alternative.</p>
<p>114</p>	<p>Global Warming. The Draft EIS GHG analysis does compare South Lake Union to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond. Comparatively, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.</p> <p>The analysis also incorporates a per capita comparison of the alternatives. As shown in Draft EIS Table 3.7-6, the analysis concludes that on a per capita basis the three action alternatives produce transportation GHG emissions that are about five percent lower than the No Action Alternative. Compared to a typical suburban employment center along Bel-Red Road in Bellevue and Redmond, the action alternatives would result in GHG emissions that are about 15 percent lower per capita.</p>
<p>115</p>	<p>Support Alternative 1. The comment is noted.</p>
<p>116</p>	<p>Consider Queen Anne and Uptown. The comment is noted.</p>

Comment Number	Response
117	Support Alternatives 1 and 2. The comment is noted.
118	Support Alternative 1. The comment is noted.
119	Support Residential Incentives. The comment is noted.
120	Fairview Blocks. The comment is noted.
121	Against Alternative 1. The comment is noted.
122	<p>Flight Path. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Final EIS Chapter 2 for a description of the revised flight path.</p> <p>An additional mitigation measure has been recommended in this EIS – that a project-level analysis of wind impacts be required for all new development above the base height permitted under the Seattle Mixed zoning.</p>
123	Support Growth. The comment is noted.
124	Support Density and Tall Buildings. The comment is noted.
125	Support Alternative 1. The comment is noted.
126	Tower Spacing. The comment is noted.
127	Tower Setbacks. The comment is noted.
128	Use of Height Bonuses. The comment is noted.
129	Benefits of Height and Growth. The comment is noted.
130	Support Alternative 1. The comment is noted.

Comment Number	Response
131	Tower Spacing. The comment is noted.
132	Podium Aesthetics. The comment is noted. Because individual future design choices are unknown and in order to focus attention on building massing, the EIS intentionally did not include design features on the podiums.
133	Reorienting Blocks. Comment noted.
134	<p>Flight Path and Buffers. Subsequent to issuance of the Draft EIS, additional review of the flight path was conducted (see Appendix F). This analysis included a review of how seaplane lanes are utilized (including runway utilization, flight tracks, and piloting techniques), an evaluation of the aircraft fleet used by floatplane operators, and documentation of the performance characteristics of the various floatplane aircraft. Several Federal Aviation Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure protection boundaries for curving approach and departure procedures such as those used on Lake Union were also reviewed.</p> <p>Based on this analysis, and in coordination with WSDOT Aviation, a revised flight path was identified (see Section 3.2 of this Final EIS). This revised flight path differs from that shown in the Draft EIS in that portions are narrower than the previous flight path, the curvature is more gradual, and the east-west legs of the flight path have shifted slightly to the north. Specifically, the southern boundary has shifted 400-500 feet north so that the southern boundary lies north of Valley Street and is generally aligned with Broad Street. The southern boundary now crosses Aurora Avenue North at about Mercer Street. Similarly, the northern boundary of the flight path shifted 200-300 feet north, crossing the Lake Union shoreline at roughly Highland Drive and crossing Aurora Avenue just north of Ward Street. Please see Section 3.4 Aesthetics for revised images associated with the revised flight path. Please see Final EIS Chapter 2 for a description of the revised flight path.</p> <p>This programmatic EIS included a qualitative analysis of potential wind impacts. From a quantitative perspective, numerous factors will affect wind patterns in an urban area. The most critical of these relate to: building height, location, orientation, and massing. At the subarea level of analysis, it is impossible to accurately forecast these factors for all development that may occur within the subarea. Therefore, the programmatic analysis that is contained in the EIS describes a range of potential vertical and horizontal impact areas, depending on the type of development that may occur.</p> <p>At the same time, it is agreed that it is essential to conduct a quantitative wind analysis of individual development proposals to ensure that wind impacts on the Lake Union Seaport Airport are mitigated. Therefore, an additional mitigation measure is recommended -- requiring a project-level analysis of wind impacts for all new development above the base height permitted under the Seattle Mixed zoning. It is anticipated that the approach to this analysis would include the following steps:</p> <ol style="list-style-type: none"> 1. Construct a physical scale model of the proposed project and/or the maximum building envelope allowed at the site, with the surrounding physical context (i.e., existing buildings, topography, etc.);

Comment Number	Response
	<ol style="list-style-type: none"> 2. Install the model into a boundary layer wind tunnel and measure velocities and turbulence levels along the prescribed flight path with and without the proposed project; 3. Test for prevailing wind directions and/or wind directions that are expected to have an impact on the flight path; 4. Present resulting data in a form to allow for quantitative comparison between existing and proposed conditions; 5. Provide a written report summarizing the methodology, results and interpretation of the results against any available published aviation standards for shear layers and turbulence levels. Analysis results would require interpretation by an aviation specialist who would assess the acceptability of these specific results for the aircraft actually used at this location. <p>In addition, the City may consider requiring additional analyses to address the following questions:</p> <ul style="list-style-type: none"> • Additional review to address potential future adjacent development (i.e., a future configuration which may augment or mitigate predicted impacts in the future); and/or • Testing of mitigation schemes if the project results are unacceptable (i.e., the wind tunnel study could be then used to help define a height, size and location on that site that could be acceptable).
<p>135</p>	<p>Transportation and Aesthetics Analyses. With respect to transportation, it is acknowledged that transportation analysis in an urban environment is complex. However, the Draft EIS clearly defines the existing conditions for traffic congestion, transit, and bicycle/pedestrian travel. The most accurate trip generation methodology available was used to estimate trip generation and potential "with action" transportation impacts, and a series of mitigation measures to reduce the significance of the impacts was identified. The final conclusion of the Draft EIS is that there will be significant and unavoidable transportation impacts as a result of the height and density increase.</p> <p>With respect to aesthetics, the views analyzed in Section 3.10 include viewpoints designated by SMC 25.05.675.P, additional locations in and near the neighborhood that provide public or quasi-public views of the neighborhood, and designated scenic routes. As shown in Draft EIS Figure 3.10.22, a total of fifteen viewpoint locations were analyzed. It is acknowledged that the bird's eye view is not a view that would normally be seen. The bird's eye view perspectives, together with the perspectives from Gasworks Park, were only intended to provide an overview depiction and cumulative perspective of the South Lake Union neighborhood in the context of the surrounding area.</p>
<p>136</p>	<p>Affordable Housing. The comment is noted. The incentive zoning program being considered by the City is intended to create additional housing opportunities.</p>

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Olympia WA 98504-7703
Attn: Peg Plummer

National Marine Fisheries Service
7600 Sand Point Way NE
Seattle, WA 98115-0070

Aesthetics

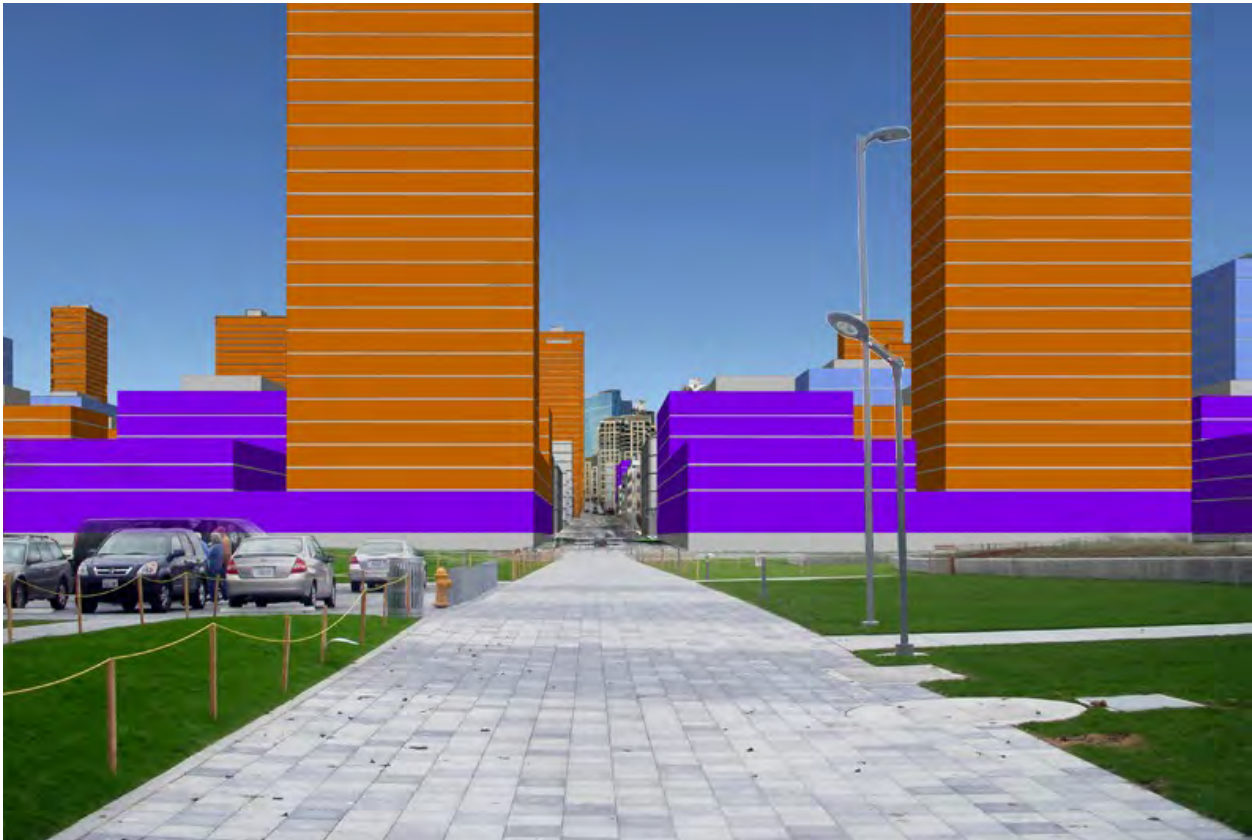
APPENDIX D AESTHETICS

Additional Viewshed Simulations Figures 1-28
Shadow Figures 29-44

Figure 1
Waterfront: South—Alternative 1



Existing



Proposed

Source: NBBJ, 2011

Figure 2
Waterfront: South—Alternative 2



Existing



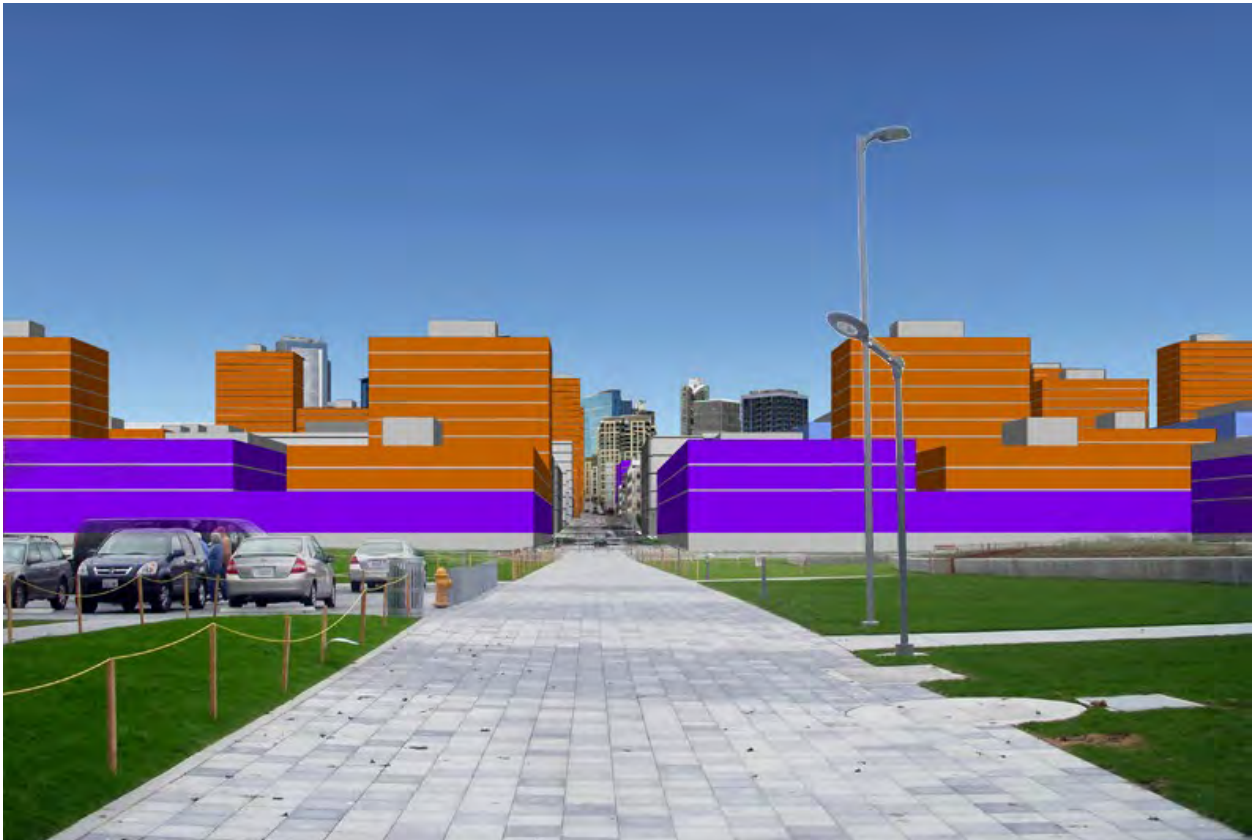
Proposed

Source: NBBJ, 2011

Figure 3
Waterfront: South—Alternative 3



Existing



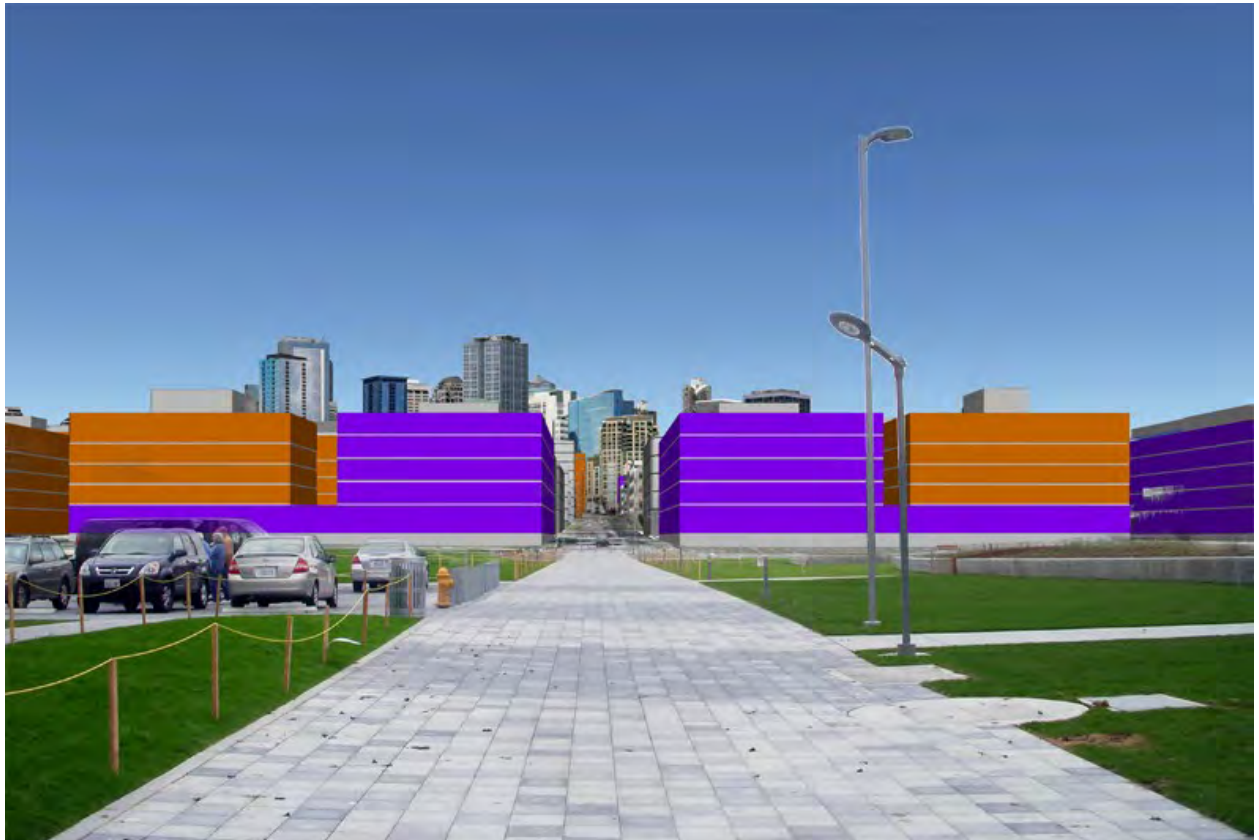
Proposed

Source: NBBJ, 2011

Figure 4
Waterfront: South—Alternative 4



Existing



Proposed

Source: NBBJ, 2011

Figure 5
Waterfront: Southeast—Alternative 1



Existing



Proposed

Source: NBBJ, 2011

Figure 6
Waterfront: Southeast—Alternative 2



Existing



Proposed

Source: NBBJ, 2011

Figure 7
Waterfront: Southeast—Alternative 3



Existing



Proposed

Source: NBBJ, 2011

Figure 8
Waterfront: Southeast—Alternative 4



Existing



Proposed

Source: NBBJ, 2011

Figure 9
Playground—Alternative 1



Existing



Proposed

Source: NBBJ, 2011

Figure 10
Playground—Alternative 2



Existing



Proposed

Source: NBBJ, 2011

Figure 11
Playground—Alternative 3



Existing



Proposed

Source: NBBJ, 2011

Figure 12
Playground—Alternative 4



Existing



Proposed

Source: NBBJ, 2011

Figure 13
Bellevue—Alternative 1



Existing



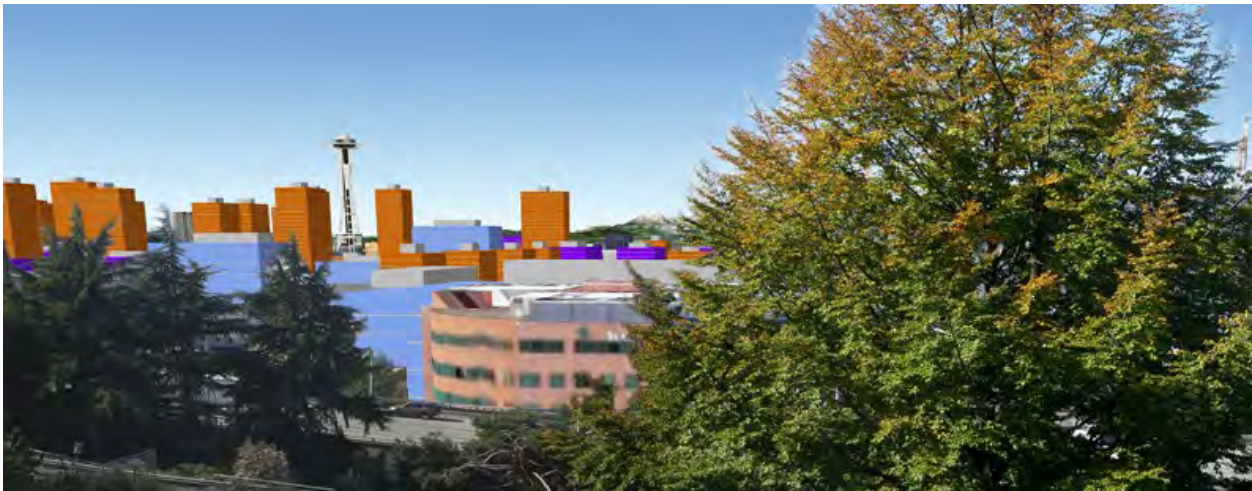
Proposed

Source: NBBJ, 2011

Figure 14
Bellevue—Alternative 2



Existing



Proposed

Source: NBBJ, 2011

Figure 15
Bellevue—Alternative 3



Existing



Proposed

Source: NBBJ, 2011

Figure 16
Bellevue—Alternative 4



Existing



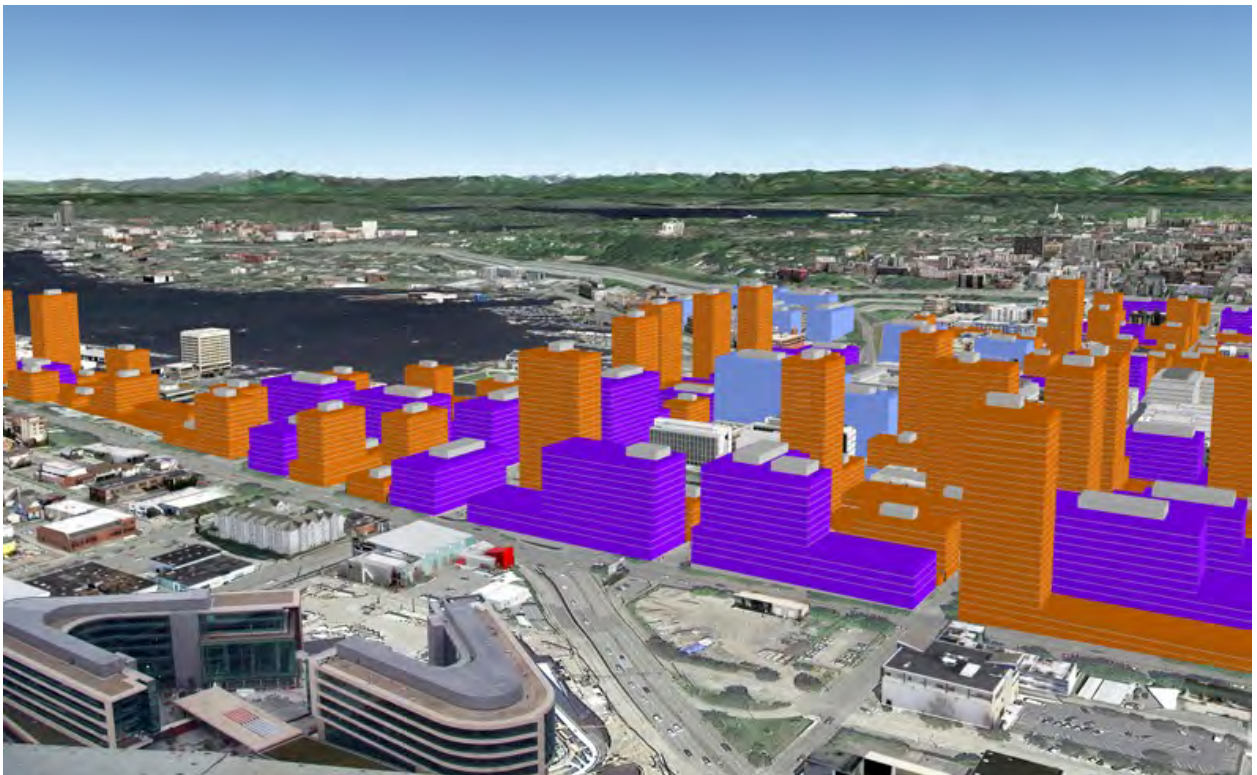
Proposed

Source: NBBJ, 2011

Figure 17
Space Needle 1—Alternative 1



Existing



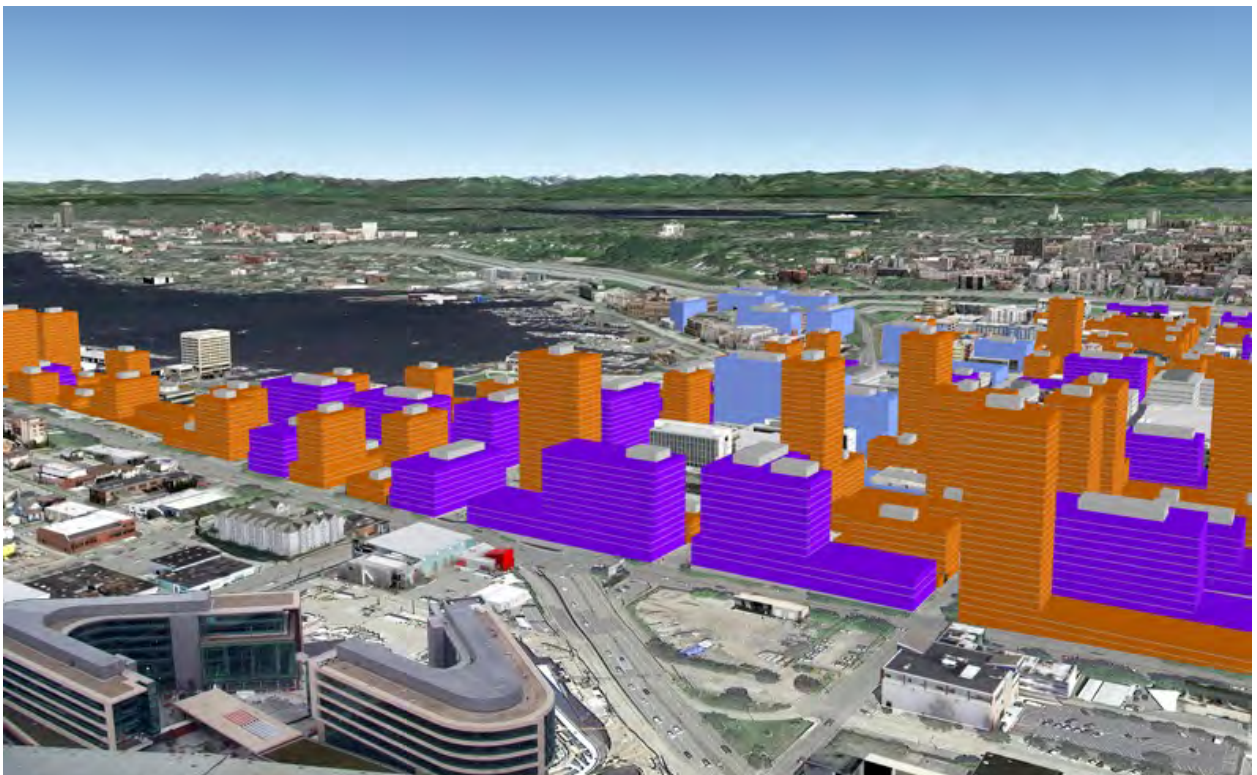
Proposed

Source: NBBJ, 201

Figure 18
Space Needle 1—Alternative 2



Existing



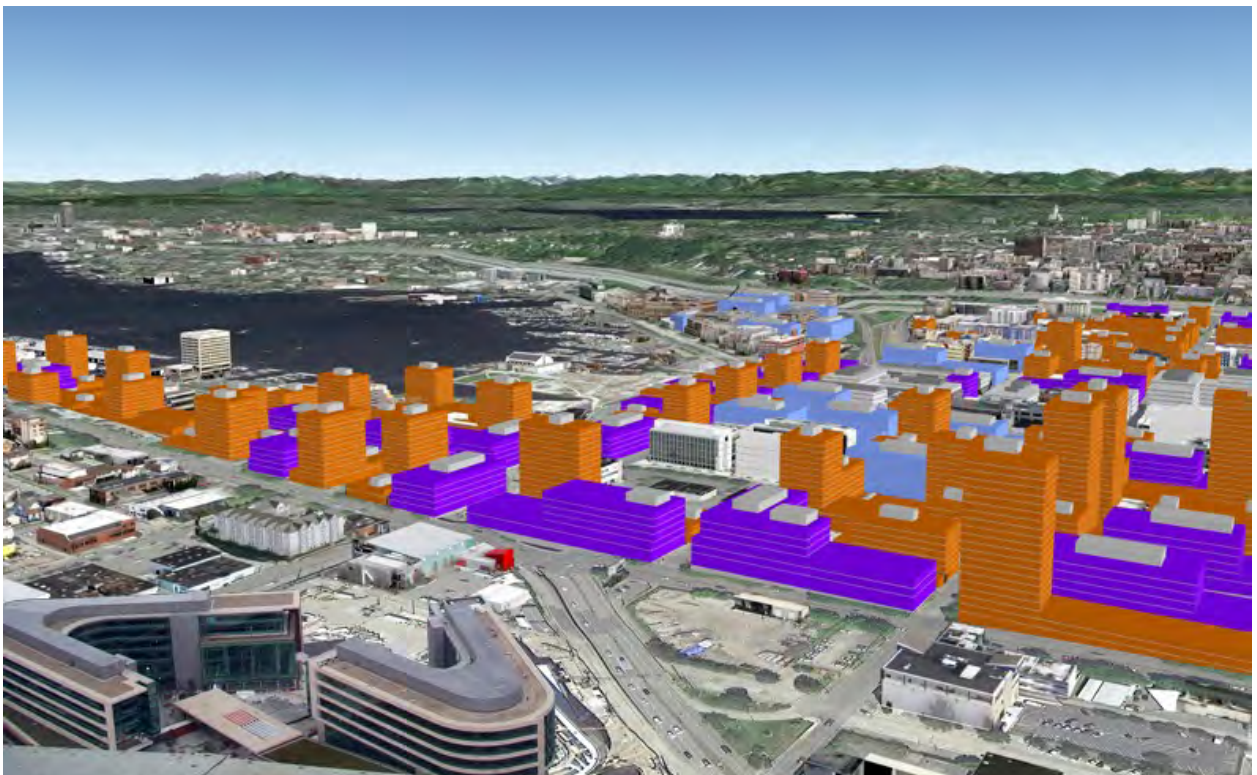
Proposed

Source: NBBJ, 201

Figure 19
Space Needle 1—Alternative 3



Existing



Proposed

Source: NBBJ, 201

Figure 20
Space Needle 1—Alternative 4



Existing



Proposed

Source: NBBJ, 201

Figure 21
Space Needle 2—Alternative 1



Existing



Proposed

Source: NBBJ, 2011

Figure 22
Space Needle 2—Alternative 2



Existing



Proposed

Source: NBBJ, 2011

Figure 23
Space Needle 2—Alternative 3



Existing



Proposed

Source: NBBJ, 2011

Figure 24
Space Needle 2—Alternative 4



Existing



Proposed

Source: NBBJ, 2011

Figure 25
Thomas—Alternative 1



Existing



Proposed

Source: NBBJ, 2011

Figure 26
Thomas—Alternative 2



Existing



Proposed

Source: NBBJ, 2011

Figure 27
Thomas—Alternative 3



Existing



Proposed

Source: NBBJ, 2011

Figure 28
Thomas—Alternative 4



Existing

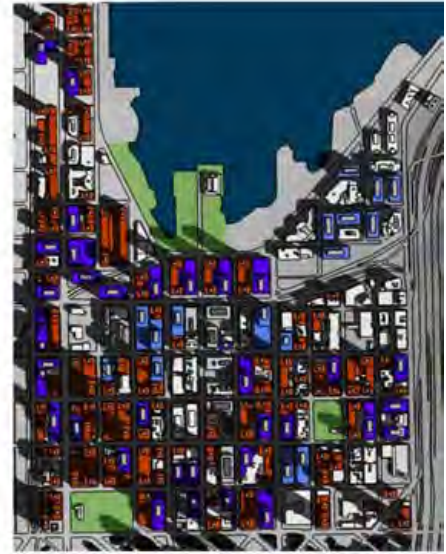


Proposed

Source: NBBJ, 2011

Figure 29
March 21—Alternative 1

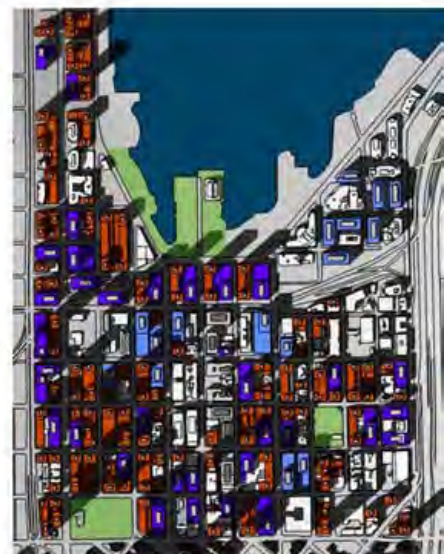
9 AM



12 PM



3 PM

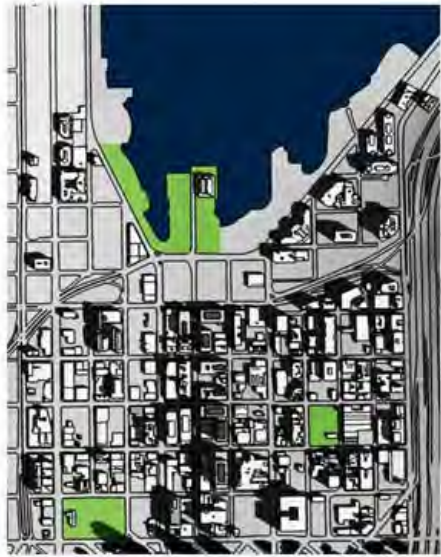


Existing

Proposed

Source: NBBJ, 2010

Figure 30
March 21—Alternative 2



9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Figure 31
March 21—Alternative 3

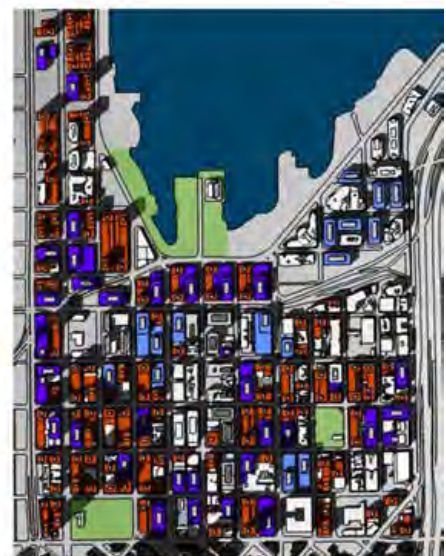
9 AM



12 PM



3 PM

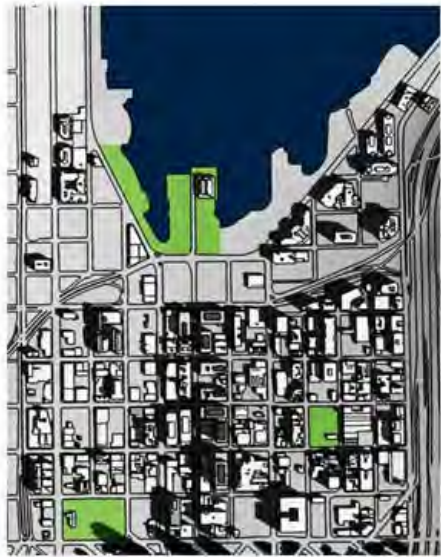


Existing

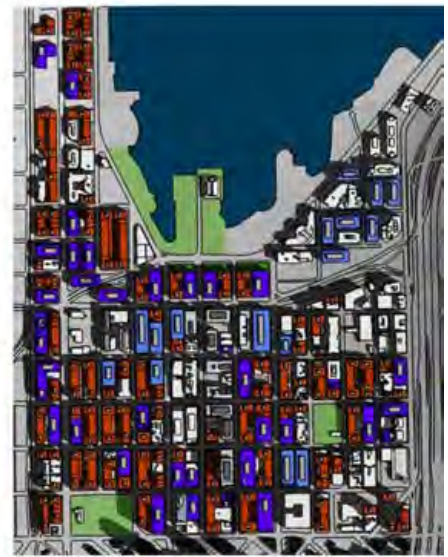
Proposed

Source: NBBJ, 2010

Figure 32
March 21—Alternative 4



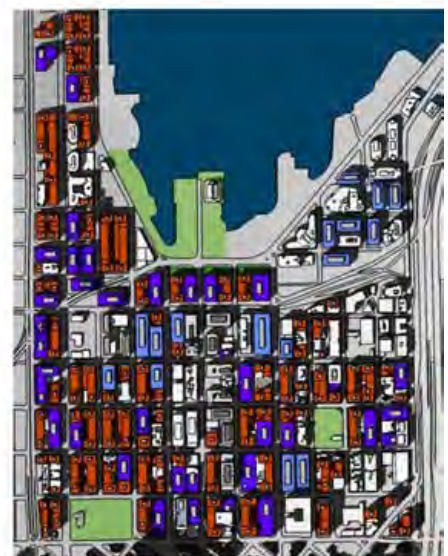
9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Figure 33
June 21—Alternative 1



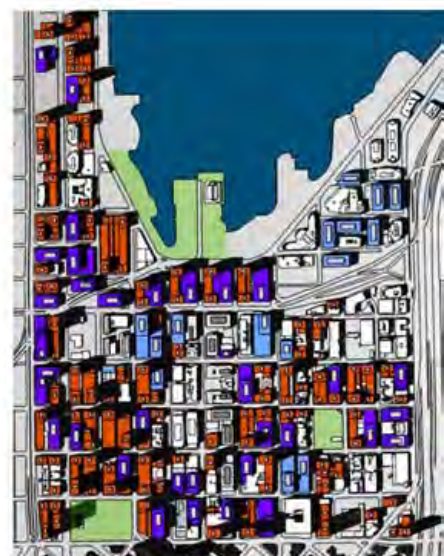
9 AM



12 PM



3 PM



Existing

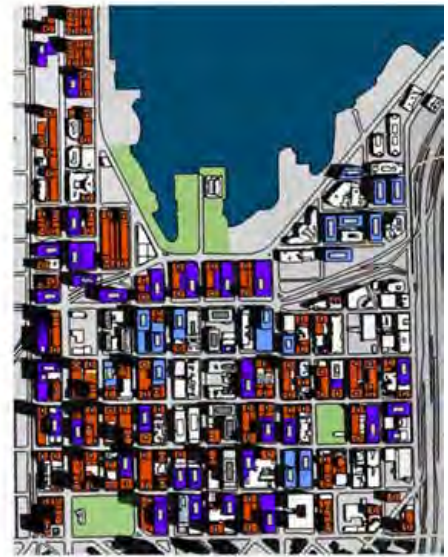
Proposed

Source: NBBJ, 2010

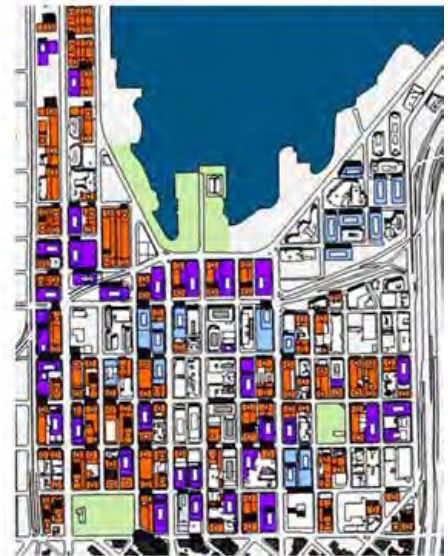
Figure 34
June 21—Alternative 2



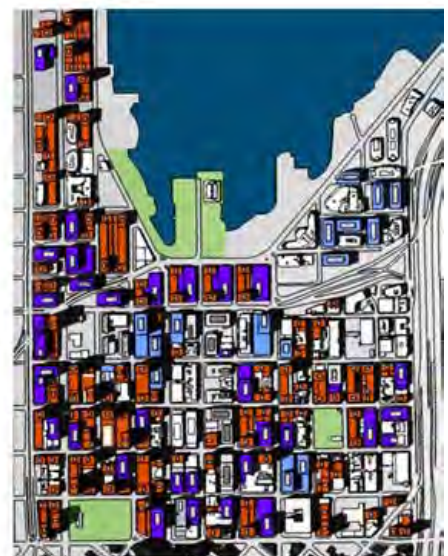
9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Figure 35
June 21—Alternative 3



9 AM



12 PM



3 PM



Existing

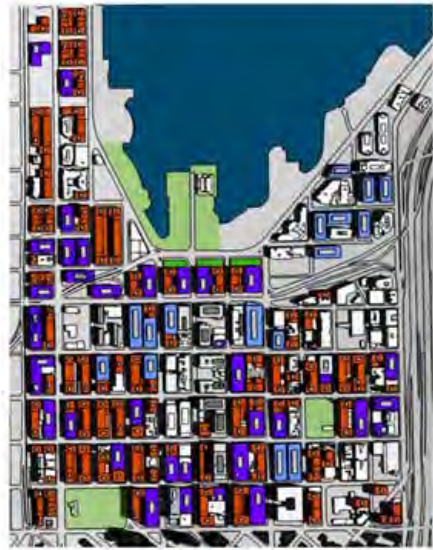
Proposed

Source: NBBJ, 2010

Figure 36
June 21—Alternative 4



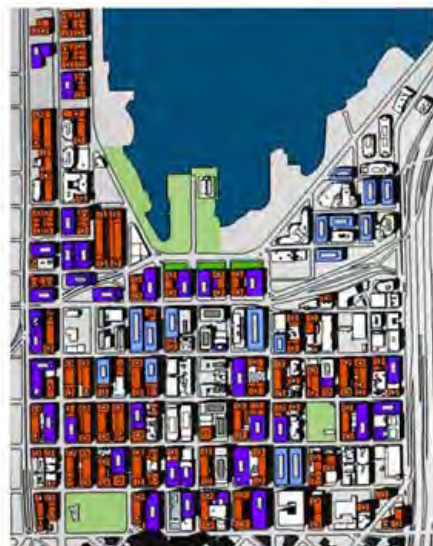
9 AM



12 PM



3 PM



Existing

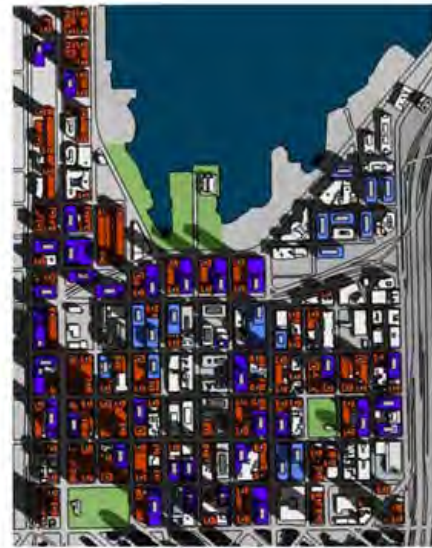
Proposed

Source: NBBJ, 2010

Figure 37
September 21—Alternative 1



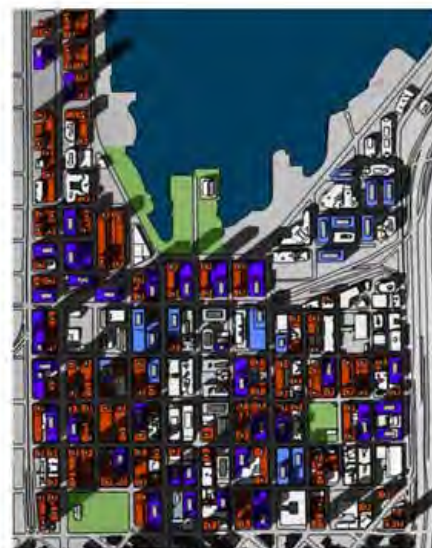
9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Figure 38
September 21—Alternative 2



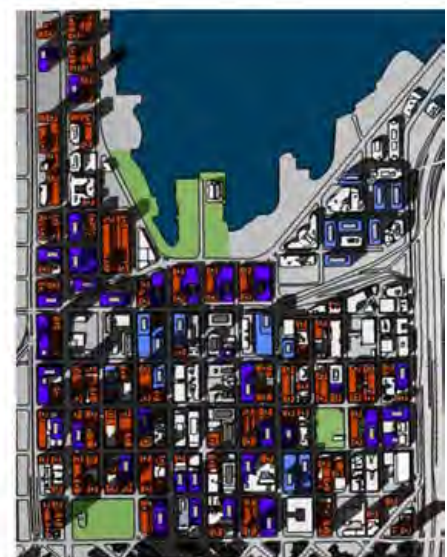
9 AM



12 PM



3 PM



Existing

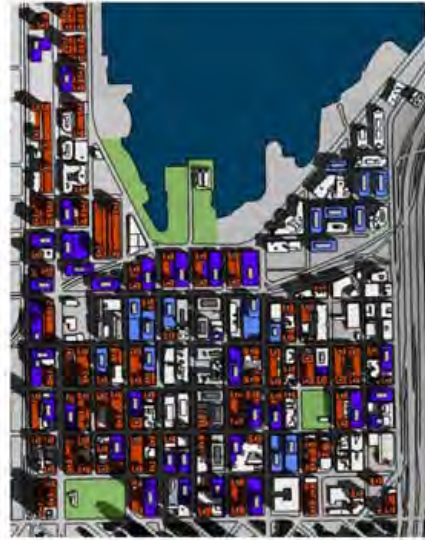
Proposed

Source: NBBJ, 2010

Figure 39
September 21—Alternative 3



9 AM



12 PM



3 PM



Existing

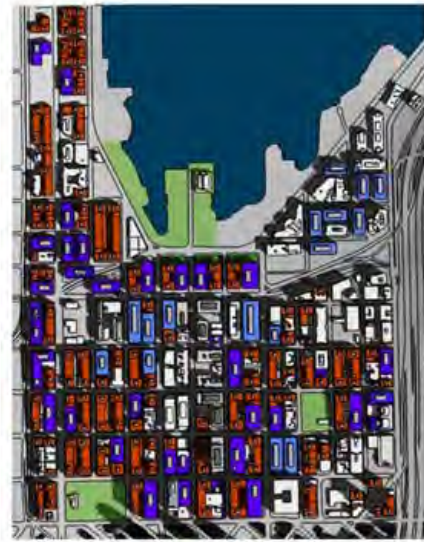
Proposed

Source: NBBJ, 2010

Figure 40
September 21—Alternative 4



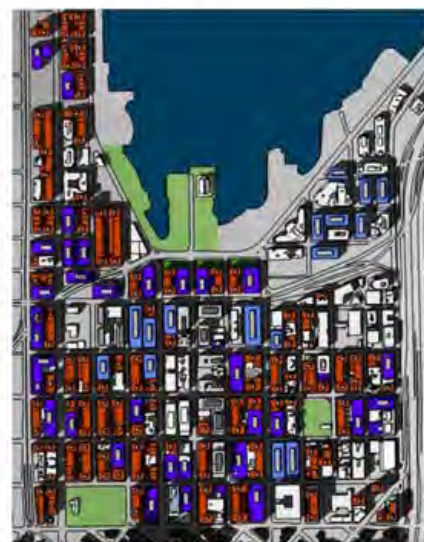
9 AM



12 PM



3 PM

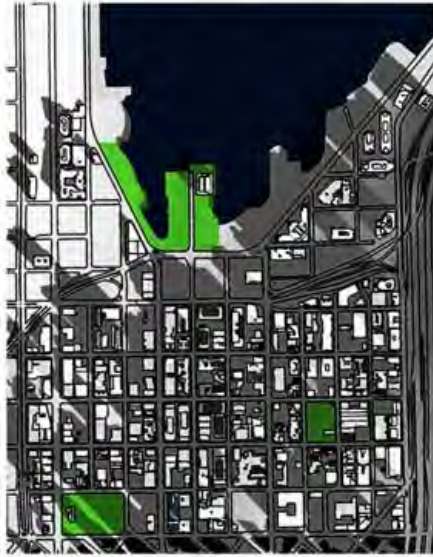


Existing

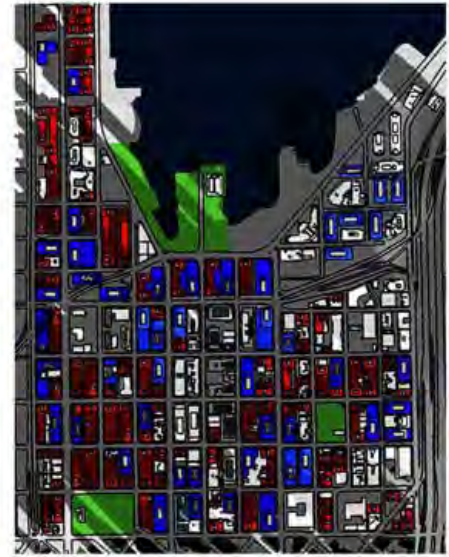
Proposed

Source: NBBJ, 2010

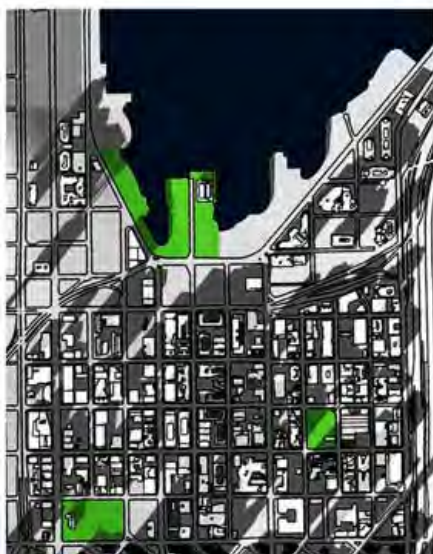
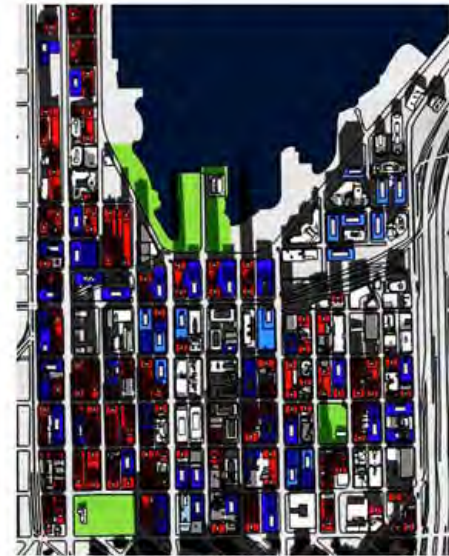
Figure 41
December 21—Alternative 1



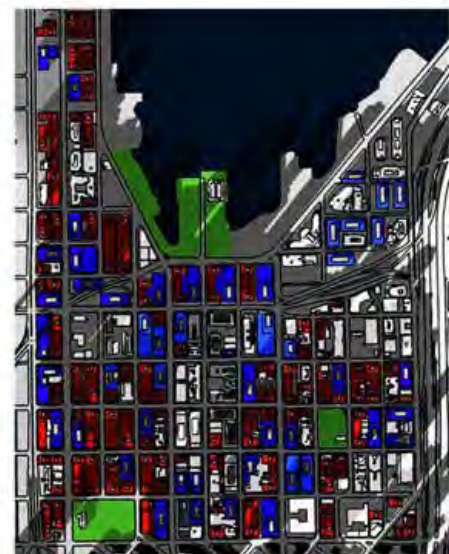
9 AM



12 PM



3 PM

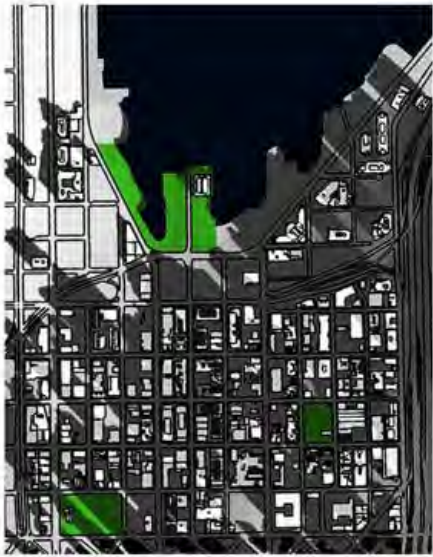


Existing

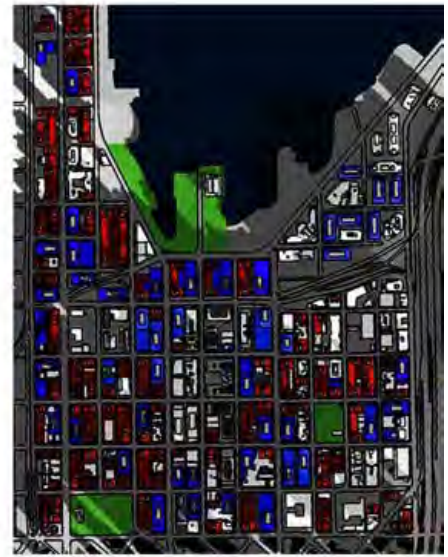
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Source: NBBJ, 2010

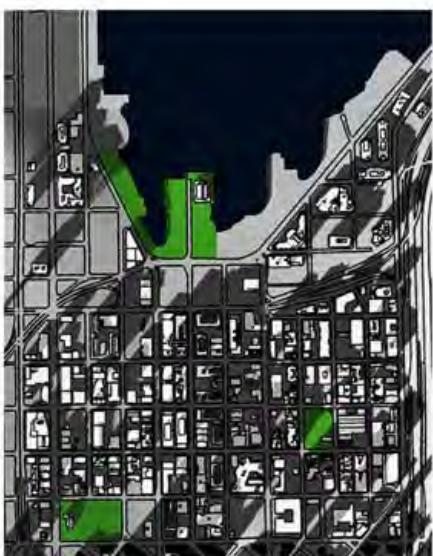
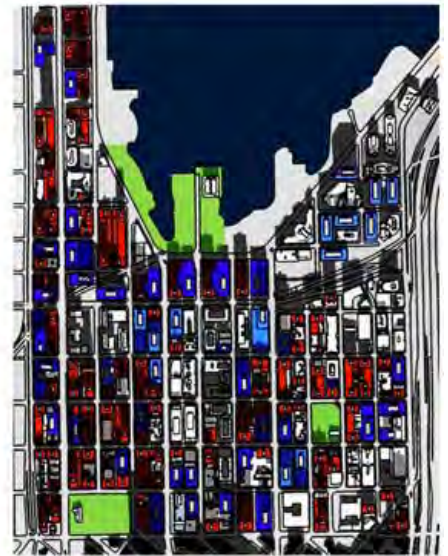
Figure 42
December 21—Alternative 2



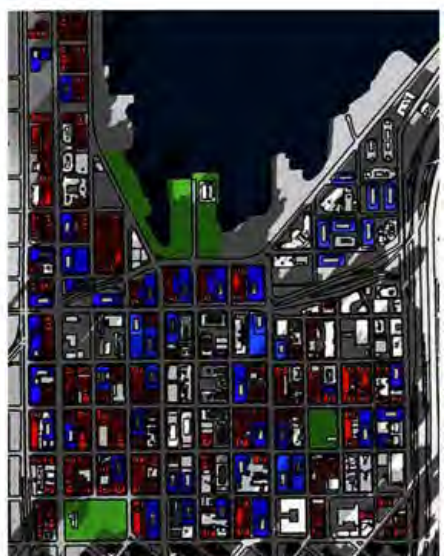
9 AM



12 PM



3 PM

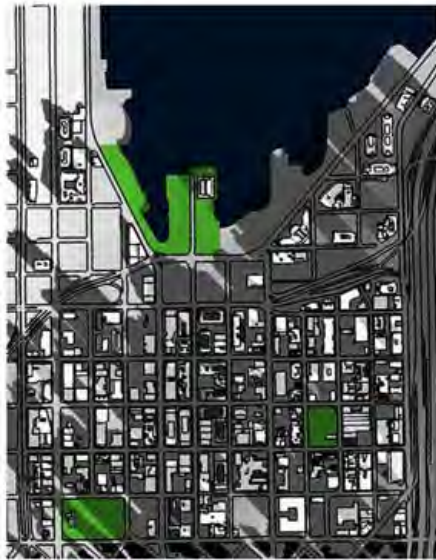


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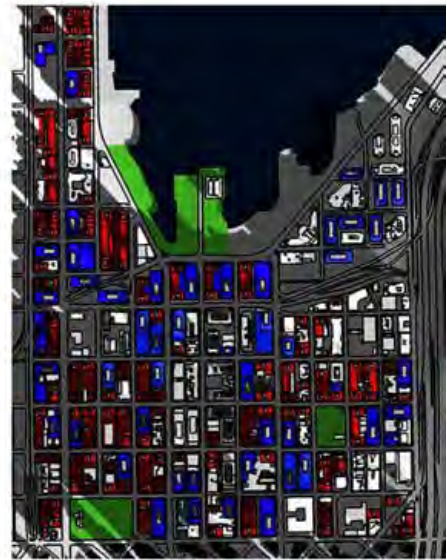
Proposed

Source: NBBJ, 2010

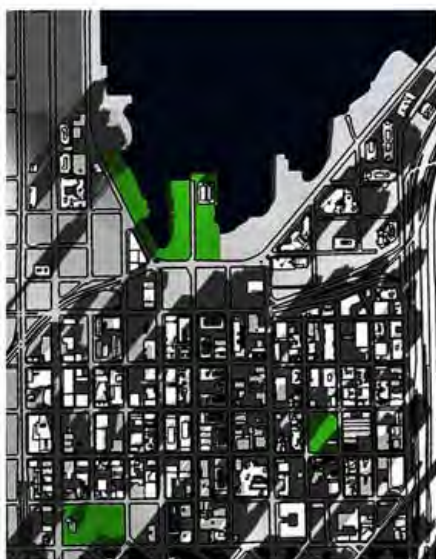
Figure 43
December 21—Alternative 3



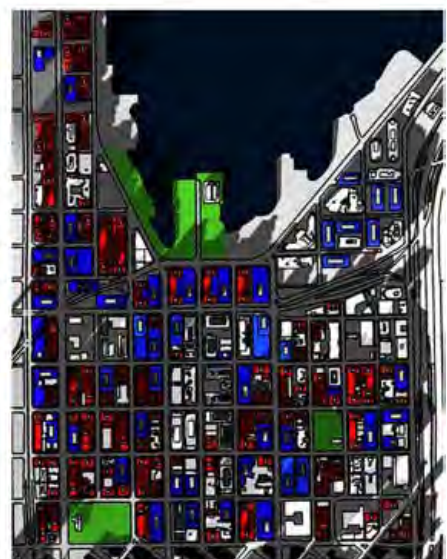
9 AM



12 PM



3 PM

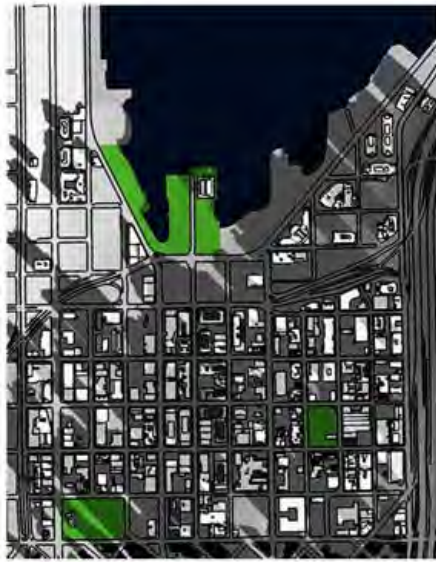


Existing

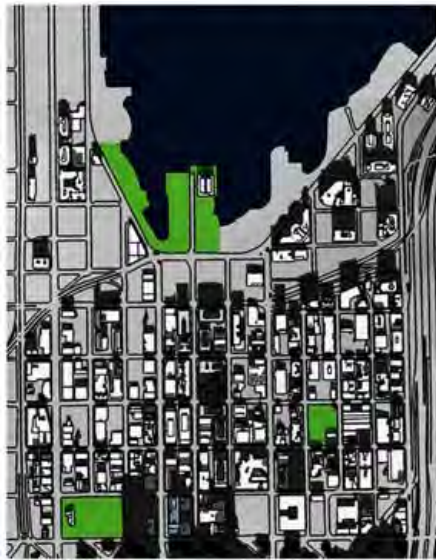
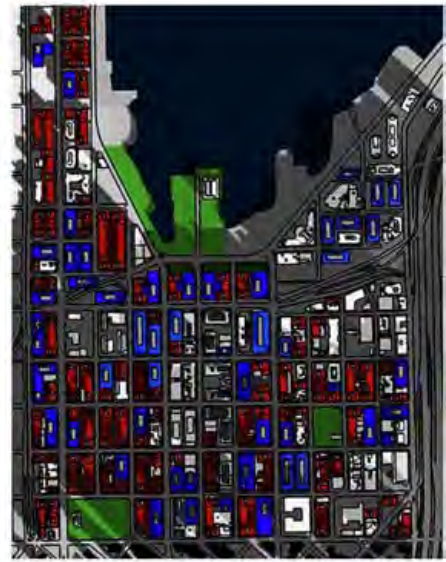
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Source: NBBJ, 2010

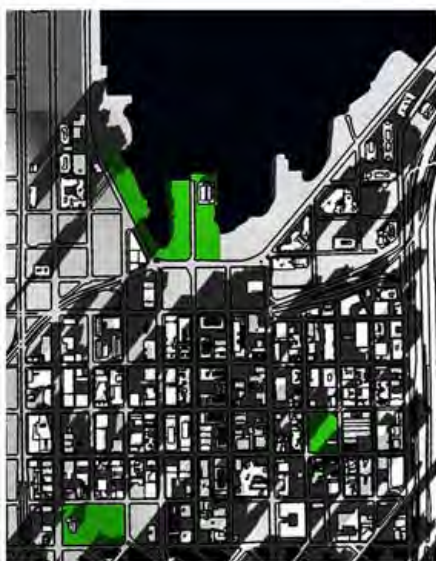
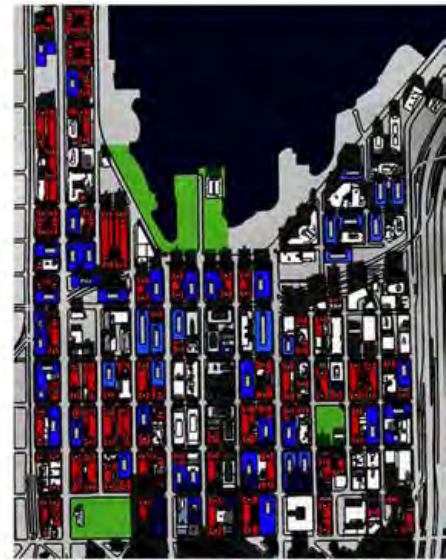
Figure 44
December 21—Alternative 4



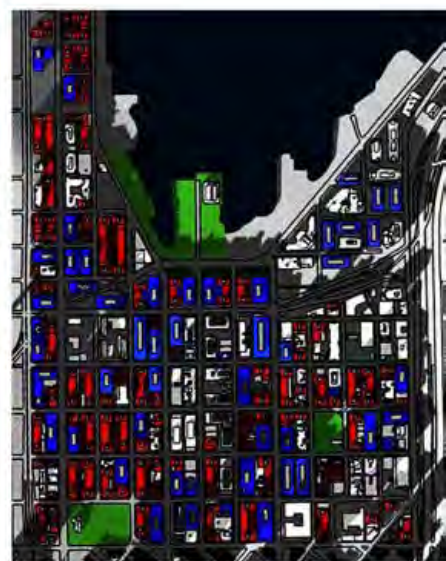
9 AM



12 PM



3 PM



Existing

Proposed

Source: NBBJ, 2010

Transportation

Appendix E-1: Parking

This appendix provides more information on the parking analysis completed for this document.

Existing Conditions Parking Analysis

The data used for the existing conditions parking analysis is included as Attachments 1, 2, and 3.

Future Year Parking Estimates

The future year parking estimates are based on the actual parking supplied by recent developments in South Lake Union. According to <http://seattlecommercialpropertydirectory.com/>, parking was provided at the following ratios for recently developed projects:

- 1 space per thousand square feet of non-residential area: Alley 24, 2200 Westlake Avenue, 2201 Westlake Avenue
- 1.4 spaces per thousand square feet of non-residential area: Amazon Headquarters
- 1.5 spaces per thousand square feet of non-residential area: 320 Westlake Avenue
- 1.6 spaces per thousand square feet of non-residential area: 428 Westlake

The current City of Seattle Municipal Code (Section 23.54.015) requires 1 space per thousand square feet of office and 2 spaces per thousand square feet for retail uses. As discussed in the text, no parking is required for multifamily residential uses in commercial zones in urban centers, which applies to most of the study area; however, parking is still usually provided. It was assumed that one parking space per dwelling unit would be supplied. Since the code regarding commercial uses is complex, and varies depending on specific land use, the following assumptions were made:

- 1 space per dwelling unit for residences
- 3 spaces per 1,000 square feet (ksf) of retail space
- 1.5 space per 1,000 square feet (ksf) of office (non-retail) space

Future growth was provided as jobs, rather than as square footage. Therefore, the assumptions used in the MXD tool were used to convert jobs to square footage. The conversion factors are:

- 500 square feet per retail employee
- 350 square feet per office (non-retail) employee

The following table shows the household and job growth and resulting parking spaces.

Table A3.13-1
ESTIMATED ADDITIONAL PARKING SPACES IN 2031

Alternative	Households	Retail Jobs	Non-retail Jobs	Total
Expected Growth				
No Action	9,200	2,087	13,913	25,200
Alternative 1	11,900	2,856	19,040	33,796
Alternative 2	11,900	2,856	19,040	33,796
Alternative 3	11,900	2,400	16,000	30,300
Expected New Parking Spaces				
No Action	9,200	3,131	7,305	19,636
Alternative 1	11,900	4,284	9,996	26,180
Alternative 2	11,900	4,284	9,996	26,180
Alternative 3	11,900	3,600	8,400	23,900

Source: Fehr & Peers, 2010

Appendix E-2: Roadway Operations Analysis

This appendix provides additional information on the methods used for roadway impact assessment.

Impact Threshold

The threshold for an impact on the roadway is defined as “an increase in traffic on a study corridor that operates unacceptably (as measured by d/c ratios and LOS) under the 2031 No Action scenario that results in the d/c ratio increasing by at least .01 (increases in d/c ratios of less than .01 are less than typical daily fluctuations and are not noticeable by drivers).”

The following analysis was completed to give show that an increase of less than 0.01 would not be noticeable by drivers. A Synchro network showing the intersection of Mercer Street and Fairview Avenue N was created with turning volumes for the PM peak hour. The Highway Capacity Manual LOS report determines the average delay experienced by drivers to be 85.9 seconds.

The d/c ratio on eastbound Mercer Street increasing by 0.01 equates to an additional 32 cars (i.e. one-hundredth of the total capacity). Therefore, 32 cars were added proportionally to the eastbound movements. The same growth factor (1.24 percent) was applied to the other approaches as well. The resulting Highway Capacity Manual LOS report determines the new average delay experienced by drivers to be 89.7 seconds, an increase of 3.8 seconds. Additional delay of this length would not be noticeable to drivers, and is within typical daily fluctuations. The HCM reports are included as Attachment 4.

The Difference Method

To reduce model error, a technique known as the difference method was applied for traffic volumes. Rather than take the direct output from the 2031 model, the difference method calculates the growth between the base year and 2031 models, and adds that growth to an existing count. For example, assume a road has an existing count of 450 vehicles. If the base year model showed a volume of 400 vehicles and the future year model showed a volume of 550 vehicles, then 150 cars would be added to the existing count for a total of 600 cars.

Capacity Adjustments

The increase in capacity for one-way streets is consistent with methodology recommended by the Florida Department of Transportation (FDOT). Attachment 5 from FDOT’s 2009 Quality/Level of Service Handbook shows the relevant table.

Appendix E-3: Transit Analysis

This appendix summarizes the transit analysis. All future year transit information comes from the City of Seattle travel model.

Existing Conditions

The existing average headways reported in **Table 3.13-1** were calculated using current King County Metro (KCM) schedules. Average headways are the ratio of the number of minutes in the time period to the number of busses expected over the time period. Note that within each time period, the actual headway will often vary.

The existing load factors reported in **Tables 3.13-5** and **3.13-6** were provided by KCM (see Attachment 6). The peak hour for each route in each direction was chosen to reflect the highest load factor experienced over the peak period. Therefore, the time periods vary between routes as well as between directions of the same routes.

Future Year Analysis

Future year analysis was conducted the same way for both the No Action and the Action Alternatives. Future transit operations are assessed using peak hour load factors. The City of Seattle travel model uses three hour peak periods, rather than one peak hour, so assumptions were made to factor the results to represent the peak hour. These assumptions are described below.

Since load factors are based on the number of seats available on the transit route during the peak commute hour, the capacity will change under 2031 conditions as headways change. The Seattle travel model does not explicitly model PM peak period transit trips (they are modeled as the reverse of the AM trips).

Table A.13-2 displays AM peak period transit route headways from the City of Seattle travel model for the base year and 2031 conditions. Since headways can vary over the course of the peak period, weighted headways were estimated. The travel model breaks routes into multiple pieces, for example some with 15 minute headways and others with 30 minute headways. Headways are weighted based upon the ridership volume for each piece so if the 15 minute headway busses have higher ridership, the headway will be weighted more heavily toward the 15 minute headway than the 30 minute headway. An example (using Route 5 SB) is provided below to illustrate. There are 298 passengers at 20 minute headways, 1,234 passengers at 30 minute headways, and 103 passengers at 120 minute headways.

$$\text{Weighted Headway} = \frac{(20 * 298) + (30 * 1234) + (120 * 103)}{(298 + 1234 + 103)} = 34$$

These weighted headways are assumed to remain constant over the entire peak period for this analysis. The following table shows that all headways are expected to decrease between the base year and 2031, with the exception of the Aurora RapidRide (replacing existing Route 358) SB which will remain constant at 6 minute headways.

Table A3.13-2
NO ACTION ALTERNATIVE: SOUTH LAKE UNION AM PEAK PERIOD TRANSIT
WEIGHTED HEADWAYS

Route	Termini Locations	Base Year Headway		2031 Headway	
		NB	SB	NB	SB
5	Downtown, Shoreline	33	34	26	32
8	Uptown, Rainier Valley	30	30	14	16
16	Downtown, Northgate	20	20	17	17
17	Downtown, Loyal Heights	23	21	17	15
25	Downtown, Laurelhurst	49	45	26	26
26	Green Lake, Tukwila	26	27	17	14
28	Downtown, Broadview	30	30	17	24
66	Downtown, Northgate	30	30	26	26
70	Downtown, University District	15	15	10	10
Rapid Ride	Downtown, Aurora Village Transit Center	15	6	6	6

Source: Fehr & Peers, 2010

The underlying principle used to estimate capacity is that the change in headways has an inverse relationship to the change in capacity. For example, a bus route running 35-seat busses on 30 minute headways offers 70 seats per hour. The same bus route running on 15 minute headways offers 140 seats per hour.

$$2031 \text{ Capacity} = \frac{\text{Base Year Headway}}{2031 \text{ Headway}} * \text{Existing Capacity}$$

To reduce model error, a technique known as the difference method was applied for transit ridership. Rather than take the direct output from the 2031 model, the difference method calculates the growth between the base year and 2031 models, and adds that growth to an existing count.

Forecasted Ridership

$$\begin{aligned} &= \text{Existing Ridership} + (\text{2031 Model Ridership} \\ &- \text{Base Year Model Ridership}) \end{aligned}$$

Ridership in the City of Seattle travel model is available for the peak period only. The peak hour of transit is often assumed to contain approximately 40 percent of peak period ridership. This figure was confirmed as a reasonable average, given that KCM data indicates 44 percent of AM peak period (6-9 AM) ridership and 35 percent of PM peak period (3:15-6:30 PM) ridership occurs within the respective peak hours. Therefore, peak period ridership was multiplied by 0.4 to arrive at peak hour ridership.

$$\text{Peak Hour Ridership} = \text{Peak Period Ridership} * 0.4$$

The previous methods were used for all transit lines that appear in both the base year and future year travel models. Ridership for new routes was estimated using direct model output since the difference method correction cannot be applied to routes that do not have existing conditions ridership estimates. The same peak factor of 40 percent was used to calculate peak hour ridership. The new lines are listed below:

- Route 21: Arbor Heights to Downtown Seattle
- Route 29: Woodland Park to Downtown Seattle
- Route 56: Alki/West Seattle to South Lake Union
- Route 121: Burien to Downtown Seattle
- Route 308: Lake Forest Park to Downtown Seattle
- Route 313: Bothell to Uptown
- Route 316: Shoreline to Uptown

Capacities for the future lines were not available from KCM. Therefore, the project team made assumptions about the size of the busses that would run based upon the estimated ridership. Bus capacity does vary among the KCM fleet, but KCM plans to purchase only low-floor busses in the future. The articulated busses have 56 seats and the standard busses have 35 seats. Lines with at least 700 riders per peak period are assumed to run 56-seat busses, while lines with fewer than 700 riders per peak period are assumed to run 35-seat busses. These assumptions are based on the types of busses that serve existing routes with higher and lower ridership.

Using these assumptions and future headways, capacity was estimated for the new lines, as follows.

$$\text{Peak Hour Capacity} = \frac{60 \text{ minutes}}{\text{Weighted Headway}} * \text{Number of seats on bus}$$

Off-Peak Headways

The UVTN calls for 15 minute frequencies 18 hours a day, every day of the week. Since the travel model only provides headway information for the AM peak hour, headways were extrapolated for other times of the day. The change in headway between the base year and 2030 was applied to existing midday headways.

Table A3.13-3
NO ACTION ALTERNATIVE: SOUTH LAKE UNION MIDDAY TRANSIT WEIGHTED HEADWAYS

Route	Termini Locations	Base Year Midday Headway		Change in Headway Between Base Year and 2031		2031 Estimated Headway	
		NB	SB	NB	SB	NB	SB
5	Downtown, Shoreline	15	15	0.80	0.96	12	14
8	Uptown, Rainier Valley	15	15	0.47	0.52	7	8
16	Downtown, Northgate	20	20	0.87	0.87	17	17
17	Downtown, Loyal Heights	30	30	0.76	0.73	23	22
25	Downtown, Laurelhurst	65	65	0.53	0.58	35	38
26	Green Lake, Tukwila	29	29	0.67	0.54	19	16
28	Downtown, Broadview	30	30	0.58	0.78	17	23
66	Downtown, Northgate	30	30	0.87	0.87	26	26
70	Downtown, University District	15	15	0.69	0.69	10	10
Rapid Ride	Downtown, Aurora Village Transit Center	9	9	0.40	1.00	4	9

Source: Fehr & Peers, 2010

This analysis indicated that Routes 16, 17, 25, 26, 28, and 66 would not meet the UVTN frequency goals due to their midday schedules. Of the remaining routes, the following indicated that they would not meet other UVTN frequency goals:

- Route 70 does not operate on Sundays.

- Route 5 currently has approximately 30 minute headways on Sundays. The expected decrease in headway (0.80 NB and 0.96 SB) would not bring the headway to 15 minutes.
- Route 8 very narrowly misses the goals. It currently has approximately 30 minute headways on Sundays. The expected decrease in SB headway (0.52) would not bring the headway to 15 minutes.

Mitigation

Transit mitigation was considered independently of any changes in trip generation and mode share. If the transit ridership remained the same as is expected under the Action Alternatives, then one to two busses per peak hour could be added to the routes with unacceptable load factors to bring them to an acceptable level. The following table details the calculations. The size of bus assumed for each route is the same as was assumed for the original Action Alternatives analysis.

Table A3.13-4
SOUTH LAKE UNION TRANSIT MITIGATION

Route	Termini Locations	Peak Hour Ridership	Peak Hour Capacity	Unmitigated Peak Hour Factor	Minimum Required Capacity	Assumed bus size	Additional busses required	Mitigated Load Factor
21 NB	Downtown, Arbor Heights	520	386	1.35	416	56	1	1.18
21 SB	Downtown, Arbor Heights	520	386	1.35	416	56	1	1.18
28 NB	Downtown, Broadview	240	171	1.40	192	56	1	1.06
29 NB	Downtown, Woodland Park	120	80	1.49	96	35	1	1.04
29 SB	Downtown, Woodland Park	144	80	1.79	115	35	1	1.25
56 NB	South Lake Union, West Seattle	396	258	1.53	317	56	2	1.07

Source: Fehr & Peers, 2010

Appendix E-4: MXD Tool Trip Generation

This appendix contains detailed background information on the enhanced trip generation tool used for this analysis. The complete MXD report is included as Attachment 7.

Model Validation

To ensure the accuracy of the MXD model, a set of 16 independent mixed use sites that were not included in the 239 initial model development MXD sites were tested to validate the model. Among the validation sites, use of the MXD model produced superior statistical performance when comparing the model results to observed data than are found when using traditional ITE methods. Specifically, the MXD model had a significantly lower root mean squared error (RMSE) and higher pseudo-R squared than traditional ITE methods when comparing estimated to observed external vehicle trips. Estimates from the ITE *Trip Generation Handbook* had an RMSE of 40% and pseudo-R squared of 0.58 (i.e., the ITE method only explains about 58 percent of the variability in external vehicle trips), modified estimates using ITE's traditional trip internalization techniques had an RMSE of 32% and pseudo-R squared of 0.73, whereas modified estimates using the MXD model had an RMSE of only 26% and pseudo-R squared of 0.82.

Trip Generation Tables

Table A3.13-5 summarizes the daily, AM, and PM trip generation for all four alternatives. Mitigated trip generation is also shown for the three action alternatives. The following table is a more detailed version of **Tables 3.13-8** and **3.13-16**

ITE gross trips are generally based on vehicle trip generation data from suburban development projects with very little transit, pedestrian, or bicycle trip generation. In this case, gross trips were estimated using the "High Rise Condo – ITE 232," "Shopping Center – ITE 820," and "General Office – ITE 710" land use types. The MXD model estimates the number of internal trips and external trips made by auto, pedestrian, bicycle, and transit by calculating the probability that a gross ITE trip will use one of these alternative modes.

When this calculation is made, the vehicle-trip is converted into a person-trip. The MXD model assumed an ITE average vehicle occupancy of 1.1 persons per vehicle. This means that one vehicle trip shifted to another mode becomes 1.1 person-trips. Therefore, the sum of the auto and non-auto trips will be greater than the ITE gross trips.

Mode share must be calculated using the same unit of trips (i.e. vehicle-trips or person-trips). Therefore, the mode share is calculated before the conversion factor is applied to internal, bicycle, pedestrian, and transit trips.

Table A3.13-5
TRIP GENERATION BY ALTERNATIVE

Alternative	Daily			PM Peak			AM Peak			
	Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)		Auto Trips (mode share %)	Non-auto Trips (mode share %)		
		Internal, Bike & Pedestrian	Transit		Internal, Bike & Pedestrian	Transit		Internal, Bike & Pedestrian	Transit	
No Action Alternative - Current Zoning	108,946 (49.4%)	70,540 (29.1%)	52,337 (21.6%)	12,648 (51.4%)	7,279 (26.9%)	6,091 (21.7%)	11,285 (56.2%)	4,688 (21.2%)	4,991 (22.6%)	
UNMITIGATED	Alternative 1 - Maximum Increases to Height and Density	136,973 (48.3%)	93,828 (30.1%)	67,509 (21.6%)	15,554 (50.5%)	9,429 (27.8%)	7,371 (21.7%)	13,262 (55.6%)	5,722 (21.8%)	5,945 (22.6%)
	Alternative 2 - Mid-Range Increases to Height and Density	136,888 (48.3%)	93,908 (30.1%)	67,509 (21.6%)	15,548 (50.4%)	9,435 (27.8%)	7,371 (21.7%)	13,257 (55.5%)	5,728 (21.8%)	5,944 (22.6%)
	Alternative 3 - Moderate Increases to Height and Density	117,326 (48.1%)	81,403 (30.3%)	57,855 (21.6%)	13,605 (50.3%)	8,334 (28.0%)	6,449 (21.7%)	12,239 (55.2%)	5,411 (22.2%)	5,501 (22.6%)
MITIGATED	Alternative 1 - Maximum Increases to Height and Density	108,027 (38.1%)	115,933 (37.2%)	77,236 (24.8%)	12,244 (39.7%)	11,835 (34.9%)	8,606 (25.4%)	10,787 (45.2%)	6,947 (26.5%)	7,443 (28.3%)
	Alternative 2 - Mid-Range Increases to Height and Density	107,936 (38.1%)	116,030 (37.2%)	77,235 (24.8%)	12,236 (39.7%)	11,844 (34.9%)	8,606 (25.4%)	10,782 (45.2%)	6,953 (26.5%)	7,442 (28.3%)
	Alternative 3 - Moderate Increases to Height and Density	92,607 (38.0%)	100,310 (37.4%)	66,139 (24.6%)	10,715 (39.6%)	10,435 (35.1%)	7,526 (25.3%)	9,951 (44.9%)	6,556 (26.9%)	6,873 (28.2%)

Appendix E-5: CAPCOA Research

This appendix contains background information on the CAPCOA research used as a basis for mitigation. The MXD trip generation tool predicts mode share based primarily on land use and demographic information. It does not take additional travel demand management measures into account. The CAPCOA research provides guidance on the mode share shift expected when various travel demand management (TDM) programs are enacted. This appendix summarizes the process used to apply both types of measures. Attachment 8 contains the parking section from the CAPCOA research report. The full report, *Quantifying Greenhouse Gas Mitigation Measures*, is available online.

The pedestrian and bicycle system mitigation measures were factored into the MXD model to produce the mitigated trip generation based on land use changes alone. The results are shown in the following table.

Table A3.13-6
LAND USE MITIGATION REDUCTION RATE CALCULATIONS

Alternative	Unmitigated Net Trips			Mitigated Net Trips (Increased intersection density taken into account)			MXD (Land Use) Reduction Rate		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Alternative 1	13,262	15,554	136,973	12,691	14,404	127,090	4.3%	7.4%	7.2%
Alternative 2	13,257	15,548	136,888	12,684	14,395	126,984	4.3%	7.4%	7.2%
Alternative 3	12,239	13,605	117,326	11,707	12,606	108,949	4.3%	7.3%	7.1%

Source: Fehr & Peers, 2010

The CAPCOA research provides estimates on the amount of trip reduction that may take place given certain TDM measures. The 15 percent reduction in trip generation used for this analysis assumes that the maximum parking limits reduce parking supply (on a per square foot/dwelling unit basis) by 25 percent compared to the No Action alternative and that unbundled parking costs an average of \$100 per month per space. See the attached CAPCOA report for details.

The land use reductions and TDM reductions should be multiplicative, rather than additive, meaning that the reduction rate to be applied to the

mitigated net trips should be less than 15 percent. The following formula was used to identify the final TDM reduction percentage:

$$1 - (1 - MXD \text{ reduction rate}) * (1 - TDM \text{ reduction rate}) - MXD \text{ reduction rate}$$

The following table shows the results. These reduction rates were applied to the unmitigated net trips above to identify the additional trips that should be subtracted from the mitigated net trips.

Table A3.13-7TDM MITIGATION REDUCTION RATE CALCULATIONS

Alternative	TDM Reduction Rate per CAPCOA Research			Additional Trip Reductions			Final Number of Trips		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Alternative 1	14.4%	13.9%	13.9%	1,904	2,161	19,064	10,787	12,244	108,027
Alternative 2	14.4%	13.9%	13.9%	1,903	2,159	19,048	10,782	12,236	107,936
Alternative 3	14.3%	13.9%	13.9%	1,756	1,891	16,342	9,951	10,715	92,607

Source: Fehr & Peers, 2010

Appendix E-6: Commute Trip Reduction Surveys

This appendix contains background information on the CTR programs in place in South Lake Union.

Attachment 9 contains the table of 16 companies with SOV rates and goals. Green indicates the company met their goal, yellow indicates they reduced their but did not meet their goal, and red indicates the rate increased.

Attachment 10 contains the detailed reports used to create **Table 3.13-7**.

Appendix E-7: Comprehensive Plan Mode Share Goal Consistency

This section describes the evaluation to determine consistency with the Seattle Comprehensive Plan mode split goals. The Comprehensive Plan sets the following two goals:

- South Lake Union work trips mode split: 50% non-SOV
- South Lake Union resident trips mode split: 75% non-SOV

The trip generation analysis shown in **Table 3.13-8** and the Seattle travel model's estimate of SOV and HOV mode shares were used to determine the expected mode splits in 2031.

Under all three height and density alternatives, the project meets the first goal of at least 50 percent of South Lake Union work trips being made by non-SOV modes. However, the goal of 75 percent of all trips by South Lake Union residents being made by non-SOV modes is not met, as shown in **Table A3.13-17**. The mode shares of the three action alternative are closer to the goal than that of the No Action Alternative.

Table A3.13-17
SOUTH LAKE UNION RESIDENTS 2031 MODE SHARE

Alternative	Total Auto Mode Share (SOV & HOV)	SOV Mode Share
No Action Alternative	49.4%	27.6%
Alternative 1	48.3%	27.0%
Alternative 2	48.3%	27.0%
Alternative 3	48.1%	26.9%

Source: Fehr & Peers, 2010

Applying auto trip reduction rates correlated to the mitigation measures, the SOV mode share is reduced from approximately 27 percent to approximately 21 percent, which meets the Comprehensive Plan goal. Therefore, all three mitigated alternatives would meet the City's mode share goals while the No Action Alternative would not. Details of these calculations are provided in the remainder of this appendix.

The Seattle travel model trip tables break trips down by type including home based work (HBW), home based non-work (HBNW), and non-home based (NHB). The model also breaks trips down by mode. The HBW trips were used to determine the mode share for the goal of at least 50 percent

non-SOV work trips into South Lake Union (Goal 1). All three trip types were used to determine mode share for the goal of at least 75 percent non-SOV total trips by South Lake Union residents (Goal 2). The mode shares were used to approximate SOV and HOV use, since the MXD model does not distinguish between the two.

Comprehensive Plan Goal 1

The following table shows the number of person-trips made by SOV, HOV2 (2 passengers), and HOV3+ (3 or more passengers). Since the MXD results do not distinguish SOV from HOV trips, these proportions were applied to the MXD projection of total auto share. All alternatives have less than 50 percent SOV mode share so the first goal from the Comprehensive Plan is met.

Table A3.13-8
 COMPREHENSIVE PLAN MODE SHARE GOAL 1: AUTO OCCUPANCY
 CALCULATION

Mode	Work Trips to SLU	Percentage of Total Auto Trips
SOV	28,105	86.1%
HOV2	3,159	9.7%
HOV3+	1,368	4.2%
Total	32,632	100.0%

Source: City of Seattle travel model, 2010

Table A3.13-9
 COMPREHENSIVE PLAN MODE SHARE GOAL 1: SOV CALCULATION

Mode	Total Auto Trips per MXD	SOV Trips
No Action	49.4%	42.5%
Alternative 1	48.3%	41.6%
Alternative 2	48.3%	41.6%
Alternative 3	48.1%	41.4%

Source: City of Seattle travel model, 2010

Comprehensive Plan Goal 2

A similar method to that used for Goal 1 is used here. The sum of all three trip types originating in South Lake Union is calculated. This is an approximation of the trips made by South Lake Union residents.

Table A3.13-10
 COMPREHENSIVE PLAN MODE SHARE GOAL 2: AUTO OCCUPANCY
 CALCULATION

Mode	HBW Trips from SLU	HBNW Trips from SLU	NHB Trips from SLU	Total Trips from SLU	Percentage of Total Auto Trips
SOV	2,736	10,436	21,467	34,639	55.9%
HOV2	594	5,304	10,667	16,565	26.8%
HOV3+	340	3,086	7,284	10,710	17.3%
Total	3,670	18,826	39,418	61,914	100.0%

Source: Fehr & Peers, 2010

The breakdown of SOV and HOV types was then applied to the MXD auto mode share for both the mitigated and unmitigated alternatives. The 75 percent non-SOV goal is not met under the unmitigated alternatives, but is met under the mitigated alternatives.

Table A3.13-11
 COMPREHENSIVE PLAN MODE SHARE GOAL 2: SOV CALCULATION
 (UNMITIGATED AND MITIGATED)

Alternative	Unmitigated		Mitigated	
	Total Auto Trips per MXD	SOV Trips	Total Auto Trips per MXD	SOV Trips
No Action	49.4%	27.6%		
Alternative 1	48.3%	27.0%	38.1%	21.3%
Alternative 2	48.3%	27.0%	38.1%	21.3%
Alternative 3	48.1%	26.9%	38.0%	21.3%

Source: Fehr & Peers, 2010

Appendix E-8: Growth Management Act Concurrency

This section describes the evaluation to determine concurrency with Growth Management Act concurrency standards.

Methodology

The Seattle Comprehensive Plan uses peak hour volume-to-capacity (v/c) ratios across designated screenlines to assess arterial LOS for GMA Concurrency assessment. The v/c ratio is defined as the ratio of measured traffic volumes to calculated roadway capacity¹. Since busses (the primary transit mode) operate in the same roadways as general traffic, the City uses the same screenline analysis for transit. Within the traffic impact analysis area (bounded by S King Street to the south, the ship canal to the north, Elliott Avenue to the west and Broadway to the east), screenlines run along four corridors: the Ship Canal, Fairview Avenue, S Jackson Street and I-5. **Figure 3.13-24** in the Draft EIS shows the traffic impact analysis area and the screenlines it contains.

The screenline analysis was based upon methods outlined in the *Department of Planning and Development Director's Rule 5-2009* which summarizes the 2008 traffic volumes and capacities at each of the City's screenlines. From this document, the capacities of the key facilities were determined and the v/c ratio was calculated using the most recent traffic counts available from the City of Seattle.

Concurrency Standard

As previously described, the Seattle Comprehensive Plan uses v/c ratios across designated screenlines to assess arterial LOS. Each screenline is assigned a maximum acceptable v/c threshold. In the event a screenline's measurement approaches this threshold, the Comprehensive Plan calls for vehicular demand reduction strategies to be pursued before increasing capacity. **Table A3.13-12** displays the screenlines and their respective v/c thresholds in detail.

¹ As noted above, v/c ratios measure vehicles that pass a given point during the peak hour and do not consider queuing. Demand/capacity ratios were not used for GMA concurrency analysis since the Comprehensive Plan specifies the use of v/c ratios.

Table A3.13-12
TRAFFIC IMPACT ANALYSIS AREA SCREENLINES

Screenline Number	Screenline Location Segment	LOS Standard (v/c ratio)
5.11	Ship Canal—Ballard Bridge	1.20
5.12	Ship Canal—Fremont Bridge	1.20
5.13	Ship Canal—Aurora Bridge	1.20
5.16	Ship Canal—University & Montlake Bridges	1.20
8	Fairview Avenue N—Denny Way to Valley Street	1.20
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	1.00
12.12	East of CBD—S Jackson Street to E Pine Street	1.20

Source: *City of Seattle Comprehensive Plan, 2005.*

Existing Screenline Results

Table A3.13-13 displays the peak hour v/c ratios for the relevant screenlines. The peak hour count for each direction was used to calculate the v/c ratio. The *Department of Planning and Development Director's Rule 5-2009* document provided the capacity for each screenline. None of the screenlines currently exceed the GMA Concurrency LOS standard stated in the Comprehensive Plan.

Table A3.13-13
EXISTING SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.09	0.94
5.12	Ship Canal—Fremont Bridge	0.89	0.71
5.13	Ship Canal—Aurora Bridge	0.89	0.82
5.16	Ship Canal—University & Montlake Bridges	0.91	0.87
8	Fairview Avenue N—Denny Way to Valley Street	0.86	0.75
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.35	0.41
12.12	East of CBD—S Jackson Street to E Pine Street	0.50	0.60

Source: *City of Seattle count data, 2005-2010.*

No Action Alternative Screenline Results

Table A3.13-14 displays the v/c ratios for the relevant screenlines. As shown, the Ballard Bridge screenline exceeds the Comprehensive Plan standard in both directions. The Fairview Avenue N screenline exceeds the threshold of significance in the westbound direction only.

Table A3.13-14
NO ACTION ALTERNATIVE: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24
5.12	Ship Canal—Fremont Bridge	1.11	0.96
5.13	Ship Canal—Aurora Bridge	1.08	0.98
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64

Source: Fehr & Peers, 2010

Action Alternatives Screenline Results

Table A3.13-15 displays the v/c ratios for the screenlines within the traffic impact analysis area for all four alternatives. The 2031 travel model provided the volumes and capacities for all four future year scenarios.

As shown in the bold text, two screenlines exceed the Comprehensive Plan's v/c ratios under the three height and density rezone alternatives. These are the same two screenlines that exceeded the v/c ratio under the No Action Alternative. The screenline analysis indicates that the GMA concurrency requirements will not be met under 2031 conditions with or without the height and density rezone.

Table A3.13-15
ACTION ALTERNATIVES COMPARISON: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	No Action Alternative		Alternative 1		Alternative 2		Alternative 3	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24	1.37	1.25	1.38	1.26	1.36	1.24
5.12	Ship Canal—Fremont Bridge	1.11	0.96	1.13	0.99	1.13	0.98	1.11	0.98
5.13	Ship Canal—Aurora Bridge	1.08	0.98	1.10	0.99	1.10	0.99	1.09	0.98
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07	1.16	1.09	1.16	1.09	1.15	1.08
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21	1.05	1.22	1.05	1.22	1.03	1.21
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72	0.52	0.73	0.52	0.73	0.52	0.72
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64	0.46	0.66	0.46	0.66	0.45	0.65

Source: Fehr & Peers, 2010

Mitigated Action Alternatives Screenline Results

Following the mitigation measures discussed in Chapter 3.13, the screenlines were re-evaluated. The results are shown in **Table A3.13-16**. The Ballard Bridge screenline continues to exceed the standard under all three mitigated alternatives. However, the v/c ratios under the mitigated scenarios are all less than or equal to the v/c ratios under the No Action Alternative. Therefore, the mitigated alternatives (in particular, Alternative 3) perform better than the No Action Alternative in terms of GMA concurrency.

The Fairview Avenue N screenline exceeds the Comprehensive Plan standard in the westbound direction under the No Action Alternative and Alternative 1. Alternatives 2 and 3 meet GMA concurrency requirements since they equal the maximum acceptable threshold.

Table A3.13-16
MITIGATED ACTION ALTERNATIVES COMPARISON: SCREENLINE V/C RATIOS

Screenline Number	Screenline Location Segment	No Action Alternative		Alternative 1		Alternative 2		Alternative 3	
		NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB	NB/EB	SB/WB
5.11	Ship Canal—Ballard Bridge	1.35	1.24	1.35	1.23	1.35	1.23	1.34	1.22
5.12	Ship Canal—Fremont Bridge	1.11	0.96	1.10	0.96	1.10	0.95	1.08	0.94
5.13	Ship Canal—Aurora Bridge	1.08	0.98	1.07	0.97	1.07	0.97	1.06	0.97
5.16	Ship Canal—University & Montlake Bridges	1.14	1.07	1.13	1.06	1.13	1.06	1.12	1.05
8	Fairview Avenue N—Denny Way to Valley Street	1.02	1.21	1.02	1.21	1.02	1.20	1.02	1.20
10.11	South of S Jackson Street—Alaskan Way to 4th Avenue S	0.52	0.72	0.51	0.71	0.51	0.71	0.51	0.70
12.12	East of CBD—S Jackson Street to E Pine Street	0.45	0.64	0.44	0.64	0.44	0.64	0.44	0.63

Source: Fehr & Peers, 2010

Additional Flight Path Analysis

June 9, 2011

Mr. James Holmes
City of Seattle Department of Planning and Development
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**Re: South Lake Union Height and Density Draft EIS/
Summary of South Lake Union Floatplane Surface and Approach/Departure
Boundary Assessment & Criteria Review**

Dear Mr. Holmes:

In response to the publication of the South Lake Union Height and Density Draft Environmental Impact Statement (EIS), published in February 2011, City Investors LLC requested Barnard Dunkelberg & Company to evaluate and review the obstacle protection areas associated with the existing floatplane approach/departure flight track located over a portion of the South Lake Union Urban Center. We consulted with both the Washington State Department of Transportation/Aviation Division (WSDOT Aviation) and Kenmore Air in the preparation of that evaluation. This letter provides a brief summary of the findings of that evaluation. A memo detailing the results of the planning evaluation is included in the Planning Memorandum attached to this letter at Tab One. Barnard Dunkelberg & Company is a nationally recognized aviation planning firm. Background information on the firm, including the resumes of the preparers of the Planning Memorandum, is attached at Tab Two.

Findings

This review began with a comprehensive assessment of the existing Lake Union seaplane operation, which included confirmation of how the seaplane lanes are utilized (runway utilization, flight tracks, piloting techniques, etc.), an evaluation of the aircraft fleet used by the commercial floatplane operators, and documentation of the performance characteristics for the various floatplane aircraft. This information was supplemented with specific operational data provided by the commercial floatplane operators Kenmore Air and Seattle Seaplanes.

The purpose of the Planning Memorandum is to assist the City of Seattle with the preparation of the Final EIS and with the potential rezone of the South Lake Union Urban Center. In preparing this evaluation, Barnard Dunkelberg & Company identified several Federal Aviation

Mr. James Holmes
June 9, 2011
Page 2

Administration (FAA) and International Civil Aviation Organization (ICAO) planning documents that have applicability in the establishment of approach/departure track protection boundaries for curving approach and departure procedures such as the floatplane operations at Lake Union that approach or depart over the South Lake Union Urban Center. In our opinion, this planning methodology is more applicable than use of the Federal Aviation Regulations (FAR) Part 77 criteria that was referenced in the Draft EIS. FAR Part 77 can provide useful planning criteria for the evaluation of obstructions, especially the approach slopes in FAR Part 77, but those regulations do not, strictly speaking, apply to the seaplane bases on South Lake Union and do not address offset approach or turning departure procedures.

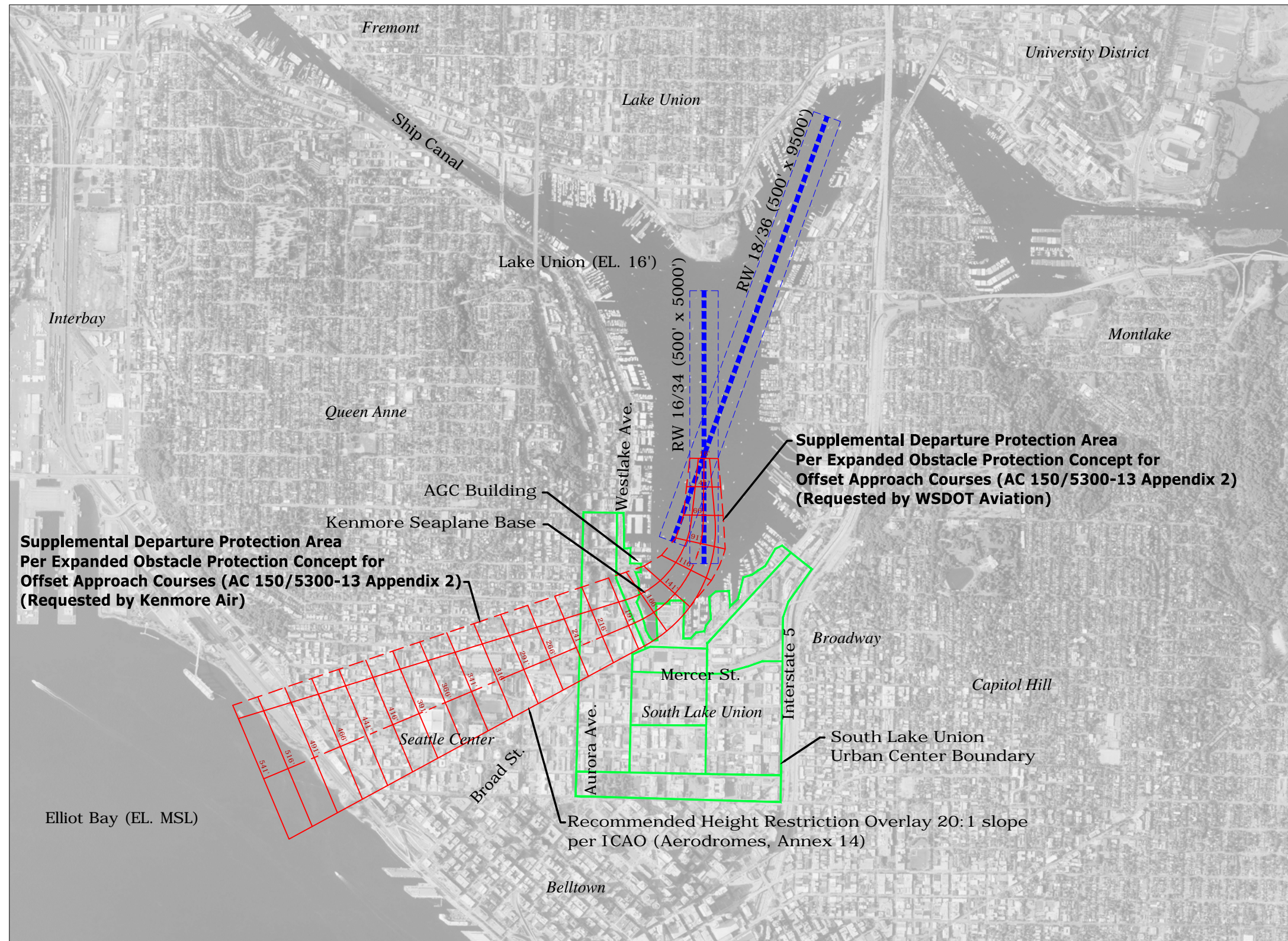
Based upon the site specific aviation planning characteristics of the existing flight track, a combination of the FAA and ICAO guidance documents was used in formulating the attached recommendation, which included coordination and input from both WSDOT Aviation and Kenmore Air. The following figure (Figure 3 from the attached Planning Memorandum), entitled *Recommended ICAO Criteria w/Expanded WSDOT Boundary*, illustrates the recommended revised approach/departure track protection area and the associated 5%/20:1 obstacle limitation slope that establishes the height development limits for the South Lake Union Height and Density Rezoning proposal. The elevation differential between the proposed development height restrictions of the rezoning boundary and the actual elevation of the floatplanes within the flight path represents the “vertical buffer” of the approach/departure flight track protection area. Therefore, the establishment of an additional vertical buffer is not required for an obstruction avoidance analysis. We acknowledge that potential wind turbulence issues for building designs proposed under the flight path is an issue of concern for the City. This memorandum does not address that issue. In addition, Figure 4, also from the attached Planning Memorandum, includes potential seaplane marking and lighting safety enhancements to increase the public awareness of the seaplane operation to all boat traffic on the lake.

We appreciate the opportunity to provide this supplemental aviation-related planning information to you regarding the South Lake Union Height and Density Draft EIS/Rezoning proposal. Please don't hesitate to contact me if you have any questions regarding this submittal. I may be reached by phone at 918/585-8844 or by email at cody@bd-c.com.

Sincerely,

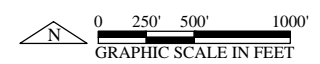
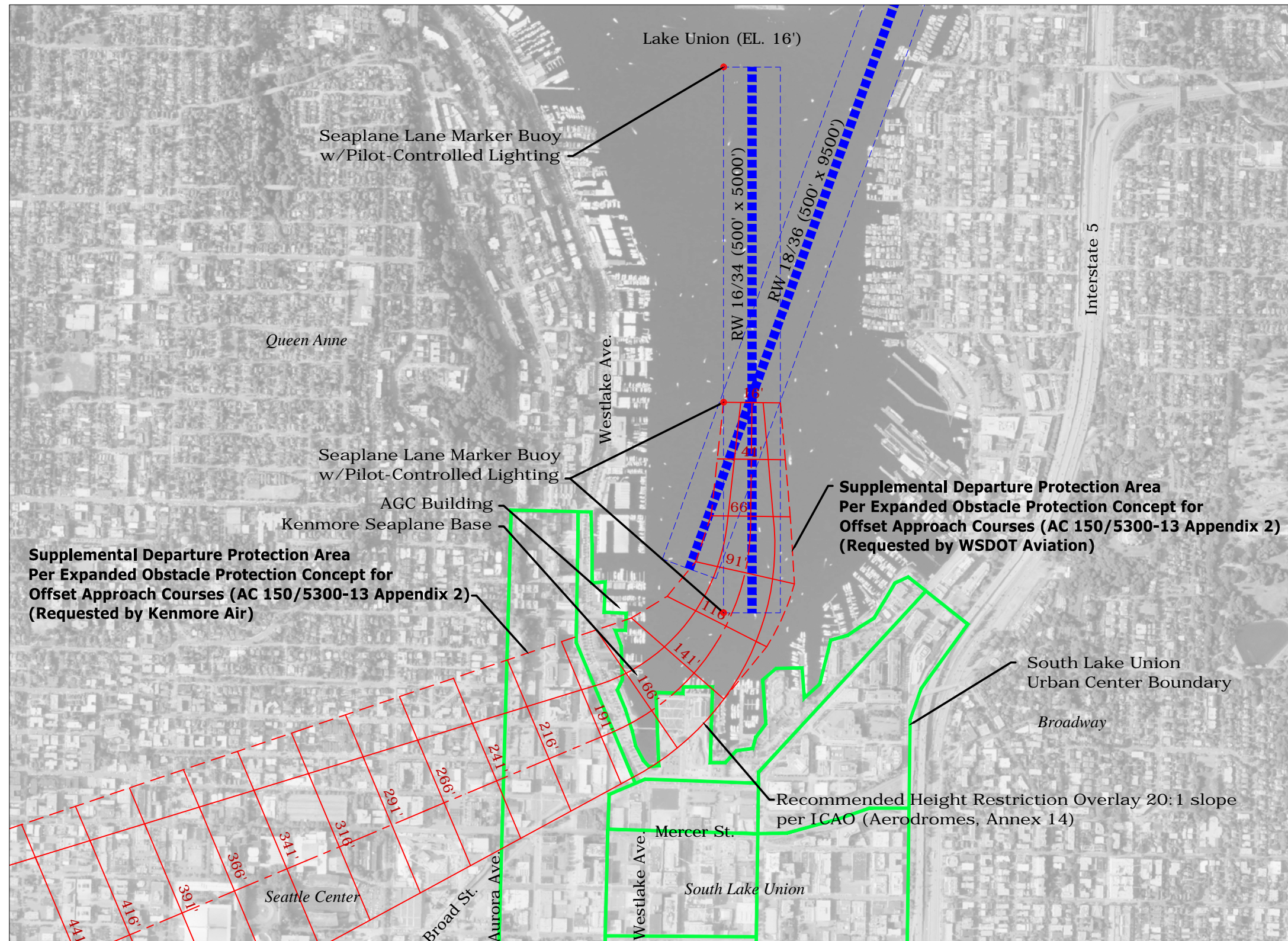


Cody Fussell, Senior Aviation Planner/Project Manager
BARNARD DUNKELBERG & COMPANY



0 500' 1000' 2000'
 GRAPHIC SCALE IN FEET
 SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

Figure 3
 Recommended ICAO Criteria w/Expanded WSDOT Boundary
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review
 Seattle, Washington



SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

May 24, 2011

Figure 4
 Lake Union Seaplane Operational Safety Enhancement
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review
 Seattle, Washington

Tab One

- Planning Memorandum

Planning Memorandum

Date: June 09, 2011

To: Lyn Tangen
City Investors LLC

From: Cody Fussell
BARNARD DUNKELBERG & COMPANY

Reference: South Lake Union Height and Density Draft EIS Comments

Introduction

In response to the publication of the South Lake Union Height and Density Draft Environmental Impact Statement (EIS), published in February 2011, City Investors LLC has requested Barnard Dunkelberg & Company to evaluate the floatplane operations at the Lake Union Seaplane Base in relation to the City of Seattle's proposed rezoning in the South Lake Union Urban Center. This planning assignment includes a comprehensive criteria review of a proposed obstacle protection area methodology for the existing floatplane approach/departure flight track regularly used for floatplane operations approaching from, or departing to, the south. This flight track passes over a portion of the South Lake Union Urban Center and is relevant for the City of Seattle's planning purposes. The findings of our review and evaluation are presented in this planning memorandum.

Background on Lake Union Seaplane Operation

There are two seaplane lanes that are operational on Lake Union: Runway 16/34 @ 5,000' associated with the Kenmore Air Seaplane Base (W55) and Runway 18/36 @ 9,500' associated with the Seattle Seaplanes Seaplane Base (0W0). Kenmore Air has operated from Lake Union since 1946 and Seattle Seaplanes (formerly Chrysler Air) has operated from the Lake for over 30 years. Therefore, the Lake Union seaplane operation is well established within the City of Seattle, and the existing floatplane operators have been utilizing well-defined flight tracks/corridors to and from the Lake for many years. In addition, there is no existing height hazard zoning ordinance/mapping for the Lake Union Seaplane Operation that has been implemented by the City of Seattle. According to information obtained from NOAA mapping and from a March 3, 2011 meeting with Lt. Ian Hanna, USCG, it was confirmed that there are no buoys or other visual markers delineating the existing seaplane lanes on Lake Union. For that reason, the FAA's FAR Part 77 imaginary surfaces are not applicable to the Lake Union seaplane bases. Some of the criteria in FAR Part 77, such as the approach surface slopes, are useful

planning metrics, along with other metrics that more directly address the type of turning approach/departure track that is utilized for southern approaches and departures on Lake Union.

Aircraft fleet information was obtained from consultations with Kenmore Air and Seattle Seaplanes, and from website information for those two commercial seaplane operators on Lake Union. The aircraft fleet relative to the Kenmore Air Harbor Seaplane Base operation has been identified as the deHavilland Beaver (both piston and turbine models), the deHavilland Otter (turbine model), and the Cessna 180. The aircraft fleet for Seattle Seaplanes includes the Cessna 172 and 206. The deHavilland Beaver and the Cessna 172, 180, and 206 are categorized as Airport Reference Code (ARC) A-I, having approach speeds less than 91 knots (i.e., Category A) and wingspans less than 49 feet (i.e., Airplane Design Group I). The deHavilland Otter, which is categorized as ARC A-II, also has a Category A approach speed, but a slightly larger wingspan at 58 feet.

According to operational information obtained from representatives of Kenmore Air and Seattle Seaplanes, operations consisting of both takeoffs and landings are conducted in south flow (i.e., Runway 16 or Runway 18). While the preferred takeoff and landing direction is to the north, a significant percentage of operations takeoff to the south because of south winds. Based upon the existing commercial seaplane fleet, the typical altitude of aircraft taking off to the south ranges from 250 to 500 feet above ground level along the south shore of Lake Union, depending on the performance capabilities and loading characteristics of each floatplane. In addition, generalized takeoff and landing performance data for various floatplane aircraft have been assembled and are presented in the following table.

Table 1
Floatplane Takeoff & Landing Performance Data

Aircraft	Takeoff Length (feet) (Ground Roll/Over 50' Obstacle)	Landing Length (feet) (Ground Roll/Over 50' Obstacle)
Kenmore Air		
Cessna 180	1,160/1,900	735/1,720
deHavilland Beaver (piston) ⁽¹⁾	1,642/2,415	1,007/1,737
deHavilland Beaver (turbine) ⁽¹⁾	1,768/2,600	1,032/1,780
deHavilland Otter (turbine) ⁽¹⁾	1,904/2,800	1,015/1,750
Seattle Seaplanes		
Cessna 172M	1,620/2,390	590/1,345
Cessna U206	1,835/2,820	780/1,675
Private Operators		
Piper PA-18-150 Super Cub	700/990	430/730
Lake LA-4 Seaplane	960/1,250	---/---

Source: Aircraft performance data, using standard day temperature (59° F.) at sea level, from RisingUp Aviation website (www.risingup.com), unless noted otherwise.

(1) Data provided by Kenmore Air.

Note that this table addresses takeoff and landing length requirements only, and does not directly address takeoff climb rates.

From the standpoint of providing a land use compatibility assessment of the Lake Union floatplane operations, it is important to recognize the limited number of aircraft types operating from Lake Union, their specific performance capabilities, and the operational rules and regulations for the seaplane base. It was also confirmed through discussions with representatives of Kenmore Air and Seattle Seaplanes that the departure operation (i.e., takeoffs to the south) is the most operationally demanding with respect to the obstruction clearance surfaces being evaluated for the South Lake Union Height and Density Rezoning proposal. Based upon the floatplane takeoff data presented above and the related takeoff performance attributes (i.e., climb rates), it appears that the Cessna U206 operated by Seattle Seaplanes is the most operationally demanding in consideration of takeoff operations. The DeHavilland Otter has a similar takeoff length requirement as the U206, but the Otter is a turbine aircraft with much greater climb rate capability. For comparison, flying the offset visual approach procedure from the southwest offers much more flexibility for obstruction clearance on landings from the south due to the steeper glide path performance capability of the various floatplane aircraft and typical piloting techniques.

Washington State Land Use Compatibility Planning

According to information contained in the *Washington State Airports and Compatible Land Use Guidebook*, the legal framework, for Airport Compatibility Planning within the State of Washington, is set forth in the Washington Growth Management Act (GMA), which is codified in RCW Ch. 36.70A. Cities and counties planning under GMA use the GMA goals to guide the development and adoption of comprehensive plans and development regulations. Part of the

GMA references the Planning Enabling Act at RCW 36.70.547, which states that “Every county, city, and town in which there is located a general aviation airport that is operated for the benefit of the general public, whether publicly owned or privately owned public use, shall through its comprehensive plan and development regulations, discourage the siting of incompatible uses adjacent to such general aviation airport”. Cities and counties may obtain technical assistance from Washington Department of Transportation/Aviation (WSDOT Aviation), and WSDOT Aviation is providing technical assistance to the City of Seattle in connection with the current City planning process of which the Draft EIS is a part. Our discussions with WSDOT Aviation have informed the recommendations and analysis in this memorandum and addressed comments from WSDOT Aviation and Kenmore Air. It should also be noted from the *Washington State Airports and Compatible Land Use Guidebook* that state law addressing obstructions to airport airspace (RCW Ch. 14.12) provides counties and cities with the authority to adopt and enforce airport hazard zoning, which includes the identification and assessment of specific flight track corridors.

Approach/Departure Flight Track Protection Area Criteria Review

As noted on pages 3.8-32 through 3.8-34, under the heading of Federal Air Regulations Part 77 of the Draft EIS, the FAA’s Federal Aviation Regulations (FAR) Part 77 Objects Affecting Navigable Airspace criteria is cited by WSDOT for reference in defining the physical boundary and obstruction clearance criteria for the various rezoning alternatives in the South Lake Union Urban Center. However, as noted above, the FAR Part 77 regulations do not, strictly speaking, apply to these floatplane bases. Perhaps more important, the FAR Part 77 regulations do not provide obstruction evaluation criteria for the protection of curved approach/departure tracks to a runway or seaplane lane, such as the southern approach/departure track at the Lake Union seaplane base. Therefore, it is recommended that the International Civil Aviation Organization’s¹ (ICAO) document, entitled *Aerodromes, Annex 14* (see Chapter 4. Obstacle Restriction and Removal), be referenced for applicable design standards regarding the identification of an obstacle limitation surface for a takeoff flight path involving a turn. These ICAO criteria use the same 20:1 obstruction clearance slope as FAR Part 77, but are applicable to turning departure tracks. The criteria are specified as follows in Table 4-2 of *Aerodromes, Annex 14*:

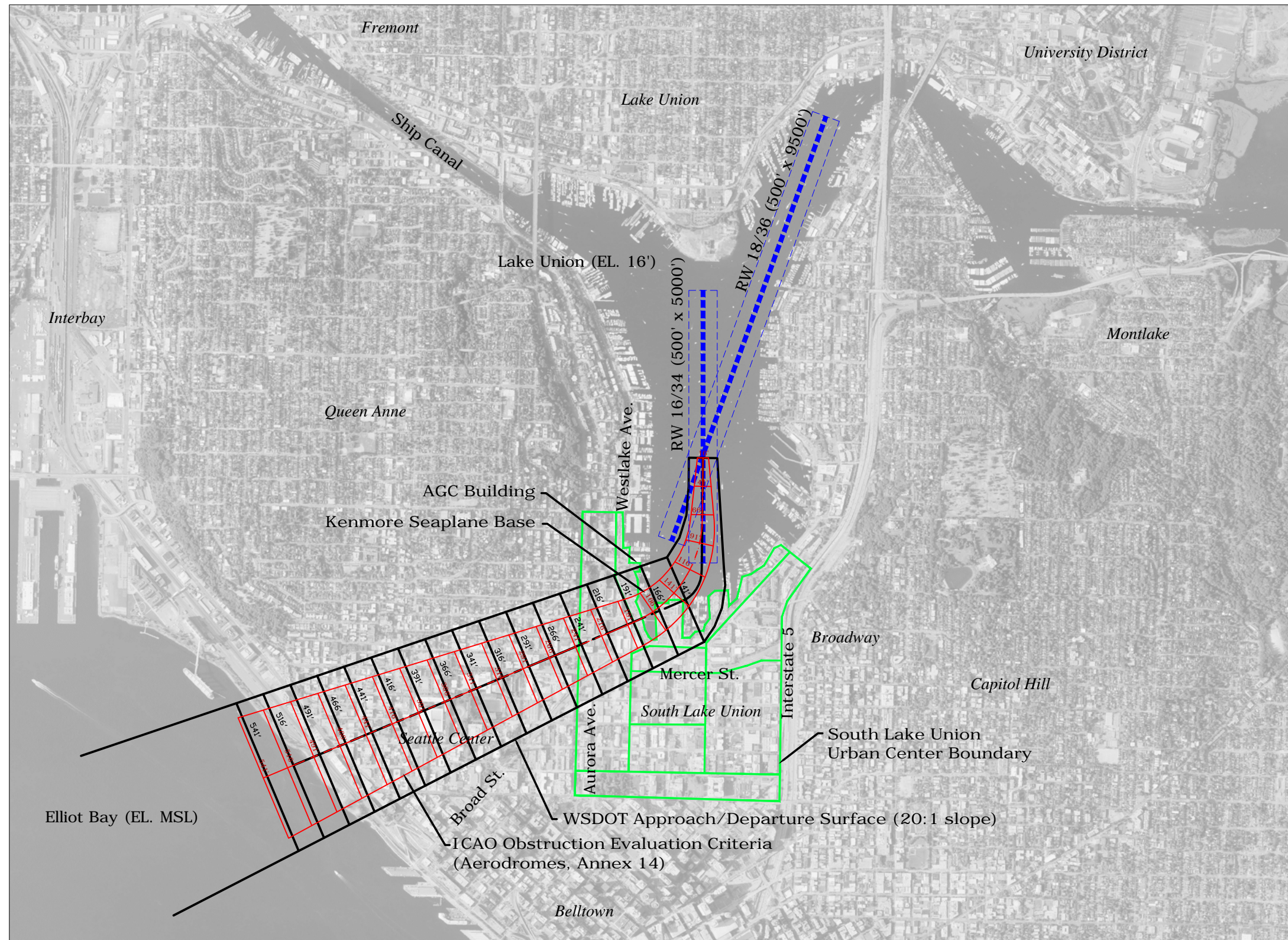
Surface dimensions for a Code 1 Aeroplane Reference Field Length of less than 800 meters:

- Length of Inner Edge @ 60 meters
- Divergence (each side) @ 10%
- Length @ 1,600 meters

¹ ICAO is a specialized agency of the United Nations that sets standards and recommended practices for the safe and orderly development of international civil aviation. The *Aerodromes, Annex 14* document contains the design standards that are applicable to nearly all airports serving international air commerce.

- Final Width @ 380 meters
- Slope @ 5%

The application of the specified obstacle limitation surface per the specified ICAO criteria is presented in the following figure, entitled *ICAO & WSDOT's FAR Part 77 Approach/Departure Surface Criteria Comparison*, which includes the proposed boundary of "FAR Part 77 Approach/Departure Surface" shown in Figure 3.8-1 in the Draft EIS for comparison. It should be noted that the surface dimensions (i.e., horizontal limits) of the turning takeoff flight path protection area defined by ICAO are comparable to the boundary of the standard visual approach surface specified by FAR Part 77, and they share the same 5%/20:1 obstacle limitation slope. However, both the ICAO and the standard FAR Part 77 surfaces are somewhat smaller than the approach/departure surface from Figure 3.8-1. In addition, the recommended height development restrictions of the rezoning proposal for the approach/departure track protection area are identified in 25-foot increments, and range from between 141 and 166 feet at the shoreline and increases to between 216 and 241 feet at the western limits of the South Lake Union Urban Center (at Aurora Avenue). The elevation differential between the proposed development height restrictions shown on the flight path and the actual elevation of the floatplanes on the flight path provides a "vertical buffer" for the approach/departure flight track protection area. For this obstacle avoidance analysis, no additional vertical buffer is required. We acknowledge that the potential wind turbulence caused by buildings under the flight path is an issue of concern for the City. This memorandum does not address that issue.

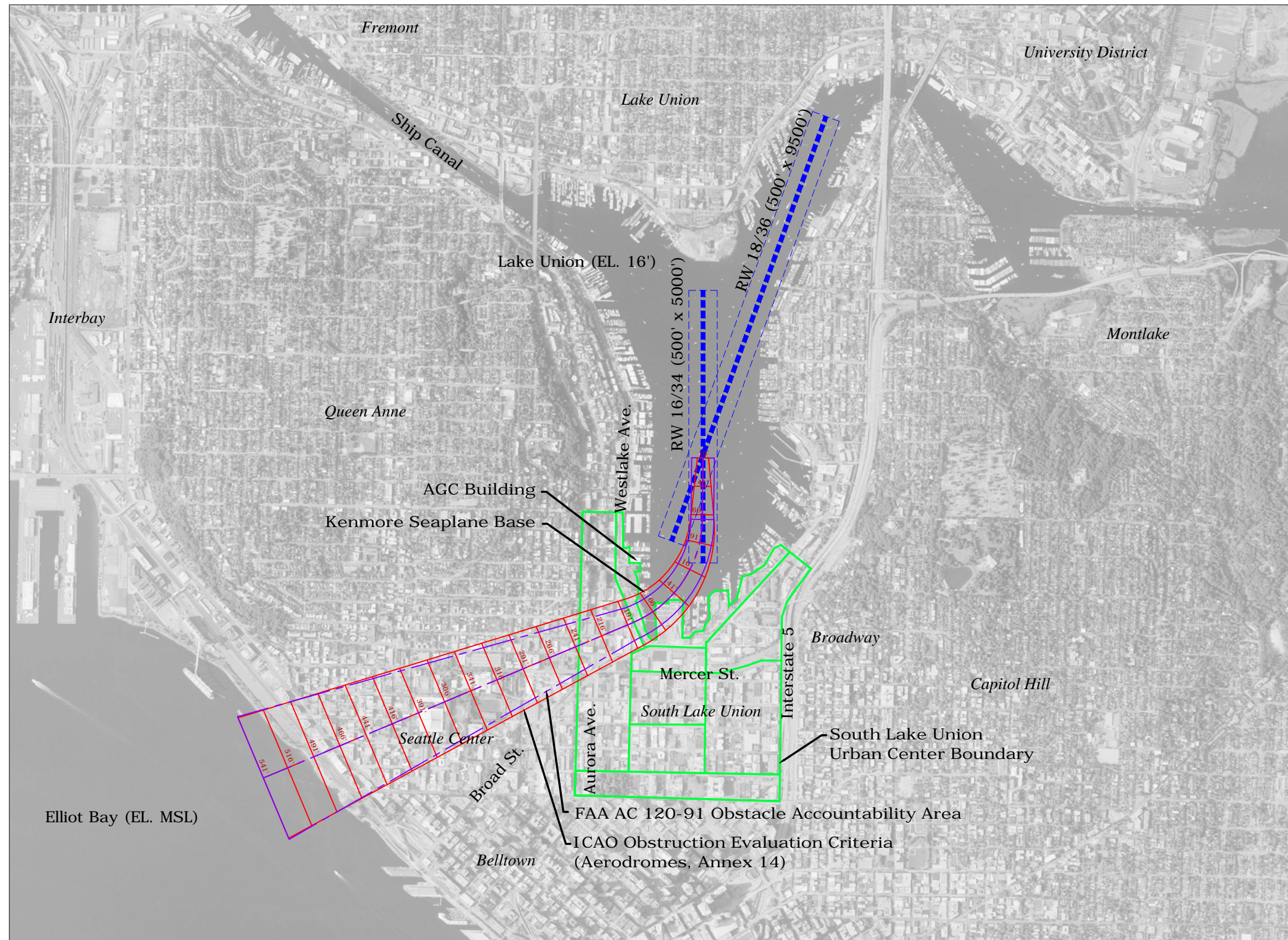


SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

Figure 1
 ICAO & WSDOT's FAR Part 77 Approach/Departure Surface Criteria Comparison
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review

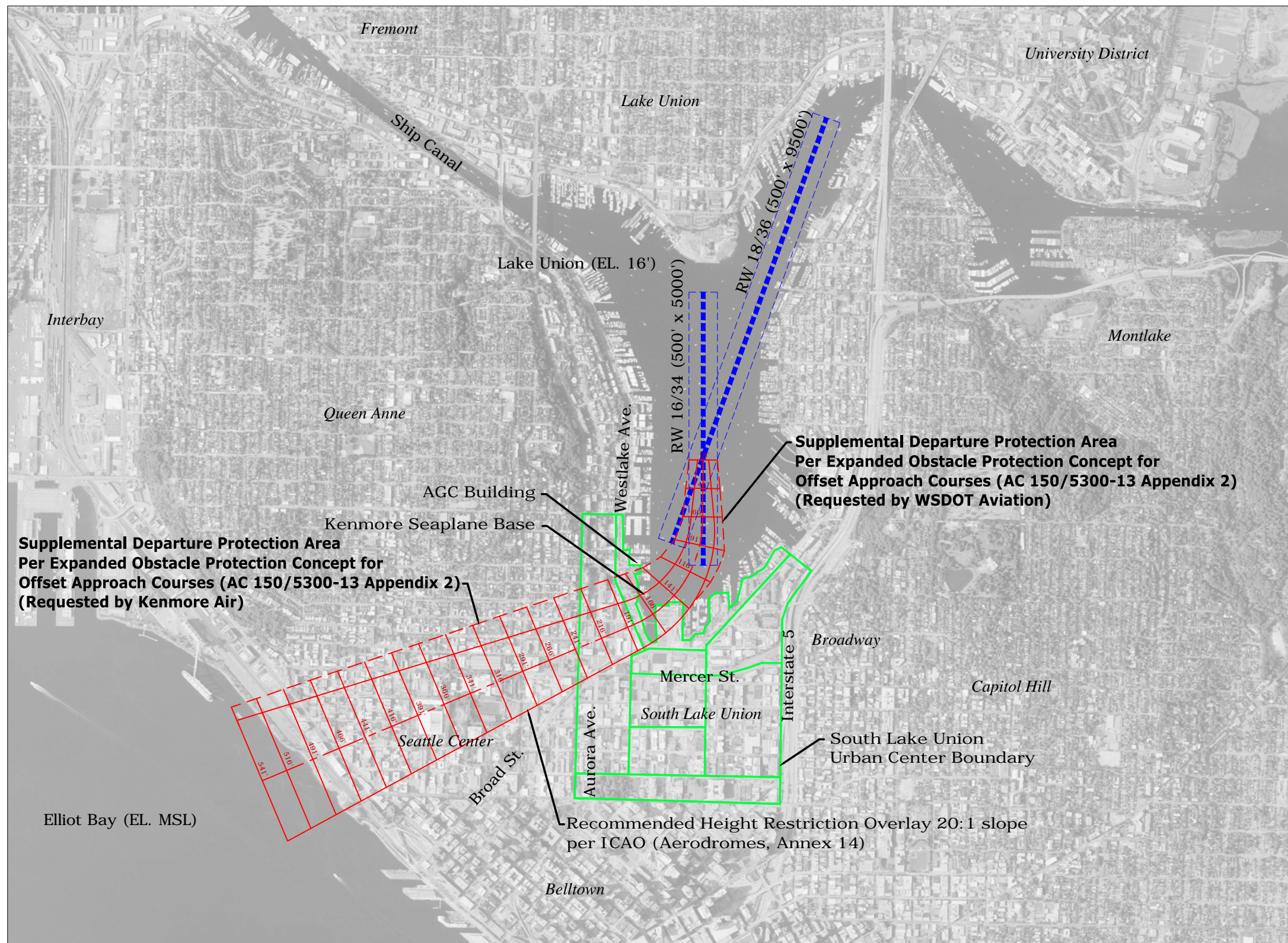
In addition to the specified ICAO regulations for obstacle limitation surfaces associated with turning departure tracks, the FAA has published Advisory Circular (AC) 120-91, *Airport Obstacle Analysis* for both charter operators and airlines to develop takeoff and initial climb-out airport obstacle analyses. The AC 120-91 guidance provides criteria for defining obstacle accountability areas (OAAs) for an engine-out (i.e., engine failure) takeoff during a turning departure, and applies to known obstructions needing clearance during that operation. The criteria specified in AC 120-91 is not mandatory, nor directly applicable to the single engine floatplanes operating on Lake Union, but it does provide another comparable obstruction evaluation surface that specifies criteria for turning departures. The following figure, entitled *ICAO & AC 120-91 Obstacle Accountability Area Criteria Comparison*, is presented for comparison with the proposed ICAO obstacle limitation surface. As can be seen, the plan view boundary of the AC 120-91 surface is comparable in size and shape to the ICAO boundary, but the methods for determining airport obstacle analysis in AC 120-91 are not applicable for land use compatibility planning. Therefore, based upon the similarity of the two obstacle evaluation surfaces, it is recommended that the ICAO approach/departure track protection area be established for potential rezoning to protect the South Lake Union floatplane operations.

Based upon meeting discussions with representatives of Kenmore Air and WSDOT Aviation, it was confirmed some additional obstacle protection along the northern (inside) edge of the Kenmore departure track was determined to be necessary, based upon existing takeoff procedures and typical piloting techniques. This modification would widen the entry to the flight path along the area where the floatplanes typically turn, permitting a more gradual transition to realign and track straight out toward Elliot Bay. This widening would also allow pilots to use the existing AGC building as a visual reference marker for the northern edge of the flight path. In addition, WSDOT Aviation has requested that the inner width of the ICAO obstacle limitation surface be widened over the Lake to correspond with the published width of the seaplane lane (500 feet wide) in the FAA's Airport Facility Directory. The ICAO *Aerodromes, Annex 14* obstruction evaluation criteria provides some discretion to planners regarding the slope of the obstruction surface based upon specific aircraft operational characteristics, while the FAA's AC 150/5300-13, *Airport Design* offers some general guidance for expansion of the obstruction clearance surfaces associated with threshold siting criteria to accommodate an offset approach course, which is the current procedure for Runway 34 seaplane landings on Lake Union. Neither guidance document offers specific criteria for expanding the boundary of the obstruction clearance surface that would conflict with the recommendations discussed above, which came out of our consultation with WSDOT and the floatplane operator whose pilots use this corridor on a regular basis. Therefore, it is recommended that the ICAO approach/departure track protection area be expanded to the west and north, consistent with the northern limits of WSDOT's proposed surface from Figure 3.8-1 in the Draft EIS, and also be widened to the east and southeast over the Lake to coincide with the 500-foot published width of the seaplane lane. Figure 3, entitled *Recommended ICAO Criteria w/Expanded WSDOT Boundary*, illustrates the recommended revised approach/departure flight track protection area for the South Lake Union Height and Density Rezoning proposal.



SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

Figure 2
 ICAO & FAA AC 120-91 Obstacle Accountability Area Criteria Comparison
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review
 Seattle, Washington



SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

May 24, 2011

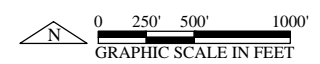
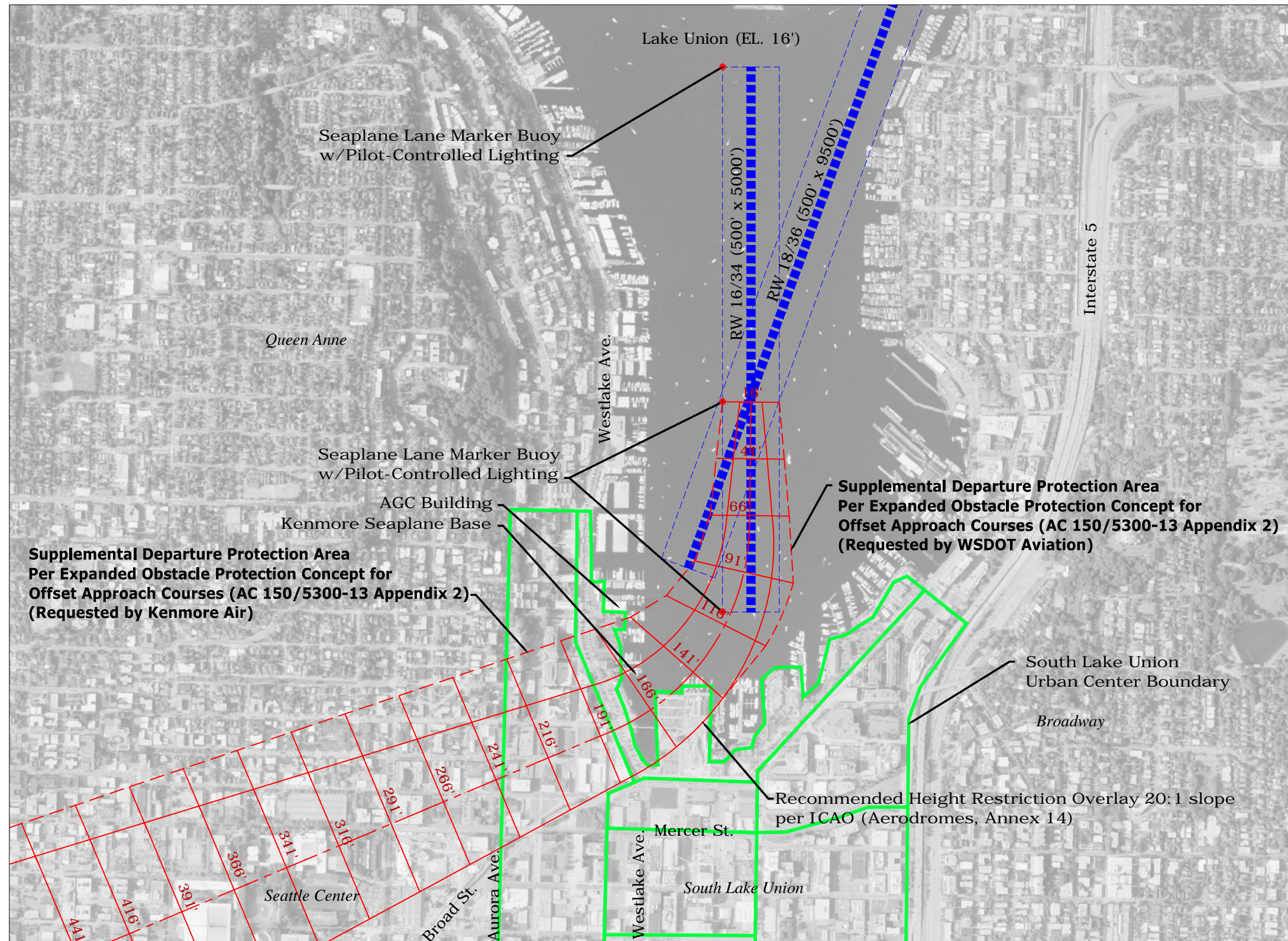
Figure 3
 Recommended ICAO Criteria w/Expanded WSDOT Boundary
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review
 Seattle, Washington

Lake Union Seaplane Operational Safety Enhancements

One of the most significant operational challenges for floatplane operators on Lake Union is the avoidance of watercraft on the lake during takeoff and landing operations. Representatives of Kenmore Air have identified the potential safety enhancement benefits of marking/lighting the north-south seaplane lane (i.e., Runway 16/34) on Lake Union. Based on Kenmore Air's suggestion, this memorandum includes a potential marking/lighting buoy system that would include installation of buoys located along the western edge of the published seaplane lane. Pilot-controlled seaplane operation warning lights and educational signage would be mounted on the buoys. The buoy system illustrated in this memorandum would include three (3) buoys. One buoy could be located at each end of the seaplane lane, denoting the takeoff point for each operating configuration. The third buoy would be located at the midpoint of the runway, denoting both the optimum landing location and the designated departure end of the seaplane lane for aircraft operating in either direction. The following figure, entitled *Lake Union Seaplane Operational Safety Enhancement*, illustrates the potential location of the buoys within the Lake. The recommended approach/departure track protection area specified by the ICAO criteria described previously is consistent with the location of the third buoy near the midpoint of the runway.

This proposed system of educational signage on three buoys and pilot controlled seaplane operation warning lights mounted on top of the buoys would greatly increase the public awareness to lake users of the seaplane operations. When activated by a pilot, the lights would flash and indicate to boaters that a seaplane operation was about to commence (either a landing or takeoff). Boaters would be advised by the signage to move a minimum distance away from the seaplane lane towards the east or west shorelines. Once the aircraft operation was completed and the lights ceased flashing, then boaters could safely re-enter the operations area.

This system of buoys would allow the pilot to setup for final approach on landings with greater assurance that the seaplane lane would be clear of vessels. Such an established area free of boating conflicts would also help ensure that the floatplanes could depart the lake from the location identified in Figures 1 through 4 in this memorandum. In the opinion of the floatplane operator, this type of system would significantly reduce the potential for boating and seaplane conflicts.



SOURCE: AERIAL PHOTOGRAPHY FROM USDA NAIP, 2008
 WSDOT SOUTH LAKE UNION HEIGHT AND DENSITY DRAFT EIS, FEB. 2011
 SEAPLANE LANES FROM AIRPORT FACILITY DIRECTORY, MARCH 2011

May 24, 2011

Figure 4

Lake Union Seaplane Operational Safety Enhancement
 Lake Union Seaplane Flight Track/Obstacle Clearance Evaluation
 South Lake Union Height and Density Draft EIS Review
 Seattle, Washington

Tab Two

- Barnard Dunkelberg & Company Firm Information
- Resumes
- Reference Projects

Barnard Dunkelberg & Company

Barnard Dunkelberg & Company, Inc., founded in 1976, is a nationally recognized airport planning and environmental firm that is solely engaged in projects for airports, their environs, and their associated communities. In 1999, we opened our Colorado office, which is located in Denver. Barnard Dunkelberg & Company exercises strong project management with full capability, manpower, experience, and a proven track record to effectively lead and direct our planning team in accomplishing all work tasks in an expeditious and professional manner.

We are proud of our body of work and believe that the experience this work represents provides us with a corporate background rich in experience; an experience that has been forged and whetted by participation in some of the most challenging planning and environmental issues facing airports in the last three decades. Our firm's principals, Bob Barnard and Ryk Dunkelberg, are intimately engaged in the daily active management of our firm and the work products we produce.

- **Barnard Dunkelberg & Company has prepared over five hundred (500) Airport Master Plans and Development Programs for air carrier, commercial service, reliever, and general aviation airports throughout the United States. Our Master Plans are creative and uniquely tailored to each airport and the conditions that prevail currently, and in the future. We establish programs that are indicative of the needs and capabilities of the Sponsor and that are aggressive in approach.**
- **Barnard Dunkelberg & Company is starting our forty-eighth (48th) aircraft noise and land use compatibility study, placing us among the top two or three firms nationally conducting such programs for civilian and military airports. Forty (40) of these planning programs have been FAR Part 150 Studies, of which seven (7) have been FAR Part 150 Updates of previously completed programs by our firm. *Ryk Dunkelberg has served as Project Director for each of these studies.***
- **Barnard Dunkelberg & Company has prepared over sixty (60) major Environmental Assessments and Environmental Impact Statements for all sizes of airports across the nation, in addition to literally numerous categorical exclusions, environmental overviews, analyses, and reviews in association with master plans.**
- **Having over thirty years as a company dealing with a variety of airport and aviation issues, we are well versed in local, state, and federal procedures and requirements.**

- **As an indication of our work quality, work ethic, and dedication to the client, over 75 percent of our assignments at Barnard Dunkelberg & Company, historically, have been and are with clients for whom we have performed more than one project. We are proud of the fact that our clients choose to utilize our services after completing an initial assignment.**
- Barnard Dunkelberg & Company has been responsible for **establishing and managing numerous successful community involvement and citizen participation programs for projects nationwide.** We take great pride in our abilities to work with groups, committees, and the public-at-large. Virtually all of our projects involve these activities.
- We regularly **employ state-of-the-art technical resources** in the conduct of our projects. We are fully prepared to meet all computer-related needs of the project, including geographical information systems (GIS), computer aided design (CAD), modeling and animation (i.e., ESRI ArcMap, Autodesk AutoCAD Map and 3D Studio Max, Transoft AeroTurn, Army Corps of Engineers Corpscon, FAA Digital Aeronautical Database System, US Census TIGER/Line Data and Summary File data).

Role

Ryk Dunkelberg serves as Executive Vice President and General Counsel of Barnard Dunkelberg & Company. As a firm principal, he is responsible for a variety of the firm's master planning, system planning, environmental and noise planning projects. Additionally, he is a key client liaison and active project director.

Education/Certification

B.S., Oklahoma State University

M.S., Colorado State University

J.D., University of Tulsa

Member/American Institute of Certified Planners (AICP)

Affiliations/Achievements

Member/American Association of Airport Executives (AAAE)

Member/American Planning Association

Member/American Society of Landscape Architects

Member/American Bar Association (ABA)

Member/ABA Airport Law Committee

Member/South Central Chapter AAAE

Member/Northwest Chapter AAAE

Founding Member/Oklahoma Airport Operators Association

Member/Arkansas Airport Operators Association

Member/Colorado Airport Operators Association

Member/Michigan Association of Airport Executives

Member/Washington Airport Management Association

Member/Wyoming Airport Operators Association

Past Instructor/FAA Aeronautical Center, Airport System Planning Course

Past Instructor and Author/SCC/AAAE Accreditation Academy, FAR Part 150 Programs and Legal Implications of Airport Planning

Author and Lecturer on Airport and Land Use law

Ryk A. Dunkelberg

Ryk A. Dunkelberg has an educational background in planning and law. Prior to the formation of Barnard Dunkelberg & Company, Ryk was affiliated with a several multi-disciplinary planning and engineering firms. As Executive Vice President and General Counsel of Barnard Dunkelberg & Company, he is responsible for firm management and administration, and serves as project principal for a variety of the firm's sustainability studies, master planning, noise and land use compatibility studies and environmental planning projects. Further, as a project director, Ryk is responsible for the administration and management of many of our most complex noise and environmental planning programs.

Ryk Dunkelberg is exclusively involved in and responsible for emission inventories, sustainability studies, airport master planning studies, site evaluation and selection studies, FAR Part 150 studies, environmental assessments and impact statements and general resource planning and analysis for airports. In addition to his complete professional and technical knowledge of airports and environmental planning, Ryk possesses a nationally-recognized expertise in the legal aspects of aviation and airport development and has been responsible for the development of zoning ordinances and other land use controls, throughout the nation. Projects he has been responsible for reflect his unique approaches and solutions for preparing implementation mechanisms in relation to airports. As such, he has been responsible for numerous intricate airport planning and sustainability assignments.

Ryk is a dynamic speaker with an engaging personality. He is a studious observer as well as a skilled and patient practitioner. Along with Ryk's other talents and abilities, his great sense of humor and his demonstrated capabilities in emotionally charged settings, provide him with an exceptional and proven leadership style for the public forum.

Role

Cody Fussell serves as a Project Manager and Senior Airport Planner for Barnard Dunkelberg & Company. He has responsibility for the development of assigned airport master plans, site evaluation/site selection studies, land use compatibility planning studies, and development programs.

Education/Certification

B.S., Oklahoma State University

B.L.A., Oklahoma State University

Affiliations/Achievements

Member/American Society of Landscape Architects

Licensed Landscape Architect/Oklahoma

Member/Washington Airport Management Association

Cody D. Fussell

Cody has an educational background in Landscape Architecture and has been associated with Barnard Dunkelberg & Company for over twenty years. As a Project Manager and Senior Airport Planner for Barnard Dunkelberg & Company, he is responsible for the development of numerous airport master plans, site evaluation/selection studies, and development programs for airports in many states. These management and technical responsibilities have included the preparation of planning programs for large, medium, small and non-hub air carrier airports; and, reliever and general aviation airports.

Specific planning assignments have included the development of airport master plans; airport facilities site planning; terminal area plans; on-airport and off-airport business/industrial park plans; site development standards; environmental enhancements programs (signage, lighting, landscaping, etc.); airport minimum standards guidance; and, the preparation of a variety of airport land use compatibility plans for airports in Colorado, Washington State, Utah, Texas, and Oklahoma.

In addition to having a comprehensive understanding of airports and the airport planning process, Cody is technically well-versed in the resolution of non-standard dimensional criteria, as well as the application of FAR Part 77 and Terminal Instrument Procedures (TERPS) standards, which includes the analysis/evaluation of aircraft approach and departure design issues.

Cody is a talented and methodical planner with excellent written and oral communication skills. He is a skilled and informative presenter, as well.

Recent Experience in Projects with Similar Planning Issues

Client/Project Name Location	Relevant Planning Issues and Considerations	Key Personnel	Role	Client Contact
Angoon Airport (On-Going) Environmental Impact Statement <i>Angoon, Alaska</i>	Aviation Demand Forecasting, Environmental Analysis for New Airport Sites, Agency Coordination and Public Information, and Community Involvement Program.	<i>Brad Rolf</i> <i>Cody Fussell</i>	Project Manager Lead Technical Planner	Leslie Grey, FAA Project Manager 907/271-5453
Olympia Regional Airport (On-Going) Airport Master Plan <i>Olympia, Washington</i>	Aviation Demand Forecasting, Environmental Analysis for Threatened and Endangered Species and Critical Habitat, Public Information and Community Involvement Program, and Continuous ADO Coordination.	<i>Cody Fussell</i> <i>Kelly Maddoux</i> <i>Ryk Dunkelberg</i>	Project Manager Lead Technical Planner Environmental Support	Rudy Rudolph, Airport Director 360/528-8074
Sitka Rocky Gutierrez Airport Runway Safety Area EIS <i>Sitka, Alaska</i>	Aviation Demand Forecasting, Detailed Alternatives Analysis including EMAS, Environmental Impact Analysis including Essential Fish Habitat and Coastal Zone Management, Public Information and Community Involvement Program, and Public Hearings.	<i>Brad Rolf</i> <i>Cody Fussell</i> <i>Kate Andrus</i>	Project Manager Lead Technical Planner Project Coordinator	Patricia Sullivan, FAA Lead Environmental Manager 907/271-5454
Kodiak Airport (On-Going) Runway Safety Area EIS <i>Kodiak, Alaska</i>	Aviation Demand Forecasting, Environmental Impact Analysis Including Section 4(f) and Coastal Zone Management, Public Information and Community Involvement Program, and Extensive Agency Coordination.	<i>Brad Rolf</i> <i>Kate Andrus</i> <i>Cody Fussell</i>	Project Manager Project Coordinator Lead Technical Planner	Leslie Grey, FAA Project Manager 907/271-5453
Arlington Municipal Airport (On-Going) Airport Master Plan <i>Arlington, Washington</i>	GA Site Planning, Airside Layout Planning, Glider related Alternatives Analysis, Public Information and Community Involvement Program, and Continuous ADO Coordination.	<i>Cody Fussell</i> <i>Kelly Maddoux</i>	Project Manager and Lead Technical Planner Project Coordinator and Planner	Rob Putnam, C.M. Airport Manager 360/403-3470

<p>Spokane International Airport Runway Justification Study, Environmental Assessment and ALP Update <i>Spokane, Washington</i></p>	<p>Non-standard Conditions Alternatives Analysis, Wetlands Mitigation, Runway Length Analysis, Airside Layout Planning, Positive Community Involvement, and ADO Coordination.</p>	<p><i>Brad Rolf Cody Fussell</i></p>	<p>Project Manager Lead Technical Planner</p>	<p>David Crowner, Former Operations Manager 206/787-7514</p>
<p>Will Rogers World Airport Master Plan Update <i>Oklahoma City, Oklahoma</i></p>	<p>Terminal Building and Gate Utilization, Terminal Area Roadway/Access/Entry Planning, Interim Planning Steps, GA and Aviation Support Strategies, Public Information and Community Involvement Program, Partnering with Staff and Stakeholders, Schedule Management, and Continuous ADO Coordination.</p>	<p><i>Mark McFarland Peter Van Pelt Cody Fussell</i></p>	<p>Project Manager Project Coordinator Lead Technical Planner</p>	<p>Mark Kranenburg, Director of Airports 405/680-3200</p>
<p>Aspen/Pitkin County Airport Airport Master Plan <i>Aspen, Colorado</i></p>	<p>Runway Length and Critical Aircraft Analysis, Aviation Demand Forecasting, Non-Standard Conditions Analysis, Runway Extension Alternatives Analysis, Public Information and Community Involvement Program, and ADO Coordination.</p>	<p><i>Mark McFarland Cody Fussell</i></p>	<p>Project Manager Lead Technical Planner</p>	<p>Jim Elwood, Director of Aviation 970/429-2851</p>
<p>Aspen/Pitkin County Airport East Side Infrastructure Development Plan <i>Aspen, Colorado</i></p>	<p>GA Site Planning, On-Airport Land Use Development Planning, Environmental Analysis including Visual and Light Emissions Impacts, Development Schedules and Cost Estimates.</p>	<p><i>Mark McFarland Cody Fussell</i></p>	<p>Project Manager Lead Technical Planner</p>	<p>Jim Elwood, Director of Aviation 970/429-2851</p>
<p>Salt Lake City Airport II (now South Valley Regional Airport) Master Plan Update <i>Salt Lake City, Utah</i></p>	<p>Emerging Airspace Considerations, Runway Extension Alternatives Analysis, Airport Reference Code Upgrade, Partnering with Staff and Stakeholders, Public Information, and Community Involvement Program.</p>	<p><i>Cody Fussell Ryan Hayes</i></p>	<p>Project Manager and Lead Technical Planner Planner</p>	<p>Allen McCandless, Planning Director 801/575-2231</p>
<p>Wiley Post Airport Airport Master Plan <i>Oklahoma City, Oklahoma</i></p>	<p>Aviation Demand Forecasting, GA Strategies and Development Plan, Flexible/Right-sized Planning Applications, Public Information, and Community Involvement Program.</p>	<p><i>Mark McFarland Peter Van Pelt Cody Fussell</i></p>	<p>Project Manager Project Coordinator Lead Technical Planner</p>	<p>Tim Whitman, General Aviation Manager 405/789-4061</p>



**Washington State
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October 28, 2011

Jim Holmes
Senior Urban Planner
City of Seattle / Department of Planning and Development
PO Box 34019
Seattle, WA 98124-4019

RE: Barnard Dunkelburg Correspondence and Planning Memorandum

Dear Mr. Holmes,

This letter is in response to the City of Seattle's October 12, 2011 request for technical assistance regarding the Barnard Dunkelburg Planning Memorandum, supporting correspondence and established airspace corridor for Kenmore Air Seaplane Base. The Washington State Department of Transportation (WSDOT), Aviation Division has reviewed the Planning Memorandum and supporting correspondence, and finds them consistent with best management practices found in the *Airports and Compatible Land Use Guidebook, January 2011*.

The *Airport and Compatible Land Use Guidebook* is designed to help airports, communities, and jurisdictions work cooperatively and proactively toward preventing incompatible development around airports in Washington state. Jurisdictions can use the tools and resources found in the guidelines to develop policies and development regulations that discourage the encroachment of incompatible land use adjacent to public use airports. It does not prescribe a one size fits all approach to land use compatibility planning, rather it provides recommended best management practices for local land use jurisdictions. WSDOT's *guidebook* recommends that local jurisdictions consider variables including, but not limited to:

- Airport characteristics
- Fleet mix / aircraft operations
- Location and alignment of the area used for takeoffs and landings
- Any areas along the standard arrival and departure routes where aircraft will be below 1,000 feet AGL
- Estimates of how often different routes are used
- FAR Part 77 "*Imaginary Airspace Surfaces*"
- Topography

Jim Holmes
Barnard Dunkelburg Correspondence and Planning Memorandum
October 28, 2011

The Barnard Dunkelburg Planning Memorandum dated June 9, 2011 is consistent with these recommendations. WSDOT Aviation supports the revised approach / departure area for Kenmore Air, as identified in figure 3, and operational safety enhancement identified by the Barnard Dunkelburg Planning Memorandum. Educational signage and a system of lighted buoys would increase public awareness of seaplane operations and mitigate for additional traffic on the lake.

WSDOT Aviation's role under the Growth Management Act is to address the issue of encroachment incompatible land uses by advocating for the preservation of public use airports and providing decision makers with the best available information about airport land use compatibility. The state's program emphasizes airspace protection and discourages residential development, schools, hospitals, and other medical facilities adjacent to airports, especially in the extended centerline of the airport runway. The program identifies most industrial and commercial land uses as airport-compatible. WSDOT does not have regulatory authority over land use decisions. WSDOT relies on local jurisdictions with land use authority to keep critical airspace clear of obstructions. RCW 36.70A.510 and RCW 14.12 gives local jurisdictions the authority to develop and adopt airspace regulations.

Thank you again for the opportunity to provide technical assistance and comment on this important issue. WSDOT remains available to assist the City of Seattle in adopting comprehensive plan amendments and development regulations that discourage the encroachment of incompatible land use adjacent to public use airports. Please don't hesitate to contact me at 360-651-6312 or timmerc@wsdot.wa.gov if you have any questions or concerns.

Sincerely,



Carter Timmerman
Aviation Planner/ GIS Analyst
WSDOT, Aviation Division

KENMORE AIR[™] *harbor inc.*

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Kenmore Air, "The Seaplane Airline" • Kenmore Air Express • Kenmore Air Cargo • EDO Floats

Mr. Jim Homes, Senior Urban Planner
City of Seattle Department of Planning and Development
PO Box 34019
Seattle WA 98124-4019

November 18, 2011

RE: Barnard Dunkelburg Flight Path and Planning Memorandum

Dear Mr. Holmes,

The Barnard Dunkelburg recommended ICAO with Expanded WSDOT Boundary flight path and obstacle clearance presentation as shown in Figure 3 of the June 9, 2011 memorandum meets the minimum requirements for seaplane operations on Lake Union.

Of critical importance in the evaluation of flight path requirements is the width of the flight path area as it crosses the south west shoreline of Lake Union. The width of the Barnard Dunkelburg depiction at the shoreline conforms closely with that of the two previous depictions of May 1, 2007 and January 27, 2010. While no single metric, either FAA FAR 77 or ICAO perfectly captures the actual historical and current flight path requirements for seaplanes on Lake Union, the Barnard Dunkelburg depiction comes closest to meeting the needs of seaplane operators.

As your office is aware, Kenmore Air continues to support the need for additional protection under the flight path that goes beyond the vertical penetration boundaries of FAR77 or ICAO. Without the protection of the horizontal airspace of FAR 77 which limits building heights around an airport to 150 feet seaplane operations are more vulnerable to the downdrafts, mechanical turbulence and wind sheer created by buildings higher than 150 feet along the edge and adjacent to the described flight path. This vulnerability is further exacerbated by the fact that aircraft at this location along the south west shoreline are in a turn with reduced lift and performance.

Lastly, Kenmore Air is in full support of those measures identified in Figure 4 of the memorandum that outline the operational safety enhancement features of a Seaplane-Vessel Safety Zone. This seasonal system of pilot activated lights on the lake will dramatically improve the safety of seaplane and vessel interactions and provide mitigation for the expected increase in local boating activity as a result of increased residential densities.

Kenmore Air appreciates the opportunity to comment and encourages your office to contact us if you have any further questions.

Sincerely,

Kenmore Air Harbor, Inc

A handwritten signature in black ink, appearing to read "Tim Brooks". The signature is written in a cursive style with a horizontal line above the first few letters.

Tim Brooks

Vice President, Flight Operations