



Seattle City Council

Establishment of Triggers Second Montlake Bridge Workgroup

SR 520 Project Committee Special Meeting
September 10, 2012



Today's Presentation

- Why was this project conducted?
- Who participated in the Second Montlake Bridge Workgroup?
- Summary of the Establishment of Triggers Report
- Implications of the report
- Your Questions

Project history:

- Council comment on SDEIS (April, 2010)
- Issue referred to ESSB 6392 Workgroup (report final in December, 2010)
- WSDOT and City negotiated MOU (adopted October, 2011)
- Seattle took lead to identify triggers through interagency workgroup

Workgroup Participants



Seattle City Council

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- SDOT
 - Council Central Staff
 - King County Metro
 - WSDOT SR 520 Project Office
 - WSDOT Traffic Operations
 - Facilitated by Nelson\Nygaard

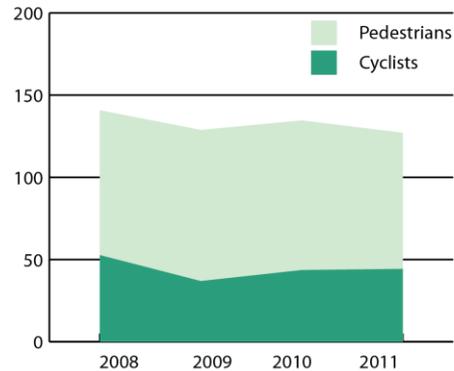
Existing Conditions



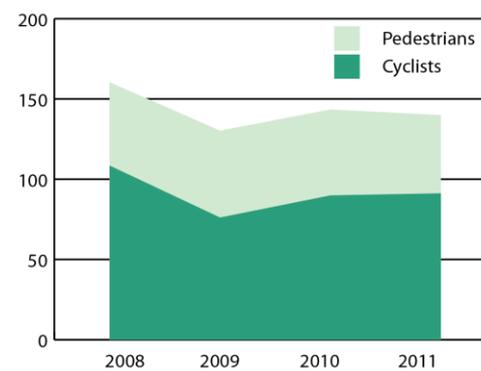
Bicycle and Pedestrian Volumes



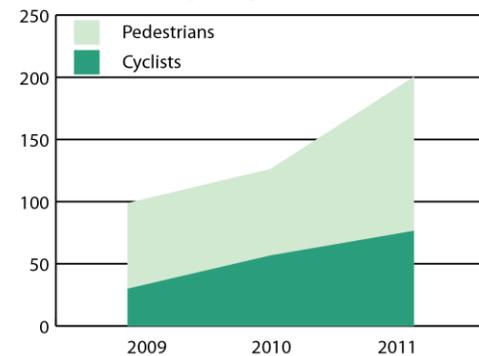
**Average Hourly Volume:
West side of the bridge, AM period**



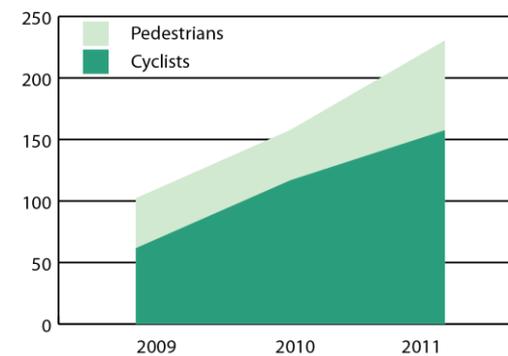
**Average Hourly Volume:
East side of the bridge, AM period**



**Average Hourly Volume:
West side of the bridge, PM period**



**Average Hourly Volume:
East side of the bridge, PM period**



Data is based on the 2008, 2009, 2010 and 2011 WSDOT and SDOT bicycle and pedestrian counts. Numbers show average hourly volume for both directions of travel.

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- A: Excellent** -- Optimum conditions for individual bicyclists and ample space to absorb more users of all modes, while providing a high-quality user experience.
 - B: Good** -- Good bicycling conditions, and retains significant room to absorb more users, while maintaining an ability to provide a high-quality user experience.
 - C: Fair** -- At least minimum width to meet current demand and to provide basic service to bicyclists. A modest level of additional capacity is available for bicyclists and skaters;
 - D: Poor** -- Trail is nearing its functional capacity given its width, volume, and mode split. Peak period travel speeds are likely to be reduced by levels of crowding. The addition of more users of any mode will result in significant service degradation. Some are likely to adjust their experience expectations or to avoid peak-period use.
 - E: Very Poor** -- Given width, volume, and user mix, the trail has reached its functional capacity. Peak-period travel speeds are likely to be reduced by crowding. Many bicyclists and skaters are likely to adjust their experience expectations, or to avoid peak period use.
 - F: Failing** -- Trail significantly diminishes the experience for at least one, and most likely for all user groups. It does not effectively serve most bicyclists; significant user conflicts should be expected.

Existing Level of Service



Based on 2011 Count

Side of Bridge	Width	Time Period	Average Hourly Volume (bicyclists/ pedestrians)	Overall LOS Score	Overall LOS Grade
East	8.0ft	AM	140 (91/49)	2.95	D
East	8.0ft	PM	231 (158/73)	2.54	D
West	8.0ft	AM	127 (44/83)	2.57	D
West	8.0ft	PM	201 (77/124)	1.91	F

Based on Four Year Average

Side of Bridge	Width	Time Period	Average Hourly One-way Volume (bicyclists/ pedestrians)	Overall LOS Score	Overall LOS Grade
East	8.0ft	AM	143 (91/52)	2.92	D
East	8.0ft	PM	164 (112/52)	2.88	D
West	8.0ft	AM	132 (44/88)	2.49	E
West	8.0ft	PM	141 (54/87)	2.44	E





If the calculated level of service, or SUPL \emptyset S, reaches level of service “F,” or failed conditions, consistently during at least one peak period, for more than three months of a single year, the trigger is met.

While any “failed” SUPL \emptyset S condition is incompatible with established City of Seattle policy, the condition must exist to the degree that addressing the condition provides significant benefits.

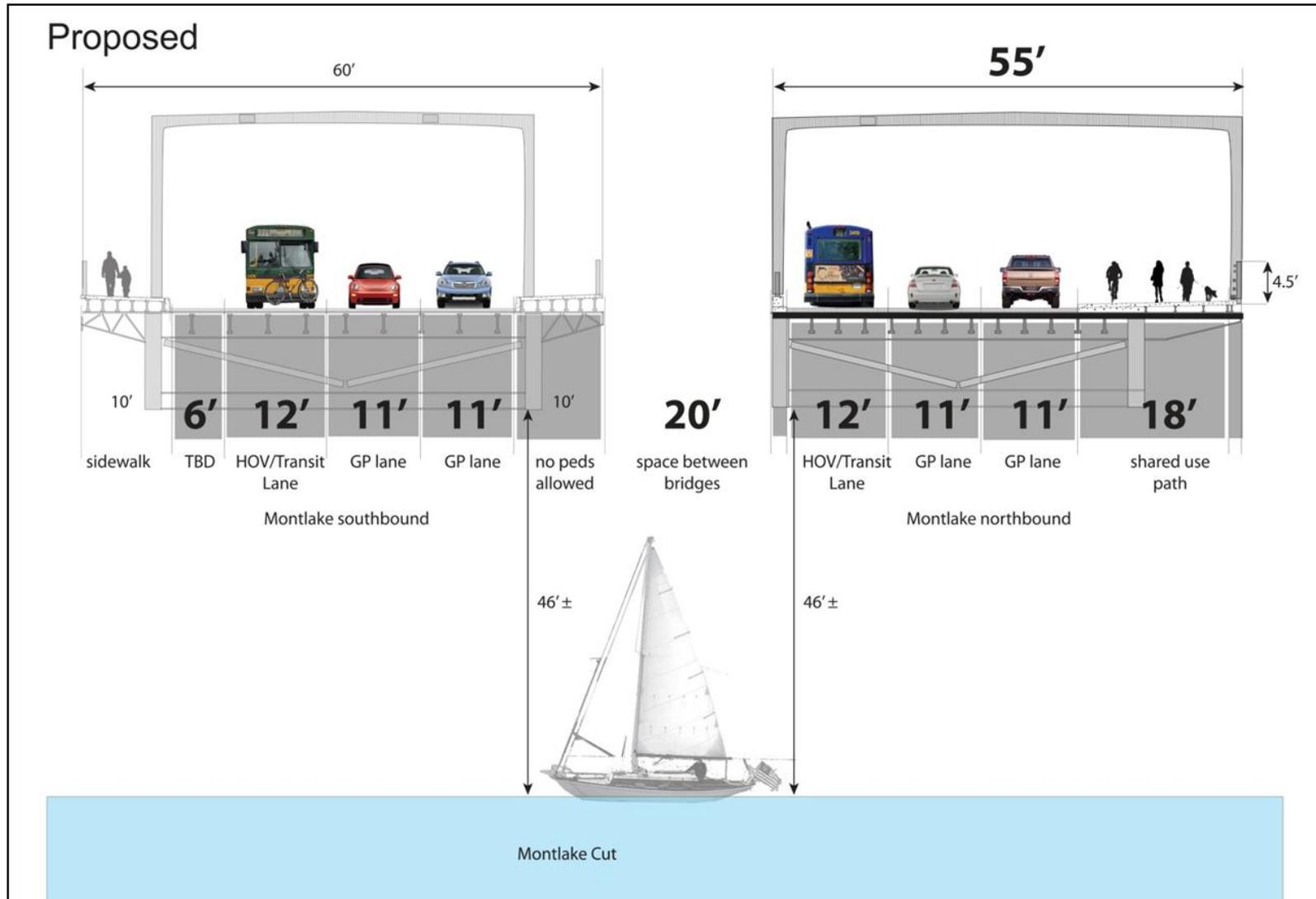
- SR 520 Cross Lake Shared Use Path
- U-Link Station
- Background growth in pedestrian and bicycle activity

Side of Bridge	Time Period	4/3 Year Avg Base Line	+ Five Years Background Growth (Bike/Ped)	+ U Link Opening (Bike/Ped)	+ 520 Shared Use Path (Bikes/Ped)	Combined Forecast (Bike/Ped)	Overall LOS Score (Bike/Ped)	Overall LOS Grade (Bikes/Peds)
East	AM	143 (91/52)	23(20/3)	60(12/48)	28(27/1)	253 (150/103)	2.12	E
East	PM	164 (112/52)	28(25/3)	60(12/48)	37(35/2)	288 (184/104)	2.07	E
West	AM	132 (44/88)	14(10/4)	0(0/0)	14(13/1)	160 (67/93)	2.38	E
West	PM	141 (54/87)	16(12/4)	0(0/0)	20(17/3)	177 (83/94)	2.36	E

What would a Second Bridge Do?



Seattle City Council



Projected LOS



Side of Bridge	Width	Time Period	Average Hourly Volume (bicyclists/ pedestrians)	Overall LOS Score	Overall LOS Grade
East	18.0ft	AM	314 (211/103)	3.84	B
East	18.0ft	PM	363 (259/104)	3.80	B
West	8.0ft	AM	100 (7/93)	-	-
West	8.0ft	PM	103 (8/95)	-	-



King County Metro and Sound Transit operate 10 routes across the Montlake Bridge

- 7 coming from SR 520
- 3 local routes through the corridor
- Over 600 transit trips cross the Montlake Bridge
- Nearly 11,000 transit passengers cross the Montlake Bridge daily.

Transit moves about 15% of all daily person trips crossing the bridge in motorized vehicles in just over 1% of all of those motor vehicles.

However, current transit operating conditions in the Montlake corridor are among the least reliable in the service area.



Route 48 - a high ridership route and ranks in the top 25% of routes serving the Seattle core in terms of riders per platform hour, a measure of transit effectiveness.

Currently fails on-time performance thresholds:

- Weekday average: 21% late - threshold - 20%
- Saturday: 28% late -- threshold - 20%.
- PM peak: 29% late -- threshold - 35%

Route 43 - also a high ridership route

- Saturday : 21% late -- threshold - 20%

Per Metro Service Guidelines, these conditions demonstrate the need for investing resources to improve the on-time performance.

Spring 2011 Baseline Transit Travel Time and Transit Speed				
Peak One-Hour Time Period	Direction	Average Travel Time (min)^a	Standard Deviation Travel Time (min)	Average Speed (mph)
AM	Northbound	10.8	1.4	14
	Southbound	11.1	1.8	13
Midday	Northbound	10.2	1.8	15
	Southbound	10.5	1.4	14
PM	Northbound	12.6	3.6	12
	Southbound	12.9	1.5	11

Spring 2011 Passenger Delay						
Peak One-Hour Time Period	Direction	Average Travel Time (min)	Delay Per Trip (min)^b	Average Passenger Load Per Peak Hour Trip	# Trips Per Peak Hour	Annual Person Delay (in annual person-hours)
AM	Northbound	10.8	0.9 to 2.8	42	10	1,607 to 4,998
	Southbound	11.1	1.2 to 3.1	28	10	1,428 to 3,689
Midday	Northbound	10.2	0.3 to 2.2	32	9	367 to 2,693
	Southbound	10.5	0.6 to 2.5	37	8	755 to 3,145
PM	Northbound	12.6	2.7 to 4.6	20	12	2,754 to 4,692
	Southbound	12.9	3 to 4.9	27	11	3,787 to 6,185

“Data show that travel times in the corridor which includes the Montlake Bridge, vary widely by time of day, but the specific causes of that time/speed variation are not well understood.”

“A correlation between adopted transit performance standards and measures, current transit performance, and the traffic conditions directly related to the Montlake drawbridge could not be specifically established.”

Two factors were identified that could contribute to a transit “trigger” that would indicate a need to improve transit operating conditions in the **entire** corridor and that could include construction of a second Montlake bridge. These factors are:

- Transit travel time and speed
- Passenger delay

Step 1 -- If future conditions degrade beyond 2011 baseline conditions by any measure, speed or passenger delay, and for any time period, AM peak, midday, PM peak, a process to identify transit operating enhancements is triggered. The amount of change beyond 2011 baseline conditions will determine the level of transit enhancements indicated for the corridor. Metro, City of Seattle, and WSDOT will work to identify potential projects to bring transit travel times and passenger delay back to 2011 levels, or better.

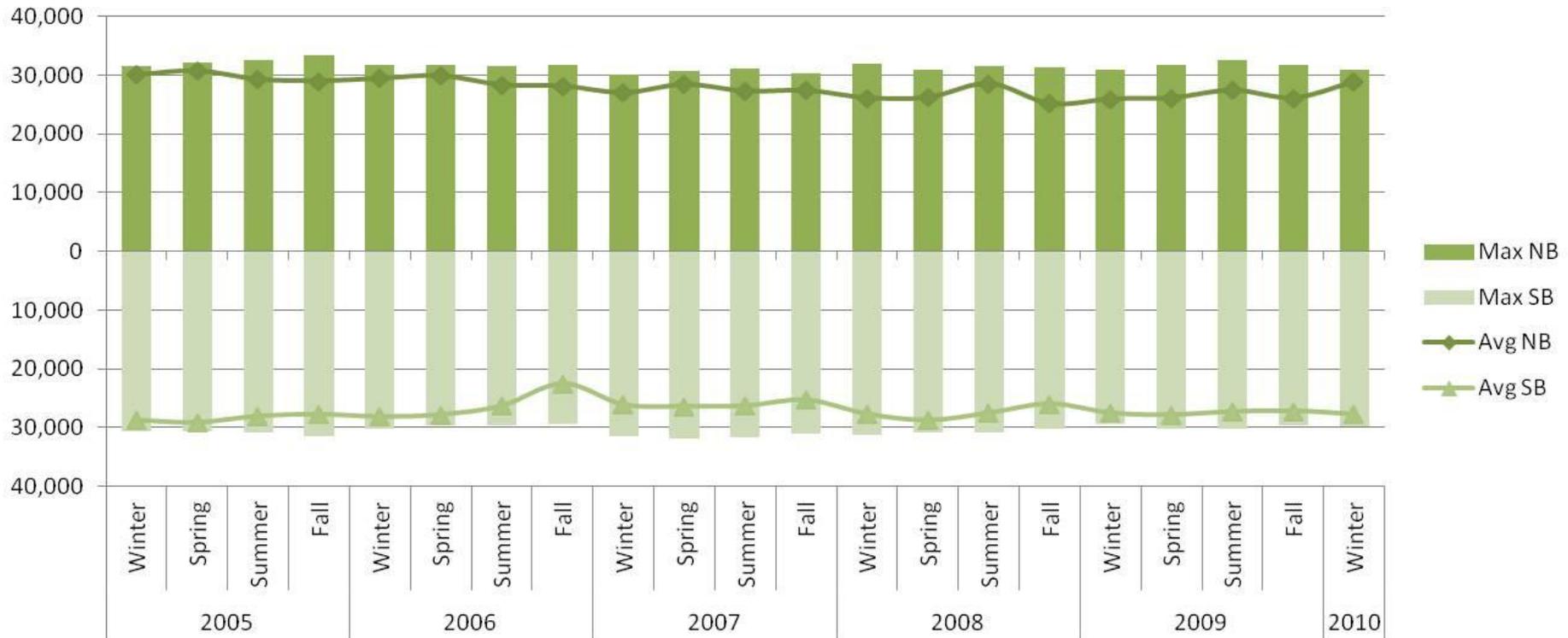
Step 2 -- If transit enhancement measures employed in **Step 1** are exhausted and are not able to improve transit operations to 2011 conditions based on a minimum of six months measurement following implementation of all transit enhancements, the trigger would then be met to consider the potential benefits to transit of constructing a second Montlake bridge. It is anticipated that additional analysis will be required if the second step trigger is met to determine the benefit to transit of a second bridge so that there is assurance that construction of a second bridge will actually resolve the speed and delay issues experienced by transit and improve conditions to the 2011 baseline, or better.

Transit speed and total passenger delay depend on:

- Traffic volume
- Light rail implementation
- Draw bridge opening frequency
- Changes in transit ridership
- Levels of boarding and alighting at transit stops
- Traffic signal operations
- Transit priority improvements

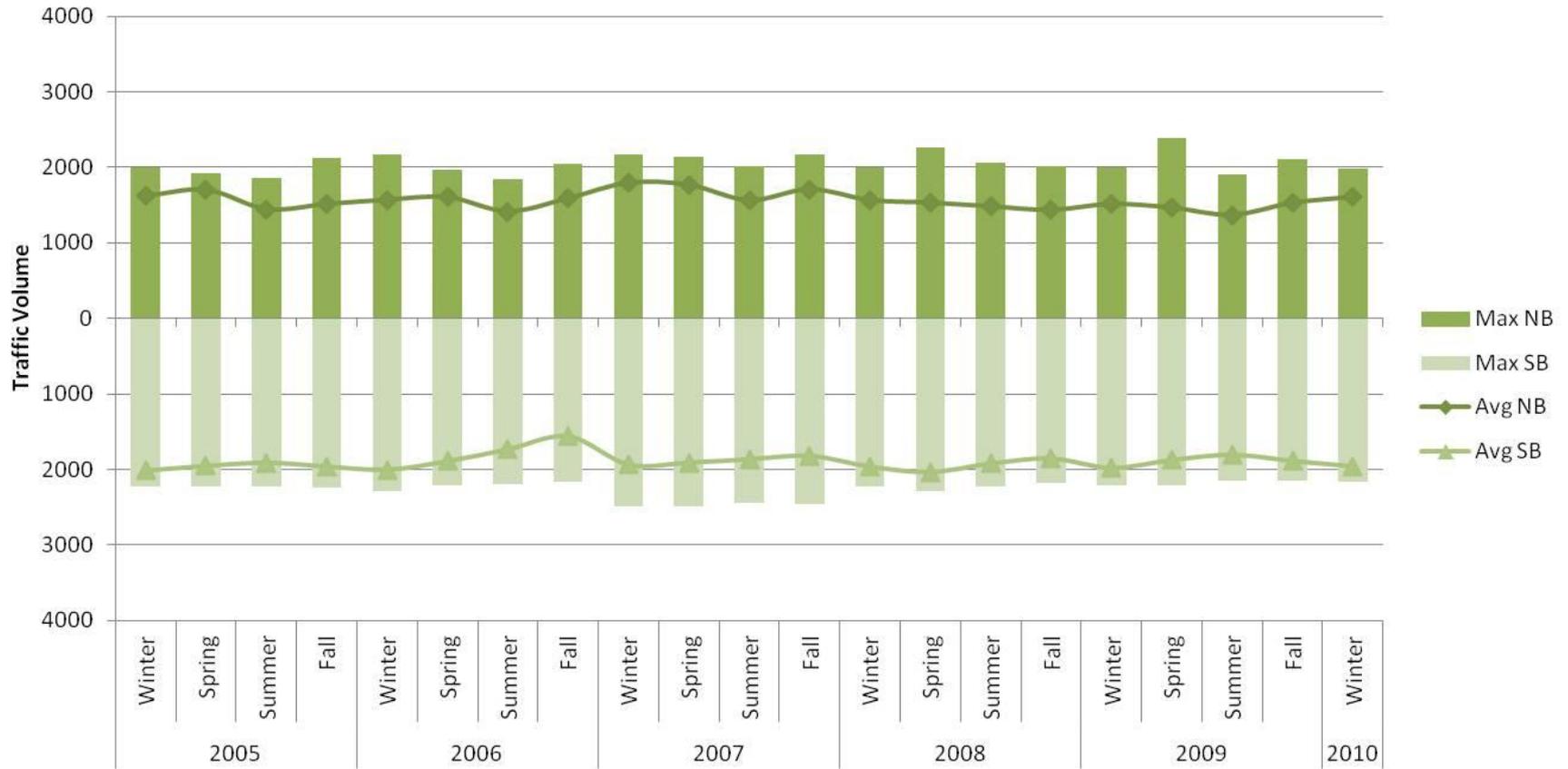


Existing Conditions - Average Daily Traffic





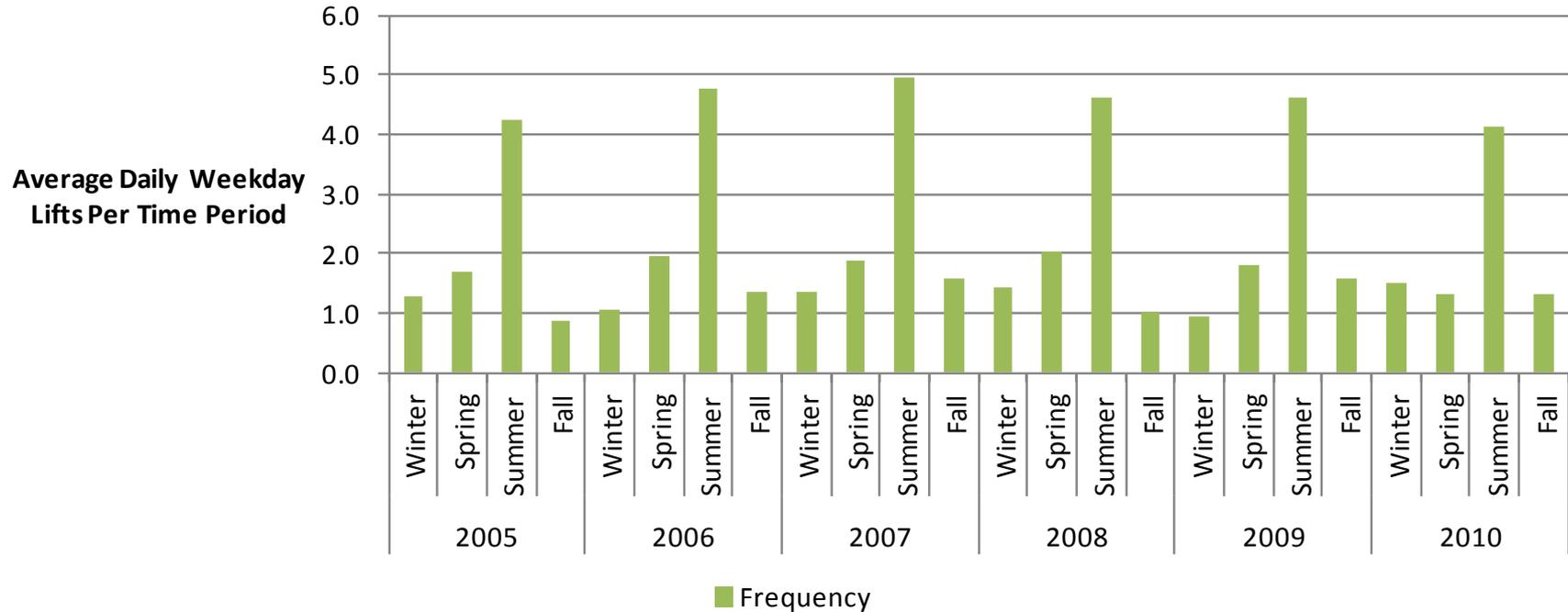
Existing Conditions - PM Peak Period Traffic





Existing Conditions - Midday Bridge Lift Activity

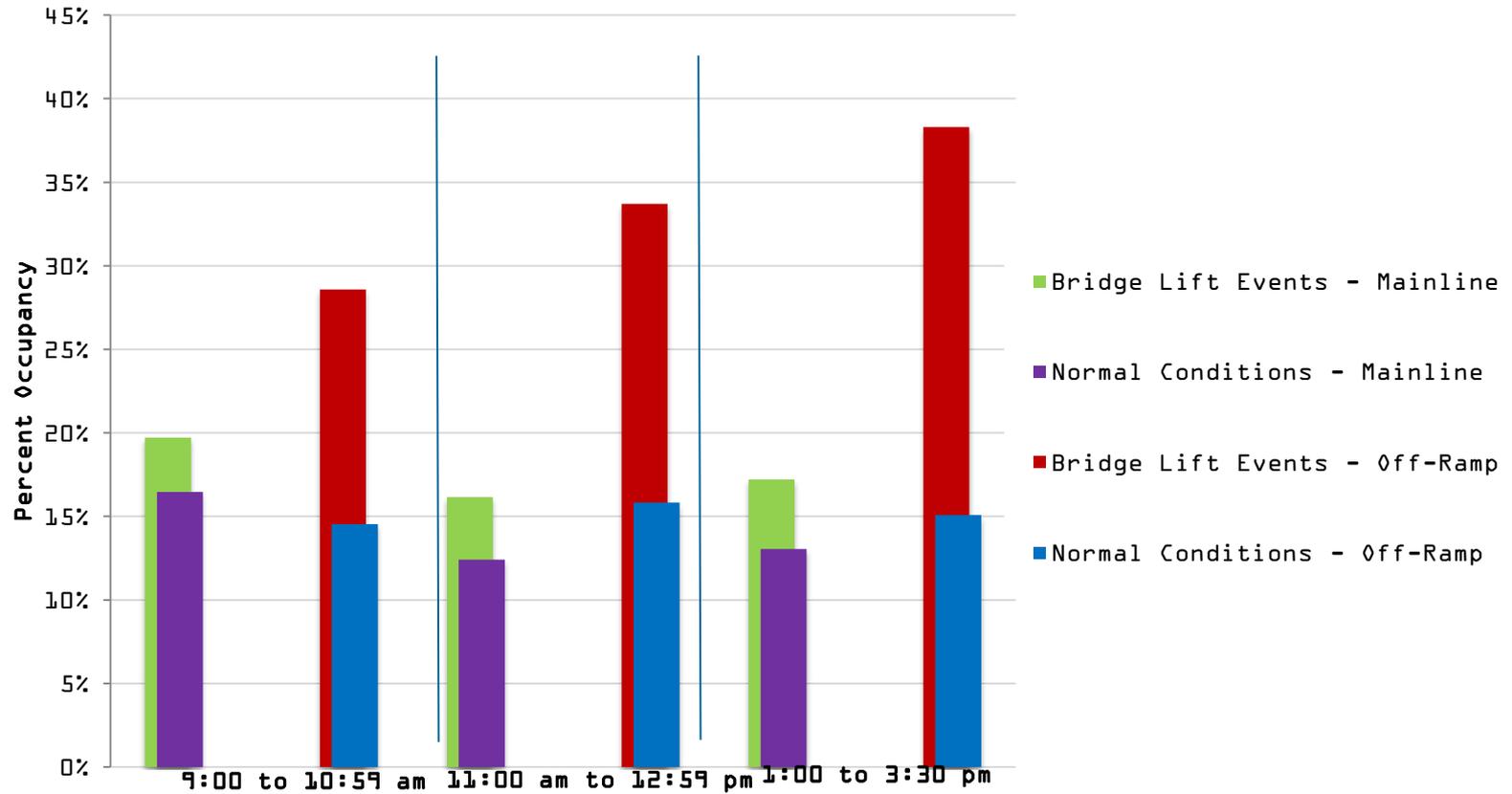
Midday Bridge Lift Frequency





Existing Conditions - Influence of Bridge Lift Activity

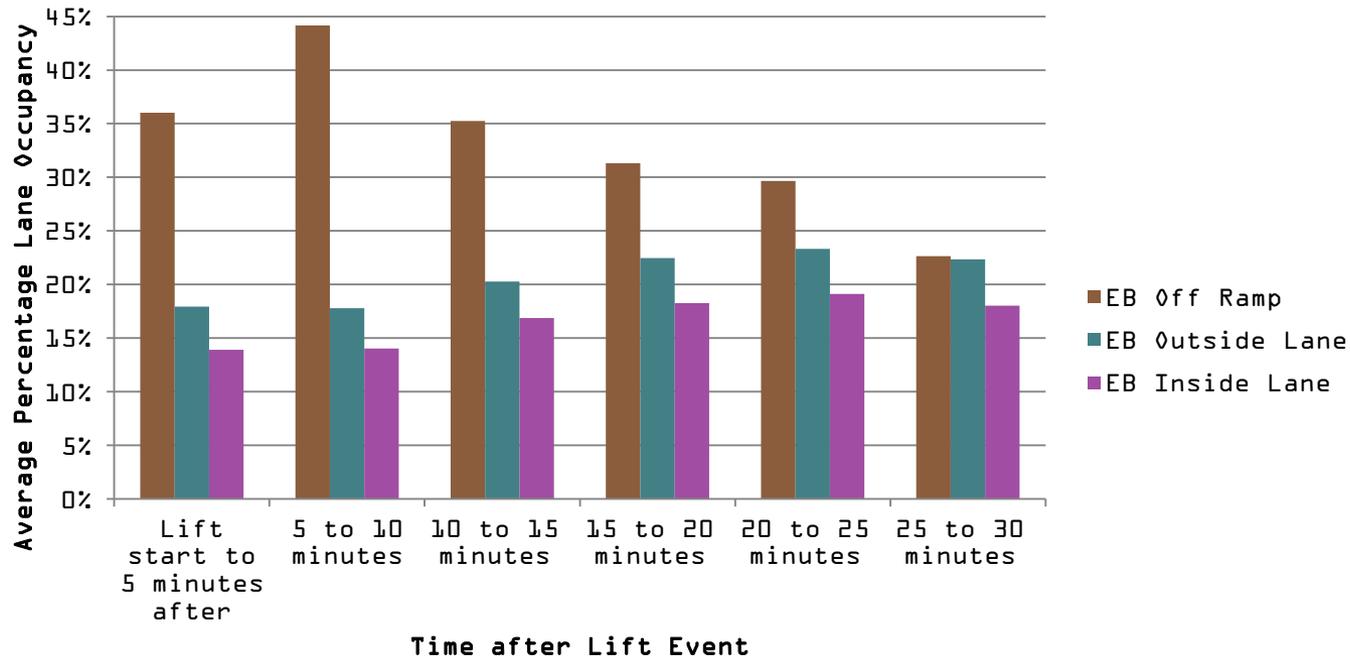
Westbound at Montlake -- Weekday





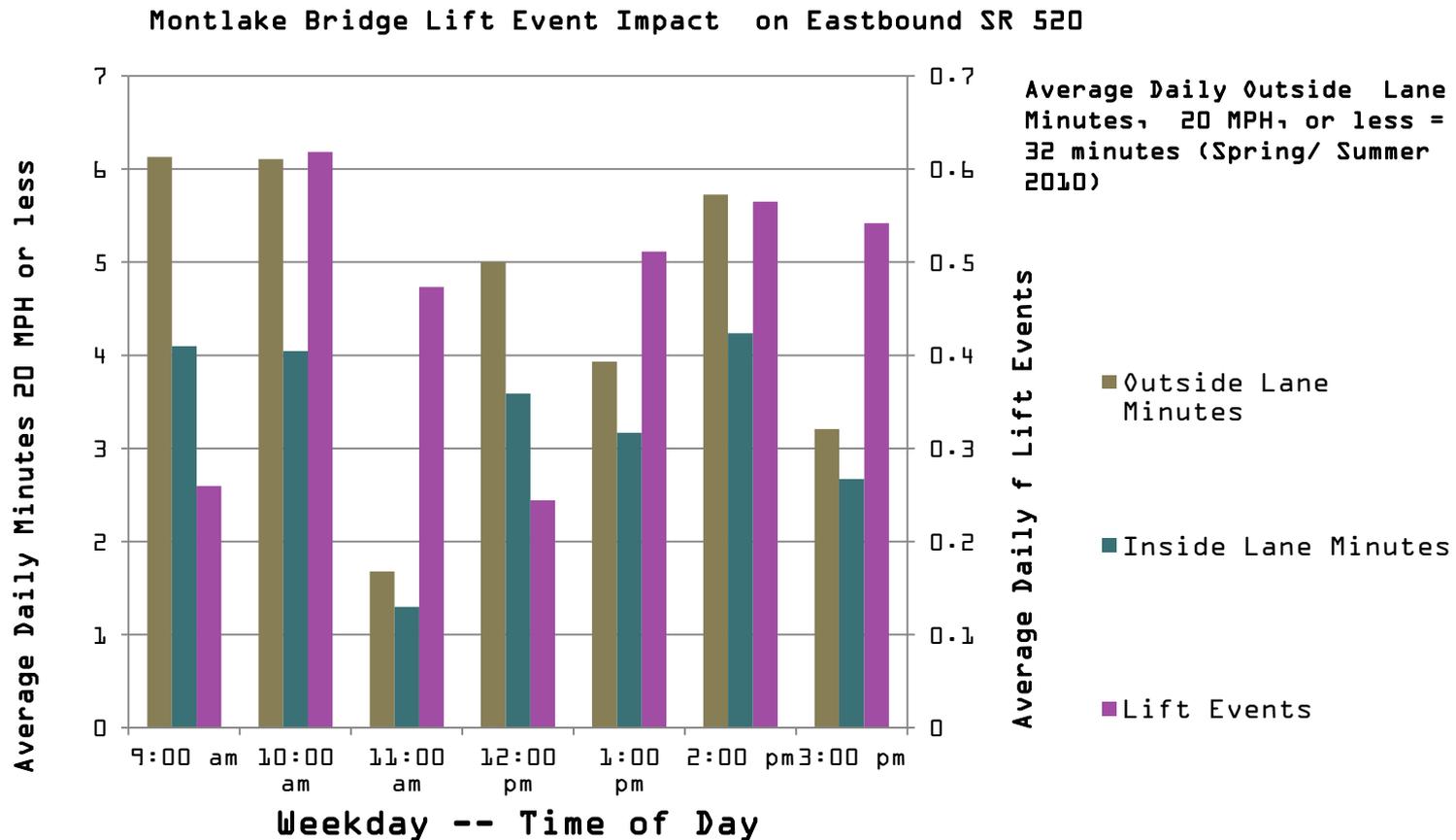
Bridge Lift Influence on Congestion

Anatomy of a Bridge Opening:
EB SR 520 at Montlake





Bridge Lift Influence on Congestion





If SR 520 mainline congestion that occurs as a result of Montlake bridge openings exceeds an average of 100 minutes per day for any six month period, the trigger is met. If met, roadway improvements would be considered to reduce congestion. Those roadway improvements could include a second Montlake Bascule Bridge.

Congestion is defined as mainline average speed of 20 MPH, or less, in the right, or outside, lane. The threshold of 100 minutes is established in combination with the projected 5% reduction in recovery time from the ESSB 6392 traffic models to obtain a daily reduction in mainline congestion of five minutes.



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- Reconstructed Montlake interchange
 - Influence of tolling on traffic flow characteristics
 - Influence of Sound Transit Link projects
 - Influence of cross-lake regional transit services



Pedestrians and Bicycles:

- Need to fund on-going monitoring of corridor

- Update of Seattle Bicycle Master Plan
 - appropriate forum to weigh options that address capacity limitations of current bridge
 - creative alternatives that do not necessitate construction of a second bridge for vehicle traffic.



Transit Speed and Reliability:

- Need to fund on-going monitoring of corridor
- Seattle Transit Master Plan
 - Names corridor as a high priority for improvement of transit reliability and travel time
 - City and King County Metro should work together to improve transit operating conditions in the corridor
- For the foreseeable future a second Montlake Bridge would have little benefit in addressing adverse transit operating conditions in the corridor.



SR 520 Mainline Operations:

- Need to fund on-going monitoring of corridor
- For the foreseeable future, given the decreasing incidence of bridge openings (documented in the technical report), reduced traffic volumes on SR 520 and Montlake Boulevard, and the limited benefit provided to mainline traffic recovery following a bridge opening, an investment in a second bridge is unwarranted.



Overall Policy Implications:

- Need to fund on-going monitoring of corridor
- A second Montlake Bridge does not provide sufficient benefits to balance its high costs, which are both financial and environmental.
- There are issues in the corridor; however, other alternatives need to be explored and implemented if found to be effective.
- The legislature should consider reallocating the costs of the second bridge to other, more beneficial, aspects of the SR 520 project:
 - improving pedestrian and bicycle connectivity between SR 520 and the University of Washington/U-Link/Burke-Gilman Trail,
 - improving transit operating conditions in the broader corridor,
 - improving the livability aspects of SR 520 project through the Madison Park, Montlake, Portage Bay, and Roanoke neighborhoods.

QUESTIONS?



NELSON
NYGAARD

Tim Payne

1402 Third Avenue

Suite 1200

Seattle, WA 98101

Office: (206) 357-7524

tpayne@nelsonnygaard.com