Montlake Bridge Crossing

Bike & Pedestrian Enhancement Study

Seattle Department of Transportation

Presentation to City Council
SR-520 Special Committee
Sept 30, 2013

Background & Purpose

Second Montlake Bridge Workgroup Establishment of Triggers (2012)

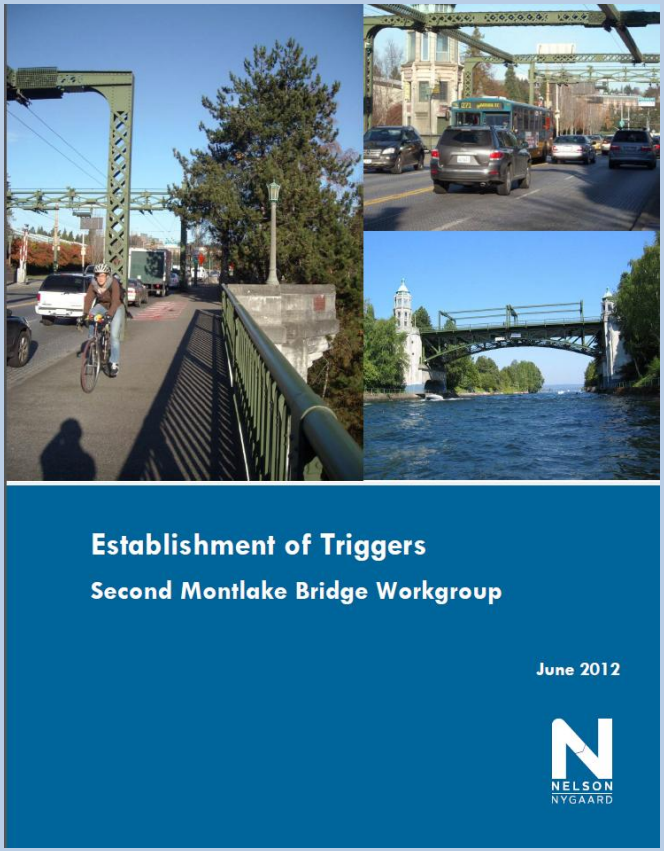
- Bicycle and Pedestrian Mobility
- Transit Speed and Reliability
- SR 520 Mainline Operations

(Resolution 31411)

Council directed SDOT to evaluate the feasibility of improving bicycle and pedestrian facilities by looking at:

- Operational Changes
- Structural Changes
- New Facility

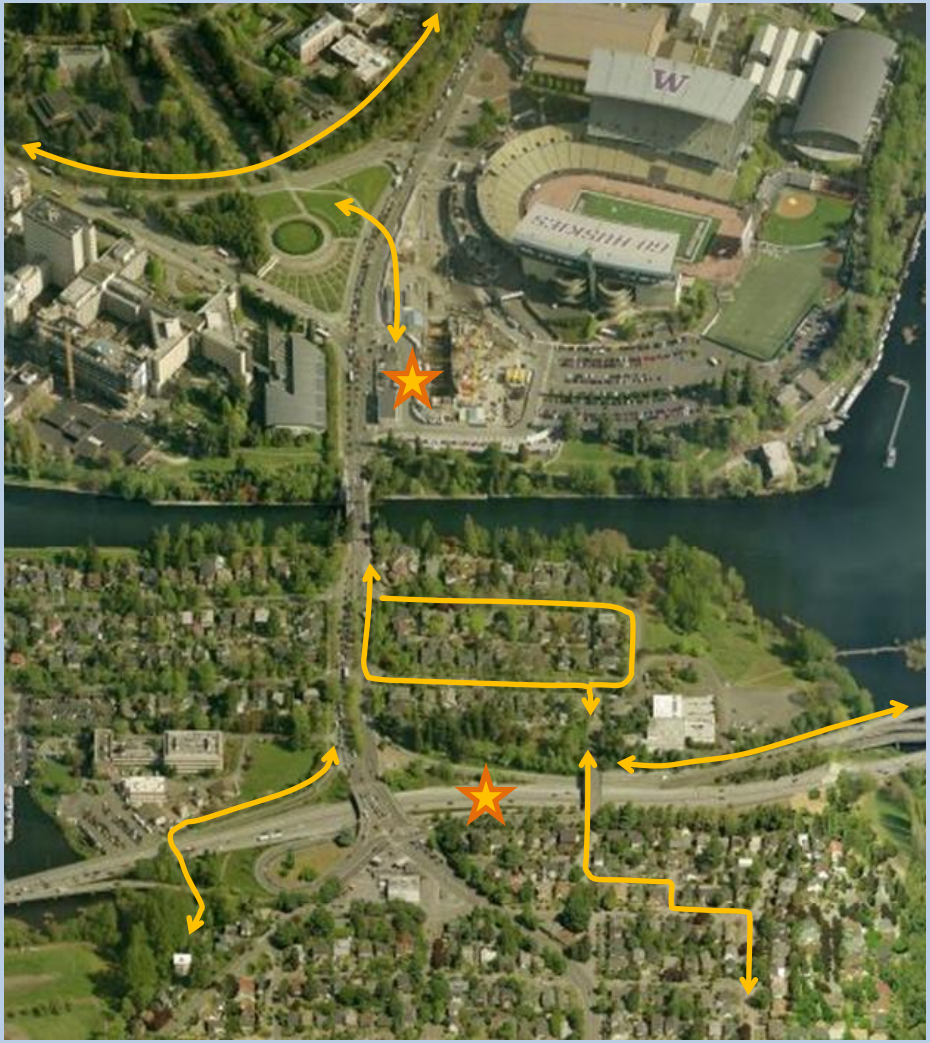
(2013 Budget Green Sheet GS-78-2-A-1)



SDOT engaged Integrity Structural Engineering, PLLC

Montlake Bridge is owned by WSDOT (designated part of SR-513)

Bicycle & Pedestrian Connections



Connections North

- UW Campus Facilities
- Burke Gilman Trail
- Montlake Triangle Ped/Bike Overpass
- Sound Transit Light Rail Station

Connections South

- Shelby/Hamlin Couplet
- 24th Ave Bridge / 25th Ave Greenway
- SR-520 Shared Use Path
- Montlake Flyer Transit Stop
- Bill Dawson Trail

Operational Limitations

- Bicycle and pedestrian demand expected to grow, emphasize east side of Montlake Bridge
- Restricting bicycle/pedestrian use to separate sides is impractical
- Restricting direction of bicycle/pedestrian use is impractical
- Anticipate and manage expectations for bicycle/pedestrian interactions on bridge

Montlake Bridge

Bridge Length: 344’

- Approach Structure: 162’
- Bascule Section: 182’

Sidewalk Width:

- Approach Structure (unconstricted): 9’-10”
- Bascule Section (unconstricted): 9’-4”

Sidewalk Constrictions (18):

- Trolley Wire Poles (10): 7’-2”
- Longitudinal Joints (4): 7’-8”
- Safety Gates (4): 7’-2” (3 gates)
  6’-4” (SW gate)

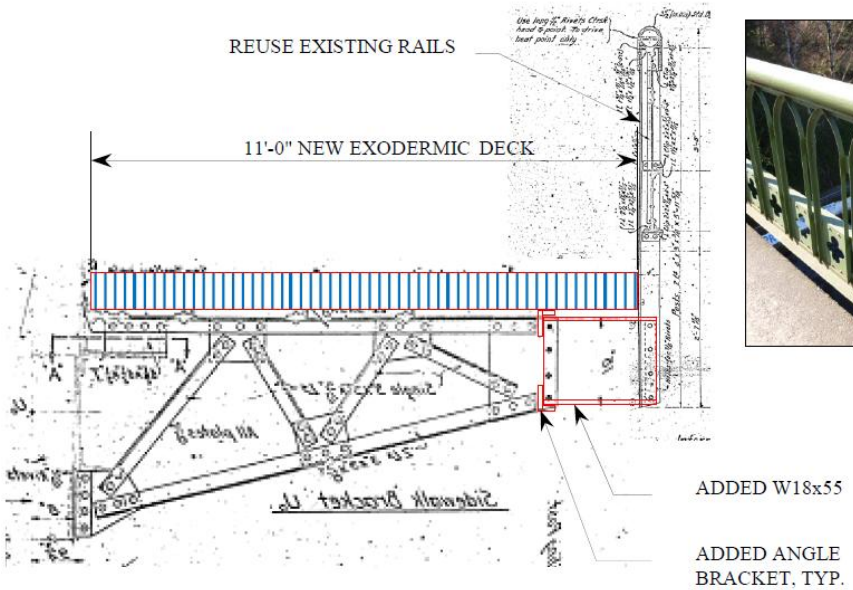
Sidewalk Widening Feasibility

Approach Structure

- Can add 4’ sidewalk width without affecting load rating
- The two existing towers remain a constraint to widening (9’-10”)
- Requires reconstructing concrete railing/architectural features
- High risk for historic preservation concerns

Bascule Section

- Can add 1’-8” sidewalk width and maintain existing weight
- Extend steel support structure and replace decking
- Refurbish and reuse historic railing
- Low risk for historic preservation concerns



New Bicycle and Pedestrian Crossing

Potential Locations
- Adjacent to existing bridge
- East near McCurdy Park

Potential Bridge Types
- Vertical Lift Bascule
- Swing Bascule
- Double-Leaf Bascule

Opportunities
- Provide greater separation of bicycles (new facility) and pedestrians (existing)
- Potential efficiencies if single operator for both Montlake and adjacent bridge

Challenges
- Adjacent bridge occupies same location as proposed 2nd Bascule Bridge
- Adjacent bridge may impact historic character of existing bridge
- Potential right-of-way impacts

Summary of Findings

Operational Limitations

- Bicycle and pedestrian demand anticipated to grow
- Impractical to impose directional or use restrictions on bridge sidewalks
- Anticipate and manage bicycle/pedestrian interactions on bridge

Structural Changes

- Widening of sidewalks is structurally feasible, but has limitations
  - Approach widening requires full reconstruction of historic features
  - Bridge towers remain a constraint to approach widening
  - Bascule widening is limited by weight considerations
- Feasibility cost estimate:
  - Approach (4’) and bascule (1’-8”) widening: $5.7 million
  - Bascule-only (1’-8”) widening: $3.7 million

New Facility

- Opportunity to separate bicycle and pedestrian traffic
- Potential historic preservation and right-of-way impacts
- Feasibility cost estimate: $25 million to $40 million