

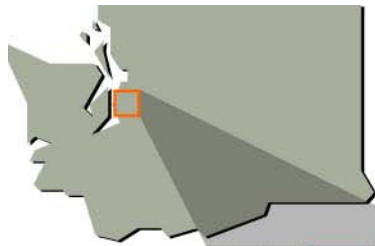


Innovative Process Informs Function on the SR 520 Bridge Replacement Project

Paul Bott P.E., S.E.
Program Structures Lead
HDR Engineering Inc.

Greg Nutson P.E., S.E.
West Side Structures Lead
HDR Engineering Inc.





Project Location



SR 520 Project and Program Limits

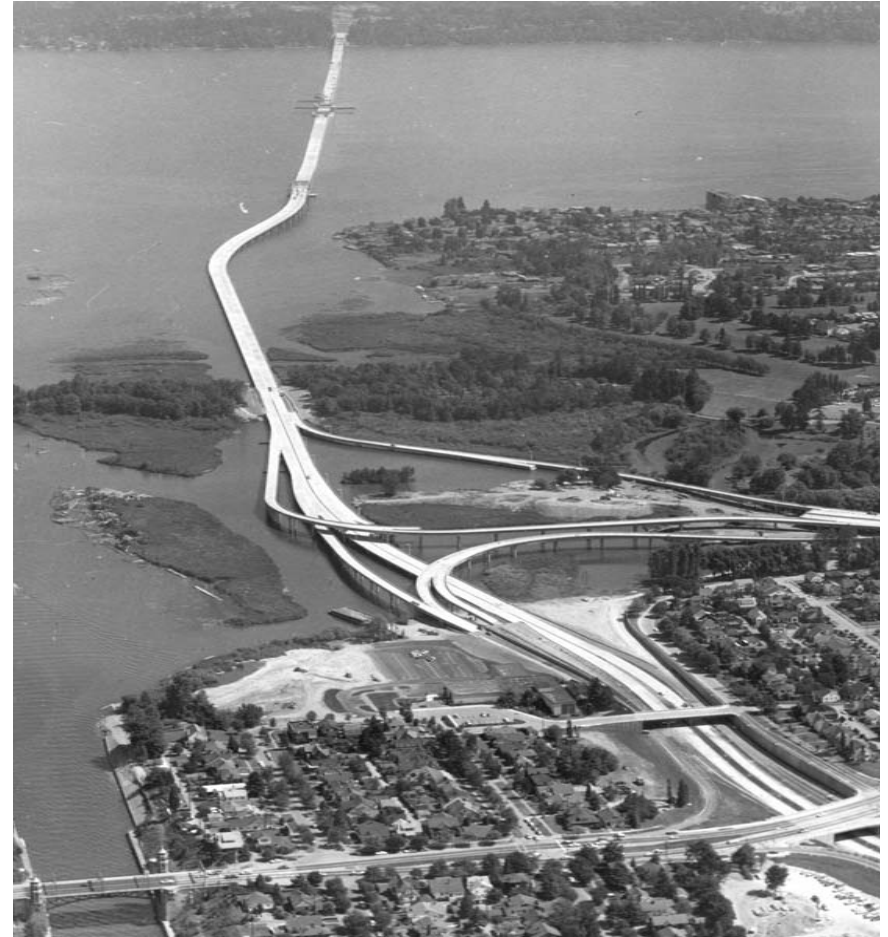


Four SR 520 projects:

-  I-5 to Medina: Bridge Replacement and HOV Project
-  Medina to SR 202: Eastside Transit and HOV Project
-  Pontoon Construction Project
-  Lake Washington Congestion Management Project

Existing Bridge Data

- Opened August 8th, 1963
- 2.3 mile long crossing
- Originally designed for 57 mph wind
- Retrofitted in 1998 to withstand 20 year storm - 77 mph wind
- Designed for 65,000 trips per day
- 60 feet wide with 4 lanes of traffic



Existing Bridge Deficiencies

- Vulnerable to catastrophic failure during large windstorms
- Vulnerable to collapse from earthquakes
- Vulnerable to collapse from vessel impact
- Does not have shoulders
- Daily traffic volumes exceed capacity
- No HOV, bicycle, or pedestrian features
- Discharges untreated storm water runoff into Lake Washington



Program Goals

- Improve Safety and Reliability
- Increase mobility for people and goods
- Avoid, minimize, and/or mitigate the project effects on the environment and neighborhoods



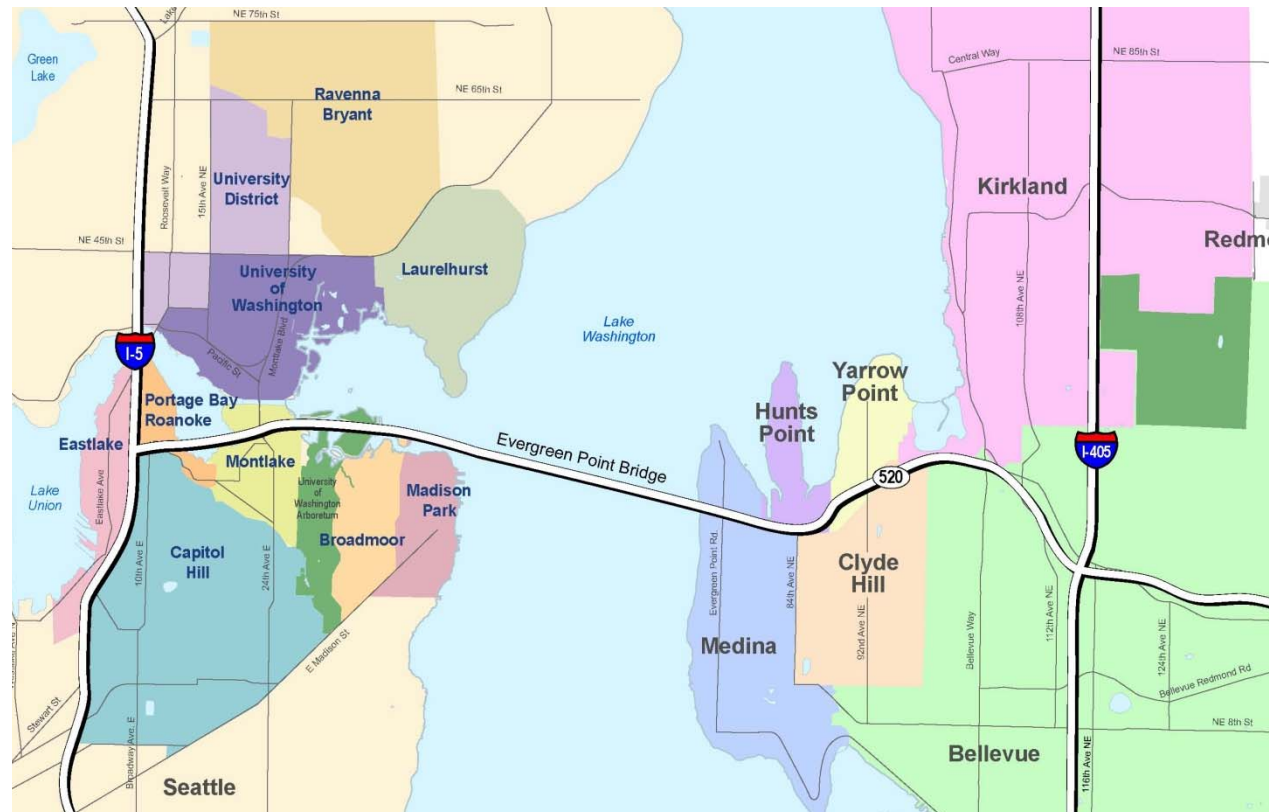
Project Setting and Environment

- Vital link across Lake Washington
- Wetlands
- Parklands
- Urban neighborhoods
- University property
- Navigable waterways
- Recreational waters
- Endangered species habitat
- Tribal fishing waters
- Historical and Cultural resources



Stakeholders

- Cross – Lake Commuters
- Taxpayers
- Local Communities and Interest Groups
- Regulatory Agencies
- The University of Washington
- Native American Tribes
- Businesses on both sides of the lake
- The Arboretum
- WSDOT
- Sound Transit
- FHWA
- Many others



Environmental Regulations

- National Environmental Policy Act (NEPA)
- Clean Water Act (wetlands/water quality)
- Clean Air Act
- Section 4(f) of the Department of Transportation Act of 1966
- Section 6(f) of the Land and Water Conservation Fund Act
- Section 106 of the National Historic Preservation Act
- Rivers and Harbors Act
- Endangered Species Act
- State Regulations and Local Ordinances



Regulatory Agencies / Permits Required

Army Corps of Engineers:

Clean Water Act Section 404 Permit
Rivers and Harbors Section 10 Permit

Coast Guard

Rivers and Harbors Section 9 Permit
Private Aids to Navigation Permit (PATON)

USFWS:

Endangered Species Act Section 7 Consultation
Migratory Bird Treaty Act compliance
Bald and Golden Eagle Protection Act consistency
Fish and Wildlife Coordination Act Compliance

Department of Ecology

Clean Water Act Section 401 Certification
Coastal Zone Management Certificate
NPDES General Construction Permit
Shoreline Conditional Use Permit

WA State Department of Fish and Wildlife

Hydraulic Project Approval

Department of Natural Resources

Aquatic Lands Use Authorization/Lease/Easement

National Marine Fisheries Service

Endangered Species Act Section 7 Consultation
Marine Mammal Protection Act Compliance
Magnuson-Stevens Act (Essential Fish Habitat)

King County

Waste Discharge Permit/Authorization

Seattle and Medina

Street Use Permit
Noise variance
Shoreline Substantial Development-
Permit/Conditional Use/Variance/Exemption
Critical Areas Review
Building Permit
Side Sewer Permit
Other Local Permits

Others



Innovative Processes

- Communications Process
 - Targeted to all parties involved in the program
- Mediation Process
 - Targeted to the West Side Stakeholders
- Regulatory Agency Coordination Process
 - Targeted to regulatory agencies and tribes



Communications Process

- “No surprises” approach
 - Daily conference calls with WSDOT communications officials
 - Bi-Weekly reports to WSDOT Headquarters
 - Communications back pocket card
- Public Outreach
 - Open houses, public hearings, workshops, fairs and festivals
 - Comprehensive Web site
- Public Correspondence
 - e-mail updates and responses, phone call follow ups, and constituent meetings
- Internal Communications
 - Monthly all-staff meetings
 - Project Media Clips



Washington State
Department of Transportation

SR 520 Bridge Replacement and HOV Project

STATE ROUTE 520

Heard the latest?

Join us at open houses on June 24 and 25 to learn about progress toward building a new SR 520.


Project team members, and agency and community representatives will answer your questions and share the latest project information on:

- Opening the new bridge in 2014.
- Designing the new corridor.
- Commuting across Lake Washington.

Your involvement helps us reach our goal of starting construction in 2012. We look forward to discussing the project with you.

www.wsdot.wa.gov/Projects/SR520Bridge

Dates and locations



Seattle
Tuesday, June 24, 4 – 7 p.m.
Naval Reserve Building
Lake Union Park
860 Terry Avenue N
Bus routes: 17, 96 (Seattle Streetcar)

Bellevue
Wednesday, June 25, 4 – 7 p.m.
Bellevue City Hall
450 – 110th Avenue NE
Bus routes: 232, 260, 342, 550, 560, 564, 565

Limited free parking is available at both locations.

ADA Info: The meeting sites are accessible to persons with disabilities. Accommodations for people with disabilities can be arranged with advance notice by calling 206-770-3500.

Communications Back Pocket Card

- Key Messages
- Program Costs
- Program Timeline
- Web Site Address
- Contact Info

<p>SR 520 Bridge Replacement and HOV Program</p> <p>SR 520 program information card</p> <p>The SR 520 program will:</p> <ol style="list-style-type: none"> 1 Improve safety and reliability. 2 Increase mobility for people and goods. 3 Avoid, minimize, and/or mitigate the project effects on the environment and neighborhoods. <p style="text-align: right; font-size: small;">Summer 2009</p>	<p>The SR 520 program will replace the SR 520 floating bridge and enhance safety and reliability from Seattle to Redmond with two general-purpose lanes and one HOV lane in each direction.</p> <p>Four SR 520 projects:</p> <ul style="list-style-type: none"> ■ I-5 to Medina: Bridge Replacement and HOV Project ■ Medina to SR 202: Eastside Transit and HOV Project ■ Pontoon Construction Project ■ Lake Washington Congestion Management Project 	<p>SR 520 program key messages</p> <p>The SR 520 bridges and structures are vulnerable to earthquakes and windstorms, and need to be replaced.</p> <p>We are currently completing environmental documentation in order to obtain construction permits.</p> <p>Tolling will begin on the SR 520 bridge in 2010, allowing us to build a new pontoon construction site in Grays Harbor next year, and pontoons at this site starting in 2012.</p> <p>We will open a new SR 520 floating bridge in 2014.</p>
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Key features of SR 520 program	How much does the SR 520 program cost?	What is the SR 520 program timeline?	How can I learn additional information?										
<ul style="list-style-type: none"> • Designed floating bridge to withstand 92 mph winds. • Designed bridges to better withstand earthquakes. • Two general-purpose lanes and one HOV lane in each direction. • Improved, wider shoulders. • Bicycle and pedestrian path. • Improved transit service. • Stormwater runoff treatment. • Noise walls for noise reduction. 	<p>The latest cost estimates for the SR 520 program range from \$4.53 to \$6.67 billion, depending on which west side option is chosen.</p> <p>The Governor and Legislature have approved tolling to fund a new SR 520 floating bridge. The SR 520 program is currently funded for \$1.99 billion.</p> <p>Additional funding sources are under consideration to close the existing funding gap and pay for the remaining safety and mobility improvements included in the program.</p>	<p>We plan to open a new floating bridge to drivers in 2014.</p> <table border="1" style="width: 100%; background-color: #e0f2f1;"> <tr> <td style="background-color: #008080; color: white; padding: 2px;">2009</td> <td style="padding: 2px;">Begin innovative pontoon construction testing effort. Advertise design-build contract for the Pontoon Construction Project.</td> </tr> <tr> <td style="background-color: #008080; color: white; padding: 2px;">2010</td> <td style="padding: 2px;">Begin pontoon construction at an existing facility. Begin new pontoon site construction in Grays Harbor. Begin construction on the Eastside.*</td> </tr> <tr> <td style="background-color: #008080; color: white; padding: 2px;">2012</td> <td style="padding: 2px;">Begin construction of new floating bridge.</td> </tr> <tr> <td style="background-color: #008080; color: white; padding: 2px;">2014</td> <td style="padding: 2px;">Open four-lane bridge to drivers.</td> </tr> <tr> <td style="background-color: #008080; color: white; padding: 2px;">2016</td> <td style="padding: 2px;">Open six-lane bridge to drivers.*</td> </tr> </table> <p style="font-size: x-small; text-align: center;">* Assumes full project funding.</p>	2009	Begin innovative pontoon construction testing effort. Advertise design-build contract for the Pontoon Construction Project.	2010	Begin pontoon construction at an existing facility. Begin new pontoon site construction in Grays Harbor. Begin construction on the Eastside.*	2012	Begin construction of new floating bridge.	2014	Open four-lane bridge to drivers.	2016	Open six-lane bridge to drivers.*	<p>Web site: www.wsdot.wa.gov/projects/sr520bridge</p> <p>E-mail: sr520bridge@wsdot.wa.gov</p> <p>Please refer all media inquires to: Suanne Pelley Communication Director Phone: 206-770-3578</p>
2009	Begin innovative pontoon construction testing effort. Advertise design-build contract for the Pontoon Construction Project.												
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2014	Open four-lane bridge to drivers.												
2016	Open six-lane bridge to drivers.*												

Mediation Process

- Initiated by the Legislature and Governor.
- Began August 2007 and continued through December 2008.
- Goal was to select a west side design option.
- Participants identified options independently of the project team.



Mediation Process Participants

WSDOT
Sound Transit
Office of the Governor
University of Washington
King County Metro Transit
Seattle Mayor's Office
Seattle City Council
Seattle Design Commission
Arboretum Foundation/Arboretum and
Botanical Garden Committee
Cascade Bicycle Club
Friends of Seattle's Olmsted Parks
Transportation Choices Coalition
Boating Community
Seattle Chamber of Commerce
Bellevue Chamber of Commerce
Freight Advisory Committee
Montlake Community Council
Madison Park Community Council
Roanoke/Portage Bay Community
Council
Laurelhurst Community Council
University District Community Council
North Capitol Hill Community Council
Eastlake Community Council
Ravenna Bryant Community Council

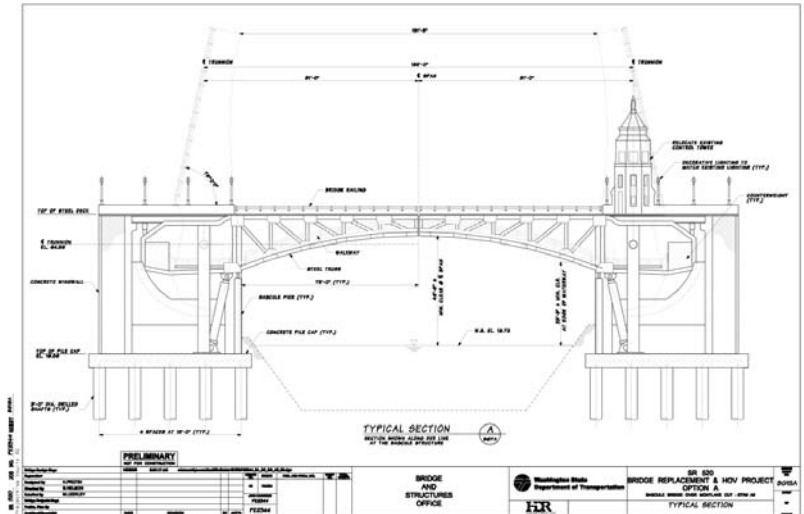
City of Yarrow Point
City of Medina
City of Clyde Hill
City of Hunts Point
City of Bellevue
City of Kirkland

Federal Highway Administration
NOAA Fisheries, National Marine
Fisheries Service
U.S. Fish and Wildlife Service
U.S. Coast Guard
Washington State Legislature



Project Team's Role in the Mediation Process

- Provided information to participants
- Performed technical analysis on ideas presented
- Developed conceptual plans and visualizations
- Prepared cost estimates for conceptual designs

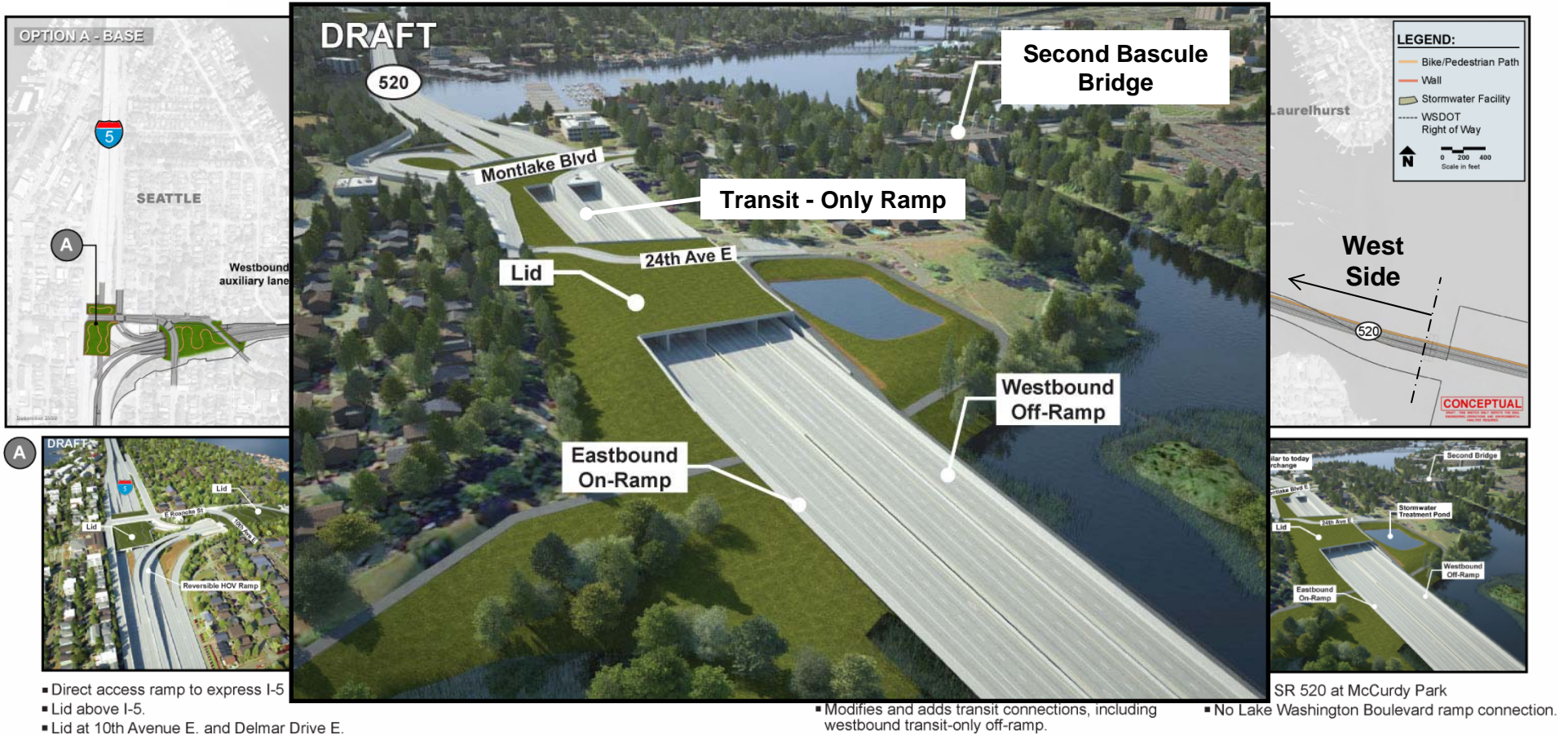


Mediation Process Outcomes

- Three options were agreed to by the mediation participants
 - Option A
 - Option K
 - Option L
- Options A, K, and L will be evaluated in the Supplemental Draft Environmental Impact Statement (SDEIS)



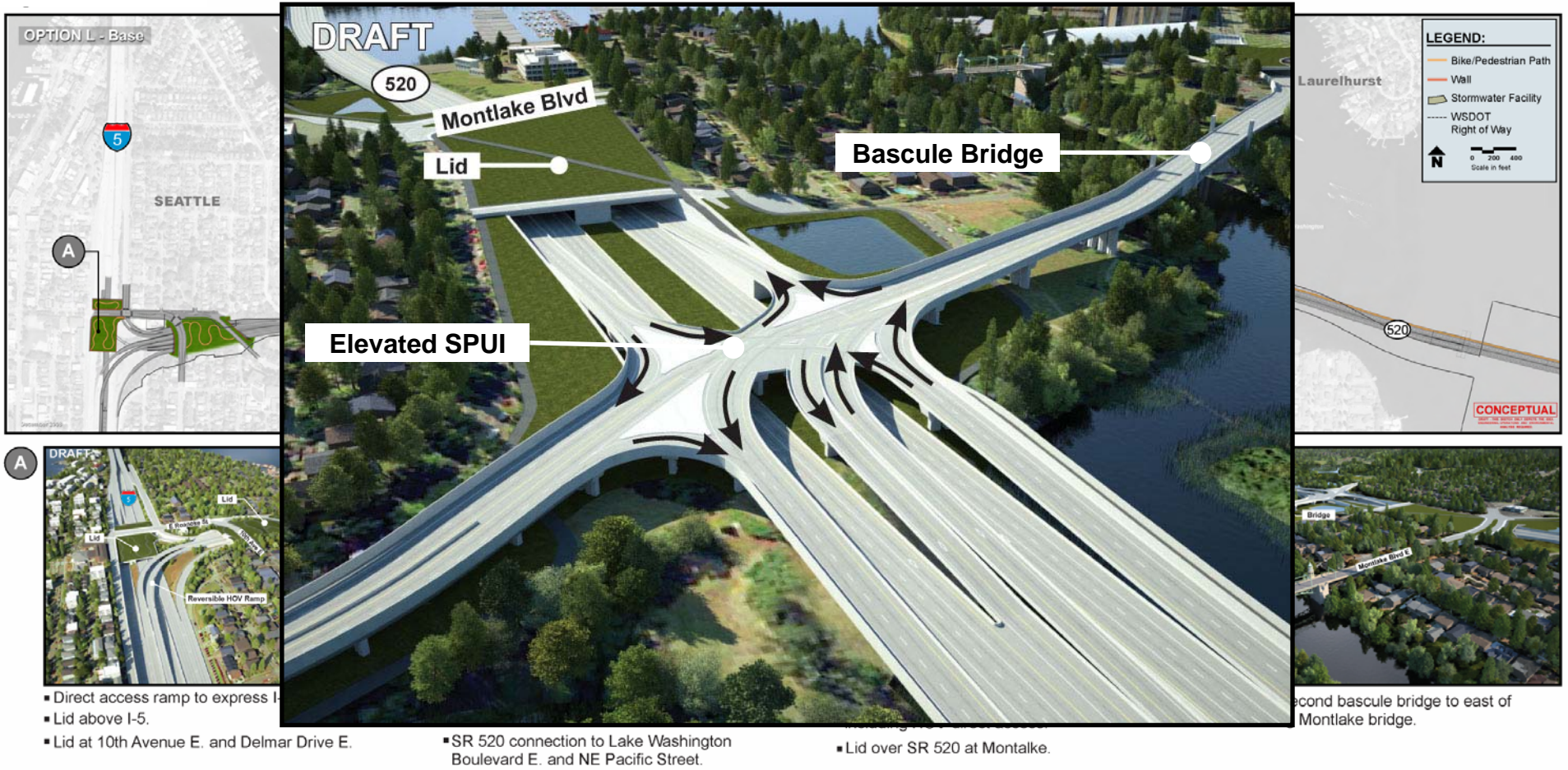
Option A



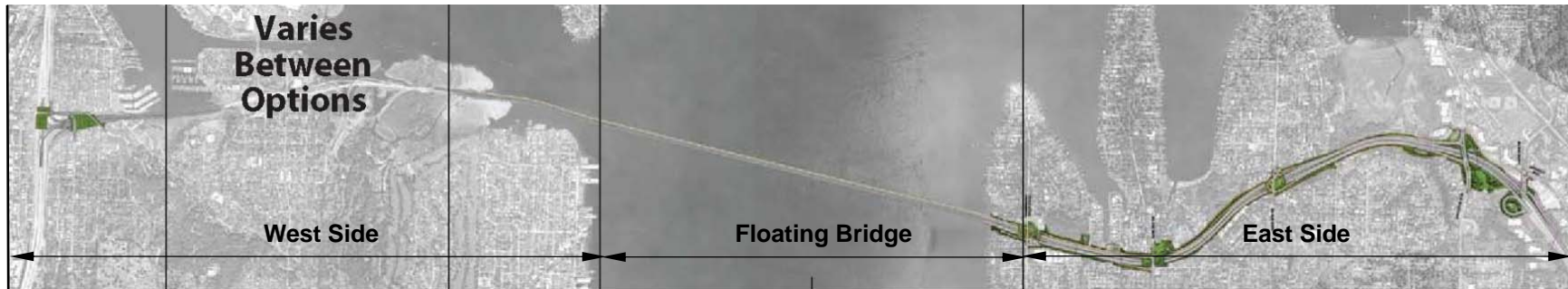
Option K – SEM Tunnel



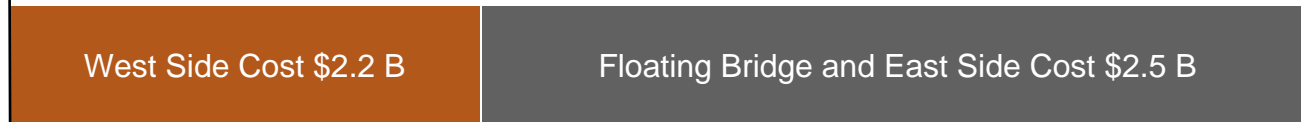
Option L



2008 Program Costs



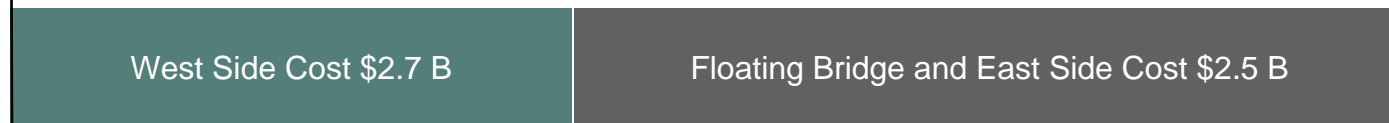
Option A - Total Cost \$4.7 B



OptionK – Total Cost \$6.7 B



Option L – Total Cost \$5.2 B



Regulatory Agency Coordination Process (RACp)

- The goal of RACp is to facilitate ongoing collaboration with regulatory agencies.
- RACp provides a forum for:
 - Ensuring consistency with regulations
 - Sharing information
 - Clarifying agency preferences
 - Identifying potential issues **early** in the design process

Washington State
Department of Transportation

SR 520 Bridge Replacement and HOV Project

STATE ROUTE 520

DRAFT
Regulatory Agency Coordination Process (RACp) –
In-Water Construction Technical Working Group
Thursday, September 4, 2008, 1:00 p.m. – 4:00 p.m.
SR 520 Office, 600 Stewart Street, Seattle
Second Floor Conference Room

Meeting Summary

Introductions and Meeting Purpose

Sarah Brandt, SR 520 environmental communications manager and meeting facilitator, welcomed the group and led introductions. Sarah reviewed the meeting objectives and meeting packet materials with the group. Packets included a draft meeting summary for the August 7 In-Water Construction (IWC) Technical Working Group (TWG). Sarah announced that comments on the draft summary would be appreciated by next Friday, September 12, 2008.

Construction Timing Matrix Updates

Chris Cziesla, SR 520 Endangered Species Act (ESA) lead, indicated that he was unable to attend the August 7 IWC TWG meeting and would like to begin by reviewing updates to the matrices based on discussion from the last meeting. Updates were made to the zone 8: East Approach matrix based on discussion at the August 7 IWC TWG. Updates were also made to the zone 7: Floating Bridge matrix based on discussion at the July 10 IWC TWG.

Updates: Zone 7 – Floating Bridge

Updates to the zone 7 matrix indicate that activities within the zone may be conducted year-round because the activities either do not require in-water work or have little or no interaction with fish or fish habitat.

Updates: Zone 8 – East Approach

Chris reviewed the updated zone 8 matrix. The updated matrix indicates that many construction activities are not subject to work windows because either the nature of the activity does not require in-water work, or would have little or no interaction with fish use.

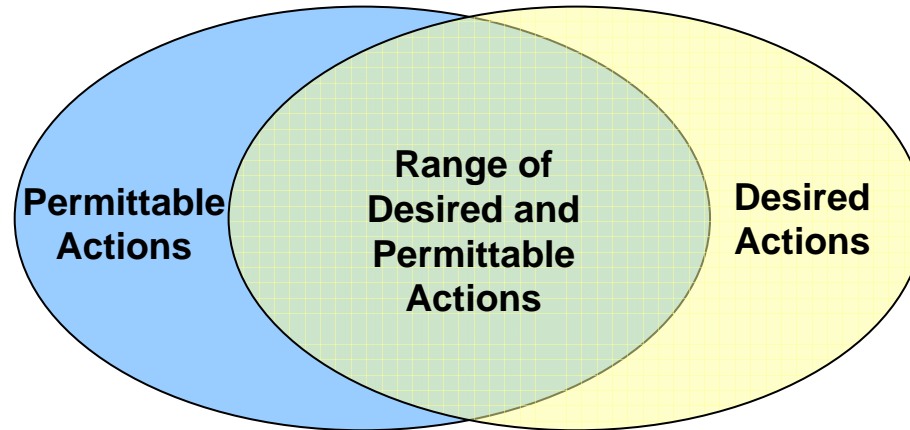
Chris noted that construction activities showing restricted work windows are all related to pile driving installation and removal.

Chris identified some parking lot items identified by the project team based on discussion from the last meeting for zone 8. A summary of the discussion and updates to suggested work windows in zone 8 is captured in the table below.

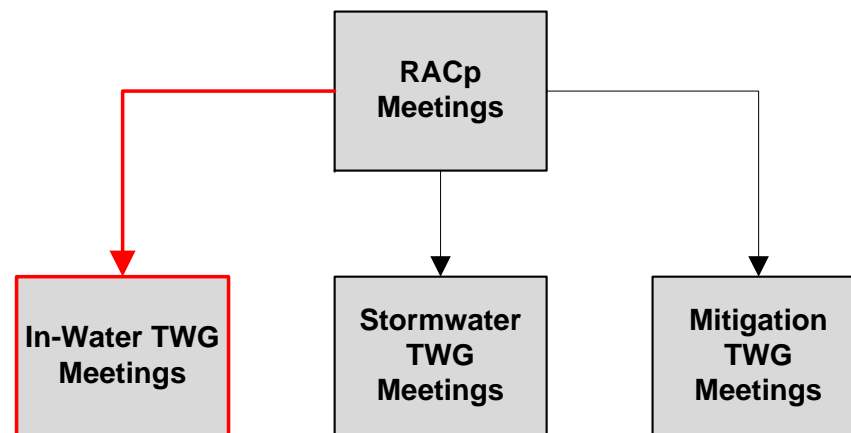
SR 520 RACp In-Water Construction Technical Working Group Meeting
September 4, 2008 – Meeting Summary DRAFT

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RACp - Technical Work Groups (TWGs)

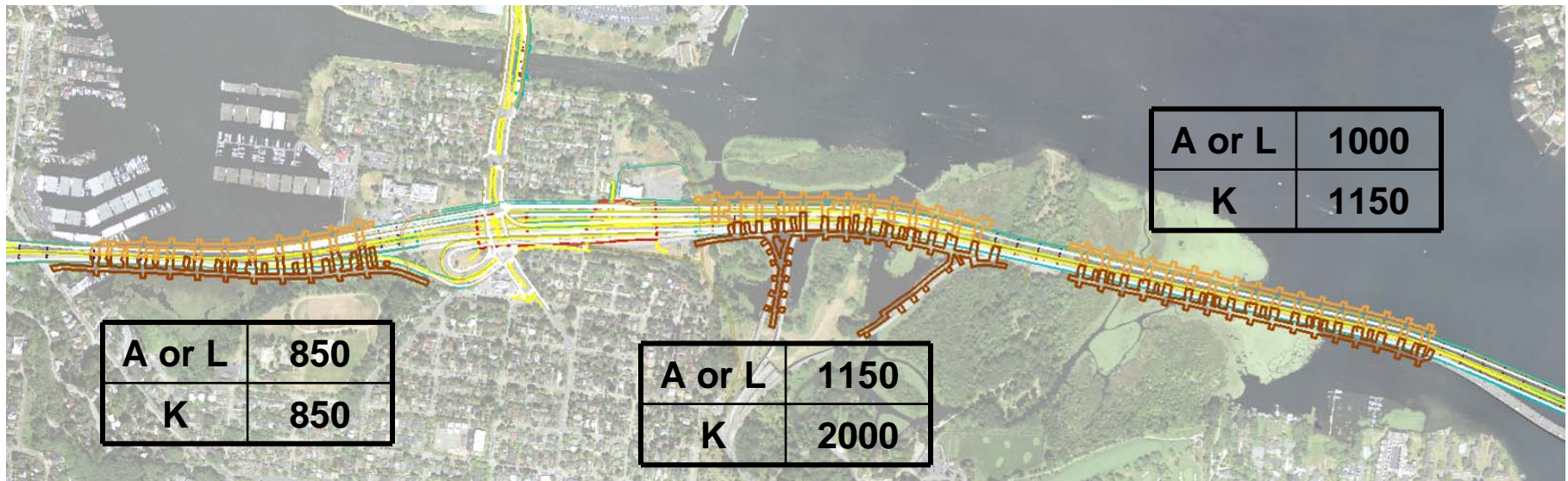


- Technical Work Groups (TWGs) meet to cover specific topics in detail



Work Bridge Areas and Number of Piles

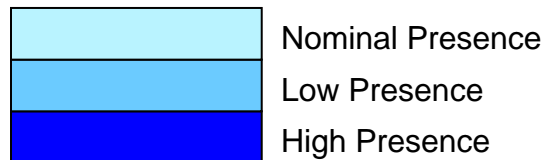
Option	Temp. Br. Area (SF)	No. of Piles (Ea)	Pile Area (SF)	Total Length (LF)
A	900,000	3,000	9,400	240,000
K	1,200,000	4,000	12,600	320,000
L	900,000	3,000	9,400	240,000



Fish Use by Zone

Zone 6: SR 520 West Approach (from Foster Island to the 10 – meter depth contour)

Species	Life History Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chinook	Adult						Low	High	High	High	Low		
	Residual	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
	Juvenile			Low	Low	High	High	High	Low				
Steelhead	Adult	Low	Low	Low	Low	Low	Low						Low
	Residual	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
	Juvenile		Low	Low	Low	Low	Low	Low	Low				
Bull Trout	Sub Adult	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low



Work Descriptions and Windows by Zone

Construction Activity	Components	Functional Impacts	Threshold of Concern	BMP's	Proposed Work Window											
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Work Bridge Construction	Shoreline Access	-Turbidity - Habitat disturbance	- State water quality standard 5 NTU over background	-Siltcurtain -TESC plan												
	Pile Driving	- Under water noise - Turbidity	- NMFS underwater noise standards	-Vibratory Installation when possible - Sound attenuation device (bubble curtain, Gunderboom)												
	Above Water Work	-Debris/spills	Any fuel spill	-Debris containment - Spill prevention, control and countermeasures plan (SPCC)												

Zone 6



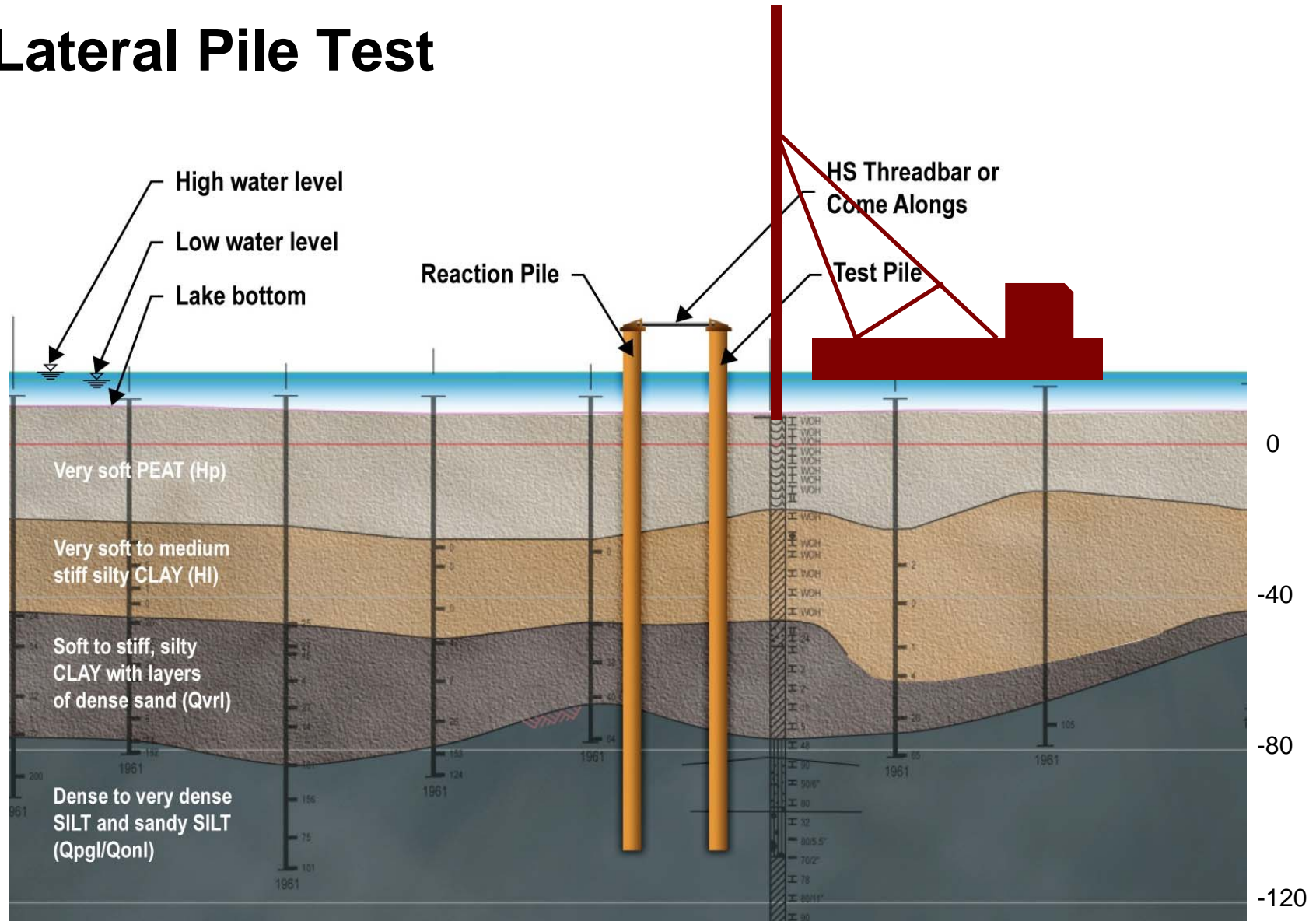
Indicates No In-Water Work Permitted

Test Pile Program Goals

- Collect site specific sound wave propagation data
- Test the effectiveness of different noise attenuation methods on pile driving
- Determine the effectiveness of vibratory and impact pile driving
- Determine the feasibility of removing piles after hard driving
- Demonstrate the effectiveness of equipment, materials, and means of access
- Determine geotechnical properties and parameters for soils



Lateral Pile Test



In Closing

- Three innovative processes have been developed in response to the challenges faced by the program.

The Communications, Mediation, and RAC processes have helped inform the decisions that will determine the ultimate form and function of the project





Washington State
Department of Transportation

SR 520 Bridge Replacement and HOV Program



Questions?

Web Site:

www.wsdot.wa.gov/projects/SR520Bridge

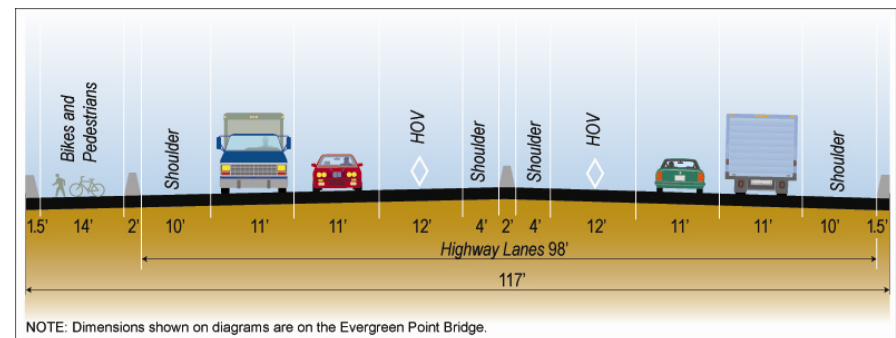
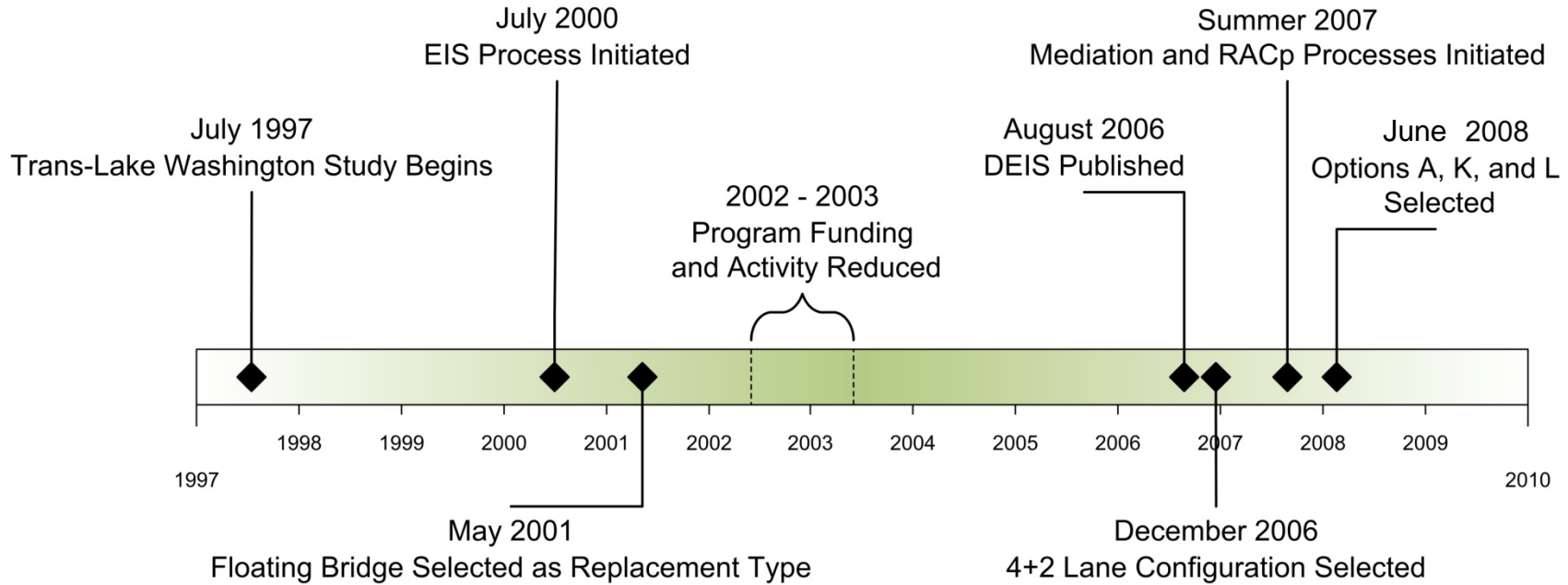
E-mail:

sr520bridge@wsdot.wa.gov



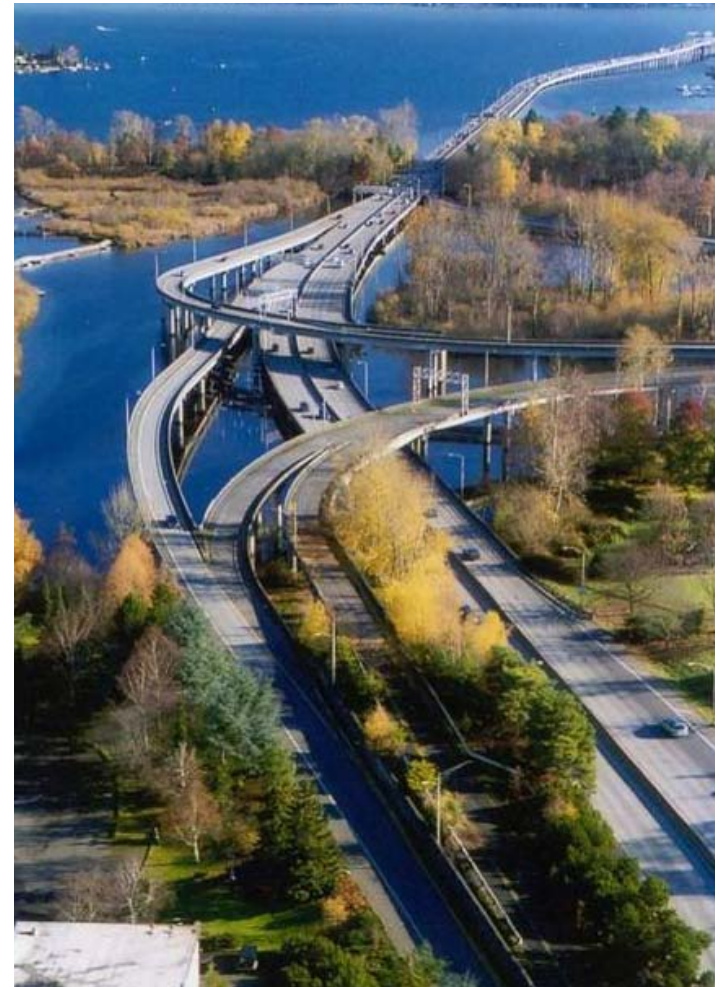
U.S. Department of Transportation
Federal Highway Administration

Program History and Milestones



Environmental Regulations – State and Local

- State Regulations
 - State Environmental Policy Act (SEPA)
 - Hydraulic Code (streams and aquatic habitat)
 - Water Pollution Control Act (stormwater and wetlands)
- Local Regulations
 - Shoreline Management Act Regulations
 - Coastal Zone Management Act
 - Local Ordinances



I-5 to Portage Bay



Zones and Work Bridges

