



Washington State
Department of Transportation

SR 520 Bridge Replacement and HOV Program



I-5 to Medina: Bridge Replacement and HOV Project

ESSB 6392: Design Refinements and Transit Connections
Workgroup | **Draft Recommendations Report**

September 13, 2010



Washington State
Department of Transportation



SDOT

Seattle Department of Transportation

ESSB 6392: Design Refinements and Transit Connections Workgroup | **Table of Contents**

Executive Summary _____	1
Background _____	4
Process _____	7
Recommendations _____	12
Author positions _____	20
Table 1 _____	26

Appendix: White papers

[Turning, queuing, and channelization](#)

[Bicycle and pedestrian connections and amenities](#)

[Arboretum: traffic calming](#)

[Arboretum: traffic management](#)

[Neighborhood traffic management](#)

[Second bascule bridge phasing](#)

[Corridor management and HOV lane performance plan](#)

[Roadway operations: Portage Bay Bridge managed shoulder](#)

[Roadway operations: I-5 express lanes](#)

[HOV/transit lane location and transit signal priority](#)

[Transit connections: bus stop locations](#)

[Light rail transit accommodation](#)

[Noise reduction strategies](#)

[Health Impact Assessment](#)

[Urban design and streetscape](#)

[Montlake Triangle Charrette](#)

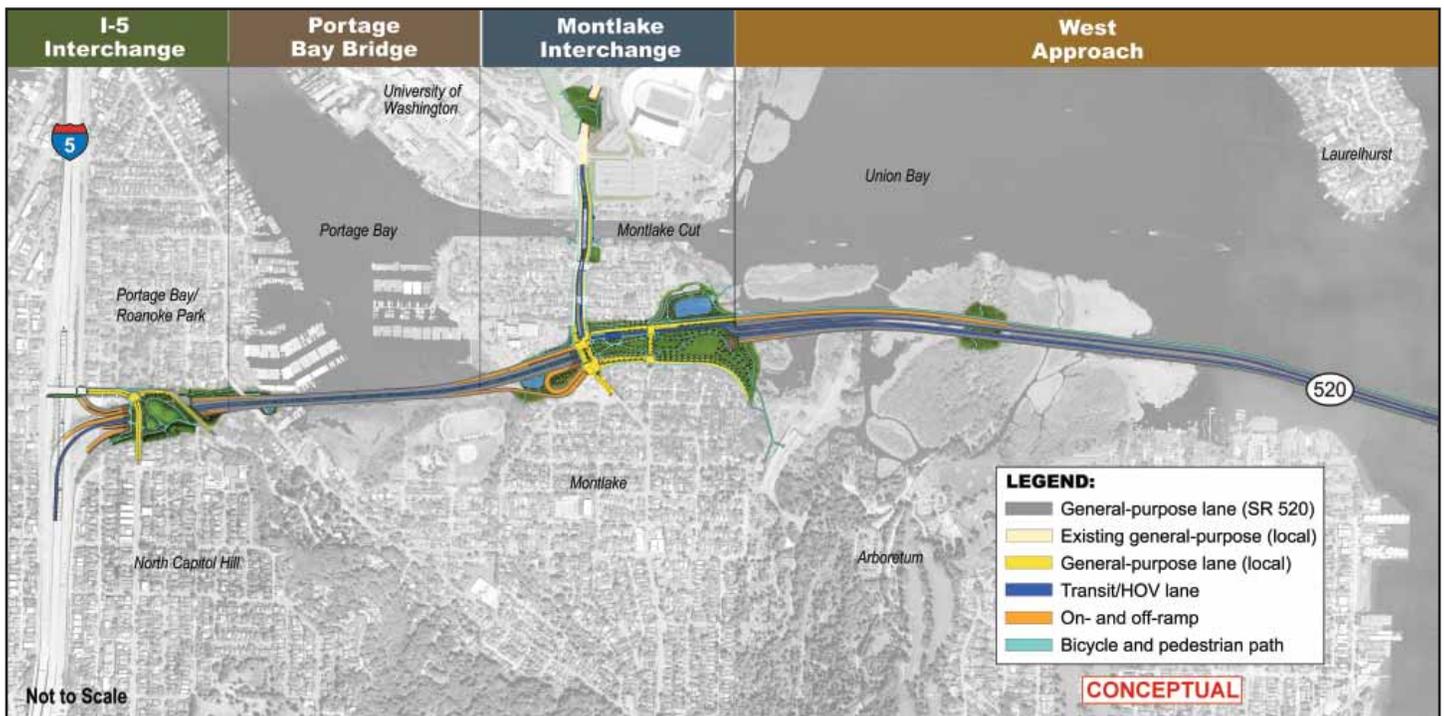
ESSB 6392: Design Refinements and Transit Connections Workgroup | Executive Summary

Introduction

During the 2010 session, the Washington State Legislature passed ESSB 6392, which outlined specific areas and elements of the SR 520 I-5 to Medina Bridge Replacement and HOV Project preferred alternative to refine through a multi-agency process. Based on legislative direction, Washington Department of Transportation (WSDOT) and the Mayor and City Council of the City of Seattle established a workgroup that brought together King County Metro, University of Washington, Sound Transit, and other designees to consider design refinements and transit connections within the preferred alternative.

What is the SR 520 I-5 to Medina preferred alternative?

The SR 520 I-5 to Medina Bridge Replacement and HOV Project replaces the SR 520 floating bridge as well as the landings, vulnerable structures, interchanges, and roadway between I-5 in Seattle and the eastern shore of Lake Washington in Medina. WSDOT announced a preferred alternative for the SR 520 project in April 2010. The preferred alternative includes a new floating bridge and highway with six lanes, providing two general-purpose lanes and a new transit/high occupancy vehicle (HOV) lane in each direction. Other key features include a regional bicycle/pedestrian path, lids, and a second bascule bridge across the Montlake Cut.



Preferred alternative overview.

What is the ESSB 6392 Workgroup?

Co-led by WSDOT and the City of Seattle, the Workgroup was tasked with refining the design of the corridor on the west side of the bridge and enhancing transit connections. The Workgroup included representatives from WSDOT, Seattle Department of Transportation (SDOT), the Seattle City Council, University of Washington, King County Metro, and Sound Transit.

The Workgroup was supported by two technical groups: the Technical Coordination Team (TCT) and the Montlake Triangle Charrette (MTC). These groups of technical experts from local governments and agencies discussed transit connections and design refinements in great detail. The TCT provided technical review and analysis of topics and developed preliminary recommendations for Workgroup consideration. The MTC recommended design options to begin developing the Montlake Triangle into a multimodal transit hub, a milestone identified in the 2008 SR 520 High Capacity Transit study.

What design refinements and transit improvements are recommended?

Based on technical recommendations from the TCT and MTC, the Workgroup made recommendations for design refinements to the SR 520 preferred alternative and transit improvements. Key recommendations from the Workgroup include:

Roanoke Park/North Capitol Hill Neighborhood

- Maintain the SR 520 reversible transit/HOV ramp to and from I-5 as identified in the preferred alternative.
- Enhance bicycle and pedestrian connections across the new lid.

Portage Bay Bridge

- Design Portage Bay Bridge to include a planted strip and managed shoulder, with the width identified in the preferred alternative.
- Implement the managed shoulder identified in the preferred alternative.

Montlake Neighborhood

- Create a bicycle and pedestrian overcrossing at the Sound Transit UW light rail station.



Workgroup members.



Agency staff and the public at Workgroup meeting.



West side neighborhood map.

- Evaluate bus stops in Montlake Triangle area to minimize pedestrian and transit travel times.
- Implement northbound inside transit/HOV lane on Montlake Boulevard.
- Implement southbound outside transit/HOV lane on Montlake Boulevard.
- Locate northbound local bus stop at Montlake Boulevard near regional bus stops on Montlake lid.
- Locate southbound local bus stop near the Hop-In Grocery store on Montlake Boulevard.
- Install bus pullout in the eastbound transit/HOV direct-access lane on Montlake lid.
- Establish measures to trigger construction of a second bascule bridge.
- Construct 18-foot wide bicycle/pedestrian path on the proposed second bascule bridge across the Montlake Cut.

West Approach

- Reduce width of west approach by narrowing the westbound off-ramp to a single lane over Foster Island.
- Maintain left turn movement from 24th Avenue to eastbound Lake Washington Boulevard.

Arboretum

- Identify proposed traffic calming and traffic management strategies in the Arboretum.

SR 520 Corridor

- Implement noise reduction strategies throughout the corridor.
- Provide bicycle and pedestrian path connections to key local and regional routes.
- Accommodate future light rail transit on the floating bridge and approach structures.
- Establish a design process to expand and refine vision, goals, and design treatments for urban design and streetscapes.
- Evaluate potential for traffic management on city streets within and adjacent to the project area.
- Implement WSDOT corridor management strategies.

Next steps

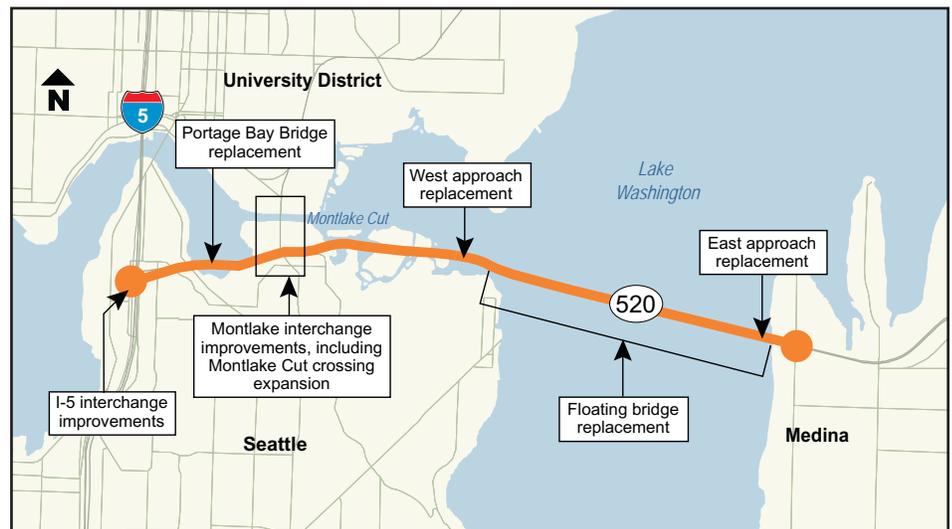
Recommendations made by the Workgroup are consistent with environmental documentation completed to date, and any refinements that affect the project footprint can be addressed in the SR 520 I-5 to Medina Bridge Replacement and HOV Project Final Environmental Impact Statement (FEIS) and discipline reports that will be published in spring 2011. As WSDOT advances the project design and moves into construction, WSDOT and the City of Seattle will continue to work with communities and the public to implement the Workgroup recommendations.

ESSB 6392: Design Refinements and Transit Connections Workgroup | Background

Introduction

During the 2010 session, the Washington State Legislature passed ESSB 6392. Signed into law by Governor Gregoire, the bill outlined specific areas and elements of the SR 520 I-5 to Medina Bridge Replacement and HOV project preferred alternative to refine through a multi-agency process. ESSB 6392 directed the Washington State Department of Transportation (WSDOT) and the Mayor and City Council of the City of Seattle to establish two workgroups that bring together King County Metro, University of Washington, Sound Transit, and other designees to consider design refinements to and transit connections within the preferred alternative. WSDOT was also directed to convene a workgroup with King County Metro and Sound Transit to study options for planning and financing high capacity transit through the SR 520 corridor. The bill also directed WSDOT to work with the Arboretum to develop a mitigation plan, and established various reporting timelines for the different work efforts. High capacity transit planning and financing work and development of an Arboretum mitigation plan are underway and will be summarized in separate reports. This report summarizes recommendations for both transit connections and design refinements to the SR 520 I-5 to Medina preferred alternative.

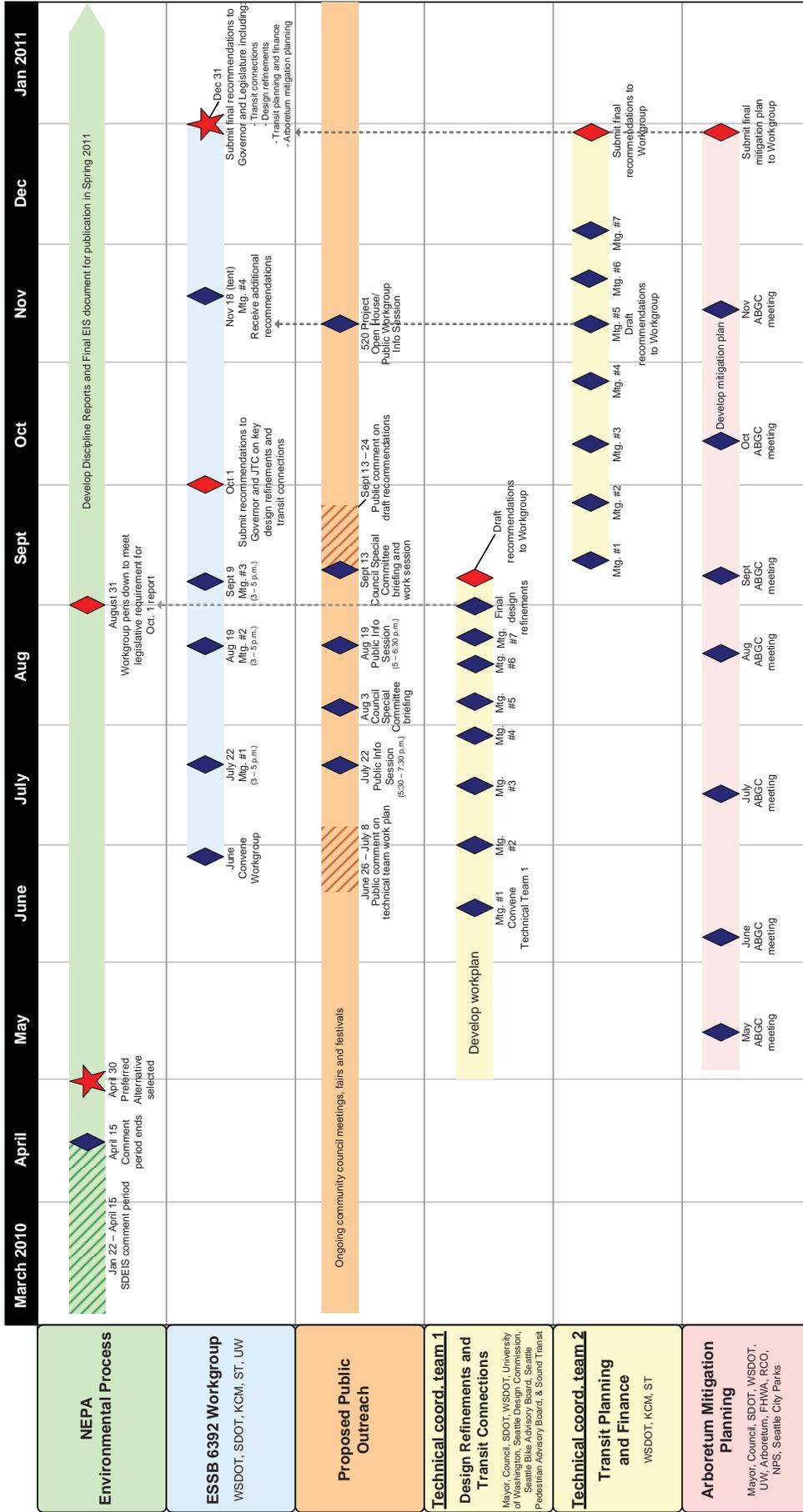
The Legislature directed that design refinements to the preferred alternative be "consistent with the current environmental documents prepared by the department for the supplemental draft environmental impact statement," so as to accommodate a "timely progression" of the SR 520 project. Similarly, recommendations for effective transit connections must be "within the scope of the supplemental draft environmental impact statement," and provide "a connection distance of less than one thousand two hundred feet between the stops and the (Sound Transit University Link UW) light rail station." The Legislature also directed the SR 520 project to include high occupancy vehicle (HOV) lanes with a minimum carpool occupancy requirement of three-plus persons on SR 520, and to report when average transit speeds in HOV lanes fall below 45 miles per hour at least ten percent of the time during peak hours. Recommendations for design refinements to the preferred alternative and transit connections are due to the Governor and the transportation committees of the State Legislature by October 1, 2010 (see ESSB 6392 milestones in figure 1).



Project limits for I-5 to Medina Bridge and HOV Replacement project.

Figure 1 - ESSB 6392 Workgroup Milestones

DRAFT – Updated: September 2, 2010



This report describes how design refinements and transit connections topics were identified and how recommendations were developed. It also summarizes each of the recommendations, and provides an overview that incorporates the design refinements into the SR 520 preferred alternative and the SR 520 project moving forward.

What is the SR 520 I-5 to Medina preferred alternative?

The SR 520 I-5 to Medina Bridge Replacement and HOV Project replaces the SR 520 floating bridge as well as the landings, vulnerable structures, interchanges, and roadway between I-5 in Seattle and the eastern shore of Lake Washington in Medina.

Based on comments on the Draft Environmental Impact Statement (DEIS), the Supplemental Draft Environment Impact Statement (SDEIS), and extensive public input, WSDOT announced a preferred alternative for the SR 520 project in April 2010. The preferred alternative includes a new floating bridge and highway with six lanes, providing two general-purpose lanes and a new transit/HOV lane in each direction. The preferred alternative also:

- Lowers the floating bridge and maintains navigation access under the east and west bridge high rises, including access for the Seattle Fire Department.
- Narrows the Portage Bay Bridge by including a westbound managed shoulder instead of an auxiliary lane.
- Restores park lands and recreation areas, improves connections to the Washington Park Arboretum and Foster Island, and removes existing ramps in the Arboretum.
- Creates a pedestrian-friendly urban interchange at Montlake Boulevard, including an extended lid from Montlake Boulevard east to the shoreline that reconnects the Montlake neighborhood and maximizes open space and pedestrian/bicycle connections.
- Provides transit connections and priority at key intersections and along Montlake Boulevard.
- Includes a lid over SR 520 at 10th Avenue East and Delmar Drive, and improves pedestrian/bicycle connections in the Roanoke Park/North Capitol Hill neighborhoods.
- Accommodates the potential for light rail transit service in the future.



Montlake interchange vicinity looking southeast.

ESSB 6392: Design Refinements and Transit Connections Workgroup | Process

What is the ESSB 6392 Workgroup?

Of the four workgroups created by ESSB 6392, WSDOT and the City of Seattle elected to combine the efforts of the two groups tasked with refining the design of the corridor on the west side of the bridge and enhancing transit connections. Combining these groups simplified coordination between WSDOT and the City of Seattle's Department of Transportation (SDOT) and allowed for more comprehensive discussions among workgroup members. Co-led by WSDOT and SDOT, the 6392 Workgroup also included representatives from the Seattle City Council, University of Washington, King County Metro, and Sound Transit. A complete list of Workgroup participants is included in table 1.

Recommendations made by the Workgroup that affect the project footprint will be included in the SR 520 I-5 to Medina Bridge Replacement and HOV Project Final Environmental Impact Statement (FEIS) and discipline reports. The SR 520 project schedule required that all design refinements and transit connection recommendations be identified by August 31, 2010, to ensure they can be addressed in the FEIS.

WSDOT continues to move forward with the SR 520 project, with a planned opening of the new floating bridge by 2014. As the project moves into design and construction, WSDOT and the City of Seattle will continue to work with communities and the public to implement the Workgroup recommendations.

How were recommendations developed?

The Workgroup was supported by two technical groups: the Technical Coordination Team (TCT) and the Montlake Triangle Charrette (MTC). These groups of technical experts from local governments and agencies discussed design refinements and transit connections in detail. The groups developed preliminary recommendations for the Workgroup to consider and drafted technical white papers for Workgroup review. The groups also provided bi-monthly updates to agency executives to discuss policy and implementation issues surrounding these topics.

Workgroup

The Workgroup was tasked with refining the design of the SR 520 corridor on the west side of the bridge and enhancing transit connections between SR 520 and the Sound Transit UW station. A comprehensive workplan was developed based on topics identified in comment letters on the SDEIS (including comment letters from the City of Seattle and the Seattle City Council); the workplan was refined by the Workgroup and TCT during their first meetings and was provided to the public for comment. Topics discussed by the Workgroup included:

- **Turning, queuing, and channelization.** Explore eliminating one of the two lanes at the westbound off-ramp. Review turning movements and queue storage lengths at the 24th Avenue E and Montlake Boulevard intersections, and refine channelization on Montlake Boulevard.
- **Bicycle and pedestrian connections and amenities.** Identify key regional and local pedestrian and bicycle connections and corridors in the project area, and propose refinements to the pedestrian and bicycle facilities and amenities. Identify pedestrian pathways through intersections and refine intersections to facilitate maximum pedestrian and bicycle movements and safety.
- **Arboretum: Traffic calming.** Identify appropriate traffic calming treatments and management measures for Lake Washington Boulevard.
- **Arboretum: Traffic management plan.** Assess baseline conditions and key elements for a traffic management plan for the Arboretum, including desired traffic volume and speed objectives. Identify pedestrian enhancement and traffic demand management measures, and assess potential High Occupancy Toll lane ramps at 24th Avenue East.
- **Neighborhood traffic management plan.** Evaluate the potential for an area beyond the Arboretum—including Madison Park, Montlake, 23rd and Madison, and North Capitol Hill—to be covered by a traffic management plan. Identify key elements that may reduce traffic impacts of closing the Arboretum ramps, and consider the impacts of a traffic management plan on transit and transit corridors.
- **Second bascule bridge phasing.** Develop a phasing plan for construction of the second bascule bridge and identify specific measures—including traffic management

plans for the Montlake corridor and bicycle and pedestrian mobility enhancements—that could be implemented in interim phases. Evaluate how the phasing plan would affect the alignment and operation of Montlake Boulevard, both prior to and during the construction of a new facility across the Montlake Cut, and how the plan would accommodate bicycles and pedestrians prior to a new facility.

- **Corridor management plan.** Develop a corridor management plan for transit/HOV lanes, including intelligent transportation systems (ITS).
- **Roadway operations: Portage Bay Bridge managed shoulder.** Identify protocols for managed shoulder operations on the Portage Bay Bridge.
- **Roadway operations: I-5 express lanes.** Evaluate the operational impact of the connection from the 520 reversible HOV lane to the I-5 express lanes.
- **Transit priority and HOV lanes.** Identify transit connections to HOV lanes and consider transit movement and signal operations at the Montlake Interchange, Montlake Boulevard and Pacific Street, and at Montlake Boulevard and 23rd Avenue. Assess signalization at intersections for transit priority and for pedestrians and bicycles.
- **Transit connections: Bus stop locations.** Identify preferred bus stop locations and design at the Montlake Interchange and Montlake lid, and enhance the quality of existing and future bus stops, including safety, wayfinding, and ease of connections. Assess opportunities for Montlake-based passengers to access public transit to and from downtown Seattle and eastside locations.
- **Light rail transit (LRT) accommodation.** Confirm the design of the SR 520 floating bridge and approach structures will accommodate a future light rail alignment that connects to the UW station at Husky Stadium.
- **Noise reduction strategies.** Explore options for noise reduction and mitigation, including evaluating noise impacts resulting from removal of the I-5 lid.
- **Health impact assessment (HIA).** Review recommendations from the 2008 HIA to determine if there are related design refinements that may be beneficial.
- **Urban design and streetscape.** Enhance streetscape with the use of improved lighting, signage, landscaping, etc. at the Montlake Interchange and Lake Washington Boulevard East. Inventory urban amenities and identify their future status, and identify urban design amenities to ensure safety.
- **Montlake Triangle Charrette.** Evaluate opportunities for grade separation for bicycle and pedestrian crossings. Improve connections for local bus service and ensure adequate base level of midday service between UW/Montlake and the Eastside.

Technical White Papers included in appendix:

Turning, queuing, and channelization

Bicycle and pedestrian connections and amenities

Arboretum: Traffic calming

Arboretum: Traffic management plan

Neighborhood traffic management plan

Second bascule bridge phasing

Corridor management plan

Roadway operations: Portage Bay Bridge managed shoulder

Roadway operations: I-5 express lanes

Transit priority and HOV lanes

Transit connections: Bus stop locations

Light rail transit (LRT) accommodation

Noise reduction strategies

Health impact assessment (HIA)

Urban design and streetscape

Montlake Triangle Charrette

At each meeting, Workgroup members heard recommendations from the TCT on selected topics. Technical staff provided Workgroup members with an overview of each topic and proposed recommendations, and Workgroup members asked questions of the technical team. The Workgroup then refined or approved the TCT recommendations. Workgroup meetings were open to the public, and each meeting also provided an opportunity to hear public comment on agenda topics. Additional details about how the public was engaged in the Workgroup process are provided later in the report.

Technical Coordination Team

The TCT provided technical review and analysis of topics and developed preliminary recommendations for Workgroup consideration. In many cases, a subgroup of TCT members met between scheduled TCT meetings to discuss a particular topic in detail and develop draft recommendations for the larger group to consider. For other topics, agency representatives with expertise in a given subject (e.g., noise reduction strategies) prepared proposed recommendations for TCT consideration. In all cases, draft recommendations were presented to the TCT and refined through group discussion. TCT recommendations were provided to the 6392 Workgroup, and the TCT also prepared a white paper for each technical topic that documented the issue and the process for developing recommendations (see appendix).

Co-led by WSDOT and SDOT, the TCT included participation from the City of Seattle Mayor's Office, Seattle City Council, University of Washington, King County Metro, Sound Transit, Seattle Design Commission, Seattle Bicycle Advisory Board, and Seattle Pedestrian Advisory Board. A complete list of TCT participants is included in table 1.

Montlake Triangle Charrette

In response to ESSB 6099, WSDOT, Sound Transit, and King County Metro worked in cooperation with the University of Washington to prepare the 2008 SR 520 High Capacity Transit study. This study recommended developing the Montlake Triangle into a multimodal transit hub, and the Montlake Triangle Charrette was established to meet the initial milestone of the study: define the first phase of Montlake Multimodal Center improvements. The Montlake Triangle Charrette worked to integrate several Triangle-area projects already in the planning and design or construction phases, leveraging existing plans and projects to maximize multimodal transit investment in the area. The MTC also evaluated opportunities for grade separation for bicycle and pedestrian crossings in the Triangle area to improve the connection between the Sound Transit UW station and the University of Washington campus, as well as connections between the Burke Gilman Trail, the SR 520 regional path, and City of Seattle designated or planned bicycle/pedestrian routes.

The MTC met weekly for five weeks in June 2010, a timeline set by the need to maintain adopted project schedules of the University of Washington and Sound Transit projects. MTC members began by identifying the most important design features for the Triangle area and then developed conceptual designs

based on those features. Those conceptual designs were clarified through robust engineering discussions and refined with urban design treatments. In addition to the five Montlake Triangle charrettes, a subgroup of urban planners and designers met to brainstorm possible solutions that responded to the conceptual ideas identified in the larger group. At each charrette, the design subgroup presented options for consideration and discussion. After group discussion, the charrette participants eliminated some options from further consideration and identified refinements to the remaining

options. In the end, this iterative process led to one option for further study that was recommended to the Workgroup. The overcrossing option recommended by the MTC is described later in this document and the Montlake Triangle Charrette white paper found in the appendix.

Led by WSDOT, the MTC included close coordination with representatives from SDOT, University of Washington, Sound Transit, King County Metro, Seattle City Council, and the Seattle Design Commission. A complete list of MTC participants is included in table 1.



Montlake Triangle Charrette participants.

How was the public involved?

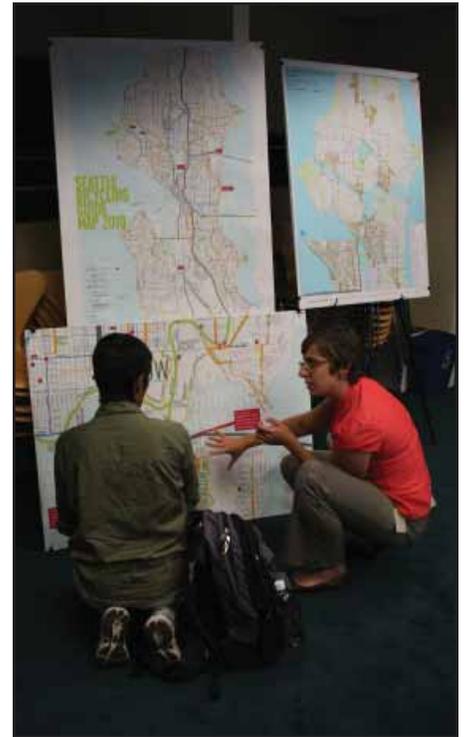
The public has been extensively involved in development of the preferred alternative and was given opportunities to engage in the ESSB 6392 Workgroup efforts. The SDEIS for the I-5 to Medina project was issued in January 2010 and included an 84-day public comment period. During that time, 415 letters or comments were received, and comments were thoroughly reviewed and addressed as much as possible in the preferred alternative. Following the announcement of the preferred alternative, WSDOT offered briefings to 21 community organizations, conducted 12 briefings, and participated in 15 community fairs and festivals on either the preferred alternative and/or the Workgroup process between May and August 2010. The public was also invited to comment on the draft workplan for the TCT and Workgroup. Four comments were received and were addressed through adjustments to the workplan.

A public comment period was included in each Workgroup meeting, and the public was invited to attend an information session following the July 22 and August 19 meetings. Workgroup updates were provided in regular e-mail communications from the SR 520 project, and public comments were accepted through email. Topics of concern identified by the public included:

- Traffic speeds and volumes in the Arboretum and on City of Seattle streets.
- Width of the Portage Bay Bridge and usefulness of the planted median.
- Financing for construction of the full SR 520 corridor.
- Turning movements at the intersection of 24th Avenue East and Lake Washington Boulevard East.
- Bicycle and pedestrian connectivity along Montlake Boulevard.
- Local and regional transit connections.
- Need and phasing of the second bascule bridge.
- SR 520 impacts to the Foster Island area.
- Options for noise mitigation.

On September 13, 2010 WSDOT and SDOT provided a joint briefing to the Seattle City Council on the Workgroup recommendations. The Council also included an opportunity for public comment on the recommendations, and **XX** people provided comments. The briefing and public comment period was televised on the Seattle Channel, and all materials were posted on the SR 520 Program website.

Following the presentation to the Seattle City Council, a draft legislative report was released for public comment between September 13-24, 2010. Comments received during the public comment period included: **[complete after public comment period, before report is submitted to Governor and JTC]**



SDOT staff speaking with a member of the public at Workgroup public information session.



WSDOT staff brief members of the Montlake Community Council on the SR 520 preferred alternative.

ESSB 6392: Design Refinements and Transit Connections Workgroup | Recommendations

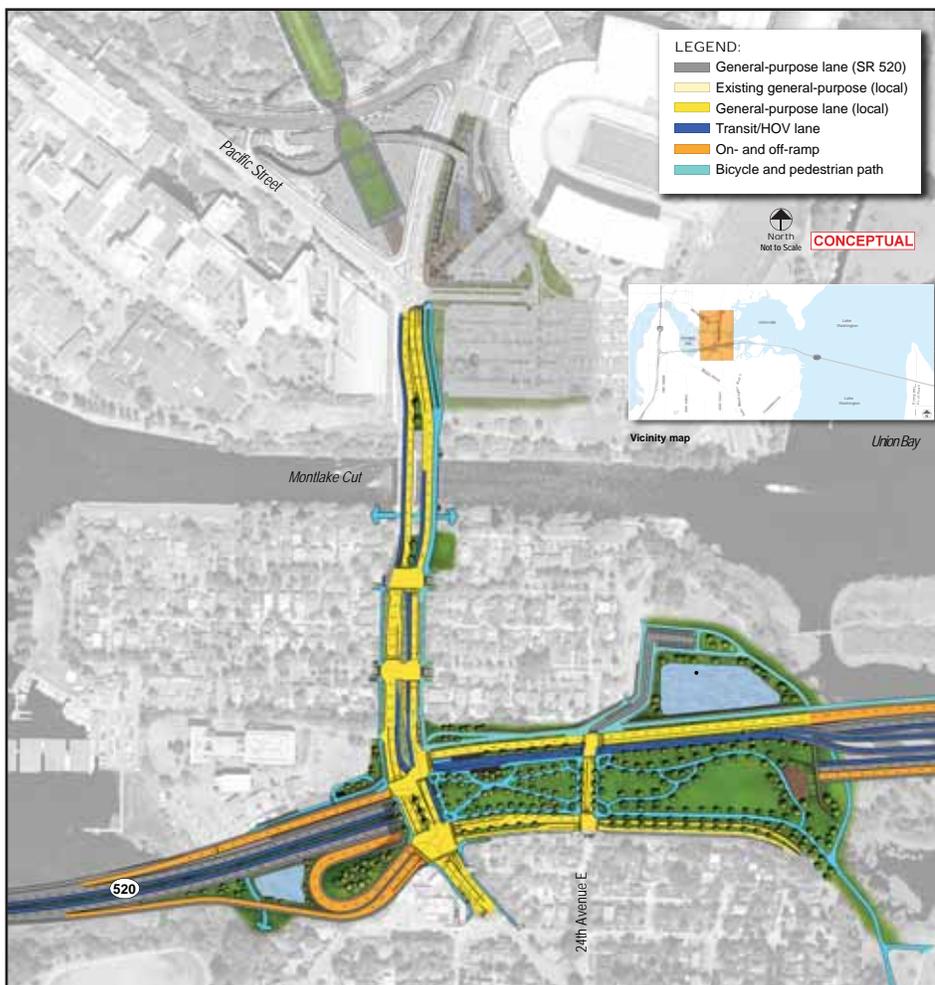
What design refinements are recommended?

Each of the topics below is supported by a white paper (see appendix), which provides an overview of the topic and how it was considered in the SR 520 preferred alternative. The white papers also review all options considered and the final recommendation made by the TCT and approved by the Workgroup.

Turning, queuing, and channelization

The Workgroup recommends several refinements to the turning, queuing, and channelization movements described in the preferred alternative.

- Modify the westbound off-ramp to be one-lane from the floating bridge to west of Foster Island, expanding into two lanes from west of Foster Island to the Montlake intersection.
- Maintain the left turn movement from 24th Avenue to eastbound Lake Washington Boulevard.
- Maintain the number of lanes on Lake Washington Boulevard and Montlake Boulevard.
- Improve the geometry of the HOV/transit direct access ramps at the east edge of the lid to provide a transition between freeway design and local design.
- Provide 11-foot general purpose lanes and 12-foot HOV lanes on city streets and the westbound off-ramp on top of the lid.
- Maintain the width of the Portage Bay Bridge described in the preferred alternative, including the planted median.



Montlake Interchange.

Bicycle and pedestrian connections and amenities

The Workgroup recommends implementing components of the Montlake bicycle-pedestrian network included in the preferred alternative and supports the anticipated process to identify future network additions.

Components of the recommended Montlake bicycle-pedestrian network included in the preferred alternative are:

- A minimum 14-foot wide shared use path between SR 520 and the Burke Gilman Trail, including an 18-foot path on the second bascule bridge and separated bicycle and pedestrian paths or an 18-foot path north of the bascule bridge. The project is assuming the implementation of the Rainier Vista project and a bicycle and pedestrian overcrossing of Montlake Boulevard to provide a connection between the east side of Montlake Boulevard and the Burke Gilman Trail.
- Connection to an enhanced Bill Dawson Trail via a bicycle/pedestrian-only tunnel under Montlake Boulevard.
- Arboretum Loop Trail Extension—a new recreational path under SR 520 connecting the Waterfront Trail to the Arboretum.

- Montlake Boulevard and Lake Washington Boulevard East intersection crossing improvements.
- Improved access to 24th Avenue East across the Montlake lid.

Additional Workgroup recommendations require further analysis as well as SDOT-led community outreach in order to reach final decisions:

- Identifying whether Shelby Street two-way bike lanes or Montlake Boulevard sidewalk widening should be completed to connect the SR 520 regional path to the Burke Gilman Trail.
- Recommending sidewalk widening or on-street improvements for the west side of Montlake Boulevard.
- Conducting further study evaluating additional pedestrian and bicycle crossings and pathways (including in-street bike lanes) as well as traffic operations in the Roanoke Park/North Capitol Hill area.
- Continuing cooperation between WSDOT, the Seattle Bicycle Advisory Board, and the Seattle Pedestrian Advisory Board in decision-informing discussions about bicycle and pedestrian designs and inclusion of amenities.



Montlake Interchange.

Arboretum: traffic calming

The Workgroup supports the coordination efforts that have been made thus far between SDOT, WSDOT, and the Arboretum and Botanical Garden Committee (ABGC) to identify proposed traffic calming strategies in the Arboretum. Elements of a preliminary traffic calming plan along Lake Washington Boulevard have been presented to the TCT on several occasions; the Workgroup recommends that SDOT finalize the proposal for a traffic calming plan with ABGC. Proposed elements of the plan include marked crosswalks, radar speed signs, speed cushions, sign improvements, landscaped curb bulbs, and raised crosswalks.



Duck Bay in the Washington Park Arboretum.

Arboretum: traffic management

The Workgroup supports the coordination efforts that have been made thus far between WSDOT, SDOT, and ABGC to identify traffic management strategies for the Arboretum. The Workgroup supports ABGC's goal to reduce traffic in the Arboretum but is particularly concerned about adverse impacts to transit speed and reliability on 23rd Avenue and Montlake Boulevard. It is the recommendation of the Workgroup that WSDOT, SDOT, and the ABGC continue coordination on the evaluation of traffic management options that will form the basis of a comprehensive traffic management plan for the Arboretum, including the Workgroup recommendation to maintain the left turn movement on the edge of the Montlake lid from 24th Avenue to eastbound Lake Washington Boulevard.

Neighborhood traffic management

The Workgroup recommends evaluating the potential for traffic management on City of Seattle streets within and adjacent to the project area. This evaluation should be accompanied by a plan for evaluating and integrating applicable intelligent transportation system (ITS) tools and techniques. The Workgroup also recommends establishing a schedule for implementation of these systems, as well as identifying the agencies responsible for implementation.

Second bascule bridge phasing

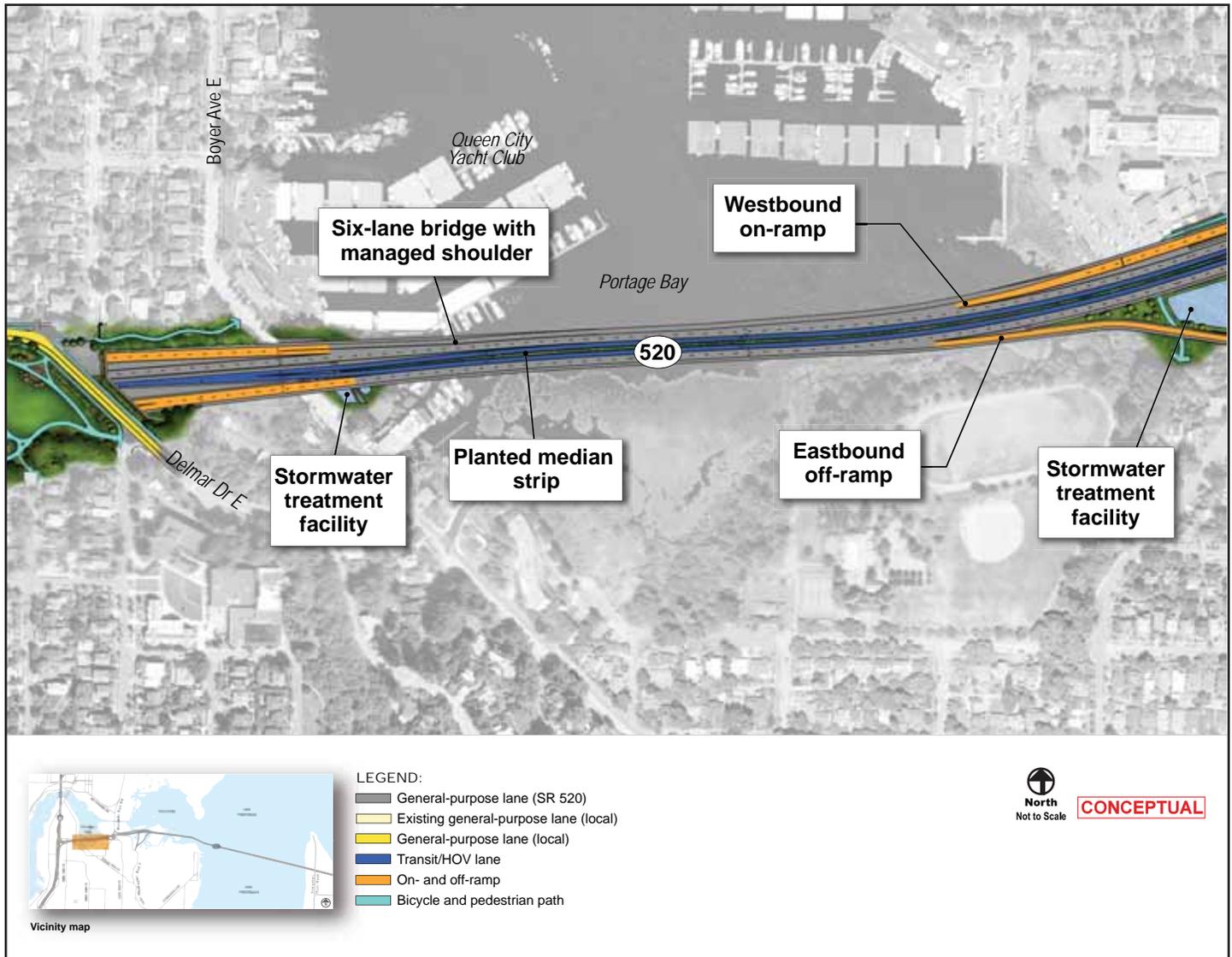
The Workgroup recommends establishing transit travel time, bicycle/pedestrian level of service, and SR 520 operations measures to trigger construction of a second bascule bridge across the Montlake Cut. The Workgroup also recommends identifying opportunities to implement traffic management strategies (such as ITS) that may delay the onset of these triggers. The Workgroup recommends formation of a committee to identify these triggers and strategies with representatives from WSDOT, SDOT, Seattle City Council, King County Metro, Sound Transit, and UW.

Corridor management plan

The Workgroup supports WSDOT's strategies for SR 520 corridor management, including continuous HOV lanes from I-5 to SR 202, variable tolling, traffic demand management strategies, continued use of traffic management applications (such as ramp meters, variable speed limits, lane control, as well as companion incident response services), and enforcement. These strategies should result in a corridor that is well positioned to meet the established HOV lane performance standards and corridor performance expectations stated in ESSB 6392.

Roadway operations: Portage Bay managed shoulder

The Workgroup recommends the westbound managed shoulder be included as described in the preferred alternative. This shoulder provides the function of an auxiliary lane by using the westbound shoulder to maintain acceptable traffic operations during the peak commute periods, special events, and for accident management. It also allows for a narrower footprint for the Portage Bay Bridge and maintains traffic operations on both the freeway and local system when needed to help relieve congestion.



Portage Bay Bridge.

Roadway operations: I-5 express lane operations

The Workgroup recommends implementing the SR 520/I-5 interchange design described in the preferred alternative. A single-lane, reversible direct access ramp will connect from the westbound SR 520 transit/HOV lane to the southbound I-5 express lanes during the morning period of express lane operations. During the evening period, the direct access ramp will connect northbound I-5 express lanes to the eastbound SR 520 transit/HOV lane. The preferred alternative will reduce the I-5 express lanes by one lane width just north of the I-5/SR 520 interchange to provide space for the new reversible transit/HOV direct access ramp.

Transit priority and HOV lanes

The Workgroup recommends providing a transit/HOV lane on the left (inside) lane when traveling northbound on Montlake Boulevard, and on the right (outside) lane when traveling southbound. The Workgroup also recommends installing transit signal controllers that are compatible with signal priority equipment along Montlake Boulevard at the following intersections:

- Montlake Boulevard/Pacific Street
- Montlake Boulevard/Shelby Street
- Montlake Boulevard/Hamlin Street
- Montlake Boulevard/Westbound ramps
- 24th Avenue/Westbound ramps

Transit connections: bus stop locations

The Workgroup recommends bus stop locations in three geographic areas: the Montlake Triangle, the Montlake interchange, and the direct access transit/HOV ramp.

Montlake Triangle stops

- Bus stop Options A, B, and C are recommended for further evaluation and inclusion for short term improvements at the Triangle area.
 - Each stop location offers the majority of transit riders the shortest walk distance to/ from destinations on the UW campus and UW Health Sciences facilities.
 - Transit riders transferring from bus-to-bus or bus-to-light rail are served by walk distances of 1,100 feet or less.

- Options D through H offer some benefits and could be implemented as continued transit planning efforts identify additional service and bus stop needs to address transit riders and pedestrians.
 - Options D through H are not precluded by the initial implementation of Options A, B, or C; however additional infrastructure and capital investments are required to provide service at these locations.
 - Options D, G, and H would require improvements to the existing stops such as 220 foot bus bays, additional sidewalk and curb space, and platforms.
- Options E and F would require construction of a transit center to serve all northbound and southbound routes in this area.

Montlake interchange stops

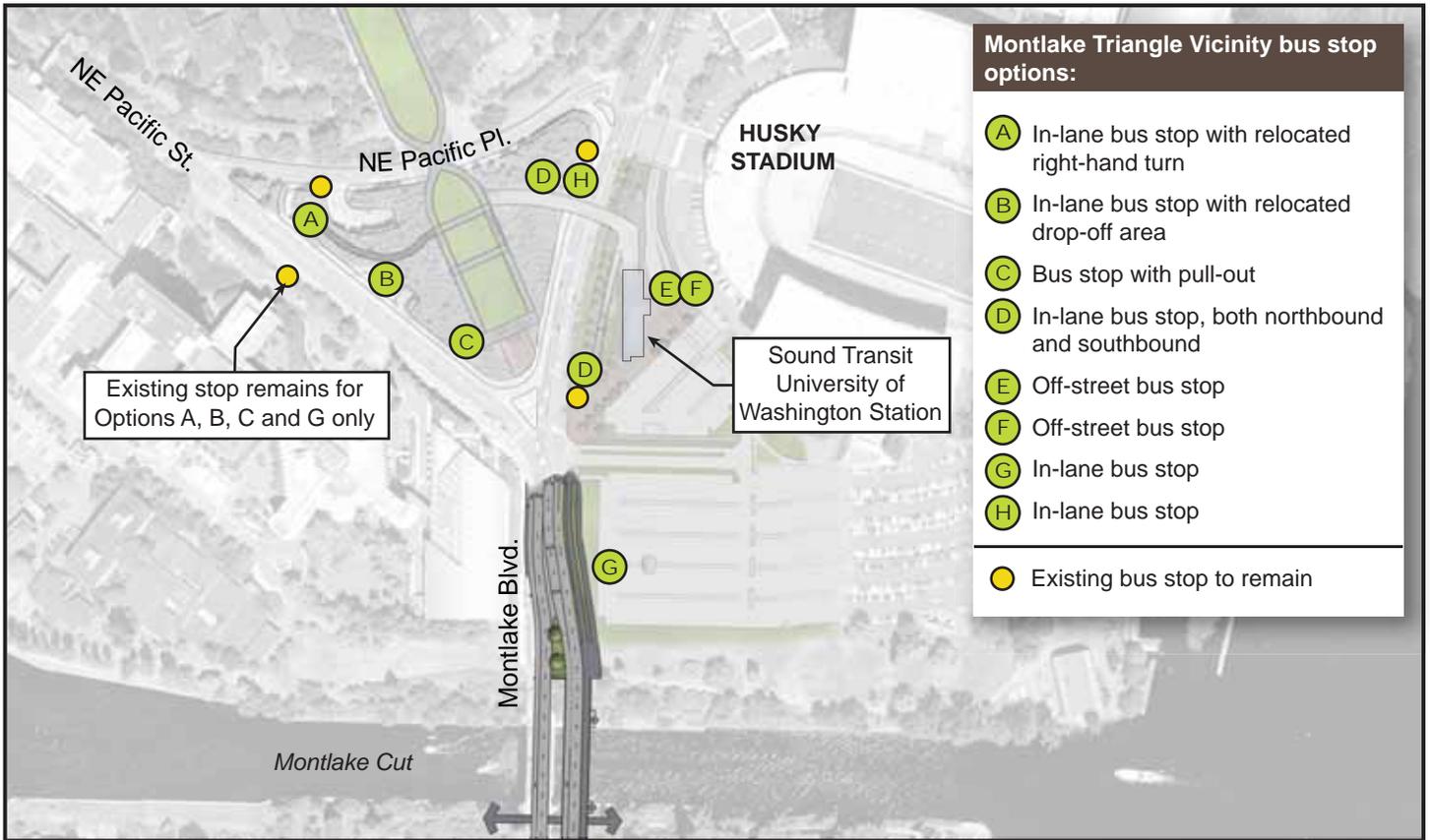
- A northbound bus stop and receiving lane located on the Montlake Lid (Stop A) and a southbound stop located adjacent to the Hop-In Grocery (Stop C), are recommended. These locations provide the most effective service for planned transit routes, and are closest to proposed bus stops on the direct access ramps.

Direct access transit/HOV ramp stop

- A pull out is recommended on the eastbound direct access transit/HOV ramp, and an in-lane stop is recommended on the westbound ramp (Option B).

Light rail transit (LRT) accommodation

The preferred alternative incorporates specific design features on the replacement floating bridge and approaches that support future conversion to light rail while minimizing reconstruction of the highway infrastructure. The Workgroup endorses the work of the SR 520 design team to ensure compatibility of the corridor with potential future LRT service. Specifically, the project can accommodate future light rail in two different configurations with some capital investment, and maintains four options for connecting LRT to the UW light rail station at Husky Stadium.



Transit connections.

Noise reduction strategies

To address noise concerns along the SR 520 corridor, the Workgroup recommends moving forward with noise management strategies as identified in the SDEIS for the preferred alternative, including:

- Continue to follow the required FHWA/WSDOT process for considering noise mitigation.
- Four-foot high traffic barriers with acoustically absorptive material from I- 5 to the west approach of the floating bridge.
- Quieter concrete pavement along the SR 520 mainline the full length of the project, including the floating bridge.
- Acoustically absorptive materials around lid portals.
- Bridge expansion joint encapsulation to reduce noise transmission through bridge joints.
- Speed limit reduction on the Portage Bay Bridge.

Health Impact Assessment (HIA)

The Workgroup supports addressing recommendations from the 2008 HIA by incorporating design features identified in the preferred alternative, including enhancing transit, bicycling, and walking facilities; providing landscaped lids and green spaces; and employing noise reduction strategies.

Urban design and streetscape

The Workgroup supports collaboration between WSDOT, the Seattle Design Commission, City of Seattle, UW Architectural Commission, ABGC, Seattle Bicycle Advisory Board, Seattle Pedestrian Advisory Board, and Seattle neighborhoods to expand and refine an aesthetic vision, establish goals, and suggest design treatments for urban design and streetscapes within the project area. This collaboration would include co-developing a community engagement process for refining the goals and principles and would result in a set of urban design guidelines that would inform and direct final design and construction of SR 520.

Montlake Triangle Charrette

The Workgroup recommends further design and evaluation of an overcrossing between the Sound Transit UW station and the Montlake Triangle. The overcrossing would include a ramp on the west side of the UW station. The Workgroup also supports advancing the University of Washington Rainier Vista Land Bridge project, as well as completing a number of at-grade crossing enhancements, to ultimately provide a comprehensive solution for bicycle and pedestrian connectivity at the Montlake Triangle. This recommendation improves bicycle and pedestrian connections to the University of Washington and improves the walk time by reducing the distance between current and planned transit improvements in the Montlake area. Recommended at-grade

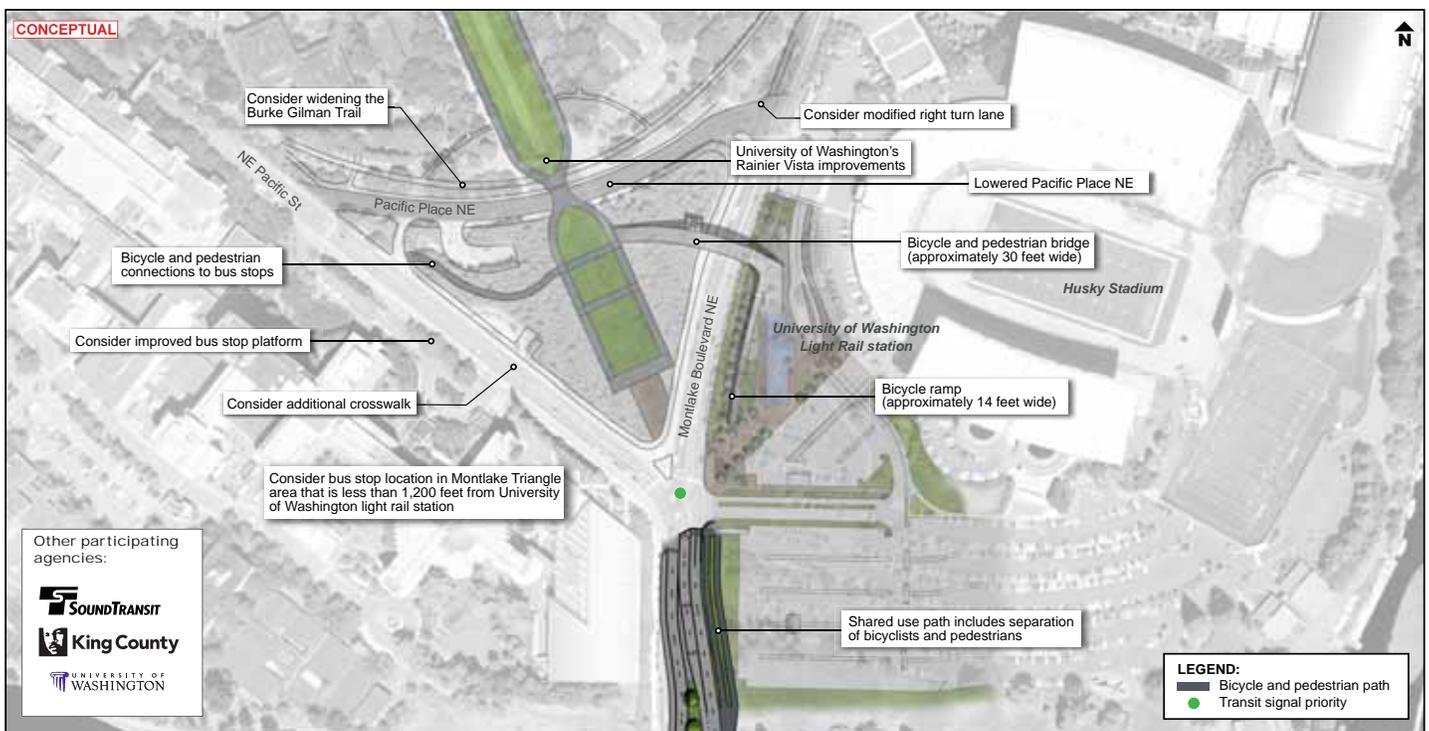
improvements to be combined with the overcrossing option and the Rainier Vista Land Bridge include:

- At-grade enhancements at Pacific Street and Montlake Boulevard intersection, as provided in Sound Transit's UW station design plans.
- Paths for bicycles and pedestrians on the east side of Montlake Boulevard between the Montlake Cut and NE Pacific Place.
- Sidewalk enhancements to increase the size of bus stop waiting areas for all bus stops near the Triangle.
- Pedestrian paths between the bus stops and the pedestrian bridges.

A technical team, made up of representatives from the UW, Sound Transit, King County Metro, SDOT, and

WSDOT, is advancing the Triangle design concept by defining specific elements of the plan and establishing a working cost estimate. The technical team is considering additional at-grade improvements, including:

- Widening the Burke Gilman Trail between the existing Hec Edmonson bridge and the Hitchcock Hall bridge along NE Pacific Street, west of the Health Sciences Building.
- Creating an additional Pacific Street crosswalk near the UW Medical Center.
- Modifying the right turn from Montlake Boulevard to NE Pacific Place and enhancing crossing conditions at the intersection.
- Enlarging the pedestrian triangle at the right turn from Montlake Boulevard to NE Pacific Street.



Montlake Triangle.

SR 520 Program next steps

WSDOT will incorporate recommendations from the Workgroup into a revised preferred alternative that will be included in the FEIS and accompanying discipline reports. This revised SR 520 preferred alternative represents the plan for the project moving forward. As WSDOT continues with design, opportunities for public comment and continued engagement in the process will be provided.

With the funding secured to date, WSDOT is moving forward in 2011 with construction of pontoons, launching Eastside construction, and selecting a contractor for the floating bridge. Publishing the FEIS for the I-5 to Medina project in spring 2011 will allow WSDOT to then issue the Record of Decision and move forward with construction permits. WSDOT will continue to work with the State Legislature and the Governor's office to secure additional funding for the I-5 to Medina project.

ESSB 6392: Design Refinements and
Transit Connections Workgroup | **Author positions**



**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
TTY: 1-800-833-6388
www.wsdot.wa.gov

September 13, 2010

In April 2010, after more than 13 years of thorough environmental and transportation analysis, WSDOT reached an important milestone when we announced our preferred alternative for the SR 520 I-5 to Medina Bridge Replacement and HOV Project. The preferred alternative responded to input from the public, jurisdictions, transit agencies, tribes, and state and federal regulators and officials. Announcing the preferred alternative keeps the project on schedule and allows us to open a new, safer floating bridge to drivers in 2014.

ESSB 6392 directed WSDOT to work with regional agencies to refine components of the I-5 to Medina preferred alternative, including design refinements and transit connections. The ESSB 6392: Design Refinements and Transit Connections Workgroup Draft Recommendations Report represents a significant effort from WSDOT and our partner agencies – the Seattle Department of Transportation, the Seattle City Council, King County Metro, Sound Transit and the University of Washington – in recommending refinements to the SR 520 preferred alternative.

The Workgroup tackled an extensive list of topics, and worked together to develop recommendations that could be supported by all members. The recommendations developed by agency technical staff were based on lengthy technical discussions. The Workgroup approved each of the technical recommendations unanimously. While WSDOT recognizes there is still significant work ahead to advance the design and continue collaboration with our partner agencies and the public, the Workgroup effort is an important step forward.

Through ESSB 6392, the Legislature specifically directed the Workgroup to recommend refinements to the preferred alternative within the boundaries of the environmental documentation included in the Supplemental Draft Environmental Impact Statement (SDEIS). This direction ensured that WSDOT could open a new floating bridge to drivers in 2014.

Workgroup discussions addressed a range of topics from detailed traffic analyses to urban design approaches to strategies for noise reduction. Some of the recommendations made by the Workgroup will be addressed in the Final Environmental Impact Statement (FEIS) to be released in spring 2011. Other recommendations were outside the scope of the FEIS, and included items such as city neighborhood traffic management plans and bus stop location changes near the University of Washington. For these recommendations, WSDOT will continue to work with the City of Seattle and the other partner agencies to identify how the recommendations can be implemented.

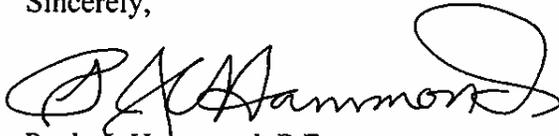
September 13, 2010
Page 2

WSDOT understands that transit service and reliability will be key functions of the future SR 520 corridor. In 2008 we worked with transit agencies to develop the SR 520 High Capacity Transit Plan that identified providing the opportunity for reliable bus rapid transit service in the new transit/HOV lanes throughout the corridor as a first step. WSDOT supports future high capacity transit efforts and the design of our facility can accommodate light rail when the region is ready. We look forward to supporting Sound Transit as they lead any future high capacity transit planning efforts.

Prior to finalizing this report and submitting to the governor and transportation committees of the Legislature on October 1, we welcome the opportunity for the public to provide comments on the draft report during the public comment period that starts today, September 13, and extends through September 24.

I want to express my appreciation to the Workgroup members for their participation in this effort. Their recommendations and refinements to the preferred alternative move us closer to a new SR 520. WSDOT is also committed to continuing to work with the governor and Legislature to secure funding for the entire SR 520 corridor.

Sincerely,

A handwritten signature in black ink, appearing to read "Paula J. Hammond". The signature is fluid and cursive, with a large loop at the end.

Paula J. Hammond, P.E.
Secretary of Transportation



Michael Patrick McGinn
Mayor of Seattle

September 13, 2010

I have serious concerns about the preferred alternative for SR 520, including an insufficient investment in high capacity transit, project funding and phasing, and protection of parks and open space. We outline these concerns in detail in the Appendix to this report. However, I also want to acknowledge that the work done by the participating agencies as part of ESSB 6392 has made some important improvements to the design of the preferred alternative. I appreciate their hard work.

Goals of city staff that participated in refining the preferred alternative included:

- Ensuring that refinements protect Seattle's interests when it comes to light rail accommodation and neighborhood traffic management
- Flagging important City of Seattle policy issues
- Considering neighborhood concerns

Despite these efforts, there are issues within the scope of ESSB 6392 that have not been satisfactorily addressed. They concern light rail accommodation, neighborhood traffic management and tolling, speed limits throughout the Seattle portion of this corridor, and phasing.

Light Rail Accommodation

Design refinements to the preferred alternative have provided better accommodation for future light rail transit (LRT) in the SR 520 corridor, yet I continue to have concerns about the project design. If this project were built according to the current specifications, adding light rail to the SR 520 corridor at a future time will be financially and/or environmentally infeasible. The detailed study needed to truly ensure that light rail is easily accommodated has not occurred.

According to the white paper on LRT accommodation included in this report, the project is being designed to accommodate light rail in either a six-lane or an eight-lane configuration. The City of Seattle has been clear that an eight-lane configuration for SR 520 is not acceptable. However, a six-lane corridor with LRT replacing the high-occupancy vehicle (HOV) lanes leaves no opportunity for dedicated bus transit lanes unless a general purpose travel lane is converted to an HOV lane. Such a conversion is not one that has been considered to date. If buses are to be added to the general purpose lanes, work must be done to ensure that transit travel times remain reliable.

I have included a letter in the appendix that provides details on specific project elements that require additional evaluation or design to ensure LRT accommodation. These include assumptions about the width of the bridge deck, confirmation of the number of additional flanker pontoons required to support LRT, and design of the west approach and second bascule bridge. While the SR 520 design team has made a strong effort to ensure LRT accommodation, I am concerned that the future cost of adding pontoons, retrofitting portions of the bridge and approaches, and new construction—as well as potential environmental impacts associated with doing this work in the future—do not truly accommodate light rail on the corridor and render implementation of LRT nearly impossible.

Neighborhood Traffic Management, Tolling

I have asked my staff at the Seattle Department of Transportation (SDOT) to continue to work with neighborhoods and the Washington State Department of Transportation (WSDOT) to develop a

Office of the Mayor
Seattle City Hall, 7th Floor
600 Fourth Avenue, PO Box 94749
Seattle, WA 98124-4749

Tel (206) 684-4000
Fax (206) 684-5360
TDD (206) 615-0476
E-mail mike.mcginn@seattle.gov

traffic management plan for city streets. The recommendations of the Neighborhood Traffic Management white paper are lacking; however, I understand that this is due to insufficient information for determining traffic impacts at this time. I have strong reservations about going forward with construction of a portion of this project without this more detailed information. I ask that WSDOT work with SDOT to expedite traffic modeling and studies that will contribute to a greater understanding of traffic impacts on neighborhoods.

The impact of traffic in the Westside portion of this project would be lessened if the lanes currently slated for HOV and transit were to be transit-only. In future years, this would also enable an easier transition to utilizing these two new lanes for high capacity transit. A stronger vision for high capacity transit is needed to ensure that this project is serving the movement of people and not simply creating more vehicle traffic.

Tolling also has the potential to decrease the number of vehicles to a large degree and this affects neighborhood traffic management in a positive way. Because the current design refinements cannot reflect the impacts of tolling (this information simply does not exist yet), I ask that more weight is placed on the impact that tolling has when it begins—and that design responds to this information. If transit reliability is maintained on a tolled, four-lane SR 520, we must still consider what this means for the preferred alternative. Tolling has the potential to decrease the number of vehicles to such a degree that an expansion to six lanes may be unnecessary. Additionally, the Nelson\Nygaard study I commissioned earlier this year indicated that a four-lane Portage Bay viaduct may be adequate as well. Because additional width means that fewer parks and open space will be preserved, we must take every opportunity we can to assess locations to minimize width.

Speed Limit from Foster Island to I-5

A 45 mile per hour speed limit (beginning at the Montlake lid through to I-5) is suggested in the Noise Mitigation white paper. We are in support of continuing this lowered speed limit eastward to the eastern edge of Foster Island and potentially beyond. The same noise-mitigating properties this lowered speed limit achieves are appropriate throughout the Seattle portion of SR 520, especially in the segment passing through the Arboretum.

Phasing

With at least a \$2 billion gap in project funding, we have to be realistic about how this gap may impact the final product and what impacts will exist in the interim years before the full project is completed. The things that are most important to Seattle—lids that connect neighborhoods and provide open space, better transit options, a solution for traffic increases in neighborhoods and at the I-5 junction—will not be made realities for many years, and will only happen if there is full funding. With dwindling sources of revenue for transportation and a standing commitment to big-ticket items, our state is not in a sound position to make good on the elements of this project that are most important to Seattle's neighborhoods. Moving the traffic jam to Seattle does not make sense, and failing to mitigate the traffic jam makes it even worse.

Thank you for the opportunity to participate in refining the preferred alternative and to voice my concerns about the areas where this process has not yet achieved success.

Sincerely,



Mike McGinn
Mayor of Seattle



The Seattle City Council appreciates the work completed as part of the ESSB 6392 Design Refinements and Transit Connections Workgroup. Council will be providing detailed comments on the Workgroup recommendations following a report briefing and public comment on September 13.

ESSB 6392: Design Refinements and Transit Connections Workgroup | Table 1

Table 1. 6392 Workgroup members, Technical Coordination Team members, Montlake Triangle Charrette members.

Workgroup Members	
David Hull	King County Metro
Bob Powers	Seattle Department of Transportation
Michael Fong	Seattle City Council
Greg Walker	Sound Transit
Theresa Doherty	University of Washington
Julie Meredith	WSDOT

Technical Coordination Team Members	
Mike Boonsripisal	King County Metro
David Hull	King County Metro
Candida Lorenzana	King County Metro
Chris O'Claire	King County Metro
Tim Payne	Nelson/Nygaard Consulting Associates (for the Seattle City Council)
Ann Boyd	Seattle Bicycle Advisory Board
Gabe Grijalva	Seattle Bicycle Advisory Board
Max Hepp-Buchanan	Seattle Bicycle Advisory Board
Sara Belz	Seattle City Council
Mike Fong	Seattle City Council
Phyllis Shulman	Office of Seattle City Council President Richard Conlin
Stephanie Brown	Seattle Department of Transportation
Bill Bryant	Seattle Department of Transportation
Jennifer Wieland	Seattle Department of Transportation
Andrew Barash	CH2MHill (for the Seattle Department of Transportation)
Guillermo Romano	Seattle Design Commission
Don Vehige	Seattle Design Commission
Rebecca Deehr	Seattle Mayor's Office
Kristen Lohse	Seattle Pedestrian Advisory Board
Seth Schromen-Warin	Seattle Pedestrian Advisory Board
Eric Chipps	Sound Transit
Greg Walker	Sound Transit
Peter Dewey	University of Washington
Theresa Doherty	University of Washington
Marni Heffron	Heffron Transportation (for the University of Washington)

Olivia Yang	University of Washington
Kate Howe	VIA Architecture
Heather Catron	SR 520 Program
Kristin Dean	SR 520 Program
Elizabeth Faulkner	SR 520 Program
Suryata Halim	SR 520 Program
Michael Horntvedt	SR 520 Program
Davidya Kasperzyk	SR 520 Program
Larry Kyle	SR 520 Program
Julie Meredith	SR 520 Program
John Perlic	SR 520 Program
Brad Phillips	SR 520 Program
Kerry Ruth	SR 520 Program
Angie Thomson	SR 520 Program
John Villager	SR 520 Program
Lindsay Yamane	SR 520 Program
Jenifer Young	SR 520 Program

Montlake Triangle Charrette Members	
Jennifer Guthrie	Gustafson Guthrie Nichol
Bernie Alonzo	Gustafson Guthrie Nichol
Genesee Adkins	King County Executive's Office
Mike Boonsripisal	King County Metro
David Hull	King County Metro
Candida Lorenzana	King County Metro
Chris O'Claire	King County Metro
Mark Gedoza	KPFF
Craig Olson	KPFF
John Nesholm	LMN Architects
John Petterson	LMN Architects
Mike Fong	Seattle City Council
Ketil Freeman	Seattle City Council
Jennifer Wieland	Seattle Department of Transportation
Guillermo Romano	Seattle Design Commission
Don Vehige	Seattle Design Commission
Debora Ashland	Sound Transit
Mark Pickerill	Sound Transit
Tracey Reed	Sound Transit
Rebecca Barnes	University of Washington

Andy Casillas	University of Washington
Peter Dewey	University of Washington
Theresa Doherty	University of Washington
Marni Heffron	Heffron Transportation (for the University of Washington)
Kristine Kenney	University of Washington
Chip Lydum	University of Washington
Olivia Yang	University of Washington
Heather Catron	SR 520 Program
Kristin Dean	SR 520 Program
Suryata Halim	SR 520 Program
Michael Horntvedt	SR 520 Program
Davidya Kasperzyk	SR 520 Program
Larry Kyle	SR 520 Program
Julie Meredith	SR 520 Program
Brad Phillips	SR 520 Program
Kerry Ruth	SR 520 Program
Angie Thomson	SR 520 Program
Lindsay Yamane	SR 520 Program
Jenifer Young	SR 520 Program