Attachment 9

Arboretum Mitigation Plan

Washington State
Department of Transportation

SR 520 Bridge Replacement and HOV Program

I-5 to Medina: Bridge Replacement and HOV Project

Washington Park Arboretum Mitigation Plan

December 22, 2010

Washington State
Department of Transportation

Dec. 22, 2010

TO: Governor Chris Gregoire
Washington State Senate and House Transportation Committee members

FROM: David L. Dye, Washington State Department of Transportation

SUBJECT: ESSB 6392 Washington Park Arboretum Mitigation Plan

Please find attached WSDOT's final Washington Park Arboretum Mitigation Plan. As required by the Engrossed Substitute Senate Bill 6392, WSDOT consulted with the Arboretum and Botanical Garden Committee (ABGC) from May to December 2010 to develop a mitigation plan for anticipated effects from the SR 520, I-5 to Medina Project preferred alternative in the Arboretum. The ABGC is composed of representatives from the city of Seattle (Seattle Parks and Recreation and mayoral appointees), University of Washington, Arboretum Foundation and Washington State Governor's office. The Seattle Department of Transportation also participated in ABGC coordination meetings as needed to discuss traffic calming and traffic management in the Arboretum.

Based on coordination with the ABGC and WSDOT's technical evaluation, WSDOT identified a suite of projects that could mitigate for the anticipated adverse effects of the I-5 to Medina project on the parks and wetlands within the Arboretum. These projects are described in the Arboretum Mitigation Plan, which was approved by the ABGC in early December. The plan also provides an overview of the public comments submitted during the public comment period.

Anticipated effects and associated mitigation measures for the I-5 to Medina project, including those described in this plan, will be memorialized in the final environmental impact statement (EIS) that will be published in spring 2011. After the final EIS is published we will obtain a record of decision and move forward with construction permits. WSDOT will continue to work with the ABGC to scope identified mitigation projects to better understand their scale and estimated cost. WSDOT will also facilitate coordination between the ABGC and interested tribes regarding potential design concepts and improvements on Foster Island. Finally, WSDOT will continue to coordinate with SDOT and the ABGC to implement traffic calming measures in the Arboretum in 2011 and develop a traffic management plan for the Arboretum.

We appreciate your review of these recommendations and look forward to working with the Legislature to obtain funding for SR 520 corridor plans from I-5 to the floating bridge. Construction of these elements will also allow us to move forward with implementation of the identified mitigation measures.

Sincerely,

David L. Dye, Deputy Secretary
Washington State Department of Transportation

Washington State
Department of Transportation

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Arboretum Mitigation Plan | **Executive summary**

What is the purpose of this plan?

During the 2010 legislative session, the Washington State Legislature passed and Governor Gregoire signed Engrossed Substitute Senate Bill (ESSB) 6392. Among other requirements, this bill directed the Washington State Department of Transportation (WSDOT) to consult with the governing board of the Washington Park Arboretum (the Arboretum), the city of Seattle and the University of Washington to develop a mitigation plan for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project (I-5 to Medina project) effects on the Arboretum. This Arboretum mitigation report was prepared as a response to the direction of ESSB 6392. This plan describes the Arboretum and existing conditions, coordination processes, anticipated effects from the new SR 520 highway, recommended mitigation measures in the Arboretum and next steps for implementation.

How is the Arboretum managed?

The Arboretum is managed cooperatively by Seattle Parks and Recreation and the University of Washington. The Arboretum Foundation is its major support organization. The city of Seattle owns the Arboretum's land and buildings, Seattle Parks and Recreation maintains the park functions and the University of Washington owns, maintains and manages the plant collections and associated programs. The Arboretum and Botanical Garden Committee (ABGC) is the legally mandated advisory committee for the Arboretum, established by the Arboretum's enabling legislation in 1934. It is composed of nine members appointed by the University of Washington, city of Seattle, the Governor and the Arboretum Foundation. The ABGC advises the owners and managers of the Arboretum (Seattle Parks and Recreation and the University of Washington) on important issues such as the 2001 Arboretum Master Plan and mitigation for the SR 520 project.

How did WSDOT consult with the governing board of the Arboretum?

Through coordination with the ABGC, city of Seattle and University of Washington, WSDOT identified the ABGC as the appropriate advisory committee for consulting on Arboretum mitigation. The ABGC members include representatives from the Arboretum Foundation, the city of Seattle, the University of Washington and a Washington State Governor's Office representative. Prior to the working meetings, the ABGC adopted *Guiding Principles for the I-5 to Medina Project* that stressed the importance of reducing and possibly alleviating the effects of the I-5 to Medina project to the Arboretum through design, construction and operation of SR 520.

Through a series of 12 meetings starting in May 2010, WSDOT consulted with the ABGC to develop an initial list of mitigation ideas addressing park and natural resource effects within the Arboretum. The ABGC provided WSDOT with a prioritized list of projects derived from the 2001 Arboretum Master Plan, a long-range master plan for the Arboretum adopted by the Seattle City Council, the University of Washington Board of Regents and the Arboretum Foundation. Some projects could potentially be funded by WSDOT as mitigation measures. WSDOT then conducted an evaluation to screen this initial list of potential mitigation projects to ensure that they addressed identified project effects and met regulatory requirements. WSDOT and the ABGC also discussed noise effects of the project, as measures to address noise in the Arboretum are included as part of the I-5 to Medina project. The Seattle Department of Transportation (SDOT) also participated in ABGC meetings as needed to

The existing ramps in the Arboretum will be removed as part of the I-5 to Medina project.

develop measures to address traffic in the Arboretum, as suggested by the Seattle City Council in their April 2010 and September 2010 letters (Appendix D).

Throughout the discussions, ABGC members stressed the importance of protecting the Arboretum, as they believe it is one of the most respected and loved educational and cultural resources in the Pacific Northwest. When the original SR 520 was built, environmental regulations protecting park land and wetlands were not in place and the Arboretum suffered damage and property loss. The ABGC stressed throughout their discussions with WSDOT that the region now has an opportunity to design a roadway that will protect the Arboretum from excessive traffic volumes along Lake Washington Boulevard, address traffic safety concerns and reduce noise and aesthetic effects in the park.

What are the results of the Arboretum coordination process?

Based on consultation with the ABGC and WSDOT's technical evaluation, WSDOT identified a suite of projects that could mitigate for anticipated adverse effects of the I-5 to Medina project on the parks and natural resources within the Arboretum. Some of these projects would be implemented by WSDOT in conjunction with SR 520 construction, and others would be funded by WSDOT and implemented by the city of Seattle or the University of Washington. The ABGC will be actively involved in the design process for all of these projects. The ABGC and WSDOT will continue to clarify the scope of each mitigation project, timing of implementation and implementation responsibility. These projects are described in detail in this plan and shown on the graphic

The SR 520 ramps are currently located above water and park areas of the Arboretum. These will be removed as part of the I-5 to Medina project.

titled “WSDOT Evaluation of Potential Mitigation Projects in Washington Park Arboretum.” In addition, WSDOT will continue to coordinate with the ABGC on urban design standards, landscaping, aesthetics, and construction through future processes, such as development of a community construction management plan. These coordination efforts are described in more detail in the “Next steps and future coordination” section of this plan.

Although the I-5 to Medina project would reduce traffic volumes on Lake Washington Boulevard in 2030 when compared to no action (or no build), WSDOT and SDOT recognize that the ABGC is concerned with traffic volumes in the Arboretum resulting from traffic currently using Lake Washington Boulevard to access SR 520. WSDOT, SDOT and the ABGC discussed traffic management and traffic calming measures in ABGC meetings. Some traffic calming measures collaboratively identified will be funded by WSDOT and implemented by SDOT starting in 2011. SDOT is also working collaboratively with WSDOT to evaluate a number of traffic management measures, as described in their Arboretum Traffic Management Evaluation Matrix (Appendix F), which will be considered and may be recommended by SDOT.

Next steps

WSDOT and the ABGC identified the need for additional coordination to address outstanding topics and accomplish the next steps, including the following:

- Develop scopes and estimated costs for the recommended mitigation projects and a timeline for implementation.
- Develop a series of agreements to implement the mitigation projects and processes identified in this plan.
- Identify and implement appropriate traffic calming measures for the Arboretum with SDOT (see Appendix E).
- Further evaluate traffic management measures for the Arboretum with SDOT (see Appendix F).
- Continue to work with regulatory agencies (listed in the full Arboretum Mitigation Plan) to clarify implementation, potential monitoring and other requirements associated with regulated mitigation.
- Consult with and receive concurrence from tribes on any improvements to Foster Island, including restoration of the ramp area.
- Include the ABGC in future work on urban design concepts and related design details to ensure that they fit both within WSDOT’s overall I-5 to Medina corridor design and within the context of the Arboretum.

What is ESSB 6392 and how does it relate to mitigation in the Arboretum?

During the 2010 legislative session, the Washington State Legislature passed Engrossed Senate Substitute Bill (ESSB) 6392. Signed into law by Governor Gregoire, the bill directed the Washington State Department of Transportation (WSDOT) to work with the governing board of the Washington Park Arboretum (Arboretum), the Mayor and City Council of the city of Seattle and the University of Washington to develop a mitigation plan for the effects from the SR 520, I-5 to Medina: Bridge Replacement and HOV Project (I-5 to Medina project) on the Arboretum. This legislation specifically requires WSDOT to develop:

> *A plan to address mitigation as a result of the state route number 520 bridge replacement and HOV program at the Washington park arboretum. As part of its process, the department shall consult with the governing board of the Washington park arboretum, the Seattle city council and mayor and the University of Washington to identify all mitigation required by state and federal law resulting from the state route number 520 bridge replacement and HOV program's impact on the arboretum, and to develop a project mitigation plan to address these impacts. The department shall submit the mitigation plan by December 31, 2010, to the governor and the transportation committees of the legislature. Wetland mitigation required by state and federal law as a result of the state route number 520 bridge replacement and HOV program's impacts on the arboretum must, to the greatest extent practicable, include on-site wetland mitigation at the Washington park arboretum, and must enhance the Washington park arboretum. This subsection (4) (b) (v) does not preclude any other mitigation planned for the Washington park arboretum as a result of the state route number 520 bridge replacement and HOV program.*

The Arboretum and Botanical Garden Committee (ABGC) acted as the lead for consulting with WSDOT on Arboretum mitigation. The ABGC is the legally mandated advisory committee to the owners and managers of the Arboretum and is composed of representatives

Arboretum and Botanical Garden Committee Voting Members

Arboretum Foundation

- *Paige Miller, Arboretum Foundation Executive Director*
- *Barbara Wright, Arboretum Foundation Immediate Past President and ABGC Chair*

City of Seattle

- *Jack Collins, Citizen Mayoral Appointee*
- *Donald Harris, Seattle Parks and Recreation Planning and Development Manager*
- *Kjris Lund, Citizen Mayoral Appointee*

University of Washington

- *Theresa Doherty, University of Washington, Assistant Vice President for Regional Affairs*
- *Sandra Lier, University of Washington Botanic Gardens Executive Director*
- *Iain Robertson, University of Washington Associate Professor, Department of Landscape Architecture*

State of Washington

- *Dave Towne, Washington State Governor's Appointee*

Additional ABGC participating members:

- *Nancy Belcher, Arboretum Foundation*
- *David Graves, Seattle Parks and Recreation Senior Planner*
- *Fred Hoyt, University of Washington Botanic Gardens Associate Director*
- *Michael Shiosaki, Seattle Parks and Recreation Planning and Development Deputy Director*

from the University of Washington, the city of Seattle, the Arboretum Foundation, and a Washington State Governor's Office representative. Its mission is to advise the owners and managers on the management and stewardship of the Arboretum for the benefit of current and future generations. WSDOT has met with the ABGC regularly since May 2010 to build a common understanding of the project effects and then to identify and define Arboretum mitigation per the requirements of ESSB 6392. The Seattle Department of Transportation (SDOT) participated in ABGC meetings as needed to develop measures to address traffic speeds and volumes in the Arboretum.

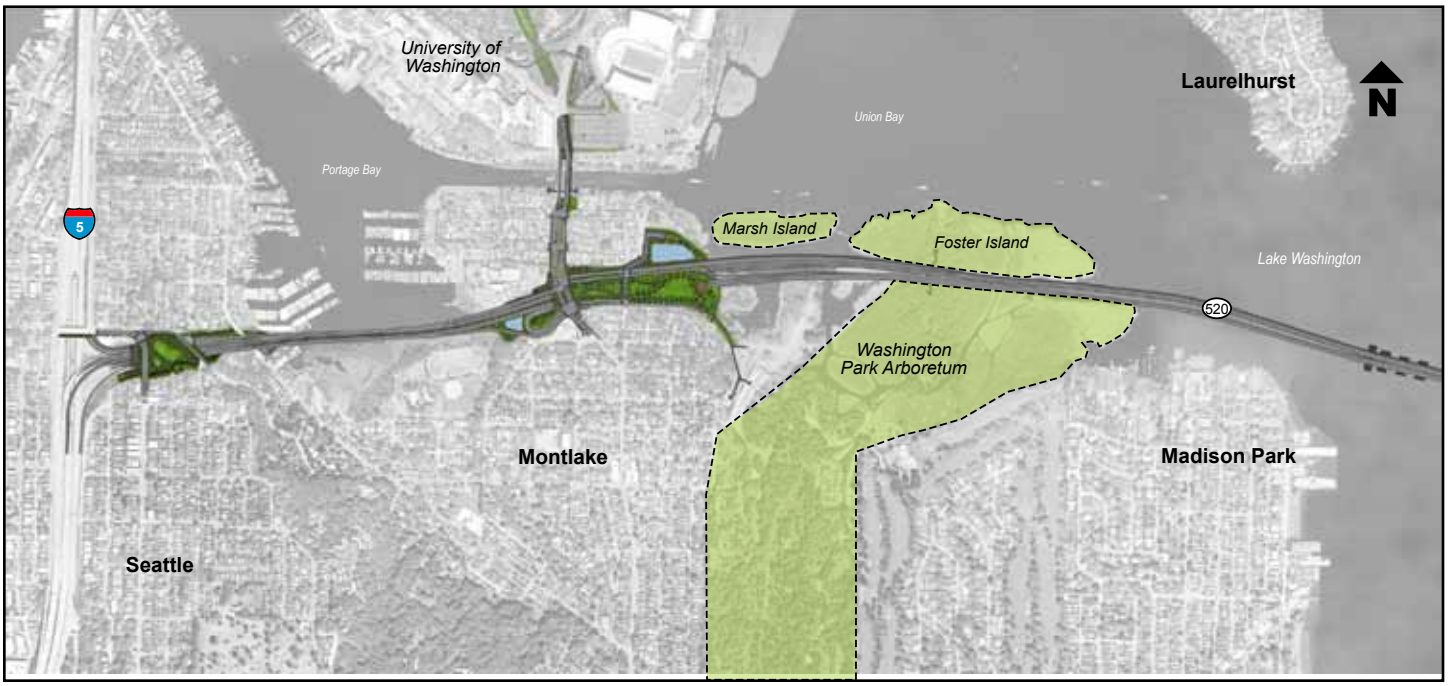
This Arboretum Mitigation Plan summarizes WSDOT's commitment to mitigate for effects of the I-5 to Medina project on the Arboretum. WSDOT's coordination efforts with the ABGC, anticipated effects to the Arboretum, proposed Arboretum mitigation projects, and future and ongoing coordination steps are described within this plan.

What is the preferred alternative for the I-5 to Medina project?

The I-5 to Medina 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 2006 draft environmental impact statement (EIS), the 2010 supplemental draft EIS, and extensive public input, WSDOT announced a preferred alternative for the I-5 to Medina project in April 2010.

The preferred alternative includes a new floating bridge and highway with six lanes, providing two general-purpose lanes, a new transit/HOV lane in each direction, and a regional bicycle/pedestrian path. Compared to previous design options studied, the preferred alternative also:

- Lowers the floating bridge while maintaining navigation access under the east and west 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.
- Elevates the profile of the west approach off of Foster Island.
- Restores park lands and recreation areas, improves pedestrian and bicycle connections to the Arboretum, including Foster Island, and removes the existing ramps in the Arboretum.



The I-5 to Medina 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. Environmental regulations require WSDOT to analyze project effects on the Arboretum and mitigate for those effects.

- 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.

What is an arboretum?

In its essence, a public garden (including arboreta and botanical gardens) is a mission-based institution that maintains collections of plants for the purposes of education, research, and/or public display. This coincides with one of the goals of the University of Washington's College of the Environment, to look at human activities through scientific endeavor.

Plant collections are fundamentally distinct from purely ornamental displays. Collections can either be grouped taxonomically (i.e., by family association), geographically (all plants from one region of the world), functionally (groundcovers), or by plant needs (shade plants; dry soil plants). In addition, plants of known origin are of extreme importance for an arboretum. An essential component of plant collections for all public gardens is the accessioning and de-accessioning of individual plants through plant records. One of the greatest challenges for public garden managers is how to merge the method by which collections are organized with the aesthetic goals of the garden.

Botanical gardens contain a wide array of both herbaceous and woody plant collections, varied educational offerings for all ages, and research programs focused on plant improvement, conservation, ecology, or basic science. If there is one characteristic that unites all botanical gardens, it is that they have botanically diverse, rather than simply aesthetic, collections of plants.

Arboreta, as contrasted with botanical gardens, focus on the study and display of woody plants, primarily trees and shrubs. They also typically offer educational programs for children, school students and adults. Their collections may be organized systematically, with each plant family assigned to its own area, or functionally, with plants located where their needs can best be met.

What is the Washington Park Arboretum?

The ABGC provided the following description of the Arboretum:

> *The Arboretum has had a rich 75-year history as one of the most loved educational and cultural resources in the Pacific Northwest. The Arboretum (including Foster and Marsh Islands) is situated on the shores of Lake Washington and is jointly owned and managed by the University of Washington and the city of Seattle with major support from the Arboretum Foundation. It is a 230-acre living plant museum of over 4,400 species and cultivated varieties from around the world. One specialty garden exists in the Arboretum: the Japanese Garden. This beautiful, culturally significant garden is located at the south end of the Arboretum near Madison Avenue and is managed by the city of Seattle.*
>
> *The Arboretum is managed cooperatively by Seattle Parks and Recreation and the University of Washington. The Arboretum Foundation is its major support organization. The city of Seattle owns the Arboretum's land and buildings; Seattle Parks and Recreation maintains the park functions; and the University of Washington owns, maintains, and manages the plant collections and associated programs. The ABGC is the legally mandated advisory committee for the Arboretum, established by the Arboretum's enabling legislation in 1934. It is comprised of nine members appointed by the University of Washington, city of Seattle, the Governor and the Arboretum Foundation. The ABGC advises the owners and managers of the Arboretum (Seattle Parks and Recreation and the University of Washington) on important issues such as the 2001 Arboretum Master Plan and mitigation for the SR 520 project.*

The Arboretum began as "Washington Park" in the early 1900s on private park land the city had acquired. In 1907, the University of Washington hired the Olmsted Brothers Landscape Architecture firm to create a boulevard entry

for the Alaska-Yukon-Pacific Exposition at East Lake Washington Boulevard, contiguous with the southern portion of Washington Park. The formal entity of the Washington Park Arboretum was established in 1934 by an agreement approved by the University of Washington (Board of Regents) and the city of Seattle (City Council/ Mayor). In 1936, the Olmsted firm developed the first formal plan for the Arboretum.

The Arboretum contains a number of important natural and cultural resources. In addition to the Arboretum's extensive plant collections and the Japanese Garden, the northern portion of the Arboretum contains a large area of emergent, forested, and open-water wetlands that provide nesting and forage for many animal species. Arboretum Creek flows into Union Bay from the south via a culvert under Lake Washington Boulevard.

Future development of the Arboretum is guided by the ABGC's 2001 Arboretum Master Plan. The Arboretum Master Plan was developed collaboratively by of the city of Seattle, University of Washington, Arboretum Foundation and citizens of the area. It was adopted by the Seattle City Council, the University of Washington Board of Regents and the Arboretum Foundation in 2001. The 20-year Master Plan ensures the Washington Park Arboretum will effectively fulfill three primary purposes—conservation, recreation and education—for decades to come.

Substantial public and private funds have been invested to begin implementation of the Arboretum Master Plan and enhance visitors' experience of the park. The first Pacific Connection Gardens have been created, the Japanese Garden Entry Gatehouse has been built and the Gateway to Chile Garden was installed this year. Many of the potential mitigation projects proposed by the ABGC and WSDOT were defined through the ABGC's Arboretum Master Plan. The projects in the original Master Plan have been reviewed, and project scopes and estimates are now being updated.

Washington Park Arboretum footbridge over water between Foster and Marsh Islands in 1939. Courtesy of the Museum of History and Industry.

Visitors walking through a field in the Washington Park Arboretum in 1957. Courtesy of the Museum of History and Industry.

Construction of the existing SR 520 bridge west approach section in 1962.

Why is WSDOT working to protect the Arboretum?

At the time of SR 520 construction in the 1960s, environmental regulations were not in place to protect resources like the Arboretum. SR 520 currently passes through the Arboretum south of Marsh Island and across Foster Island. The northern portion of the Arboretum, including areas of Marsh Island and Foster Island, was substantially altered by the original construction of SR 520 in the 1960s. The then-Highway Commission (now WSDOT) acquired 47 acres of Arboretum property for right of way and did extensive dredging around Foster and Marsh Islands, which are within the Arboretum boundaries. Ramps were installed connecting SR 520 to Lake Washington Boulevard and to the proposed RH Thompson Expressway. The RH Thompson Expressway project was abandoned under protest by neighborhood groups, though the unused ramps are still present.

Foster Island is a highly sensitive cultural area to regional tribes. WSDOT and the Federal Highway Administration (FHWA) consider Foster Island to be a "traditional cultural property" eligible for listing in the National Register of Historic Places (NRHP). Both the Arboretum itself and Lake Washington Boulevard are also NRHP-eligible as examples of Seattle's historic Olmsted legacy. Marsh Island is largely owned by the Washington State Department of Natural Resources.

WSDOT recognizes the regional significance of the Arboretum. Currently, a variety of environmental regulations guide development in and near environmental resources. Regulatory requirements influencing mitigation for WSDOT's I-5 to Medina project in the Arboretum are described in the following section. While WSDOT is not mitigating for the effects of the original SR 520 bridge at this time, avoidance, minimization, and mitigation measures will be implemented as part of the I-5 to Medina project. In addition to regulatory requirements, WSDOT is protecting the Arboretum in response to numerous community organizations, the public and tribes, who value the Arboretum and have requested that WSDOT avoid, minimize, and mitigate effects to the area.

An existing wetland in the Arboretum.

The ABGC's April 2010 comment on the I-5 to Medina project supplemental draft EIS states:

> *The Arboretum is a stunning gem of the Seattle Park system, a 230-acre oasis of gently rolling land, bucolic watery islets, and home to the best of the city's wildlife. It provides respite, scenery, recreation, and solace to thousands of visitors in every season of the year. It provides educational and volunteering opportunities to thousands of friends, sightseeing to thousands of visitors, and cultural enrichment in gardening styles and distant ecosystems to those who seek it out. Proposed upgrades to State Route 520 (SR 520) across the north end of the Arboretum threaten to significantly impact the park for many, many years due to construction, and will impose a base set of permanent adverse impacts once the bridge is completed.*

Similarly, a variety of public comments on the 2006 draft EIS and the 2010 supplemental draft EIS describe the significance of the Arboretum, express concern for potential effects from the new SR 520 bridge, and ask WSDOT to protect it. Examples of these include:

> *The Washington Park Arboretum is a regional treasure and resource for our citizens and needs to be valued and protected. The new SR 520 Bridge will have significant adverse impacts on the Arboretum—every effort needs to be made to reduce those impacts and to enhance the Arboretum.*

> *I have strong concerns regarding the environmental effects of the proposed rebuild of the SR 520 bridge, particularly the effects on the beautiful, sensitive wetlands in the Arboretum in Seattle. These wetlands are a rare and precious gift of nature that are already seriously affected by the existing SR 520 bridge.*

> *I live near the arboretum and find it to be a really wonderful treasure in the city. One of the best parks around.*

In November 2010, the ABGC provided the following statement regarding the Arboretum:

> *Throughout impact and mitigation discussions with WSDOT, ABGC members stressed the importance of protecting the Arboretum as it is one of the most loved educational and cultural resources in the Pacific Northwest. At the time the original SR 520 was built, environmental regulations protecting park land and wetlands were not in place and the Arboretum suffered severe damage and property loss. ABGC members have stressed that we now have an opportunity to address ongoing impacts from the first bridge that have reduced the quality of the Arboretum experience and to protect the Arboretum in the future. Some of those impacts include high traffic volumes, traffic safety concerns, noise, degradation of the habitat and aesthetics.*

The Arboretum and nearby water bodies provide visitors with educational, cultural and recreational resources.

What are the regulatory requirements influencing Arboretum mitigation?

WSDOT must comply with a variety of local, state and federal regulations that require mitigation for the effects of the I-5 to Medina project throughout the project corridor. Documentation of anticipated effects and associated mitigation for the entire project is required through the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA). WSDOT plans to release a final EIS in spring 2011 to comply with NEPA and SEPA requirements. Anticipated effects and associated mitigation measures for the I-5 to Medina project, including those described in this plan, will be memorialized in the final EIS.

This plan specifically describes anticipated effects from the I-5 to Medina project, as well as associated mitigation measures, within the Arboretum boundary. Construction and operations within the Arboretum will require compliance with the environmental resources and associated regulations described below.

Park effects within the Arboretum

Section 4(f), Department of Transportation Act. The use of publicly owned land from a park, refuge, or historic property for a federal transportation project may be approved only if:

- There is no prudent and feasible alternative to use of the land.
- The project uses all possible planning to minimize harm to the resource (i.e. avoidance, minimization, mitigation, and/or enhancement) or use of the property, including measures to minimize harm, will have a *de minimis* impact on the property.

Section 6(f), Land and Water Conservation Fund (LWCF) Act. The National Park Service administers this regulation, which restricts the conversion of parks and recreation facilities acquired and/or developed using LWCF funds unless:

- Approval is received from National Park Service and Washington Recreation and Conservation Office.

SR 520, I-5 to Medina: Bridge Replacement and HOV Project Regulatory Compliance Requirements

Anticipated permits and approvals that would be required for the project, as well as regulatory processes that must be followed, include:

Federal

- *Department of Archaeology and Historic Preservation: National Historic Preservation Act Section 106 Consultation*
- *Environmental Protection Agency*
  - Review of Army Corps of Engineers' Clean Water Act Section 404 Permit
  - Review and Rating of NEPA Document(s)
- *National Park Service: Confirm Recreation and Conservation Office Section 6(f) Approval*
- *Tribes*
  - Participate in Resolution of Section 106 Impacts
  - Resolution of Impacts to Usual and Accustomed Areas
- *U.S. Army Corps of Engineers*
  - Clean Water Act Section 404, Individual Permits
  - Section 10, Rivers and Harbors Act of 1899
- *U.S. Coast Guard*
  - General Bridge Permit
  - Private Aids to Navigation Permit
- *U.S. Fish and Wildlife Service and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service*
  - Section 7, Endangered Species Act Consultation
  - Magnuson-Stevens Essential Fish Habitat Consultation
  - Marine Mammal Protection Act Compliance
  - Bald and Golden Eagle Protection Act Compliance
  - Migratory Bird Treaty Act Compliance
  - Fish and Wildlife Coordination Act Compliance

- The conversion is mitigated through replacement with property of at least equal fair market value and reasonably equivalent usefulness and location.

Section 6(f) lands used longer than 180 days (for example, during construction) are considered a conversion. The I-5 to Medina project would convert approximately 4.75 acres of Section 6(f) land for temporary and/or long-term use. Of this, approximately 0.5 acre is permanent acquisition within the Arboretum. Section 6(f) replacement requirements for the project are being addressed in the final EIS and Section 6(f) Environmental Evaluation due for publication in spring 2011.

Historic resources effects within the Arboretum

Section 106, National Historic Preservation Act. The Washington Department of Archaeology and Historic Preservation administers Section 106 to protect historic and cultural resources, including the Arboretum, Foster Island and Lake Washington Boulevard. Section 106 requires a Memorandum of Agreement or Programmatic Agreement specifying mitigation for adverse effects and coordination with "consulting parties" that have stewardship responsibility for historic and cultural resources.

Wetland effects within the Arboretum

Sections 401 and 404, Clean Water Act. The U.S. Army Corps of Engineers regulates filling of "navigable waters of the U.S.," including adjacent wetlands, and requires compensatory mitigation for effects that cannot be avoided or minimized under Section 404. The Section 401 Water Quality certification issued by the Department of Ecology confirms compliance with state water quality standards and other state aquatic resource protection requirements.

Critical Areas Ordinance (CAO). The city of Seattle regulates development in environmentally sensitive areas, including wetlands, wetland buffers and fish and wildlife habitat conservation areas. The city has also codified development standards within critical areas and mitigation requirements.

Noise effects within the Arboretum

Noise Abatement Criteria. FHWA sets a maximum average noise level for highway projects according to land use. Parks have the highest level of protection. Where effects exceed the criteria, FHWA requires a cost/benefit analysis of mitigation.

SR 520, I-5 to Medina: Bridge Replacement and HOV Project Regulatory Compliance Requirements continued...

State and Regional

- *Puget Sound Clean Air Agency: Clean Air Conformity Certification*
- *Recreation and Conservation Office: Section 6(f) Replacement Package Approval*
- *Washington Department of Fish and Wildlife: Hydraulic Project Approval*
- *Washington Department of Natural Resources: Aquatic Lands Use Authorization*
- *Washington State Department of Ecology*
  - Clean Water Act Section 401 Water Quality Certification
  - Clean Water Act Section 402 National Pollutant Discharge Elimination System, general or individual construction permits
  - Coastal Zone Management Act Consistency Determination
  - Shoreline conditional use, final approval
  - Various construction notices/approvals
- *WSDOT: State Environmental Policy Act*

Local

- *WSDOT will obtain the applicable local permits and meet all local requirements from King County, and the cities of Seattle and Medina, where the project will be located.*

How did WSDOT avoid and minimize effects to the Arboretum?

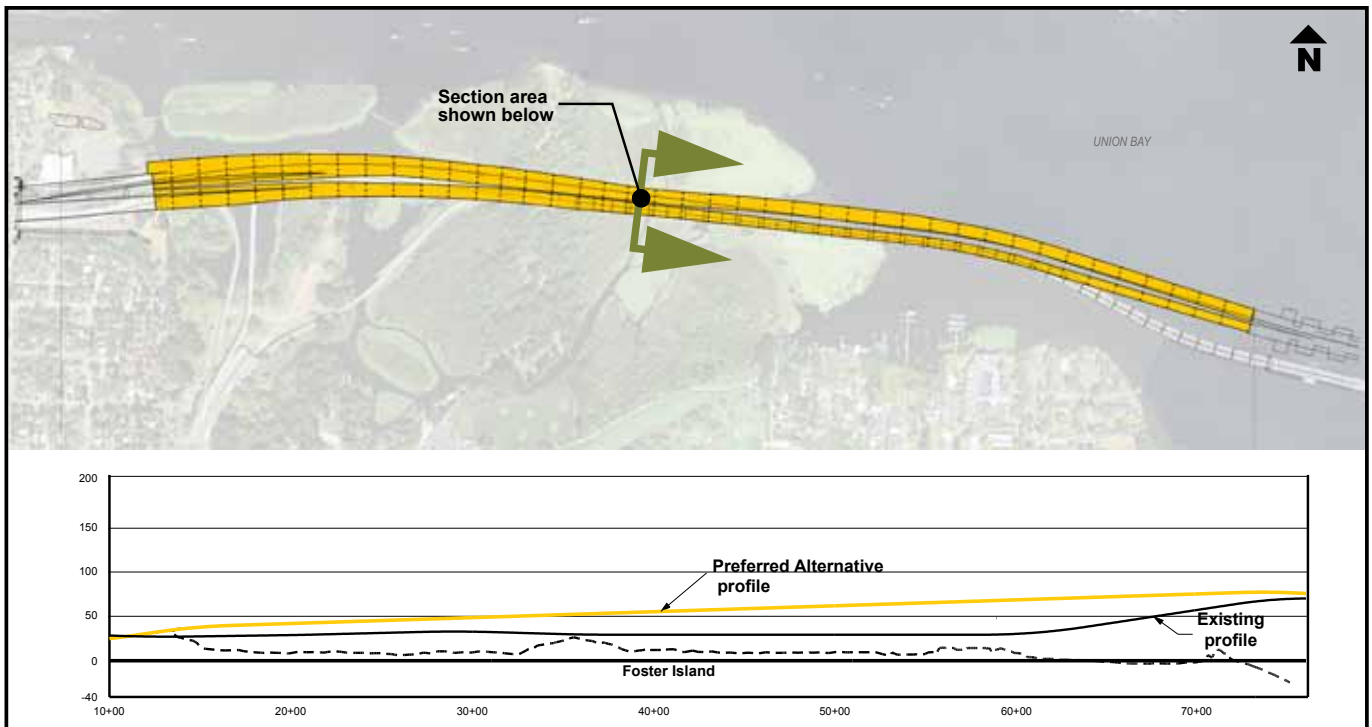
WSDOT selected a preferred alternative that avoids and minimizes project effects in a variety of ways. In the Arboretum, the following measures are incorporated into the design to avoid and minimize effects from the I-5 to Medina project:

- Removed existing SR 520 ramps in the Arboretum to help reduce traffic, noise and permanent right of way needs in the Arboretum compared to no action.
- Raised bridge profile on Foster Island to improve and expand trail user access compared to existing conditions. This will also reduce noise levels for Arboretum users.
- Designed bridge piers on Foster Island to minimize disturbance in culturally sensitive areas. Coordinated with tribes to plan and conduct archaeological investigations verifying no disturbance to cultural resources in advance of construction.
- Narrowed lane and shoulder widths to minimize effects on environmental resources compared to previously evaluated options.
- Narrowed gap between westbound and eastbound structures across Foster Island compared to previously evaluated options. This will minimize Arboretum effects while also minimizing effects to vegetation by allowing light to reach the ground and water.
- Reduced Sections 4(f) and 6(f) effects in the Arboretum compared to previously evaluated options.
- Enhanced open space connectivity to the Arboretum through pedestrian and bicycle connections across the expanded Montlake lid and a crossing beneath the roadway, adjacent to the lid to East Montlake Park.
- Developed best management practices to minimize construction disturbance and effects.
- Proposed using existing ramps for construction staging to reduce effects on Arboretum park lands and wetlands during construction.

WSDOT will continue ongoing coordination with the ABGC to address and minimize construction effects and traffic management.

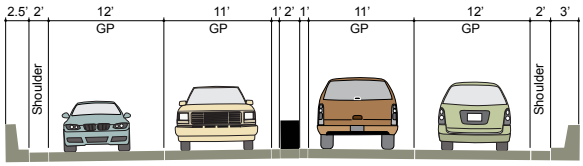
West approach bridge profile and width comparison

Existing and preferred alternative bridge designs



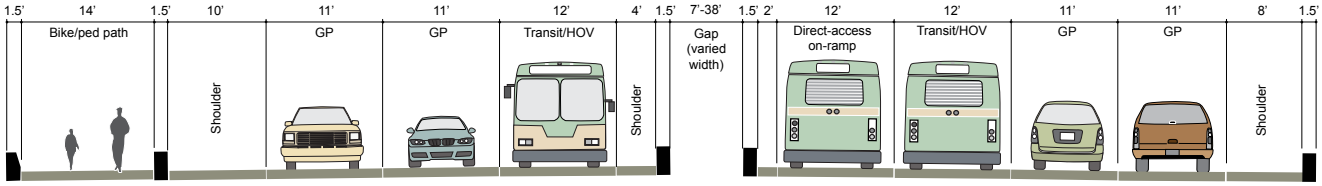
West approach bridge profile comparision

EXISTING BRIDGE - TYPICAL CROSS SECTION



Note: Typical sections at same scale to allow for visual comparison.

PREFERRED ALTERNATIVE BRIDGE - TYPICAL CROSS SECTION



VICINITY MAP

CONCEPTUAL

DRAFT - THIS SKETCH ONLY DEPICTS THE IDEA. ENGINEERING, OPERATIONS AND ENVIRONMENTAL ANALYSIS REQUIRED.

How will the I-5 to Medina project affect the Arboretum?

The I-5 to Medina project preferred alternative has the least overall effects within the Arboretum of all options evaluated for the project. However, WSDOT anticipates operational and construction effects from the project within the Arboretum that will require mitigation. Information regarding the effects and associated mitigation for the entire I-5 to Medina project will be detailed in the final EIS, scheduled to be published in spring 2011.

Comparison to no action (or no build) is the established standard for NEPA analysis. However, the final EIS will include a more detailed comparison of existing, 2030 no build, and preferred alternative traffic volumes and noise levels.

The following table summarizes the permanent effects, associated regulations and mitigation requirements that WSDOT anticipates in the Arboretum as a result of the I-5 to Medina project. Effects are also shown on the graphics following this table. Additional details regarding Arboretum effects are described in the section following this table.

Project effects within the Arboretum

Arboretum Effect	Description of Effect	Governing Regulation(s)	Regulatory Mitigation Requirements
Park effects within the Arboretum			
Section 6(f) conversion	Approx. 0.5 acre converted in Arboretum	Section 6(f)	Purchase replacement land of reasonably equivalent function and at least equal fair market value
Right-of-way acquisition and expanded footprint of SR 520 across Foster Island	Approx. 0.5 acre land acquired	Section 4(f)	Measures to minimize harm[1]
Disruption in and near north end of the Arboretum for reconstruction of Lake Washington Boulevard	During construction	Section 4(f)	Measures to minimize harm[1]
Removal of existing Lake Washington Boulevard ramps	Benefits Arboretum, but will cause construction disturbance	Section 4(f)	Measures to minimize harm[1]
Wider/higher Foster Island crossing	Larger visual presence, greater footprint in traditional cultural area, and increased shading	Section 4(f) and Section 106	Pier placement to minimize disturbance; aesthetic treatment to reduce visual effects
Natural resources effects within the Arboretum			
Wetland fill	Approx. 0.05 acre (2,000 square feet) of wetland fill in Arboretum[2]	Sections 401, 404, Seattle CAO	Replace and/or enhance wetlands
Wetland buffer fill	Approx. 0.01 acre (400 square feet) of wetland buffer fill in Arboretum[2]	Sections 401, 404, Seattle CAO	Replace and/or enhance wetland buffers

1 Measures to minimize harm under Section 4(f) can include mitigation and enhancement.

2 Quantities for wetlands and wetland buffers include those affected in and adjacent to the Arboretum (not only within the Arboretum boundary).

Project effects within the Arboretum continued…

Arboretum Effect	Description of Effect	Governing Regulation(s)	Regulatory Mitigation Requirements
Wetland shading	Approx. 4.2 acres of wetland shading in Arboretum[2]	Sections 401, 404, Seattle CAO	Replace and/or enhance wetlands
Temporary clearing	Removal of shoreline vegetation	Sections 401, 404, Seattle CAO	Restore and/or enhance
Aquatic shading	TBD	Sections 401, 404, Seattle CAO	Restore and/or enhance)
Noise effects within the Arboretum			
Reduction in noise due to project design features[3]	Noticeable reduction in noise levels	FHWA Noise Abatement Criteria	No further mitigation required
Traffic effects within the Arboretum			
Through traffic volumes and speed in Arboretum, specifically on Lake Washington Boulevard[4]	Positive effect (reduction in traffic compared to No Build)	NEPA and SEPA require evaluation of traffic effects, though there are no adverse effects in the Arboretum	None, but a partnership with SDOT and WSDOT has been agreed upon to create traffic calming plans and to coordinate on traffic management plans

3 The I-5 to Medina Project preferred alternative includes a higher roadway profile, 4-foot-high traffic barrier with noise absorptive material, removal of the existing ramps and quieter concrete pavement. As a result of these design features, WSDOT's noise analysis indicates that noise levels in the Arboretum will be reduced compared to existing and 2030 no build projections.

4 Projected traffic is expected to reduce compared to a no action alternative but be higher than existing. The additional traffic by the year 2030 would occur as a result of projected regional growth in population and employment that is independent from the project. No changes in regional population and employment growth have been attributed to the project build alternative.

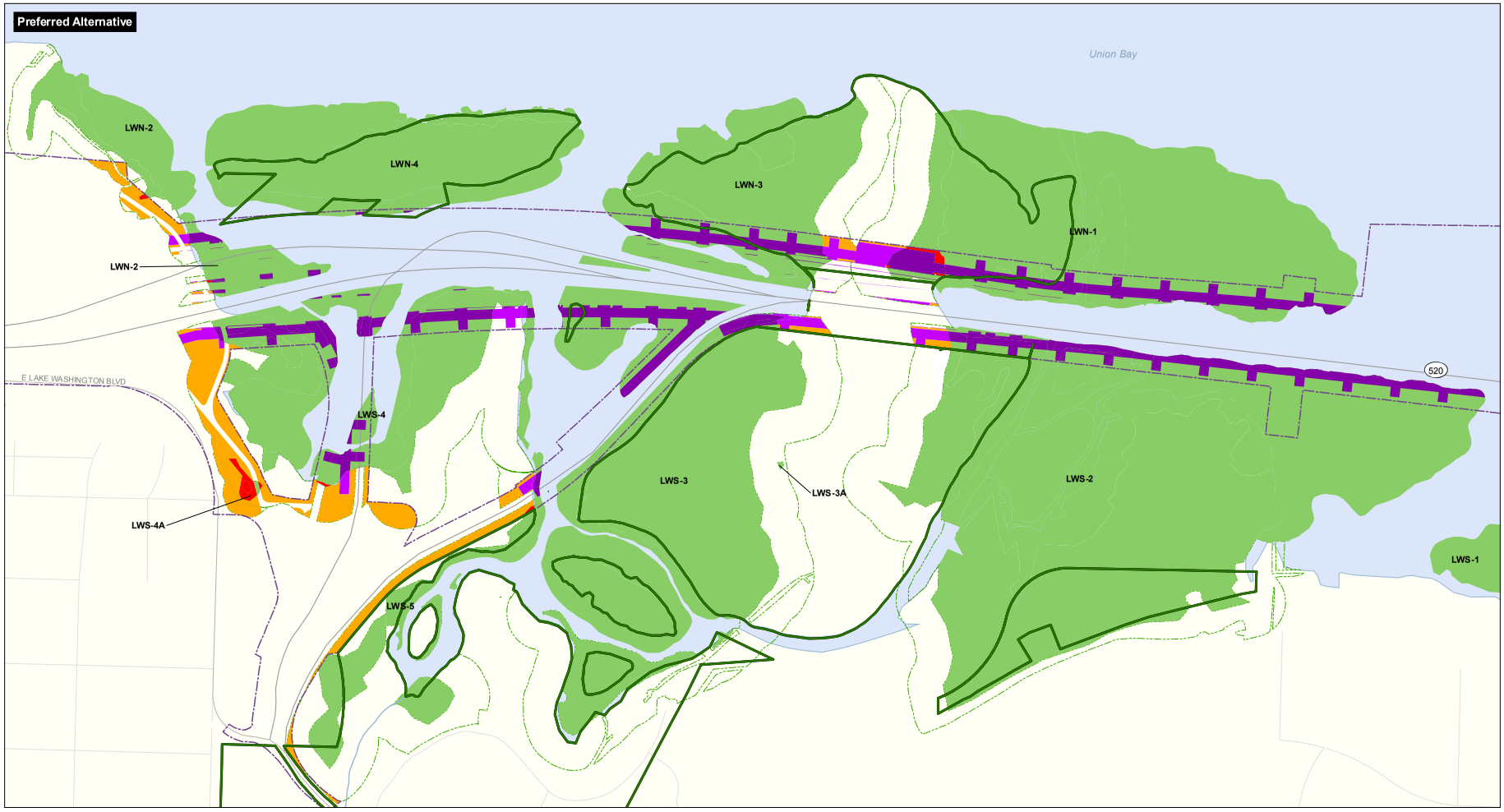
Park effects identified within the Arboretum boundary.

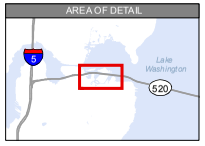
Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Effects on Recreation Resources in the Washington Park Arboretum Area

SR 520: I-5 to Medina Bridge Replacement and HOV Project

Wetland effects identified within the Arboretum boundary





Construction Effect

- Affected Wetland (Clearing)
- Affected Buffer (Clearing)
- Affected Wetland (Shading)
- Affected Buffer (Shading)
- Limits of Construction
- Wetland
- Wetland Buffer
- Washington Park Arboretum

N

0 250 500 1,000 Feet

Source: King County (2005) GIS Data (Streets), Parametrix (2008 and 2009) GIS Data (Wetlands). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Construction Effects on Wetlands and Buffers in the West Approach Area

SR 520: I-5 to Medina Bridge Replacement and HOV Project

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Permanent effects during project operation

The I-5 to Medina project would have both positive and negative permanent effects on park lands and natural resources within the Arboretum. Mitigation measures are described in pages 27 to 30 of this plan. These effects would include the following:

- ***Conversion of about a half-acre of land in the Arboretum from recreation use to transportation use.*** This acquisition would be north of the existing SR 520 roadway and would comply with applicable laws and regulations.
- ***Effects to natural resources.*** Construction and operations of the project would result in temporary and permanent filling and shading of both wetlands and wetland buffers within the Arboretum. Some tree removal within the limits of the work area may also occur.
- ***Wider and higher structure over Foster Island.*** The new SR 520 would cross Foster Island with a bridge that meets current highway standards and provides an additional transit/HOV lane in each direction by widening the existing structure. The new SR 520 bridge across Foster Island would range from 150 feet wide (with a 7-foot gap) to 180 feet wide (with a 9.5 foot gap). The width of the current roadway is 60 feet wide where it crosses Foster Island. The new highway mainline would also be higher than the existing SR 520 and would therefore provide additional clearance and better lighting conditions for users at the crossing of the Arboretum Waterfront Trail on Foster Island. The current roadway clearance on Foster Island ranges from zero to approximately 8 feet. The new SR 520 clearance on Foster Island will vary from 14.5 to 25.5 feet on the north bridge and 12.5 to 16 feet on the south bridge.
- ***Gap between westbound and eastbound structures.*** The westbound and eastbound lanes of the west approach would be constructed as two structures separated by a gap. This could allow growth of vegetation in water and on land between the westbound and eastbound lanes.
- ***Shading on Foster Island.*** The permanent structure would result in shaded areas on Foster Island that could affect the amount of light and precipitation reaching the ground, potentially limiting some vegetation growth.
- ***Maintenance access needs.*** Similar to today, WSDOT maintenance crews would need to access the area beneath the SR 520 highway on Foster Island. Although the land underneath the footprint of the highway would be within the WSDOT right of way, it would be available for Arboretum use after construction (except for the area necessary for the columns to support the highway structure). WSDOT does not anticipate that maintenance in this area would require the use of vehicles. Maintenance access will primarily occur from the SR 520 mainline, as it is today.
- ***Changes to trail user experience.*** The Arboretum Waterfront Trail currently crosses under SR 520 in a low and narrow pedestrian underpass. The new SR 520 structure would allow the trail to pass between piers of an elevated structure, opening views at ground level. Because the highway mainline would be higher than the existing roadway, the structure would become a more dominant and noticeable feature.
- ***Removal of existing ramps.*** The existing SR 520 ramps and unused R.H. Thomson Expressway ramps would be removed, which would open views for Arboretum users, eliminate some columns that currently impede boat access, and allow the area to be restored to natural conditions and additional park access.
- ***Reduced highway traffic noise levels.*** Due to the proposed four-foot noise absorptive traffic barrier and the increased height of the new SR 520 structure, highway traffic noise in the Arboretum would decrease from the existing levels and improve the experience of Arboretum users. In addition, WSDOT committed to quieter concrete pavement throughout the corridor as a means to potentially reduce noise.
- ***Cultural effects.*** The new highway will have a larger footprint on Foster Island, which is considered to be a traditional cultural property. Design of SR 520 across Foster Island has been revised to minimize the width of the structure and right of way needed. This resulted in reducing the amount of excavation needed in this culturally sensitive area. WSDOT has worked closely with the tribes to plan and conduct geotechnical investigations to reduce the risk of encountering cultural resources during construction.

Temporary effects during project construction

WSDOT also anticipates temporary effects to the Arboretum during construction, including:

- ***Periodic closures of a section of the Arboretum Waterfront Trail.*** Construction of the proposed improvements would require the periodic closure of the section of the Arboretum Waterfront Trail located under SR 520 and within WSDOT right of way on Foster Island. During such closures, trail users would be unable to use any portion of the trail between East Montlake Park and the limits of construction. Arboretum users would be able to access the remainder of the trail, including the portion of Foster Island south of SR 520, from the Graham Visitor Center throughout the construction period. There may also be intermittent short-term trail closures in the Arboretum between Marsh and Foster Islands.
- ***Use of temporary construction structures.*** Construction would include an access work bridge on and adjacent to Foster and Marsh Islands. These work bridges would be temporarily located parallel to SR 520, on both the north and south sides. The work bridges would be removed after completion of the permanent structure.
- ***Temporary construction easements.*** WSDOT would use easements during construction to allow temporary use of areas adjacent to the SR 520 roadway. The areas used for construction would be restored and returned to Arboretum use once construction is completed.
- ***Noise, dust and vibrations.*** Construction activities would generate dust and construction-related noise and vibration in close proximity to the active areas of the Arboretum. Pile-driving equipment would be used in the nearshore areas of the Arboretum south of Marsh Island and on either side of Foster Island to construct bridges over the water. WSDOT will communicate and coordinate with the ABGC on potentially disruptive activities and consider other events planned in the Arboretum. WSDOT will continue to work with the ABGC on these effects as they develop the Community Construction Management Plan.
- ***Visual effects during construction.*** Construction activities and staging areas will be visible from Lake Washington Boulevard, Montlake Boulevard and within the Arboretum. Additional information regarding construction activities and staging areas will be included in the Community Construction Management Plan.

Existing view of the Foster Island pedestrian tunnel, looking northwest at south entrance of tunnel under SR 520.

View after construction of the I-5 to Medina project.

Existing view from the north side of Foster Island looking south.

View after construction of the I-5 to Medina project.

Existing view from the WSDOT peninsula looking northwest where ramps will be removed.

View after construction of the I-5 to Medina project.

Process for developing the Arboretum mitigation plan

How did WSDOT consult with the governing board of the Arboretum?

WSDOT identified the ABGC as the appropriate advisory committee for consulting on Arboretum mitigation. The ABGC members include representatives from the Arboretum Foundation, city of Seattle, University of Washington, and a Washington State Governor's Office representative. The following sections describe how WSDOT coordinated with these parties regarding Arboretum mitigation, as well as through separate processes associated with the I-5 to Medina project.

Coordination on ESSB 6392 with the Arboretum and Botanical Garden Committee

In 2009, the ABGC established a set of guiding principles regarding the I-5 to Medina project for WSDOT and FHWA to consider as they move the project forward. These principles were provided to WSDOT as part of the ABGC's comments on the supplemental draft EIS in April 2010. WSDOT considered the ABGC's guiding principles when the preferred alternative was selected, and continued to consider these principles as they refined the project design and identified mitigation measures.

Following the announcement of the preferred alternative in April 2010, and as directed by ESSB 6392, WSDOT and the ABGC began coordination efforts in May 2010 to identify mitigation for effects of the I-5 to Medina project on the Arboretum. A consultation process was developed with the ABGC chair, and subsequently the full ABGC and WSDOT developed a common understanding of project benefits and effects through discussion of technical analyses of the preferred alternative. WSDOT identified the following objectives for coordinating with the ABGC on Arboretum mitigation:

- Establish a forum to work collaboratively with the ABGC on Arboretum mitigation.
- Identify Arboretum resources potentially affected by the project.
- Clarify effects to identified resources.

ABGC Guiding Principles on the I-5 to Medina Project

The proposed SR 520 project in and around the Washington Park Arboretum should:

1. *Enhance the Washington Park Arboretum through the design, construction and operation of SR 520 and the SR 520, I-5 to Medina: Bridge Replacement and HOV Project;*
2. *Avoid harm to the Washington Park Arboretum and its collections;*
3. *Respect the historical, aesthetic and design integrity of the Park;*
4. *Fully compensate the Arboretum for loss of property and function if harm is unavoidable;*
5. *Reduce traffic on Lake Washington Boulevard below levels that exist today on the boulevard between Montlake Boulevard and East Madison Street; and,*
6. *Preserve and restore the Arboretum as an accessible place of quiet and respite.*

- Identify appropriate mitigation opportunities within the Arboretum for these effects.
- Provide an information link to and from legislative and regulatory technical working groups (TWGs).
- Submit a final plan to the Governor and Transportation Committees of the Washington State Legislature by Dec. 31, 2010.

Through a series of 12 meetings, the ABGC and WSDOT developed an initial list of mitigation ideas addressing park and natural resources effects. WSDOT and the ABGC also discussed noise, as measures to address noise in the Arboretum are included as part of the I-5

to Medina project. During this coordination process, WSDOT recognized that traffic calming and traffic management are important issues to the ABGC members due to concern with existing traffic conditions and future predictions within the Arboretum. Therefore, coordination was expanded to include participation by SDOT to focus on calming and managing traffic in the Arboretum.

ABGC provided WSDOT with a prioritized list of projects from the 2001 Arboretum Master Plan that could be funded by WSDOT as mitigation measures. WSDOT then conducted an evaluation to screen the initial list of potential mitigation projects developed jointly with the ABGC. Through this evaluation, WSDOT determined which projects would meet legislative intent and satisfy regulatory requirements for mitigation. The ABGC approved the Arboretum Mitigation Plan at their Dec. 8, 2010 meeting.

Section 106 consultation

WSDOT and FHWA consulted with the Arboretum Foundation, city of Seattle, University of Washington and ABGC on the Section 106 process. The consultation process is defined as "the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the Section 106 process." The consulting parties representing the Arboretum play a role with the FHWA, WSDOT, state and local Historic Preservation Officers, Native American tribes, and other consulting parties, in identifying and seeking mitigation for historic properties and cultural resources potentially affected by the I-5 to Medina project. The agreed-upon measures to address the adverse effect are being incorporated into a Programmatic Agreement, which is scheduled to be signed in spring 2011. Since it is still under development and is specific to historic and cultural resources, the Programmatic Agreement may include additional mitigation measures not described in this plan that would also benefit the Arboretum.

Coordination with SDOT on traffic in the Arboretum

While the I-5 to Medina project preferred alternative would reduce traffic volumes in the Arboretum in 2030 compared to no action, WSDOT and SDOT recognize the ABGC's desire to reduce existing traffic volumes, reduce vehicle speeds and improve pedestrian and bicycle safety. Also, in an April 2010 letter to WSDOT, the Seattle City Council emphasized the importance of developing a traffic management plan for the Arboretum.

In a September 2010 letter to WSDOT, the Seattle City Council identified traffic improvements in the Arboretum as one key goal for the city's continued coordination on the I-5 to Medina project. The City Council expressed a specific interest in understanding:

- Effects from restricting a left turn from southbound 24th Avenue onto Lake Washington Boulevard.
- WSDOT's commitment to work with SDOT on Arboretum traffic calming and traffic management.
- SDOT's plans for implementing traffic calming measures in the Arboretum as early as 2011.
- SDOT's plan for ongoing traffic monitoring in the Arboretum.

To address the ABGC's concern and the City Council's requests, SDOT began participating in ABGC meetings prior to WSDOT initiating coordination on the ESSB 6392 Arboretum mitigation plan. SDOT continued participating in ABGC meetings with WSDOT to assist in developing potential traffic management and traffic calming measures for the Arboretum. Through coordination with the ABGC and WSDOT, SDOT identified and recommended pedestrian improvements and traffic calming measures in an attached plan (see Appendix E). SDOT also recommended a number of traffic management measures for consideration, as described in the Arboretum Traffic Management Measures for Evaluation (Appendix F), that will be evaluated with the ABGC and WSDOT and may be implemented in the future.

How did WSDOT involve agencies in mitigation planning?

Local, state and federal regulations require WSDOT to mitigate for effects to parks and natural resources from the I-5 to Medina project, both project-wide and within the Arboretum. WSDOT began coordinating with regulatory agencies through the Regulatory Agency Coordination process (RACp) and associated TWGs in 2007. Since the preferred alternative was announced in April 2010, WSDOT has continued to meet regularly with agency staff through the Parks and Natural Resources TWGs to identify effects and associated mitigation. Members of the TWGs have had input into the development of mitigation measures for the Arboretum that are proposed in this plan, and all the proposed measures are consistent with those agencies' regulatory requirements.

Natural resource agencies will continue to play a role in natural resources mitigation, as they must review and approve the I-5 to Medina project's wetland and aquatic mitigation plans as part of permitting the projects. These mitigation plans will be submitted to regulatory agencies with state and federal aquatic permit applications. Regulatory agencies will review and comment on the plans, and WSDOT will then revise the mitigation plans. The final mitigation plans will be included by reference in the federal and state permits issued for the project.

Similarly, WSDOT will continue to coordinate with regulatory agencies on mitigating effects to the built environment. The Section 4(f) evaluation for the project, which focuses on effects and mitigation for parks and historic resources, will be reviewed by FHWA and the Department of Interior prior to its release with the final EIS. The National Park Service and the Washington State Recreation and Conservation Office will have review and approval authority for compliance with Section 6(f). The Department of Archaeology and Historic Preservation, FHWA, and the tribes will review cultural resource findings, along with the draft Programmatic Agreement under Section 106, and will need to concur with the mitigation measures set forth in that document.

How did WSDOT involve tribes in mitigation planning?

WSDOT is coordinating with the federally-recognized Muckleshoot Indian Tribe, Suquamish Indian Tribe, Tulalip Tribes, Snoqualmie Indian Nation and the Yakama Nation on cultural resources and treaty fishing rights related to the I-5 to Medina project area. In addition, WSDOT is consulting with the Duwamish Tribe on cultural resources. Under Section 106, WSDOT is seeking concurrence from the tribes regarding potential effects to cultural resources. Tribes have also been invited to participate in the agency coordination processes described above and Muckleshoot Indian Tribe Fisheries Division and Preservation Department staff have participated in many of the RACp and TWG processes.

Commitments described in this mitigation plan related to cultural resources are pending tribal concurrence. WSDOT continues to conduct ongoing conversations regarding tribal interests in the area of the Arboretum. Resolution of issues is expected prior to commencement of construction.

Technical Working Groups

Since 2007, WSDOT has convened technical working groups (TWGs) with agency and tribal staff as needed to address specific topics related to the I-5 to Medina project. The TWGs provide forums for detailed explorations of project issues and collaboratively address topics such as mitigation, fish passage, parks, stormwater, in-water construction, and bridge maintenance facility siting and design. In 2010, the Parks and Natural Resources TWGs met regularly, as described below.

Parks TWG (ongoing)

Participants have regulatory authority over built environment resources in the project area, including the Arboretum. Participants are responsible for identifying potential mitigation strategies and packages for effects to resources regulated under Sections 4(f) and 6(f). Participants represent the following entities:

- *Federal Highway Administration*
- *National Park Service*
- *Seattle Parks and Recreation*
- *Washington State Recreation and Conservation Office*
- *University of Washington*

How was the public involved in developing the Arboretum Mitigation Plan?

As described in the background section, the public provided comments on WSDOT's potential project effects in the Arboretum during the 2006 draft EIS and 2010 supplemental draft EIS comment periods. WSDOT recognizes the public's concern with the Arboretum and desire to ensure the Arboretum is protected when the new SR 520 bridge is constructed.

WSDOT has engaged the public in development of the Arboretum Mitigation Plan in a number of ways. The ABGC meetings where this plan was discussed were open to and generally attended by the public. The ESSB 6392 Workgroup discussed the traffic management and traffic calming measures described in the Arboretum Mitigation Plan at their meetings, which were also open to the public.

WSDOT and SDOT also presented key findings related to the Arboretum Mitigation Plan at the Dec. 1, 2010 ESSB 6392 Workgroup meeting, which was open to the public and provided an opportunity for public comment. This date marked the beginning of the Arboretum Mitigation Plan public comment period, which ran through Dec. 15, 2010. Information about the public comment period was also included in regular SR 520 program e-mail updates to the public.

In summary, WSDOT received a total of 34 comments on the Arboretum Mitigation Plan, submitted through the following methods:

- 11 through an online survey.
- 13 by e-mail.
- Seven verbal comments at the Dec. 1 Workgroup meeting.
- Three hard-copy letter comments.

Comments received were diverse, and focused on a variety of topics related to the Arboretum Mitigation Plan. Topics that were the most frequently addressed in the comments include:

- Traffic: 30 comments. Of these, key topics were related to traffic management or calming and tolling within the Arboretum.
- Project design: 18 comments
- Mitigation: 17 comments
- Neighborhood and community effects: 16 comments
- Public involvement and coordination: 15 comments
- Environmental effects: 10 comments
- Land use: Nine comments
- Sections 4(f) and 6(f): Seven comments
- Support for the process: Seven comments
- Transit: Seven comments

WSDOT will consider these comments as the projects move toward further design and implementation. Due to the content of some of the comments, clarifying information has been added to the Arboretum Mitigation Plan. A more detailed summary of the comments and the verbatim comments are included in Appendix H.

Technical Working Groups continued...

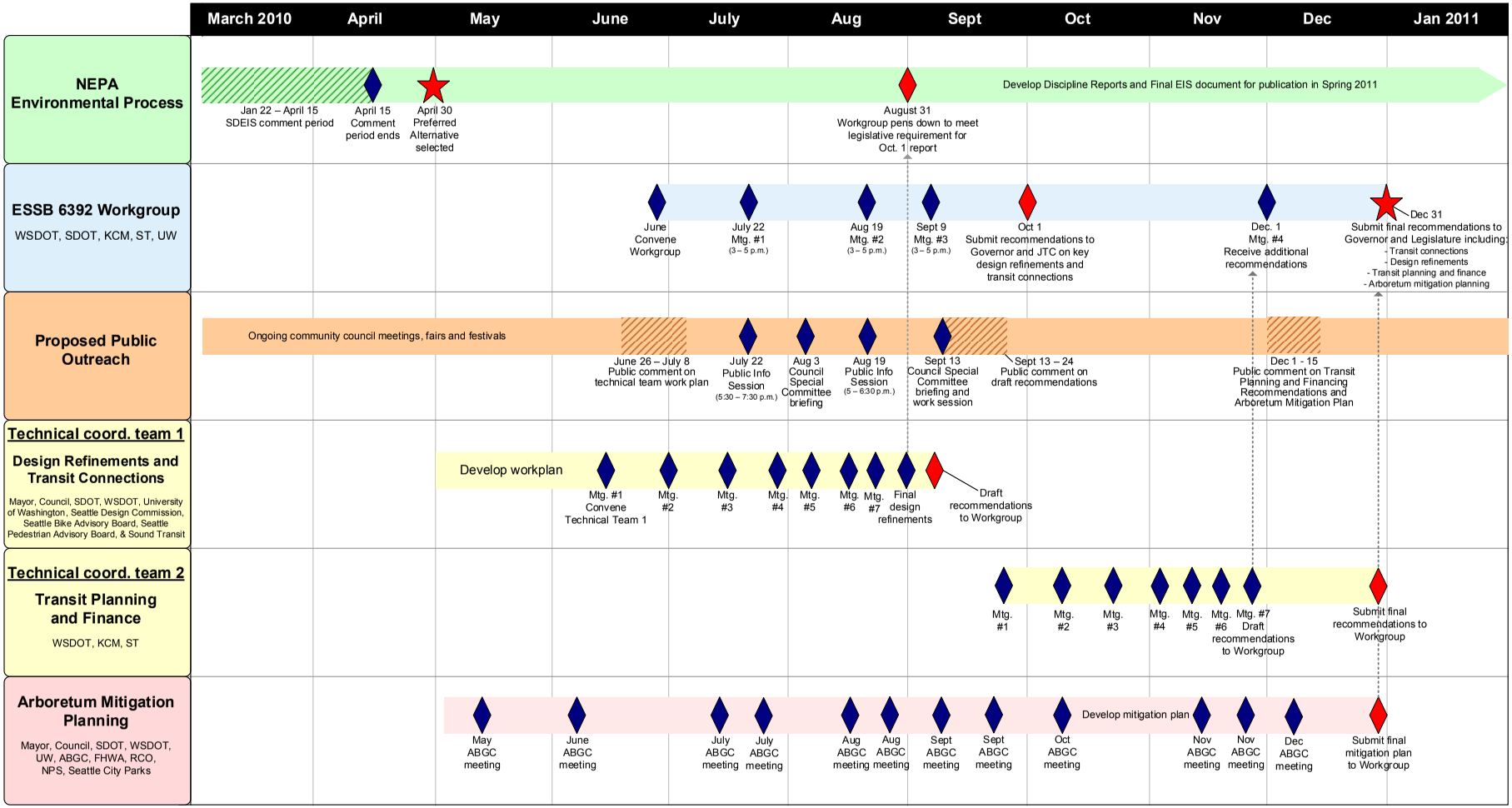
Natural Resources TWG
(May 2010 - October 2010)

Participating regulatory agencies have regulatory authority over natural environment resources in the project area, including the Arboretum. Participants are responsible for identifying potential mitigation strategies and packages for effects to regulated natural resources. Participants represent the following entities:

- *Muckleshoot Indian Tribe Fisheries Division*
- *NOAA's National Marine Fisheries Service*
- *Seattle Department of Planning and Development, Department of Transportation, Parks and Recreation*
- *Washington State Department of Ecology*
- *Washington State Department of Fish and Wildlife*
- *Washington State Department of Natural Resources*
- *University of Washington*
- *US Army Corps of Engineers*
- *US Coast Guard*
- *US Environmental Protection Agency*
- *US Fish and Wildlife Service*

ESSB 6392 Workgroup Milestones

DRAFT – Updated: November 30, 2010



How did WSDOT identify and prioritize Arboretum mitigation measures?

The ABGC initially identified potential mitigation opportunities in the Arboretum. WSDOT then conducted a preliminary evaluation to screen the initial list of potential mitigation projects developed through consultation with the ABGC. Through this evaluation, WSDOT determined which projects could potentially be considered mitigation for anticipated effects from the I-5 to Medina project on the Arboretum. The criteria used to evaluate the projects were:

- Is there an effect of the SR 520 project that triggers the need for mitigation?
- Could the proposed mitigation project potentially satisfy one or more regulatory requirements?
- Does the proposed project have a high priority in the Arboretum Master Plan?

What are WSDOT's proposed mitigation measures in the Arboretum?

After consultation with the ABGC and technical evaluation, WSDOT plans to mitigate for effects in the Arboretum through funding and/or implement action of a suite of projects. The table on page 27 summarizes the results of WSDOT's evaluation, describes the regulatory nexus between the project's effects and the potential mitigation measures, and identifies the likely lead for project implementation. Six of the potential mitigation projects are in the 2001 Arboretum Master Plan and are designated as high priorities for implementation. The ABGC supports implementation of the remaining projects although they were not identified in the Master Plan.

All the projects are anticipated to enhance the Arboretum. Of these, three projects include feasible opportunities for on-site wetland mitigation. Activities associated with specific mitigation projects are described in detail in the table. WSDOT and the ABGC recognize that the project scopes and estimates in the adopted Arboretum Master Plan need to be updated, therefore ABGC and WSDOT will continue to refine specific details of the representative projects described in the table. The letters in the table correspond with the graphic titled "WSDOT Evaluation of Potential Mitigation Projects in Washington Park Arboretum" on page 28.

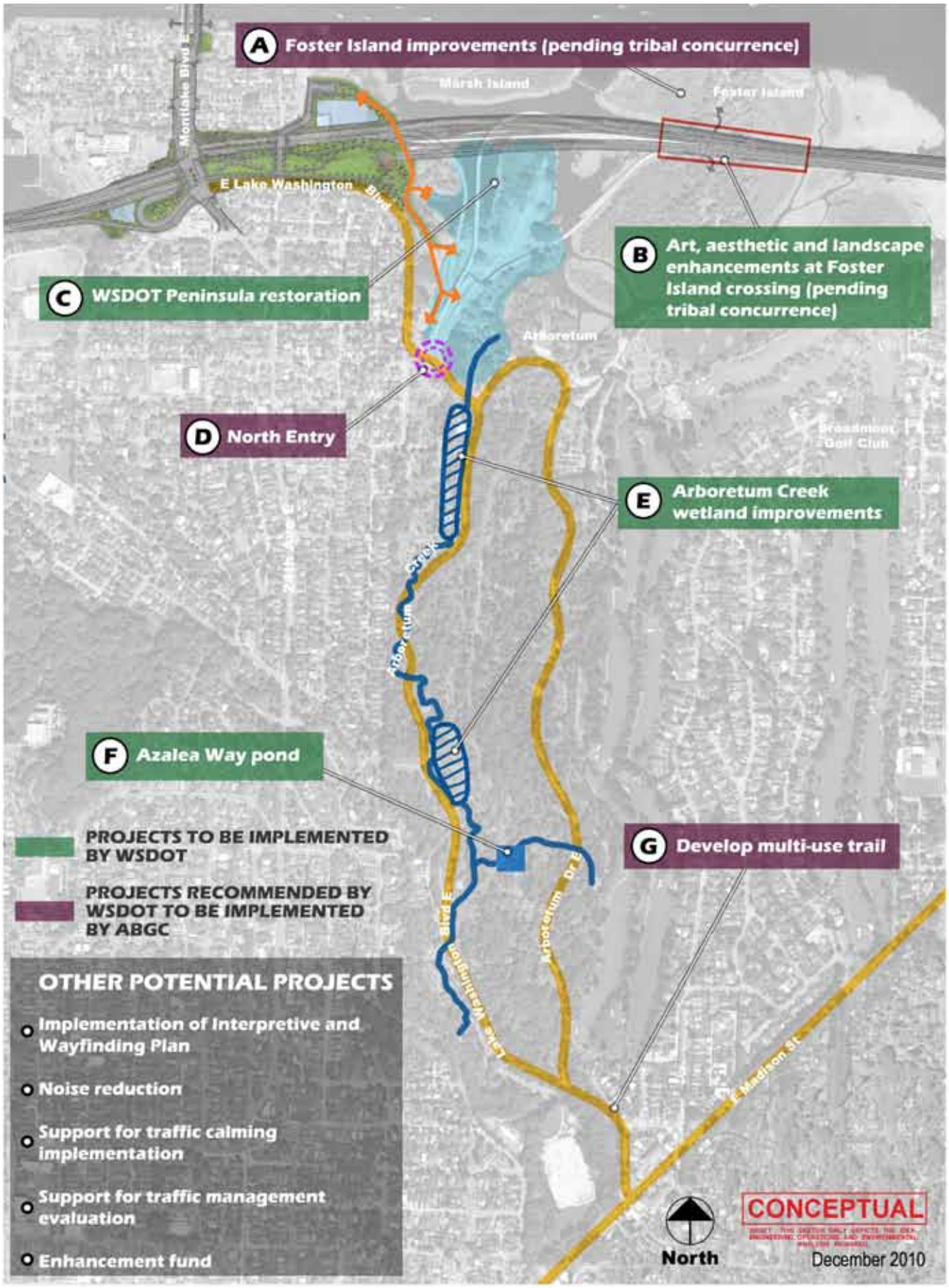
The Arboretum provides habitat for many birds and wildlife, such as this heron.

Recommended mitigation measures

Key to graphic on pg. 28	Project/Measure	Addresses adverse effect?	Potentially satisfies regulatory requirements for mitigation?	Master Plan priority project?	Lead
A	Foster Island Improvements (pending tribal coordination)[1]	Yes (increased footprint, construction disturbance)	Yes (Section 4f)	Yes	ABGC
B	Art, aesthetic and landscape enhancements at Foster Island crossing (pending tribal coordination)	Yes (increased footprint and structure bulk)	Yes (Section 4f, general NEPA requirements)	N/A[2]	WSDOT
C	WSDOT Peninsula wetland restoration	Yes (wetland effects elsewhere in Arboretum)	Yes (Sections 401 and 404, Seattle CAO, Section 4f)	N/A[2]	WSDOT
D	North Entry[1]	Yes (ramp removal, Lake Washington Boulevard changes)	Yes (Section 4f)	Yes	ABGC
E	Arboretum Creek wetland improvements	Yes (wetland effects elsewhere in Arboretum)	Yes (Sections 401 and 404, Seattle CAO, Section 4f)	Yes	WSDOT
F	Azalea Way Pond	Yes (wetland effects elsewhere in Arboretum)	Yes (Sections 401 and 404, Seattle CAO, Section 4f)	Yes	WSDOT
G	Multi-use trail[1]	Yes (restores/enhances trail connections)	Yes (Section 4f)	Yes	ABGC
Other	Implementation of Interpretive and Wayfinding Plan in areas being improved by WSDOT	Yes (changes in this area create additional wayfinding needs)	Yes (Section 4f)	Yes	ABGC
Other	Noise reduction (4-foot barriers with sound absorption, quieter concrete pavement, and raised profile)	Yes (increased noise in some areas of Arboretum)	No (does not meet FHWA mitigation requirements); proposed as enhancement	N/A[2]	WSDOT
Other	Support for traffic calming implementation	Yes (potential increase in pedestrian use as a result of project-related traffic reductions)	Yes (general NEPA requirements)	N/A[2]	SDOT
Other	Support for traffic management evaluation	TBD	TBD	N/A[2]	SDOT
Other	Enhancement Fund	Allows for project overruns or other approved Master Plan projects if one of the above projects is unbuildable or becomes a diminished priority	Yes	Yes	ABGC

1 WSDOT may fund these projects in whole or part, pending additional project scoping and coordination with the ABGC.

2 These projects are not identified in the 2001 Arboretum Master Plan because they are action-specific effects. Nevertheless, the ABGC supports their implementation and has suggested WSDOT evaluate them as potential mitigation.



WSDOT Evaluation of potential mitigation projects in the Washington Park Arboretum.

The mitigation projects are described in more detail below. WSDOT may fund these projects in whole or part, pending additional project scoping and coordination with the ABGC.

A: Foster Island improvements

The Arboretum Master Plan outlines a variety of improvements that the ABGC has prioritized on Foster Island. Foster Island, which the new SR 520 will cross, is considered to be a traditional cultural property with ongoing cultural value to Native American tribes. Therefore, implementation of any Foster Island improvements is pending tribal concurrence. Due to ongoing coordination with tribal staff, this plan does not include specific recommendations for mitigation on Foster Island.

B: Art, aesthetic and landscape enhancements at Foster Island crossing

Art, aesthetic and landscape enhancements and other design features could occur within future WSDOT right of way areas. Due to ongoing coordination with tribal staff, this plan does not include specific recommendations for mitigation on Foster Island. WSDOT will continue to work with the tribes and ABGC to identify and implement appropriate aesthetic treatments for the new crossing of Foster Island.

C: WSDOT Peninsula restoration

As part of the I-5 to Medina project, WSDOT will remove the existing unused freeway ramps as well as the SR 520 on- and off-ramps in the Arboretum. WSDOT would also construct improvements as part of ramp removal and reconstruction of Lake Washington Boulevard, potentially including:

- Restoration following ramp removal.
- Restoration of wetlands on the northern portion of property.
- Rehabilitation of existing wetlands.
- Establishment of forested buffers around the restored wetland.

A portion of the WSDOT Peninsula will be graded and planted to restore and expand wetland areas. WSDOT is evaluating the possibility of transferring property from the WSDOT to the Arboretum owners as part of its mitigation for wetland and Section 4(f) effects. Should all or part of the property need to be surplused, Arboretum owners would be offered an opportunity to purchase it as a contiguous landowner.

D: North Entry

The ABGC has identified potential improvements to the Arboretum North Entry in their Arboretum Master Plan. Additional project scoping is needed to identify and prioritize project elements.

E: Arboretum Creek wetland improvements

The Arboretum Master Plan describes a variety of modifications to Arboretum Creek that could enhance the creek's natural appearance and ecological function. WSDOT proposes to:

- Restore the forest through buffer enhancement and conifer planting at the mouth of Arboretum Creek.
- Convert piped sections of the stream to natural open channel and remove/reconfigure the parking lots to restore the stream channel and riparian forest.
- Add stream bends and wood habitat structures at north end of Arboretum creek and excavate the middle section of the creek to establish wetland hydrology along the creek margins.
- Rebuild creek bed and restore riparian zone.

F: Azalea Way Pond

Improvements to the Azalea Way Pond have also been described in the Arboretum Master Plan. WSDOT proposes to:

- Restore hillside seep wetland above pond and revegetate.
- Remove pipe drain and restore an open channel from the pond to Arboretum Creek.

G: Develop multi-use trail

The ABGC has also identified potential improvements to a multi-use trail in their Arboretum Master Plan. Additional project scoping is needed to identify and prioritize project elements.

Other: Implementation of Interpretive and Wayfinding Plan

In areas being improved as part of the I-5 to Medina project, WSDOT would implement (or fund the implementation of) signage and other measures consistent with the Arboretum's Interpretive and Wayfinding Plan. The 2004 Interpretive and Wayfinding Plan guides development of a consistent wayfinding system throughout the Arboretum and application of Arboretum-wide interpretive messages.

Other: Noise reduction

Noise reduction measures are included as part of the preferred alternative for the I-5 to Medina project. The preferred alternative is an elevated structure that includes a 4-foot-high traffic barrier with noise absorptive material. This barrier, in conjunction with the higher roadway profile, is predicted to reduce noise levels on Foster Island.

WSDOT also plans to construct the SR 520 road surface using quieter concrete. WSDOT cannot guarantee specific noise reduction amounts or acoustic longevity of the noise performance until quieter concrete pavement has been tested and implemented in Washington. However, WSDOT recognizes the benefits that quieter concrete may provide based on tests performed in other states and therefore plans to implement quieter concrete pavement as part of the project and monitor the effectiveness.

Other: Support for traffic calming implementation

The I-5 to Medina project preferred alternative will enhance non-motorized mobility and connections to the Arboretum, thereby resulting in increased Arboretum use by pedestrians and bicyclists. Over the long term, traffic calming measures would reduce traffic speeds, potentially contributing to increased pedestrian and bicyclist safety in the Arboretum.

WSDOT plans to contribute $200,000 to traffic calming measures that SDOT can implement as early as 2011. Implementing these measures in advance of I-5 to Medina project construction could offset some of the temporary effects to pedestrian and vehicle mobility during construction.

Through ongoing coordination with SDOT, the following potential pedestrian safety and traffic calming improvements are recommended:

- Marked crosswalks on Lake Washington Boulevard to provide visibility at areas frequently used by pedestrians.
- Radar speed signs to educate drivers and reduce speeds through the Arboretum.
- Raised crosswalks to reduce vehicle speeds and improve pedestrian visibility.
- Speed cushions to reduce vehicle speeds.
- Landscaped curb bulbs to reduce vehicle speeds, increase pedestrian safety, and provide a connection to Arboretum character.
- Sign improvements to improve clarity and direct traffic to arterial streets.

Appendix E provides additional information about SDOT's recommended traffic calming measures as well as information about additional ABGC-requested measures (e.g., pedestrian-activated signals).

Other: Support for traffic management evaluation

Although the I-5 to Medina project would reduce traffic volumes on Lake Washington Boulevard compared to a no action alternative, projected traffic is expected to be higher than existing levels. The additional traffic by the year 2030 would occur as a result of projected regional growth in population and employment that is independent from the project.

Through ongoing coordination with the ABGC and WSDOT, SDOT has recommended further evaluation of the following potential traffic management measures:

- Signing improvements to direct SR 520-related traffic to the Montlake interchange on routes other than Lake Washington Boulevard.
- Traffic signal modifications to discourage traffic from routing through the Arboretum.
- Traffic calming treatments to slow traffic and create a safer environment for pedestrians and bicyclists within the Arboretum (see Appendix E).
- Turn restrictions to direct SR 520-related traffic away from the Arboretum during off-peak times.

Trail improvements would provide additional recreation areas and connectivity to existing trails. Photo courtesy of the Arboretum Foundation/Joy Spurr.

- Traffic restrictions to discourage traffic from SR 520 from using the Arboretum.
- Tolling of Lake Washington Boulevard through the Arboretum to discourage traffic from accessing SR 520 via the Arboretum.

WSDOT will continue coordinating with SDOT and the ABGC to further evaluate traffic management measures that could benefit SR 520 operations and the Arboretum experience. Appendix F provides additional information about SDOT's recommended traffic management measures for evaluation.

Other: Washington Park Arboretum Enhancement Fund

As part of the mitigation for the SR 520 construction project, a fund could be created for the benefit of the Arboretum. In recognition that Arboretum project funding and priorities may change, the purpose of the fund would be to provide mitigation monies for the enhancement of the Arboretum. Monies from the fund would be used for capital projects at the Arboretum (as it currently exists or as it may be expanded) and for stewardship of new projects. Priority would be given to projects in the following order: (1) to provide any additional funding needed for mitigation projects identified in the Arboretum Mitigation Plan for WSDOT funding, and (2) to other projects specified in the 2001 Arboretum Master Plan.

Contributions may be made to the fund in the event that a specific mitigation project committed to by WSDOT for the benefit of the Arboretum is unable to be accomplished or cannot be accomplished at a cost within the funds available for the project.

The leaves change colors during fall in the Arboretum. Courtesy of the Arboretum Foundation/Joy Spurr.

Next steps and future coordination

With the SR 520 program 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. WSDOT has not yet secured funding for construction of the west approach, which is the area that would primarily affect the Arboretum and would include Arboretum mitigation.

Publishing the final EIS for the I-5 to Medina project in spring 2011 and obtaining the Record of Decision (ROD) from FHWA will memoralize mitigation measures. WSDOT can then move forward with construction permits and ultimately construction of the floating bridge, which has funding secured. WSDOT will continue to work with the Washington State Legislature and the Governor's office to secure additional funding for the I-5 to Medina project.

How will identified mitigation projects be funded and implemented?

WSDOT generally implements mitigation concurrently with the effects that necessitate it. For Arboretum mitigation, WSDOT plans to primarily implement the recommended mitigation projects when the associated effect occurs. In addition to satisfying regulatory requirements, funding for mitigation will be available on the same timeline as funding for project construction. With WSDOT's funding and continued coordination, SDOT will be able to implement some traffic calming measures as early as 2011.

However, before mitigation project funding and implementation can begin, WSDOT will continue to work with the ABGC to develop scopes of work and estimated costs for the recommended projects. This will allow WSDOT to allocate funding for mitigation projects with a higher degree of certainty and also allow the ABGC to integrate the proposed projects into ongoing implementation of the Arboretum Master Plan.

Water lilies beneath the existing SR 520 ramps. The ramps will be removed as part of the I-5 to Medina project.

WSDOT and the ABGC are working together to develop a Memorandum of Understanding, which will identify the roles and responsibilities of each party involved in scoping and implementing Arboretum mitigation projects. WSDOT will enter into agreements as appropriate to implement these commitments. Mitigation project scoping is planned to begin in spring 2011 so that the ABGC and WSDOT can then prioritize project elements and develop an implementation schedule. Concurrence on the scopes and implementation schedule of the mitigation projects will be documented through a series of agreements between the parties involved. As described above, funding and implementation of mitigation projects will correspond with construction funding and commencement.

How will WSDOT continue coordinating with the ABGC?

WSDOT anticipates continuing to work closely with the ABGC in advance of and during project construction. This includes the following mechanisms:

- ***Mitigation plan.*** As described in the previous section, WSDOT will continue to coordinate with the ABGC to define and prioritize mitigation projects in order to clarify the overall budget and implementation responsibilities. The information is intended to be included in the final EIS.
- ***Urban design process.*** WSDOT and the ABGC, in coordination with the Seattle Design Commission, will continue to work closely on urban design concepts and related design details that fit both within WSDOT's I-5 to Medina corridor, as well as within the context of the Arboretum. This could include art, aesthetic and landscape improvements on Foster Island (pending tribal concurrence) and the Montlake lid.
- ***Ongoing planning for mitigation under Sections 4(f) and 6(f).*** WSDOT will continue to work with the Parks TWG, whose participants include the city of Seattle and the University of Washington, to define park-related mitigation measures, including the Arboretum, for inclusion in the I-5 to Medina project final EIS and ROD. The ROD serves as the FHWA and WSDOT formal commitment to implement the agreed-upon mitigation measures.
- ***Section 106.*** The Arboretum Foundation, city of Seattle, and University of Washington will continue to work with WSDOT and FHWA to describe effects to historical and cultural resources and identify mitigation measures. Mitigation in the Section 106 process could be outside of mitigation identified in the ESSB 6392 process.
- ***Fieldwork notification.*** WSDOT anticipates additional fieldwork needs in and around the Arboretum to assess existing conditions before construction begins. As is currently done, WSDOT will continue to notify the Arboretum Foundation, city of Seattle, and University of Washington in advance of any nearby fieldwork.
- ***Ongoing correspondence during construction.*** WSDOT will also continue to maintain close coordination with the Arboretum Foundation, city of Seattle, and University of Washington during construction to ensure proper notification when noisy work or other disturbances could occur. The process for correspondence during construction will be outlined through a community construction management plan.

What are WSDOT's next steps?

In addition to coordinating with the ABGC on scoping and the additional processes previously described, the following next steps were identified for WSDOT:

- ***Ensure compliance with environmental regulations.*** Most of the mitigation projects WSDOT plans to implement are subject to evaluation and approval by regulatory agencies. WSDOT will continue to work with these agencies through existing forums and the permitting process to clarify implementation and potential monitoring requirements.
- ***Facilitate coordination with tribes.*** As an extension of the ongoing Section 106 process, WSDOT will assist the ABGC in working with interested tribes to ensure that their interests are considered in the design of the Foster Island crossing and in the design and implementation of any additional improvements on Foster Island.
- ***Traffic management plan.*** SDOT will continue to work with the ABGC and WSDOT to evaluate the traffic management measures identified in Appendix F. The outcome of this evaluation will be the development of an Arboretum traffic management plan. Although the I-5 to Medina project would reduce traffic volumes on Lake Washington Boulevard in 2030 compared to no action, WSDOT will continue coordinating with SDOT and the ABGC to identify and potentially implement appropriate traffic management measures for the Arboretum.

References

BOLA Architecture + Planning and Karen Kiest. 2003. Washington Park Arboretum Historic Review. www.seattle.gov/parks/ arboretum/History.pdf. Accessed April 2009. Prepared for the city of Seattle Parks and Recreation, Seattle, Washington. September 2003.

City of Seattle. 1974. Washington Park. www.seattle.gov/PARKS/ history/ WashingtonPk.pdf. Accessed May 2009.

City of Seattle, University of Washington, and The Arboretum Foundation. 2001. Washington Park Arboretum Master Plan. January 2001. www.cityofseattle.net/ parks/arboretum/Docs/apx-a1.pdf. Accessed August 2010.

Cascade Interpretive Consulting and Lehrman Cameron Studio. 2005. Washington Park Arboretum Interpretive and Wayfinding Plan. depts. washington.edu/uwbg/docs/finaliwplan.pdf. Accessed October 2010.

Arboretum Mitigation Plan |
Appendices

Appendix A: ABGC Coordination Process

Appendix B: Meeting Summaries

Appendix C: ABGC Letter of Support

Appendix D: Seattle City Council letters (April and September 2010)

Appendix E: SDOT's Recommended Pedestrian Improvements and Traffic Calming Plan

Appendix F: SDOT's Arboretum Traffic Management Matrix

Appendix G: Washington Park Arboretum Master Plan Priorities

Appendix H: Public Comments