

Coalition for a Sustainable SR 520

Madison Park.. North Capitol Hill..Montlake.. Laurelhurst..Roanoke Park/Portage Bay..Boating community

April 15, 2010

Ms. Jenifer Young
Environmental Manager
SR 520 Program Office
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Seattle, WA 98101

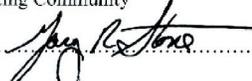
Dear Ms. Young,

The Coalition for a Sustainable SR 520 hereby submits its comments on the SDEIS for the SR 520 I-5 to Medina Project, consisting of this letter and Appendices A through Z. Most of the Appendices are on the attached CD.

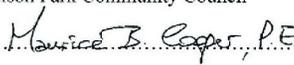
We give heartfelt thanks to the many members of the community who created this response.

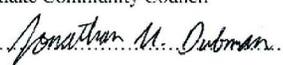


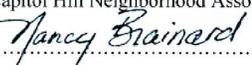
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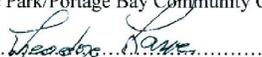
Boating Community
by 

Laurelhurst Community Council
by 

Madison Park Community Council
by 

Montlake Community Council
by 

N. Capitol Hill Neighborhood Assoc.
by 

Roanoke Park/Portage Bay Community Council
by 

Appendices

Printed and on CD

- Appendix A: Comment Letter written by David Bricklin
- Appendix B: Analysis of damage done to parks and public open space
- Appendix C: Comment Letter from Tighlman Group on traffic
- Appendix D: Letter from JGL Acoustics on noise

The following appendices are on the CD only:

- Appendix E: Current funding for SR 520 program
- Appendix F: Email on timing of EIS for pontoon project
- Appendix G: 1954 map of "Option A"
- Appendix H: Letter from Governor Gregoire to Seattle City Council
- Appendix I: Excerpt from Publicola report on Federal court decision
- Appendix J: Seattle Times Article quoting governor and Senator Tom
- Appendix K: Report of Legislative Workgroup
- Appendix M: Methodological flaws in transportation analysis
- Appendix N; Traffic simulation flaws
- Appendix O: References on traffic
- Appendix P: Generated Traffic
- Appendix Q: Capacity of 4 Lanes
- Appendix R: Ramp at I-5 SR 520 Intersection
- Appendix S: References on Traffic, Air, and Health
- Appendix T: Analysis of SDEIS assertions on air and health
- Appendix U: Comments on Health Impacts Assessment
- Appendix V: Ruling on Uses of Tolls
- Appendix W: Fish Impacts
- Appendix X: Park Commissioner' Comments
- Appendix Y: RFP Pontoon Bidding
- Appendix Z: Errors and Omissions in Cultural Resources report

This document also incorporates by reference the comment letters from the Madison Park Community Council; the Montlake Community Council; the Shelby-Hamlin Group; the Roanoke Park/Portage Bay Community Council; the Seattle Yacht Club; the Queen City Yacht Club, and the Laurelhurst Community Club.

Summary

There are nine basic problems with the state's analysis (SDEIS) for the 520 corridor from I-5 to Medina:

- C-040-001** | I) The state has improperly separated the evaluation of the I-5 to Medina segment from the pontoons segment and from the east side segment. In fact, these are interdependent parts of one project.
- C-040-002** | II) The state appears to have made a decision already, and to be going through a paper environmental review process while subverting the intent of the laws.
- C-040-003** | III) The SDEIS does not demonstrate that people and goods would move better after the construction. The methodology for estimating demand and assessing congestion is fundamentally flawed.
- C-040-004** | IV) The state is planning to take protected parkland for most of the length of 520 on the west side, destroying a unique chain of linked parks and bays. Federal law requires seeking alternatives rather than taking parkland or harming historic areas.
- C-040-005** | V) The state has not analyzed obvious alternatives which might have better results and do less damage, including a tolled, transit-priority 4 lanes which might be adequate for some years until additional funding is available, and a 6 lane alternative with 2 lanes used for light rail.
- C-040-006** | VI) The SDEIS does not correctly describe the Current Proposals. The SDEIS also does not adequately describe the current congestion in Seattle, the planned projects will increase that congestion, and the lack of space for additional cars.
- C-040-007** | VII) The SDEIS does not adequately describe the effects of this highway expansion on air pollution and human health. The state has an obligation to seek alternatives which will do less damage.
- C-040-008** | VIII) The state plans to start expanding the east side of 520 this year. The whole program is at least \$2 billion short on funding, and the state is choosing to use the available funds for an area which has no safety problems, rather than to do a safety project for which funding is available.
- C-040-009** | IX) The costs to businesses, families, and travelers are not fairly portrayed. Almost no mitigation of damages is promised. Noise reduction levels, limits on air pollution, offsets for construction damages, and lids are either ignored or presented as optional.

C-040-001

WSDOT worked closely with FHWA to ensure that the SR 520, I-5 to Medina Bridge Replacement and HOV Project, the SR 520, Medina to SR 202 Transit and HOV Project, and the Pontoon Construction Project met the FHWA criteria for consideration as independent projects. According to 23 CFR (Code of Federal Regulations) 771.111(f), the purpose of these criteria is to "to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated." See the response to Comment C-040-010 for further discussion of this regulation.

C-040-002

The identification and analysis of alternatives are crucial to the NEPA process and the goal of objective decision making. Consideration of the range of alternatives and design options proposed by WSDOT through consultation and public/agency scoping provided sufficient analysis under NEPA to produce a reasonable range of environmentally sound solutions to the transportation need. NEPA and FHWA guidance allow for agencies to identify a preferred alternative at the Draft EIS stage. The regulations of the Council on Environmental Quality include the following related to the preferred alternative, "Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference" (40 CFR 1502.14(e)).

Even though NEPA and FHWA guidance allow for agencies to identify an alternative preference at the Draft EIS stage, WSDOT considered the information from the Draft EIS and SDEIS, public and agency comments and input from the Washington State Legislature, Sound Transit, and other groups and organizations before identifying a preferred alternative. The decision-making process for this project has lasted over 10 years and has incorporated extensive participation from stakeholder groups,

Comments

C-040-010

I) The SDEIS errs in breaking the environmental analysis of the 520 Program (from I-5 to Redmond) into segments.

Section I) A)

A) There are four components of the SR 520 Program; three of these are segments of the same construction project .

- 1) WSDOT 520 website: "there are four projects in the SR 520 Bridge Replacement and HOV Program:
[I-5 to Medina: Bridge Replacement and HOV Project](#) (hereafter I-5 TO MEDINA PROJECT)

[Medina to SR 202: Eastside Transit and HOV Project](#) (hereafter East Side Project)

[Pontoon Construction Project](#) (hereafter Pontoon Project)

[Lake Washington Congestion Management Project](#)
<http://www.wsdot.wa.gov/projects/SR520Bridge/>
- 2) The first three of these projects are large construction projects. WSDOT is doing separate environmental analyses on each of them. However, these are interdependent segments of the same project, see (B) below.
- 3) The fourth project, Lake Washington Congestion Management Project, consists of early tolling; active traffic management (electronic signage) and travel time signs. This project can be carried on independent of the other three and does not need to be covered in the same analysis.

Section I)B)

B) The SDEIS for the I-5 TO MEDINA PROJECT does not include necessary analysis of the East Side and the Pontoon Projects.

[http://www.wsdot.wa.gov/Projects/SR520Br 1](http://www.wsdot.wa.gov/Projects/SR520Br1)

- 1) The East side project is literally a continuation of the I-5 TO MEDINA PROJECT described in the DEIS, adding lanes.

C-040-011

including the communities that form the Coalition. The responses to later comments in this letter provide further information on project decision-making.

C-040-003

The transportation analysis conducted for the SDEIS and the assumptions used were consistent with industry standards, NEPA requirements, the regional planning process, and FHWA traffic analysis guidelines for evaluating and comparing existing and future transportation project alternatives. The analysis showed that the project's purpose of improving the movement of people and goods on SR 520 would be satisfied by the 6-Lane Alternative. The transportation analysis in Section 5.1 of the SDEIS (pages 5-1 through 5-32) described the future (2030) vehicle and person demand projected for the corridor and determined how much of that demand can be met with the 6-Lane Alternative in comparison to the No Build Alternative. It also addressed freeway congestion and travel times for both eastbound and westbound general-purpose and HOV traffic. Results of the analysis indicated that the 6-Lane Alternative would serve more vehicle and person trips than the No Build Alternative and that travel times for both general-purpose and HOV trips would be reduced. Thus, the 6-Lane Alternative would improve mobility for people and goods compared to the No Build Alternative.

Since the SDEIS was published, FHWA and WSDOT have identified a Preferred Alternative that is similar to Option A, but refines the design to improve future traffic operations in the corridor and minimize potential effects. Because of this, the transportation analysis has been updated in the Final EIS to reflect more current assumptions. The results continue to indicate that the Preferred Alternative would improve mobility over the No Build Alternative. Please see Chapters 5 and 6 of the Final Transportation Discipline Report in Attachment 7 to the Final EIS. The responses to later comments in this letter provide further explanation

C-040-011



- 2) The Pontoon project creates the flotation devices which support the 520 floating bridge described in the I-5 TO MEDINA PROJECT.
- 3) **The three projects are functionally inseparable.** To cross Lake Washington on SR 520, one must travel from the area covered by the SDEIS to the area covered by the East side project, and the roadway on which one travels is supported by the pontoons.

Section 1)B) cont'd

- 4) **The three projects have intertwined and interdependent purposes.**
 - a) "The purpose of the SR 520, I-5 to Medina Bridge Replacement and HOV Project is to improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond in a manner that is safe, reliable, and cost-effective, while avoiding, minimizing and/or mitigating impacts on affected neighborhoods and the environment." *SDEIS Chapter 1, page 3*
 - b) Eastside: "The purpose of this project is to enhance travel time reliability, mobility, access, and safety for transit and carpools in the rapidly growing areas along the SR 520 corridor east of Lake Washington." *520 Medina to SR 202: Eastside Transit and HOV project Environmental Assessment. Chapter 2, page 1*
 - c) "Pontoons are the foundation of a floating bridge and can take several years to construct. They are large, hollow concrete structures designed to support the weight of the road, plus the cars, trucks and buses that use

about how the methodology for estimating demand and assessing congestion complies with applicable regulations and guidelines.

C-040-004

Section 4(f) of the Department of Transportation Act of 1966 states that an agency can approve a transportation project that uses Section 4(f) lands if the determination has been made that there is no feasible or prudent alternative to using that property and if all possible planning has been conducted to minimize harm to Section 4(f) properties (23 CFR 774). A Section 4(f) property is "...publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance." (23 CFR 774.17)

Over the past decade, WSDOT has investigated a number of alternatives for the SR 520, I-5 to Medina project, ranging in design from an 8-lane alternative to a 4-lane alternative. Of the alternatives considered, only the No-Build Alternative would avoid the use of Section 4(f) properties. The 4-Lane Alternative had less use of Section 4(f) properties than the 6-Lane Alternative options studied in the Draft EIS or the SDEIS, but it did not satisfy the project purpose of improving the movement of people and goods on SR 520. In 2010, responding to public comment regarding a transit-optimized 4-lane alternative or a 4-lane alternative with congestion management, WSDOT performed additional traffic analyses and confirmed that these concepts also would not satisfy the project purpose and need. The results of these analyses are documented in Section 2.4 of the Final EIS.

Because the alternative that would avoid a Section 4(f) use fails to satisfy the project purpose and need, WSDOT determined that there is no feasible or prudent alternative to using the land from several Section 4(f) properties. Consequently, WSDOT has continued to evaluate 6-lane designs that minimize use of Section 4(f) properties. With the Preferred

C-040-012

final analysis concludes that a narrow 6 lanes is best, the existence of the additional lanes on the east side project would put pressure to design to accommodate them.

- 3) If the west side were constructed as currently proposed (Option A or variations), it could not add light rail in the future. See Nelson Nygaard report on light rail alternatives, April 2010, incorporated here by reference. This is contrary to the legislative intent, and precludes an important option.
- 4) The pontoons as discussed in the SDEIS would not support light rail, but light rail is an active possibility for the I-5 TO MEDINA PROJECT. Additional pontoons would be needed, and they would change the size and environmental impact from that described in the SDEIS.
- 5) The pontoons determine the size and structure of the bridge superstructure described in the SDEIS for the I-5 TO MEDINA PROJECT. Constructing the pontoons as currently designed would preclude a smaller lower bridge over lake Washington.

Section I)D)

C-040-013

D) Because the state does not have enough funding for the full 520 program, construction of any one segment would limit the design options of the other segments.

- a) The state funded the 520 program as a whole, another indication that the projects form one whole.
 - (i) In 2009, ESSB 2211 Sec 8 says "for all projects in the state route number 520 corridor program, the legislature intends that the total cost will be no more than \$4.65 billion".
 - (ii) In 2009, ESSB 2211 then appropriates funds for "the replacement of the floating bridge and necessary landings" which is one piece of the I-5 TO MEDINA PROJECT, one of the three construction projects. This limited piece of a project not correspond to any definition of project.
 - (iii) In 2010, ESSB 6392 removes the limitation of floating bridge and necessary landings, and says bonds may be issued for the "state route number 520 bridge replacement and HOV program", once more treating the program as a whole.
 - (iv) In 2009, ESSB 1272 authorizes issuing \$1.95 billion general obligation bonds for the "state route number 520 corridor projects"

any 4-lane option, particularly for users of transit and carpools. Chapter 5 of the Final EIS and the Transportation Discipline Report (Attachment 7) provide additional information.

Since the Trans-Lake Washington Project alternatives analysis determined in 2003 that light rail would not be an initial component of the SR 520 corridor, WSDOT has worked with Sound Transit to design the corridor for future rail compatibility. An April 2010 report prepared for the Seattle Mayor's Office identified several changes to the SDEIS options that were believed to be necessary to "meet the mayor's goal of an SR 520 bridge that is readily convertible to rail." Although WSDOT believed that the design had already achieved this goal, it continued to work with the City of Seattle and Sound Transit to identify changes that would enhance the corridor's rail compatibility. The Preferred Alternative reflects these design changes and is compatible with two future rail options:

- **Option 1:** Convert the HOV/transit lanes to light rail. This approach would accommodate light rail by converting the HOV lanes to exclusive rail use. Trains would use the direct-access ramps at Montlake Boulevard to exit, or they could use a 40-foot gap between the northbound and southbound lanes of the west approach to make a more direct connection to the University Link station at Husky Stadium.
- **Option 2:** Add light-rail-only lanes. This approach could provide several connections—via a high bridge, a drawbridge, or a tunnel, as suggested in the Nelson/Nygaard report—to the University Link station.

Both approaches would require supplemental floating bridge pontoons to support the additional weight of light rail if the regional decision to implement light rail were made and funded. Such a decision would need to be planned and programmed by regional land use and transit

C-040-013

b) Current estimates of shortfall in funding for the full 520 program are at least \$2 billion of the \$4.6 billion total.
<http://www.wsdot.wa.gov/Projects/SR520Bridge/financing.htm>

State funding			\$0.55 B
Transportation Partnership Account		\$0.50 B	
Nickel Package		\$0.05 B	
SR 520 Account (tolling and future federal funding)			\$1.60 B
Federal funds			\$0.22 B
Total funding			\$2.37 B
Program cost			\$4.65 B
Less sales tax deferral		\$0.30 B	
Program cost after sales tax deferral			\$4.35 B
Total unfunded need			\$1.98 B

- (i) Unless additional funding is found, construction of any one segment will limit the ability to construct the others.
- (ii) If the east side is constructed, there may not be funds to construct the safety-threatened bridge and west side.
- (iii) If the east side is constructed, there may not be sufficient funding for the west side. The design may be changed, and the mitigation features reduced.
- (iv) The most likely source of additional funding is to add tolls to the I-90 corridor; but there are legal and political obstacles to that action, and the results are unknowable.
- (v) Even with tolls on I-90, the funding would be insufficient. Appendix E, Legislative Workgroup Nov. 2009 Additional taxes would be needed, and the willingness of citizens to vote for them is unknown.

agencies, funded by a public vote, and evaluated in its own environmental analysis.

Please see the responses to comments C-040-043 through C-040-051 for a discussion of additional issues related to the range of alternatives.

C-040-006

The SDEIS fully describes the alternatives and options evaluated in Chapter 2 and the Description of Alternatives Discipline Report (Attachment 7 to the SDEIS). Chapter 5 and the Transportation Discipline Report (Attachment 7 to the SDEIS) address existing and future traffic congestion, along with future foreseeable projects that might contribute to congestion increases, in accordance with adopted regional and local transportation and land use plans under the state's Growth Management Act. Please see the responses to comments C-040-052 through C-040-064.

C-040-007

The SDEIS addressed air quality effects by conducting analyses to test compliance with adopted air quality standards. The analyses used methodology accepted by the U.S. Environmental Protection Agency and the Puget Sound Clean Air Agency, the local agency with jurisdiction over Clean Air Act requirements. Compared to No Build, the Preferred Alternative and all of the SDEIS design options would reduce emissions of "criteria" pollutants regulated by the Clean Air Act, as well as emissions of mobile source air toxics and emissions of greenhouse gases. The project would comply with all current air quality standards. Since the project would result in a net benefit compared to the No Build Alternative, WSDOT has no "obligation to seek alternatives which will do less damage." Please see the responses to comments C-040-065 through C-040-074.

Section I)E)

C-040-014

E) **The timing of the environmental reviews makes it impossible to assess the impact on the human environment of the whole program.**

- 1) The east side environmental analysis was published in December 2009 and the comment period ended on January 7, 2010.
<http://www.wsdot.wa.gov/Projects/SR520Bridge/EastsideEA.htm>
- 2) The EIS for the pontoon project is expected to be published in May 2010, after the comment period for the I-5 TO MEDINA PROJECT SDEIS is closed. [Appendix F]
- 3) The SDEIS for the I-5 TO MEDINA PROJECT was published on January 22, after the comment period for the eastside ended, and its comment period runs until April 15, before the EIS for the pontoon project will be published.
<http://www.wsdot.wa.gov/Projects/SR520Bridge/SDEIS.htm>

Section I)F)

C-040-015

F) **There appear to be significant conflicts of designs shown in the segments, so that it is currently impossible to know what will be built.**

- 1) Documents differ on the number of lanes and their purposes.
 - a) RCW 47.01.408 says the bridge shall be designed for 6 total lanes, with 2 lanes that are for transit and high-occupancy vehicle travel and 4 general purpose lanes.

Citizens have been told on numerous occasions, including at a mediation meeting, that 6 means 6; that is, that light rail and bus will be on lanes 5 and 6 and there will be no lanes 7 and 8.[find 6 = 6 document!]
 - b) The bidding documents for the pontoon project show additional lanes (ie lanes 7 and 8) with light rail in the future. The SDEIS for the I-5 TO MEDINA PROJECT does not show or discuss light rail on the bridge or on the west side. The east side environmental analysis (incorporated by reference) does not show or discuss light rail. Lanes 5 and 6 can be built to support light rail; but if they are not designed now for that, it will be impossible to add light rail in the future without rebuilding the structures.
- 2) Current documents show busses and HOV on one lane on the east side and the bridge; but except for a ramp, there is no bus/HOV lane on the west side. This precludes meaningful bus rapid transit.

C-040-008

The state has allocated full funding for replacement of the vulnerable floating bridge. Responses to comments C-040-013 and C-040-075 address specific topics related to project funding and prioritization.

C-040-009

The estimated costs for natural environment and built mitigation have always been included in program-level cost estimating. In accordance with applicable regulations, including NEPA, SEPA, Section 4(f), Section 106, the Endangered Species Act, the Clean Water Act, the Clean Air Act, and many others, FHWA and WSDOT have included avoidance, minimization, and mitigation as integral elements of project development and the NEPA process. With regard to the topics noted in the comment, the Preferred Alternative would reduce noise and air pollution compared to No Build and includes lids at Montlake and 10th and Delmar.

The SDEIS noted (see page 1-44) that additional work would take place to further define mitigation measures after a Preferred Alternative had been identified. Since publication of that document, specific mitigation measures have been developed through a number of venues, including, but not limited to the Regulatory Agency Coordination process, technical working groups, community construction management planning, and the Section 106 consulting party process. Mitigation commitments are presented in the Final EIS and will be memorialized in the project's Record of Decision. Please see more specific discussions of mitigation in response to subsequent comments in this letter.

C-040-010

WSDOT worked closely with FHWA to ensure that the each project in the SR 520 program met the FHWA criteria for consideration as an independent action under NEPA. WSDOT and FHWA are satisfied that this requirement has been met. Information on the logical termini and independent utility of each project was provided on pages 1-35 through

C-040-015

- 3) The Nelson Nygaard report (April 2010) indicates that the current design of the west side landing precludes light rail in the future.
- 4) We have been told that an emergency project to produce pontoons in case of failure is underway, but no information is divulged regarding the size, location, or impact of this project. It may be covered in the EIS expected in May, after the comment period for this SDEIS is closed.
- G) Evergreen Point is not a logical terminus on the east side. Virtually all the 520 traffic at Evergreen Point continues east on 520. See Appendix C, letter from David Bricklin.

C-040-016

II) The state appears to have made a decision already, and to be going through a paper environmental review process while subverting the intent of the laws (NEPA and SEPA).

Section II) A)

- A) The pre-ordained result is 6 or more traffic lanes, car-centric, across the lake and on the east side, with option A+ (perhaps with minor variations) on the west side. (hereafter Current Proposals)**
- 1) The state has been pushing small variations on this design for years. Each of the state-run processes... the TransLake Study, the Mediation, the Legislative Workgroup... has inched closer to it. Participants in each of these groups urged further study of specific alternatives but were ignored.
 - 2) Although all parties agree that in 1963 the highway should not have been put through an area of intense recreational use and unique environment, the state has not presented the preservation of the remaining natural area as a weighty element for any of these groups or the SDEIS . See section IV below.
 - 3) In the EIS of 2006, the state promoted a version of this plan called "Base 6". This was defeated by voters.
 - 4) In 2007, the state (ESSB 6099) defined the expected result and the task of the mediation group as a 6 lane highway with 2 HOV/transit lanes, and 4 general purpose lanes. This law is an attempt to pre-determine results before alternatives were fully considered.
 - 5) In 2009, Mediation participants were given the definition above and not allowed to introduce alternative solutions.

1-37 of the SDEIS. Please refer to the discussions of specific topics under the responses to the following comments.

Section 23 CFR Part 771, entitled "Environmental Impact and Related Procedures," sets forth FHWA's responsibilities under NEPA. The regulations regarding how project actions are to be defined are in described in 23 CFR 111(f). In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each EIS or finding of no significant impact (FONSI) shall:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

The discussion below provides a summary of how the three infrastructure projects in the SR 520 program meet these criteria. (Since the comment acknowledges the independence of the Lake Washington Congestion Management Project, it is not addressed further in this response.) More information can be found in each project's environmental documentation:

- Medina to SR 202: Eastside Transit and HOV Project, Final Environmental Assessment and Finding of No Significant Impact, May 2010, WSDOT/FHWA:
http://www.wsdot.wa.gov/NR/rdonlyres/5C1514B7-14C9-46D0-9AAE-40CF3F6FFBBE/0/0510EA_TOC_May2010.pdf.
- SR 520-Pontoon Construction Project, Final Environmental Impact

C-040-016

- 6) Indeed, the currently preferred alternative was conceived in 1954 and has not advanced much since then See Appendix G.

Section II) B)

C-040-017

B) The public is being asked to comment on the SDEIS by April 15, 2010, even though many critical elements of the proposal are not yet known, so the public can not make effective comments.

- 1) The pontoon project is not yet published;
- 2) The "Cultural Resources" section which is crucial for the west side is not updated. The overall impact on the historic districts is not laid out.
- 3) The construction plans are not laid adequately out so that the public could assess their impacts;
- 4) The whole chain of linked parks and opens spaces along the west side has not been depicted and is not known to the public;
- 5) And Option A+, which is likely to be chosen, is not laid out in enough detail, see specifics below.

C-040-018

C) The Current Proposals were in fact chosen as the preferred design before the SDEIS was published, although the most senior leaders of the program have avoided saying so.

Section II) C)

- 1) The media have frequently reported the recommendation of the legislative workgroup in December 2009 as a decision, without any contradiction from state leaders.
- 2) In her letter to the city council, the governor indicates that only small changes will be accepted, and those must be made quickly. Appendix H
- 3) The governor and Sen. Rodney Tom, who was a member of the Legislative workgroup and is a leader in attempting to get 520 expanded, are quoted in media as opposing efforts to rethink the bridge... before the comment period ended. . Appendix L.
- 4) The state plans to proceed rapidly to construction of the east side segment of the Current Proposal before the other segments are finalized.
 - (i) The environmental assessment was published December 2009;

Statement, December 2010, WSDOT/FHWA:

<http://www.wsdot.wa.gov/Projects/SR520/Pontoons/eis.htm>.

- SR 520 Variable Tolling Project, Environmental Assessment and Finding of No Significant Impact, March 2009, WSDOT/FHWA: <http://www.wsdot.wa.gov/NR/rdonlyres/4427620F-9F8F-42A4-953D-01C65ED717AA/0/1ExecutiveSummary.pdf>.

SR 520, Medina to SR 202 Eastside Transit and HOV Improvements Project

The purpose of the SR 520, Medina to SR 202 Eastside Transit and HOV Improvements Project is to enhance travel time reliability, mobility, access, and safety for the rapidly growing areas along the SR 520 corridor east of Lake Washington. WSDOT began developing this project separately from the Westside project in 2008, in response to changes in Eastside transportation needs since the 2000 Notice of Intent for the SR 520 corridor (WSDOT correspondence with FHWA, June 2008).

- Connecting logical termini: The project extends from the Evergreen Point Road transit station in Medina to the SR 520/SR 202 interchange in Redmond. Its limits encompass the entire Eastside SR 520 corridor, which serves the urban centers of Bellevue, Kirkland, and Redmond and the rapidly growing areas of East King County. The Evergreen Point Road transit stop is a major local and regional transit transfer point on the Eastside, and is the primary transfer point for people changing from local and regional north-south bus routes to the regional east-west service that operates on SR 520. The stop is used by 23 bus routes that serve the cities and towns north and south of SR 520 as well as destinations as distant as Totem Lake, Issaquah, and Renton. This makes it one of the key transit interface points on the Eastside, facilitating trips between Eastside cities and employment centers as well as across Lake Washington.

C-040-018

- (ii) ESSB 6392 in March 2010 changed the use of the appropriated funding, from floating bridge only to anywhere on the project, with legislators saying the intent was to start the east side.
- (iii) A "Finding of no Significant Impact" is expected April 2010 <http://www.wsdot.wa.gov/Projects/SR520Bridge/eastsideenviro.htm>
- (iv) Permits for the east side project are expected to be received around May 2010; (P8 presentation to legislative workgroup 7/29/09)
- (v) Construction of the east side project is expected to start around June 2010. (P8 presentation to legislative workgroup 7/29/09)

Section II) D)

C-040-019

- D) The state has continued to press toward its Current Proposals even though the state does not have funding , rather than evaluate alternatives which could be done with foreseeably available funding.**
- Speaker Frank Chopp and Rep. Jamie Pederson in their minority report to the legislative workgroup say " Absent a commitment to engage in genuine discussion for a more viable option, we recommend that the Washington State Department of Transportation (WSDOT) address the immediate safety concerns on the existing bridge and work with the affected neighborhood communities and the City of Seattle to find a long term solution that better serves the region. "P 5 Report of Legislative Workgroup.
- 1) The state plans to start construction of the east side in a few months even though funding for the full program is not available, and design of the full program is incomplete so real total costs can not be known.

C-040-020

- E) The state has used arbitrary deadlines to cut off analysis of alternatives.**
- Section II) E)**
- 1) In 2008, the governor directed that the program be accelerated so that the new bridge could be open in 2014. This deadline was arbitrary. Safety fixes could have been done quickly and could still be done separate from expanding the highway.
 - 2) The 2009 mediation process was cut off with an arbitrary deadline for reporting to the legislature. WSDOT insisted on including Alternative L, which no participant wanted at the time, and on not including an Improved-4-Lane alternative or more intensive study of transit, which many participants wanted and would have insisted on in subsequent meetings.
 - 3) When the mediation process was cut off, one of the design options was a tunnel called "Alternative K". Mediation participants wanted to study a type of tunnel called an "immersed tube tunnel" Many months later, they learned that WSDOT

- Independent utility: The project will create a complete and continuous transit and HOV system on the Eastside portion of SR 520 to support planned economic expansion and population growth in the Eastside cities of Bellevue, Redmond, and Kirkland. It would provide travel time benefits to transit and HOVs, support regional planning policies promoting increased transit and HOV use, and enhance public safety by widening shoulders and eliminating existing weaving merge patterns. All of these benefits will be realized, and the project will be fully functional on its own, regardless of whether the SR 520, I-5 to Medina project is built.
- Not restricting consideration of alternatives: The Eastside project has been designed either to blend with the existing configuration of the floating bridge or to merge into a new 6-lane bridge. The single HOV lane on SR 520 west of I-405 currently ends at the east approach to the Evergreen Point Bridge. If No Build or a 4-lane alternative were chosen for the SR 520, I-5 to Medina project, the merge point created by the end of the HOV lane would simply remain as it is today. Since the design of a new 6-lane floating bridge would be the same regardless of the Seattle interchange design, the Eastside project is also compatible with any 6-lane design option. Although light rail is not currently planned or proposed in the SR 520 corridor, design of the Eastside project is compatible with the potential addition of rail by other agencies at some point in the future.

SR 520 Pontoon Construction Project

The purpose of the SR 520 Pontoon Construction project is to (1) expedite the construction of the pontoons needed to replace the existing traffic capacity of the Evergreen Point Bridge if a catastrophic failure occurs, and (2) store these pontoons in case they are needed for catastrophic failure response or until they are incorporated into the proposed SR 520, I-5 to Medina Bridge Replacement and HOV Project.

was studying only a much more expensive method called “Sequential Excavation”. Because this more expensive method did not work well, months later WSDOT agreed to look at the immersed tube tunnel, now called “Option M”; but then analysis of Option M was stopped as soon as the legislative workgroup made its recommendation. The date cutoffs have been critical to eliminating alternatives without serious study.

- 4) The 2009 legislative workgroup was instructed to recommend a design alternative by the end of 2009, far before the engineering was far enough along to solve important problems, or establish reasonable cost ranges.
- 5) In turn, one of the reasons given by the legislative workgroup for not finishing the development of Option M was that it would delay the schedule. Appendix K <http://www.wsdot.wa.gov/partners/sr520legislativeworkgroup/files/finalreport/RecommendationsRpt.pdf>
- 6) The arbitrary deadline for the SDEIS means that “live” options for the west side were not analyzed, while obsolete options are.
 - a) The SDEIS discusses three design options for the west side:
 - (i) Option A, which simply expands the existing footprint while adding a second drawbridge over the Montlake Cut. (SDEIS page 2-6)
 - (ii) Option K, which moves the interchange west, uses a tunnel under the Montlake Cut, and keeps the footprint narrower going towards I-5.
 - (iii) Option L, whose footprint is similar to Option K, but which uses a second drawbridge going at a long diagonal over than Montlake Cut.
 - b) All of these options were obsolete at the time the SDEIS was published.
 - (i) For months before the SDEIS was published, all parties knew that Option A did not work for traffic mobility. Putting that option in the SDEIS gives the appearance of considering options without the reality.
 - (ii) “Option A+” is Option A plus its suboptions. It is part of the Current Proposals. However, the SDEIS analysis mentions it only in passing and fails to analyze its overall impact, see YY below.
 - (iii) For months before the SDEIS was published, all parties knew that Option K had been discarded in favor of Option M. As with Option A, its inclusion in the SDEIS simply gives the appearance of considering options without the reality.
 - (iv) Option M is not included in the SDEIS because WSDOT dropped it when the legislative subgroup decided to recommend the Current

Pontoon construction was not evaluated as part of the 2006 SR 520 Bridge Replacement and HOV Project Draft EIS; rather, that document stated that the site for building pontoons would be evaluated through a separate environmental process.

- Connecting logical termini: Since pontoon construction is not a linear project, the concept of logical termini is not applicable. However, the project covers all facilities and activities required to build pontoons and moor them until they are needed for catastrophic failure or project construction.
- Independent utility: The work done to develop the SR 520 Catastrophic Failure Plan (WSDOT, July 2008) identified the urgency of planning for replacement of the Evergreen Point Bridge should it be partly or completely destroyed in a severe windstorm. The plan identified the regional consequences of potential loss of the bridge in terms of traffic congestion and resulting economic effects. Given the high likelihood of the bridge becoming unusable in the next 20 years, the Pontoon Construction Project will ensure that pontoons—the longest lead time item for reconstruction—are on hand to replace the existing capacity of the bridge should failure occur.
- Not restricting consideration of alternatives: As described in its purpose statement, the Pontoon Construction Project is expressly intended to replace only the existing 4-lane capacity of the bridge. Therefore, it does not presuppose the choice of a 6-lane alternative before a decision is made on the SR 520, I-5 to Medina project. However, the pontoon design is modular, allowing for a 6-lane bridge to be built with the addition of supplemental stability pontoons. Construction of the additional supplemental stability pontoons to support a 6-lane bridge is covered in the SR 520, I-5 to Medina Bridge Replacement and HOV Project EIS. The floating bridge design does not vary among the alternatives and options for the SR 520, I-5 to Medina project; any new 4-lane or 6-lane floating

C-040-020

Proposals. The development of this option might have led to a real west side alternative to the Current Proposals.

- (v) For months before the SDEIS was published, all parties knew that Option L was not practical. Its inclusion in the SDEIS gives the appearance of analysis of alternatives without the reality.

Section II) F)

C-040-021

F) The SDEIS has minimized attention to legislative directives that do not lead to the Current Proposals, and put heavy weight on directives that do lead there.

- 1) These laws include ESHB 1272; ESHB 2211; ESHB 2878; ESSB 5352 ESSB 6099; ESSB 6392.
- 2) State law shows an intent for a 6 lane total(RCW 47.01.408), and WSDOT used this to preclude any analysis of less than 6 lanes. However, the Current Proposals have more than 6 lanes on almost all of the west side, and could be striped for additional lanes.
- 3) State law requires effective transit connections from SR 520 at the University of Washington light rail station (RCW 47.01.408), but the current proposals do not achieve that. Light rail passengers would have to walk about 1200 feet across a busy street to catch their bus.
- 4) State law requires both HOV and transit (same RCW), but virtually all WSDOT communications and analyses emphasize HOV rather than transit. SDEIS CH 2-2 in describing the 6 lane alternative emphasizes HOV and does not mention bus or rail.
- 5) State law requires that the bridge be designed to accommodate light rail, but the SDEIS does not analyze the impacts of a light rail system on the design, on demand, on congestion, or on avoidance of harm to 4f-protected properties.
- 6) Legislative intent of minimizing footprint is ignored. The Current Proposals have wide shoulders and wide footprint.
 - a) ESSB 6099 states as a legislative goal: " Minimize the total footprint and width of the bridge, and seek appropriate federal design variances to safety and mobility standards, while complying with other federal laws";

Section II) G)

bridge would have the same configuration across the lake, independent of design variations in other geographic areas of that project.

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

The purpose of the SR 520, I-5 to Medina Bridge Replacement and HOV Project is to improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond in a manner that is safe, reliable, and cost-effective, while avoiding, minimizing, and/or mitigating impacts on affected neighborhoods and the environment.

- Connecting logical termini: I-5 is a major system interchange and the western terminus of SR 520. Evergreen Point Road in Medina, in addition to being the western terminus of the SR 520, Medina to SR 202 project, is at the eastern landing of the Evergreen Point Bridge. Improving safety by replacing this vulnerable structure is one of the primary purposes of the SR 520, I-5 to Medina project. Although the project termini have changed since the Draft EIS, freeway operations are still assessed from I-5 to SR 202 because of the highway's importance as a regional facility. (The Eastside project also evaluated freeway operations from I-5 to SR 202.)
- Independent utility: The SR 520, I-5 to Medina project would provide safety benefits by replacing vulnerable structures in the corridor. It would also provide mobility benefits by adding an HOV lane that would reduce travel time and increase reliability for buses and carpools. These benefits would be realized regardless of whether other improvements occurred in the corridor.
- Not restricting consideration of alternatives: The Eastside project and the Pontoon Construction Project have both completed their environmental review under NEPA. As stated in the SDEIS, the SR 520, I-5 to Medina project assumed completion of the Eastside

C-040-022

G) The SDEIS ignores verbal negotiated agreements with the communities because they do not lead to the Current Proposals which the state wants to build.

- 1) During the mediation, the communities insisted that primary effort must be to avoid damage rather than to mitigate it. The state agreed that “mitigation will be inherent to and inseparable from design”. However, the design does not avoid or minimize damage harm, see Appendix B and each section below, inadequate lids are the only mitigation proposed, and the SDEIS clearly states that most of the lids are optional.
- 2) The communities insisted that noise is a primary concern and must be mitigated, and WSDOT agreed. However, there is no promised level of noise mitigation, see below.
- 3) The communities and WSDOT agreed that all alternatives would have narrow shoulders and not be wide enough to permit striping for additional travel lanes. The Current Proposals have broad shoulders which would permit such re-striping.
- 4) After extended negotiation, WSDOT agreed that the center line of the Portage Bay bridge would be in the future where it is now. The SDEIS shows the Portage Bay bridge moved to the north, nearer to more homes and to the yacht clubs.

Section II) H)

C-040-023

H) There is a pattern in the errors and omissions detailed below; they consistently work towards defining the Current Proposals as the solution.

Readers, please be aware of this pattern as you consider the errors and omissions.

Section II) I)

C-040-024

I) The state has manipulated the timing and content of cost estimates to discredit west side design options other than the one in the Current Proposals.

- 1) As the mediation group worked on 3 designs, WSDOT called a press conference immediately prior to the mediation meeting. At the press conference and before members had a chance to see or question the cost numbers, WSDOT announced cost numbers for the 3 designs.
- 2) At that time, engineering was no more than 10% complete. At this stage, costs are not reliable. Furthermore, WSDOT’s costing methodology is heavily dependant on a

project as a baseline condition. None of the alternatives or design options for the SR 520, I-5 to Medina project would affect or be affected by the choice of a site for pontoon construction.

Although light rail is not currently planned or proposed in the SR 520 corridor (and is therefore not an “active possibility,” as stated in the comment), design of the project is compatible with the potential addition of rail by other agencies at some point in the future. Chapter 2 of the Final EIS provides information on the SR 520, I-5 to Medina project’s accommodations for potential future light rail, including discussion of legislative direction regarding high-capacity transit in the corridor and the recommendations of the Seattle Mayor’s Office on light rail.

C-040-011

Please see the response to Comment C-040-010 regarding segmentation. The purpose and need of the SR 520 Pontoon Construction Project is misstated in the comment. The purpose of that project is to (1) expedite construction of the pontoons needed to replace the existing traffic capacity of the Evergreen Point Bridge, if a catastrophic event occurs, and (2) store these pontoons in case they are needed for catastrophic failure response or until they are incorporated into the SR 520 Program’s I-5 to Medina project. The SR 520 Pontoon Construction Project would construct pontoons and store them in case they are needed in the event of an emergency, independent of the SR 520, I-5 to Medina project.

C-040-012

Through coordination with Sound Transit, WSDOT has designed the Preferred Alternative to have enhanced compatibility with potential future light rail compared to the SDEIS design options. Light rail could be accommodated either by converting the HOV lanes for rail use or by adding light-rail-only lanes. Similarly, the HOV lanes on the SR 520,

C-040-024

risk factor which leads to choosing familiar alternatives rather than techniques with which the department is less familiar.

- 3) One of the designs included a tunnel under the Montlake Cut. WSDOT numbers for this tunnel were eleven times the costs for other new tunnels

Tunneling Costs
2009

Project	Length In Feet	Estimated Cost	Cost per Foot
Bremerton, WA Tunnel	960	\$ 53,900,000	\$ 56,146
Pittsburgh River Tunnel	2,240	\$ 156,000,000	\$ 69,643
Seattle Viaduct Tunnel	10,560	\$ 2,200,000,000	\$ 208,333
		<i>Average above</i>	\$ 111,374
SR 520 Plan K Tunnel	900	\$ 1,056,000,000	\$ 1,173,333

WSDOT estimates are 11 times the average above

- 4) Participants asked many times for explanation of the costs. Although WSDOT hired a cost expert to review its numbers, we never received line items adding up to a total until after the legislative workgroup made its decision.
- 5) The cost numbers were a primary factor in the legislative workgroup's choice of Alternative A for the west side. The costs were probably the factor, with quick timing as the second factor, because the legislative workgroup did no meaningful comparison of the effects on parks, the environment, the historic areas, mobility on the city streets, etc see report of Legislative workgroup, Appendix K
- 6) After the legislative workgroup had voted, on the night before their final meeting, costs adding up to a total were published for the first time, on page30 of their draft report. Appendix J. The costs of the tunnel option as finally presented are extremely inflated by assuming half a billion dollars for a garage for the University of Washington, right of way, and mitigation. Thus the legislative workgroup's decision was made without any opportunity to see or analyze the costs, and these costs appear to be extremely biased towards the design favored by the state.

Section II) J)

C-040-025

- J) The SDEIS does not show the pontoons or the 2 layer bridge to the public, but state officials now say it is too late to change them. Please see Section V.

Medina to SR 202 project could be converted to light rail, which would connect up to the SR 520, I-5 to Medina project. However, since light rail transit in the SR 520 corridor is not programmed in current regional transit plans, any future project to add light rail in the corridor and additional pontoons would need to undergo an extensive planning and environmental review process by the responsible transit agency prior to implementation.

Design options for other aspects of the two SR 520 projects are not precluded; rather there is coordination on the design to ensure the two projects match up, even though the projects are on a different schedule. For example, both projects are proposing 6 lanes (4 travel lanes and 2 HOV lanes). As with any transportation improvement project there is a need to make necessary connections at the termini to ensure traffic operations are not hindered, which requires consideration of a project's end points.

C-040-013

As described in Chapter 1 of the Final EIS, funding for the floating bridge—the most vulnerable portion of the SR 520, I-5 to Medina corridor—has been secured, and WSDOT has solicited proposals for construction of this portion of the project. Chapter 1 also describes construction sequencing for the project, which allows several years for full funding to be obtained through a variety of state and federal sources. Thus, funding and construction of the Eastside project does not preclude the Preferred Alternative or any other alternative for the SR 520, I-5 to Medina project.

The estimated costs for natural environment and built mitigation have always been included in program-level cost estimating. In accordance with federal policies, including NEPA and FHWA's mitigation policy, WSDOT has included mitigation as an integral element of project development and the NEPA process. Specific mitigation measures have

III) The SDEIS does not demonstrate that people and goods would move better after the construction. The methodology for estimating demand and assessing congestion is fundamentally flawed.

Section III) A)

A) The state has made inconsistent and questionable assumptions in order to conclude that the project purpose of improving mobility would be achieved by the SR 520 project as described in the SDEIS.

- 1) The purpose of the SR 520, I-5 to Medina Bridge Replacement and HOV Project is to improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond ... (SDEIS Chapter 1, page 3)
 - a) Because this purpose statement extends to Redmond, the purpose cannot be achieved without completion of the east side project. Results from another project can not be used to justify this project.
 - b) Mobility from I-5 to Medina depends on the traffic at the interchanges at I-5 and the bus stop at Evergreen Point. Assumptions about the evolution of traffic patterns at these spots are not clearly identified or tested (Traffic Discipline Report, Chapter 4).
- 2) The SDEIS asserts in various places that mobility would be improved by the 6-lane alternative. [Chapter 5, p 5 and following] However, this assertion is based on assumptions that are not clearly stated or tested.
 - a) Particular assumptions were made about traffic demand and transportation conditions in the year 2030, which strongly influence conclusions. These include untested stated assumptions about human behavior (In particular, that tolls will cause large numbers of people to switch to HOV transport); demand (such as that load remains heavily concentrated at peak periods); transportation infrastructure (particular transport services existing such as a light rail across the lake); and many other implicit assumptions such as that citizen pressure does not cause HOV lanes to be opened for general use. It is highly improbable that all these assumptions will turn out to be valid.

been developed through a number of venues, including, but not limited to the Regulatory Agency Coordination process, technical working groups, community construction management planning, and the Section 106 consulting party process, in which member groups of the Coalition for a Sustainable SR 520 the participated.

The SDEIS identified the potential for the project to be implemented in phases. The “phased implementation scenario” described in SDEIS Chapter 2 included the statement that “WSDOT would develop and implement all mitigation needed to satisfy regulatory requirements” (p. 2-37). Although lids would have been deferred under this scenario until the I-5 and Montlake interchange area improvements were built, WSDOT’s intent, as stated on page 2-34, remained “to build a complete project that fully meets all aspects of the purpose and need.” While the potential phasing has been revised in this Final EIS (see Section 2.8 for a discussion), WSDOT’s commitment to mitigation remains firm.

With regard to the timing of environmental reviews, please see the response to Comment C-040-010 regarding the logical termini and independent utility of each project in the SR 520 program. To the extent appropriate, each project discusses the effects of the other projects as reasonably foreseeable future actions in the cumulative effects section of its environmental document.

C-040-014

The environmental analysis in the SDEIS considered, as appropriate, the cumulative effects on the human environment from the SR 520, Medina to SR 202 project, the SR 520, I-5 to Medina project, the SR 520 Pontoon Construction Project, and other projects in the region. See Chapter 7 of the Final EIS for an updated discussion of cumulative effects.

C-040-026

- b) The SDEIS 2030 No-Build and Cumulative Effects Definition Technical Memorandum and supplement March 28, 2008 acknowledge that these assumptions drive the results “These elements (i. e., the input assumptions) are major factors that influence travel behavior and patterns.”

Section III) B)

C-040-027

B) The SDEIS omits discussion of demand and use of the SR 520 corridor during most of its expected life. .. all the years after 2030. Since the expansion of the 520 corridor is intended to last for 75 years, or at least until 2090, it appears the SDEIS assumes all conditions will remain static from 2030 to 2090.

- 1) It is an error to make statements about improvements in mobility without the qualification that they are based on use of a model which projects only to 2030.
- 2) Seattle’s population growth is forecast to double by 2100, (Open Space Seattle) with increasing demand for transportation across Lake Washington. A plan for 520 must allow the flexibility to adapt to the larger population as it grows during the next century. The project would not be successful if it improved mobility only until 2030.

Section III) C)

C-040-028

C) The SDEIS does not test an adequate range of assumptions about the impacts of tolling on projected traffic levels on the No-Build, Existing, 4- or 6-lane options.

- 1) The SDEIS failed to examine the possibility that 4 lanes, tolled and transit-priority, would accommodate the expected demand.
- 2) The SDEIS compares the no-build alternative without tolling to the 6 lane alternative with tolling. This is misleading.

Section III) D)

C-040-029

D) The SDEIS Transportation Discipline Report (TDR, hereafter) reveals fundamental flaws in the methodology used to predict demand and use of the facility and nonstandard or nonexistent tests of model assumptions. Please refer to Appendices M and N for discussions of some of the major flaws in this modeling methodology. We cite here only a few.

- 1) The Puget Sound Regional Council chose the model, gave the model inputs (i. e., the controlling assumptions), did the model validation, and provided the goals for development. There was no independent review of the process at any step.

C-040-015

The comment is correct in stating that RCW 47.01.408 calls for 6 total lanes, 2 for HOV travel and 4 for general purpose travel. This is consistent with the 6-Lane Alternative designs evaluated in the EIS. WSDOT does not propose to construct light rail transit as part of the SR 520, I-5 to Medina project.

As discussed in Chapter 2 of the Final EIS, WSDOT has worked with Sound Transit since 2003 to design for future rail compatibility in the corridor. The Mayor’s April 2010 report identified several changes to the SDEIS options that were believed to be necessary to “meet the mayor’s goal of an SR 520 bridge that is readily convertible to rail.” While WSDOT believed that the design already met this goal, the agency worked with the City of Seattle and Sound Transit to identify changes that would enhance the corridor’s rail compatibility. The Preferred Alternative reflects these design change and allows for two future rail options:

- Option 1: Convert the HOV/transit lanes to light rail. This approach would accommodate light rail by converting the HOV lanes to exclusive rail use. Trains would use the direct-access ramps at Montlake Boulevard to exit, or could utilize a 40-foot gap between the eastbound and westbound lanes of the west approach to make a more direct connection to the University Link station at Husky Stadium.
- Option 2: Add light-rail only lanes separate from the HOV lanes. This approach would allow several connections—via a high bridge, a drawbridge, or a tunnel, as suggested in the Mayor’s report—to the University Link station.

Both approaches would allow for the addition of supplemental floating bridge pontoons to support the additional weight of light rail, should the regional decision to do so be made and funded. Such a decision would

C-040-029

- 2) The Transportation Discipline Report omits customary and critical model validation procedures.
- 3) The model is calibrated from data from one month alone (October, 2008). Many different parameter settings can fit the data from the short (one month) period but would produce wildly different results. There is no explanation for how the choices were made and no discussion of uncertainties, and no robust sensitivity analysis as is standard professional practice.
- 4) The model is land based and does not adapt for behavioral choices. If, for instance light rail were available, it should affect vehicle traffic results .
- 5) The model relies on assumptions about how many people will live here, where, where they will want to go, how they will travel, what legislative and price restrictions will be in place concerning use of certain fuels, and other demographic and economic factors. Because of the number and importance of these assumptions, the model results themselves have to be treated as a set of assumptions, not fact, and a range of such assumptions (called "scenarios") should have been used in the analysis. However, the current analysis rests on only one scenario. Thus it does not support the conclusion that the benefits for transportation will continue to exist if the circumstances of the future become different from what was assumed in 2009.
- 6) The statements that general –purpose vehicles would decrease by up to 10,000 vehicles and 13,500 persons per day (Table 5.1.2, Ch 5) that "travel demand models are not intended to provide an absolute traffic volume forecast", advising that forecasted traffic flows should be used only for comparison between options, NOT for estimating absolute conditions.
- 7) The SDEIS says that completion of the eastbound HOV lane could save vehicles approximately 40 minutes (Chapter 5). However, completion of the eastbound HOV lane is not part of this I-5 to Medina project. Results from another project can not be used to justify this project.

Section III) E)

C-040-030

- E) The SDEIS lacks adequate studies of the impacts of the SR 520 project on I-5 and on city streets. Thus in effect it assumes these impacts will not modify traffic performance. These flaws are discussed in Appendix C and summarized here**

need to be planned and programmed by regional land use and transit agencies, funded by a public vote, and evaluated in its own environmental analysis. The drawing in the bidding documents that is referred to in the comment shows the cross-section corresponding to Option 2 as a future design consideration, not as part of the construction project. The drawing included the note "This configuration is assumed for design. The actual configuration unknown at this time."

It is not clear what "current documents" are referred to as showing "buses and HOV on one lane on the east side and the bridge" and no bus/HOV lane on the west side. If the reference is to the bidding documents, this reflects the fact that the floating bridge would be the first portion of the I-5 to Medina project constructed and may be completed before the west approach bridge (to which it connects) is fully constructed. Large construction projects are typically completed in stages; the completed project would have full HOV lanes from I-5 to Medina that would support bus rapid transit.

The "emergency project to produce pontoons in case of failure" is the SR 520 Pontoon Construction Project. A Draft EIS was issued for the project in May 2010, the Final EIS was issued in December 2010, and the Record of Decision was issued in January 2011. Please see the response to Comment C-040-010 for a discussion of the purpose and need and independent utility of this project. Also see that same response for a discussion of logical termini for the SR 520, I-5 to Medina and Medina to SR 202 projects.

C-040-016

NEPA requires the identification of a Preferred Alternative as part of the EIS process (see 23 CFR 711.125). This may occur as early as the Draft EIS; however, to provide full opportunity for public input, WSDOT typically does not identify a Preferred Alternative until the Final EIS. Regardless of the timing of Preferred Alternative designation, the

1) The model does not take into account crucial factors like on- street parking. It is further unable, according to discussions with WSDOT, to predict what will happen on affected city streets. Since the congestion on city streets will affect trip performance, the model is inadequate to predict overall travel time improvement or queuing times.

C-040-031

2) The model assumes the area impacted by modification to the Montlake Interchange is limited on the south by the SR-520 Arboretum ramps. (TDR- 4-7) This is inconsistent with current traffic and congestion patterns and discussions elsewhere in the document. Likewise, on Capitol Hill the area defined as impacted is much smaller than the area profoundly impacted by SR 520, which reaches from the Harvard I-5 northbound onramp at least to 10th and East Miller.

C-040-032

3) Pedestrian volumes are assumed to remain static (TDR 4-15) That assumption conflicts with all other assumptions about population, transit ridership, changing behaviors, etc. Please provide more realistic assumptions on pedestrian volumes.

C-040-033

4) The SDEIS errs in not adequately quantifying the current and future congestion on all the Seattle arterials and at all important interchanges near 520.

a) The TDR does not provide data on the current vehicle levels and congestion in the following areas, all of which currently have severe congestion related to SR 520.

1. Madison at 23rd
2. Madison at Lake Washington Blvd
3. Montlake Boulevard at Pacific and at University Village;
4. 10th Avenue at Miller or Boston;
5. Harvard north of Roanoke, before the entrance to I-5.
6. I-5 southbound and northbound from 520

b) The TDR does not provide predicted vehicle levels and congestion in the same areas, taking into account the following major, planned developments in Seattle:

1. Large new condo buildings in the Broadway area
2. More commercial space at Eastlake
3. In the Montlake area and north, the expansions of
 - a. Children's Hospital
 - b. University Hospital
 - c. University Village
 - d. See appendix XX for data on the above developments.

process is not complete, and selection of an alternative is not final, until the NEPA Record of Decision is signed by FHWA. As stated in the SDEIS (page 1-21): "Although the mediation participants, the legislative workgroup, and other political bodies can provide recommendations, it remains FHWA's responsibility under NEPA, and WSDOT's under SEPA, to select the final preferred alternative and to ensure that the environmental review process has evaluated a reasonable range of alternatives."

As described in Chapter 1 of the SDEIS and in the Range of Alternatives and Options Report (Attachment 7 of the Final EIS), an extensive range of alternatives has been evaluated for this project. Alternative corridors, technologies (e.g. tubes and tunnels), and travel modes, as well as many design variations within the existing corridor, were evaluated as part of the Trans-Lake Washington Study and again after the initiation of NEPA review in 2000. All of the alternatives and options have been developed with public input, and a number of them—including the Pacific Street Interchange option in the Draft EIS and all the mediation design options in the SDEIS—were designed collaboratively by WSDOT and project-area stakeholders, including Coalition communities. Chapter 2 of the Final EIS provides additional information on how alternatives were developed and evaluated, and why some solutions were determined not to be reasonable alternatives.

Chapter 1 of the SDEIS described how, based on the findings of the Draft EIS, Governor Gregoire recommended that a 6-lane SR 520 would best meet the needs of the regional transportation system. The Governor's report, A Path Forward to Action, cited the greater mobility benefits of the 6-Lane alternative compared to the No Build and 4-Lane Alternatives, and its greater consistency with the project's purpose and need statement. She also noted the benefit of the proposed HOV lanes to regional transit service. At the same time, the Governor observed that more work was needed to minimize impacts and identify design solutions

C-040-034

5) The SDEIS model appears to assume the one way express lanes at the SR 520—I-5 junction will be adequate to maintain mobility at that junction through the year 2090. This assumption is inconsistent with present data and is highly unlikely to be valid at any time in the future.

C-040-035

6) The analysis of local arterials deals only with the morning and afternoon peak hour. The analysis thus assumes a standard traffic pattern that is irrelevant in the vicinity of Montlake Bridge, where traffic mobility is far more sensitive to bridge opening than to overall 'rush hours'. Without specific data and simulations of the impacts of bridge openings the model conclusions are of very limited applicability.

Section III) F)

C-040-036

F) The traffic and congestion predictions in the SDEIS (TDR and Chapter 5) are inconsistent with experience and published studies of urban highway expansion elsewhere. A number of traffic studies relevant to this point are summarized in Appendix P; a few of these are highlighted here. SDEIS must explain what assumptions led to results so inconsistent with these data based studies.

- 1) SDEIS projected improvements in traffic mobility are not supported by experience or data collected on other urban highways.
 - a) Under typical urban conditions, data demonstrate that more than half of added capacity is filled within five years of project completion by additional vehicle trips that would not otherwise occur, with continued but slower growth in later years. (Dargay and Goodwin, 1995). As a result, traffic congestion tends to maintain a self-limiting equilibrium: once congestion becomes a problem it discourages further growth in peak-period travel. Road expansion that reduces congestion in the short term attracts additional peak-period trips until congestion once again reaches a level that limits further growth. (Litman, 2010). whether the expansion is SOV or HOV. The experience and literature on this is critical and needs to be made clear to decision makers.
 - b) SDEIS predictions on travel time (Table 5.1.5) are inconsistent with published data that show that travel time does not decrease with expanded highway capacity. People tend to average about 75 minutes of daily travel time regardless of transport conditions (Levinson and Kumar 1995; Lawton 2001). National data indicate that as freeway travel increases, average commute trip distances

that would fit the character and needs of local communities. Since the 4-Lane Alternative had already been evaluated in the Draft EIS, and other alternatives had been eliminated as not reasonable during earlier evaluation, the legislation that created the SR 520 mediation process limited the participants to developing 6-lane solutions. Because of the previous analyses that had taken place, the Legislature's direction did not limit the range of alternatives under NEPA.

It should be noted that the 2006 Draft EIS did not include an alternative called the "Base 6," although this term was sometimes used informally to refer to the 6-Lane Alternative. No vote has ever taken place on SR 520, so it is unclear what is being referred to as having been "defeated by voters." In addition, none of the alternatives or design options evaluated during the SR 520 NEPA process includes a system of ramps north of the Montlake Cut as shown in Appendix G of the comment letter.

C-040-017

Please see the response to comments C-040-10 and C-040-11 for discussion of the relationship between the SR 520, I-5 to Medina project and the SR 520 Pontoon Construction Project. The latter project evaluated the effects of building pontoons at a site in Grays Harbor County to replace the existing capacity of the floating bridge in the event of a catastrophic failure. An understanding of the Pontoon Construction Project was not necessary to comment on the SDEIS for the SR 520, I-5 to Medina project.

The Cultural Resources Discipline Report was provided for Section 106 consulting parties to review prior to its publication as an attachment to the SDEIS. The consulting parties included representatives from the Montlake and Portage Bay/Roanoke communities, which are members of the Coalition. The Final EIS includes an updated cultural resources analysis (see the Final Cultural Resources Assessment and Discipline Report in Attachment 7 to the Final EIS). A 30-day comment period was

C-040-036

and speeds increase, but trip time stays about constant (Levinson and Kumar 1997).

- c) SDEIS does not adequately analyze the effects of generated traffic on surrounding streets. In general, the more congested a road, the more traffic is generated by capacity expansion. Increased capacity on highly congested roads often generates considerable traffic (Marshall 2000). This generated traffic must move through surface streets in the vicinity of the highway.

SECTION III) G)

C-040-037

- G) **The SDEIS does not adequately analyze the potential impacts of public transit on 520 itself or on neighboring surface streets and arterials.**

SDEIS ignores the likely possibility that light rail, or lanes dedicated to bus rapid transit, will be needed on 520 in the future. This lack alone renders this study inadequate as a predictive tool for transportation planning. The demand for bus or light rail is likely understated with no supporting data. The projection of 65 passengers per bus, contrasted with today's 30 passengers per bus, seems impossible. SDEIS provides inadequate explanation of how the predicted number of buses could accommodate the predicted number of bus passengers.

C-040-038

- IV) **The state is planning to take protected parkland for most of the length of 520 on the west side, destroying a unique chain of linked parks and bays. Federal law requires seeking other alternatives rather than taking parkland or arming historic districts.**

Section IV) A)

- A) **Along 520 from Roanoke Park to the Arboretum is a linked series of parks and publicly-used natural spaces**



also provided for consulting parties to review this report in fall 2010, prior to release of the Final EIS.

SDEIS Chapters 3 and 6 provided a description and comparative analysis of construction methods, durations, and effects for Options A, K, and L. This analysis was at an appropriate level of detail for the NEPA process and enabled readers to understand the relative effects of construction for each design option. Identification of the Preferred Alternative has allowed WSDOT to develop additional detail on construction methods and effects; however, construction techniques continue to be refined throughout the final design process. WSDOT is continuing to coordinate with to identify ways to avoid, minimize, and/or mitigate the effects of corridor construction.

The meaning of “the whole chain of linked parks and open spaces along the west side” is not clear from the comment. Sections 5.4 and 6.4 of the SDEIS identified park and open space effects for each design option. Sections 5.4 and 6.4 of the Final EIS provide updated information on the effects of the Preferred Alternative (which uses less park land than the SDEIS options), as well as mitigation measures that have been developed in greater detail since the SDEIS. Coordination with the City of Seattle and affected communities will continue following the NEPA process to implement mitigation commitments and develop urban design and landscaping concepts for the proposed lids. For discussion of Option A with suboptions (Option A+), see the responses to comments below.

C-040-018

Please see the response to Comment C-040-016. As stated in the SDEIS, the legislative workgroup was not a decision-making body, and the Preferred Alternative differs from Option A+ in a number of respects that reflect the constructive comments received on the SDEIS. The SR 520, Medina to SR 202 project has a separate purpose and need from

C-040-038

B) These spaces qualify for protection under the federal Section 4f rule. Appendix B enumerates and describes them.



- 1) The SDEIS fails to identify many of these spaces. See Appendix B
- 2) The SDEIS does not recognize that WSDOT right of way must be discussed as public park space if it has been used as such.

C-040-039

C) The SDEIS All of these spaces form a connected green space, heavily used by humans and by wildlife, which is completely irreplaceable. It has frequently been called "Seattle's chain of pearls."

- 1) Although the SDEIS discusses some of these parks, it does not put them this perspective of one unique, interconnected whole.
- 2) The linked nature of these parks makes it almost impossible to replace them, and therefore essential to avoid damaging them.

C-040-040

D) The state plans to repeat the errors of 1963, taking public recreation space for highway use.

- 1) For years, people have said "never again!" and "They couldn't do that now"
- 2) The Current Proposals more than double the width of 520 in Seattle. The state would take more park space now then it did in 1963.

C-040-041

E) The SDEIS does not prove, as required, that other alternatives which would do less damage are not feasible. See suggested alternatives below, Section V.

C-040-042

F) In addition, the area around Roanoke Park is a national historic area, the NOAA building is recognized as historic, and there are a number of historic sites and

the SR 520, I-5 to Medina project, as described in the responses to comments C-040-010 through C-010-013.

C-040-019

Please see the response to Comment C-040-013 regarding funding.

C-040-020

The timeline for the mediation process was set in recognition of the need to replace the vulnerable floating span of the Evergreen Point Bridge, and in light of the fact that deliberation of alternatives and design options for the SR 520 corridor had at that point been underway for more than 10 years. All participants were aware of the timeline, which provided more than a year for development and review of design options. At the time the process concluded, design development was sufficient to identify environmental effects and to provide reliable cost comparisons among Options A, K, and L.

NEPA requires that lead agencies evaluate a reasonable range of alternatives. WSDOT and the mediation participants agreed at the conclusion of the mediation process that Options A, K, and L would be evaluated in the SDEIS. NEPA does not require that alternatives or design options be discarded when their proponents no longer support them, nor does it require that non-reasonable alternatives be evaluated simply because some members of the public are in favor of them.

Chapter 2 of the Final EIS discusses the reasons that Option M, proposed during the legislative workgroup, was not considered a reasonable alternative. The primary reasons for its dismissal were environmental impact and cost. As stated in the findings of the legislative workgroup, "Because the Montlake Cut is an environmentally sensitive area, we believe the permitting of Option M's wetlands impacts will be very risky and very costly to mitigate and we believe there would be a high likelihood of a much longer delay (12 to 24 months) in order to

C-040-042

areas in Montlake. Protection of these is mandatory. The SDEIS does not demonstrate:

- 1) That it evaluated alternatives which would avoid the damage, such as a 4 lane 520 or a 4 lane Portage Bay Bridge, or use of immersed tube tunnels or light rail in an immersed tube tunnel, see Section V below.
- 2) That it evaluated ways to change the Current Proposals to minimize the damage to the historic areas. Many of these ways are enumerated in the sections below and in appendix B.
- 3) That it took every reasonable step to mitigate the damage. On the contrary, the SDEIS is clear that lids are optional and no other mitigation is currently planned.
- 4) There are numerous errors and omissions in the Cultural Resources section. For a partial enumeration, see Appendix Z

C-040-043

V) The state has not analyzed obvious alternatives which might have better transportation results and do less damage.

The SDEIS has neglected to provide serious analysis of obvious alternatives to the Current Proposals.

Ch1.4 says all options have 6 lanes, 2 HOV

Ch1.7 reviews EIS options

Ch 1.8 says 4 lanes discarded

Ch1.9 defines alternative: no build and 6 lane, with HOV

Section V) A)

C-040-044

A) The SDEIS does not adequately address the impact of safety issues on alternatives.

- 1) Part of the project purpose is safety, and the state has presented the probability of bridge collapse as a major incentive for the 520 program.
 - a) The SDEIS says that improvement of safety is a major purpose of the project. (Ch 1.3)
 - b) The state has published a video showing possible collapse of the bridge. <http://www.youtube.com/watch?v=qliuDUgvZpY>
 - c) The SDEIS says it will design for a 7% probability of failure during 75 years.
- 2) However, the state's actual priorities in building do not correspond to the safety problems.
 - a) The SDEIS presents a plan for possible phased implementation based on risk: (ATT 7, Description of Alternatives, P 71 and preceding).

negotiate the permitting issue with the US Army Corps of Engineers.” Additionally, the Cost Review Panel was concerned that given the range of probable costs for Option M, it was unlikely to fit within the legislatively established budget for the project.

Option A+ was fully described in the SDEIS and its environmental and traffic effects evaluated in that document along with those of the other design options and suboptions. The Preferred Alternative differs from Option A+; hence, the Final EIS presents an updated analysis of this alternative alongside the SDEIS options. The Preferred Alternative has impacts similar to or less than those of the SDEIS design options in virtually all elements of the environment.

C-040-021

The 6-Lane Alternative, as its name suggests, includes 6 lanes: 4 general-purpose lanes plus 2 HOV lanes. Standard engineering terminology includes only through lanes, not ramps or shoulders, in describing the number of lanes in a facility. For full disclosure of facility width at various locations, the SDEIS provided a number of cross-sections and dimensions, including ranges where appropriate (see, for example, SDEIS Tables 2-2 and 2-3). The document is clear that the HOV lanes would be used for transit (see, for example, pages 5-19 through 5-27 of the SDEIS). Buses are, by definition, high-occupancy vehicles.

With regard to RCW 47.01.408, the complete text is provided below:

(1) The state route number 520 Bridge replacement and HOV project shall be designed to provide six total lanes, with two lanes that are for transit and high occupancy vehicle travel, and four general purpose lanes.

(2) The state route number 520 Bridge replacement and HOV

C-040-044

However, the SDEIS does not mention that in real life the state is proceeding to build the East side project, where there are no safety risks, diverting resources from the vulnerable areas.

- b) The state has one funding plan for this segment and the east side segment of the 520 program. Funding is quite uncertain; please see Section VIII below. Please explain why tolls on 520 are not being dedicated to the vulnerable areas, particularly since tolls on I-90 are uncertain.

C-040-045

- 3) The SDEIS has failed to present analysis of how much safety improvement would be achieved by the Current Proposals, and by the alternatives which it should have examined.

- a) For each of the priority areas (eg p71) in the Description of Alternatives, What is the probability of failure in 25 years, and in 50 years, before and after the construction of the Current Proposals?
- b) How is that weighed against the harm done... the damage to the natural environment, health, etc?
- c) What range of safety goals is acceptable for each priority area?

C-040-046

- 4) The SDEIS asserts that bringing the 520 bridges up to current standards would not be cost effective without also adding lanes (Find this).

- a) How much safety improvement could be achieved by a retrofit which is aimed at improving safety but short of current standards?
- b) How can that improvement in safety be weighed against the costs?

C-040-047

- 5) The state has enough money to fix all the current safety problems. The SDEIS does not explain why the state is embarking on a project which it does not have money to complete, rather than fixing the safety problems with funds that are foreseeably available. Please explain.

Section V) B)

C-040-048

B) State legislation does not excuse the lack of analysis of alternatives

- 1) The legislation providing for a 6 lane highway, with 2 lanes used for HOV and transit and with narrow shoulders and rail connections, gives guidance.

project shall be designed to accommodate effective connections for transit, including high capacity transit, to the light rail station at the University of Washington. [2008 c 270 § 2.]

Notes:

Finding - 2008 c 270: "The legislature finds that the replacement of the vulnerable state route number 520 bridge is a matter of urgency for the safety of Washington's traveling public and the needs of the transportation system in central Puget Sound. The state route number 520 bridge is forty-four years old and has a useful remaining life of between thirteen and eighteen years. While one hundred fifteen thousand vehicles travel on the bridge each day, there is an ever present likelihood that wind or an earthquake could suddenly destroy the bridge or render it unusable. Therefore, the state must develop a comprehensive approach to fund a state route number 520 bridge replacement to be constructed by 2018." [2008 c 270 § 1.]

The law does not define "effective connections for transit." However, the SR 520 HCT Plan, cited in the SDEIS, documents planning for the Montlake Multimodal Center that was conducted jointly by Sound Transit, King County Metro, and WSDOT. The transit agencies involved in this study have determined that the transit connections provided in this location will be effective. Chapter 8 of the Final Transportation Discipline Report describes the effects of the Preferred Alternative on the Montlake Multimodal Center and on transit service to, from and between the Montlake area, the University District, the Eastside, and downtown Seattle.

For discussion of how potential future light rail would be accommodated on SR 520, see the response to Comment C-040-014 above.

C-040-048

- 2) However, the federal environmental laws still demand that the state evaluate alternatives that might avoid damage to the protected parks and historic areas.

Section V) C)

C-040-049

C) The “No Build” alternative is not realistic, and the state should create a “tolled, transit priority 4 lanes” alternative as a base.

- 1) The “No build” alternative is not feasible or logical and it is an error to present it as a valid a base case.
 - a) It is an error to present as an alternative, a situation which is defined as a failure: SDEIS says that the current structures are likely to fail within 15 Years. Ch 1-4.
 - b) It is an error to assume no tolls would be used on a no-build alternative in spite of the state’s directive to use tolls for congestion management.
 - c) The base case should include tolls, which is now a given, and transit priority, which is an obvious result of recent transportation policy statements.
- 2) The SDEIS should examine an alternative with 4 lanes, tolled, and with transit given priority, and noise reduction features.
 - a) An analysis which says that an improved 4 improved lanes could handle up to 40% more vehicles is attached, appendix Q. Please respond to its arguments. Should this not be tested?
 - b) A tolled and transit-priority 4 lanes would do much less damage to the protected parklands and historic areas. The SDEIS should analyze these tradeoffs.
 - c) A tolled and transit-priority 4 lanes might not accommodate the expected demand for the next 75 years, but for how long would it be likely to be effective? What is the feasibility and desirability of constructing this promptly, and then adding light rail when funding becomes available?

Section V) D)

C-040-050

D) Another obvious alternative which should have been examined, and should still be examined, is use of an immersed tube tunnel.

- 1) As indicated above, WSDOT stopped studying Option M, with an immersed tube tunnel, as soon as the legislative workgroup chose A+. However,
 - a) The legislators were not told about, and did not understand, the necessity of protecting the parklands which run along the whole west side corridor, and

The footprint and width of the proposed SR 520 corridor has been minimized to the maximum extent feasible. Highway lanes and shoulders are designed to standards that have been established to protect the safety of drivers. When circumstances warrant a change from these standards, WSDOT must request FHWA’s approval of a “design deviation.” WSDOT has already obtained approvals for design deviations for both lane and shoulder widths in response to community requests for a narrower roadway footprint. In the interest of safety, FHWA will not approve further narrowing of the corridor. WSDOT intends to operate SR 520 as a 6-lane corridor and has no plans to restripe it in the future.

C-040-022

See the response to Comment C-040-016 regarding decisions on the Preferred Alternative. Regarding mitigation, please see the response to Comment C-040-013 above. Mitigation proposed for the Preferred Alternative is detailed in Chapters 5 and 6 of the Final EIS.

The Preferred Alternative incorporates many design measures to avoid or minimize effects from the project. For example, lids are proposed (and included in the funding package) over Montlake Boulevard and at 10th Avenue East and Delmar Drive East. In the SDEIS, the lid over Montlake would have had an opening; however, with the Preferred Alternative, this lid would completely cover SR 520. The Preferred Alternative would have a narrower footprint through the Arboretum than the SDEIS options, and would require the use of less Section 4(f) land. Mitigation for construction and operation effects of the Preferred Alternative is described in the Final EIS. In compliance with project permitting requirements, WSDOT will continue to refine measures to avoid, minimize, and mitigate project effects as design development progresses.

A number of noise-reduction strategies for operation of the SR 520

C-040-050

- b) The legislators were not told about, and did not understand that the result of the Current Proposals would be permanent congestion in all the areas from Montlake to north Capitol Hill, and the accompanying health impacts of increase in chronic disease;
 - c) We believe that WSDOT spent most of its energies trying to prove that an immersed tube tunnel did not work, rather than creatively thinking about how to use one to solve the problems.
- 2) A six lane alternative where all lanes go underwater before Foster Island would almost eliminate the 4f issues of taking parklands and damaging historic sites, and would solve many of the city congestion problems. At least two lanes underwater would reduce the 4f issues. Variations of a tube tunnel which should be evaluated include
 - a) 2 lanes from Foster Island to the UW light rail station;
 - b) 2 lanes from Foster Island to South Lake Union, avoiding the inevitable congestion on I-5 and solving the Mercer weave; and
 - c) Any other variations which would get people to their destinations without overcrowding I-5 or the city streets.
 - 3) Although the costs for some of these alternatives might be higher, they might also achieve the objective of improving mobility while preserving parks and communities. In addition, a solution which appeals to people and solves big problems might be easier to fund and to obtain federal money.

Section V) E)

C-040-051

- E) The SDEIS should analyze an alternative with 6 lanes of which 2 are light rail only.**
- 1) It is well documented that light rail will cause less pollution and therefore be better both for health and for greenhouse gases; it would run on rail lines to stations and therefore not impact I-5 or city streets; and it could be designed to avoid most damage to parks and communities, particularly if it went underwater at or before Foster Island.
 - 2) Recent polls and votes show that people want light rail. If we give people the kind of transportation they want, they are more willing to use it and pay for it.
 - 3) The legislature wanted the bridge to be able to carry light rail, and under the Current Proposals it could not do so (Nelson Nygaard light Rail report, April 2010), and Section VI) A) below.

C-040-052

VI) The SDEIS does not correctly or fairly describe what it is planning to do (The Current Proposals) .

corridor have been introduced as part of the Preferred Alternative. The current noise-reducing measures proposed for the project include 4-foot concrete traffic barriers with noise-absorptive coating, reduced speed limits on the Portage Bay Bridge, and noise-absorptive materials around the Montlake and 10th Avenue East/Delmar Drive East lid portals. Noise walls are not proposed in the Seattle portion of the corridor, except potentially along I-5 in the North Capitol Hill area where the reasonableness and feasibility of a noise wall is still be evaluated, because noise modeling results for the Preferred Alternative show that predicted noise levels will not only be lower compared to the No Build Alternative, but will be lower than existing levels at most locations. For more information, see Section 5.7 of the Final EIS and the Noise Discipline Report Addendum in Attachment 7 to the Final EIS.

During construction, WSDOT is committed to reducing noise as much as possible. A number of proposed measures to reduce impacts from construction noise were described in the SDEIS in Section 6.7, and additional measures are described in Section 6.7 of the Final EIS. Some of the proposed measures include:

- Requiring all engine-powered equipment to have mufflers and to comply with EPA noise standards
- Limiting use of noisy equipment such as pile drivers and jack hammers to daytime work hours
- Installing temporary or portable acoustic barriers around stationary equipment
- Shutting off idling equipment
- Restricting use of back-up alarms during evening hours
- Scheduling construction operations to avoid periods when noise would create the greatest annoyance such as during late evening and early morning hours
- Monitoring construction activities so that any issues that arise from noise or vibration can be quickly resolved with the contractor

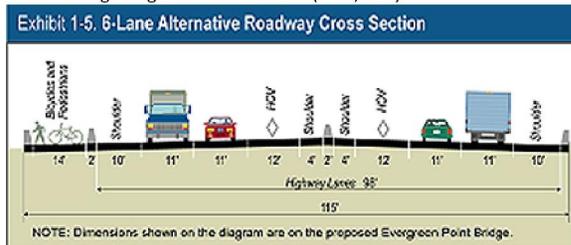
C-040-052

Since the Current Proposals, as described above, use option A+ or variations of it, all comments and questions below on west side issues assume Option A+ or variations thereof.

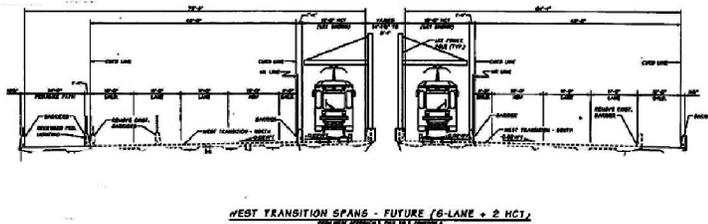
Section VI) A)

A) The SDEIS does not analyze adding 2 lanes for light rail, although both logic and the state's bidding-on-pontoons documents show that as an alternative. This is an error.

- 1) The SDEIS has no discussion of adding lanes for light rail. The SDEIS shows that the floating bridge will look like this (Ch 1, P24)



- 2) The state documents given to bidders on the pontoons show additional lanes for light rail in the future;



Source: Appendix Y. Request for proposal

- 3) These documents depict very different bridges. If the state is planning to add light rail the SDEIS should show and analyze it.
 - a) State law says the bridge should be constructed to support light rail in the future.
 - b) Since the Current Proposals will cause severe congestion, it is reasonable to suppose that light rail might be added within 10-20 years.

- Instituting a noise hotline so that community members can report effects.

WSDOT is in the process of developing a Community Construction Management Plan (outlined in Attachment 9 to the Final EIS) in coordination with adjacent communities. This will give affected residents an opportunity to be involved in how construction noise and other potential effects from construction (dust, visual quality, etc.) are managed and mitigated. The plan is adaptable, so it can address unanticipated issues if and when they arise. WSDOT will continue to work with the communities as design and contracting progress and as more detailed information becomes available about how the project will be built.

The Preferred Alternative includes an alignment shift to the south at the eastern end of the new Portage Bay Bridge. Based on feedback from agencies, tribes, community organizations, and the public, the Preferred Alternative includes a narrower footprint for the Portage Bay Bridge. It includes a managed shoulder rather than an auxiliary lane, which allows reduced shoulder widths and creates room for a landscaped median. Please see the response to Comment C-040-021 regarding lane and shoulder widths for SR 520.

C-040-023

Please see the responses to Comments C-040-016 through C-040-022.

C-040-024

Costs of the project disclosed in the EIS documents were through the Cost Estimation Validation Process (CEVP®). During the CEVP process, analysts use systematic project review and risk assessment methods to identify and describe cost and schedule risks, and evaluate the quality of the information available. An important part of the process is that

C-040-052

- c) The Nelson Nygaard study on light rail alternatives http://www.seattle.gov/mayor/PDF/SR520-MayorsDRAFTReport_040610.pdf, incorporated here by reference, indicates that light rail can not be put on the bridge that is depicted in the SDEIS, both because
 - (i) the capacity of the structure and the flotation capacity of the pontoons are both less than would be required to have light rail on the 6 lane bridge, and re-building plus additional exterior pontoons would be required, and because
 - (ii) Light rail can not go on the outside, so even if one expanded the bridge to 8 lanes and expanded the pontoon base, the currently proposed bridge would have to be strengthened in the middle.
- 4) If exterior pontoons were needed, or if the highway were expanded to 8 lanes of which 2 are light rail, the environmental effects would be quite different from those described in the Current Proposals. The SDEIS must analyze these alternatives, which its own bidding documents show the state is considering.

Section VI) B)

C-040-053

B) The "6 lane" alternative's name is misleading and should be changed.

The name of this alternative is misleading. In almost all of the west side, there are more than 6 lanes. Although many of these are ramps, they still take up space and contain moving vehicles.



- 1) The alternative's name is also misleading since it refers only to HOV and not to transit, where both are specified in the state law. This seems to be part of a pattern to minimize discussion of transit. The name should say "transit and HOV".

Section VI) C)

C-040-054

- c) **The width of the bridge should be narrowed so that 8 lanes are not physically possible.**

analysts examine how risks can be lowered and cost vulnerabilities can be managed or reduced. Costs estimated during the process account for a host of project components and risks, including design, construction, mitigation efforts, potential delays at each step of project delivery, costs for legal challenges and litigation, and inflation. The process provides opportunities for WSDOT to improve final cost and schedule results. The output of the CEVP® process is a probabilistic range of costs. The range accounts for uncertainties defined in the workshop for cost and schedules. By WSDOT policy (IL 4071.01) the 60th percentile estimate number is used for the budgeting process. This process conforms to industry standards for cost estimating and is suitable for comparing design options during project planning. The level of design development at the time the estimates were prepared was sufficient for comparison of the relative magnitude of costs across the options; as explained to the mediation participants, risk is a key consideration in cost estimating during conceptual design. Because of unique geotechnical factors related to Option K's proposed tunnel (in particular, the need to freeze the soft lakebed soils beneath the Montlake Cut in order to excavate them), as well as the extensive excavation needed to construct the interchange on its south side, it is not appropriate to compare this effort with a limited set of cost data from tunnels constructed under very different conditions. In addition, resource agencies identified significant concerns related to the environmental effects of Option K, which could have resulted in delay or denial of permits as well as increased mitigation costs.

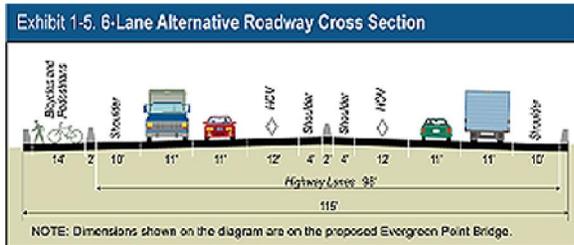
The legislative workgroup had ample opportunity to consider project costs and other factors in making its recommendation. For further information please see the workgroup's website at: <http://www.wsdot.wa.gov/partners/sr520legislativeworkgroup>.

C-040-025

The design of the floating bridge superstructure and pontoons was

C-040-054

- 1) Also the description is labeled 6 lanes and the analysis is based on 6 lanes, the SDEIS gives assurance is given that the bridge will remain 6 lanes. The SDEIS shows wide, 10 foot shoulders which could be re-stripped for additional lanes. There is precedent in our region for such re-stripping. Both the legislative direction and the verbal agreements with communities call for narrow shoulders



- 2) All the analysis in the SDEIS assumes the quantities of traffic, pollution, etc. that would result from 6 lanes. If there is any intention of allowing for the possibility of 8 lanes, the results should be analyzed. If not, the possibility must be precluded by the physical size of the bridge.

Section VI) D)

C-040-055

- D) The SDEIS does not depict the bridge from the lake, or analyze the need for its height and massive blockage of views.

- 1) Please show a side view of the bridge in context and with all its features, so that its impact can be assessed. Using WSDOT data, we had a depiction constructed, showing how the bridge would look before adding the stabilizing pontoons on the sides and the noise walls above.



shown in Exhibit 2-17 of the SDEIS; the text on page 2-29 described the structure and noted that it would be about 22 feet higher than the existing bridge deck. Attachment 2, Exhibits 2-17, 2-18, 2-19 and 2-20 in the SDEIS Visual Quality and Aesthetics Discipline Report showed a simulation of the floating bridge. There is no proposal for a “two-layer bridge” as characterized by the comment. All of the alternatives and design options analyzed for the SR 520, I-5 to Medina project include a single-deck floating structure. With all build alternatives and options, the structure would include an area for bridge maintenance below the roadway deck; however, no lower deck would be available for through traffic.

Pages 2-29 through 2-30 of the SDEIS described the pontoons necessary for construction of the SR 520, I-5 to Medina project. Construction of pontoons to replace the existing 4-lane bridge in the event of a catastrophic failure is analyzed in the SR 520 Pontoon Construction Project EIS. The Final EIS for the SR 520, I-5 to Medina project describes the potential effects of constructing supplemental stability pontoons needed to provide 6 lanes on the floating bridge.

C-040-026

Please see the response to Comment C-040-003 regarding improvements in mobility resulting from the SR 520, I-5 to Medina project. The methodology for the SR 520, I-5 to Medina project transportation analysis is consistent with industry standards, NEPA requirements, regional planning processes, and FHWA traffic analysis guidelines for evaluating and comparing existing and future transportation project alternatives. WSDOT and the co-lead agencies for the project selected the Puget Sound Regional Council (PSRC) travel demand model because it is the accepted standard used for all major transportation planning projects in the region.

Because traffic modeling predicts future conditions, it must rely on

C-040-055

- a) Please analyze the tradeoffs: The higher the bridge across the lake, the more impact on views, the more taking of public space used by the public, the worse the noise, and the more expense. How does one weight these costs against the benefits?
- b) The SDEIS omitted explanations of why the bridge would be as high as planned, and double-layered.
- c) The SDEIS omitted analysis of alternative actions which would do less damage to the environment. If the bridge is designed that way for ease of maintenance, what other options for maintenance exist, and how are they weighed against the damage to the public's use of the environment, and the noise, and the added expense?
- d) The SDEIS does not explain why the SR 520 bridge can not be approximately as low as the I-90 bridge.

Section VI) E)

C-040-056

- E) The SDEIS omits needed analysis related to the connections of SR 520 to I-5 and the nearby communities of Roanoke Park, Portage Bay, and north Capitol Hill.**
- 1) The SDEIS errs in not describing the intersection adequately.
 - a) Today, we finally obtained a visual of the intersection showing that the ramp at the intersection of I-5 and 520 will be considerably higher than the current one. This is the first time that information has been available. This is a material fact which was omitted from the SDEIS. More information is needed, so that readers can have a clear picture of the planned connections.
 - b) The merging of the lanes from the Portage Bay Bridge to the I-5 connections is never clearly portrayed. It is always shown under a lid. This area needs to be clearly shown.

C-040-057

- 2) The SDEIS does not explain what are the expected effects of the additional traffic from 520 on the express lanes south of SR 520? How will this impact congestion on I-5?
- 3) And the effects of the additional on the mainline I-5, north and south on I-5? What throughput can be expected? What are the implications for congestion on I-5?
- 4) The SDEIS does not explain the expected effects of not having additional connections from SR 520 to I-5 north?

assumptions, as noted in the comment. These assumptions include predictions of how land use, population, and employment will change in the project area, as well as on what travel choices people will make with or without the project. Land use plans adopted by local governments guide where, how, and to what densities land may be developed. This allows projections to be made of future population and employment. On a regional basis, PSRC is responsible for developing a demand model that translates this future growth and development into an estimate of the number of people who will use the future regional transportation system. These assumptions are based on long-term regional data and trends. Factors such as "citizen pressure" cannot be incorporated into a data-driven model and are more appropriately addressed through agency policy.

The transportation analysis assumed completion of the SR 520, Medina to SR 202 project because it was included in regional and statewide transportation plans and had received funding. Thus, it was reasonable to assume that by the design year of 2030, this project would be complete. Similar assumptions were made regarding other regional projects planned for completion by 2030. These assumptions are made not to "justify" the SR 520, I-5 to Medina project, but because these future projects will influence the movement of traffic throughout the regional transportation network. Thus, NEPA requires that these future projects be considered when determining how traffic will move as a result of the SR 520, I-5 to Medina project. The 2030 travel demand model for the Final EIS also accounted for all of the projects in Sound Transit 2, including light rail on I-90, in the evaluation of the Preferred Alternative and the No Build Alternative.

Please see the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for information about the assumptions that were used for the Preferred Alternative. The responses to comments C-040-029

C-040-057

- 5) What is the expected effect of the Current Proposals on vehicle throughput and on congestion, in the following areas, all of which are heavily impacted by 520 traffic?
- (i) Harvard Street from 520 to the northbound onramp of I-5
 - (ii) 10th Avenue from 520 to East Boston Street
 - (iii) Impact on Delmar , both east and westbound.
- 6) The SDEIS omits analysis of the possibility that it is not possible to put more cars in the communities near the 520 offramp at Roanoke. There does not appear to be any way to make more traffic from 520 traffic flow freely either to the north or to the south. The possibility must be examined that it is simply not feasible to put additional cars from SR 520 into this area.

Section VI) F)

C-040-058

F) The SDEIS omits many analyses related to the proposed 7 lanes of the Portage Bay Bridge.

- a) Since no additional connections to I-5 north are planned, why have three additional lanes on Portage Bay Bridge?
- (i) If the purpose of these lanes is to stack up traffic waiting to go to I-5, how does that weigh against the taking of public use of the bay underneath, the additional strain on the water ecology, and the additional expense of constructing these lanes?
 - (ii) If the purpose of these lanes is to enable traffic entering at Montlake to move more quickly up the Portage Bay bridge, how does that weigh against the factors above?
 - (iii) The additional lane (auxiliary lane) for vehicles entering at Montlake going west has been described as a way for those vehicles to gain speed before merging. However, the SDEIS omits any analysis of this, including
 - (i) This auxiliary lane would not be necessary if the Montlake interchange were further east, near the current Museum of History and Industry. Since that alternative is available, what is the justification for taking away public use of Portage Bay parkland, harming the ecology, and causing extra expense?
 - (iv) What is the purpose of a lane enabling cars to go faster on the Portage Bay Bridge, since in a few hundred yards the seven lanes

though C-040-038 address further statements in the comment letter regarding the transportation analysis.

C-040-027

The methodology for estimating travel demand and traffic congestion in the project area is consistent with industry standards, NEPA requirements, regional planning processes, and FHWA traffic analysis guidelines for evaluating and comparing existing and future transportation project alternatives. The SR 520, I-5 to Medina project selected its horizon year for transportation analysis to be consistent with regional planning work performed by the Puget Sound Regional Council. At the time the Final EIS transportation analysis began, 2030 was the horizon year. WSDOT used PSRC's travel demand model and its population, employment, and land use forecasts. The SR 520, I-5 to Medina project will provide the region with the flexibility to respond to future changes in demand through the addition of a safe and reliable structure and design improvements that will improve traffic operations and safety.

C-040-028

The 4-Lane Alternative evaluated in the 2006 Draft EIS was assumed to be tolled, and was determined not to meet the project purpose and need. As discussed in the response to Comment C-040-005 and Chapter 2 of the Final EIS, tolled and "transit-optimized" 4-lane alternative options also would not satisfy the project purpose and need, and therefore have not been advanced for the project.

The 6-Lane Alternative options in the SDEIS and the Preferred Alternative in the Final EIS are all assumed to be tolled, and the Preferred Alternative includes updated tolling assumptions. As explained on page 1-37 of the SDEIS, the SR 520 Variable Tolling Project will implement tolling on SR 520 in 2011 for the primary purpose of managing traffic congestion. This toll would remain in place until the

C-040-058

have to merge into 5 operating lanes anyway, and there is a very high probability of backups because of the lack of additional connection to I-5 north of 520?

- (v) The SDEIS lacks description of the width of the Portage Bay bridge as it approaches the Delmar area, and of the lane configuration at the planned merge of the 7 lanes into 5 active lanes, including the area under the lid.

C-040-059

- b) Our analysis indicates that adding the 2 westbound lanes to the Portage Bay bridge so that there are 4 westbound lanes actually decreases the throughput compared to the existing 2 lanes, because there are only two functioning exit lanes in the afternoon, when traffic is heaviest, and 3 lanes in the morning. Vehicles on the Portage Bay bridge will be changing lanes and merging, and frequently will be backed up by congestion on I-5 anyway. We calculate that the main use of the additional westbound lanes is to hold cars, which will pollute heavily. Please respond.

- c) For the eastbound lanes, the analysis is similar except that the backups will come from the overcongested Montlake area. Please respond.

C-040-060

- d) Because the increased size of the Portage Bay Bridge will harm a number of park areas (Section IV and Appendix B), and because the idling cars on the bridge will have a major effect on local air pollution and health, alternatives which do less damage must be considered.
 - (i) The Nelson Nygaard report on 520 project enhancement, April 2010, incorporated here be reference <http://www.seattle.gov/council/attachments/2010sr520final.pdf> indicated that the Portage Bay Bridge could work with 4 lanes.
 - (ii) If the additional 520 lanes were mass transit and went to a station near UW, it would be easy to avoid the damage by keeping the Portage Bay bridge at 4 lanes.
 - (iii) In the unlikely event that Portage Bay Bridge can not be kept to four lanes, it should be kept to 5 lanes.

Section VI) G)

C-040-061

G) The SDEIS omits many analyses related to the Montlake area

- 1) The SDEIS omits depicting the Montlake Interchange as it will be seen from the ground in Montlake.
 - a) Please show drawings of the interchange from several ground and water level vantage points.
 - b) Please show detailed drawings of bicycle and pedestrian paths.

construction of the SR 520, I-5 to Medina project and would then be replaced with new tolls adopted by the Transportation Commission to provide project funding in accordance with the financing plan. Although the state Legislature has authorized allocation of revenues from the Variable Tolling Project to fund the SR 520 Pontoon Construction Project and the SR 520, Medina to SR 202: Eastside Transit and HOV Project, the toll would be removed when the bonds for those projects are repaid, which is expected to be before 2030. Therefore, if the SR 520, I-5 to Medina project were not built, there would be no toll in effect in 2030, which is the year used to compare the No Build Alternative and the Build alternatives. This is why the baseline No Build Alternative assumption is that the SR 520 corridor would not be tolled.

WSDOT and FHWA understand that the Legislature might choose to extend the duration of variable tolling for congestion management even if the SR 520, I-5 to Medina project were not built. Discussions about tolling are taking place also at a regional level. Accordingly, WSDOT performed a sensitivity analysis to understand how traffic modeling results for the SR 520, I-5 to Medina project might differ if the No Build Alternative were tolled. This analysis showed that transit and HOV use would increase with a tolled No Build, but only by about half as much as they would under the Preferred Alternative. It also showed that the tolled No Build Alternative would move about 10,000 fewer people each day through the SR 520 corridor than the untolled No Build, and about 20,000 fewer people than the Preferred Alternative. In other words, the mobility benefits of the Preferred Alternative are even greater when compared to a tolled No Build Alternative than they are compared to the untolled No Build used for the EIS analysis. The sensitivity analysis is summarized in more detail in Section 5.1 of the Final EIS.

Please see Chapter 4, Transportation Forecasts and Operations Analysis Methodology, and Chapter 8, Transit Operations, of the Final Transportation Discipline Report for further discussion of modeling

C-040-062

- 2) The SDEIS omits necessary analysis of the second bascule bridge which would cross Montlake Cut.
 - a) Please provide drawings showing the second bascule bridge and its impact on view from all sides and from the water .
 - b) The SDEIS fails to acknowledge that the second bascule bridge both causes constructive taking of park land, and harming a historic site.
 - c) The current Montlake Bridge is a historic site which would be damaged by the second bridge.
 - d) The construction of a second bridge takes away constructive use of the Ship Canal Trail (4fd parkland) near the bridge, because people would be walking or biking or sitting under a large noisy structure, instead of in open air.
 - e) The construction of the second bridge takes away viewpoints enjoyed by thousands of people each year, including water views from east and west; the muc-used view from 10th and Shelby; and views from the land to the east, on both north and south sides.
 - f) The SDEIS fails to demonstrate that the second bascule bridge provides any advantages .
 - (i) The SDEIS (Ch 6) contains no performance data that allow an assessment of the impact of this second drawbridge.
 - (ii) A compilation of data from the 2006 EIS indicates that the bridge adds almost no value.(Appendix XX Balick)
 - (iii) Please demonstrate any advanatages of the second bridge on intersection efficiency, overall capacity, pedestrian and bicycle experience, and transit service.
 - g) Because the proposed second drawbridge does harm to historic and park sites, alternatives must be evaluated to avoid this damage. Please present an analysis weighing any benefits of this bridge against the harms.

C-040-063

- 3) The SDEIS omits analysis of the possibility that it is not possible to put more cars in the area of the Montlake interchange. After years of study, no one has found a way to make more traffic from 520 traffic flow freely either to the north or to the south. The possibility must be examined that it is simply not feasible to put additional cars from SR 520 into this area.

Section VI) H)

C-040-064

- H) The SDEIS omits analysis of the area between Madison Park and Laurelhurst
 - 1) The SDEIS statement that only 18 homes in Madison Park will be affected is erroneous; at least 600 residences are on the north end of the peninsula, running along SR 520.

assumptions. See also Section 1.11 of the Final EIS for more information about tolling. WSDOT has conducted the necessary and appropriate planning to comply with the requirement to study alternatives under NEPA.

C-040-029

The methodology for the SR 520, I-5 to Medina project transportation analysis is consistent with industry standards, NEPA requirements, regional planning process, and FHWA traffic analysis guidelines for evaluating and comparing existing and future transportation project alternatives. WSDOT and the co-lead agencies for the project selected the PSRC travel demand model because it is used for all major transportation planning projects in the region. PSRC is the regional Metropolitan Transportation Planning Organization. WSDOT reviewed and validated the model. The travel demand and traffic operations modeling processes are described in Chapters 3 and 4, respectively, of the Transportation Discipline Report and the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

Existing data from October were used because this is when traffic volumes are typically at their highest (school is in session and there are few holidays). The travel demand model does account for behavioral changes that are influenced by travel times, tolls, bus transfers, and parking prices, to name a few. This has been demonstrated by the shift in mode choice that resulted with the Preferred Alternative.

The underlying assumptions, including population, land use, and planned improvements other than the project, were the same for the No Build and the build alternatives, which made it possible to determine the specific effects the build alternatives and design options would have on the transportation network in the SR 520 corridor. This approach is consistent with FHWA's customary practices for NEPA documents in densely developed urban areas where the project itself is not expected

C-040-064

- 2) The height of 520 is a major factor for residents of this area and the damages to homes of the proposed higher elevation of 520 are not adequately described. The proposed height and bulk of this bridge would change these from homes with a front-seat lake view, to homes looking at a concrete barrier.

C-040-065

VII) The SDEIS does not adequately describe the effects of this highway expansion on air pollution and the harm to human health .

Section VII) A)

A) The SDEIS presents unrealistically optimistic projections of air quality.

- 1) The SDEIS conclusions on air quality are completely dependent on its predictions that congestion will decrease and average speeds will be over 30 mph. which in turn is dependent on overly optimistic assumptions. (Section III above)
- 2) Because of its inadequate examination of the effects of the expansion of SR 520 on the Seattle roads (see Section VI above), the SDEIS does not acknowledge that much of the Arboretum, the Montlake area, Portage Bay, Roanoke Park, and north Capitol Hill would have permanent heavy congestion, with idling cars spewing pollutants. Please include analysis of congestion and pollutants of these areas.

C-040-066

- 3) The projections use data only to the year 2030, where residents will be living with the results through 2090 or longer.

C-040-067

- 4) The SDEIS (Chapter 5) states that according to their models there will be no new violations nor increases in the frequency or severity of existing violations of the air quality standards associated with any of the build options. It was difficult to evaluate this projection because:
 - a) At 2030 projected vehicle traffic levels along arterials and local streets is associated with dramatic adverse health impacts (asthma, cardiovascular disease, cancer) for those spending significant amounts of time outside within about 0.2 -0.3 miles of major roads. (For example: Brugge et al (2007), Chang et al (2009); Shendell and Boothe (2008); Williams et al (2009), Buonocore et al (2009)). The impacts grow with length of arterial and are particularly highly correlated with concentrations of particles with diameters less than 2.5 microns (called 'fine' particles).
 - b) The only regulations cited in the DEIS are EPA (1992). It is unclear if they have incorporated more recent regulatory standards; (e.g. EPA (2006)).

to cause significant changes in land use. Analysis of differing scenarios for growth, economic conditions, travel pricing structures, and other variables affecting travel demand is appropriately done at the regional planning level. For example, PSRC's recently adopted Transportation 2040 plan included an EIS that evaluated these types of considerations. It would be outside the scope of NEPA for WSDOT to engage in speculative analysis of planning efforts that are outside its purview.

That the SR 520, Medina to SR 202: Eastside Transit and HOV Project would be complete in the design year for the I-5 to Medina project is a reasonable assumption about the future transportation network. (Please see the response to comment C-040-026 for additional information.) Comparing the Build alternatives to the No Build Alternative, the effect the SR 520, I-5 to Medina project would have on travel time was discussed on page 2-3 of the Transportation Discipline Report. Travel time associated with the HOV lane that is part of the SR 520, Medina to SR 202 project was provided only as additional information.

Please see the responses to Comments C-040-194 and C-040-195 regarding Appendices M and N in the comment letter. These appendices were also submitted by the Laurelhurst Community Club (Comment Letter C-031). See the responses to Comments C-031-071 through C-031-080 in that letter.

C-040-030

The models used for evaluating vehicle travel demand (travel demand model), freeway operations (CORSIM) and local streets and intersection (Synchro), used together, are able to predict traffic performance on local streets. In addition to the models listed above, the transportation analysis conducted for the Final EIS was expanded to include a VISSIM (PTV AG 2010) micro-simulation analysis of the Montlake interchange along with the Synchro analysis. Together, these two models provided more detailed information regarding local street operations, congestion,

C-040-067

- c) Moreover, the SDEIS does not provide the 24-hour area concentrations of pollutants, the quantity regulated by EPA.

Section VII) B)

C-040-068

- B) By not designing the expansion of SR 520 to avoid air pollution, the state is arguing that it is ok to harm human health and the global environment.**

- 1) The argument: the economic plight of this community is such that people must have access to their cars to travel to work even though the resultant air pollution will adversely affect the health of citizens in ways which include premature death. Is there no other way that people can reach their jobs?
- 2) Further, the argument is that the economic plight of Puget Sound is so great that we can ignore the effects of increasing CO₂ emissions upon global warming and the adverse effects upon the rest of the world.

Section VII) C)

- C) The SDEIS errs in not evaluating other alternatives, like light rail or tunnels, which might provide better mobility with far less air pollution.**

- 1) Whaver the level of pollution in the future, it is not adequate to design a highway, present it in an SDEIS, and then attempt to mitigate the pollution caused by the design.
- 2) Instead, the design from the beginning should have as one of its primary goals the avoidance of air pollution (and noise pollution).
- 3) Please give responses to the following questions:
 - a) What avenues were explored to find alternatives to the use of the automobile?
 - b) What funding was requested for this purpose? What funding was provided? For what grants wer applications made?
 - c) What instructions were WSDOT planners given to explore alternatives to the automobile to reduce pollution, by senior managers, the governor, or the legislature?
 - d) Was exclusive Bus Rapid Transit considered as a less-polluting alternative for lanes 5 and 6?
 - e) Was light rail considered as a less-polluting alternative for lanes 5 and 6? If so, who participated in the discussion and what were the conclusions?

Section VII) D)

C-040-069

- D) The SDEIS does not adequately address the impacts of the Current Proposals on human health, and does not present the important information that its**

and travel time. Please see Chapter 4 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a description of the methodology used to forecast traffic volumes and evaluate traffic operations. Please see Chapters 6 and 8 of the Final Transportation Discipline Report for a discussion of the modeling results and the effects the Preferred Alternative would have on local street traffic volume, intersection operations, congestion, and transit travel times.

C-040-031

The interchange influence areas described in the Transportation Discipline Report were identified to help summarize where similar growth in traffic was anticipated. The boundaries of the interchange influence areas were based on where the majority of the traffic growth would occur. However, the traffic model itself did include a broader area in the analysis including a number of local intersections. Please see the response to comment C-040-033 for a description of how local intersections were selected for the model.

C-040-032

As noted in the comment, pedestrian volumes were assumed in the SDEIS to be consistent with existing volumes. When existing pedestrian volumes were unavailable, estimates were based on data provided in the Transportation Research Board's Highway Capacity Manual for central business district (CBD) and non-CBD areas.

For the Final EIS, WSDOT based pedestrian forecasts in the Montlake area on the North Link Final Supplemental EIS Addendum Traffic Operations and Construction Transportation Analysis (Sound Transit 2010), which includes pedestrian activity related to the Husky Stadium Light Rail Station. The Final EIS transportation analysis incorporates the assumption that existing pedestrian volume would increase by 2030, keeping pace with population and employment growth, increased transit ridership, and changing behavior. The results of the 2030 level-of-service

C-040-069

proposals would unnecessarily cause some people to become chronically sick or to die.

- 1) Please include in the SDEIS statements from authorities. Here are examples;
 - a) "A comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health" (Pope and Dockery, 2006)
 - b) "Recent studies have shown associations of long-term and short-term exposure to traffic air pollution with cardiovascular mortality, morbidity, and subclinical parameters." (Kan, Heiss, et al, 2008)
 - c) "Short term and long-term exposures to air pollution have been consistently linked to cardiovascular disease morbidity and mortality." (Van Hee, Adar, et al, 2009)
 - d) "Cohort and case-control studies have also reported an association between long-term exposure to air pollution and fatal coronary heart disease." (Roselund, Bellander, et al, 2009)

C-040-070

- 2) The SDEIS has many other errors and omissions related to air quality and human health. Please respond to the issues raised by Dr. Doug Stewart in Appendix T. References are in Appendix S, Health Literature references

C-040-071

- 3) Preparing for the SDEIS, the state commissioned a Health Impact Assessment (HIA) . However, that SDEIS refers to that HIA only in passing and does not present the issues related to human health as criteria for assessing alternatives. For a critique of the HIA, please see Appendix U.

C-040-072

- 4) The SDEIS does not explain that light rail would produce much less pollution than cars, and does not present the data on that subject.
 - a) The SDEIS does not explain how tradeoffs were made between expanding for cars, and using alternatives like bus rapid transit or light rail. Were health considerations of vehicle travelers and surrounding citizens considered in weighing the balance between single occupant vehicles and other forms of transportation? What data was considered regarding the potential adverse effects of traffic associated air pollution, on chronic respiratory illnesses, the development of asthma particularly in children, the development of heart disease, the development of cancer, the effects upon the development of children, the particular vulnerability of older people, and the risk to pregnancy.

analysis are in Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

C-040-033

The local traffic study area in the SDEIS was determined by comparing traffic volume on local streets between the No Build Alternative and Options A, K, and L during peak hours. Based on standard methodology, the traffic operations analysis only included intersections where traffic volume would change by more than 5 percent between No Build and the design options. Five percent was used as a criterion because a change of that magnitude would typically result in measurable operational changes. Traffic volume changes of less than 5 percent are within the daily fluctuation and so are not considered measurable or significant. Therefore, if traffic volume was predicted to change by more than 5 percent on streets adjacent to an intersection, effects on that intersection were presented in the SDEIS. Conversely, if an intersection showed an overall change in traffic volume of less than 5 percent, effects on that intersection were not presented in the SDEIS. The same 5 percent threshold has been used for the Preferred Alternative analysis. Please see the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for detailed information about traffic volume changes and intersection operations with the Preferred Alternative.

C-040-034

2030 is the analysis year used in the SDEIS and the Final EIS; it is not clear why the comment refers to 2090. The transportation analysis for the Preferred Alternative indicates that congestion at the I-5/SR 520 interchange would be reduced significantly over the No Build Alternative. In 2030, the Preferred Alternative would result in near free-flow conditions on I-5 northbound during the morning commute. Travel time between Seattle and Bellevue would be reduced by 36 minutes compared to the No Build Alternative. During the afternoon commute, travel times with the Preferred Alternative would improve by 12 minutes

C-040-072

- 5) The SDEIS does not explain that tunnels would reduce pollution on the west side, and does not provide analysis of the tradeoffs between surface car lanes and tunnels.
- 6) The SDEIS does not explore other designs that would result in less air pollution.

Section VII) E)

C-040-073

- E) **The SDEIS does not explain that the effect of the Current Proposals is to discourage physical activities which help human health.**
 - a) The SDEIS (Ch 5-27) does not explain how important near 520 in Seattle are walking, bicycling, kayaking, canoeing, and nature outings. It does not explain that the net effect of the Current Proposals is to reduce such activity.
 - b) See discussion of the takings of parkland and trails, Appendix B. Loss of these parks, trails, and water activity spaces discourages physical activity.
 - c) In Montlake and at the Roanoke 520 offramp, the Current Proposals create freeway-like movements of traffic, fast and multi-lane, completely inappropriate for a pedestrian or bicycle environment. This endangers people and discourages physical activity.
 - d) Along the Arboretum walking trail, the Bagley Stair trail, the Bill Dawson Trail, Montlake Park, and Roanoke Park, the highway structure will be so close, so big, and so noisy, that it will have a tremendous discouraging effect on physical activity.

Section VII) F)

C-040-074

- F) **The SDEIS errs in its discussion of greenhouse gases. In reality, building more lanes will lead to more emissions, and less-polluting alternatives like light rail are available.**
 - 1) In Chapter 5 the claim is made that by 2030 all the options will decrease greenhouse gas emissions by up to 7% over those if we do not build. This projected reduction is highly unlikely :
 - a) Data based analyses show that adding highway lanes always increase greenhouse gases over the long run, although they may decrease them in the short run. (E. g., Williams-Derry (2007)) Construction and maintenance for 50 years is estimated to produce about 3500 tons of CO2 per mile, before counting emissions from vehicles.

for this same trip. Please see Chapter 5 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS), for more about the effects of the Preferred Alternative on traffic volume and operations at the I-5/SR 520 interchange in 2030.

C-040-035

The Montlake Bridge does not open during the morning and afternoon peak-traffic periods. However, it does open at other times and can cause congestion and backups that affect operations on SR 520 and local roads. Consequently, Montlake Bridge openings were included in the traffic model to identify their effect on overall traffic operations in the Montlake area. Please see Chapters 6 and 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information.

C-040-036

The assumptions that were used in the project's transportation analysis are documented in the Chapters 3 and 4 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS). The methodology for estimating and assessing travel demand and traffic operations for highways and local streets is consistent with industry standards, NEPA requirements, regional planning processes, and FHWA traffic analysis guidelines for evaluating and comparing existing and future project alternatives.

Traffic growth is not caused by a transportation project; it is caused by population growth and land use planning that directs where population growth can occur. The traffic model used for the SR 520, I-5 to Median project is based on land use plans and forecasts of population growth that have been adopted by the local jurisdictions. These plans and forecasts have been incorporated into the regional travel demand model maintained by the Puget Sound Regional Council. Background growth, such as increased traffic, is presented as part of the No Build Alternative analyses for 2030 and is not considered to be a direct or indirect effect of

C-040-074

b) . Each mile of new highway lane, whether it is HOV or not, is projected to increase CO2 by about 100,000 tons over 50 years. This estimate is based on available data and includes optimistic estimates of projected increases in fuel efficiency.

2) Further, these reductions are insufficient.

The goal of the Seattle Climate Action Plan (SeaCAP06), was to reduce citywide greenhouse gas emissions by 7% over 1990 levels by 2012; the goal of the Western Climate Initiative (WCI), to which Washington State belongs, is overall emission reduction by 15 percent below 2005 levels by 2020. Road transportation currently accounts for 52 % of greenhouse gas emissions in the state of Washington, 62 % in the city of Seattle, and is the only sector of the Seattle economy whose emissions have grown over the past two years. (Community Inventory (2008)).

Thus even if we took the DEIS projections at face value, the GHG emissions they project for 2030 are not in keeping with the Seattle or WCI goals.

C-040-075

VIII) The state plans to start expanding the east side of 520 this year. The whole project is at least \$2 billion short on funding, and the state is choosing to use the available funds for an area which has no safety problems, rather than to do a safety project for which funding is available.

Section VIII) A)

A) The SDEIS should explain why it is more important to go ahead on an expansion project which is \$2 billion short on funding, than to do a safety project for which funding is available.

Section VIII) B)

B) The costs of the Current Proposals are likely to be higher than the \$4.6 billion anticipated.

- 1) Engineering is far from complete;
- 2) As discussed in Appendix B, very substantial required mitigation is not even discussed or defined, and its costs are not included.
- 3) The mitigation required by agencies may not yet be covered; and
- 4) There is a high likelihood that community actions will postpone construction until the issues are resolved.

Section VIII) C)

C) The state does not have enough funding even for the currently estimated costs of the SR 520 program. Construction is now expected to start on the east side. This is likely to leave the I-5 to Medina project short on funds and constructed with no mitigation.

the project. More information about travel demand modeling and transportation analysis methodology was provided in Chapters 3, 4, 5, and 11 of the Transportation Discipline Report (Attachment 7 to the SDEIS). The analysis allowed the project alternatives and design options to be compared to the No Build Alternative and to each other for their effects on travel time and congestion.

Please see the response to Comment C-040-033 regarding the local study area for transportation effects and why effects on streets outside the study area that was included in the discipline report would not be significant.

See also the response to Comment C-040-197 regarding Appendix P in the comment letter.

C-040-037

Please see the responses to Comments C-040-005 and C-040-006 for discussion of light rail transit on SR 520. The SR 520 High-Capacity Transit Study (December 2008) recommended bus rapid transit as the preferred mode of high-capacity transit on SR 520.

The average vehicle occupancy (AVO) estimate of 65 passengers per bus was used to determine the total bus capacity that would be available in the future with the project. The AVO of 65 passengers is consistent with the project travel demand model. This passenger volume assumes that some riders would stand during the peak hour.

The discussion on page 8-35 of the Transportation Discipline Report responded to the question, "Would there be enough bus service to meet Build Alternative demand?" The footnote on that page provided further information on transit assumptions. Based on information from King County Metro, it was assumed that 65 percent of bus trips would use standard buses (42 seats) and 35 percent would use articulated buses

C-040-075

- 1) If the Current Proposals for the 520 program are built, the state lacks at least \$2 billion committed funding, and at least \$1 billion even if I-90 were tolled. See page 33 of appendix K. .
- 2) Additional funding shortfalls are likely;
 - a) The funding plans are dependent on tolling a separate highway , I-90. This tolling has not be approved, would require exemptions from federal law, and may not be feasible under a recent ruling. See Appendix V.
 - b) The State's analysis shows that new taxes will be needed Appendix E, and there is no assurance that voters will approve such taxes.
- 3) The SDEIS omits analysis of how the expected funding shortfalls are influencing design and construction plans. What levels of shortfall will lead to what changes in plans?
- 4) Starting constuction of the east side segment leaves less funding for the I-5 to Medina segment. The SDEIS refers repeatedly to a "phased implementation plan" under which the lanes would be built first, and lids and other mitigation would come later. The SDEIS errs in not explaining that the lack of funds is likely to lead to no mitigation for the west side for many years.
- 5) Particularly because of the safety issues, the SDEIS needs to analyze an alternative based on the funding which the state is confident of having. For instance, a safety retrofit of the four lanes could be done with funds available. A 4 lane tolled and transit prioritized 520 might be done with funds foreseeably available.
- 6) For the reasons above, the legislative desire to have an expanded SR 520 is not likely achievable. The state needs to present real alternatives to a 6 lane car-centric 520, alternatives such as those mentioned in Section V above, together with their costs, what they accomplish, and what they leave undone.

C-040-076

IX) Almost no mitigation of damages is promised. Noise reduction levels and technologies, offsets for construction damages, and lids are either ignored or presented as optional throughout the document.

A) Please see the discussions of lack of mitigation in Appendix B and in each of the sections above. The mitigation is required, and will be substantial.

C-040-077

B) Noise is the primary impact on area residents. The SDEIS does not propose to use the techniques recommended by the noise experts panel, and reasonable noise levels are not assured. See Appendix D.

(58 seats). This was a conservative estimate because more articulated buses are expected in the future, especially as bus rapid transit service is deployed in the corridor. Please see Chapter 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for an updated evaluation and discussion of transit demand and capacity in 2030 with the Preferred Alternative. Since the completion of the SDEIS, the Urban Partnership Agreement and Sound Transit's ST2 programs have funded additional bus service for the SR 520 corridor. Updates to the plan are documented in Chapter 8 of the Final Transportation Discipline Report. See also the response to Comment C-040-029 regarding the validity of transit use assumptions.

C-040-038

Please see the response to Comment C-040-004 regarding the Section 4(f) analysis. The definition of Section 4(f) protected properties does not include all properties that may be perceived as parks, such as plantings in rights-of-way or informal open spaces not designated for park purposes. In particular, it does not include land within the WSDOT right-of-way that is designated for transportation use, regardless of whether the land is informally used or regarded as recreational or open space.

WSDOT has worked closely with FHWA and the agencies with jurisdiction over Section 4(f) resources to determine which properties are protected by this regulation. These agencies have all concurred on the 4(f) resources identified in the Final EIS. Please see the responses to Comments C-040-080 through C-040-107 below regarding specific portions of the WSDOT right-of-way mentioned in Appendix B. Also see the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS and the Recreation Discipline Report Addendum in Attachment 7 to the Final EIS.

WSDOT has evaluated all of the public parks and significant historic sites in the project area and has found that 8 park and recreation

C-040-078

- C) However, the SDEIS does indicate that the Current Proposals attempt to avoid and mitigate the impact on fish. We believe the data use is questionable at best; please see and respond to Appendix W.

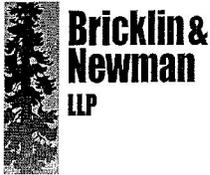
facilities and more than 350 historic properties are eligible for protection under Section 4(f). The Draft Section 4(f)/6(f) Evaluation (Attachment 6 to the SDEIS) identified 4 parks, 2 trails, and 11 historic properties that would be subject to a project use under Section 4(f) with Options A, K, or L. Properties protected by Section 4(f) but not affected by the project do not warrant extensive discussion. Section 4(f) and Section 6(f) resources have been reevaluated for the Preferred Alternative and are discussed in Chapters 9 and 10 of the Final EIS.

C-040-039

The Preferred Alternative would minimize the amount of park land required for the project compared to the SDEIS options, and would strengthen the connections among project-area parks by providing new and enhanced trail linkages as well as improved pedestrian crossings of SR 520, which currently serves as a partial barrier in moving between parks north and south of it. As noted in the response to Comment C-040-004, appropriate mitigation has been identified for impacts on Section 4(f) and Section 6(f) properties; this mitigation has been agreed upon by the agencies with jurisdiction (FHWA, the Seattle Parks and Recreation Department, and the University of Washington). Please see the Final Indirect and Cumulative Effects Discipline Report (Attachment 7 to the Final EIS), which provides a discussion of the Preferred Alternative's effects on parks in the larger context of Seattle's recreational lands. Please see the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS for additional information on this topic.

C-040-040

Regulations enacted since the original construction of SR 520 require the evaluation of environmental impacts and the protection of park land. The National and State Environmental Policy Acts (adopted in 1969 and 1971, respectively) require preparation of an environmental impact statement for projects that are likely to have significant adverse effects on the natural or built environment. Section 4(f) of the Department of



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Reply to: Seattle Office

April 14, 2010

Jennifer Young
Environmental Manager
SR 520 Project Office
600 Stewart Street, Suite 520
Seattle, WA 98101

Re: Supplemental Draft EIS for the I-5 to Medina Portion of the SR-520 Project

Dear Ms. Young:

C-040-079

I write on behalf of the Coalition for a Sustainable 520 and its members to provide comments on portions of the SDEIS for the above-referenced project. Thank you for this opportunity to comment.

All Reasonable Alternatives Have Not Been Included

SEPA (and NEPA) were adopted to assure that government agencies made decisions "by deliberation, not default." *Stemple v. Dept. of Water Resources*, 82 Wn.2d 109, 118 (1973). There has been much deliberation regarding addressing the transportation needs in the SR 520 corridor. But despite that, there is still the risk that the lead agencies are defaulting on their obligations to rigorously examine all reasonable alternatives. The alternatives analysis is the "heart of the environmental impact statement." 40 C.F.R. § 1502.14. It must "[r]igorously explore and objectively evaluate all reasonable alternatives . . ." 40 C.F.R. § 1502.14(a). The EIS must "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits." 40 C.F.R. § 1502.14(b). Reasonable alternatives include those that are "not within the jurisdiction of the lead agency." 40 C.F.R. § 1502.14(c).

Determining the range of reasonable alternatives flows from the project's purpose and need. The SDEIS states that the project's purpose remains the same today as it was when the purpose statement was first crafted by the Trans-Lake Washington Study Committee in 2000:

The purpose of the project is to improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond in a manner that is safe, reliable, and cost-effective, while avoiding, minimizing, and/or mitigating impacts on affected neighborhoods and the environment.

Transportation Act was enacted in 1966 to preserve public parks and recreation lands, wildlife and waterfowl refuges, and historic sites. Section 4(f) had not been adopted in 1963, and a Section 4(f) evaluation was not required at that time. As discussed in the response to comment C-040-004, WSDOT planning for the SR 520, I-5 to Medina project has been and will continue to be consistent with Section 4(f). This includes evaluating all feasible and prudent alternatives to use of land protected by Section 4(f), planning to minimize harm to protected lands, and providing appropriate mitigation for Section 4(f) uses that cannot be avoided.

As described on page 50 of the Draft Section 4(f)/Section 6(f) Evaluation (Attachment 6 to the SDEIS), in 1963 the State Department of Highways condemned approximately 47 acres of land in the Arboretum for the construction of SR 520. The Preferred Alternative evaluated in this Final EIS would require acquisition of 0.5 acre of land in the Arboretum and 6.2 acres of land from other parks in the project area for a total of 6.7 acres of park land acquisition. Thus, the statement that "The state would take more park space than it did in 1963" is incorrect.

C-040-041

Please see the response to Comment C-040-004. As documented in the Final Section 4(f) evaluation (Chapter 9 of the Final EIS), there are no feasible and prudent avoidance alternatives to the use of Section 4(f) properties, and the Preferred Alternative results in the least net harm to Section 4(f) properties of any alternative meeting the project purpose and need.

C-040-042

WSDOT has conducted the necessary and appropriate planning to comply with Section 106 of the National Historic Preservation Act, which protects historic properties, and has evaluated historic properties as appropriate in the Final Section 4(f) Evaluation (Chapter 9 of the Final

C-040-079

SDEIS at 1-3. This purpose statement is notable in its focus on moving “people and goods” not motor vehicles. Yet every single alternative examined in the SDEIS involves spending billions of dollars to increase the capacity of SR 520 for motor vehicles only. None of the alternatives include light rail. Light rail offers the possibility of accomplishing the project’s purposes at lower environmental costs. The decision to omit light rail from any of the alternatives examined in the SDEIS is inexplicable and renders the SDEIS fatally flawed.

The viability of a light rail option has been documented in the recent draft report prepared for the City of Seattle’s Mayor: *SR 520 Light Rail Alternatives, Draft Report*, Nelson/Nygaard Consulting Associates (Apr. 2010). A copy of the report is available at www.seattle.gov/mayor/.¹

The benefits of a rail option are many. At the top of the list, rail offers opportunities to reduce greenhouse gas emissions. In this day and age, an alternative that offers the promise of reducing GHG emission should be examined in great detail in the environmental review process. Your failure to develop and analyze a rail alternative is disheartening given the commitment of the federal and state governments to reducing GHG emissions in the coming years.

State legislation establishes demanding standards for *reducing* our GHG emissions. The legislation calls for GHG emissions to be reduced to 1990 levels by 2020. By 2050, we are to reduce GHG emissions to 50 percent of 1990 levels. RCW 70.235.020.

The State is not going to meet these standards if it continues to pour billions of dollars into constructing highways for motor vehicles in areas where light rail is a viable option. Few areas of the State have opportunities for light rail. Residential densities and employment opportunities are high enough in the SR 520 corridor to support rail. It is a dereliction of duty by WSDOT to fail to seize this opportunity and do everything it can to explore the opportunities for rail in this corridor now.

The SDEIS explains that a rail option was excluded as a result of planning that started in 1998. The SDEIS seems to take the point of view that because rail was eliminated from consideration many years ago, that the momentum behind that decision somehow excuses analyzing a rail alternative in detail in this EIS in 2010. That rationale is flawed in several respects.

First state law mandates WSDOT, Sound Transit, and others to develop a transportation plan “that ensures the effective and efficient coordination of bus service **and light rail services throughout the State Route Number 520 corridor.**” RCW 47.01.410 (emphasis supplied). That multi-modal transportation plan is to be “closely coordinated” with the 520 bridge replacement and HOV projects. *Id.* Excluding light rail from every alternative considered in the SDEIS does not reflect “close coordination” between this project and the legislative mandate to “ensure” light rail “throughout the State Route Number 520 corridor.”

¹ I presume the City of Seattle Mayor’s Office is providing a paper copy of that report. If you are unable to obtain it otherwise, please contact me and I will be happy to provide you with a copy.

EIS). Please see that document for discussions of how the Preferred Alternative minimizes harm to historic properties and how remaining effects would be mitigated. See also the response to comment C-040-041. The responses to comments C-040-020 and C-040-043 through C-040-051 provide information on why a 4-lane SR 520, immersed tube tunnel designs, and/or immediate implementation of light rail transit are not being considered further.

The Final Cultural Resources Assessment and Discipline Report (Attachment 7 to the Final EIS) updates the SDEIS cultural resources analysis and addresses many of the comments in Appendix Z of this letter. Appendix Z is a duplicate of a comment letter submitted separately by the Portage Bay/Roanoke Park Community Council (Comment Letter C-008). Please see the responses to that letter for further information.

WSDOT will provide appropriate mitigation for all Section 106 adverse effects and all Section 4(f) uses found to occur with the Preferred Alternative. The Section 106 Programmatic Agreement in Attachment 9 to the Final EIS contains mitigation measures for effects on Section 106 properties. The Final Section 4(f) Evaluation in Chapter 9 of the Final EIS describes the mitigation planned for Section 4(f) uses. As noted in the response to comments C-040-009 and C-040-013, mitigation is a commitment that is required by regulations, included in project costs, and documented in the Record of Decision. Although lids are not considered mitigation, the lids included in the Preferred Alternative are an integral part of the project and are not “optional.”

C-040-043

Please see the responses to comments C-040-005, C-040-016, and C-040-020 regarding the range of alternatives evaluated under NEPA. Also see the response to Comment C-040-004 regarding the consideration of alternatives in the Section 4(f) analysis. WSDOT has conducted the necessary and appropriate planning to comply with the requirements to

C-040-079

Second, none of the prior planning efforts that resulted in the “no rail” decision for SR 520 had the benefit of the analysis in an EIS. Government decisions on major projects are not allowed to be made until after the decision makers are informed by the content of an adequate EIS. Relying on recommendations made without the benefit of an EIS puts the proverbial cart before the horse. Your agencies’ recommendations on how to spend billions of taxpayer dollars must be informed by the contents of an adequate EIS. You should not be justifying the exclusion of reasonable alternatives based on studies that did not enjoy the input of an adequate EIS.

Third, reliance on years of prior planning also is misplaced because the world has changed greatly in the intervening years. Nearly a decade ago, in the early years of the so-called “Trans-Lake Washington Project,” rail was jettisoned from consideration for the SR 520 corridor. SDEIS at 1-10. Much has changed regarding our knowledge about climate change. New policies adopted at the city, state, national, and international levels reflect our increasing awareness of the reality of global warming and the need for bold action to avert its worst consequences.

In 2007, the United Nations’ Intergovernmental Panel on Climate Change (IPCC) released its frequently cited report reflecting the new scientific consensus that is causing global warming. As summarized by the U.N. News Center in its press release announcing the report:

The IPCC, which brings together the world’s leading climate scientists and experts, concluded that major advances in climate modeling and the collection and analysis of data now give scientists “very high confidence” – at least a nine out of ten chance of being correct – in their understanding of how human activities are causing the world to warm. **This level of confidence is much greater than the IPCC indicated in their last report in 2001.** The report confirmed that it is “very likely” that greenhouse gas emissions have caused most of the global temperature rise observed since the mid-twentieth century. Ice cores, going back 10,000 years, show a dramatic rise in greenhouse gases from the onset of the industrial age. The co-chair of the IPCC working group stated, “There can be no question that the increase in these greenhouse gases are dominated by human activity.”

The United Nations went on to summarize the key findings of the report:

The report describes an accelerating transition to a warmer world – an increase of three degrees Celsius is expected this century – marked by more extreme temperatures including heat waves, new wind patterns, worsening drought in some regions, heavier precipitation in others, melting glaciers and arctic ice, and rising global average sea levels.

evaluate alternatives under NEPA and Section 4(f). Chapter 2 of the Final EIS contains a description of how alternatives for the project were identified and evaluated.

C-040-044

Please see the response to Comment C-040-020 regarding legislative directives related to bridge safety. Also see the response to Comment C-040-013 regarding funding. Replacement of the floating bridge, which is the most vulnerable portion of the SR 520 corridor, is fully funded through current legislative allocations.

C-040-045

Project design must meet FHWA, AASHTO and WSDOT safety standards, irrespective of the alternative or design option chosen. WSDOT is developing the project design to comply with applicable design standards for structural, seismic, and wind safety. Within the constraints imposed by these standards, WSDOT has minimized impacts on the natural and built environment to the greatest extent feasible. For a discussion of seismic hazards, see the Geology and Soils Discipline Report. The fixed structures in the SR 520 corridor would be designed to avoid collapse during the design seismic event. The design seismic event is a 1,000-year event where the magnitude of the earthquake would range from 8 to 9 on the Richter scale. This means that an earthquake of this magnitude has a 0.1 (one-tenth of one percent) probability of occurring in any given year.

The storm safety issues related to the Evergreen Point Bridge were discussed on page 1-4 of the SDEIS. The span was originally designed for a sustained wind speed of 57.5 miles per hour (mph). In 1999, WSDOT rehabilitated the bridge to enable it to withstand sustained winds up to 77 mph. This still falls well short of the current design standard of 92 mph. The probability that the existing bridge will sustain serious structural damage sometime in the next 15 years is extremely

C-040-079

The 2007 report from the IPCC represented a major step forward in the scientific understanding of global warming issues. According to the United Nations, "IPCC Chair Rajendra Pachauri said the science has 'moved on' and the extent of knowledge and the research carried now is several steps beyond what was possible for the last report." "This report by the IPCC represents the most rigorous and comprehensive assessment possible of the current state of climate science and has considerably narrowed the uncertainties of the 2001 report," according to Michel Jarraud, Secretary General of the World Meteorological Organization. Executive Director of the United Nations Environment Program was quoted as stating: "[T]his new report should spur policy makers to get off the fence and put strong and effective policies in place to tackle greenhouse gas emissions."

The IPCC was released several years after the Trans-Lake Washington study participants decided not to include rail on SR 520 in the near term. But this information was available to the drafters of the SDEIS in 2009 and 2010 and should have been used by them in determining a regional range of alternatives to simply building more pavement for motor vehicles.

As earth-shaking as the IPCC report in 2007 was (or should have been), scientific analysis since then should be causing alarm bells to ring even louder. The recent Copenhagen Climate Science Congress, attended by 2,000 scientists, concluded with this "Key Message 1.:"

Recent observations confirm that, given high rates of observed emissions, the worst-case IPCC scenario trajectories (or even worse) are being realized. For many key parameters, the climate system is already moving beyond the patterns of natural variability within which our society and economy have developed and thrived. These parameters include global mean surface temperatures, sea-level rise, ocean and ice sheet dynamics, ocean acidification, and extreme climatic events. There is a significant risk that many of the trends will accelerate, leading to an increasing risk of abrupt or irreversible climatic shifts.

International Scientific Congress Climate Change: Global Risks, Challenges, and Decisions (Mar. 12, 2009). (This Scientific Congress was held in advance of the December 2009 Climate Change Conference that drew political leaders from around the world.)

More than our scientific understanding of global warming has changed in recent years. The political firmament is shifting, too. At the national level, in 2007, the Supreme Court rejected Bush administration efforts to preclude EPA from regulating greenhouse gas emissions. *Massachusetts v. EPA*, 549 U.S. 497 (2007). The Supreme Court held that the EPA could regulate those emissions as long as the EPA determines they contribute to climate change. *Id.*

The Supreme Court decision was followed by the election of President Obama, which opened the doors for new federal initiatives to combat greenhouse gas emissions. Pursuant to the Supreme Court decision, the EPA has proposed rules regulating GHG emissions from motor vehicles. On

high. To bring the bridge up to current design standards and eliminate the risk of catastrophic failure, the existing span must be completely replaced.

Safety considerations in the corridor also include the need for shoulders that are consistent with American Association of State Highway and Transportation Officials (AASHTO) standards. Current safety standards for both highway design and seismic design are far more rigorous than those that were in effect when the existing bridge was built. As noted above, WSDOT has worked with FHWA to reduce the additional width needed to the greatest extent possible consistent with maintaining safe driving conditions.

C-040-046

The potential for retrofitting the existing bridges was discussed during the mediation process and was dismissed from further consideration at that time (see pages 1-17 through 1-19 of the SDEIS). The No Build Alternative evaluated in the Draft EIS did assume that minor retrofits associated with maintenance and safety would continue. However, retrofitting the Evergreen Point Bridge and bridge approach structures to current standards was determined not to be a viable option because the bridge has had a number of safety and maintenance retrofits to date, and further retrofits are not feasible due to structural and pontoon floatation limitations. Although it might be feasible to seismically retrofit the hollow columns supporting the west approach to the Evergreen Point Bridge, the Portage Bay Bridge, and on- and off-ramps in Montlake and the Arboretum, such a retrofit is likely to have similar costs to new construction, similar or greater impacts, and a shorter design life. Thus, it would not be cost-effective compared to building new structures.

C-040-047

Please see the response to Comment C-040-013 regarding funding.

C-040-079

another front, directly relevant to this project, on January 13, 2010, the United States Department of Transportation announced a "dramatic change from existing policy" regarding the funding of major transit projects. DOT Secretary LaHood stated, "We want to base our decisions on how much transit helps the environment, how much it improves development opportunities, and how it makes our communities better places to live." No longer would transit funding decisions be based simply on alleviating congestion "in making funding decisions, the FTA will now evaluate the environmental, community, and economic development benefits provided by transit projects, as well as the congestion relief benefits from such projects." U.S. DOT Press Release (Jan. 13, 2010).

The shifting political climate also is evidenced by the passage of the American Clean Energy and Security Act by the House of Representatives last summer. The bill sets a goal of reducing overall greenhouse gas emissions by 17 percent from 2005 levels by the year 2020, and 83 percent by 2050.

In like manner, Washington State adopted greenhouse gas reduction standards in legislation adopted in 2008. The legislation states: "The state shall **limit emission of greenhouse gases to achieve the following emission reductions . . .**" RCW 70.235.070(1)(a) (emphasis supplied). As noted above, the statute establishes that by 2020, emissions shall be reduced to 1990 levels. By 2035, GHG emissions are to be 25 percent below 1990 levels and by 2050, they are to be 50 percent below 1990 levels.

The new law also requires agencies distributing capital funds for infrastructure projects to consider whether the entity receiving the funds has adopted policies to reduce greenhouse gas emissions. The agencies must also consider whether the project is consistent with the State's limit on the emissions of greenhouse gases established in RCW 70.235.020 and the statewide goals to reduce annual per capita miles traveled by 2050. RCW 70.235.070.

Policy shifts have occurred recently at the local level, too. The Seattle City Council's 2010 priorities include the adoption of a "carbon neutral goal for Seattle with specific milestones and implementation steps . . ."²

In sum, whatever may have led the Trans-Lake Washington Project group to exclude rail from SR 520 nearly a decade ago cannot be cited in 2010 as justification for refusing to consider rail within the range of alternatives today.

Climate change is the most significant and daunting environmental issue facing this generation. We cannot pass up opportunities to reduce GHG emissions based on dated policy recommendations developed without the benefit of an EIS, without the benefit of our current knowledge of the seriousness of GHG emissions, and without the guidance provided by current governmental policies calling for significant reductions in those emissions in the coming years and decades.

² [Http://www.Seattle.gov/Council/Issues/Council_Priorities.htm#1](http://www.Seattle.gov/Council/Issues/Council_Priorities.htm#1).

C-040-048

Please see the responses to Comments C-040-005 and C-040-016 regarding alternatives and the response to Comment C-040-004 regarding protection of parks.

C-040-049

Under NEPA, an EIS must include analysis of a "no action" alternative (40 CFR 1502.14(d)). The No Build Alternative satisfies this requirement. As noted on page 2-1 of the SDEIS: "Given the vulnerabilities of the existing bridges, the No Build Alternative is not a likely scenario; however, it provides a set of baseline conditions to which the expected effects of the project can be compared."

Please see the response to Comment C-040-028 regarding evaluation of the No Build Alternative with tolling. The toll that is authorized for the existing bridge would expire prior to 2030 if the SR 520, I-5 to Medina project were not built; therefore, the No Build Alternative is not assumed to be tolled. Please see the response to Comment C-040-005 regarding a tolled, transit-optimized 4-lane alternative. The Draft EIS analysis determined that a 4-lane alternative would not satisfy the project purpose and need. This was confirmed in the SDEIS and again in the Final EIS, when an additional transportation analysis of 4-lane alternative options was performed.

Appendix Q was also included in the comments submitted by the Laurelhurst Community Club. It is responded to in Comments C-031-062 through C-031-067.

See the responses to Comments C-040-004 and C-040-053 regarding compliance with Section 4(f). The Preferred Alternative would have fewer effects on parks and historic properties protected under Section 4(f) than any other alternative that meets the project purpose and need.

C-040-079

We recognize the existence of political and economic forces (and their friends in the mainstream media) that resist adding a new study of rail at this time. They argue that studying rail now will cause delays and that the project has been “studied to death.” First, if delays ensue, they are not the result of those asking that the SDEIS be revised to include a rail option. If the SDEIS had included a rail option in the first place, there would be no need for any delay at all. If an analysis of rail at this stage causes any delay, it is because of the failure of the authors of the SDEIS to include a rail option in the SDEIS in the first place when it was published earlier this year. Don’t shoot the messenger.

Second, the new information about climate issues and government policies addressing global warming are issues of the highest environmental magnitude. We understand that at some point, planning must stop and decisions must be made. If there were new information policies about a relatively minor environmental issue, the need for making a decision might outweigh the need for additional study. But as stated above and as recognized by virtually every credible source, there is not a more important environmental issue than dealing with climate change. This SDEIS recognizes that close to 50 percent of the State’s GHG emissions come from the transportation sector. One of the most heavily traveled transportation corridors in the State is the SR 520 corridor. We are about to make a decision regarding transportation options in that corridor that will be with us for the next 50 to 100 years. How can we possibly in good conscience (thinking not only of ourselves, but of the next generation) make a decision of this magnitude and with such long-lasting impacts without taking a hard look at a rail option now?

Third, reliance on the old recommendations to exclude consideration of rail in the SR 520 corridor is misplaced because it is inconsistent with Sound Transit’s current plan for the SR 520 corridor. Sound Transit has not ruled out constructing light rail in the 520 corridor. Rather, Sound Transit’s current plan (“ST 2”) calls for an analysis of opportunities to develop high capacity transit, including light rail, in that corridor. Yet all of the alternatives currently under consideration would effectively eliminate the opportunity to bring rail to this corridor. See Nelson/Nygaard report. An EIS is required to assess opportunities that will be lost if the proposal goes forward. RCW 43.21C.030(2)(b)(v). But rather than disclose that all of the studied alternatives will doom light rail in this corridor, the SDEIS suggests light rail can be readily added later. Such a claim is debunked by the extensive analysis in the Nelson/Nygaard report. As those authors state, we have one chance to get this right – and that time is now.

The failure of the SDEIS to provide a detailed assessment of a rail option infects other portions of the SDEIS, too. For instance, in the discussion of the project’s consistency with local land use plans and policies (SDEIS at 5-42, *et seq.*), there is no acknowledgement that proceeding with the current proposal would stymie the region’s long-term plans that call for possible inclusion of rail in the SR 520 corridor. As just noted, Sound Transit (and other regional planning bodies) still consider rail in the SR 520 corridor a viable option that requires further study. Yet this project would effectively eliminate that option from future consideration (for the next 50 to 100 years). That inconsistency should be disclosed in the EIS.

C-040-050

Please see the response to comment C-040-020 and Section 2.4 of the Final EIS for a discussion of why Option M was not studied further. The variations of Option M described in the comment would involve greater environmental impacts than the original concept, including open trenching through a large portion of Union Bay salmonid habitat and potentially across the Foster Island traditional cultural property (which is also a park). Impacts of this magnitude are not acceptable when less damaging alternatives exist, and are incompatible with the project goal of avoiding, minimizing, and mitigating impacts on affected neighborhoods and the environment.

The legislative work group was informed about the regulations protecting parks and natural resources at its meeting on September 22, 2009. This meeting included representatives from the Federal Highway Administration, the Washington State Recreation and Conservation Office, the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the Washington State Department of Ecology, the National Marine Fisheries Service, the U.S. Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and the Washington Department of Archaeology and Historic Preservation. They provided information to the workgroup on environmental regulatory requirements with respect to the design options under consideration. The meeting summary can be viewed at:

http://www.wsdot.wa.gov/partners/sr520legislativeworkgroup/files/0922_meetingsummary.pdf.

The legislators were also provided with traffic modeling results at the October 8, 2009 Westside subgroup meeting. These results did not indicate “permanent congestion in all the areas from Montlake to north Capitol Hill.” A summary of this meeting is available at:
http://www.wsdot.wa.gov/partners/sr520legislativeworkgroup/files/1008_meetingsummary.pdf.

C-040-079

In like manner, the Section 4(f) analysis (SDEIS, Attachment 6) totally ignores the light rail option and fails to provide any consideration of the ability of that alternative to avoid or reduce impacts to parklands protected by federal law. A light rail option could eliminate the need for HOV ramps and, thereby, reduce the footprint of the project and its impacts on protected Section 4(f) lands. Yet this avoidance and minimization strategy was not analyzed because rail had been eliminated as an alternative to be studied in detail in the EIS. See Attachment 6 at 121. This is yet another fatal flaw in the SDEIS.

The failure to consider rail as a means of reducing impacts to parks is ironic given the Governor's quote in the SDEIS that called for Seattle communities to develop a design for the project in Seattle that "will best serve the neighborhoods, University of Washington, and parks and natural resources." SDEIS at 1-16 (emphasis supplied). The Governor called on WSDOT "to provide support" to that effort. It is not too late. A rail alternative could be the best option for protecting parks and our most vulnerable natural resource – our atmosphere under attack from GHG emissions. We urge the FHWA and WSDOT to provide support for that effort now.

Segmentation

The SDEIS assesses impacts (and alternatives) only within a part of the SR 520 Project corridor. As the SDEIS recognizes, the earlier Draft EIS evaluated the entire SR 520 corridor from I-5 in Seattle to 108th Avenue NE in Bellevue (just shy of I-405). In contrast, though, the SDEIS chops that corridor in two. The current SDEIS evaluates only the portion of the corridor from I-5 to Medina. This is error.

Federal Highway Administration regulations set forth three criteria that must be met to justify conducting environmental review for only a segment of a longer highway project. The segment evaluated in the EIS "shall:"

- (1) Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- (2) Have independent utility or independent significance, *i.e.*, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- (3) Not restrict consideration of alternatives for reasonably foreseeable transportation improvements.

23 C.F.R. § 771.111(f).

The I-5 to Medina segment analyzed in the SDEIS fails all three of these tests.

In 2006, citizens from the Madison Park and Roanoke neighborhoods suggested constructing the segment of SR 520 that extends from I-5 to the western end of the floating bridge as a tunnel. WSDOT reviewed the tunnel concept, investigated engineering, evaluated key environmental considerations, and identified preliminary cost ranges. This work is documented in the Assessment of Tunnel Concept I-5 to Lake Washington report of April 17, 2006 (available at: <http://www.wsdot.wa.gov/NR/rdonlyres/B81AC988-E033-4255-AFCE-0D38DF05E52D/0/AssessmentofTunnelConceptI5toLakeWashington41706.pdf>).

The assessment found that major engineering challenges are associated with construction of a tunnel through this area. The tunnel concept would provide fewer opportunities for local traffic to access SR 520. Maintaining correct roadway geometrics would require significant excavation on Marsh Island and Foster Island for the tunnel to transition above ground and connect to the Evergreen Point Bridge, and would likely require substantial open water fill that would be regulated under the Corps of Engineers Section 404 permitting process. Effects to the fragile ecosystems of the Arboretum and Marsh and Foster Islands would be substantial; restoration of the natural environment would take decades. There is a strong likelihood that resource agencies with jurisdiction would be unwilling to issue required permits for tunnel construction, and the tunnel concept would add billions of dollars to the SR 520 project costs. Designing the project to coordinate with the Sound Transit tunnel, the Portage Bay Bridge, the interchange connection to I-5, and on- and off-ramps to the local street network also present unique design challenges and would be expensive to engineer and construct. The reduction in access could result in increases in street congestion in some locations. Based on these issues related to feasibility, design, environmental effects, and cost, WSDOT eliminated the I-5 to Lake Washington tunnel

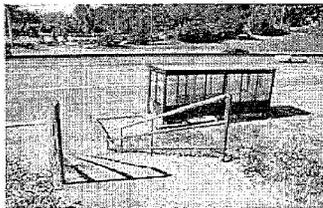
C-040-079 Logical Terminus

The SDEIS explains the logic of the two endpoints in Section 1.14: “These termini are logical because the I-5/SR 520 interchange is a major system interchange in the City of Seattle, while Evergreen Point Road is the location of a major transit transfer point for the Eastside.” We have no quarrel with recognizing the I-5/SR 520 interchange as a major system interchange and a logical terminus for the western end of the project. A parallel eastern terminus is SR 520’s intersection with I-405 in Bellevue or its intersection with SR 202 in Redmond. But there is no comparable “major system interchange” at Evergreen Point Road. The SDEIS claim that Evergreen Point Road in Medina is a logical endpoint because it is a “major transit transfer point” is illogical in several respects.

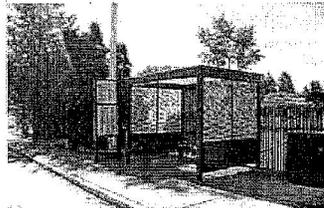
First, an infinitesimal number of persons traveling along SR-520 use the Evergreen Point Freeway Station. According to data in the SDEIS, of the 160,000 people who use the bridge on an average weekday, only 1,000 of them are transit riders who use the Evergreen Point Freeway Station. That is, barely more than one-half of one percent of persons crossing the bridge use the Evergreen Point Freeway Station.³ That hardly makes it a “major” transit transfer point.

Second, even if the comparison is made to transit riders crossing the bridge, the numbers are not much better. According to the EIS, there are 15,000 transit riders passing across the bridge on an average weekday (ES 2-1). The 1,000 transit riders using the Evergreen Point Freeway Station constitute just seven percent of all transit riders crossing the bridge. The Evergreen Point Freeway Station simply is not a “major” transfer point.

Third, the minor role of the Evergreen Point Freeway Station is visually conveyed by these pictures of the facility:



Evergreen Point Freeway
Transit Station – Westbound



Evergreen Point Freeway
Transit Station – Eastbound

SR 520 Transit station Usage summary Page 2
WSDOT Aug 2015

³ According to the EIS, 160,000 people cross the bridge on an average weekday (ES 1-2) of which only 1,000 are transit riders using the Evergreen Point Freeway Station (SDEIS at 2-8 and Ex. 2-5).

from further consideration as an alternative and did not evaluate it in the Draft EIS.

C-040-051

Please see the response to Comment C-040-005 regarding study of a 6-lane alternative with two lanes used for light rail. As described in Chapter 2 of the Final EIS and in the response to Comment C-040-004, including light rail with the opening of the SR 520, I-5 to Medina project was considered during alternatives analysis, but was not evaluated as an alternative based on a number of regional planning decisions made over the past decade. The SR 520 High-Capacity Transit Plan, which was completed in 2008 by WSDOT, King County Metro, and Sound Transit, determined that demand for transit in the SR 520 corridor could be satisfied until at least 2030 by bus rapid transit that runs in HOV/transit lanes, complementing Sound Transit’s East Link. The 6-Lane Alternative design options evaluated in the SDEIS were designed to accommodate light rail in the future, if a decision should be made to use SR 520 as a second high-capacity transit route across Lake Washington. With the Preferred Alternative, the design has been modified to enhance the compatibility with potential future light rail.

C-040-052

Please see the responses to comments C-040-005 and C-040-051 regarding why light rail on the corridor was not studied in the SDEIS and the timing of a possible future decision to add light rail to the corridor. It is not likely that a decision would be made to implement light rail in the SR 520 corridor in the next 15 to 20 years.

As noted in the response to Comment C-040-005 and discussed in Chapter 2 of the Final EIS, there are two potential ways to accommodate future light rail on SR 520: in the HOV lane or in a new right-of-way separate from the HOV lanes. On the floating bridge, the second method (addition of a new rail right-of-way) would involve widening of the bridge,

C-040-079

These small bus stops on the side of a major freeway hardly constitute a “logical terminus” for this environmental analysis.

Fourth, in justifying Evergreen Point Road as the western terminus for the segment of this project stretching east to Redmond, the SDEIS asserts: “The existing freeway transit stop at Evergreen Point Road is a key hub for transit on the Eastside, connecting north-south routes with east-west routes across Lake Washington; . . .” SDEIS at 1-36. Key hub? Connecting north-south routes? According to Metro’s Route Map, there are no major north-south bus routes using the Evergreen Point Transfer Station. The only two routes that do not simply pass through the transfer station while remaining on 520 are Route 261 and Route 271. Each of these routes travel south for a short distance and then turn east through downtown Bellevue and then beyond to points further east in Overlake (Route 261) and southeast in Eastgate (Route 271). Characterizing the Evergreen Point Transfer Station as a “logical terminus” on the basis of it being a “key hub” linking east-west with north-south routes is pure fiction. For all of these reasons, the first test in the federal regulation is not met. Evergreen Point is not a major hub and is not a logical terminus.

Independent Utility

Limiting environmental analysis to this western segment also fails the second test which requires that the project have “independent utility,” “even if no additional transportation improvements in the area are made.” Certainly the “no action” alternative would have independent utility by eliminating safety issues associated with the existing, aging structures. But the proposal is to do much more than that, *i.e.*, to expand the road to include new HOV lanes across the lake and in Seattle. The SDEIS claims that these HOV lanes “will complete the SR-520 HOV system in keeping with regional planning.” SDEIS at 1-23. Hardly! Completion of this segment would not complete the SR-520 HOV system in keeping with regional planning. The Eastside project would have to be completed as well.

Eastbound on SR 520 from the Evergreen Point Station, there are no HOV lanes until considerably east of Evergreen Point Road. Constructing eastbound HOV lanes in Seattle and on the bridge would create a huge backup where that traffic has to merge with the general purpose lanes due to the absence of any eastbound HOV lanes from Evergreen Point east.

The eastern segment of this now bi-sected project (*i.e.*, the segment east of Evergreen Point Road) is described as including this major element:

Construct a new eastbound HOV lane from Lake Washington to the existing HOV lane west of the I-405 interchange. This improvement would complete the currently discontinuous HOV network on the Eastside and improve travel time reliability for buses and carpools.

which would require additional supplemental stability pontoons to support the weight of light rail. This configuration is the one depicted in the drawing reproduced on page 28 of the comment letter. The drawing depicts one potential future configuration of a 6-lane roadway with future HCT that was included in the SR 520 Pontoon Construction Project Design-Build Request for Proposals. The original drawing included the note “This configuration is assumed for design. Actual configuration unknown at this time.” In keeping with the desire expressed by the Coalition and others to keep future light rail options open, this depiction represents a possible future design consideration for bidders to consider. It does not represent the project that is proposed by WSDOT and evaluated in the EIS.

C-040-053

The standard terminology for referring to the number of lanes in a transportation facility is based on the number of through lanes. The 6-Lane Alternative has six through lanes: four for general-purpose traffic and two for HOVs. Ancillary facilities such as ramps are needed in some areas on all limited-access highways to support proper function, mobility, and safety. These facilities are accounted for in defining right-of-way limits and associated impacts, but are not counted as through lanes.

Transit vehicles are, by definition, high-occupancy vehicles. They are distinguished from carpools as appropriate in the transportation analysis.

C-040-054

Highway lanes and shoulders are designed to standards that have been established to protect the safety of drivers. When circumstances warrant a change from these standards, WSDOT must request FHWA’s approval of a “design deviation.” WSDOT has already obtained approvals for design deviations for both lane and shoulder widths in response to community requests for a narrower roadway footprint. In the interest of safety, FHWA will not approve further narrowing of the corridor. WSDOT

C-040-079 SDEIS, Appendix Q at 1-4 (emphasis supplied). Not unless the west of Medina segment is combined with the east of Medina segment will there be a continuous eastbound HOV system in the SR 520 corridor.

Westbound, HOV lanes exist from I-405 to Lake Washington, but they are on the outside of the right-of-way. The project in Seattle and on the bridge call for the HOV lanes to be on the inside of the other lanes. "This change would enhance safety by eliminating the need for merging vehicles to weave across the faster-moving HOV lanes to reach the general purpose lanes." Thus, completing the SR 520 HOV system involves more than building HOV lanes in Seattle and on the bridge. The Eastside HOV lanes must be moved so that they form a continuous protected lane inside of the general purpose lanes. Unless the westbound HOV lanes east of Lake Washington are relocated to the inside, the SR 520 HOV system will not be complete, contrary to the claim in the EIS that the Seattle and bridge segment of the project alone will "complete the SR 520 HOV system."

Segmentation Precludes Alternatives

Carving out the Seattle and Lake Washington portion of the corridor as a separate segment also violates the third test of the federal regulation, *i.e.*, it will "restrict consideration of alternatives for other reasonably foreseeable transportation improvements." As we have already seen, adding rail to this corridor is a "reasonably foreseeable transportation improvement," yet all the alternatives under consideration for this segment would not just "restrict" consideration of light rail, but effectively eliminate it. That would be a loss not just for Seattle communities, but for Eastside communities, too.

In like manner, proceeding with the eastern segment in advance of the Seattle and bridge segment threatens the feasibility of adding rail to the Seattle and bridge segment. Unless provision is made now for rail east of Evergreen Point Road, the decisions made on the eastern segment will "restrict," if not effectively preclude, consideration of adding rail to this corridor at any time in the reasonably near future.

Segmenting the overall project also threatens consideration of alternatives for the Seattle and bridge segment because of funding limitations. There is only so much money that the federal and state agencies can find to fund this project overall. Revenue sources for the entire project have not been found. *See, e.g.*, SDEIS at 2-34. Project cutbacks seem inevitable. By segmenting the project and allowing the eastern segment to go first, scarce funds will be devoted to designing, building, and mitigating impacts on the eastern segment, effectively limiting options when the time comes to design, build, and develop mitigation for the western segment. For all these reasons, the third criterion is not met and this attempted segmentation must be abandoned. A new Supplemental Draft EIS should be prepared that evaluates the entire project. No further action should be taken to implement the eastern segment (east of Evergreen Point Road) until a Final Supplemental EIS is published.

intends to operate SR 520 as a 6-lane corridor and has no plans to restripe it in the future.

C-040-055

The Visual Quality Discipline Report Addendum (Attachment 7 to the Final EIS) shows side views of the bridge from Webster Point and Madison Park.

Based on public concerns about views, the Preferred Alternative includes a modified bridge height, approximately 20 feet above water in the middle of the lake, and approximately 5 to 10 feet lower than Options A, K, and L. The new bridge would be higher than the existing bridge because of maintenance needs associated with the pontoons and design considerations such as protecting travelers on the bridge from high waves. These design issues were weighed against costs and public concerns to achieve an optimal height for the bridge.

Bridge height would not affect the use of "public space used by the public" as described in the comment because the range of bridge heights evaluated would not change the project footprint. The height of the bridge would somewhat reduce noise, since it would increase the distance between the noise source and the listener. The Preferred Alternative would include 4-foot concrete traffic barriers with noise-absorptive coating, which would further reduce noise levels.

All of the alternatives and design options analyzed for the SR 520, I-5 to Medina project include a single-deck floating structure. Under all build alternatives and options, the structure would include an area for bridge maintenance below the roadway deck; however, this area would not be available for through traffic.

As described on page 2-29 of the SDEIS, WSDOT does not state that the bridge deck could not be located directly on the surface of the

C-040-079 Section 4(f) Lands

Section 4(f) of the Department of Transportation Act and Section 138 of the Federal-Aid Highway Act preclude the use of parklands for highway projects absent extraordinary circumstances.⁴ Prior to enactment of Section 4(f), parklands had been an easy mark for highway projects. Building highways in parks typically involves less expense and less political and practical problems than building a highway through established residential or commercial areas. As the Supreme Court stated in the seminal 4(f) case of *Citizens to Preserve Overton Park v. Volpe*,⁵ Section 4(f) “expresses the Congressional will ‘that protection of parkland was to be given paramount importance.’”

In *Overton Park*, the highway departments argued that parkland should be used because of cost, safety, and other factors. The highway departments claimed they had discretion to consider these other factors and to determine “whether, on balance, alternative feasible routes would be ‘prudent.’” *Id.* at 412. The Supreme Court rejected these contentions:

But no such wide-ranging endeavor was intended. It is obvious that in most cases considerations of cost, directness of route, and community disruption will indicate that parkland should be used for highway construction whenever possible. Although it may be necessary to transfer funds from one jurisdiction to another, there will always be a smaller outlay required from the public purse when parkland is used since the public already owns the land and there will be no need to pay for right-of-way. And since people do not live or work in parks, if a highway is built on parkland no one will have to leave his home or give up his business. Such factors are common to substantially all highway construction. Thus, if Congress intended these factors to be on an equal footing with preservation of parkland there would have been no need for the statutes.

Congress clearly did not intend that cost and disruption of the community were to be ignored by the Secretary. But the very existence of the statutes indicates that protection of parkland was to be given paramount importance. **The few green havens that are public parks were not to be lost unless there were truly unusual factors present in a particular case or the cost or community disruption resulting from alternative routes reached extraordinary magnitudes.** If the statutes are to have

⁴ These provisions are currently codified at 23 U.S.C. § 138 and 49 U.S.C. § 303. They were originally enacted as § 4(f) of the Department of Transportation Act of 1966 and are still commonly referred to as “Section 4(f).”

⁵ 401 U.S. 402, 412-13 (1971).

pontoon, but does indicate that there are engineering and safety issues that influence bridge height: (1) Improved safety for drivers by being further above crashing waves and water, and improved safety for maintenance workers who would have access to pontoons without having to interrupt or negotiate traffic, (2) An elevated structure could be modified to accommodate light rail more readily than a roadway located directly on the surface of the pontoon. Furthermore, there are engineering advantages to having the electrical vehicle power system located further away from the pontoons, as described in the text box on page 2-29 of the SDEIS. Stray electrical current could corrode the steel used to construct the pontoons, and could substantially shorten the life of the structure, and (3) There are construction efficiencies with having an elevated road deck, which allows WSDOT to deliver a new floating bridge more quickly.

C-040-056

An updated discussion about the changes in traffic volume and operations on the local streets in the Roanoke interchange area is in Chapter 6 of the Final EIS. Delmar Drive East is not included in this chapter because traffic volume on this street would change less than 5 percent compared to the No Build Alternative, and thus would not result in measurable operational changes. Please see the response to Comment C-040-033 regarding how the local traffic study area was defined and why the results for this street were not presented in the SDEIS.

C-040-057

Page 173 of the 2009 SDEIS Cultural Resources Discipline Report, published as part of the SDEIS describes the height of the reversible HOV ramp, indicates that the ramp would be higher on the south west end than the existing ramp, and also indicates that the visual effects anticipated would not be adverse. This component of the project was analyzed by all relevant disciplines for the SDEIS. Additional information

C-040-079

any meaning, the Secretary cannot approve the destruction of parkland unless he finds that alternative routes present unique problems.

Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402 at 411-12 (1971) (emphasis supplied; footnotes omitted). See also *Arlington Coalition on Transportation v. Volpe*, 458 F.2d 1323, 1335 (4th Cir. 1972) (“Congress has declared through sections 138 and 4(f) that conservation of parkland is of the **utmost primary importance**”) (emphasis supplied).

Section 4(f) prohibits FHWA from approving any project:

which requires the use of any publically owned land from a public park, recreation area, or wildlife and water fowl refuge of national, State, or local significance as determined by the federal, State, or local officials having jurisdiction thereof, or any land from an historic site of national, State, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land and (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and water fowl refuge, or historic site resulting from such use.

23 U.S.C. § 138(a).

The legislation not only provides the utmost protection for parklands, but it also provides local governments with a major role in deciding whether local parklands can be used for a highway project. The Act protects publicly owned park lands “of local significance,” and the Act reserves to the “local officials having jurisdiction” the right to determine whether municipally owned park lands have “local significance.” 28 U.S.C. § 138(a). In like manner, a finding that an impact to a municipally owned park is *de minimis* requires concurrence by the municipality. 28 U.S.C. § 138(b)(iii)(B). This local concurrence cannot be inferred. There must be an explicit determination by the local government. *Arlington Coalition on Transportation v. Volpe, supra*, 458 F.2d at 1336. See also 23 C.F.R. 774.11(c) (in the absence of an explicit determination by the officials with jurisdiction over a park that it is insignificant, park property “will be presumed to be significant”).

In making the “significance” determination, “the desirability of using the particular parkland in question as a highway must be ignored and only the value of the park as a park can be considered. Were this not so, land valuable to the community as a park could be used for a highway even though ‘feasible and prudent alternatives’ existed because federal or State officials had decided that using the park for highway purposes was desirable according to criteria other than whether such alternatives existed, the *only criterion* allowed by the Acts.” *Id.* (emphasis in original).

about the design of the reversible HOV ramp at the SR 520/I-5 interchange will be included in Chapter 2 of the Final EIS.

The lane configuration and merging from SR 520 to I-5 is shown on page 2-8, in Exhibit 2-4 of the SDEIS. While the lid at 10th Avenue East and Delmar Drive East is shown on this graphic, the proposed lane and ramp configuration can be seen. Chapter 2 of the Final EIS will have improved scale so that the lane and ramp configurations can be more easily interpreted by the reader.

An analysis of effects in I-5 interchange areas near SR 520 was included in Chapter 6 of the Transportation Discipline Report. Additional information and updates for the Preferred Alternative, including an evaluation of the effects of SR 520 traffic volumes on the I-5 express lanes and mainline, are found in Chapter 5 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS). For example, the transportation analysis indicates that the Preferred Alternative would result in less congestion at the I-5/SR 520 interchange than the No Build Alternative. The Preferred Alternative would provide near free-flowing conditions on I-5 northbound during the morning commute and would increase the number of vehicles served on I-5, which would decrease travel times on I-5 southbound (see Chapter 5 of the Final EIS and the Final Transportation Discipline Report for additional analysis). Please see the response to Comment C-040-056 regarding traffic operations in the Roanoke interchange area.

C-040-058

Under existing conditions, westbound Portage Bay Bridge is one of the most congested areas in the SR 520 corridor. Much of this congestion results from the short distance between the Montlake Boulevard on-ramp and the I-5 northbound on-ramp, which forces vehicles to merge and weave in very limited space to reach the I-5 ramps. The SDEIS options used different approaches to address this condition: Option A provided

C-040-079 There is no requirement that land that functions as a park be formally designated as a park to enjoy the protection of Section 4(f). *Stewart Park & Reserve Coalition, Inc. v. Slater*, 352 F.3d 545 (2nd Cir. 2003).

Some of the lands at issue here are owned by the State and managed by WSDOT. If WSDOT were to determine that these lands that have been used as park land for decades are not "significant," the Federal Highway Administration has the duty to independently review that determination and reach its own conclusion. 23 C.F.R. § 774.11(d).

Under separate cover, my clients are providing you with a detailed analysis of the project's use of and impacts to significant parklands protected by Section 4(f). That analysis demonstrates that the EIS and its Attachment 6 do not comply with the requirements of either NEPA, SEPA, or Section 4(f). Lands that have local significance for park purposes have been ignored in the analysis. Impacts to lands that have been identified as Section 4(f) lands have not been adequately assessed. The EIS and the accompanying 4(f) analysis fail to recognize and disclose numerous project impacts that will substantially impair the activities, features, and attributes of these park lands. That substantial impairment constitutes constructive use of the park lands and triggers Section 4(f) requirements. 23 C.F.R. § 774.15(a). The failure of the EIS and its Attachment 6 to fairly and fully acknowledge the substantial impairment of these park lands renders the EIS and the accompanying 4(f) analysis inadequate and void.

My clients' comments regarding the impacts to the parks (and the comments of many other citizens, too) are echoed also by the Seattle Board of Park Commissioners. Their recent resolution states that the Parks Board "cannot endorse any of the alternatives . . . due to the profound negative environmental impacts the project would have on the Washington Park Arboretum and the other City of Seattle Parks along the SR 520 corridor." The resolution goes on to explain that "the visual impacts and noise associated with the project, both during construction and after it is completed, will be significant" for Montlake Playfield. The resolution notes that the SDEIS "fails to recognize Lake Washington Boulevard as a historic resource or a park and recreation resource." "This officially designated park boulevard is a 204-acre, 9.2 mile long linear park wholly owned by the City and under the jurisdiction of Seattle Parks and Recreation." The project's "increased traffic through the heart of the Arboretum limits access to the Japanese Garden from the rest of the Arboretum, reduces the air quality due to vehicle emissions, increases noise from traffic and makes crossing Lake Washington Boulevard unsafe." The resolution further explains that recent improvements to Washington Park Arboretum "will likely be negatively impacted" by the project. The Parks Board has adopted a plan for future improvements to the Park, yet "redevelopment of SR 520 has the potential to negate the potential to undertake some or all of these projects to the detriment of the Arboretum and contrary to the goals set out in the Master Plan." The failure of the SDEIS and the Section 4(f) analysis to fully disclose these impacts renders the disclosure functions of those documents inadequate. These impacts also demonstrate the impropriety of using these park lands for the project and failing to minimize impacts as required by Section 4(f).

an auxiliary lane, while Options K and L lengthened the distance between the two interchanges.

Following the publication of the SDEIS, WSDOT developed a number of refinements to the Preferred Alternative to address community comments. Concern regarding the width of the Portage Bay Bridge was a frequently expressed theme. Accordingly, the Preferred Alternative would replace the auxiliary lane on SR 520 westbound with a managed shoulder, which would operate only during peak periods. This would reduce the roadway width compared to Option A, thereby minimizing effects on the surrounding Portage Bay area. When operating, this shoulder lane would help to accommodate the high volume of vehicles entering from the Montlake interchange, as well as those vehicles exiting to I-5, and would improve operations on both the SR 520 westbound mainline and on Montlake Boulevard. Please see Chapter 5 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a discussion of the effects of the Preferred Alternative on traffic volume and operations on the Portage Bay Bridge with the managed shoulder. A detailed description and maps showing the width of the Portage Bay Bridge as it approaches the Delmar area and the lane configuration as it approaches I-5 were provided in Exhibit 2-6 and Table 2-2 in Chapter 2 of the SDEIS.

C-040-059

The auxiliary lane in the SDEIS options, and the managed shoulder in the Preferred Alternative, would help to accommodate the high volume of vehicles entering from the Montlake interchange, as well as those vehicles exiting to I-5, improving operations on both the SR 520 westbound mainline and on Montlake Boulevard. The eastbound congestion between I-5 and the west bridge approach (near the Arboretum) would be substantially reduced because of the project improvements. As a result, eastbound general-purpose travel times in this section of SR 520 would be reduced by 7 to 9 minutes and HOV

C-040-079

The EIS and the Section 4(f) analysis also failed to consider the substantial impairment that will occur to park lands if construction of the lids is deferred. Given the considerable funding uncertainties and the lead agencies' acknowledgment that the project may be completed in phases, there is a significant possibility that the lids will be deferred for a considerable period of time, if they ever are built. Analysis of that issue should not be delayed until that decision point arrives. At that juncture, with most of the rest of the project built and money available to complete the Seattle section (but not enough money for the lids), there will be severe pressure to complete the highway project and build the lids at some unspecified time later. That possibility must be addressed now. This dynamic also further demonstrates the impropriety of segmenting this project into an east and west segment.

The EIS and Section 4(f) analysis also are inadequate in their failure to consider the possibility of alternatives that would avoid or minimize the amount of park lands to be used by this project. The rail option, discussed above, for instance, would result in a narrower footprint in some areas, thereby, reducing the amount of park land used for the project. The analysis also fails to consider the alternative of double decking the roadway to drastically reduce the width of the project and its use of adjacent park lands.

Finally, the EIS and the Section 4(f) analysis are inadequate in their treatment of measures to mitigate the use of and adverse impacts to park lands. Both NEPA and Section 4(f) require the lead agencies to develop and assess all reasonable measures available to mitigate these adverse impacts. As detailed in the accompanying letter from my client, that task remains undone. Of particular (but not exclusive) concern is the extent to which the analysis relies on the unfunded lids. Given the severe funding constraints, exacerbated by your current decision to allow the Eastside segment to proceed in advance of the Seattle segment, there seems to be a significant possibility that the lids never will be built. The EIS and the Section 4(f) analysis must take that into account.

Based on the various inadequacies described in this letter, the lead agencies should proceed promptly to develop a new Supplemental Draft EIS that, among other things, addresses the entire project, not just the Seattle/bridge segment and which includes a reasonable range of alternatives, including a light rail alternative. It is unfortunate that decisions made by the lead agencies in the early stages of drafting this document led to such a flawed document. Those decisions will, unfortunately, result in the loss of some time in planning for this project. The sooner the agencies rectify these errors, the sooner this project can get back on the right path. Ignoring these errors or making excuses for them now will simply delay the inevitable and result in yet more lost time. If a mid-course correction is made quickly now, the amount of time lost can be minimized and this project can still move into the construction phase in a reasonable time frame.

travel times by 8 to 11 minutes compared to the No Build Alternative. See Chapter 5 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

Improved air quality is associated with reduced idling, and therefore pollutant emissions would be reduced by traffic flowing freely. Air quality would improve with all SDEIS options and the Preferred Alternative, compared to the No Build Alternative (see the Air Quality Discipline Report Addendum in Attachment 7 of the Final EIS).

C-040-060

Please see the responses to comments C-040-005, C-040-016, and C-040-020 regarding the range of alternatives evaluated under NEPA. Also see the response to Comment C-040-004 regarding the consideration of alternatives in the Section 4(f) analysis. WSDOT has conducted the necessary and appropriate planning to comply with the requirements to evaluate alternatives under NEPA and Section 4(f). Chapter 2 of the Final EIS contains a description of how alternatives for the project were identified and evaluated.

C-040-061

A large-scale diagram of bicycle and pedestrian paths in the Montlake Interchange area has been added to Chapter 7 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS). Drawings of specific designs for these paths were not provided in the SDEIS because design development is ongoing. Please see the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachment 16 to the Final EIS) for design recommendations regarding these paths.

Attachment 2 to the Visual Quality and Aesthetics Discipline Report included visual simulations of the Montlake interchange and lid from several vantage points. Views of the Preferred Alternative interchange

Jennifer Young
April 14, 2010
Page 15

C-040-079 | Thank you for your consideration of these comments.

Very truly yours,

BRICKLIN & NEWMAN, LLP



David A. Bricklin

DAB:psc

cc: Clients

Friends of SR 520/SDEIS Comment Letter to Jennifer Young

and lid are included in the Visual Quality and Aesthetics Discipline Report Addendum (Attachment 7 to the Final EIS). There are also several simulated views of the bridge over the water from Webster Point and Madison Park.

C-040-062

Visualizations of the second bascule bridge, including views from the water and land, were provided on pages 2-42 through 2-45 in Attachment 2 to the Visual Quality and Aesthetics Discipline Report.

The Cultural Resources Discipline Report included a discussion of the effects of construction and operation of a second bascule bridge on historic properties. As stated in that report, the design of the second bascule bridge would be context sensitive to minimize effects on the setting and feeling of the historic Carl F. Gould Montlake Bridge. The Section 106 Programmatic Agreement (Attachment 9 to the Final EIS) stipulates that the new bridge design must be in keeping with National Parks Service guidelines to minimize effects on the historic bridge. It also includes stipulations that will ensure mitigation of effects that could result from the new bascule bridge or its proximity to the existing Montlake Bridge. Please see the Visual Quality and Aesthetics Discipline Report and Addendum, and the Final Cultural Resources Assessment and Discipline Report, both in Attachment 7 to the Final EIS, for further information.

The Recreation Discipline Report (Attachment 7 to the SDEIS) and its addendum in Attachment 7 to the Final EIS, the Draft Section 4(f)/6(f) Evaluation in the SDEIS, and the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS describe the effects of construction and operation of the second bascule bridge on park and recreational resources. WSDOT has determined that there would not be a constructive use of the Ship Canal Waterside Trail, as defined by Section 4(f), because the trail would retain the activities, features, and attributes that qualify it for protection

Linked parks near SR 520;
would be taken or harmed by proposed expansion



- | | | |
|------------------------|--|---------------------------------|
| (1) Interlaken Park | (9) Roanoke Street End Park | (18) Ship Canal Trail |
| (2) Bagley Viewpoint | (10) Portage Bay | (19) McCurdy Park |
| (3) Parklands East | (11) Street End Parks | (20) East Montlake Park |
| (4) Parklands West | (12) South Portage Bay Park | (21) Arboretum Waterfront Trail |
| (5) Roanoke Park | (13) Montlake Playfield Park | (22) RH Thompson area |
| (6) South Forest Area | (14) Portage Bay Park Area in 520 Right of Way | (23) University Canal Lands |
| (7) North forest area | (15) Bill Dawson Trail | |
| (8) Bagley Stair Trail | (16) Arboretum | |

under Section 4(f). The Ship Canal Waterside Trail would remain open during the construction of the second bascule bridge. Although WSDOT would use a small section of the trail during construction, a detour would be provided to ensure that the trail remains open for public use. The user experience below the new bridge would be similar to that under the existing bridge.

As noted above, visualizations of the second bascule bridge were provided on pages 2-42 through 2-45 in Attachment 2 to the Visual Quality and Aesthetics Discipline Report. Under the Preferred Alternative and SDEIS Option A, the second bascule bridge would not result in a change in the visual quality measurements of character, vividness, intactness, or unity of the views of the Montlake Cut if it is designed to be an appropriate architectural companion to the existing historic bridge (see page 65 of the discipline report).

The analysis in the Final Transportation Discipline Report (Attachment 7 to the Final EIS) confirms that the Preferred Alternative with the second bascule bridge would improve transportation operations in the Montlake area, compared to the No Build Alternative. The second bridge would allow for lane continuity between the Montlake Cut and the SR 520/Montlake interchange, which would improve traffic operations compared to No Build. The bridge would provide additional capacity for transit and carpools, bicycles, and pedestrians. Most notably, overall delay related to bridge openings would decrease for all vehicles because the additional capacity would allow congestion to clear more quickly. The changes in traffic volumes and operations on the local streets in the Montlake interchange area are described in Chapter 6 of the Transportation Discipline Report; effects nonmotorized transportation facilities and connections are described in Chapter 7. The effects of the Preferred Alternative on transit service and facilities, ridership, travel times, and rider connections are discussed in Chapter 8.

C-040-080

Appendix B: Analysis of impacts on linked parks and recreation areas
By Gerald Conley 206-322-0427 gerry@roanokecap.com

Federal Section 4(f) of the 1966 Dept. of Transportation Act as amended in 2005 says that a transportation project requiring the use of publicly owned parks, or recreation areas or wildlife areas, can be approved only if

- there is no feasible and prudent alternative to using that land and
- if the project is planned to minimize harm to the property.

To adhere, the state must prove that reasonable alternatives have been evaluated and don't work. In addition, section 6(f) gives additional protection to certain areas where federal funds have been used to create an amenity (such as the Arboretum Waterfront Trail) regardless of the land on which it resides.

Additional 4(f) focus

While the focus of the 4(f) law is on properties formally dedicated or operated as parks, recreational areas or wildlife refuges, a history of actual use of any public properties for these purposes can extend 4(f) protection to such public properties even though they do not have such formal dedication.

The focus of the process is to identify what properties have to be treated with the extra care for detailed analysis to make sure first that the need for care is identified (i.e. it is 4(f) property); second avoids using that land if feasible and prudent; and third, if avoidance is not possible, minimizes the harm and/or provides appropriate mitigation.

The SDEIS has failed to properly identify all 4(f) property involved, often failed to assess the opportunity to avoid impacting such property, often failed to describe the full adverse impact the project makes on that 4(f) property and incorrectly dismissed the need to deal with that impact in numerous instances. Often the SDEIS dismissal is made based on the statement that the use is temporary because the period of use is contrasted to total project construction time. The forecast time for this project is some 8 years and it easily could be longer. But that fact cannot be used to affirm that everything that takes less time is temporary. Rather, properly applied, the time measure is intended to demonstrate the insignificance of the nature and duration of the occupancy being described. The scope of the work needs to be minor to qualify as temporary. Occupancy, for two or three years affirms the significance, not the insignificance of the project that has caused the use. Occupancy constitutes a use if it "interferes with the purpose of the resource, on either a temporary or permanent basis." See USDOTFHA section 4(f) Policy Paper, Office of Planning, Environment and Realty, Project Development and Environmental Review, March 1, 2005.

C-040-081

As noted above and described more fully in Chapter 9 of the Final EIS, the proposed second bascule bridge does not result in a Section 4(f) use of the Ship Canal Waterside Trail, nor does it substantially impair the features and attributes that make the original Montlake Bridge eligible for listing on the NRHP. Thus, no analysis of avoidance alternatives is necessary. Addition of the second bascule bridge would support the overall purpose and need of improving mobility for people and goods.

C-040-063

Population growth and associated growth in travel demand in the region will create increased traffic volumes in the Montlake area, regardless of whether the project is built. The improvements proposed under the Preferred Alternative would better accommodate this growth in demand, improving traffic operations in the Montlake interchange area and on the SR 520 mainline compared to the No Build Alternative. Please see Chapters 5 and 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a discussion of the changes in traffic volume and operations on the highway and local streets in the Montlake interchange area with the Preferred Alternative.

C-040-064

In reviewing the SDEIS, WSDOT was unable to find a statement indicating that only 18 homes in Madison Park would be affected by the project. Please see the response to comment C-040-055 and the Visual Quality and Aesthetics Discipline Report Addendum regarding the height of the floating bridge and its effects on views under the Preferred Alternative.

C-040-065

The air quality analysis was conducted using a model approved by the U.S. Environmental Protection Agency. WSDOT worked with the Puget Sound Clear Air Agency to determine appropriate inputs to the model. As

C-040-082

Lids

In addition, the SDEIS assumes that the proposed lids will be built and therefore that the 4(f) harm that would exist if the lids were not constructed does not have to be fully identified. However, the SDEIS also states that the lids are discretionary! SDEIS Chapter 5, Page 5-80: "Under all build options the following are some of the possible mitigation measures that may be performed by WSDOT."

Given the budgetary tightness of this project, billions of dollars short, discretionary items can be expected to be dropped. **The omission of descriptions of detailed harm to all 4(f) properties creates an impression that the mitigation proposed is in fact discretionary, when, in fact, the state is required to attempt to 1) Avoid, 2) Minimize and 3) Mitigate damage. In short, the properties are not receiving the assessments and protection to which they are legally entitled.**

It is clear in the SDEIS that the lids have been identified as the most discretionary aspect of this project and that they will be built last, if ever. The SDEIS describes the project's funding outlook as follows:

"Along with the rest of the nation, Washington State and the Puget Sound region are facing serious revenue shortfalls.**there is a gap between the estimated cost of the project and the revenue available to build it. Because of these funding limitations, there is a strong possibility that WSDOT will construct the project in phases over time.**" (SDEIS, Chapter 2, Page 2-34.) The document goes on to say that priority would be given to construction of "the Evergreen Point Bridge's floating section, Portage Bay Bridge and the west approach to the Evergreen Pont Bridge. This plan is further described (SDEIS Chapter 5, page 5-152) If the project is phased, WSDOT would "...provide new structures to replace the vulnerable bridges in the SR520 corridor, as well as transitional sections to connect the new bridges to exiting facilities. It would include storm water facilities, noise mitigation and the width for the regional bicycle/pedestrian path, but **lids would be deferred until a subsequent phase.**" Finally, (SDEIS Chapter 6, page 6-128) the document explains: "under the Phased Implementation scenario, corridor improvements in the I-5 and Montlake areas would be completed during later phases after vulnerable structures have been replaced. **Lids at I-5, 10th Avenue East and Delmar Drive East, and Montlake Boulevard would be deferred until a subsequent phase.**"

The outlook for funding is jeopardized by two additional factors. There is a Federal law that makes it unclear that tolls on I-90 can be used to fund SR520. Second, Washington Legislators are diverting available SR520 funds to commencing work on non-safety related projects on the east side of Lake Washington. The phased implementation plan which the legislature has effectively launched is an intent to not mitigate at the time of construction. **Given the uncertainty of funding and the high probability of phased construction the SDEIS should analyze impacts assuming lids are not constructed.**

described in Chapter 5 of the Final EIS, the project would result in operational improvements in air quality and reductions to greenhouse gas emissions compared to the No Build Alternative. The Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS) includes a quantitative analysis of mobile source air toxics (MSATs) that shows that MSAT emissions would also decrease with the Preferred Alternative compared to existing conditions. Factors that account for the expected improvement in air quality include changes to the fleet as older vehicles are replaced with newer, low-emissions vehicles; reduced idling and increased speeds resulting from improved intersection and roadway operations and HOV lanes; and a higher proportion of trips using transit and carpools. Please see the response to Comment C-040-007 regarding air quality and the responses to Comments C-040-026, C-040-027, and C-040-029 regarding the assumptions used in traffic modeling.

C-040-066

It is standard practice for NEPA analyses to evaluate projects on the basis of a design year 20 to 25 years into the future. Detailed population and employment projections to support the analysis of travel demand and resulting effects on air quality are not generally available beyond this horizon. WSDOT analyzed conditions in 2030 to be consistent with Destination 2030, the adopted regional transportation plan (in effect at the time the analysis was done), which calculated regional air emissions for the same year (see page 23 of the Air Quality Discipline Report).

C-040-067

Air quality standards established by the Clean Air Act are intended to protect human health and the environment. The U.S. EPA regulates "criteria" pollutants by developing science-based guidelines for setting permissible levels of these pollutants in the atmosphere. The first set of limits, based on protection of human health, is called the primary standards. Another set of limits, intended to prevent environmental and property damage, is called secondary standards. A geographic area with

C-040-082

This project's lack of funding raises additional questions regarding the lids. Who will get to design them and with what guidelines? There are trade offs in terms of construction cost vs. aesthetics and safety and future maintenance cost. WSDOT has historically done a very poor job of maintaining lands for which it has responsibility, letting them go to blackberry and tree killing vines. The Seattle Park Department budget is constantly being reduced, so it is not funded to care for lids created to mitigate this project. The SDEIS fails to describe the lid program in a way that permits the public to know if it represents real mitigation or sound reduction at the expense of increased visual blight. Given the current environmental climate, this project should not start until all the funds to complete it are at hand and those funds should cover the full cost of all mitigation including landscape maintenance cost for a duration long enough to ensure an aesthetically attractive landscaping is successfully established.

C-040-083

Linked Parks

The numbers below tie to the Map "Linked Parks near SR 520" Appendix B1

(1) Interlaken Park

SDEIS description is in Chapter 4, page 4-27. Also Described in Attachment 6, page 31. Conclusion is that it would be 4(f) if used. Affirms the historical connection to Bagley. SDEIS describes a small portion of the park used for construction easement Ch 6 page 6-41.

Interlaken is a 52-acre regional park with woods and trails running from the Arboretum to Roanoke Park. Interlaken is a major walking and bike route running roughly south-east to north-west. Interlaken ends on both sides of Delmar at the Delmar bridge abutment, the Delmar bridge creating a gap between Interlaken Park and Bagley Viewpoint which was part of Interlaken Park until severed by SR 520 45 years ago. The Olmstead design envisioned that Roanoke Park was the gateway to the start of Interlaken Park at its north end, with Bagley Viewpoint, a partial block from Roanoke Park. Maintaining a park-like connection from Roanoke Park to Interlaken has been a Park Department objective that has been achieved.

The current plans for 520 impact Interlaken Park as follows:

- 1) Interlaken Park usage will be impaired by its use for construction staging, and replacement of Delmar Bridge. While the park is large, its access points are relatively rare and Interlaken Boulevard at Delmar is a primary and significant access point.
- 2) The proposal would wipe out the park-like connection between Roanoke Park and Interlaken. This includes the consistent mature tree landscaping between Roanoke Park, Parklands East, Forest Areas (see below), Bagley Viewpoint and Interlaken.

air quality that is cleaner than the primary standards is called an attainment area; areas that do not meet the primary standard are called nonattainment areas. (See www.epa.gov/air/peg/cleanup.html for more information.)

The Puget Sound metropolitan area is currently in attainment status, meaning that overall air quality is consistent with human health needs, except for carbon monoxide for which the region is designated as maintenance status meaning that additional care must be taken to ensure that the carbon monoxide standard is not exceeded. The project-specific air quality analysis for the SR 520, I-5 to Medina project found that the project would not cause new violations of the National Ambient Air Quality Standards (NAAQS). Modeling of local carbon monoxide concentrations at the highest-volume intersections (referred to as "conformity analysis") showed that CO would remain within allowable concentrations. In addition, as described in the Air Quality Discipline Report Addendum, MSAT emissions are expected to be lower with the project than under No Build. Because the project would improve conditions with respect to standards that protect human health, no adverse health impacts would result from its implementation.

The NAAQS include 24-hour standards for PM10 and PM2.5, which are shown in Exhibit 8 of the Air Quality Discipline Report (Attachment 7 to the SDEIS). The standards in Exhibit 8 are the current standards, as referenced in Exhibit 8. The NAAQS also include a 24-hour standard for sulfur dioxide; however, this is not a pollutant of air quality concern for transportation-related projects (see page 16 of the Discipline Report). A burden analysis was conducted for daily operational project emissions for five criteria pollutants, including PM10 and PM2.5 (see page 29 of the Air Quality Discipline Report).

C-040-068

Please see the responses to comments C-040-065 and C-040-067. It is

C-040-083

3) The physical linkage between Interlaken and Roanoke Park will be cut for 9 months because of the closing of Delmar associated with the replacement of the Delmar Bridge and the widening of the road below. When the Delmar Bridge is taken out the detour will require biking up a steep hill with lots of competing traffic, and then going through the Miller and 10th Avenue and the 10th Avenue and Roanoke signaled Intersections. This is high traffic in compressed space, slow routing now and it will be made worse because the 10th Avenue Bridge will be taken out and a temporary bridge put to the east, an alignment shift that will slow traffic. Also, the I-5 Roanoke Overpass will be being replaced with temporary bridging and forecast lid building. This same route will be a haul route, presumably with flagmen. Simultaneous construction in so many contiguous areas is going to lead to a noisy, dirty, clogged traffic world that people will seek to avoid. This will impair Interlaken's use for at least two years. Serenity and quiet, also significant attributes of this park, will also be destroyed. See Exhibit 3-6, Construction Elements and Durations in I-5 Area, SDEIS Chapter 3, page 3-12 which shows a 2-year time schedule. The text, Chapter 3, page 3-6 says that the Delmar Bridge will be out for approximately 9 months; Chapter 3 page 13 says Delmar will be closed for 9 to 12 months.

4) Also, as described below, widening of SR 520 exposes Interlaken to increased noise and visual blight.

5) The location of a replaced Bagley Viewpoint is not committed to, nor are its contents and linkages (see below.) The relocation of Bagley could easily cause a taking of Interlaken Park lands if the relocation occurs to the south. The SDEIS in failing to resolve the size and location of a Bagley relocation fails to address these issues.

In sum, Interlaken Park will be harmed by construction impact, by the destruction of mature trees and landscaping during the construction period, and harmed afterwards, the amount depending on the nature of the mitigation if any that is done. Given the high probability that lids will not be constructed at the time SR520 is rebuilt at Delmar, it is very obvious that Interlaken and its peaceful green belt of connection to Roanoke will be damaged seriously. The widening of SR520 takes natural land out of production that is currently a sound absorbing and visual blight reducing mitigation. Given the total lack of real capability and commitment to mitigate, this important entry way to Interlaken must be seen as significantly damaged. Its features of a green belt, its activity of peaceful quiet recreation for pedestrians and bikers, and its attributes as a historical path connecting Roanoke Park and the Arboretum will be seriously impaired. The fact that the bridge will be out for 9 months adds to the loss of activity. The park will be left with significantly more noise at its north end than it has now due to the doubling of road way width and number of cars plus their increased speed. The combination of above factors means that what was a pleasant connection from Interlaken to Roanoke will be broken, significantly impairing a major current and historical function of Interlaken Park, i.e. being an easily accessed bike and pedestrian friendly, serene park

not clear where "the state" is believed to have made the arguments the comment attributes to it. Operation of the project would result in improved air quality, as discussed in the Air Quality Discipline Report and Addendum (Attachment 7 to the Final EIS). Emissions of criteria pollutants, MSATs, and greenhouses gases would all be reduced by its implementation. This would constitute a beneficial effect on human health and the environment. No mitigation is proposed because none is warranted.

Supporting effective transit service has always been a key consideration in the project. As proposed, the Preferred Alternative supports the implementation of bus rapid transit in the near term, and light rail transit in the long term if regional decisions are made to provide it. The HOV lanes will provide benefits to transit users by reducing transit travel times and increasing reliability. These benefits would facilitate increased use of transit, with resulting increases in person-throughput and transportation system efficiency. Please see the responses to comments C-040-005 and C-040-016 regarding why initial implementation of light rail transit is not proposed for the project and regarding the range of alternatives evaluated under NEPA. Please see the response to comment C-040-050 for information on why tube and tunnel alternatives are not being studied further.

C-040-069

Please see the response to the previous comment. The information cited in the comment relates to air quality in general and does not characterize the incremental effects of a specific transportation project such as the SR 520, I-5 to Medina project. The air quality analysis performed for the project is consistent with applicable policies and regulations, including guidance from the U.S. Environmental Protection Agency and Washington State Department of Ecology. This guidance has been formulated to protect human health and the environment. The SR 520, I-

C-040-083

well linked in Boulevard style to Roanoke Park. The SDEIS is incorrect in not assigning 4f constructive use to Interlaken.

The SDEIS identifies Interlaken as a city park and acknowledges that there are 4(f) issues because they plan to do staging and construction at Delmar which they deem not significant in part because of a mis-use of the "temporary use" classification. They are focusing on curbing rather than on the treed area which will be destroyed by that construction. The SDEIS does state that street trees taken out by the lid construction will be replaced, but a mature tree is not replaced by a sapling. Further there are many trees creating the connection between parks and these many trees are in the declared construction area. The SDEIS should have also acknowledged 4(f) status to Interlaken for loss of the preciousness and historically significant connection to Bagley Park Overlook and Roanoke Park, given that said connection will be severed as part of the SR 520 doubling. (See also Parklands East and Parklands West.)

The SDEIS errs in neglecting to consider the relationship between these park areas, including the historical aesthetic significance of the linkage between the parks as well as the need for ease of access by park users.

- The SDEIS fails in its presumption that the harms can be dismissed as temporary taking. If the lid is built the disruption will be over a 2 year period. If the lid is not built, construction will cause very long lasting to permanent damage to the connection between Interlaken and Roanoke park, with greatly increased visual blight and noise and break and the elimination of mature foliage which has been reducing the impact of these problems for a road half the size of the one planned.
- The SDEIS fails to evaluate alternatives which avoid this damage.
- A 4 lane alternative on Portage Bay bridge, and elimination of 15 express lane connection would minimize the road width of SR520 and would reduce the amount of road widening required. This might permit the retention of Bagley and avoidance of replacement of Delmar and Tenth Avenue Bridges.
- If these bridges have to be replaced, postponing that construction until funds are available for lid completion would at least ensure that some of the damage done partially offset by the lid. Right now the timing is such as to create maximum damage with possibly no mitigation.
- The SDEIS fails to evaluate alternatives which would minimize the damage.
- See discussion of Parklands East and Parklands West and Forest Areas.
- See also Roanoke Park and Tenth Avenue discussion.
- The SDEIS proposals for mitigation are inadequate because the mitigation is not stated as required, and even if required there is high probability the mitigation will not occur at the time of construction if ever. The SDEIS has not documented the harm to this area effectively, which makes it much more likely that the needed mitigation will not be completed. The SDEIS should acknowledge that mitigation for these sites must address the park-like connection between these

5 to Medina project would improve air quality compared to the No Build Alternative.

C-040-070

An EIS addresses air quality effects by conducting analyses to assess a project's compliance with national, state, and local air quality standards. The analyses for the project were conducted using accepted methodology and show that the project conforms with all current air quality standards. Please see pages 17 through 22 of the Air Quality Discipline Report for a discussion of applicable standards and pages 23 through 25 for a description of the methodology.

To augment the SDEIS analyses, a quantitative analysis of mobile source air toxics was conducted for operation of the Preferred Alternative and No Build Alternative, and a quantitative analysis of effects on air quality effects from construction was conducted for the Preferred Alternative. See the Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS) for those analyses. Also, please see the responses to Comments C-040-159 and C-040-162.

C-040-071

The SR 520 Health Impact Assessment (HIA) was developed to support and inform the mediation efforts mandated by Engrossed Substitute Senate Bill (ESSB) 6099, and its findings and recommendations were included in the developed by the mediation group. King County Health and the Puget Sound Clean Air Agency led preparation of the HIA, with support from WSDOT. All parties agreed that the HIA was not part of the NEPA process, although the HIA used data from the Draft EIS, and the SDEIS referred to the results of the HIA. In general, the HIA recommended measures that could be incorporated to improve the region's overall quality of health, rather than attributing specific health outcomes to any one project. However, protecting human health is one of the reasons behind many of the studies conducted in the preparation

C-040-083

parks, fulfilling the physical and aesthetic historical linkage intended by the Olmsteads.

C-040-084

(2) Bagley Viewpoint (which before 520 was built was part of Interlaken Park)
Described in SDEIS in Chapter 4 page 4-27. Also described SDEIS Attachment 6 page 30 and 31. Stairway access from below is acknowledged. SDDOT pays parks to maintain it including the stairway. Parks is responsible for maintaining the vegetation.

Bagley Viewpoint is in daily use as a rest place and viewpoint, looking over Portage Bay to Lake Washington and the Cascades. Bagley Viewpoint was part of Interlaken Park before 520 was built, and is part of the Olmstead vision connecting Roanoke Park to Interlaken.

The SDEIS identifies Bagley Viewpoint as a significant city park because it has been so identified by the Seattle Parks Department, is historically significant and is a SEPA site. It will be removed to handle the planned widening of SR 520. The SDEIS notes that the taking of Bagley Viewpoint makes it 4(f) property and that it might be mitigated by creating a viewpoint on a new lid at that point. What it fails to note is that because Bagley Viewpoint is part of the historical and visual entrance path to Interlaken, Interlaken Park is affected by the Bagley Viewpoint removal and qualifies for 4(f) review for that reason as well as for the reason given in the SDEIS (see above). In addition, the damage done by taking Bagley Viewpoint is not clearly described and thus the mitigation cannot be designed or mandated to fit the need. Finally, the mitigation plans are not sufficiently clear with regard to amount and location of parking and the nature of the lid and how lid walls will be treated and how the lid will be fit into adjacent landscaping (see Notes on the Proposed 10th Avenue to Delmar Lid, page 38).

While the SDEIS does state that this taking cannot be avoided, it presumes that what has to come through this area is a 7 lane highway.

The SDEIS fails to evaluate alternatives for narrowing the bridge and thus not taking the Bagley viewpoint.

- The SDEIS should evaluate 520 with 4 lanes, tolled and transit priority.
- The SDEIS should evaluate a 4 lane Portage Bay Viaduct. The Nelson Nygaard report and common sense both indicate that the 4 lane Portage Bay viaduct might work well. See also the Coalition Comments Section VI.
- In the unlikely event that a 4 lane Portage Bay Bridge does not work well, the SDEIS should evaluate a 5 lane bridge.

In addition the SDEIS does not promise mitigation, nor does it describe the (possible) mitigation clearly so that it can be evaluated.

of an EIS.

Appendix U of this comment letter only includes comments on the HIA. Because the HIA was not prepared by WSDOT and is not part of the NEPA process, specific responses to the comments in Appendix U are provided in the Final EIS.

C-040-072

Please see the responses to Comments C-040-005, C-040-065, C-040-068, and C-040-070.

C-040-073

The SR 520, I-5 to Medina project would not discourage physical activities that benefit human health. Rather, the Preferred Alternative would improve regional bicycle and pedestrian connections and create new non-motorized travel and commuting opportunities by providing a bicycle/pedestrian lane on the floating bridge that links with other regional trail facilities. Connections would also be improved between the trails in the Arboretum and other regional trails such as the Burke-Gilman Trail. The Preferred Alternative includes a considerably larger Montlake lid than Option A, which would provide better pedestrian facilities in the central part of the Montlake neighborhood and a connection to the Arboretum (see Chapter 2 of the Final EIS). These effects are described in Chapter 7 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) and in the Recreation Discipline Report Addendum (Attachment 7 to the Final EIS). The revised profile of the west approach bridge also allows room for easier passage under the bridge for pedestrians, bicycles, and watercraft.

In early 2010, additional amenities for pedestrians, bicyclists, and park users were added to the Preferred Alternative as a result of Engrossed Substitute Senate Bill (ESSB) 6392. A regional agency workgroup formed under the bill recommended development of bicycle and

C-040-084

The SDEIS says:

- The SDEIS Ch2, 2-9 says that 10th Avenue to Delmar Lid would incorporate "redevelopment of the path from Bagley Viewpoint to Boyer Way, redevelopment of the Bagley Viewpoint Park and vista points to overlook Lake Union, Portage Bay and the panoramas eastward and westward." The view is also noted Ch 4 page 4-35.
- SDEIS Chapter 5, page 5-63 says "a new viewpoint would be designed and constructed on the 10th and Delmar lid to recreate the panoramic views of Portage Bay and the Cascade Mountains that were available when Bagley Viewpoint was first built."
- SDEIS Chapter 5, page 5-81 in the list of "possible mitigation measures," "Replace Bagley Viewpoint either on the new lid or reconstructed bridge. WSDOT would work with the Seattle Parks department to identify an appropriate site."
- The SDEIS Ch5, Page 5-67 says 10th Avenue East and Delmar lid "could also recreate a more substantial connection between Interlaken Park and Bagley Viewpoint." It goes on to say the viewpoint would be recreated and "the areas to the north and south of the lid surface would be planted to reestablish the tree buffer and street trees that were removed for construction." Which tree buffers and street trees are being discussed is not explained.

So what is to be done, where it is to be done, and if it is to be done are all uncertainties. See also Ch 5 page 5-80.

The SDEIS omits:

- Bagley Viewpoint is an oasis of green and a critical link between Roanoke Park and Interlaken. Treating it only as a viewpoint fails to describe its full purpose as the entry way to Interlaken Park, visually connected by the mature green trees of both Bagley and Interlaken.
- Failing to identify the Bagley Viewpoint parking, an essential part of the viewpoint, and the number of cars for which parking should be provided also minimizes the importance of what needs to be replaced.
- The use of the words "could" and "either" and "possible" in the SDEIS indicate that WSDOT will determine if the mitigation is sufficient or necessary. The SDEIS does not describe the harm to the park in such a way that the mitigation needed is well defined and mandated.
- The SDEIS shows the planned location of proposed lid, lying on top of the north and south retaining walls flanking the roadway, creating the canyon through which SR 520 will flow; this proposal is that the lid will directly cover the roadway, running from outside wall to outside wall. See Ch 3 page 3-12. These walls will be above grade due to the required lid height to provide clearance above the road. Building the lid this way is an aesthetic

pedestrian connections in the Arboretum and the Montlake interchange area, and lid. The bill also resulted in the preparation of the Arboretum Mitigation Plan, which includes many projects that will enhance the natural and recreational features of this important park. See the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report in Attachment 16 of the Final EIS, and the Arboretum Mitigation Plan in Attachment 9.

Overall, the Preferred Alternative has been designed to minimize recreation impacts, and WSDOT has completed the necessary and appropriate planning to comply with Section 4(f) and Section 6(f). The Preferred Alternative would have fewer effects on project area parks than any option evaluated in the SDEIS. Conditions in the Arboretum would improve as a result of reduced noise, better pedestrian passage beneath SR 520, removal of the existing Lake Washington Boulevard ramps, and implementation of the Arboretum Mitigation Plan. As mitigation for conversion of recreational properties protected by Section 6(f), WSDOT would fund the development of a new park at the Bryant Building site, resulting in a permanent net gain of approximately 1.3 acres of Section 6(f) recreational space in the project area. See the Section 6(f) Evaluation in Chapter 10 of the Final EIS for additional information. The project would not cause permanent effects on recreational boating or hand-carry boat launch sites (see the Recreation Discipline Report Addendum in Attachment 7 to the Final EIS).

The Preferred Alternative also includes a number of design refinements to address noise and aesthetics, thus improving the environment for bicyclists, pedestrians, and recreational activities in the project area. In addition to the expanded Montlake lid, these include 4-foot concrete traffic barriers with noise-absorptive coating and a narrower footprint and reduced design speed on the Portage Bay Bridge than Option A. Context-sensitive design guidelines will be applied throughout the entire corridor to help the project better fit into its surroundings.

C-040-084

disaster which does not foster neighborhood reconnection. See Notes on 10th Avenue and Delmar Lid, page 38, which discusses at the adverse impact of having the a lid with Ivy and graffiti collecting walls.

- The SDEIS omits a clear description of the harms to be mitigated by the 10th Avenue to Delmar Lid. Given that the lid will not at all likely to be built at the time SR520 is rebuilt is widened, this is a serious failing.

It is important to note that the Bagley Viewpoint mitigation must be integrated with mitigation to Roanoke Park, Parklands East and Parklands West and Interlaken Park. The SDEIS, Ch2, page 2-9 discusses the role of Bagley Viewpoint and adds, “also important is the (10th to Delmar) lid’s integration with the Roanoke Park historical district, located immediately north.” While this is true, the SDEIS omits an integrated description of all of the elements and important mitigations of this lid. Properly done it will connect pedestrians to Interlaken Park land across the street at 11th Avenue on the south side of the lid, with Roanoke Park, across Roanoke Street on the north side of the lid, a connection severed by SR 520 in its original construction and mitigated with the development of Parklands East and Parklands West. The need for the lid to do these things is acknowledged on a cumulative basis, but the analysis did not start from the point of identifying the harm done to each area, assessment of avoidance options, and then the assessment of required mitigation and what it must do.

The SDEIS acknowledges that the taking of Bagley Viewpoint is a 4(f) taking. It acknowledges that it is an important SEPA sight. The issue is all about mitigation, when, how and if.

What would happen to the Bagley Viewpoint if the 10th Avenue to Delmar lid is not built? This is not described in the SDEIS. The SDEIS omits a clear description of the harms to be mitigated by the 10th Avenue to Delmar Lid; one is obviously to permit the replacement of Bagley Viewpoint in an appropriate fashion. Given the high probability that the lid will not come at the time of construction, and the distinct possibility that funds for completion may not be available for decades, this is a serious problem.

For example, where would that leave the replacement of Bagley? There will be no ground on which to place Bagley on the north side of the Delmar bridge. Placing Bagley on solid ground at the south end of the bridge facing east, would place it on Interlaken Park land. That is not mitigation; it is a taking of Interlaken Park. That leaves the option of building Delmar bridge such that a replacement of Bagley Viewpoint is included on the bridge when it is constructed. That would be a viewpoint with possibly parking but it would not replace the function that the Bagley Viewpoint served as a green link between Roanoke Park and Interlaken Park. And, without the lid behind, it would be an extremely noisy viewpoint, far more noisy than the Bagley Viewpoint is now. Bagley Viewpoint replaced will be missing its features and much of its attributes as a pleasant place to stay for a while and read or visit. It will lose its 230 degree cloak of green. The only function that it will retain will be a place where one can look at the view. If it is on

C-040-074

The Preferred Alternative, like the SDEIS design options, would reduce greenhouse gas emissions. The analysis of greenhouse gas emissions in the NEPA documents, which is based on accepted methodology, is consistent with WSDOT policy. The “data based analyses” cited in the comment reflect generalized assumptions, while the analysis in the NEPA documents is based directly on the traffic on SR 520 and the proposed changes in this corridor. Please see pages 36 to 37 of the SDEIS Energy Discipline Report, which explains that the methodology used accounts for HOV lanes and tolling, both of which are reduce congestion and thereby keep traffic flowing at a moderate and more efficient speed. This, in turn, would reduce greenhouse gas emissions compared to the more congested conditions that would occur under No Build.

To augment the discussion of greenhouse gas emissions, the Final EIS includes an analysis of emissions at the subregional level to account for trips that could be diverted as a result of tolling on the SR 520 corridor. The subregional analysis shows that on-road greenhouse gas emissions would increase by about 20 percent between now and 2030, regardless of the alternative chosen for the SR 520, I-5 to Medina project. However, with the Preferred Alternative in place, the corridor emissions would be about 10 percent less than with the No Build Alternative. The SR 520, I-5 to Medina project would not contribute to corridor or regional increases in greenhouse gas emissions. Section 5.9 of the Final EIS includes a discussion of how the project relates to regional goals to reduce greenhouse gas emissions.

C-040-075

Please see the response to Comment C-040-013. As described in Chapter 1 of the Final EIS, funding for the floating bridge—the most vulnerable portion of the SR 520, I-5 to Medina corridor—has been secured, and WSDOT has solicited proposals for construction of this

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the bridge, will there be a path down to the water as there should be or will this be another missing function?.

Based on what we now know, there is certainty that Bagley will be taken and high probability that if it is replaced soon it will be on the Delmar bridge an very inferior placement relative to its current placement. The conclusion has to be that the taking of Bagley will not be appropriately mitigated in reasonable time if ever and that the SDEIS has not conveyed an accurate depiction of this mitigation.

C-040-085

(3) Parklands East and (4) Parklands West

Both Parklands East and Parklands West lie within the construction area of the project. SDEIS Exhibit 6.2-1 Property Affected by Construction in the I-5 Area, Chapter 6, page 6-20.

This land has been part of the vegetative buffer between SR 520 and Roanoke Park since 1963 and was carefully designed as such. The ground is park-like with a combination of mature trees, garden beds and lawn. These areas, north of the fence line demarking SR 520 right of way, have been maintained by the Seattle Park Department and Roanoke Park volunteers for a very long time; both areas were re-landscaped a decade ago by volunteers who worked with plans approved by the Seattle Parks Department. The Seattle Park Department mows the grass in these areas each week and otherwise services them as needed. These lands blend into the forested areas on the other side of the fence line. (See, 8 North Forest Land below.)

The SDEIS notes the importance of these lands in describing the Roanoke Landscape Unit, Ch 4 page 4-35. "The pleasant landscape at Roanoke Park and streetscapes between 10th Avenue East and Delmar Drive East help to improve the experience" of a landscape unit that is mostly diminished by traffic."

However, the SDEIS does not acknowledge these lands as park lands and omits discussion of the damage to these lands. It also omits clear discussion of or commitment to mitigation of these lands.

Plans call for the removal of the 10th Avenue Bridge, building a temporary new bridge to the east, building a new, larger 10th Avenue Bridge angled to north of the current alignment and widening of Roanoke Street. This construction can be expected to destroy all the mature vegetation in the area. The SDEIS omits discussion about whether any of the vegetation could be saved and possibly mated with a new lid. The SDEIS omits discussion of the impact of the operational 520 and construction activity on park lands and historic homes in the area.

Parkland East (3) - Additional Detail

Exhibit 5.4-1 Chapter 5 page 54. Note that the southern boundary of Parklands has been taken in SR 520 widening in this exhibit.

portion of the project. Chapter 1 also describes construction sequencing for the project, which provides for project completion by 2018 while allowing several years for full funding to be obtained through a variety of state and federal sources. Thus, funding and construction of the Eastside project does not preclude the Preferred Alternative or any other alternative for the SR 520, I-5 to Medina project. Tolling of I-90, although it has been discussed as one possible revenue source, has not been proposed or approved by the legislature except as a potential contingency measure, and is not assumed in estimates of committed project funding. No new taxes are being proposed or assumed in funding estimates.

As described in the response to comment C-040-013, mitigation is included in project cost estimates, which are also designed to account for risks related to project delay such as the "community actions" mentioned in the comment. Costs of the project disclosed in the EIS documents were through the Cost Estimation Validation Process (CEVP®). During the CEVP process, analysts use systematic project review and risk assessment methods to identify and describe cost and schedule risks, and evaluate the quality of the information available. An important part of the process is that analysts examine how risks can be lowered and cost vulnerabilities can be managed or reduced. Costs estimated during the process account for a host of project components and risks, including design, construction, mitigation efforts, potential delays at each step of project delivery, costs for legal challenges and litigation, and inflation. The process provides opportunities for WSDOT to improve final cost and schedule results. The output of the CEVP® process is a probabilistic range of costs. The range accounts for uncertainties defined in the workshop for cost and schedules. By WSDOT policy (IL 4071.01) the 60th percentile estimate number is used for the budgeting process.

As noted in the comment, the SDEIS identified the potential for the

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Parklands East is managed by the Seattle Park Department and fully accessible to the public. It provides an area for children as they wait for school bus pick up and drop off, and it provides visual and actual park continuity from Bagley Viewpoint to Roanoke Park. Part is owned by SDOT and part is owned by WSDOT.

The temporary 10th Avenue bridge is going to come right through these lands. The garden beds and trees would be destroyed. The end state of Parkland East is unclear; a lid might be built but has not been committed to (see prior discussion.)

The SDEIS does not acknowledge this area as park land; however, it is publicly accessible, historically used for park purposes and is maintained by the City as park land. The construction planned will destroy the trees which provide its primary feature, it will destroy the visual forest screen and sound deadening, destroying the peace and harmony that is currently one of its attributes, and it will become an unpleasant noisy place for pedestrians to pass, and school children to await their bus or rides.

The SDEIS fails to evaluate alternatives which avoid this damage such as

- A 4 lane Highway 520 from Montlake west;
- A 4 lane Portage Bay Bridge.
- Changing the planned width of 10th Avenue back to or closer to the current 60 feet rather than expanding to 100,
- Changing time of removal of Tenth Avenue bridge until lid expense is committed to.
- Avoiding widening of Roanoke Street.
- Reconstruct the Tenth Avenue bridge in place, two lanes at a time; two lanes are enough to keep traffic flowing, that is all Tenth carries the rest of the way to Broadway. Cut the bridge in half and replace it in two steps, two halves.

The SDEIS fails to evaluate alternatives which would minimize the damage.

- Change of construction boundaries to protect as much of this area as possible. Don't rebuild 10th Avenue using a temporary bridge in the planned location. Set the target width of Tenth to 3 lanes plus two shoulders, basically what it is now (see discussion under Roanoke Park.)
-
- The SDEIS proposals for mitigation are inadequate.
 - o If the lid is not built, the area will suffer greatly from noise and visual blight.
 - o It is a high probability that a lid will not be built at the time construction that widens SR520 occurs and all the damage associated with that widening. It therefore becomes highly likely that the lids will never be built as there is no enforcement mechanism for this mitigation when the approved funds run out.
 - o If the lid is built, the area will have unsightly lid walls unless the plans are modified for backfill, leveling and landscaping to transition the lid to the

project to be implemented in phases. The “phased implementation scenario” described in SDEIS Chapter 2 included the statement that “WSDOT would develop and implement all mitigation needed to satisfy regulatory requirements” (p. 2-37). Although lids would have been deferred under this scenario until the I-5 and Montlake interchange area improvements were built, WSDOT’s intent, as stated on page 2-34, remained “to build a complete project that fully meets all aspects of the purpose and need.” Potential phasing for the SR 520, I-5 to Medina project has been revised in this Final EIS (see Section 2.8 for a discussion). However, WSDOT’s commitment to mitigation remains firm.

See the response to Comment C-040-047 regarding the idea of a retrofit. No cost effective retrofit method has been established, and retrofitting was determined to not be a viable option. See also the response to Comment C-040-004 regarding a transit-optimized 4-lane alternative. WSDOT has conducted the necessary and appropriate planning to comply with the requirement to evaluate alternatives under NEPA.

C-040-076

Please see the response to Comments C-040-009 and C-040-075. Mitigation is an integral part of the project that is accounted for in cost estimates. The Final EIS contains information on mitigation measures for operational and construction impacts of the Preferred Alternative as required by federal, state, and local regulations. The Record of Decision (ROD) for the project will document mitigation commitments and conservation actions in compliance with NEPA and other laws, and will identify how those measures will be implemented.

C-040-077

Please see the responses to Comments C-040-009 and C-040-022 regarding noise modeling results and noise reduction strategies that are part of the Preferred Alternative.

C-040-085

park area. Building the lids later rather than at the time the walls are built basically closes the option to do the landscaping well because the walls will be unable to take backfill.

Parkland West (4) - Additional Detail

Exhibit 5.2-1 Right of Way Acquisitions in the I-5 Area, Chapter 5, page 5-33. Exhibit 5.4-1 is a more detailed showing where the Fire station property line falls, indicating how much of Parklands West is City property. (Note this last exhibit shows a diminished Parkland West area due to the proposed widening and new alignment of 10th Avenue East, and the proposed widening of Roanoke Street.)

Parkland West, east of the Roanoke fire station contains some land owned by the City of Seattle, and the rest is WSDOT right of way. The Seattle land is fire station land, which is an historic site. The vegetation that immediately abuts the fire station is cared for by fire station personnel. The rest has been managed by the Seattle Park Department with aid from community volunteers. It is an open to the public area, hosts a bus shelter in its south-east corner and provides a visual landscape connection across Roanoke Street to Roanoke Park and along 10th Avenue East to Parklands East and Bagley Viewpoint.

This area will be dramatically impacted by widening of three roadways plus the change in alignment of 10th.

- SR 520 widening
- Proposed widening of 10th Avenue
- Proposed widening of Roanoke Street.
- Change in alignment of 10th Avenue, shifting it westward into the parcel

The cumulative effect is a very important taking of land in this park which has important park, safety, and traffic implications.

- The park land itself will be reduced, changing the nature of the experience as people approach the intersection, and the visual connection to Roanoke Park and Bagley Viewpoint will be diminished.
- The change will make the area less pleasant by reducing the land's ability to buffer the sight of SR 520 and the sound coming from it. This buffer is going to be increasingly needed because of the new 520 flyover ramps as well as the widening of the main roadway.
- The SDEIS omits consideration of Fire Department access and safety, which is a violation of federal rules. Widening Roanoke Street would reduce the safety area in front of the station and could cause the station to be unable to continue to use that location. The station has important historical status which precludes doing such damage without a full 4f SDEIS evaluation and proof that such damage is necessary.
- The SDEIS fails to provide any explanation of the reason for widening Roanoke Street. It fails to acknowledge that that expansion will also be encroaching both on Roanoke Park and on Parklands East and Parklands West. It appears that the intent is to increase the speed and throughput of this short section of road. But by failing to see how short that section is and that roads beyond are at capacity, it fails to

C-040-078

As described in the Final EIS, WSDOT has coordinated extensively with federal and state resource agencies and tribes to avoid and minimize the effects of the SR 520, I-5 to Medina project on fish and to develop appropriate and effective mitigation for impacts that cannot be avoided. Please see the response to Comment C-040-207 for a response to the discussion in Appendix W.

C-040-079

This comment (referenced as Appendix A in the comment letter) is a duplicate of the comment letter submitted separately by Bricklin & Newman (Item Number C-021). Please see the responses to that item.

C-040-080

Please see the responses to comments C-040-004 and C-040-038 through C-040-042. Section 4(f) of the Department of Transportation Act of 1966 states that an Agency can approve a transportation project that uses Section 4(f) land if the determination has been made that there is no feasible or prudent alternative to using the property. Please note that the definition of Section 4(f) protected properties does not cover all properties that may be perceived as parks, such as plantings in rights-of-way or informal open spaces not designated for park purposes. FHWA, as the agency responsible for Section 4(f) compliance, has concurred with WSDOT's determinations of Section 4(f) eligibility, which were arrived at through extensive coordination with the agencies with jurisdiction over Section 4(f) resources. Please see the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS for additional information on which properties are protected under Section 4(f). WSDOT has also coordinated with the National Park Service and the Washington State Recreation and Conservation Office on compliance with Section 6(f) of the Land and Water Conservation Fund Act. This coordination and an analysis of effects on Section 6(f) protected properties are contained in Chapter 10 of the Final EIS.

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observe how wasteful and unnecessarily damaging this expansion would be. Given that the widening and increased speed would harm both adjacent park areas, it is incumbent on the SDEIS to demonstrate that it has analyzed ways first to avoid and second to minimize this damage. The SDEIS omits description of any alternatives and any explanation of why it is recommending this change rather than another with less impact.

- In addition, the SDEIS omits mention of traffic modeling that justifies the widening of 10th Avenue East. Its congestion is continuous with the streets that lead from it. The reason to widen the 10th Avenue Bridge are given as adding shoulders, but there is no need to do so unless parking is contemplated, plus the existing bridge is wider than is needed by a full lane. Four lanes are shown with two right turn lanes heading south on 10th from Roanoke Street. However, 10th is one lane all the way to Broadway, starting when parking occurs just north of Miller Street, less than a block from Roanoke Street. The reason there is only one right turn lane from Roanoke south onto 10th Avenue now is that having two lanes reduced traffic flow rather than increased it. The current striping is one lane plus a bike lane plus a shoulder wide enough for a bus to pull over for the bus stop. Widening 10th Avenue by 40 percent will create a 100 foot wide swath of Concrete across from Roanoke Park, an impossible to mitigate desert. Keeping the road narrow permits the visual blight to be reduced with trees growing close to the edge further softening the effect, reducing the adverse impact of traffic, noise, and pollution. Coming north on 10th there is only one lane until Miller, then traffic is able to shift lanes and position to make a right turn at Roanoke if desired. Having two lanes north and one lane south plus room for a bike lane and a shoulder for bus pull out is working well. Increasing the width of 10th Avenue East by taking 4f Park land would have to be justified in the SDEIS. If the argument is made that a strip of plantings will be made up the middle of the 10th Avenue bridge, it may be justified, but even then the bridge could be done at less than 80 feet rather than 100 feet.
- There is no discussion of the adverse visual impact of removal of all of the buffer trees from the area. The combination of bringing SR 520 closer to the property removing contiguous former buffer area, the taking of the actual areas into street use, and the destruction of the mature trees on the property all create significant damage to the features, activity, and function of this park area.
- Whereas before Parkland West was a fine place to have a bus stop in pleasant treed surroundings, the area would be so reduced by the planned work that the bus shelter would have to be moved onto the 10th Avenue Bridge where load restrictions and lack of soil preclude plants of any significant size. Lack of space is would likely mean the covered bus stop would have to be eliminated.

In summary Parkland West land is being taken from several directions in all alternatives in the SDEIS. Less land means that this Parkland is less able to perform its function of carrying the green belt from one side of Roanoke to the other and from one side of 10th

Since the inception of the SR 520, I-5 to Medina: Bridge Replacement and HOV Project, FHWA and WSDOT have evaluated a wide range of project alternatives and options. Attachment 8 to the SDEIS, the Range of Alternatives and Options Evaluated report, described the evaluation process in detail. As required under Section 4(f), WSDOT also evaluated whether there were feasible and prudent alternatives that would avoid the use of Section 4(f) properties. This evaluation was done both for the corridor as a whole and on a resource-by-resource basis, and was described on pages 121-133 of the Draft Section 4(f)/Section 6(f) Evaluation in Attachment 6 to the SDEIS. This evaluation was not constrained by the design options generated through mediation; it went beyond these options to look at the No Build Alternative, new corridors, new travel modes, and specific potential design changes that might avoid effects on each Section 4(f) resource. The analysis concluded that there were no feasible and prudent alternatives to the use of Section 4(f) resources. The design of the Preferred Alternative has been further refined to minimize harm to Section 4(f) properties.

In addition to complying with Section 4(f) and Section 6(f), WSDOT has also conducted the necessary and appropriate planning to comply with Section 106 of the National Historic Preservation Act, which protects historic properties.

C-040-081

WSDOT coordinated closely with FHWA, the agency with jurisdiction, in determining whether project construction activities met the criteria for temporary occupancy. A temporary occupancy is not considered to constitute a use of a Section 4(f) resource when all of the conditions set forth in 23 CFR 771.135 are met:

1. Duration (of the occupancy) must be temporary, i.e., less than the time needed for construction of the project, and there should be no

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Avenue to the other. This loss of function is created by the combination of taking land and widening both streets. Second, some of the land being taken is in the most accessible and most visible area where most people walk, reducing garden bed and treed area significantly which engages passerbys and gives them relief from urban blight. This is a reduction in attributes. And the encroachment by a roadway with a new alignment increases not just proximity, but also increasing vehicle speed and noise creating a substantial diminishment of the green space harmony that will be experienced. SR520 widening and the removal of buffer vegetation makes things significantly worse, an additional substantial impairment. This combination creates permanent constructive use with or without lid construction.

The SDEIS does not acknowledge this area as park land; however, it is publicly accessible, historically used as Park land and is maintained by the Seattle Park Department as park land.

- The SDEIS fails to evaluate alternatives which avoid this damage.
- Don't increase the number of lanes on SR520 through this area.

- Delay replacement of the Tenth Avenue bridge or don't replace it. The reasons for its taking is not in the SDEIS. The replacement of the 10th Avenue bridge is presumed to be caused by the need to widen SR520 a need that might be eliminated with the 4 lane Portage Bay bridge alternative or other reduction from the many lanes planned. If that is not the cause, don't replace it until lid funds are in hand.

- Don't widen 10th Avenue or minimize the widening of 10th Avenue.

- Drop plans to widen Roanoke Street.

- The SDEIS fails to evaluate alternatives which would minimize the damage.
- Changing the timing of the bridge removal to the time when funds were available for lid construction would help ensure that mitigation was available at the time damage done by removal of 10th Avenue Bridge occurred.

- Changing time of doing any widening of SR520 near Parklands West until lid funds were assured.

-
- Develop a management plan for all vegetation between the fire house and Delmar and demonstrating how they can be preserved.

- The SDEIS proposals for mitigation are inadequate.
 - o The cumulative damage to Parklands West will be only slightly mitigated by the portion of the 10th Avenue lid that is to lie north of 10th Avenue.

- change in ownership of the land;
2. Scope of work must be minor, i.e., both the nature and the magnitude of the changes to the 4(f) resource are minimal;
3. There are no anticipated permanent adverse physical impacts, now will there be interference with the activities or purpose of the resource, on either a temporary or permanent basis;
4. The land being used must be fully restored, i.e., the resource must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the appropriate Federal, State or local officials having jurisdiction over the resource regarding the above conditions.

In the situation where a project does not meet all of the above criteria, the temporary occupancy will be considered a use of the Section 4(f) resource and the appropriate Section 4(f) analysis will be required.

Since the SDEIS was published, WSDOT has evaluated a number of additional sites in response to comments from agencies, community groups and individuals to determine whether they are protected under Section 4(f). WSDOT has also discussed the nature of potential effects on protected properties with the stewards of these properties. For impacts that WSDOT determined to be temporary, WSDOT has obtained concurrence on this finding from the officials with jurisdiction over the affected resources. Please see the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS for more information.

C-040-082

Please see the response to Comment C-040-013. As described in Chapter 1 of the Final EIS, funding for the floating bridge - the most vulnerable portion of the SR 520, I-5 to Medina corridor - has been secured, and WSDOT has solicited proposals for construction of this portion of the project. Chapter 1 also describes construction sequencing

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The rest of the public open space in Parklands will be exposed to much greater SR 520 exposure than it now has.

- o There is no consideration of noise walls along the north side of SR 520 from the proposed lid to some point past the fire station in order to protect this parcel and Roanoke Park and its historical neighborhood from increased noise associated with the widening and the creation of the lid if it is built.
- o There is no statement of harm that will occur if the lid is not built as proposed. If the 10th Avenue Bridge were to be made narrower, the non-bridge portion of the lid would need to be larger.

C-040-086

(5) Roanoke Park

The SDEIS describes Roanoke Park Ch4 page 26. Attachment 6 page 58 makes statements regarding haul route on residential streets. It does not discuss Roanoke Park as a haul route and its impact on the Park's activities, features and attributes that qualify for resource protection.

Roanoke Park is an historic park and a destination for many people because of its easy access and oasis feeling. It is a 2.2 acre Seattle park, part of the historical district which surrounds it. The park has a play area, walking trails and a children's basketball area. It is a horticultural showcase with mature trees and flowering shrubs and well maintained gardens. Roanoke Park is used by many day-care centers and schools as a play area. Children often come from Capitol Hill, down 10th to the Park. Many people drive to the park from surrounding neighborhoods to use it, or stop on their way past or use it as a freeway rest stop.

A trolley line ran to, and ended at, Roanoke Park 100 years ago when it felt like country because there were so few homes in the area. The Olmstead Brothers in designing Interlaken Park envisioned Roanoke Park as a lovely gateway to Interlaken and, via the Bagley Stairs (see below) to Portage Bay.

Impacts to Roanoke Park include:

- Without mitigation, the widening of SR 520 will increase the noise impact and visual blight to Roanoke Park.
- Instead of trees on Parklands East and Parklands West, park users will look at an arterial next to a highway. This will be particularly severe during the construction period when the 10th Avenue Bridge is removed. That bridge has acted as a sound lid for the past forty-five years.
- Roanoke Park Garden beds extend to the pavement of Roanoke Street. The plotted line of construction area comes well into those beds and thus represents a taking of Park Lands. See Attachment 6 Exhibit 25 page 61. Stately elms, the hallmark of Roanoke Park are also relatively close to the pavement.

for the project, which allows several years for full funding to be obtained through a variety of state and federal sources. WSDOT is continuing to develop further refinements of project costs and is working with the Legislature to identify additional funding sources for the SR 520 program.

The lids identified in the Preferred Alternative are an integral part of the project. The discussion of deferred construction of lids that is quoted in the comment was presented in the SDEIS as part of the Phased Implementation Scenario. Nowhere did the SDEIS describe the lids as "optional." Page 2-34 of the SDEIS stated: "It is important to note that, while the new bridge(s) might be the only parts of the project in place for a period of time, WSDOT's intent is to build a complete project that fully meets all aspects of the purpose and need."

The SDEIS discussed the possibility of constructing the project in separate phases over time, with the vulnerable structures (the Evergreen Point floating bridge, west approach bridge, and Portage Bay bridge) built first. This "Phased Implementation scenario" was analyzed for each environmental resource. Due to the funding shortfall, FHWA and WSDOT still believe it is prudent to evaluate the possibility of phased construction of the corridor should full project funding not be available by 2012. Currently committed funding is sufficient to construct the Evergreen Point floating bridge and landings; a Request for Proposals has been issued for this portion of the project, with proposals due in June 2011. Accordingly, this Final EIS discusses the potential for the floating bridge and landings to be built as the first phase of the SR 520, I-5 to Medina project. This differs from the SDEIS Phased Implementation scenario, which included the west approach and the Portage Bay bridge in the first construction phase. See Section 2.8 of this Final EIS for further information on potential project phasing.

However, whether or not the west approach and Portage Bay Bridge

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Reconstructing Roanoke Street may jeopardize the survival of these 90 year old trees by doing damage to their roots. The SDEIS has failed to understand that Park lands come to the pavement and require protection even though WSDOT and street right of ways may come into the park. Any use of right of way that has been public land used for park purposes for the last 45 to 100 years is taking of park land.

- Widening 10th Avenue from 60 feet to 100 feet will expose Roanoke Park to unnecessary visual blight; the road would not need to be 80 feet wide even if a planting strip were placed into it, given the lack of need for more than a shoulder plus two lanes and shoulder going north; one lane, plus a bike lane and a shoulder is sufficient going south. A separate bike lane going north is not safe as it could put the rider to the right of a car turning right at Roanoke. Bikes hit car speed coming down the hill so the bike lane needs to be in the right car lane. An 80 foot wide bridge would have room for a planter strip.
- The proposed temporary 10th Avenue bridge, plus removal and replacement of the 10th Avenue bridge, placement of the lid, etc. represents a two-year construction period and extreme chaos caused by the construction. This represents a significant impairment of the functions of Roanoke Park. During this period the school groups who currently walk to the park would have a dangerous trip to the park, and people who come from the south will no longer have easy access.
- Both 10th Avenue and Roanoke Street are to be haul roads; the noise, traffic and dust on Roanoke will adversely impact park visitors.

The SDEIS acknowledges Roanoke Park as a park, but does not acknowledge any constructive or other use. The SDEIS does not give Roanoke Park 4(f) status, but should because the park will be impacted by two or more years of construction, and then permanently harmed by having wider arterials and 520 closer to the park.

- Noise, dust from deconstruction and construction (including changes to 10th Avenue bridge, Roanoke bridge, Delmar bridge, SR 520 and I-5 lid)
- Increased traffic noise from 520 noise because of the 10th Avenue bridge removal
- Increased traffic noise due to removal of buffer vegetation in Parklands East and West . Higher speed traffic on 10th and Roanoke as a result of street realignment and widening
- The park abuts Roanoke Street which has been identified as a haul route
- Roanoke Park will also be adversely impacted by the widening of SR 520, which will leave the park much closer to the highway. In addition, the increased size and speed of the roadway and the increased amount of traffic on the new flyover express lane will increase noise.

portions of the project are delayed, the full-corridor delivery strategy includes area-by-area implementation of the project. The lids will be constructed together with the portion of the project in which they are located, and will not be delayed or deferred. WSDOT will continue to work with Seattle Parks and Recreation, the Seattle Design Commission, and local communities on planning and programming for the lids.

C-040-083

The Preferred Alternative would not require permanent acquisition of land or vegetation from Interlaken Park, nor would it require any temporary construction easements. Because Interlaken Park would not be affected by the project, there would be no Section 4(f) use of under the Preferred Alternative, and therefore the park is not addressed in the Final Section 4(f) Evaluation. As noted in the response to Comment C-040-082, the 10th and Delmar lid is an integral part of project design and would be built at the same time as other project components in this area. See Chapter 3 of the Final EIS for a construction schedule.

C-040-084

Although Bagley Viewpoint may have connected to Interlaken Park fifty years ago, it does not exist in that condition today. The City of Seattle recognizes Bagley Viewpoint as a distinct recreational resource, and WSDOT has also evaluated it as an individual recreational resource. Under the Preferred Alternative and all options evaluated in the Draft EIS and the SDEIS, the project would require a full acquisition of Bagley Viewpoint, constituting a Section 4(f) use of 0.1 acre. The need for acquisition of the viewpoint is not affected by the width of the Portage Bay Bridge.

WSDOT will construct a new viewpoint on the 10th Avenue East/Delmar Drive East lid that will recreate the experience the Bagley Viewpoint was designed to provide (see the Final Section 4(f) Evaluation in Chapter 9 of the Final EIS for further discussion). The City of Seattle Parks and

C-040-086

The SDEIS fails to evaluate these impacts to Roanoke Park cumulatively and thus errs in assessing the impact to Roanoke Park. Roanoke Park's function is a safe place for children. It offers a pleasant, quiet place to be in beautiful green space. Dust, dirt and noise all rob the park of its ability to continue to provide these attributes and activities. Construction traffic increase the hazard of coming to the park and definitely will retard ease of access for those who would come to the park. For this two year period Roanoke Park will feel like a place under siege. It will not be able to function as a place of refuge. Given that the lid is extremely unlikely to be constructed at the time SR520 is widened, Roanoke will be increasingly subject to the noise of SR520. In addition, Roanoke Park is impaired by the loss of Bagley Viewpoint during this time as a connecting park to Interlaken, by the closure of Delmar for 9 months, and by the damage done to Parklands East and Parklands West. This creates a cumulative reduction in the quality of experience Roanoke Park can provide to those who come there and will result in a reduction in the number that do. It will also impair park activities, sun bathing, reading, Frisbee games, and the like because the experience in the park and access to the park will be degraded. This drop in features for two years of construction plus ongoing excessive noise, represents a significant, substantial impairment and makes it appropriate to classify as experiencing constructive use by the SR520 project.

- The SDEIS fails to evaluate alternatives which avoid this damage
 - o The SDEIS acknowledges the damage, but does not evaluate opportunities to avoid it, nor does it commit to mitigation. SDEIS Chapter 6 page 6-40 says: "Construction of the 10th Avenue and Delmar Drive East lid would affect Rogers Playground, Roanoke Park, Bagley Viewpoint and Interlaken Park. Construction activities will last up to 27 months, creating increased noise, dust, and traffic in areas in close proximity to construction work Because Roanoke Park is adjacent to the proposed haul route along East Roanoke Street, noise and visual effects associated with truck traffic may affect park users."
 - o The SDEIS assumes that a lid will be constructed at the time SR520 is expanded. We now know that is all but impossible. So the failure of the SDEIS to discuss what the lid was to mitigate means that the SDEIS does not describe the adverse impact lack of the lid will have on Roanoke Park.
 - o And the SDEIS does not examine all the causes of harm, the widening of SR520 and associated construction could be changed by the 4 lane alternative. The widening of 10th could be stopped or reduced. The widening of Roanoke Street could be stopped or reduced. The harm to Parklands East and West could be stopped or reduced. There are many things which could reduce the adverse impact which the SDEIS has failed to evaluate.

Recreation Department and nearby neighborhoods will play an integral role in the planning and design of this replacement space.

See the response to Comment C- 040-082 regarding the timing of lid construction.

C-040-085

The definition of Section 4(f) protected properties does not cover all properties that may be perceived as parks, such as plantings in rights-of-way or informal open spaces not designated for park purposes. For this reason, the areas described in the comment as Parklands East and Parklands West do not constitute a Section 4(f) resource. They are landscaped transportation rights-of-way that are not designated or programmed for park or open space use. Therefore, no analysis of avoidance or minimization alternatives is warranted. FHWA and the agencies with jurisdiction over potentially affected recreational resources have coordinated closely with WSDOT throughout design and project development and concur that the resources discussed in the Final Section 4(f) Evaluation comprise all of the Section 4(f) resources within the SR 520 corridor. Please see the Final Section 4(f) Evaluation for more information about these identified Section 4(f) resources.

C-040-086

The historic Roanoke Park has been recognized by WSDOT, throughout the NEPA process, as an NRHP-listed and contributing resource to the Roanoke Park Historic District and as a Section 4(f) resource. In an effort to minimize project effects to the historic district and the park, WSDOT shifted the 10th Avenue East and Delmar Drive East lid slightly to the south, so that reconfiguration of the 10th Avenue East and East Roanoke Street intersection could occur without impacting the historic district's sidewalks or park.

Due to the design refinements of the Preferred Alternative that avoid

C-040-086

- o One of the causes of harm is having Roanoke be a haul route. This is a particularly poor idea for trucks that would have to go up 11th to Miller and then to Tenth Avenue and down to Roanoke. That route should be scrapped for a direct on SR520 routing.(a temporary bridge in the Boyer area to 520) Perhaps any trucks that would be coming to Roanoke via Delmar could also be routed that way. Stock piling material to place behind lid walls would also reduce the need to bring trucks past Roanoke Park.
- The SDEIS fails to evaluate alternatives which would minimize the damage such as those suggested above.
- The SDEIS proposals for mitigation are inadequate.
 - o The SDEIS shows the connection between Interlaken and the Arboretum, but does not show or discuss the Interlaken/Bagley/Parklands/Roanoke Park connection. The SDEIS fails to note that rebuilding the connection of Interlaken to Roanoke Park will also *require* the Roanoke lid, which is presented as an optional mitigation. Please see “10th Avenue to Delmar Lid Discussion” below.
 - o While Roanoke Park would benefit from the possible 10th and Delmar lid, that mitigation has not been committed to. In describing the impact on Roanoke Park of the 10th and Delmar Lid the SDEIS page 5-55 says, “Although no property would be acquired from Roanoke Park, the 10th Avenue East and Delmar Drive East lid would improve the park’s setting and the experience of park users by reducing freeway noise, and creating a more continuous stretch of open space south of the park. The lid would create new open space and grassy areas for residents in the surrounding area. The 10th Avenue East and Delmar Drive East lid would include pathways to improve connectivity and to provide access across SR 520 improving safety for pedestrians and bicyclists.”
 - o The SDEIS proposes the 10th Avenue to Delmar Lid as a solution to the noise problem in the area. The proposed location of the lid will not protect Roanoke Park from noise from SR 520 noise coming west of the lid, including the new flyover lane.
 - o Given that there is no commitment in the SDEIS for construction to any of the lids, and given that it is highly probable that the Tenth and Delmar lid will not be built and therefore will experience both the harm during construction and continuing and potentially permanent harm thereafter, and given the substantial impairment described above, the SDEIS was incorrect in not granting Roanoke Park Constructive Use designation as

direct effects to the Roanoke Park, along with the development and implementation of the Section 106 Programmatic Agreement, which resolves potential adverse effects, WSDOT has determined that the Roanoke Park Historic District and the contributing elements within the district would not be adversely affected by the project. For these reasons, the project would not have a Section 4(f) use of Roanoke Park.

The Preferred Alternative and all options presented in the SDEIS would construct a lid at 10th Avenue East and Delmar Drive East. The SDEIS and Final EIS noise analyses have demonstrated that this lid would contribute to an overall noise reduction in the Roanoke Park and Portage Bay area. However, although the lid would provide noise reduction benefits, this is not its primary purpose. Other features of the project design such as 4-foot concrete traffic barriers with noise-absorptive coating would also help reduce noise levels in the area. Please see the Noise Discipline Report Addendum for more information (Attachment 7 of the Final EIS). As discussed in the response to Comment C-040-082, lids will be constructed together with the rest of the project.

The Final Section 4(f) Evaluation discusses the potential for constructive use under Section 4(f) with regard to the Roanoke Park Historic District as a whole. The analysis concludes that the proximity of the project would not substantially impair the features and attributes that make the district eligible for the NRHP. Please see Chapter 9 of the Final EIS for additional information.

C-040-086

part of the adverse 4(f) impact to Roanoke Park due to SR 520 construction

C-040-087

(6) South Forest Area (south of 520 and within the SR 520 right of way)

The South Forest Area is between Delmar & 10th on the south side of SR 520 and extending west along the contour toward Miller Street. This land has the potential to link Interlaken most of the way to Colonnade Park with a trail along the south side of SR 520. The South Forest Area is matched by the North Forest Area on the other side of SR 520.

The area is a grouping of 50-year old trees that are the result of remediation from the original SR 520 construction. It is beautiful and mature landscaping which provides an important visual and sound barrier, both from north Capitol Hill and from Bagley and Roanoke Parks and the adjacent Roanoke historic neighborhood. This land is WSDOT right of way, some of which is well back from the highway now and will remain so after the planned construction (all alternatives). The land is fenced to keep the public from walking too close to the 520 highway, but it provides important landscape continuity extending from Interlaken. Given the steep pitch of the sides of SR 520, all of these trees are seen and enjoyed by the public, used by wildlife, and have provided sound and visual protection of green space, protecting the surrounding historical and residential areas from SR 520 visual blight and noise. As such we believe these lands deserve 4f protection.

The SDEIS describes this area only as WSDOT right of way. However, this land has public and park functions which are 4(f) functions. Thus, any diminishment of these lands and functions should be evaluated in the SDEIS, even though it is WSDOT right of way.

The SDEIS description of the WSDOT right of way in this area is in error. The actual WSDOT right of way property line between 10th and Delmar is significantly further south than is described in the SDEIS, and includes the grassy verge that WSDOT maintains.

The SDEIS shows this forest lies within the construction area and then fails to discuss how much of it will be removed during construction. The SDEIS also fails to acknowledge that removing these trees adversely impacts Interlaken and the visual linkage to Bagley Viewpoint and Roanoke Park.

The function of these forests was to mitigate the existing SR520 and they do that, as an established buffer providing scenic beauty as well as sound absorption. That function and attribute will cease with the felling of these trees. In addition they serve to visually connect Interlaken with Bagley, Parklands East and Parklands West and Roanoke Park.

C-040-087

Please see the response to comment C-040-085. As a transportation right-of-way not designated or managed for park use, the area referred to in the comment as the south forest area is not a Section 4(f) resource. As noted in the comment, WSDOT's limits of construction for this project area only extend partially into this area. WSDOT does not intend to remove trees in the southern portion of this area. The northern portion may experience some clearing, but it is likely that not all trees will be removed.

C-040-087

They also work to mask the visual blight of the road cuts. Expansion of SR520 will expose raw earth or concrete, and will necessitate the removal of many of these trees. The SDEIS circles all of the trees within view of the highway as being within the construction zone. There is no discussion of how many actually will be removed in the process. A very significant removal will be caused by the widening of the road and by the need for access during wall construction. This destruction eliminates the function of these trees and represents constructive use.

The SDEIS fails to evaluate alternatives which avoid this damage.

- o Keep 520 at its current width in this area: a 4 land 520 or a 4 lane Portage Bay Bridge.
- o Replace the 10th Avenue bridge in a way that preserves the treed area, and keep the 10th avenue bridge as narrow as possible. also impacts these trees as does the planned width.

The SDEIS fails to evaluate alternatives which would minimize the damage.

- o The number of trees taken should be addressed in the SDEIS as part of a landscape plan. Areas that don't need to be destroyed by construction could be set aside and protected.

The SDEIS proposals for mitigation are inadequate.

- o The proposed 10th and Delmar lid would mitigate some of this damage; however, that lid is not committed to and is highly likely not to take place at the time SR520 is expanded. The proposed lid design also has issues which are discussed in Notes on the Proposed 10th Avenue to Delmar Lid, page 38.

C-040-088

(7) North Forest Area

The North Forest Area is across SR 520 from the South Forest Area. It is also a mature stand of Pine trees that resulted from original 1963 mitigation. These forests link with forests west of 10th Avenue and mature trees from Bagley Viewpoint down to the waterfront on the north side of SR 520.

The North Forest Area's 50 year old pine trees are the backdrop for the landscape from Roanoke Park. These are very important buffers to both Interlaken Park and to Roanoke Park, and without these trees the noise and pollution would be much worse in the Roanoke Historic District and in Roanoke Park. The north forest area plays a role in maintaining the original grand entrance and connection between Interlaken and Roanoke Park including the Bagley Viewpoint transition. While there is a fence between these trees and Parklands East and Parklands West, that fence is really not seen, and thus these trees blend into the park area and support its purpose. These trees provide continuity of the park's visual impact and thus extend the park experience really making it a single experience of an integrated park buffer between Roanoke Park and SR 520.

C-040-088

Please see the response to comment C-040-087. This area is not a Section 4(f) resource. The trees in this area are located within WSDOT right-of-way, which is not designated for recreational purposes, and were not planted as mitigation. FEIS Section 6.5 notes that "Preparation for constructing the 10th Avenue East/Delmar Drive East lid would permanently remove mature roadside trees and shrubs along both sides of SR 520." These trees would be cleared to accommodate the construction of a lid at 10th Avenue East and Delmar Drive East. The lid would reconnect neighborhoods on both sides of the corridor by facilitating bicycle and pedestrian crossing, and creating landscaped open space. The 10th Avenue East bridge would be replaced with a 100 foot wide structure as part of the new lid, and would include planter strips, sidewalks and shoulders. For those who travel across this new bridge, native landscape and views would still be prominent.

C-040-088

Also, for all who travel across the 10th Avenue Bridge, the forests on both sides of 520 frame the stunning and unique East-West vista corridor, a tree-lined vista from the Olympic Mountains to the Cascade Mountains. The 50 year old linked forests of trees between Portage Bay and I-5 are also part of a view corridor along SR 520 which has significant value both to neighbors and to the many travelers on 520 and on the city streets.

As with the South Forest Area, the SDEIS describes this area only as WSDOT right of way. However, this land is visually accessible to the public, has provided a park like buffer and green relief to the highway blight and a refuge for wildlife, which taken together are 4(f) functions. Thus, any diminishment of these lands and functions should have been evaluated in the SDEIS, even though it is WSDOT right of way.

The SDEIS fails to acknowledge that these trees lie within the construction area and some or all will be removed as part of the construction. All lie within the yellow construction zone. The SDEIS also fails to acknowledge that removing these trees adversely impacts Roanoke Park and the visual linkage to Bagley Viewpoint and Interlaken. The function of these lands and of these trees is to serve as a buffer from the adverse impacts of SR520, both sound and visual blight. Removing them represents a significant impairment to these lands and significant damage to adjacent lands. These areas deserve 4(f) status. The loss of the trees represents a taking certainly qualifying as constructive use.

The SDEIS fails to evaluate alternatives which avoid this damage.

- Back to minimum required width of SR520 already discussed.
- Not placing temporary 10th Avenue Bridge in location planned. This could be the result of not replacing the 10th Avenue Bridge, or doing the replacement in a different way.

The SDEIS fails to evaluate alternatives which would minimize the damage.

- Keeping construction equipment away from all trees not directly in the excavation path. This would require a significant change in the yellow construction zone.

The SDEIS proposals for mitigation are inadequate.

- The proposed 10th and Delmar lid would mitigate some of this damage; however, that lid is not committed to. The proposed lid design also has issues which are discussed in Notes on the Proposed 10th Avenue to Delmar Lid, page 38.

C-040-089

(8) Bagley Stair Trail

See Exhibit 5.4-1 Permanent Park Acquisition at Bagley Viewpoint, Chapter 5 page 5-54.

C-040-089

Please see the response to comment C-040-085. FHWA and WSDOT, in consultation with the Seattle Parks and Recreation Department, have determined that the Bagley stairs are not a Section 4(f) resource. Therefore, no analysis of avoidance or minimization alternatives is warranted. The stairs fall within WSDOT's limits of construction, and therefore will be closed while construction occurs in the area. WSDOT will restore the area when construction is complete.

WSDOT will continue to work on the between the stairs and the 10th and Delmar lid.

C-040-089

The Bagley Stair Trail, immediately north of SR 520, links Bagley Viewpoint to the waterfront. It has been in use since 1908 as a treed parkland with a stair and path trail. These stairs are used frequently by residents for a variety of purposes, including as a to-downtown-Seattle route that connects to Colonnade Park via Miller at 10th. The value of this connection to walkers will increase as businesses continue to move into the South Lake Union area. Historically, the Bagley Stair Trail has been maintained by both the Seattle Park Department and by volunteers with recent work by WSDOT on its adjacent right of way.

The Bagley Stair Trail lies within the 520 construction area (Exhibit 27, Page 62 of Attachment 6.) The mature trees that protect the neighborhood from 520 noise and visual blight will be destroyed.

WSDOT took most of the public land adjacent to the stairs and path in 1962 and the SDEIS indicates that the remaining land would now become WSDOT right of way. The SDEIS fails to give this land 4(f) status, which is deserved because of its connection to the Bagley Viewpoint and its long use as public recreation land and Bagley Viewpoint related land.

This land functions as historical public land for recreational purposes. Turning it into an active construction zone represents constructive taking because for up to 6 years it will not be accessible and the actual path will be destroyed. Whether this path should be attached to a reincarnated Bagley Viewpoint will depend on the latter's location.

The SDEIS fails to evaluate alternatives which avoid this damage.

- A 4 lane 520, or a 4 lane Portage Bay bridge, might permit avoidance.

The SDEIS fails to evaluate alternatives which would minimize the damage.

- This stair and pathway was not taken seriously by the SDEIS so there is no real planning for it, including the potential to keep it open during most of the construction period. All we know is that it lies in the construction zone and may be off limits for years. This combined with the taking of Bagley Viewpoint is clearly constructive use.

The SDEIS proposals for mitigation are inadequate.

- The SDEIS indicates on Ch 2, page 2-9 that the Bagley Stair Trail is important to local residents and suggests it might be rebuilt as part of the proposed new Delmar to 10th lid. However, this mitigation is not committed to and the SDEIS omits a clear description of where and how the trail will be re-built.

C-040-090

(9) Roanoke Street End Park and (11) Street End Parks

C-040-090

The Roanoke street end is not currently used for recreation, as noted in the comment, and is not designated for future park development. Therefore, it is not a Section 4(f) resource and no analysis of avoidance and minimization alternatives is required. WSDOT plans to use this area during construction, after which it would be restored and planted with native vegetation. The biofiltration swale proposed in this area (erroneously referred to in the comment as a wastewater treatment facility) would be vegetated and would have a natural appearance. WSDOT is exploring the possibility of providing public access in this. None of the other street ends referred to in the comment would be affected by the project.

C-040-090

Street end parks (11) provide an important way for people to access and enjoy Seattle's waterfront. Edgar Street End Park is adjacent to the Queen City Yacht Club. Hamlin Street End Park and Shelby Street End Park provide vistas out between the house boats and offer swimming and water access to neighbors as well as the houseboat residents. Neighbors have constructed and still maintain these parks.

The Bagley Stair trail leads, via Boyer Street, to the Roanoke Street End Park (9). While currently undeveloped, this area has been eyed by the community as a developable area for many years. The City of Seattle and its residents value highly all points of public access to Portage Bay, and SDOT is currently developing a street end park program that could support this area. The community has a history of turning these street ends into small parks, including sitting and wildlife viewing areas such as the one on the northwest side of Queen City Yacht Club.

Much of undeveloped Roanoke Street was acquired by WSDOT when it developed SR 520, but a narrow remnant remains as it reaches the water. SR 520, supported on pillars is about 60 feet above. In other locations this type of access has been developed for boat launching. Trees along this undeveloped remainder of Roanoke Street provide an SR 520 screen to neighbors to the north. Roanoke Street widens after it hits the water, and Queen City leases some of Roanoke Street for open moorage.

As part of the proposed SR 520, WSDOT plans to put a waste water treatment facility near this street end. The SDEIS omits consideration of the Roanoke Street End Park Area

This land will be taken by WSDOT into its right of way. That is a 4(f) taking.

- The SDEIS fails to evaluate alternatives which avoid this damage.
 - o The Bagley Stair Trail led directly to the waterfront before the development of SR 520 blocked the trail with a retaining wall; this iteration of SR 520 should ameliorate that action by improving public access to the water at this location.
- The SDEIS fails to evaluate alternatives which would minimize the damage.
- The work that is done at the water's edge could be done in a way that enhanced future public access and offset the otherwise loss of public access that would result.
- The SDEIS proposals for mitigation are inadequate.
 - o The SDEIS plans for waste water treatment omit consideration of this area as a public green space and historical public water access, creating the need to mitigate for future public access to the water. In particular, this area has great potential as a small boat launch location.

C-040-091

(10) Portage Bay

Coalition for a Sustainable SR 520

SDEIS Comments

Appendix B

C-040-091

Although recreational activities occur on and around Portage Bay, the bay itself is not a Section 4(f) resource. As noted in the FHWA Section 4(f) Policy Paper cited in the comment, "Lakes are sometimes subject to multiple, even conflicting activities and do not readily fit into one category or another. When lakes function for park, recreation, or refuge purposes, Section 4(f) would only apply to those portions of water which function primarily for those purposes." Through consultation with the Seattle Parks and Recreation Department, FHWA and WSDOT have determined that the submerged lands owned by Seattle Parks in the vicinity of the Portage Bay Bridge are subject to Section 4(f); however, the rest of the lake is not. The Final Section 4(f) Evaluation in Chapter 9 of the Final EIS includes an analysis of avoidance and minimization alternatives for these submerged lands, as well as measures to minimize harm. In response to general public concerns about the Portage Bay Bridge design, WSDOT has also reduced width of the new Portage Bay Bridge at the midpoint from 110 feet to 105 feet. To accommodate the bridge's footprint, WSDOT would acquire right-of-way to the north of the existing Portage Bay Bridge. The recreation analysis (see Chapter 5 of the Final EIS and the Recreation Discipline Report Addendum) demonstrates that this permanent acquisition would not affect any of the recreational uses of Portage Bay.

C-040-091

Portage Bay is a major recreational area, used for swimming, boating, University crew training, sailing lessons, private canoes and kayaks as well as power boats, bird watching, nature walks, etc. Many people travel around Portage Bay daily by foot or bike, or by road or by water. The deep open water in the middle of the Bay is owned by the State and is used primarily for water sports and recreation. Portage Bay is a destination recreation area for tourists, who are taken through on tour boats, and for many local day trips. The Bay is also the focal point of hundreds of houses on Capitol Hill, of other homes both north and south of 520, and of many facilities on the University of Washington campus.

The proposed expansion of 520 would adversely impact recreation on Portage Bay as well as adversely impact the historic neighborhoods in Montlake and Capitol Hill.

- The proposal would take property from Portage Bay. The law is clear that if a bridge has pillars in parkland it has to be treated as a 4(f) impact. See USDOT FHA Section 4(F) Policy Paper, Office of Planning, Environment and Realty Project Development and Environmental Review, March 1, 2005, page 27: "Question: do the requirements of Section 4(f) apply to bridging over a publicly owned public park, recreation area, wildlife or waterfowl refuge, or historic site? Answer: Section 4(f) will apply if piers or other appurtenances are physically located in the park, recreation area, wildlife, and waterfowl refuge, or significant historical property. " In this case, all of the area below the bridge, right of way and non-right of way is recreational area meriting 4f status.
- The proposal reduces the public's ability to enjoy the remaining property, because of the added height and doubling of bulk, threatening shadows, and noise. The public has a right to a peaceful and serene experience while engaging in water activities in this natural public recreational area.
- The expansion will be detrimental to wildlife in Portage Bay.

The SDEIS acknowledges impacts to Portage Bay, but does not fully investigate the minimum impact that could be made on Portage Bay.

- - o SDEIS Chapter 7 page 7-25 acknowledges "the wider roadway, retaining walls, noise walls, and other structural features introduced by the 6 lane Alternative would create more urban character. The more urban visual character would add to the cumulative effect of other present and future planned development projects contributing to the increasingly urban visual quality of the study area." This is a polite way of describing urban blight in a beautiful natural setting. By spinning the character of the

C-040-091

roadway in this positive light, the SDEIS fails to admit the damage and then fails to evaluate alternatives as required.

All of the water area in Portage Bay is public land used for recreational purposes. The expansion of SR520 will cover a new area at least equal to the area now covered by the bridge. Some of the bridge will rest on land owned by Montlake Playfield Park, discussed below, some will rest on land owned by WSDOT, which we will discuss later, see: (14) Portage Bay Park Area in SR 520 Right of Way

The WSDOT lands are public lands used for recreation and wildlife. Putting new highway on these lands represents a 4(f) taking of these lands. The amount taken permanently as well as for construction bridges is not identified in the SDEIS, but it is acres.

The SDEIS fails to evaluate ways to avoid this taking. There are two issues here, the first is how the bridges are being built and the second is how big the bridges will be. I use the plural here because the plan is to build a new north bridge and put the existing traffic on it. Then tear down the existing bridge and build a new south bridge. The two new bridges will then be described as the new bridge with east and west directions. This construction plan makes the North Bridge capable of handling all current traffic. Creating a twin give us capacity to transport double current traffic levels. That is probably why the extra lanes for access to the express lane on I5 appeared. It appears that the way the bridges are being built automatically creates excess capacity. Changing the size of the first bridge to 4 lanes with shoulders offers the potential to make the north bridge perhaps slightly wider than planned and then not replace the other bridge and not build a second bridge. The problem with selecting the wide bridge option is that then it has to go through the Roanoke Park area and create the carnage discussed above.

- The SDEIS fails to evaluate alternatives which would minimize the damage.
 - o The SDEIS Chapter 5 page 5-66 says that the quality of the Portage Bay landscape unit "would not change as a result of the Portage Bay Bridge, but views in the vicinity of the new bridge would be more open. ...The greater column spacing (from 100 feet on center currently to as much as 250 feet apart) would open up views under the bridge, especially looking northward from the south side of the bridge." However, this is a subjective assessment that does not acknowledge that the new columns are much larger than the old. In addition, the option is shown without noise walls in the referenced Exhibit 5.5-2 page 5-67. And the primary cause of changed view from the water's edge is the planned increased height of the bridge. This height increases the bulk and the distance noise travels. Most people view this as an adverse change.
- The SDEIS proposals for mitigation are inadequate.

C-040-091

- SDEIS proposes noise walls along the north side of SR 520 from the 10th and Delmar lid to the Montlake Lid and along the south side of SR 520 from 10th and Delmar lid to Montlake Boulevard. (Chapter 5 page 5-105.) There is no commitment to these walls, and the SDEIS does not demonstrate that they have adequately evaluated other alternatives that would benefit Portage Bay users or neighbors.
- Noise walls make the visual aspect of the bridge worse by greatly increasing its apparent mass. Thus, one is caught trading one blight for another, perhaps demonstrating that noise mitigation is not possible. The SDEIS fails to acknowledge the harm SR 520 is creating with increased noise may in fact not be able to be mitigated.

C-040-092

(13) Montlake Playfield Park and (12) South Portage Bay Park

The SDEIS Description: Chapter 4 page 4-29. Also described Attachment 6 page 32.

Montlake Playfield Park is a major city park bordering Portage Bay, with activities ranging from sports, to bird watching and canoeing and kayaking. It is a 27 acre regional park used for football, baseball, soccer and track. It also holds a community center used for classes and events.

South Portage Bay Park is considered by the Park Department to be a part of Montlake Playfield Park. It is mentioned separately here to emphasize the non-playfield orientation of this area, in which residents are following a master plan to develop the shoreline. The goal is to enhance access and quality of the shoreline resource. A small boat launch has recently been added.

The proposed expansion of SR 520 would impact Montlake Playfield Park and South Portage Bay Park:

- The parks will be adversely impacted by noise and visual blight. The higher structure and increased traffic will generate more noise over a longer distance.
- Submerged lands would be taken by the proposed expansion. This is not acknowledged in any detail in the SDEIS.
- The construction impact on Montlake Playfield was identified as small and temporary, arguing that the taking was in an unused section of the park. But in fact that area is a highly used area abutting the Bill Dawson Trail. These lands have been enjoyed by all users of this trail, creating the parkland atmosphere of that trail. Further this area has been actively used by wildlife and now is proximate to a beaver lodge which is enjoyed by Montlake Playfield wildlife enthusiasts. This taking is part of the taking associated with the Bill Dawson Trail. The loss is significant and does not qualify for the "temporary" exclusion the SDEIS is claiming.

C-040-093

SDEIS: Noise & Visual Blight at Montlake Park

C-040-092

As acknowledged in the comment, the City of Seattle has not identified the "South Portage Bay Park" as a separate facility from Montlake Playfield, and therefore this area has not been addressed as a distinct resource within the Final Section 4(f) Evaluation. The Montlake Playfield is a publicly owned, documented recreation resource of significance for the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) and is addressed in the Final Section 4(f) Evaluation. Please see Chapter 9 of the Final EIS for more information.

C-040-093

Please see the response to comment C-040-092. A full Section 4(f) analysis has been completed for the Montlake Playfield and is presented in Chapter 9 of the Final EIS. Noise modeling was conducted for several locations in Montlake Playfield, as shown in Exhibit 29 of the Noise Discipline Report (Attachment 7 to the SDEIS). The analysis also included a noise monitoring location in Montlake Playfield. The same modeling locations were used in the Final EIS noise analysis. Therefore, data was collected and modeled to support the noise effect conclusions presented in the SDEIS and Final EIS.

The majority of the mature vegetation within the park would not be disturbed from construction or operations, and would continue to provide the benefits perceived by the community as described in the comment.

C-040-093

The SDEIS does not discuss the adverse impact increasing the height of the east half of the Portage Bay Bridge will have on Montlake Playfield Park. The current bridge is easily blocked by trees, and the sound transmission is much less than will occur at the planned new height. The noise modeling results say that there are no noticeable noise changes with Option A, but no receivers were put in Montlake Playground Park. (SDEIS Exhibit 5.7-1 Ch5 page 5-103)

The SDEIS fails to evaluate alternatives which would avoid or minimize this damage, and fails to propose adequate mitigation.

- There are no commitments to sound mitigation for the new bridge. It is a significant failure for the SDEIS not to quantify this adverse impact on Montlake Playfield Park, a serious 4(f) impact.
- The SDEIS treats the South Portage Bay Park area as part of Montlake Playfield Park, to which it is adjacent. This fails to understand the impact of the expansion plans on the park wetland and wildlife as well as on the community of park volunteers and users.

C-040-094

SDEIS: Submerged Lands not acknowledged as parkland

The SDEIS does not identify how much submerged land will be taken from Montlake Playfield Park, and, in most exhibits, does not acknowledge that any of its land is being taken temporarily or permanently. (See for example, Exhibit 44 page 98 of Discipline Report Attachment 6: Draft Section 4(f) 6 of Evaluation which states for Montlake Park: "no permanent acquisition.") However, elsewhere that report (page 33) acknowledges that it will take some Montlake Playfield Park lands but doesn't identify where or how much. It also deliberately does not identify the submerged lands as parkland on any of its otherwise detailed maps. The standard map that it uses for Montlake Playfield doesn't include submerged lands at all: See Exhibit 4.2-1, Existing Land Use in Seattle, Chapter 4, page 12. Also see also Exhibit 4.4-1, Chapter 4 page 4-27, see also Exhibit 4.13-1, see also Exhibit 5.1-15 and Exhibit 5.2-2, page 5-34, and Exhibit 6.4-1 Construction Effects on Parks, page 6-39, and Exhibit 5.6-4 which maps the historic boundary of Montlake Playfield Park. See also Exhibit 53 Section 5(f) Effects for Options A, K and L which uses the same graphics for Montlake, i.e. no submerged lands. See Exhibit 54, Preliminary Least Harm Analysis by Section 4(f) Property which says there is no Section 4(f) use (indicating no lands taken). The latter ties to Exhibit 10, page 23, Attachment 6 IBID, Properties with a Section 4(f) use where Montlake Park is not shown.

The exception to describing Montlake Park as only solid ground comes in Exhibit 6.4-3, Chapter 6, page 6-41 where for the only time park property is shown as coming up to the south edge of existing WSDOT right of way. Property north of SR 520 is not shown in that exhibit and is never shown in the SDEIS.

C-040-095

The SDEIS asserts that the taking of Montlake Playfield Park lands permanently as well during the construction period is not of consequence and therefore it is not covered by 4(f):

C-040-094

Please see the response to Comment C-040-091. Since the SDEIS was published, FHWA and WSDOT have agreed, at the request of the City of Seattle as the agency with jurisdiction, to treat submerged parklands as Section 4(f) properties in the Montlake Playfield. The Final Section 4(f) Evaluation reflects this new approach.

WSDOT has worked closely with FHWA, which administers Section 4(f), on the characterization of uses under this regulation. FHWA and WSDOT have determined that the Montlake Playfield would experience a direct use (i.e., an acquisition of property) as a result of the Preferred Alternative and all options evaluated in the SDEIS. If there is a direct use of a Section 4(f) property, the analysis does not go on to consider constructive use as defined by 24 CFR 774, since the direct use triggers the need to consider avoidance alternatives and measures to minimize harm. WSDOT has worked closely with the City of Seattle as an agency with jurisdiction over Section 4(f) resources in evaluating impacts and developing mitigation measures for these resources.

A portion of the area located to the south of the existing Portage Bay bridge is not recognized as part of the Montlake Playfield and does not receive protection under Section 4(f). During construction, it would be occupied by work bridges during construction of the new structure. However, there would be no permanent right-of-way acquisition in this area and no permanent negative effects.

C-040-095

See the response to Comment C-040-094 regarding submerged lands.

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“Montlake Playfield originally extended north of the current SR 520 alignment. Because of the rising water level of Portage Bay, however, 6.8 acres of the original playfield (not included in the 27-acre usable site) are now submerged in Portage Bay. A portion of the submerged land would be acquired from the City of Seattle for the 6-Lane Alternative options. However, the affected submerged land is not currently used for recreational purposes, is not accessible to the public for recreational use, and is not designated as parkland on the Seattle Park Guide (City of Seattle 2006). In addition, there are no formal plans for its recreational use in the future. As a result, the affected submerged lands are not protected by Section 4(f).” Source: SDEIS Attachment 6 Page 33.

Contradicting the above, in another section, the SDEIS says that Attachment 6, page 63, States Option A “would not entail a permanent incorporation of Montlake Playfield property. SR 520 would be widened to the north into NOAA Northwest Fisheries Science Center property and away from Montlake Playfield.” This appears as deliberately sowing the impression that expansion to the north of the existing right of way is only on NOAA lands and not on Montlake Parkland when in fact both areas are being impacted.

Chapter 5 page 34, Table 5.2-2 says that the expansion will require 2.2 acres of new right of way in Portage Bay. It shows graphically where the land will be taken, so it is possible to determine that the land taken over water is largely submerged land taken from Montlake Playfield Park.

This quoted paragraph above regarding submerged land has several errors:

A. The statement that the lands “originally extended” north of the current SR 520 alignment implies incorrectly that they no longer do. SR 520’s current acres of right of way across Portage Bay came out of Montlake Playfield Park holdings which now lie on both the north and south sides of WSDOT right of way.

B. The argument that the land became submerged and therefore useless is false. It was always submerged. And its “submerged” value was recognized when concern arose about the amount of the lake’s surface being taken over by moorage and houseboats. This land was valued as preserving open water and valuable shoreline at the time of its acquisition in addition to its offering space for playfields.

C. While some of the ball playing area and track was expanded using fill, the objective was to increase the height and thereby drainage of the fields which were well inside the bounds of the wetlands. The actual wetland edge of the park remained unchanged according to park history. In any event filling of wetlands ceased everywhere, stopped some 50 years ago with the recognition by both citizens and the park department that all wetlands had value. When Forward Thrust funds were used in 1968 to expand Montlake Playfield Park to

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the west, preservation of wetlands for wildlife was part of the master plan for that expansion, a mission being enhanced by years of work on the South Portage Bay Park area, planting more native vegetation and creating access paths and a canoe and kayak launch site.

D. The argument that these lands are not used is a SDEIS deception, as is the SDEIS' failure to show these parklands on the parkland maps provided of the area (see examples above.) The water portion of the park is used extensively both visually by thousands of people per day, and on the surface by various forms of water recreation, and by wildlife.

E. The SDEIS argues that the Seattle Park Department thinks only of the solid land area of Montlake Playfield Park as being park land. It quotes the Park Department's 27 acre size statement as covering only the solid ground area; seeking to imply that the Park Department does not consider significant the submerged land ownership. However, preliminary calculations indicate that one can only describe the park as being 27 acres by including the 6.8 acres which the SDEIS claims are the non-usable submerged lands. Thus, Seattle Parks appears to have included the underwater area in its statement of the Park's size. (Park Department confirmation is being requested.) But that argument carries no weight regardless of the acreage because the lands are park lands accessible to the public and used for recreation, wildlife and other park purposes.

The historic and continued efforts of the Park Department to facilitate preservation and access to these areas, with the creation of South Portage Bay Park and long planned improvements to Montlake Playfield Park, clearly demonstrate the "submerged lands" deserve 4(f) status. The SDEIS is disingenuous at best in not describing in the Discipline Report on 4(f) the acreage of additional right of way that WSDOT will need to take from Montlake Park for new Right of Way. The taking of just one acre would legally require full review (See [http://environment.fhwa.dot.gov/4\(f\)/4\(f\)_mparks.asp](http://environment.fhwa.dot.gov/4(f)/4(f)_mparks.asp)). A comparison of Existing vs. Planned ROW is shown in Attachment 6 Draft 4(f) /6f Evaluation, Exhibit 28, Effects on Montlake Playfield. It is easy to see that more than an acre of land will have to be taken under Option A. A different part of the SDEIS implies the permanent taking will be on the order of 2.3 acres (See Discussion in Item (13) Montlake Playfield Park above.)

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SDEIS: Land used for construction at Montlake Park

The construction effect on Montlake Playfield is said to be limited to a tiny area to be used on land on the north east corner, 0.3 acres. SDEIS Table 6.4-1 page 6-38. However, in addition to land purchased for permanent right of way over the water, there will be need for additional lands to handle "temporary" bridge construction, taken from Montlake Playfield Park (See Chapter 6, Exhibit 6.2-2). The acreage for this additional need has not been identified.

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See the responses to comments C-040-092 and C-040-093 regarding construction impacts and mitigation at Montlake Playfield Park.

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The construction activity of demolishing the existing bridge and building the temporary bridge and the new bridges will all take their toll on Montlake Playfield Park and represent constructive use which is not described in the SDEIS. The total construction time for the Portage Bay Bridge is 6 years.

As described above, the submerged lands represent a taking of parklands. Montlake Playfield Park with its South Portage Bay park represents a multiple use public recreational facility. In such case significance is rated by the particular use. The wetland and water focused section of the park represents about 20 percent of the park or about 6 acres. The taking of two acres of this section of the park by the expansion of SR520 represents a significant taking of that portion of the park.

The lands taken for construction use in the northeast section of the park, adjacent to the Bill Dawson Trail are significantly public lands highly used as part of the Bill Dawson Trail.

Access to that area will be cut off for 3 years. This is a significant taking of Montlake Playfield park lands and interferes with its activity and function. This area is close to the beaver lodge which the park wildlife enthusiasts enjoy. As described below, Montlake Playfield Park is adjacent to public areas of WSDOT right of way which are used for public park purposes and therefore are also deserving of 4(f) status. Exhibit 6.4-3, Chapter 6, page 6-41, clearly shows that part of the Montlake Playfield track is on WSDOT right of way. It is also very probable that the kayak launching site next to the track is on WSDOT right of way, emphasizing that from everyone's point of view that WSDOT property, not used by SR 520 is being used as park land and deserves 4f status.

The SDEIS fails to acknowledge 4(f) status of Montlake Playfield's submerged lands and therefore it has failed to performed the analysis required for the substantial, adverse taking these water parklands, a taking adverse to both recreational and wildlife usage and to the peace and quiet and wild-land experience offered by the wetland and water of Montlake Playfield Park. For example, both kayakers and beavers use the channels the beavers cut through the lily pads during the summer, channels cut above the "submerged" lands which the SDEIS describes as of no value. There is an active beaver lodge at the south east end of SR 520. In addition to the general public, both Seattle Yacht Club and Queen City Yacht Club use the Montlake Park lands north of the current SR 520 right of way in their recreational activities as well.

This water-parkland is also an integral part of the visual experience of being in Montlake Park, or the east side of Capitol Hill and all the parks there, including West Montlake Park.

The SDEIS has acknowledged that Montlake Playfield Park has 4(f) status because there will be construction occupation of a portion of the park. However, it dismisses this qualification by saying the use is "temporary." However, neither the task nor the time

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fit the 4(f) temporary classification. Building a new access bridge to be used to remove and replace the SR 520 off ramp does not fit the nature of a temporary use. Building a major haul route on park land is a significant use. The time of 3 years also does not fit temporary use. Further, this is a combination of forest and wetland used as a wild life refuge that will be significantly adversely impacted during construction and, because of the clearing done for that construction, after construction. The beaver colony living there is not likely to survive the experience. This is an example of current use of Montlake Playfield that will be adversely impacted by this taking. Further, this area of the park, bordering on the Bill Dawson Trail, is heavily used and the park like setting is part of what gives the trail its interest and why people like the trail.

What we have here is a combined constructive use of both Montlake Playfield park lands and the Bill Dawson Trail. Before the constructive use, both were enjoyed together. With the closing of the area neither are to be enjoyed and the cause, removal and construction of SR520 is the same. This section of the park offered wildlife viewing an increasing interest for Montlake Playfield and South Portage Bay Parks. The taking has to be seen in the context of the amount of shoreline in the park that is easily accessed and in this case this is normally a high traffic area. The taking lessens one of the uses of Montlake Park as an wildlife and open space area that is interesting to walk through. The closing of this areas to access and turning it into a major haul road not only turns off interest in that specific area but to the much larger associated area. That corner of the park will need to be avoided for three years. In addition, these lands and the WSDOT land on which this bridge is also being constructed are a mix of forest and wetland and are in fact being damaged by this construction use, impairing their recreational and wildlife use for both the construction period and thereafter. This is a significant loss in one of the attributes of the park, providing interesting wildlife viewing in mature vegetation along the shoreline and will harm its growing reputation as an interesting place for birders for the construction period.

In sum, the SDEIS fails to recognize the significance of the taking of Montlake Park lands, both submerged lands and non-submerged lands because it used logic that did not fit the circumstances. But taken together it is very clear that Montlake Playfield park is having a taking of parklands and its environment is being lessened as a result of the expansion of SR520. The SDEIS was not sensitive to these concerns but Montlake Playfield and South Portage Bay Park users are and so is the Seattle Park Commission, see Appendix X Letter From Park Commissioners.

Avoidance, Minimization, Mitigation at Montlake Park

- The SDEIS failed to evaluate alternatives which might permit avoiding this use. The key element here is whether the change in alignment is necessary, and whether the new bridge to the north needs to be so far north. A change in the size of the Portage Bay Bridge to 4 lanes might permit moving the bridge south enough to avoid taking a significant quantity of Montlake Playfield parklands.

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See discussion elsewhere of potential for fewer lanes and therefore smaller Portage Bay bridge.

- The SDEIS fails to evaluate alternatives which would minimize the damage.
- See prior discussion of option to reduce noise.
- The SDEIS omits proposals for mitigation.
- The key point here is avoidance so that mitigation is not necessary.

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(14) Portage Bay Park Area in SR 520 Right of Way

The existing SR 520 right of way for the Portage Bay Park Area comes out of Montlake Playfield Park property and comprises 4.7 acres. The existing bridge is 60 feet wide and the section of land that the city provided is some 1400 feet long, suggesting that bridge now covers only 2 acres of the lands it bought from Montlake Playfield Park in the late 50's. This leaves 2.7 acres uncovered and not used by the bridge. This land lies primarily to the south of the bridge. Since SR 520 was built, this land has been used by the public and by wildlife as open space, qualifying it for 4(f) status. See also above discussion of Montlake Park activity being carried out on those lands. As described in the Portage Bay section the use of these lands for a bridge represents a 4(f) use. The proposed construction plan will use these lands for both temporary construction bridges and also for the new permanent bridge. The SDEIS avoided detailing water coverage in Portage Bay, so we do not know these acreages. Construction of the Portage Bay bridge will take some 6 years and will utilize a process which takes a lot of heavy equipment and makes a lot of extreme noise and vibration. For the land taken for permanent use, there is a clear 4(f) taking. Given the length of time and the magnitude of the use there is clearly a constructive use of the lands used for construction even if they are not to be used permanently to support the bridge. Those lands used for a construction bridge, for example, are not available for the normal recreational activities of those lands for that period. I would expect the area to be fully posted with no trespassing signs. One can expect that the lands closed for construction will be a significant part of the lands owned by WSDOT in Portage Bay, making construction use a significant use of that property.

The proposed bridge will double the amount of water covered, impacting the waters used by the public and by wildlife. Under Option A, the water acreage being covered by the bridge is being more than doubled (at the narrowest middle part of the bridge its width is only being increased 83 percent, but the road flares much wider toward both ends.) The SDEIS omits the calculation of current water coverage vs. the options being considered.

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See the response to Comment C-040-091.

Table 5.2-2 of the SDEIS indicated that construction of a new Portage Bay Bridge under options A, K and L would acquire additional right-of-way totaling 2.2 acres, 1.75 acres and 0.85 acres, respectively. The graphic depictions located directly above this table demonstrate that the right-of-way acquisition is almost exclusively to the north of the existing SR 520. Using the information available at that time, WSDOT did not consider this area as part of the Montlake Playfield because it is was not designated as park land by the City of Seattle, and therefore did not attribute this as a use of Montlake Playfield. Acreages in the Final EIS have been revised as necessary to reflect consideration of the submerged lands as park lands.

Exhibit 28 of the Draft Section 4(f)/6(f) Evaluation (Attachment 6 of the SDEIS) depicted the proposed use of the Montlake Playfield, with the playfield boundaries recognized by WSDOT at that time, for options A, K and L. The Draft Section 4(f)/6(f) Evaluation also evaluated the use of this playfield under each option. The Final Section 4(f) Evaluation includes evaluation of the submerged land areas subject to Section 4(f), as identified through consultation with the City of Seattle.

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Some of these waters are technically SR 520 right of way and the balance is Montlake Playfield Park. **Given the use patterns of these lands for the last 45 years, recreation, wildlife, scenic beauty, buffer for SR 520, etc., all of the expansion of SR 520 will be over parkland deserving 4f status. Similar lands exist in the Arboretum area: see the R.H. Thompson Lands described below. The SDEIS failure identify the extent of 4f lands within the SR 520 right of way and to provide for all of them the avoidance and mitigation analysis required is an extremely significant error.**

The lands owned by WSDOT, but not actively covered by the bridge are
The SDEIS does not acknowledge the significance of the Portage Bay Area in the WSDOT right of way as a parkland. As a result:

- The SDEIS fails to evaluate alternatives which avoid this damage.
- The SDEIS fails to evaluate alternatives which would minimize the damage.
- The SDEIS omits proposals for mitigation.
- In addition for the use of Montlake Playfield's land near the Bill Dawson Trail, the SDEIS incorrectly regards that taking as a temporary use and therefore one not requiring avoidance and if not avoidable, mitigation.

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(15) Bill Dawson Trail (a bike and pedestrian trail)

SDEIS Description Chapter 4 page 4-29. SDEIS Description Attachment 5 page 33.

The Bill Dawson Trail connects Montlake Playfield Park on its west boundary to Montlake Boulevard via a path under and along SR 520. The SDEIS notes that all of the land is publicly owned and the primary purpose is recreation regardless of land ownership. Therefore, the Bill Dawson Trail is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina Project would result in a use of this recreational resource. It also acknowledges that the trail is heavily used.

The SDEIS attachment 6 page 65 argues there is no 4(f). However, the trail is being taken in its totality for 3 years because the trail is being destroyed with the destruction and replacement of SR520; it will have to be relocated after the new SR520 is built. The scope of work is about as big as it can get. The temporary classification only fits if the scope of work is minor and the magnitude of the changes to the resource are minimal. That doesn't fit this case. Further the use does not qualify as temporary because the trail is shut down. It only exists to do a specific task over a relatively short distance. The purpose of this trail is a speedy access from the end of Montlake playfield to the bridge side of Montlake Avenue, bypassing a lot of long traffic lights and traffic and two freeway on ramps. That quick bypass option ceases to exist with the closure of the trail, a complete "interference with the activities or purpose of the resource," another indication that this closure doesn't fit the "temporary" classification the SDEIS is seeking to use. In addition, the impact is significant: the detour suggested is 1500 feet longer and through the construction zone, a freeway entrance and very long traffic lights. The

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The Preferred Alternative would not result in a substantial impairment of the Bill Dawson Trail. As an active member of the project's Parks Technical Working Group, the Seattle Parks and Recreation Department has helped to develop a plan for the trail. During construction, WSDOT will provide a user-friendly construction detour for cyclists and pedestrians, using on-street and sidewalk connections between Montlake Boulevard and Montlake Playfield. Following construction, WSDOT will replace the affected portion of the Bill Dawson Trail (with a slight realignment to accommodate for the new corridor and stormwater pond) in a manner that complies with the standards of the Americans with Disabilities Act and corrects current flooding and encroachment issues. The trail would continue to provide a north-south pedestrian and bicycle connection underneath SR 520 from Montlake Playfield to the Montlake Boulevard area.

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trail is completely gone. Walkers and cyclists are left back with city streets they had before the trail was established. Saying that is a detour that “rejoins the trail” is totally misleading because the detour bypasses the trail completely (See Position Paper - Section 4(f) Applicability Temporary Occupancy, Harold J. Brown, Nov 4, 1988). The task and the time for which this property will be used, building a whole new bridge, taking 2.5 to 3 years (See SDEIS Attachment 6 page 65) is not appropriately called a “Temporary Use.” The Bill Dawson trail now passes through a section of interesting wetlands with mature vegetation. After construction the area will look greatly different.

- The SDEIS does acknowledge that the Bill Dawson trail qualifies for 4(f) review. The SDES may be correct that there was no way to keep the trail open, but alternatives must be evaluated.

- The SDEIS failed to acknowledge that there was a constructive use taking of this trail. Its arguments that the taking was temporary in spite of the taking lasting three years do not meet federal standards.

- There is need for mitigation other than saying that one can go back to the way things were before the trail existed. There will be fewer people passing through Montlake Playfield as a result of this change. They will bypass the park instead or will choose other routes to avoid the construction congestion that will be occurring there because without the trail they will not be able to avoid it.

- Because this is a heavily used pedestrian and bicycle trail, it must be replaced with an equivalent trail.

C-040-099

(16) The Washington Park Arboretum. (16) LAKE WASHINGTON Blvd.

*See SDEIS description Attachment 6 page 37
SDEIS description of Lake Washington and Montlake Boulevards as Olmstead Boulevards Chapter 4 page 4-32. SDEIS Description Chapter 4 page 4-30. See also SDEIS Foster Island and Marsh Island Chapter 4, page 4-30. Lake Washington Boulevard is also adversely impacted by the taking of Canal Lands which balanced that Park Boulevard’s entrance at Montlake.*

Arboretum land (0.6 acres) is being taken by the expansion of SR 520, particularly on Foster Island. Also, the Arboretum has planned to use MOHI for office space and will therefore lose that facility.

In the Arboretum WSDOT already has a lot of right of way so the small take from Arboretum lands does not indicate the impact of the doubling of the footprint of the new SR520 in that area. Some of these lands are submerged and some are not. All are used for recreation and wildlife purposes and as such deserve 4(f) protection starting with taking steps to avoid use.

A very serious use of the Arboretum by SR520 now and in any expansion mode is the use of Lake Washington Boulevard as an on and off ramp to SR520 and the adverse

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As noted in the responses to previous comments, FHWA, the Seattle Parks and Recreation Department, and WSDOT have concurred on the lands to which Section 4(f) is applicable in the project area. The Preferred Alternative reduces land acquisition in the Washington Park Arboretum to 0.5 acre (lower than any of the SDEIS design options) and mitigates for that land both through measures identified in the Arboretum Mitigation Plan and through the creation of a new public park under Section 6(f) of the Land and Water Conservation Fund Act. The Preferred Alternative would also eliminate the existing Lake Washington Boulevard ramps and reduce traffic on Lake Washington Boulevard through the Arboretum. Please see Chapters 5, 9, and 10 of the Final EIS for additional information. See also the responses to comments from the Arboretum Foundation and the Seattle Board of Park Commissioners.

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impact of increased traffic and increased noise and increased visual blight. See Letter from Park Commissioners Appendix X.

SDEIS under mitigation for "adverse effects that cannot be avoided or minimized (page 5-64) says that WSDOT is working on suitable replacement land (not identified) and other devices as well.

C-040-100

(17) West Montlake Park

The Bill Dawson Trail now leads via Montlake Boulevard to West Montlake Park. This park will be impacted by noise and visual blight by the expansion of SR 520.

C-040-101

(18) Ship Canal Trail

SDEIS Description of Ship Canal Waterside Trail Chapter 4 page 31; see also Attachment 5 page 35.

The Ship Canal Trail connects Foster Island and the Arboretum. It is a National Recreational Trail with special 6(f) status. (See also on same page Burke-Gilman Trail.) The trail will be blocked by the project and mitigation will be provided.

C-040-102

(19) McCurdy Park

SDEIS Description of McCurdy Park Chapter 4 page 4-30. See also Attachment 6 page 34. Confirmation these are 4(f) sites.

McCurdy Park is a 1.5 acre park adjacent to MOHAI and SR 520. It will be taken by this project, and City of Seattle will receive equivalent parkland in exchange. The R.H. Thompson lands have been targeted as the land to be exchanged. However, to the extent the R.H. Thompson lands are understood to be already parkland, they may be found to be an unacceptable exchange under the law because there would be a net reduction of public park land in the exchange and therefore the required mitigation would not be provided.

SDEIS Description of Potential Lids in Montlake Boulevard Area includes Option A's proposal of using a lid over SR520, east of Montlake Boulevard to link Arboretum land south of SR 520 with East Montlake Park, the lid helping the crossing over of the remains of McCurdy Park (taken by WSDOT for waste water treatment). This lid would contain the road that would enter, as it has historically, in front of MOHI which will cease to exist as part of this project because WSDOT needs that right of way.

C-040-103

(20) East Montlake Park

*SDEIS Description of East Montlake Park Chapter 4 page 4-29.
SDEIS Description of East Montlake Park and McCurdy Park Attachment 6 page 34.*

C-040-100

Although West Montlake Park is a City designated park, it does not experience a Section 4(f) use. FHWA and all the agencies with jurisdiction have been working closely together on Section 4(f) and all concur that the resources described in the Final Section 4(f) Evaluation are the affected Section 4(f) resources in the corridor.

C-040-101

Through the Parks Technical Working Group and the project's Section 6(f) process, WSDOT has worked with the City of Seattle and the University of Washington to address project effects the Ship Canal Waterside Trail. As noted in the comment, this trail is protected under Section 6(f) of the Land and Water Conservation Fund Act. With the Preferred Alternative, access to the portion of the Ship Canal Waterside Trail west of Montlake Boulevard would still be available during and after construction; and access to the eastern portion of the trail and its connection to the Arboretum Waterfront Trail would be available from East Shelby Street, East Hamlin Street, and East Montlake Park during and after construction. After construction, a connection from the Ship Canal Waterside Trail within East Montlake Park to the new bascule bridge would be provided, similar to the current stairs up to the existing bridge and Montlake Boulevard, so continuity of the trail would be maintained. However, mitigation would be required because the duration of effects during construction would be more than 180 days.

WSDOT will mitigate for its use of affected Section 6(f) resources, including the Ship Canal Waterside Trail, by providing replacement property at the Bryant Building site. For more information, please see Chapter 10 of the Final EIS.

C-040-102

Since Section 6(f) is the only federal regulation requiring replacement of protected property converted to another use, it is assumed that the

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East Montlake Park is 7.1 acres. The western one third is owned by Seattle Parks and the eastern two thirds are owned by the Washington State Department of Natural Resources. All is managed by Seattle Parks Department.

The proposed expansion of SR 520 will take much of this park, but the balance will remain a park. A land exchange is being arranged with R.H. Thomson Lands proposed for the exchange. See discussion of this exchange under McCurdy Park and below under R.H. Thompson Lands.

C-040-104

(21) Arboretum Waterfront Trail

SDEIS Description of Arboretum Waterfront Trail Chapter 4 page 4-31

This trail connects to Marsh Island and Foster Island and then to the rest of the Arboretum. Land and Water Conservation Funds were used in the creation of this trail giving it a very special protected status.

Use is being halted during the construction period creating constructive use and the need for mitigation. Closure of this type of trail for 6 months creates an automatic Constructive Use requirement for mitigation, the provision of equivalent land providing the equivalent experience.

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(22)The R.H. Thompson Lands

This area is a WSDOT right of way in the Arboretum. It has been used as parkland for the last 50 years and is totally surrounded by parkland. It is also a very actively used area with a nice parking lot for easy access. Few, if any users of the parking lot and the walking area would perceive that this land was any different from Arboretum land and paths and trails interconnect. This land lies in direct view of the entrance sign to the Arboretum. It is maintained by Seattle City Parks.

Because of its public access and park and wildlife use, probably all of the area within the WSDOT right not now used directly for highway use qualifies for 4(f) status and needs to be treated that way. The SDEIS here (as elsewhere) erroneously treats WSDOT right of way as not protected by 4(f). Additional examples include the water under SR 520 as well as the water south of Marsh Island. This Marsh Island area is heavily used by canoes coming to and from the Arboretum. That water area lies within the WSDOT right of way, but has been used for recreational purposes for 45 years. This land will be used by the proposed highway. (See Ch 5 page 5-60.) The SDEIS incorrectly assumes that expansion using WSDOT right of way in this area does not create the need for 4(f) harm evaluation and the requirement to minimize use of those lands as well as land established as park.

comment refers to Section 6(f) replacement property. As described in the response to comment C-040-101, WSDOT plans to use the Bryant Building site as replacement property for conversion of Section 6(f) properties, which include portions of East Montlake Park. The WSDOT right-of-way containing the R.H. Thomson Expressway ramps is not proposed for use as Section 6(f) replacement property, nor is the area on top of the proposed Montlake lid.

C-040-103

See the response to Comment C-040-102.

C-040-104

The comment confuses Section 6(f)—which requires construction impacts lasting 180 days or more to be mitigated as permanent conversions—with Section 4(f), which allows FHWA to make a constructive use determination if the indirect effects of a project substantially impair the features that qualify it for Section 4(f) protection. Section 6(f) does not include the concept of constructive use. Closures of the Arboretum Waterfront Trail itself would be intermittent and for fewer than 180 days; access to Foster Island via the trail would be available from one or both directions at all times. However, permanent acquisition of portions of the Arboretum and East Montlake Park, as well as construction in East Montlake Park and along the Ship Canal Waterside Trail, would constitute a conversion of Section 6(f) property that would require replacement. The Section 6(f) Evaluation in Chapter 10 of the Final EIS documents the areas converted from park use to right-of-way and the replacement property agreed upon by the grantees. The City of Seattle and the University of Washington, the Section 6(f) grantees, have agreed that this site is of reasonably equivalent usefulness and value as required by Section 6(f).

C-040-105

The SDEIS failure identify the extent of 4(f) lands within the SR 520 right of way and to provide for all of them the avoidance and mitigation analysis required is an extremely significant error.

The SDEIS Attachment 2, Agency Correspondence, un-numbered first page states that WSDOT plans to exchange the R.H. Thomson property as part of the mitigation. The SDEIS Chapter 7 page 24 says that "Unlike the experience of past years, however, today's transportation improvement projects include mitigation in the form of replacement parkland. No permanent loss in total park area would result from the proposed 6-Lane Alternative in combination with Medina to SR2012 project, Sound Transit's north Link, and East Link for light rail projects and other planned transportation improvement and land development or redevelopment projects." **This is making the argument that land taken will be replaced by other land equally suitable for park use. It pre-supposes a non-park use of the land being exchanged. However, the land in question, the R.H. Thomson Land is already park land as defined by 4(f), making the R.H. Thomson exchange questionable. Exchanging parkland for parkland may be acceptable to the owners, but it is not consistent with the objectives of federal law.**

The City of Seattle's Parkland Exchange Policy is quoted in SDEIS Chapter 7 page 7-25. Ordinance 118477 states that all park land must be preserved or mitigated by providing replacement "land or a facility of equivalent or better size, value, location and usefulness in the vicinity, serving the same community and the same park purpose." The intent is to see to it that "no long-term adverse effect on parkland and recreational resources would result from construction of the proposed project.

- The SDEIS fails to acknowledge that the WSDOT lands in the Arboretum area and elsewhere are publicly accessible park lands used for wildlife and recreation and therefore requiring 4(f) treatment.
- The SDEIS fails to evaluate alternatives which would avoid harm to these lands.
- The SDEIS fails to evaluate alternatives which would minimize the damage.
- The SDEIS has no proposals for mitigation

The use of open land for highway construction takes it over physically, with mass, shadow and noise. The new highway is to be higher than the old, increasing the impact on surrounding lands by increasing the distance the sound will travel, and also increasing the amount of noise with higher speeds. Open space used for recreation and wildlife is and subsequently taken for highway use is marred by that use, the attributes and functions of the land so taken are diminished, it becomes a less pleasant place for people and wildlife. Lands occupied by highways don't act and feel like parks. Doubling the size of this highway definitely increases the harm that is being done to the foot print area and beyond. There are also pollution issues and health issues of those who recreate or spend time next to highways. Small particulate emissions found close to

C-040-105

The existing WSDOT right-of-way containing the R.H. Thomson ramps (also area known as the "WSDOT peninsula") is not a Section 4(f) recreation property. It was purchased for transportation purposes and still contains operating transportation facilities. The agreement between WSDOT and the City of Seattle regarding this WSDOT right-of-way holds that, while the state allows Seattle to use and maintain portions of the property for park purposes, the property remains under WSDOT ownership and must be relinquished within 90 days if WSDOT needs it for transportation purposes. (See page 30 of the Cultural Resources Discipline Report). Both FHWA and the U.S. Department of Interior have concurred that the peninsula property is therefore not subject to Section 4(f) as a recreation property.

The agency correspondence cited in the comment regarding use of the WSDOT peninsula as replacement park property is dated January 12, 2006. At that time, WSDOT did envision using the area for this purpose. However, subsequent discussions with the National Park Service and the Recreation and Conservation Office indicated that this property did not meet the requirements for replacement land under Section 6(f). Therefore, conversion of Section 6(f) properties is being mitigated for at the Bryant Building site (see the response to comment C-040-101).

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highways are hazardous to our health. All of this is to say that the taking of public recreational lands for highway use is a significant adverse taking.

C-040-106

(23) University Canal Lands

The University Canal Lands lie just to the north of SR 520 between Montlake and MOHAI. They have mature and very beautiful landscaping, and offer a very important visual continuity to the trees which line Lake Washington Blvd, emphasizing that one is entering into Arboretum Lands. Visually they provide an east-west continuity with McCurdy Park trees and help create a feeling of entering park land as one approaches MOHAI, East Montlake Park and McCurdy Park. The lands have been owned by the University of Washington for nearly 100 years. They are called Canal Lands because they front on what was once the canal through which logs were floated in the portage that gave Portage Bay its name. On the north side of this significant tract of land there is a significant grassy area with a picnic table, extending the park like setting to the contributing historic homes across the alley. The land has been a buffer between these residences and SR 520 for the last 45 years.

SDEIS shows that these lands will be taken for right of way Exhibit 5.2-3 Chapter 5, page 5-35.

Description of University lands as qualifying for 4(f) status is in Attachment 6 page 37, but this specific holding is not identified and only the University holdings north of the cut are described. The SDEIS shows, however, that the homes adjacent to this site contribute to the historical district.

These are publicly owned lands used as open space to support three adjacent parks: The Arboretum with its Lake Washington Boulevard Parkway park land is across SR 520 to the south, McCurdy is directly east, and this parcel serves as a gateway to East Montlake to the north. In addition, these lands on Montlake Boulevard set the tone of entering University Open space used for park type activities. I believe these lands qualify for 4f protection.

The loss of these lands will be a significant loss to Lake Washington Blvd and should be identified as a 4(f) loss for that reason as well as the other reasons that have been identified. The impact of widening SR 520 at Montlake Boulevard is severe because of the magnitude of the widening. It creates a major challenge to recreating an attractive entrance way to the Arboretum and to East Montlake Park because real trees can't be grown on lids.

- The SDEIS fails to acknowledge that these University Lands publicly accessible park lands used for recreation and wildlife and therefore require 4(f) avoidance if

C-040-106

WSDOT has determined that the Canal Reserve land is eligible for listing in the NRHP, and the State Historic Preservation Officer has concurred with this finding. However, FHWA has concurred that the property is not a significant public park because it is located within WSDOT right-of-way. Because the Canal Reserve land is not a recognized recreational resource, it is not a Section 4(f) recreation property. The Canal Reserve land is discussed as a contributing element to the Montlake Historic District in both the Final Cultural Resources Assessment and Discipline Report (Attachment 7 of the Final EIS) and in the Final Section 4(f) Evaluation (Chapter 9 of the Final EIS). Therefore, as required by Section 106 and Section 4(f), WSDOT will minimize project impacts to the Montlake Historic District and its contributing elements, and mitigate impacts as required under Section 106. Under the Preferred Alternative, this area would be developed as part of the Montlake lid, which would provide landscaped open space, would restore and create views and would facilitate pedestrian and bicycle connectivity to and from the Arboretum.

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possible. In this case with parkland on both sides of SR520 avoidance can only happen with reduced foot print, a smaller road. This is the critical assessment The SDEIS fails to evaluate alternatives which would avoid harm to these lands.

- The SDEIS fails to evaluate alternatives which would minimize the damage.
- The SDEIS has no proposals for mitigation

It is not clear to me what will be left of these lands and how that remainder will be used. Preserving the green belt here is particularly important given its many links to other green areas.

C-040-107

Notes on the Proposed 10th Avenue to Delmar Lid

Exhibit 3-6, Chapter 3, page 3-12 shows the location of retaining walls supporting the proposed lid between 10th Avenue and Delmar. Given the required height clearance of the roadway and height of the 10th and Delmar bridges and given the steep slope of the adjacent hillsides, it is clear that these walls will be above ground for a lid which is described as dropping from surface level on 10th Avenue to surface level on Delmar Street, making it a twisted plane. For the lid to be attractive, the contour of the hill should be re-established as it once was by filling in behind its walls. But that will take design of the walls integral to the lid such that the walls can hold back earth. If not, the walls will collect ivy and graffiti. In the above Exhibit, the limits to construction are what the SDEIS thinks is WSDOT right of way, but that right of way actually includes the clear patches in the photo. Thus, the landscaping should run from that verge to Roanoke Street in a nice slope which would act to integrate Roanoke Park, Bagley Viewpoint and Interlaken Park and further re-integrate the historic Roanoke neighborhood, with pedestrian connections to the now dead-end Federal Avenue East, to Interlaken at 11th Avenue East and to Bagley Viewpoint.

The purposes of the lid have been described in the SDEIS, but not in a cohesive fashion which establishes both that this is mandatory mitigation and that the mitigation must be done in a way that achieves not just sound mitigation but also mitigates damage to the adjacent parks and historic neighborhoods. In addition the SDEIS fails to describe the need in this high traffic area to not have exposed and ugly barrier walls that would restrict movement and create maintenance headaches.

SDEIS claims a noise reduction relative to current levels throughout the corridor but says "The addition of lids and landscape features over the highway would be the primary reasons for the reduction in noise levels." Chapter 5 page 5-170.

SDEIS Exhibit 5-4-1 Permanent Park Acquisition at Bagley Viewpoint CH 5 page 5-54 includes one lid depiction which just covers the highway section and a cartoon artist rendering of the lid. The issues of fitting the lid into the hillside without creating graffiti collecting walls have not been dealt with.

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See the response to Comment C-040-082 regarding design of the proposed lid.

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SDEIS, Chapter 5, page 5-44 says that community cohesion would be improved in the neighborhoods in the study area. "They all include landscape lids with pedestrian and bicycle pathways over I-5 at East Roanoke Street, 10th Avenue East and Delmar Drive East and in the vicinity of Montlake Boulevard East. The lids would benefit community cohesion by reconnecting neighborhoods originally bisected by SR 520 and I-5, providing linkages between adjacent and nearby parks, improving views toward the highway from nearby residences, and providing safe passage across I-5 and SR 520 at these locations.

SDEIS, Chapter 5, page 5-53 " Green open spaces, landscaping and pathways planned for the lids at I-5 10th and Delmar and in the Montlake area would provide new area for passive recreation. Trails across these lids would further improve connectivity for bicyclists and pedestrians."

Care needs to be taken to manage the south to north transition of the lid: the transition from 11th and the end of Federal Street and the higher portion of the hill near 10th Avenue as the ground slopes to Roanoke Street. There is no discussion of the south to north transition issues the 10th Avenue to Delmar lid will present although one of the objectives of the lid, besides noise containment, is described as bridging neighborhoods otherwise cut apart by SR 520. The break is most significant north-south because SR 520 lies in an East-West trench with few cross over points. Making that north south connection by using a lid to make a pedestrian connection from Federal Avenue East to Roanoke Park, for example, would be very valuable.

The SDEIS Right of Way description in Exhibit 5.2-1 purports to show WSDOT right of way south of Roanoke Street and East of 10th Avenue Bridge. The actual right of way is further to the south and includes the cleared areas in the photo.

Unfortunately, the SDEIS describes the 10th to Delmar Lid and all other lids as at the discretion of WSDOT, not mandatory remediation. Further, the picture shown is a lid over the actual excavated area of roadway with no backfilling. This 1950's style design would leave walls on the north and south sides which would collect graffiti and ivy and areas for the homeless and leave the slope too steep for use or maintenance.

It is critical that the importance of the connection of Roanoke Park to Interlaken be recognized so that the lid proposed is:

- A. Seen as mandatory,
- B. Seen as requiring lid design integrated with wall design such that the walls will be able to hold fill stacked up against them (Meaning trees can be planted at the edges of the lid and the walls will disappear at surface level because they have been backfilled.)
- C. Constructed so that fill be removed as part of the construction be reserved for placement against those walls so that the hillside can be contoured as it was before SR 520 was built. The excavation material will be beach like sand, perfect for this

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application. This will require negligible additional cost and will create usable recreation area equivalent to the current area of Roanoke Park. Keeping the fill near the site of excavation offers the potential to reduce adverse hauling impact on adjacent historical neighborhood as well as reducing excavation cost. Lids have weight constraints such that they are basically tree free. Tying the lid into the hill at lid surface level on an integrated basis will permit trees to grow near the edges of the lid and create a wonderful easily maintainable landscape as well as easy path transitions.

A major failure of the SDEIS is that it fails to acknowledge that under the No Build Alternative the landscaping would be preserved and the degradation of the adjacent park areas by an expanded highway system would not occur. If the decision is to destroy what we have, then that destruction on and off right of way should be identified. That in turn should create a mitigation mandate, not a WSDOT option to mitigate which is what the SDEIS now describes.

SDEIS Overview Maps and Exhibits

- SDEIS Map page 4-27 which shows all parks in affected area including Miller Park and Colonnade Park.
- SDEIS Table 4.4-1 Chapter 4, page 4.28 which lists all Recreation Resources in Project Vicinity.
- SDEIS VIEWSHED and Landscape Units map Chapter, page 4-35 and subsequent descriptions of same. There are 6: Roanoke, Portage Bay, Montlake, Union Bay, Lake Washington and Eastside Viewshed and Landscape Units.
- Historic Properties of Seattle Chapter 4, page 4-43. It is noteworthy how much of the area SR 520 passes through is historical. See also Historical Properties East side Chapter 4, page 4-50.
- Exhibit 4.7-1 Existing Noise Levels in the Seattle Project Area Chapter 4 page 4-52 for Seattle side and page 4-53 for east side.
- Chapter 4, page 4-62 Wetlands in the Seattle Area.
- Chapter 5, page 5-29 Future Trail Connectivity showing link Montlake Playfield Park to Arboretum and back to Montlake West Park.
- SDEIS Table 5.4-1 Permanent Park Acquisitions (acres) Chapter 5, page 5-54. Note that Montlake Park submerged lands are not described.
- SDEIS Table 6.4-1 Construction Effects on Parks (acres.) Chapter 6 page 6-38.
- Properties with a Section 4(f) Use in the Seattle Area Overview Map.
- 4(f) standards Attachment 6 page 57.
- Summary of Potential Section 4(f) Use Impacts Option Attachment 6 page 82.
- See also that the decisions on 4(f) and 6(f) were made by the TWG group. (Attachment 1 page 6) and their conclusions are on page 7. Meeting discussions are listed on Page 21 and might be valuable to get because they discussed 4(f) thresholds for Roanoke Park, the Bill Dawson Trail, the issue of permanent vs. temporary use, etc.



14 April 2010

Jenifer Young
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C-040-108

Dear Ms. Young:

I have reviewed the SR-520: I-5 to Medina Bridge Replacement and HOV Project SDEIS on behalf of The Coalition for a Sustainable SR-520 and offer the following comments. My comments fall under four categories:

- Corridor Traffic Operations
- Assumptions
- Needed Clarifications
- Conclusions of the SDEIS

1. Corridor Traffic Operations

A. The SDEIS describes traffic operations on SR-520 and at intersections but gives much less attention to corridor operations on surface streets. While it indicates that congestion occurring at one location may affect others, it does not provide a clear picture of how traffic operates or will operate along corridors such as Montlake Boulevard, NE Pacific Street, E. Roanoke Street, Harvard Avenue E., 10th Avenue E., or Lake Washington Boulevard through the Arboretum. For example:

- The document (SDEIS 4-3) gives only nodding recognition to existing backups on Montlake Blvd. indicating that they “can” extend as far north as NE 25th Avenue rather than saying that those long backups occur daily, and that they often extend further back. The same is true for NE Pacific Street.
- The Transportation Discipline Report (6-24) notes for the No Build option that “Montlake Boulevard southbound would often be congested as far back as NE 45th Street”. That is barely different than today’s conditions, despite the significant increase in volume by 2030 and longer delays at the intersection of Montlake Blvd/NE Pacific Street. How is that possible?

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The Final EIS presents an expanded version of the transportation analysis, which includes a VISSIM analysis of the Montlake interchange along with the Synchro analysis. Together, these two micro-simulation models provide more detailed information regarding local street operations and congestion. Please see Chapters 6 and 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information regarding operational effects of the Preferred Alternative, including local traffic volumes and intersection operations in the Montlake interchange area and a discussion of travel time estimates for the new bascule bridge. Estimates are provided for the a.m., p.m., and off-peak periods.

Effects on affected intersections were described in the Section 5.1 of the SDEIS and the Transportation Discipline Report. Exhibits 6-3 and 6-4 of the Transportation Discipline Report show the predicted level of service in 2030 at Montlake area intersections.

The traffic analysis methodology provides a comparison of operations for a Build and No Build condition. The comparison determines if the project interchange options would improve or degrade operations compared to the No Build alternative as is required. The local system operations are measured at intersections because these are the constraints on a system (the junctions of arterial roadways). Please see Chapter 12 of the SDEIS Transportation Discipline Report to review the project requirements in regards to maintaining or improving local traffic operations. The operations analysis completed allows the impacts to be measured relative to these requirements.

Based on standard methodology, the traffic operations analysis only included intersections where traffic volume would change by more than 5 percent between No Build and the design options. Five percent was used as a criterion because a change of that magnitude would typically

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- Similarly, for options K & L, “The increased congestion would affect adjacent intersection operations to the north, south, and west” of the Montlake Blvd/NE Pacific intersection (Transportation Discipline Report 6-40). How will the operations be affected? How will travel times be affected? How frequent will back-ups be?
- Option K’s turnaround at the new Montlake interchange is projected to operate slowly during both morning and afternoon peak periods. Long queues occur for northbound traffic in the Arboretum during the morning commute now (although they are not discussed in the SDEIS), and volumes on Lake Washington Boulevard are projected to increase significantly with Option K. How will the turnaround’s slow operation affect traffic driving through the Arboretum?

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- B. Pedestrian and bicycle routes are identified for each option but important elements of the user’s experience are not discussed. For example:
- Option A creates a much wider intersection at Montlake Blvd./24th Avenue East. Pedestrians would cross 5, 6 and 7 lanes, where they now cross 3, 4 and 5 lanes. What is the potential effect of wider crossings on pedestrian safety, walking time and pedestrians’ willingness to walk?
 - Option A also creates a new signalized intersection on Montlake Blvd. at the 520 westbound ramps with a 5th leg for buses. Pedestrians face additional crossings as well as a wait at the new signal. How does this affect pedestrian safety and walking time along the Montlake corridor?
 - Riders transferring from the new SR-520 westbound bus stop under Option A to southbound local buses would have a new route to reach the southbound bus stop. Currently, riders can use the stairs and underpass to cross Montlake and then have only one lane of traffic to cross to reach the stop. While the new route is a shorter distance, it appears to require waiting at two signalized cross-walks. Would more time be required to make such a transfer than occurs now?
 - The SDEIS (5-28) calls Option A’s reduction of volumes on Lake Washington Blvd. a benefit to cyclists and pedestrians but it does not characterize the effect of Option K & L’s increases in volumes on cyclists and pedestrians on that road. What would the effect be?

C-040-110

2. Assumptions

- A. The area of influence identified for the Montlake interchange does not adequately cover roads and intersections affected by traffic operations south of the interchange. While its influence extends nearly a mile to the north, the south boundary is located at the SR-520 Arboretum ramps. The boundary should extend further south to include 24th Avenue at Boyer, Lake Washington Blvd. at Boyer, 23rd Avenue at Madison, and Lake Washington Blvd. at Madison. Given the identified shifts in volume among the options, their effects on the Arboretum and streets serving it should be fully understood.

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result in measurable operational changes. Traffic volume changes of less than 5 percent are within the daily fluctuation and so are not considered measurable or significant. Therefore, if traffic volume was predicted to change by more than 5 percent on streets adjacent to an intersection, effects on that intersection were presented in the SDEIS. Conversely, if an intersection showed an overall change in traffic volume of less than 5 percent, effects on that intersection were not presented in the SDEIS. The same 5 percent threshold has been used for the Preferred Alternative analysis. Please see the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for detailed information about traffic volume changes and intersection operations with the Preferred Alternative.

The Final EIS further measured the relationship between the SR 520 and local operations, and queue spillback from overcapacity intersections you describe by providing travel time data from a microsimulation model. This data is reported in Chapter 8 of the Final Transportation Discipline Report.

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Please see the response to comment C-040-073. The Preferred Alternative, which is similar to Option A, includes a revised and expanded Montlake lid that would improve bicycle and pedestrian connectivity in the SR 520 corridor, reduce crossing distance for many pedestrians, and improve pedestrian safety. Bicycle connections would be improved by addition of a regional trail across the floating bridge; a proposed undercrossing beneath SR 520 between the Washington Park Arboretum and East Montlake Park; and an undercrossing beneath Montlake Boulevard connecting the new regional trail to the Bill Dawson Trail. WSDOT will continue to work with the City of Seattle through final design of the SR 520, I-5 to Medina project to ensure that new bicycle routes that are part of the project are designed to applicable standards and that pedestrian facilities have appropriate treatments. Please see

- C-040-110** | On Capitol Hill, the area of influence should extend from the Harvard Avenue E/ I-5 on-ramp south to at least the 10th Avenue E/ Boston intersection. This area experiences almost daily backups from vehicles wanting to enter or leave SR 520.
- C-040-111** | B. Option A adds a second bridge across the Montlake Cut. Yet, the need for the second bridge is not readily apparent. For instance, traffic performance between the No Build alternative and Option SA (also known as Option A+ as preferred by the Legislative Workgroup) differs only by one letter grade at two intersections. Unfortunately, there is too little information in the SDEIS to indicate whether the LOS results reflect borderline ratings or more significant differences in travel delay. Accordingly, the transportation benefit of the second bridge remains obscure. Yet, its impacts to views, home displacements, and neighborhood character are obvious. How was it determined that additional capacity across the Montlake Cut is required? If it is, indeed, required, are there other options to provide extra capacity that have fewer community impacts?
- C-040-112** | C. Transit demand modeling relied on an approach “not constrained by transit volume and service forecasts” (Transportation Discipline Report 4-8). This approach produces an ideal but not realistic transit demand forecast. How would a more realistic forecast reflecting transit agencies’ service policies differ? To what extent did the unconstrained transit modeling result in a mode shift from general purpose vehicles?
- C-040-113** | D. Future transit vehicle occupancy assumes an average of 65 passengers per bus (Transportation Discipline Report 4-8) whereas today’s buses average just under 30 passengers (derived from information in Transportation Discipline Report 8-3). That assumption exceeds the number of seats on the largest buses currently in service and implies that all peak period bus trips would operate with standing loads. How is such a vast increase in vehicle occupancy a reasonable and appropriately conservative assumption? If the demand forecast is to be believed, then the number of buses has most likely been understated.
- C-040-114** | E. As the SDEIS notes, elimination of the Montlake freeway transit station will force riders between the University District and Eastside to make transfers. Did the unconstrained transit demand modeling account for the disadvantage of a transfer? If not, what is the effect on transit demand and general purpose traffic of doing so?
- C-040-115** | F. A number of recently proposed developments in the Montlake area would increase traffic on study area streets. These projects include: University Village Shopping Center expansion; QFC additional recreational facility development at Warren G. Magnuson Park. Traffic volume forecasts used in the SDEIS need to be updated to include these specific projects. It should be noted that the University Village, QFC and Seattle Children’s projects alone would account for over half of the SDEIS’s background traffic growth on Montlake Blvd. north of NE Pacific Pl.
- C-040-116** | G. Pedestrian volumes were assumed to remain static (Transportation Discipline Report 4-15). That assumption conflicts with all other assumptions about population and employment growth, transit ridership increases, and traffic volume growth. Since pedestrian volumes at intersection crosswalks affect traffic operations, intersection level of service analysis should incorporate realistically higher pedestrian volumes at crosswalks.

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Chapter 7 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for descriptions of the bicycle and pedestrian paths and connections that are part of the SR 520, I-5 to Medina project.

In accordance with the requirements of ESSB 6392, WSDOT worked collaboratively with the Seattle Department of Transportation, the City of Seattle Pedestrian Advisory Board, and the Seattle Bicycle Advisory Board to recommend design refinements for facilities to improve the bicycle and pedestrian environment, particularly in the area of the Montlake lid. Please see the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachment 16 to the Final EIS) for a description of the resulting design refinements.

The ESSB 6392 workgroup also considered priority treatments for transit. The workgroup process resulted in a number of recommendations for improving transit speed and reliability at the future Montlake Multimodal Center, which will be located at the intersection of Montlake Boulevard and Pacific Street. Additional transit priority treatments beyond those included in the SR 520, I-5 to Medina project could be implemented by the City of Seattle and King County Metro Transit. Please see Chapter 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information on the effects of the Preferred Alternative on multimodal transfers.

The Preferred Alternative would reduce volumes on Lake Washington Boulevard through the Arboretum, similar to Option A. If Options K or L were identified as the Preferred Alternative in the future, WSDOT would provide additional information as part of final design and permitting and ensure that negative effects associated with these options are mitigated to the extent practicable.

C-040-110

Please see the response to Comment C-040-033 regarding local

C-040-117 | H. A modified plan for pedestrian access to Sound Transit's light rail station has been proposed by the University of Washington. The proposal calls for a new surface crossing of Montlake Blvd. between NE Pacific St. and NE Pacific Place rather than a pedestrian bridge. If this proposal should be adopted, the SDEIS should be updated to include that crossing in its traffic analysis.

3. Needed Clarifications

C-040-118 | A. For all options, it would be very helpful to know the changes in travel time along arterial streets. That is a measure that readers can readily understand in comparing the effects of the options. Comparisons should begin with existing travel times and then estimate future times for all options, including No Build.

C-040-119 | B. The analysis of SR-520 provides extensive information about variations in hourly volumes and operations. The analysis of local arterials, however, deals only with the morning and afternoon peak hour. How many hours experience similar levels of congestion now, and how many in the future?

C-040-120 | C. How would bridge openings affect future traffic operations? The SDEIS notes that mid-afternoon openings can cause delay through the entire afternoon peak period now, so what would the effects be for each of the options?

D. Under Option A (including SA and A+), with a second bascule bridge, would the duration of bridge openings differ from today's times? If so, how would traffic be affected?

C-040-121 | E. Option A claims a reduction in volumes on streets north of the Montlake Cut due to elimination of the Lake Washington Boulevard ramps to SR-520. This seems speculative given that the alternate routes of travel noted in the Transportation Discipline Report entail considerable out-of-direction travel, congestion in the NE 45th Street corridor, and limited I-5 access capacity from NE 45th Street. The volume reductions result in an improvement in LOS at Montlake Blvd NE/NE Pacific Street and at NE Pacific Street/15th Avenue NE over No Build conditions (Transportation Discipline Report 6-33). How realistic is such diversion? And how sensitive are the LOS results to that reduction in volume?

C-040-122 | F. Option A is shown to reduce volumes on Lake Washington Boulevard. How far south is that the case? Does that reduction occur because of a diversion to E. Boyer Street and 24th Avenue E. to reach SR-520? If so, what are the consequences for intersections on E. Boyer and on E. Boyer itself?

C-040-123 | G. Option A includes an auxiliary lane on westbound SR-520 across Portage Bay. Yet, even with that extra capacity, Option A has less westbound on-ramp throughput than other options. What function does that lane provide? What would traffic performance be for Option A without the auxiliary lane? Why would Option A+ have the auxiliary lane?

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intersection modeling and analysis. Please also see the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for detailed information regarding traffic volume changes and intersection operations with the Preferred Alternative.

C-040-111

Please see the response to Comment C-040-062. The new bascule bridge would improve mobility for people and goods by adding transit and HOV capacity across the Montlake Cut. It would also provide new pedestrian and bicycle facilities across the Montlake Cut, thus improving conditions for nonmotorized travel. For updated information about the effects of the Preferred Alternative on Montlake Boulevard, please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

Other options studied for providing additional capacity across the cut were included in the SDEIS in Options K (which would tunnel under the Montlake Cut) and L (which would cross the cut on a long diagonal bascule bridge passing across East Montlake Park and south of Husky Stadium). The analysis showed that these options would result in greater environmental effects, particularly on parks and natural resources, than a new bascule bridge next to the existing bridge. Thus, the Preferred Alternative does not include either of these other options for providing capacity across the Montlake Cut.

C-040-112

Similar to what was done in the SDEIS, the transportation demand model in the Final EIS forecasts year 2030 transit demand with and without the Preferred Alternative using transit network and service assumptions from multiple transit agencies. This method results in a reasonable determination of effects of the Preferred Alternative on ridership and transit service.

- C-040-124** | H. Option K would reconfigure Lake Washington Boulevard at the north end of the Arboretum. However, the text and maps do not fully illustrate changes in circulation resulting from that reconfiguration.
- How would the intersection with E. Foster Rd. be configured? What would be its operating quality?
 - What is the change in volume on E. Roanoke Street with the one-way local access scheme on Lake Washington Boulevard?
 - Volumes with Options K & L increase significantly through the Arboretum. How would they affect the operation of Lake Washington Boulevard/E. Madison Street? And how long would southbound queues be at E. Madison? Queues now frequently extend back to the Japanese Garden in both morning and afternoon peak periods.
- C-040-125** | I. At E. Roanoke and Harvard Avenue E, the existing PM peak hour level of service is F. Vehicles waiting in queues now do not all clear the intersection on one signal cycle. For all future scenarios, volumes increase at this intersection. Yet, there is no sense of how queues will grow. How long will queues be and how much additional delay will occur on the approaches to this intersection? How will traffic on 10th Avenue E. operate?
- 4. Conclusions of the SDEIS**
- C-040-126** | A. Exhibit 5-19 in the Transportation Discipline Report compares demand and throughput for the Portage Bay Bridge and the westbound on-ramp. Throughput varies for each Option, ranging from 74% to 86% of demand, substantially less than for No Build. The text, however, obscures this fact by discussing how the build options compare with one another. Had it compared them to No Build conditions, the text would state that the build options make conditions worse. Queues on local streets would be longer than under No Build. The difference in queuing, and not just in intersection LOS, should be disclosed so that the consequences for local traffic operations are clear.
- C-040-127** | B. The cumulative effects scenario includes regional transportation projects that may not be completed by 2030. Yet, the Transportation Discipline Report (11-15) concludes that, in comparison to the cumulative effects analysis, the SDEIS alternatives analysis “represents a conservatively high estimate of traffic and associated traffic effects”. It is misleading, however, to say that the SDEIS is either conservative or high in its projections. The SDEIS and cumulative analysis scenarios are simply different networks with different results. There is no indication that the modeling done for the SDEIS reflects a high projection of traffic demand given the network assumed for the SDEIS alternatives. In fact, as I noted previously, the forecast of bus vehicles appears low. Furthermore, the Transportation Discipline Report (11-7) pointedly tells readers not to compare the results of the cumulative analysis directly with those of the other analyses, saying that they are instead for relative comparisons at the regional level.
- C-040-128** | C. Operating results for key intersections on Montlake Blvd. show very poor future performance. It is hardly acceptable to say that a particular option’s LOS F is better than No Build’s LOS F – both represent a system failure and therefore guarantee unwelcome environmental consequences.

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With or without the SR 520, I-5 to Medina project, transit ridership in the SR 520 corridor is assumed to increase between now and the year 2030 because of increases in congestion and regional traffic demand management efforts. With the Preferred Alternative, WSDOT forecasts that transit ridership would increase compared to the No Build Alternative, because completion of the HOV lane between SR 202 and I-5 and the direct connection to the I-5 express lanes would improve transit speed and reliability.

Please see page 8-35 of the SDEIS Transportation Discipline Report, which stated that the calculated bus capacity is a conservative estimate, meaning that there is likely to be more bus capacity than what was assumed for the SDEIS transportation analysis, with the addition of more articulated buses to SR 520 bus routes. Since the completion of the SDEIS, the Urban Partnership Agreement and Sound Transit’s ST2 programs have funded additional bus service for the SR 520 corridor. Updates to the plan are documented in Chapter 8 of the Final Transportation Discipline Report.

C-040-113

Please see the response to Comment C-040-037 regarding bus capacity and average vehicle occupancy assumptions.

C-040-114

Yes, the travel demand model used for the SR 520, I-5 to Medina NEPA documents accounted for the effect of transfers on transit demand.

C-040-115

Please see the response to Comment C-040-036 regarding planned changes in land use. The travel demand model used for the SR 520, I-5 to Medina project includes the development projects noted in this comment and the traffic associated with them. They are included in both

C-040-128

Under those conditions, the build options simply allow more people to share in the poor performance. It would be useful to determine what measures would achieve better results so that decision makers know whether they have realistic choices to improve future operations.

C-040-129

D. Overall, the SDEIS needs to provide a more comprehensive measure of performance on arterial streets, comparable to its measures for SR-520 performance. Indications of travel time, queue lengths, and missed signal cycles would be instructive and for more informative for most readers. Similar measures for local transit trips and for pedestrian and bicycle travel also are necessary to provide a reasonably complete picture of transportation performance resulting from the project's various options.

Thank you for the opportunity to comment on this regionally and locally important project. I look forward to reviewing your responses to these comments.

Sincerely,



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the No Build Alternative and the Preferred Alternative, because they are part of the background conditions, which are assumed to be in place with or without the project. Therefore, the trips associated with these projects are included in the traffic volumes shown in Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

C-040-116

Please see the response to Comment C-040-032 regarding the increase in pedestrian volumes over time.

C-040-117

The modified plan to provide a new surface crossing of Montlake Boulevard between NE Pacific Street and NE Pacific Place, proposed by the University of Washington, did not move forward. Therefore, the SDEIS and the Final EIS traffic analyses do not include this crossing.

C-040-118

Travel times for buses traveling through the Montlake interchange area on NE Pacific Street and Montlake Boulevard were evaluated as part of the ESHB 2211 legislative workgroup process and are summarized on page 8-31 in Chapter 8 of the SDEIS Transportation Discipline Report. Two origin-destination pairs were evaluated to compare the effects of improvements included in Option A, Option A with suboptions, Option K, and Option L on transit travel times during the PM peak hour.

For the Final EIS, travel times for buses using Montlake Boulevard NE and NE Pacific Streets were estimated for the No Build and Preferred Alternatives to determine how adding a new bascule bridge over the Montlake Cut and implementing Montlake HOV improvements would affect local buses. These travel times, presented for both peak and off-peak periods, can be found in Chapter 8 of the Final Transportation Discipline Report.



April 14, 2010

Bricklin & Newman
1001 Fourth Avenue, Suite #3303
Seattle, WA 98154

Attention: David Bricklin
Subject: SR-520 SDEIS, Noise Analysis Review

C-040-130

Ladies and Gentlemen:

This report presents review comments pertaining to the Supplemental Draft Environmental Impact Statement prepared by WSDOT for the SR-520 project as it pertains to the west end of the proposed project. I did not take time to review the entire document, but I have reviewed the sections relating to noise (SDEIS Chapters 5.7, 6.7, and the Noise Discipline Report). I have also reviewed the November 24, 2008 final report on Noise Reduction Strategies prepared by the expert review panel. My comments are focused only on the west end of the project, extending from I-5 east to the floating bridge.

Construction Noise

Chapter 6.7 of the SDEIS discusses the issue of construction noise impacts. In the Key Points box it is disclosed that maximum noise levels could be as high as 105 dB at a distance of 50 feet from pile driving. Other sources could be as high as 92 dB at the same distance. These sound levels are 30 to 40 dB higher than any of the measured existing sound levels reported in Exhibit 10 on page 31 of the Noise Discipline Report (Part 1). The construction noise level increase (above the existing ambient noise levels) is not presented in the SDEIS as it should be.

It is stated at the bottom of page 6-64 of Chapter 6.7 of the SDEIS that most construction work could be performed within the limits of the Seattle Noise Ordinance (Table 6.7-2 of the SDEIS) if the work was performed during normal daytime hours. This is almost certainly false as anyone can easily see by comparing the typical construction equipment noise levels presented in Table 6.7-1 with the sound levels presented in Table 6.7-2. I suspect that what was intended by this sentence is that most construction work could be performed within the limits of the Seattle Noise Ordinance (SMC 25.08.425), which

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Please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information regarding operation effects of the Preferred Alternative and No Build Alternative, including local traffic volumes and intersection operations and travel times in the Montlake interchange area.

C-040-119

The use of the peak hour for arterial and freeway traffic analysis is standard practice for planning and designing transportation facilities. For the SR 520 Bridge Replacement and HOV Program, two 5-hour periods (5 am to 10 am and 2:30 pm to 7:30 pm) were evaluated for the freeway analysis to more thoroughly evaluate the effects of congestion, which currently occurs for several hours on a typical weekday. For the local traffic analysis, the am and pm peak hours were determined to be adequate for providing a relative comparison among alternatives and options, and for planning and designing local arterial and intersection improvements adjacent to the freeway interchanges.

Today, the I-5 and Montlake interchange areas can be congested for several hours during commute periods. In the future, without the SR 520, I-5 to Medina project, congestion periods are expected to worsen and lengthen because of increases in population and employment and associated traffic. Increased congestion on SR 520 and I-5 would also lead to increased congestion on local streets within the transportation study area. With the project, SR 520 mainline and ramp improvements would lead to improvements in peak-hour traffic operations for both highway and local traffic. Improving peak-hour traffic flow would also improve traffic flow in the hours leading up to and following the most congested times. Please see Chapters 5 and 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a discussion of the effects of the Preferred Alternative on freeway and local traffic volumes and operations. The effect of Montlake Bridge



C-040-130

allows maximum noise levels to be as much as 25 dB higher than the values presented in Table 6.7-1 of the SDEIS. This statement cannot be true if pile driving and demolition work are taken into account. If the noise levels from pile driving are as high as is indicated in this document, this activity would not comply with the Seattle noise ordinance (SMC 25.08.425) in either the daytime or the nighttime. The bigger issue, however, is the noise impacts on the community, not just compliance with the noise ordinance. In order to determine the noise impact on the community the EIS must assess both the existing and predicted future noise levels (both construction noise and operational noise). This comparison cannot be found in the DSEIS.

C-040-131

It should be noted that construction noise within the city limits of Seattle is limited by SMC 25.08.425. As I have stated previously, it is likely that WSDOT will require a noise variance for pile driving operations during the daytime, as well as a noise variance for other activities if construction is expected to continue through the nighttime hours. With the exception of impact sources like pile driving (where compliance is based on the maximum noise level), compliance with the daytime construction noise ordinance is based on a 1-hour average (Leq) noise level. The predicted average construction noise levels at a distance of 50 feet range from 83 to 88 dB as shown in Table 6.7-5 of the SDEIS. The maximum allowable construction noise level (1-hour Leq) during daytime hours in a residential zone is 80 dB ($55 + 25 = 80$). Since the predicted average (Leq) sound levels presented in Table 6.7-5 are all above the 80 dB maximum allowable noise level allowed by the construction section of the Seattle Noise Ordinance, it seems all too evident that a noise variance would be required for both daytime and nighttime construction activities related to this project. The SDEIS should also present another table similar to Table 6.7-5 that compares the predicted construction noise levels (both Lmax and Leq) with the existing Leq and Lmax at residences that will be in close proximity to the construction activity. The table should show the expected increase in noise level due to construction activity, the duration (times of day and overall extent) of the construction activity, the probability of the noise interfering with normal daily activities (including sleep interference), and the number of residences that will experience this specific noise level increase. This information cannot be found in the current SDEIS. How likely is it that the noise will interfere with their sleep, and to what extent? Will it likely wake them once in a while or will it be so pervasive that people can barely sleep at all? Questions like these need answers if the EIS is to provide the information necessary for an informed decision.

C-040-132

Exhibit 6.7-2 shows the predicted "typical maximum pile driving noise levels" as a function of distance from the source of the noise. While the graph is accurate, the last sentence at the bottom of page 6-68 is misleading because it implies that the graph is a conservative estimate by ignoring the effects of ground attenuation and atmospheric

openings on traffic operations during the off-peak hours was included in the analysis performed for the Preferred Alternative. Please see the Final Transportation Discipline Report, Chapters 6 and 8, for the results of this analysis.

C-040-120

Please see the response to comment C-040-062. Openings of the existing and new bascule bridges would be synchronized so as not to increase waiting times for traffic. Overall delay related to bridge openings would decrease for all vehicles because the additional capacity would allow congestion to clear more quickly. The transportation analysis in the Final EIS accounts for the effects of bridge openings. Please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information regarding operational effects of the Preferred Alternative and No Build Alternative, including local traffic volumes and intersection operations in the Montlake interchange area.

C-040-121

With all build alternatives, traffic volumes in the Montlake interchange area would decrease, in part, because of tolling on the Evergreen Point Bridge. Some drivers would switch to transit or carpools, and some would use alternate routes. With Option A, additional traffic volume decreases would occur in the Montlake interchange area due to the removal of the Lake Washington Boulevard ramps. With Option A, traffic volumes that would typically use the Lake Washington Boulevard ramps would need to use Montlake Boulevard to access areas south of the Montlake interchange, contributing to the already-congested conditions at the interchange ramps. This would cause some trips to and from areas north and west of the interchange to divert to the SR 520/I-5/East Roanoke Street and I-5/NE 45th Street interchanges. These changes in travel patterns and associated traffic volumes were forecasted based on output from the SR 520 travel demand model, which was developed using PSRC's model and validated for the SR 520 corridor.



C-040-132 | absorption. While this is also true, a fair disclosure would note that both of these effects (ground attenuation and atmospheric absorption) are not significant factors for sound transmission over water or pavement and at distances less than 1,000 feet.

C-040-133 | Of all of the construction noise issues relating to this project, pile driving will be the toughest to deal with in terms of noise control. Not only does pile driving generate the highest noise levels of all sources, the noise is impulsive in nature which makes it even more annoying and stressful than other types of noise. This critical information is not disclosed in the DSEIS. It should be disclosed prominently.

The contour plots showing the extent of pile driving noise in Exhibit 7.67-3 of the SDEIS clearly show that this noise will be audible over a large area of the city, including the Capitol Hill, Madison Park, Montlake, and Laurelhurst areas. The pile driving noise will be clearly audible anywhere inside the 75 dBA contour, and should also be audible (to a lesser degree) outside this contour. The impact noise levels will be extreme inside the 87 dBA (green) contour. There is very little discussion of noise mitigation in the SDEIS for the pile driving work. There is only brief mention of augering piles (which would be much quieter than pile driving), including a statement that an auger is not likely to be feasible (without any explanation as to why it would not be feasible). There is only a brief mention of coating the piles, using piston mufflers, and using pile pads to cushion the noise of impact, suggesting that these methods are less effective. Clearly, because of the extreme noise levels that are predicted, much more effort should be placed on these and other possible techniques for controlling pile driving noise.

Consideration should also be given to the use of suspended acoustic shields as a technique for reducing pile driving noise. This technique was used successfully in 1998 during the construction of King Street Center in the Pioneer Square district of downtown Seattle (see attached newspaper article and technical report). The piles used in that project were quite a bit smaller than those proposed for this project, so the impact noise levels for this project could be even higher.

C-040-134 | Another glaring omission in the SDEIS is the lack of a discussion about a construction noise monitoring program. This will actually be required in order to determine if the project is in compliance with the Seattle Noise Ordinance. This is not something that can be initiated at the last minute. In order to be effective, a properly designed and executed construction noise monitoring program should have baseline ambient noise measurements collected over an extended period of time before construction begins. Without preconstruction noise measurements over an extended period of time, it may be impossible to distinguish construction noise from general environmental noise (with the

Since publication of the SDEIS, WSDOT has developed a Preferred Alternative, which is similar to Option A, but with a number of design refinements that would improve mobility and safety while reducing negative effects. Chapter 2 of the Final EIS describes the Preferred Alternative. Please see Chapter 4 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a description of methodology used to forecast and evaluate transportation effects. Please see Chapter 6 of the Final Transportation Discipline Report for descriptions and exhibits regarding the effects of the Preferred Alternative on traffic patterns. This discussion includes the effects of removing the Lake Washington Boulevard ramps as configured today.

C-040-122

Option A reduced traffic volumes on Lake Washington Boulevard because it eliminated the ramp connections between Lake Washington Boulevard and SR 520. It did not result in measurable changes in traffic volumes on the street segments and intersections mentioned in this comment, and therefore the results at these locations were not presented in the SDEIS. Please see the response to Comment C-040-033 regarding the study area for traffic operations analysis, and Chapter 6 of the Final Transportation Discipline Report for descriptions and exhibits regarding effects of the Preferred Alternative on traffic patterns in the Lake Washington Boulevard and Montlake interchange areas.

C-040-123

Option A, with a westbound auxiliary lane across Portage Bay, was defined as part of the ESSB 6099 mediation process and evaluated for the SDEIS. A similar option without a westbound auxiliary lane was not evaluated as part of this process.

Modifications in the Preferred Alternative include providing a managed shoulder and eliminating the auxiliary lane that was part of Option A.



- C-040-134** | obvious exception of pile driving noise which will be easily distinguished from the general environmental noise in the area).
- C-040-135** | The construction noise mitigation measures listed on page 6-72 of the SDEIS should be extended to include acoustic shields for pile driving. In addition, unless pile driving work on weekends and holidays is precluded, the EIS should disclose the impact of that noise on outdoor (and indoor) activities likely to be underway during those times.
- C-040-136** | The restriction of backup beepers during evening and nighttime hours is a good approach, but another step which could be implemented is the use of ambient sensitive beepers (which adjust the level of the beep commensurate with the ambient noise level at the time) or the use of broadband backup alarms which are less annoying than the standard tonal beepers, especially at distances greater than 100 feet from the vehicle.
- C-040-137** | Page 6-69 and the final paragraph of Section 6.7 of the SDEIS discuss vibration effects. The vibration level mentioned as a likely maximum for distances of 50 to 100 feet is 0.5 inch per second. While this might sound like a low vibration level, it really is not. The threshold of human perception (for a human being standing on the ground or on the floor of a building) is approximately 0.005 inch per second, which is only 1% of the level mentioned. According to ANSI Standard S3.29, the recommended maximum floor vibration level for residences during the daytime hours is equivalent to 0.008 inch per second. The commonly used safe limit for preventing damage to building structures is 2 inches per second, although minor damage has been observed¹ at vibration levels of 1 inch per second. The point here is that the vibration level referenced in the SDEIS looks like a relatively small value, but it is close to the threshold of causing damage to structures, and it is nearly 100 times the threshold of annoyance to private citizens living in their homes close to the construction site. As with the noise impacts, the EIS should disclose this impact in plain English, with a description of its likely effect on humans and structures. The EIS should include information on not only the intensity, but also the duration of these impacts.
- C-040-138** | It should also be pointed out that Option L will certainly cause a significant increase in construction noise for the residents of the Montlake area, due to its close proximity to the proposed new bridge and roadway around this residential development. The last paragraph on page 6-69 mentions construction noise impacts to the Burke-Gilman trail and the UW campus, but completely ignores the Montlake residential district which would have the greatest noise impact of all (pertaining to Option L).

¹ Handbook of Acoustical Measurements and Noise Control, Third Edition, Cyril M. Harris (editor), page 26.13, McGraw-Hill, 1991.

Please see Chapter 5 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a description of effects of the Preferred Alternative on freeway traffic volumes and operations and Chapter 6 for a description of its effects on interchange operations.

C-040-124

Please see Chapter 6 of the SDEIS Transportation Discipline Report for traffic volumes on Roanoke Street with Options K and L. Options K and L would not result in measurable changes in intersection operations at the Lake Washington Boulevard/East Madison Street intersection, and therefore the results at this location were not presented in the SDEIS (see response to Comments C-040-033 and C-040-122). This feature of Option K is not included in the Preferred Alternative. If Option K were identified as the Preferred Alternative in the future, WSDOT would ensure that negative effects associated with Option K are mitigated to the extent practicable.

C-040-125

Please refer to page 6-44 of the SDEIS, which described the effects of the SDEIS design options on queue length and operations at the Roanoke Street/Harvard Avenue intersection. Please also see Exhibit 6-6 of the SDEIS Transportation Discipline Report for traffic volumes on 10th Avenue East. The SDEIS also presented intersection operations at 10th Avenue/East Roanoke Street (please see Exhibit 6-7 in the SDEIS Transportation Discipline Report). Operations at other locations on 10th Avenue East would not change measurably compared to the No Build Alternative. Please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a description of traffic volumes and operations on local streets in the Roanoke interchange area with the Preferred Alternative.



C-040-139

One of the important recommendations offered by the Expert Review Panel in their November 24, 2008 final report was to develop a construction noise plan that “involves substantial and targeted public input”. I cannot agree more, and this plan should include noise monitoring stations at carefully selected locations to ensure that the project complies with the Seattle Noise Ordinance and includes the noise mitigation measures agreed to prior to the start of construction.

C-040-140

Operational Noise

Chapter 5.7 of the SDEIS discusses the issue of operational noise impacts. In the Key Points box it is noted that the number of residences that are expected to exceed the 67 dB noise abatement criteria (NAC) in 2030 will be less than the No Build Alternative, regardless of which alternative is selected. This analysis is based on the output of the traffic noise model TNM (version 2.5). According to Table 5.7-1, this is not necessarily true for all areas within the project. For example, under the No Build Alternative, 24 of the 83 residences in the Portage Bay/Roanoke area will exceed the NAC, but that number will increase from 24 to 26 for Option A, and the number increases to 27 for Options K and L. Even more disturbing is some of the data that is presented in Exhibit 5.7-1. If you look at the 4 residences (closest to the east end of the Montlake Cut) located in the Montlake district north of SR-520, you will see that they are all marked as green circles for the No Build Alternative and for Option A. The green circle means that the calculated noise level is between 49 dB and 65 dB. If you look at these same 4 residences under Option K (which includes a tunnel under the Montlake Cut, so there is no exposed traffic noise other than the tunnel entrance next to SR-520) you will note that the traffic noise level does not change for the three residences closest to the Montlake Cut, but the one residence closest to the tunnel entrance is expected to change from a green circle to a red circle, which indicates that the traffic noise level will cross over the 65 dB threshold. This conclusion is believable, but the data presented for Option L is not. As one can see from the figure, the three residences closest to the Montlake Cut are still shown as solid green circles (indicating no noticeable increase in noise level), even though a new arterial is passing right next to these homes! The fourth residence is shown as having a 3 to 6 dB decrease in noise level by the introduction of a new arterial that appears to pass directly through the center of the home. This is clearly not believable, and makes me question the validity of other data points in these figures.

C-040-141

The Key Point note on page 5-105 of the SDEIS suggests that noise barrier walls alongside the SR-520 roadway will be the primary method of mitigating the operational noise impacts of this project. The key note goes on to say that quieter pavements cannot be considered for use on this project because these pavements have not been

C-040-126

Exhibit 5-19 in the SDEIS Transportation Discipline Report depicts the changes in demand across Portage Bay Bridge and volume served from the westbound on ramp from Montlake. Today and in the No Build Alternative, the westbound on-ramp ramp is not metered, so most the demand is served. However, this results in congestion at the merge point, where slower vehicles from the westbound on-ramp accelerate and try to merge with SR 520 mainline vehicles. This congestion occurs through most the peak period. In addition to congestion caused by the westbound on-ramp, please note that (as described in Chapter 6 of the SDEIS Transportation Discipline Report), today and in the year 2030 No Build Alternative, Montlake Blvd operates/would operate with congestion southbound approaching the eastbound loop on ramp. This bottleneck also significantly impacts the operations of Montlake Boulevard.

With all build alternatives, the westbound on ramp would be metered, which would improve mainline operations and safety. Traffic operations in the interchange area would be influenced by the operations of the westbound on-ramp along with improvements to local intersections (from LOS F to E at the Montlake Boulevard/SR 520 eastbound ramp intersection), and by increasing capacity (with an additional general purpose lane) on the eastbound loop on ramp with Option A. The result is that traffic operations along Montlake Blvd would improve with Option A compared to the No Build Alternative. The effect of these improvements on travel times, as a system, are summarized in the SR 520 ESHB 2211 legislative workgroup text box shown on page 8-31.

C-040-127

The statement on page 11-15 of the SDEIS Transportation Discipline Report was intended to mean that the full extent of potential operational transportation effects of the SR 520, I-5 to Medina project were disclosed in the SDEIS.



C-040-141

demonstrated to meet the required noise mitigation standards in Washington State. While noise barrier walls are well known to be an effective and long-lasting means of reducing traffic noise if properly designed and installed, they are not the only approach that should be considered. In fact, 70% of the Expert Review Panel voted to recommend that open-grated friction course (OGFC) overlays be considered for this project. The remaining 30% voted that additional information should be acquired and assessed prior to making a final recommendation, but none of the expert panel members voted to reject the use of the OGFC pavement overlay as a viable candidate for a quiet pavement for this project. There are two major questions that impact the feasibility of this noise mitigation methodology. One issue is how much noise reduction can be achieved with the quieter pavements, and the second is how long will the noise reducing capabilities last before it must be replaced? Mr. Tim Sexton of WSDOT will be presenting a technical paper on April 19, 2010 at Noise-Con 2010 in Baltimore, MD discussing the results of recent testing on sections of quiet pavement in the Seattle area. According to his abstract, the results show that the "quiet pavement" was not significantly quieter than the control sections after 6 months of use. Reasons for the poor performance are not known, but the use of studded tires on some vehicles, frequent freeze-thaw cycles, and lower surface temperatures during installation are suggested as possible causes. Certainly, no one would want to rely on a noise mitigation method that is expensive and does not work. While it may not be prudent to rely on a technique that has not yet proven to be effective in this region, if WSDOT is eventually able to figure out how to make it work in this area, it could easily be added to the project at a later date. Adding noise barrier walls to the project after the fact would be extremely expensive and virtually impossible in the bridge sections due to structural considerations.

C-040-142

Noise barrier walls are proposed for both sides of SR-520 from the lid at 10th and Delmar all the way down to the Montlake interchange. In addition, there is a noise barrier wall proposed for the south side of SR-520 to protect the Madison Park neighborhood. The SDEIS does not indicate the height of the noise barrier walls (although the presumed heights can be found in the Noise Discipline Report), nor does any document indicate whether or not the barriers are reflective or sound absorptive on the side facing the traffic. This is an important detail that will affect the acoustical performance of the barrier. The EIS should disclose what assumptions were made regarding these items in developing the predictions of the noise reduction effects of the walls.

Presumably, the noise barriers will be designed to meet the WSDOT criteria using the FHWA traffic noise model (TNM version 2.5). The main problem with this is that Version 2.5 of TNM does not even attempt to model acoustic reflections from vertical surfaces, so it will underestimate the traffic noise levels in the Laurelhurst neighborhood because of the reflection off the noise barrier wall on the south side of SR-520 near

Since publication of the SDEIS, the project travel demand model has been updated in the Final EIS transportation analysis to account for changes in planned improvements to the transportation network and transit, including the full Sound Transit 2 Plan package in both the No Build Alternative and the Preferred Alternative (please see the response to Comment C-040-026). These projects were evaluated in the SDEIS as part of the cumulative effects scenario, as they were not yet programmed at the time the SDEIS direct effects analysis was conducted (i.e., the ST2 regional funding package had not yet been approved by voters). With the I-90 light rail project and other transit and capacity projects in place, as assumed in both the SDEIS cumulative effects analysis and Final EIS direct effects analysis, travel demand on SR 520 would be expected to decrease slightly in comparison to what was forecast in the SDEIS direct effects analysis.

Please see the response to Comment C-040-037 regarding demand for transit and bus capacity assumptions. The statement on page 11-7 of the SDEIS Transportation Discipline Report was intended to mean that the cumulative effects analysis was regional in nature. It was not intended to describe localized effects at specific interchanges or arterials.

C-040-128

In the SDEIS, Options K and L failed to improve LOS F conditions on Montlake Boulevard. With the No Build Alternative, the level of service at intersections along Montlake Boulevard would be LOS F; however, with Option A in the SDEIS and the Preferred Alternative in the Final EIS, the level of service would improve to conditions better than the No Build Alternative. It should be noted that the purpose of the SR 520, I-5 to Medina project is to improve mobility on SR 520, not on the local street network.

C-040-129

Please see Chapter 6 of the Final Transportation Discipline Report



C-040-142

Madison Park. The note on Exhibit 5.7-3 indicates that noise walls were not evaluated for the Laurelhurst neighborhood because the calculated noise levels did not exceed the NAC. Noise levels in Laurelhurst could be up to 3 dB higher than predicted by Version 2.5 of the TNM because of this limitation of the model. SR-520 traffic noise levels could be even more than 3 dB above the TNM predictions when there is a south wind or during certain atmospheric conditions. These meteorological effects are not modeled by TNM, but they can be modeled by more advanced noise modeling software programs like CadnaA and SoundPlan, both of which employ the sound propagation models that are documented in ISO 9613-2.

C-040-143

The other problem with Version 2.5 of the TNM, relates to the consideration of parallel noise barriers. When noise barriers are located on both sides of the highway, the effectiveness of the noise barrier is reduced due to multiple reflections between the two vertical barriers. The degradation of the acoustical performance is significant when the ratio of the height of the barriers to the width of the roadway (distance between the barriers) is greater than 10 to 1. Parallel barriers are recommended for all Build options on the Portage Bay bridge, extending from the lid at 10th and Delmar all the way down to the Montlake Blvd. interchange. According to Exhibit 54 in the Noise Discipline Report, the height of these parallel barriers will be 10 feet on both sides of the highway. The width of the roadway would be less than 100 feet for all options, since there will be only 6 lanes of traffic (except for Option A which would have 7 lanes). These roadway dimensions would require an evaluation of the degradation of the acoustical performance of these noise barriers. Version 2.5 of TNM does not do this automatically. Assessing the degradation caused by the parallel barriers requires a special program run and the results have to be manually deducted from the values calculated from the original program run. This was not mentioned in the Noise Discipline Report, so I would assume that this has not yet been done. This effect will result in higher predicted noise levels on both sides of the Portage Bay bridge. The degradation caused by parallel noise barrier walls can be reduced by increasing the height of the noise barrier walls and/or installing noise barriers that are sound absorptive on the side facing the traffic.

C-040-144

One of the best design features of the proposed project (from an acoustic perspective) is the use of lids over the SR-520 roadway in the Montlake and Capitol Hill neighborhoods. Residents in the vicinity of these lids will enjoy significant traffic noise reductions. This is not true of the residences near the entrances and exits of the lids, however. Noise generated by traffic under the lids does not simply disappear. It will radiate out the lid openings, concentrating the traffic noise near the openings that would otherwise be distributed over a wide area. This effect is not modeled by Version 2.5 of the TNM.

(Attachment 7 to the Final EIS) for a discussion of changes in traffic volumes and operations on local streets in the Montlake interchange area with the Preferred Alternative. Please see Chapter 7 for an expanded discussion of the effects of the Preferred Alternative on nonmotorized transportation facilities and connections. Please see Chapter 8 for a discussion of the effects of the Preferred Alternative on transit service, facilities, ridership, travel times, and rider connections. Travel time estimates are provided for the a.m., p.m., and off-peak periods for the No Build Alternative and Preferred Alternative.

C-040-130

Please see the Noise Discipline Report (Attachment 7 to the SDEIS). Exhibit 18 of this report showed exemptions for short-term noise exceedances in the City of Seattle; Exhibit 19 showed allowable exceedances for construction equipment and operations; and Exhibit 20 showed maximum noise levels for impact types of construction equipment. Please also see the Noise Discipline Report Addendum (Attachment 7 of the Final EIS), which provides additional information about construction noise effects. Complying with the City noise ordinance may involve obtaining a noise variance for activities that would not meet the noise standards. That variance, if needed, would apply specific noise limits and durations to various construction activities including pile-driving.

Noise analysis performed for the SDEIS and Final EIS has been consistent with current FHWA methodology, which is the accepted standard for modeling and mitigation of highway traffic noise. The SDEIS did assess predicted future noise levels with the SR 520, I-5 to Medina project. For example, see Exhibits 27 through 32 in the SDEIS Noise Discipline Report, which show noise levels at all modeled receivers for existing conditions, No Build, and Options A, K, and L. These results are the basis for SDEIS Exhibits 5.7-1 and 5.7-3.



C-040-144

There are two ways to combat this increase in noise level: 1) introduce high noise barrier walls at the entrance and exits of the lids, and/or 2) adding sound absorptive materials to the underside of the lid. The concept of adding acoustical treatment to the inside of the tunnels and lids was something that was recommended by 90% of the Expert Review Panel. Appropriate materials are readily available for this type of application, and they should be incorporated into the project. Unless the project is revised to include full acoustic treatment inside the tunnel and the lidded portions of the project, the noise level projections presented in the EIS in these areas should be adjusted upward accordingly or noted as being lower than the true expected noise levels.

C-040-145

Summary

This review has pointed out several major deficiencies in the SDEIS, which can be briefly itemized as follows:

1. Construction noise impacts are not adequately addressed
2. Pile driving noise mitigation was not adequately addressed
3. A construction noise monitoring program was not even mentioned
4. Vibration impacts during construction are not adequately addressed
5. A construction noise plan with community input was not even mentioned
6. The effects of parallel barriers and the resulting noise impacts are not discussed
7. The importance of acoustical treatment in tunnels and lids and on the traffic side of the noise barriers is not discussed

If you have any questions concerning these results, do not hesitate to give me a call.

Very truly yours,
JGL Acoustics, Inc.

A handwritten signature in black ink, appearing to read 'Jerry G. Lilly'.

Jerry G. Lilly, P.E., President, FASA
Member INCE, ASTM, NCAC

WSDOT also predicted construction noise levels using the methods described in FHWA Highway Construction Noise: Measurement, Prediction and Mitigation (http://www.fhwa.dot.gov/environment/noise/construction_noise/special_report/).

Please see the Noise Discipline Report and the Noise Discipline Report Addendum for more information.

C-040-131

Please see the response to Comment C-040-130 regarding compliance with City of Seattle construction noise regulations and the methods used in the noise analysis. Please also see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

The evaluation conducted through the NEPA/SEPA process was intended to identify whether the SR 520, I-5 to Medina project would be likely to result in adverse noise effects and whether mitigation measures would be available to address those effects. The construction noise levels presented in the Final EIS are the worst case predicted noise levels that would only be expected during the heaviest construction periods, when activities are nearest sensitive properties. Actual construction noise levels would vary with activity and would typically be lower than those presented.

Evaluating and managing noise related to construction is an ongoing process for WSDOT that only ends when construction ends. As with other large-scale public WSDOT projects, the details of construction methods, staging areas, and other project-related issues will be addressed in greater detail during final design. The Community Construction Management Plan (outlined in Attachment 9 to the Final EIS) will include noise as one of its most important considerations, and will provide measures to reduce and manage construction noise,

C-040-146

Subject: RE: EIS
From: "UCO Pontoon Construction Project" <Pontoons@WSDOT.WA.GOV>
Date: Fri, 12 Mar 2010 16:50:32 -0800
To: "Fran Conley" <fran@roanokecap.com>

March 12, 2010

Dear Fran,

Thank you for your interest in the SR 520 Pontoon Construction Project.

The Washington State Department of Transportation (WSDOT) is preparing a draft environmental impact statement (EIS) to evaluate potential effects to the surrounding environment from constructing and storing pontoons. The draft EIS will be released for public and agency comment in May 2010. We look forward to sharing the results of the analysis for public review and comment in the coming months. The final EIS is planned for release in late 2010.

Thanks again for your interest. You may also visit the [project Web site](#) for the latest news and project information.

Sincerely,

Suanne Pelley
Communications Manager
SR 520 Bridge Replacement and HOV Program
<http://www.wsdot.wa.gov/Projects/SR520Bridge>

-----Original Message-----

From: Fran Conley [mailto:fran@roanokecap.com]
Sent: Sunday, February 28, 2010 10:06 AM
To: UCO Pontoon Construction Project
Subject: EIS

Can you tell me, please, when you will publish the Draft EIS for the pontoon project?

Thanks

Fran Conley

including methods for affected individuals to report exceedances and concerns.

C-040-132

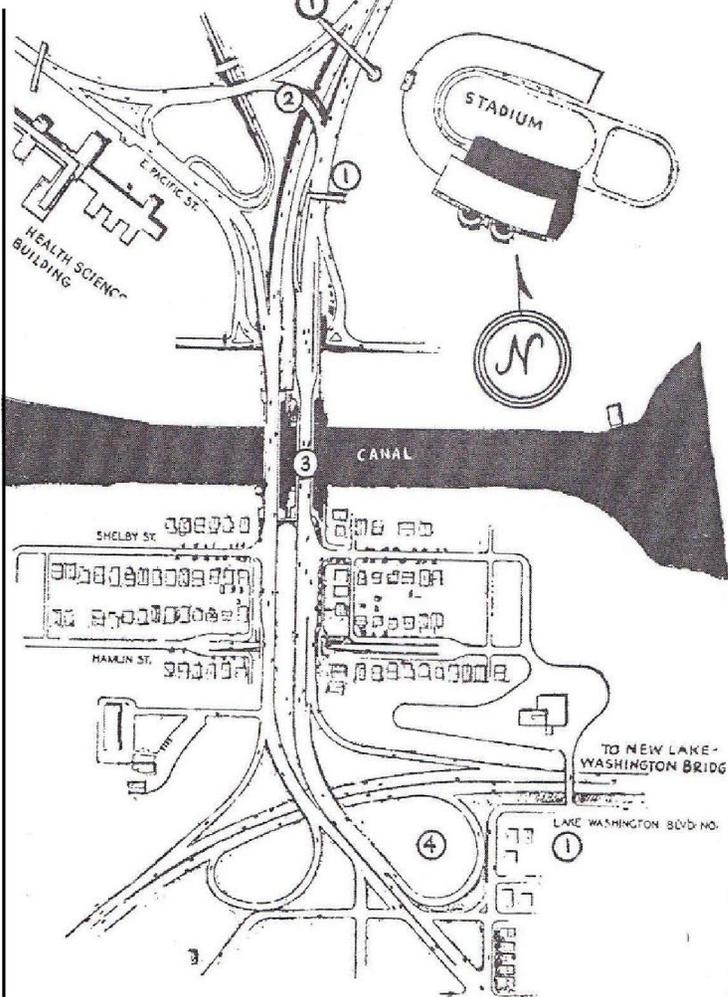
Please see pages 18 through 20 of the SDEIS Noise Discipline Report (Attachment 7 to the SDEIS) for a discussion of the effects of ground attenuation and atmospheric absorption. Because these topics were covered there, WSDOT did not incorporate the suggested change to the text on page 6-68 of the SDEIS.

C-040-133

Please see page 1 of the SDEIS Noise Discipline Report, which discussed the fact that noise, including sounds generated by construction, can affect human health and welfare. Please also see the responses to comments C-040-022 and C-040-130 regarding construction noise mitigation. WSDOT will determine the best methods to abate construction noise based on site conditions, the expected durations of work, and the types of equipment to be used. The Preferred Alternative incorporates many design measures to avoid or minimize effects from the project. During construction, WSDOT is committed to reducing noise as much as possible. A number of proposed measures to reduce impacts from construction noise, including pile driving noise, were described in the SDEIS in Section 6.7, and additional measures are described in Section 6.7 of the Final EIS. Both the permanent and the construction structures would require pile driving and other in-water construction activities. Pile driving could affect nearby fish behavior or potentially cause fish mortality from the high sound pressure levels from impact pile driving hammers. Appropriate and available construction BMPs would be used to minimize the effects of pile driving. Effects on fish habitat could also occur through temporary increases in turbidity and shade, and habitat loss would occur due to piling placement for construction work structures. WSDOT could require vibration monitoring of all activities that might

Appendix G: 1954 map of "Option A"

C-040-147



Drawing of location of proposed second Montlake bridge to accommodate greater volume of north-south traffic

Source :the 1954 plan of the Seattle City Engineer for the exit from 520, as shown in the book by Eugene Smith ('Montlake, an Urban Eden', 2004), page 101.

produce vibration levels at or above 0.5 inch per second whenever structures are located near the construction activity. This would include pile driving, vibratory sheet installation, soil compacting, and other construction activities that had the potential to cause high levels of vibration. There is virtually no effective method to reduce vibration effects from construction. However, by restricting and monitoring vibration-producing activities, vibration effects from construction can be kept to a minimum.

In cooperation with resource agencies, WSDOT would develop plans for habitat construction, improvements, or restoration to mitigate the effects of bridge construction, the increased width of shoreline and open-water crossings, and direct physical impacts from construction activities. An Initial Mitigation Report was prepared in the fall of 2009. Detailed plans would be included in permit applications for construction of the I-5 to Medina: Bridge Replacement and HOV Project.

As discussed in the response to Comment C-040-131, the Community Construction Management Plan will give affected residents an opportunity to be involved in how construction noise and other potential effects from construction (dust, visual quality, etc.) are managed and mitigated. Techniques for reducing pile driving noise can be shared at that time. The plan will be adaptable, so it can address unanticipated issues if and when they arise. WSDOT will continue to work with the communities as design and contracting progress and as more detailed information becomes available about how the project will be built.

C-040-134

Please see the responses to comments C-040-022 and C-040-130 regarding construction noise mitigation. WSDOT will define noise monitoring that would be conducted during construction. Please see Chapter 6 of the Final EIS for a list of construction mitigation measures for each discipline.



STATE OF WASHINGTON

February 1, 2010

The Honorable Richard Conlin, Council President
 The Honorable Sally Bagshaw, Councilmember
 The Honorable Tim Burgess, Councilmember
 The Honorable Sally J. Clark, Councilmember
 The Honorable Jean Godden, Councilmember
 The Honorable Bruce A. Harrell, Councilmember
 The Honorable Tom Rasmussen, Councilmember
 The Honorable Mike O'Brien, Councilmember
 Seattle City Council
 600 Fourth Avenue, 2nd Floor
 P.O. Box 34025
 Seattle, WA 98124-4025

Dear Councilmembers:

Thank you for your January 28, 2010 letter responding to the recommendation made by the SR 520 Legislative Workgroup on the Westside interchange option. Your willingness to work with us to complete the final design process for the SR 520 Bridge Replacement and HOV Program is greatly appreciated.

As you know, last year's Legislative Workgroup is only the most recent step in an extensive public process that began in 1997. We have been very grateful for the substantial public engagement from a diverse array of perspectives that has informed this process. Your offer to commission the Seattle Department of Transportation (SDOT) to engage with the Washington State Department of Transportation (WSDOT) in a technical discussion related to traffic on local Seattle streets, including transit connectivity to the new bridge will contribute greatly to the final design process.

Our primary objectives for any Westside interchange design selected for a new SR 520 are as follows: 1) the design selected must allow the project to be open to drivers in 2014, 2) the design must meet federal and state permitting requirements, and 3) the design must allow the project to be constructed within the \$4.65 billion budget.

With regard to the schedule, we very much appreciate your recognition of our plan to open the replacement floating bridge to drivers in 2014. We share your sense of urgency to correct the critical public safety and seismic issues of the existing floating bridge and its approaches. Maintaining the pace of the necessary regulatory milestones is critical to achieving the schedule

**C-040-135**

WSDOT has not yet developed the construction schedule for the SR 520, I-5 to Medina project. WSDOT will be working with the City of Seattle (and other jurisdictions in which construction noise will occur) to determine the best noise reduction strategies based on timing and site conditions. Please see the responses to Comments C-040-130 for more information.

C-040-136

The City of Seattle now requires the use of broadband alarm systems or both back-up spotters and broadband alarms at construction sites during nighttime hours (10:00 p.m. to 7:00 a.m.). Although the WAC and local codes generally exempt sounds created by warning devices that are not operating continuously, WSDOT may consider other measures to mitigate for these sounds if conditions warrant for more than five minutes.

C-040-137

WSDOT will follow United States Department of Transportation guidelines for acceptable vibration levels from construction activities, as noted on page 60 of the SDEIS Noise Discipline Report. The guidelines recommend that the maximum peak-particle velocity levels remain below 1.27 inches per second at structures nearest the construction site. The noted level of 0.5 inches per second is well below this guideline. Please see Exhibit 21 of that report for all of the United States Department of Transportation guidelines for peak particle velocity.

WSDOT will develop a construction vibration monitoring plan for the SR 520, I-5 to Medina project. The plan will provide guidelines for monitoring construction vibration near sensitive properties and structures, thereby avoiding or limiting damage during construction. WSDOT will also provide a public information telephone line, which will allow area residents to notify WSDOT of any problems associated with project

for opening the bridge to traffic in 2014. This includes the selection of a preferred alternative by mid-April 2010. With 13 years of analysis and hundreds of millions of dollars invested in the corridor replacement, we feel strongly it is time to move forward on this much needed safety and mobility project. Therefore, the joint WSDOT-SDOT technical work and council deliberation must be completed within the objectives noted above and must be substantially completed by April 15th.

Your letter references the legislative direction within which we have worked regarding the number and types of lanes to be incorporated into the SR 520 Bridge Replacement. A six-lane configuration was endorsed by the Washington State Legislature in 2007 and 2008. As part of Engrossed Substitute Senate Bill 6099 approved in 2007, codified as RCW 47.01.405, the legislature stated that:

"The state must take the necessary steps to move forward with a state route number 520 bridge replacement project design that provides six total lanes, with four general purpose lanes and two lanes that are for high-occupancy vehicle travel that could also accommodate high capacity transportation, and the bridge shall also be designed to accommodate light rail in the future. High-occupancy vehicle lanes in the state route 520 corridor must also be able to support a bus rapid transit system."

We have heard that some may wish to revisit the legislative direction regarding the use of the two additional lanes for high occupancy vehicles (HOV). The Supplemental Draft EIS focuses on alternatives based on the four general purpose lanes – two High Occupancy Vehicle (HOV) lanes option resulting from years of previous analyses and public input. Changing the configuration now would require a new environmental process. The office of the Attorney General tells us that revisiting these decisions from several years ago would set the project back at least 18 to 24 months. Our commitment to ensuring public safety does not allow that kind of delay.

The planned four general purpose and two HOV lanes included in the supplemental environmental impact statement best meets the travel needs of this growing region between now and 2030. However, it is important to note that decisions we make now on the design features of the facility do not preclude future options for high capacity transit in the corridor.

Working within the scope of the preliminary work done to date is fundamental to our ability to complete the regulatory steps on schedule. We therefore urge that any recommendations from the SDOT/WSDOT technical discussions that will affect WSDOT's selection of a preferred alternative in mid-April conform to the scope of the Westside interchange alternative recommended by the Legislative Workgroup and past legislative direction. There will be continued opportunities to refine the local elements of Westside interchange option until early fall before WSDOT prepares the final environmental statement.

We know you recognize the budget constraints associated with this project, and share your commitment to making lids and other project features that address impacts on the adjacent

construction. As the SR 520, I-5 to Medina project moves forward, more information on vibration will be provided to area residents. Please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for more information.

C-040-138

The paragraph referred to on page 6-69 pertained to the effects of suboptions, not of Options A, K, and L themselves. The discussion on pages 6-64 up to the heading "Effects of Suboptions" applied to the project area in general, including Montlake. The Preferred Alternative includes a new bascule bridge adjacent to the existing Montlake Bridge, rather than in the location of Option L. If Option L were identified as the Preferred Alternative in the future, WSDOT would ensure that negative effects associated with Option L are mitigated to the extent practicable.

C-040-139

Please see the response to Comment C-040-131 regarding construction noise mitigation.

C-040-140

Noise analysis performed for the SDEIS and Final EIS has been consistent with current FHWA methodology, which is the accepted standard for modeling and mitigation of highway traffic noise. Additional detail to support the conclusions presented in Section 5.7 of the SDEIS was provided in the SDEIS Noise Discipline Report (please see Exhibits 27 through 29, 33 through 35, and 36 through 39, as well as pages 71 through 96). In many areas of the project corridor, the Preferred Alternative would result in a decrease in noise levels compared to the No Build Alternative. Please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for more information.

community an integral part of the corridor improvements. These improvements are estimated as part of the \$4.65 billion project budget and we will continue to advance them through the design and environmental process. Work is already underway to reduce the height of the bridge in response to feedback we have received on the proposed design.

We share your interest to increase transit service in this corridor, and the addition of carpool/transit lanes will improve transit service reliability as demand increases in the future. Forty-five new buses will be added to the SR 520 corridor, made possible by the Urban Partnership Agreement between the WSDOT, King County, Puget Sound Regional Council, and federal government. Also, the second phase of Sound Transit funds 100,000 additional service hours to further develop bus rapid transit in the SR 520 corridor. If additional transit service is needed in the corridor, the Washington State Legislature also approved Second Substitute Senate Bill 5433 in 2009, which gave King County the option of raising its property tax for the purpose of expanding transit service in the SR 520 corridor.

Your expressions of support and offer to help advance our design process are both timely and gratefully received. We look forward to working with you, the Mayor and the SDOT to address the issues associated with the Westside interchange options analyzed in the supplemental draft environmental impact statement. We have asked WSDOT to begin to work with SDOT as quickly as possible to develop a schedule and work plan for this effort.

Sincerely,



Christine O. Gregoire
Governor



Mary Margaret Haugen
State Senator, 10th Legislative District
Senate Transportation Committee Chairman



Judy Clibborn
State Representative, 41st Legislative District
House Transportation Committee Chairman

Attachment

C-040-141

As described in the response to Comment C-040-022, the Preferred Alternative includes a number of noise reduction strategies along the SR 520, I-5 to Medina project corridor (please see regarding noise reduction strategies). These strategies were defined based on the recommendations of an expert review panel of internationally renowned acousticians who were asked to evaluate potential noise reduction methods for the SR 520, I-5 to Medina project.

Quieter concrete pavement is included as a design feature for Option A, Option K, and the Preferred Alternative on SR 520 from I-5 across Lake Washington; however, because it is not an FHWA-approved mitigation measure and because future pavement surface conditions cannot be determined with certainty and therefore WSDOT cannot guarantee specific noise reduction results, it is not included in the noise model for the project.

C-040-142

With the Preferred Alternative, noise walls are not recommended for the Seattle portion of the SR 520, I-5 to Medina project, except potentially along I-5 in the North Capitol Hill area where the reasonableness and feasibility of a noise wall is still be evaluated (see Section 5.7 of the Final EIS). Four-foot concrete traffic barriers with noise-absorptive coating included in the project design would reduce noise throughout the project corridor. Please see the response to Comment C-040-022 and Chapter 5 of the SDEIS for information on measures proposed to minimize traffic noise, and Chapter 2 of the Final EIS for a description of the Preferred Alternative and its noise reduction strategies.

C-040-143

Please see the response to Comment C-040-142.

History**Project:**

- Built in 1963 and now estimated to have 10-15 year life expectancy remaining. Windstorms and earthquakes pose the biggest risks to the structure.
- 1997: Trans-Lake Washington Study made recommendations for a draft Environmental Impact Statement (EIS)
- 2000: First broad EIS initiated
- 2005 Draft EIS narrows focus to 6-lane replacement options
- 2006: Governor's report 'A Path Forward to Action' identified the 6-lane alternative as the state's preference
- 2007-2008: Mediation groups review and refine project options with technical support from WSDOT
- 2010: Work will begin on pontoon construction. Supplemental Draft EIS released. The public may comment at a February hearing or through the web until March 8th. Options reviewed are 6-lane bridge replacements: Option A, adds a 2nd parallel drawbridge over Montlake Cut; Option K, adds a tunnel under Montlake Cut and Option L, adds a 2nd drawbridge and elevated interchange.

Previous Legislation highlights:

- ESSB 6099 (2007) required an SR 520 project impact plan to be developed with local input through the use of a mediator.
- ESHB 3096 (2008) Required an SR 520 finance plan, created a tolling implementation committee to evaluate tolling issues and survey citizens, and provided a sales tax deferral for the SR 520 bridge project.
- ESHB 2211 (2009) authorized tolling on the SR 520 corridor, set the maximum budget for the project at \$4.65bn and created a legislative workgroup to make recommendations on the design of the project.

C-040-144

The Preferred Alternative design extends the length of the Montlake lid to approximately 1,400 feet; and noise-absorptive materials will be used around lid portals.

C-040-145

Please see the responses to Comments C-040-130 through C-040-144.

C-040-146

Because this material is not a comment on a document that is part of the SR 520, I-5 to Medina NEPA process, the Final EIS does not provide a response to it.

C-040-147

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

C-040-148

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

C-040-149

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

C-040-150

Appendix J: opposition to re-thinking

<file:///C:/Documents%20and%20Settings/fran/Desktop/Appendices/Times%20Gregoire%20no%20rethink.htm>

Seattle Times

Gregoire opposes Seattle officials' request to rethink 520 bridge

By Mike Lindblom

Seattle Times transportation reporter

Gov. Chris Gregoire pushed back Monday against Seattle lawmakers who are seeking separate transit lanes, instead of a pair of carpool lanes, for the future Highway 520 replacement bridge.

That change and others suggested by Seattle officials would require up to two more years of studies and delay the project, the governor contended.

Her comments put her at odds with House Speaker Frank Chopp of Seattle, a fellow Democrat. He and five other elected officials declared their support earlier Monday for the transit-only lanes.

"The mayor and the council now stand united against the current plan," Chopp said at a news conference, with marshes and abandoned road ramps in the foreground and the roar of morning traffic over Lake Washington.

Seattle Mayor Mike McGinn, City Councilmembers Nick Licata and Mike O'Brien, Democratic state Sen. Ed Murray and Democratic state Rep. Jamie Pedersen joined him, along with 100 supporters. These include the Cascade Bicycle Club; the Sierra Club; the Washington Park Arboretum Foundation; and the Coalition for a Sustainable SR 520, representing Madison Park, North Capitol Hill, Montlake, Roanoke Park, Portage Bay, Laurelhurst and the boating community.

Last week, the Seattle City Council issued a letter saying a greatly enlarged Montlake interchange and a 30-foot-high floating bridge deck, as proposed, are unacceptable and asked the state for a 120-day period for the two governments to work out a new design maximizing transit opportunities.

State law calls for a toll bridge with two general-purpose lanes and one high-occupancy-vehicle lane in each direction. The governor's letter says in part: "Changing the

C-040-150

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

configuration now would require a new environmental process. The office of Attorney General tells us that revising these decisions from several years ago would set the project back at least 18 to 24 months. Our commitment to ensuring public safety does not allow that kind of delay."

But the letter acknowledges there would be technical discussions with the city before the state Department of Transportation (DOT) states its Montlake interchange choice this fall.

Sen. Rodney Tom, D-Bellevue, a leading advocate for a six-lane bridge as planned, said talks with the Seattle groups have lasted long enough: "To me, every time they turn the corner they come up with a new wrinkle. We have an agreement; let's move forward."

Debates and design research have been under way since 1997 to replace the nearly 47-year-old, four-lane bridge, at risk of sinking in a severe earthquake or windstorm.

...paragraphs omitted...

The \$4.65 billion project is at least \$2 billion short of funding, and the state has yet to choose a toll strategy to close some or all of that gap.

Mike Lindblom: 206-515-5631 or mlindblom@seattletimes.com

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C-040-151

METHODOLOGICAL FLAWS IN TRANSPORTATION ANALYSIS

Summary

The methodology used by the TDR team to evaluate design options may be fundamentally flawed, because it assumes a particular transportation demand model rather than acknowledging the fundamental uncertainties about Seattle demographics and transportation demand in 20 years. In particular, unrealistic assumptions are made that portray 6-lane alternatives in a favorable light. A sound methodology would acknowledge uncertainties and perform robust sensitivity analysis.

Contents

The SDEIS Transportation Discipline Report (TDR, hereafter) portrays 6-lane design alternatives in a favorable light [TDR 2-3]

1. Comparing the No Build Alternative with the 6-Lane Alternative, year 2030 congestion and HOV travel times between I-5 and SR 202 would be reduced between an average of 2 to 8 minutes during the morning peak period and 5 minutes during the evening peak period. However, during the peak of the evening commute period, the completion of the eastbound HOV lane could save both general-purpose and HOV vehicles approximately 40 minutes.
2. Tolling and the completion of the HOV lane with the 6-Lane Alternative would reduce daily vehicle volumes across SR 520 by up to 4,700 vehicles (or 3 percent) compared to the No Build Alternative. Some people would choose to take other modes of travel (such as transit, carpools, vanpools, and bike), change time of travel, or select a different route.
3. Daily person trips across SR 520 would increase by up to 14,400 people (6 percent) because completing the HOV lane system between I-5 and SR 202 and/or tolling the corridor would increase carpools and bus use.
4. General-purpose vehicle trips would decrease by up to 10,000 vehicles per day and general-purpose person trips would decrease by up to 13,500 persons per day.

This seems almost magical: vehicle trips will decrease substantially, with commensurate decreases in greenhouse gas emissions, yet peak transit times will reduce by 40 minutes and 14,400 more people will cross each day!

C-040-151

This comment (referenced as Appendix M in the comment letter) is a duplicate of comments on pages 51-53 of a letter submitted by the Laurelhurst Community Club. Please see the responses to Comments C-031-071 through C-031-080.

Methodological flaws

Exhibit 4-4 of the TDR presents the methodology used by the WSDOT team for predicting future traffic flows (steps irrelevant for current discussion omitted):

1. Calibrate existing CORSIM model to match field observations
2. Code future conditions into CORSIM model
3. Summarize results for year 2030 conditions

"The first step in the process was to verify that the simulation model correctly represented existing freeway operations process known as calibration. The team calibrated the CORSIM model against existing WSDOT freeway count data to ensure that the model's output for the morning and afternoon peak periods was accurately representing current volumes and operations of the freeway mainline and ramps. Most locations were calibrated to within 5 percent of actual volumes. The team verified that the congestion and travel times from the model reasonably matched field observations and data from WSDOT loop detectors. Existing data from October of 2008 were used in the calibration effort."

In the terminology of simulation studies, "calibration" refers to adjusting parameters of a model to match a set of observations. However, just as an infinity of curves can match a small number of data points, an infinity of transportation models can fit a small set of observations from October of 2008, and there is no guarantee that whatever parameters selected by the calibration process will fit 2030 Seattle transportation well.

The possibility of a calibration stage fitting a set of observations used for calibration but failing to predict the future well is so likely that sound simulation modeling includes a post-calibration step known as "validation", in which the simulation is used to predict observed transportation data that was NOT used in the calibration stage. [See for example "Discrete-Event System Simulation" (Banks et alia), chapter 10, or most textbooks on fitting of statistical models.] If the predictions do not match these "held-out" observations, the results of other predictions can not be trusted.

But the TDR methodology diagram 4-4 does not show a validation step. This completely undermines the credibility of all simulation results.

Further, step 3 of the TDR methodology, "Code future conditions into CORSIM model", requires some particular future conditions to be

chosen. The TDR states:

The SDEIS 2030 No-Build & Cumulative Effects Definition Technical Memorandum (SR 520 Bridge Replacement and HOV Program 2008) and a supplement to that memo issued by the project office on March 28, 2008, contain detailed information about these travel demand model assumptions. They include all projects that were assumed to be complete by 2030, planned transit service, and other assumptions coded into the project's travel demand model for the No Build Alternative. Adjustments were also made to reflect expected changes in inflation and land use,¹ specifically future population and employment growth forecasts, for the year 2030. These elements are major factors that influence travel behavior and patterns.

The last sentence is particularly telling: "These elements are major factors that influence travel behavior and patterns."

In other words, particular assumptions were made about traffic demand and transportation conditions in the year 2030, which strongly influence conclusions. These include untested stated assumptions about human behavior (in particular, that tolls will cause large numbers of people to switch to HOV transport); demand (such as that load remains heavily concentrated at peak periods); transportation infrastructure (particular transport services existing such as light rail across the lake); and many other implicit assumptions such as that citizen pressure does not force HOV lanes to be opened for general use. It would be fantastic if all these assumptions turned out to be exactly true.

Sound method for modeling with suspect assumptions include various forms of either "sensitivity analysis" (testing the change in results for various changes in assumptions to derive confidence bounds) or "worst-case analysis" (testing at the boundaries of plausible futures) or "model averaging" (combining results across a diversity of possible future conditions). But the methodology described in the TDR does not indicate that any of these were performed, and no results presented in the TDR demonstrate any of these were performed.

Misleading presentation of results

The TDR states: "travel demand models are not intended to provide an absolute traffic volume forecast", advising that forecasted traffic flows should be used only for comparison between options, NOT for estimating absolute conditions.

But in many places in the TDR and executive summary, this distinction

has been lost:

"Daily person trips across SR 520 would increase by up to 14,400 people (6 percent) because completing the HOV lane system between I-5 and SR 202 and/or tolling the corridor would increase carpools and bus use."

"General-purpose vehicle trips would decrease by up to 10,000 vehicles per day and general-purpose person trips would decrease by up to 13,500 persons per day."

Clearly, there is great appeal to the idea that the number of vehicles crossing each day will decrease and the number of people crossing will increase, but given that the TDR states only relative values are meaningful, this conclusion should not be drawn and should not be in the report.

Further, it is clear that certain assumptions, especially those surrounding the impact of tolling on usage of the HOV lane, will affect the relative standing of 6-lane vs. 4-lane alternatives. Given that no data has been presented demonstrating such assumptions are reliable, and that no analysis is presented as to the sensitivity of results to these assumptions, conclusions such as the two above are highly suspect and misleading.

Conclusion

It is impossible to conclusively evaluate the methodology used in traffic forecasting even from such a lengthy document as the TDR, given that it is but a summary of a vast amount of work performed by the TDR team. However the statement of methodology presented in the TDR, pointedly omitting any rigorous model validation procedures, suggests the methodology may be flawed and unreliable. And since results do not include any form of confidence bounds or other indication of sensitivity to forecasting and traffic modeling assumptions, they are highly misleading and should not be used for policy decisions and should not have been included in a report for the public. The draft EIS makes predictions about the comparative benefits of the No-Build vs Build options. There are reasons to be concerned about the accuracy and the margin of error of these predictions.

The methodology for the obtaining those predictions is described in the Transportation Discipline Report. The report does not give evidence that errors at various levels in the model have been estimated accurately, so that the forecasts are credible.

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1. The simulation model is chosen by PSRC, the model inputs (demographic and land use forecasts) are established by PSRC, the model validation is done by PSRC teams, and the goals for development are also set by PSRC. There is no independent review of this process at any step.

2. Models are calibrated from current data. This process sets the models' internal parameters to values that best align the model predictions with the observed data. The problem is that, for models with many parameters, there can be many different parameter settings that can fit the current data equally well. However, these parameter settings will produce wildly different forecasts for the future, e.g. for 2030. The report does not explain how the choice was made.

A standard statistical validation technique to avoid the catastrophic ambiguity I described above is to test the model predictions on existing data, but to employ for this purpose independent or fresh data, which was not previously used in calibration. The accuracy of the model on the fresh data is a better estimate of the ability of the model to represent the reality in the field.

3. The inaccuracies in the input variables (demographic, employment, and land use forecasts) were not considered. Nor is it explained how these inaccuracies, which are unavoidable in any forecast, will propagate through the model and will affect its predictions. In other words, there is no evidence that the model used is "robust" to changes in the input data. For instance, a 10% error in the population growth may well translate into a 100% error in the traffic time estimate. The document does not demonstrate that the errors of this kind have been controlled for.

4. Another source of inaccuracies in the final predictions of traffic time, traffic volume etc are the variations in model parameters. The travel demand model has parameters for each of the 4 steps: trip generation, trip distribution, mode choice, trip assignment. It is the latter two steps that I want to discuss now. Essentially, the travel demand model has an internal model for how people will choose to travel in 2030, and by what route. At first glance, all the model parameters are validated by predicting current data. However, the current data is not detailed enough to guarantee that these parts of the model are accurate even for the present. The validation method, as it is explained in the document, only ensures that the model as a whole predicts traffic patterns at certain points and across certain screenlines, but does not guarantee that the model captures correctly

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This comment (referenced as Appendix N in the comment letter) is a duplicate of comments on pages 54 to 55 of the letter submitted by the Laurelhurst Community Club. Please see the responses to Comments C-031-076 through C-031-080.

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the mechanisms of mode choice and travel assignment that produce these results. It is not known what the margin of error of the traffic forecasts are with respect to such inaccuracies.

In summary, I feel that transportation forecasts produced may be relied upon, only under the unlikely conditions when the economic, demographic and land use forecasts are accurate, when people make their choice in agreement with the model's step 3 and 4 parameters and not otherwise, and when cars, gas consumption, gas prices also evolve as forecasted. But that the current analysis does not cover any other scenario. Thus it does not support the conclusion that the benefits for transportation will continue to exist if the circumstances of the future become different from what was assumed in 2009.

C-040-153 |

Appendix O: References used in Section III, Traffic Assumptions

References,(incorporated here by reference)

Dargay, J. M. and P. B. Goodwin (1995), "Evaluation of Consumer Surplus with Dynamic Demand Changes." Journal of Transport Economics and Policy, Vol. XXIX, No. 2, pp. 179-93.

Appendix M: Flaws in Model Methodology and Use in the TDR.

Appendix N: Flaws in Simulation Methodology in TDR

Appendix O: -Tilghman Group Analysis of SDEIS

Appendix P: Review of Studies on Generated Traffic and Induced Travel

Lawton, K. (2001), The Urban Structure and Personal Travel: an Analysis of Portland, or Data and Some National and International Data, E-Vision 2000 Conference (www.rand.org/scitech/stpi/Evision/Supplement/lawton.pdf).

Levinson, D. and A. Kumar (1997), Density and the Journey to Work, Growth and Changes, Vol. 28, No. 2 1997, pp. 147-72

Litman, T (2010) Generated Traffic and Induced Travel Implications for Transport Planning <http://www.vtpi.org>

Marshall, N.(2000), Evidence of Induced Demand in the Texas Transportation Institutes Urban Roadway Congestion Study Data Set, TRB Annual Meeting (www.trb.org).

Open Space Seattle (2010) http://www.seattlepi.com/local/271365_ncenter24.html

STPP (1998), Do New Roads Cause Congestion?, Surface Transportation Policy Project (www.transact.org); at www.transact.org/congestion/analysis.htm.

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Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

Generated Traffic and Induced Travel

Implications for Transport Planning

19 March 2010

Todd Litman

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Abstract

Traffic congestion tends to maintain equilibrium. Congestion reaches a point at which it constrains further growth in peak-period trips. If road capacity increases, the number of peak-period trips also increases until congestion again limits further traffic growth. The additional travel is called “generated traffic.” Generated traffic consists of diverted traffic (trips shifted in time, route and destination), and induced vehicle travel (shifts from other modes, longer trips and new vehicle trips). Research indicates that generated traffic often fills a significant portion of capacity added to congested urban road.

Generated traffic has three implications for transport planning. First, it reduces the congestion reduction benefits of road capacity expansion. Second, it increases many external costs. Third, it provides relatively small user benefits because it consists of vehicle travel that consumers are most willing to forego when their costs increase. It is important to account for these factors in analysis. This paper defines types of generated traffic, discusses generated traffic impacts, recommends ways to incorporate generated traffic into evaluation, and describes alternatives to roadway capacity expansion.

A version of this paper was published in the *ITE Journal*, Vol. 71, No. 4, Institute of Transportation Engineers (www.ite.org), April 2001, pp. 38-47.

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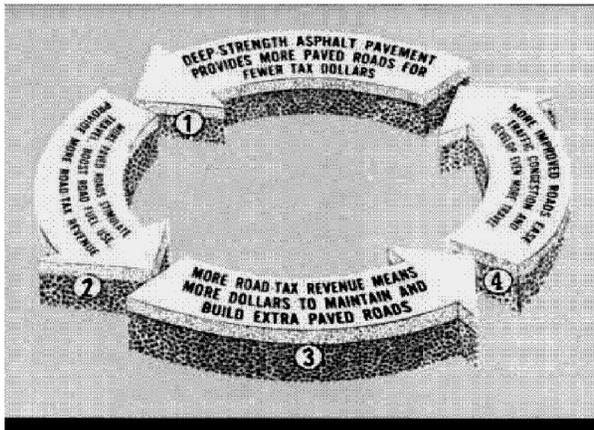
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This article addresses the potential for additional “generated” traffic resulting from roadway improvements that increase traffic capacity. The SR 520, I-5 to Medina project would not provide new general-purpose vehicle capacity. The new HOV lanes would provide time travel savings and a lower relative cost for transit users than for drivers in the general-purpose lanes. This would increase transit use on SR 520 by 33 percent compared to No Build, while resulting in a 5 percent reduction in average daily cross-lake vehicle trips in 2030. Hence, “generated traffic,” “induced travel” and any associated potential for adverse effects would not occur as a result of the SR 520, I-5 to Medina project.

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Roads beget roads: From the cover of *Asphalt Bulletin*, April 1966.

This illustration from a highway builders' magazine shows how expanding roadway capacity tends to stimulate automobile travel and the need for more roads.

Introduction

Traffic engineers often compare traffic to a fluid, assuming that a certain volume must flow through the road system. But urban traffic may be more comparable to a gas that expands to fill available space (Jacobsen 1997). Road improvements that reduce travel costs attract trips from other routes, times and modes, and encourage longer and more frequent travel. This is called *generated traffic*, referring to additional vehicle traffic on a particular road. This consists in part of *induced travel*, which refers to increased total vehicle miles travel (VMT) compared with what would otherwise occur (Hills 1996).

Generated traffic reflects the economic “law of demand,” which states that consumption of a good increases as its price declines. Roadway improvements that alleviate congestion reduce the generalized cost of driving (i.e., the price), which encourages more vehicle use. Put another way, most urban roads have *latent travel demand*, additional peak-period vehicle trips that will occur if congestion is relieved. In the short-run generated traffic represents a shift along the demand curve; reduced congestion makes driving cheaper per mile or kilometer in terms of travel time and vehicle operating costs. Over the long run induced travel represents an outward shift in the demand curve as transport systems and land use patterns become more automobile dependent, so people must drive more to maintain a given level of accessibility to goods, services and activities (Lee 1999).

This is not to suggest that increasing road capacity provides no benefits, but generated traffic affects the nature of these benefits. It means that road capacity expansion benefits consist more of increased peak-period mobility and less of reduced traffic congestion. Accurate transport planning and project appraisal must consider these three impacts:

1. Generated traffic reduces the predicted congestion reduction benefits of road capacity expansion.
2. Induced travel imposes costs, including downstream congestion, accidents, parking costs, pollution, and other environmental impacts.
3. The additional travel that is generated provides relatively modest user benefits, since it consists of marginal value trips (travel that consumers are most willing to forego).

Ignoring these factors distorts planning decisions. Experts conclude, “...*the economic value of a scheme can be overestimated by the omission of even a small amount of induced traffic. We consider this matter of profound importance to the value-for-money assessment of the road programme*” (SACTRA 1994). “...*quite small absolute changes in traffic volumes have a significant impact on the benefit measures. Of course, the proportional effect on scheme Net Present Value will be greater still*” (Mackie, 1996) and “*The induced travel effects of changes in land use and trip distribution may be critical to accurate evaluation of transit and highway alternatives*” (Johnston, et al. 2001)

This paper describes how generated traffic can be incorporated into transport planning. It defines different types of generated traffic, discusses their impacts, and describes ways to incorporate generated traffic into transport modeling and planning, and provides information on strategies for using existing roadway capacity more efficiently.

Defining Generated Traffic

Generated traffic is the additional vehicle travel that results from a road improvement. Congested roads cause people to defer trips that are not urgent, choose alternative destinations and modes, and forego avoidable trips. Generated traffic consists of *diverted travel* (shifts in time and route) and *induced travel* (increased total motor vehicle travel). In some situations, highway expansion stimulates sprawl (automobile-dependent, urban fringe land use patterns), further increasing per capita vehicle travel. If some residents would otherwise choose less sprawled housing locations, their additional per capita vehicle travel can be considered to be induced by the roadway capacity expansion.

Below are examples of decisions that generate traffic:

- Consumers choose closer destinations when roads are congested and further destinations when traffic flows more freely. “*I want to try the new downtown restaurant but traffic is a mess now. Let’s just pick up something at the local deli.*” This also affects long-term decisions. “*We’re looking for a house within 40-minute commute time of downtown. With the new highway open, we’ll considering anything as far as Midvalley.*”
- Travelers shift modes to avoid driving in congestion. “*The post office is only five blocks away and with congestion so bad this time of day, I may as well walk there.*”
- Longer trips may seem cost effective when congestion is light but not when congestion is heavy. “*We’d save \$5 on that purchase at the Wal-Mart across town, but it’s not worth fighting traffic so let’s shop nearby.*”

Travel time budget research indicates that increased travel speeds often results in more mobility rather than saving time. People tend to average about 75 minutes of daily travel time regardless of transport conditions (Levinson and Kumar 1995; Lawton 2001). National data indicate that as freeway travel increases, average commute trip distances and speeds increase, but trip time stays about constant (Levinson and Kumar 1997). As a result, traffic congestion tends to maintain a self-limiting equilibrium: once congestion becomes a problem it discourages further growth in peak-period travel. Road expansion that reduces congestion in the short term attracts additional peak-period trips until congestion once again reaches a level that limits further growth. It may therefore be incorrect to claim that congestion reductions save travel time.

Definitions

Generated Traffic: Additional peak-period vehicle trips on a particular roadway that occur when capacity is increased. This may consist of shifts in travel time, route, mode, destination and frequency.

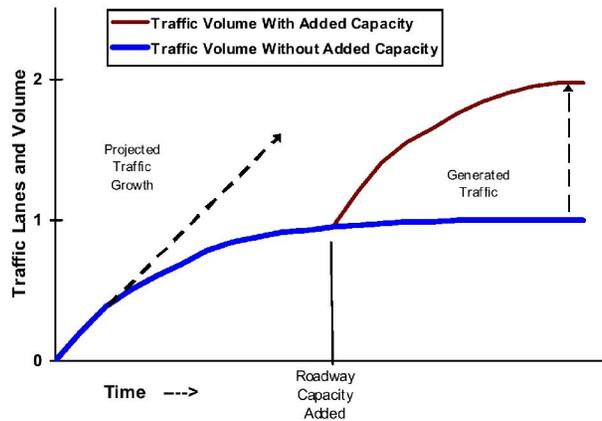
Induced travel: An increase in total vehicle mileage due to roadway improvements that increase vehicle trip frequency and distance, but exclude travel shifted from other times and routes.

Latent demand: Additional trips that would be made if travel conditions improved (less congested, higher design speeds, lower vehicle costs or tolls).

Triple Convergence: Increased peak-period vehicle traffic volumes that result when roadway capacity increases, due to shifts from other routes, times and modes.

Figure 1 illustrates this pattern. Traffic volumes grow until congestion develops, then the growth rate declines and achieves equilibrium, indicated by the curve becoming horizontal. A demand projection made during this growth period will indicate that more capacity is needed, ignoring the tendency of traffic volumes to eventually level off. If additional lanes are added there will be another period of traffic growth as predicted.

Figure 1 How Road Capacity Expansion Generates Traffic



Traffic grows when roads are uncongested, but the growth rate declines as congestion develops, reaching a self-limiting equilibrium (indicated by the curve becoming horizontal). If capacity is added, traffic growth continues until it reaches a new equilibrium. The additional peak-period vehicle travel that results is called "generated traffic." The portion that consists of absolute increases in vehicle travel (as opposed to shifts in time and route) is called "induced travel."

In some situations, adding capacity to a network in which all the moving entities rationally seek the most efficient route can reduce the network's overall efficiency, a phenomena called *Braess's Paradox*. In such situations, closing certain roadways can increase average traffic speeds (Youn, Jeong and Gastner 2008).

Generated traffic can be considered from two perspectives. Project planners are primarily concerned with the traffic generated *on the expanded road segment*, since this affects the project's congestion reduction benefits. Others may be concerned with changes in *total vehicle travel* (induced travel) which affects overall benefits and costs. Table 1 describes various types of generated traffic. In the short term, most generated traffic consists of trips diverted from other routes, times and modes, called *Triple Convergence* (Downs 1992). Over the long term an increasing portion consists of induced travel.

Table 1 Types of Generated Traffic

Type of Generated Traffic	Category	Time Frame	Travel Impacts	Cost Impacts
<i>Shorter Route</i> Improved road allows drivers to use more direct route.	Diverted trip	Short term	Small reduction	Reduction
<i>Longer Route</i> Improved road attracts traffic from more direct routes.	Diverted trip	Short term	Small increase	Slight increase
<i>Time Change</i> Reduced peak period congestion reduces the need to defer trips to off-peak periods.	Diverted trip.	Short term	None	Slight increase
<i>Mode Shift: Existing Travel Choices</i> Improved traffic flow makes driving relatively more attractive than other modes.	Induced vehicle trip	Short term	Increased driving	Moderate to large increase
<i>Mode Shift: Changes in Travel Choice</i> Less demand leads to reduced rail and bus service, less suitable conditions for walking and cycling, and more automobile ownership.	Induced vehicle trip	Long term	Increased driving, reduced alternatives	Large increase, reduced equity
<i>Destination Change; Existing Land Use</i> Reduced travel costs allow drivers to choose farther destinations. No change in land use patterns.	Longer trip	Short term	Increase	Moderate to large increase
<i>Destination Change; Land Use Changes</i> Improved access allows land use changes, especially urban fringe development.	Longer trip	Long term	More driving and auto dependency	Moderate to large increase, equity costs
<i>New Trip; No Land Use Changes</i> Improved travel time allows driving to substitute for non-travel activities.	Induced trip	Short term	Increase	Large increase
<i>Automobile Dependency</i> Synergetic effects of increased automobile oriented land use and transportation system.	Induced trip	Long term	Increased driving, fewer alternatives	Large increase, reduced equity

Some types of generated traffic represent diverted trips (trips shifted from other times or routes) while others increase total vehicle travel, reduce travel choices, and affect land use patterns.

What constitutes *short-* and *long-term* impacts can vary. Some short term effects, such as mode shifts, may accumulate over several years, and some long term effects, such as changes in development patterns, can begin almost immediately after a project is announced if market conditions are suitable. Generated traffic can also work in reverse; when urban roadway capacity is reduced a significant portion of previous vehicle traffic may disappear altogether (Cairns, Hass-Klau and Goodwin 1998).

Highway capacity expansion can induce additional vehicle travel on adjacent roads (Hansen, et al. 1993) because such projects leverage automobile dependent land use patterns. For example, urban-fringe highway expansion often stimulates more dispersed development. Although these indirect impacts are difficult to quantify they are potentially large and should be considered in transport planning (Louis Berger & Assoc. 1998).

Measuring Generated Traffic

Several studies using various analysis techniques have examined the amount of traffic generated by specific projects (Goodwin 1996). Their findings are summarized below:

- Cervero (2003a & b) used data on freeway capacity expansion, traffic volumes, demographic and geographic factors from California between 1980 and 1994. He estimated the long-term elasticity of VMT with respect to traffic speed to be 0.64, meaning that a 10% increase in speed results in a 6.4% increase in VMT, and that about a quarter of this results from changes in land use (e.g., additional urban fringe development). He estimated that about 80% of additional roadway capacity is filled with additional peak-period travel, about half of which (39%) can be considered the direct result of the added capacity.
- Duranton and Turner (2008) investigate the relationship between interstate highway lane-kilometers and highway vehicle-kilometers travelled (VKT) in US cities. They found that VKT increases proportionately to highways and identify three important sources for this extra vehicle travel: increased driving by current residents, an inflow of new residents, and more transport intensive production activity. They find aggregate city-level VKT demand to be elastic and so conclude that, without congestion pricing, increasing road or public transit supply is unlikely to relieve congestion, and current roadway supply exceeds the optimum.
- Time-series travel data for various roadway types indicates an elasticity of vehicle travel with respect to lane miles of 0.5 in the short run, and 0.8 in the long run (Noland 2001). This means that half of increased roadway capacity is filled with added travel within about 5 years, and that 80% of the increased roadway capacity will be filled eventually. Urban roads, which tend to be most congested, had higher elasticity values than rural roads, as would be expected due to the greater congestion and latent demand in urban areas.
- The medium-term elasticity of highway traffic with respect to California state highway capacity was measured to be 0.6-0.7 at the county level and 0.9 at the municipal level (Hansen and Huang 1997). This means that 60-90% of increased road capacity is filled with new traffic within five years. Total vehicle travel increased 1% for every 2-3% increase in highway lane miles. The researcher concludes, "it appears that adding road capacity does little to decrease congestion because of the substantial induced traffic" (Hansen 1995). Mokhtarian, et al (2002) applied a different statistical technique (matched-pairs) to the same data and found no significant induced travel effect, but that technique does not account for additional traffic on other roads or control for other factors that may affect vehicle travel.
- A study by leading U.K. transportation economists concludes that the elasticity of travel volume with respect to travel time is -0.5 in the short term and -1.0 over the long term (SACTRA 1994). This means that reducing travel time on a roadway by 20% typically increases traffic volumes by 10% in the short term and 20% over the long term.
- The following are elasticity values for vehicle travel with respect to travel time: urban roads, short-term -0.27, long term -0.57; rural roads, short term -0.67, long term -1.33 (Goodwin 1996). These values are used in the FHWA's SMITE software program described below.
- A Transportation Research Board report based finds consistent evidence of generated traffic, particularly with respect to travel time savings (Cohen 1995).

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- National Highway Institute concludes that the elasticity of highway travel with respect to users' generalized cost (travel time and financial expenses) is typically -0.5 (NHI 1995).
- Analysis of traffic conditions in 70 metropolitan areas finds that regions which invested heavily in road capacity expansion fared no better in reducing congestion than those that spent far less (STPP 1998). The researchers estimate that road capacity investments of thousands of dollars annually per household would be needed achieve congestion reductions.
- Noland and Mohammed A. Quddus (2006) found that increases in road space or traffic signal control systems that smooth traffic flow tend to induce additional vehicle traffic which quickly diminish any initial emission reduction benefits.
- Cross-sectional time-series analysis of traffic growth in the U.S. Mid-Atlantic region found an average elasticities of VMT with respect to lane miles to be 0.2 to 0.6 (Noland and Lem 2002).
- Small (1992) concludes that 50-80% of increased highway capacity is soon filled with generated traffic, based on a detailed review of previous studies.
- The USDOT Highway Economic Requirements System (HERS) investment analysis model uses a travel demand elasticity factor of -0.8 for the short term, and -1.0 for the long term, meaning that if users' generalized costs (travel time and vehicle expenses) decrease by 10%, travel is predicted to increase 8% within 5 years, and an additional 2% within 20 years (Lee, Klein and Camus 1998; FHWA 2000).
- Cervero and Hanson (2000) found the elasticity of VMT with respect to lane-miles to be 0.56, and an elasticity of lane-miles with respect to VMT of 0.33, indicating that roadway capacity expansion results in part from anticipated traffic growth.
- A comprehensive study of the impacts of urban design factors on U.S. vehicle travel found that a 10% increase in urban road density (lane-miles per square mile) increases per capita annual VMT by 0.7% (Barr 2000).
- In a study of eight new urban highways in Texas over several years, Holder and Stover (1972) found evidence of induced travel at six locations, estimated to represent 5-12% of total corridor volume, representing from a quarter to two-thirds of traffic on the facility. Henk (1989) performed similar analysis at 34 sites and found similar results.
- Modeling analysis indicates that adding an urban beltway can increase regional VMT by 0.8-1.1% for each 1.0% increase in lane capacity (Rodier, et al. 2001).

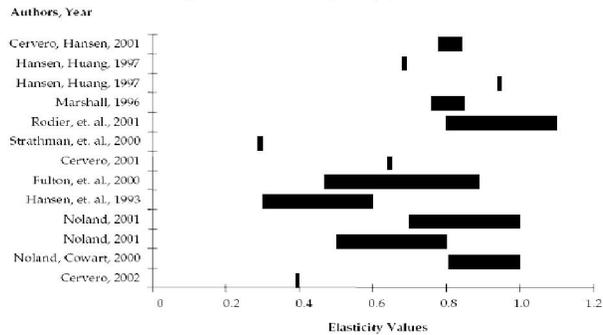
Table 2 Portion of New Capacity Absorbed by Induced Traffic

Author	Short-term	Long-term (3+ years)
SACTRA		50 - 100%
Goodwin	28%	57%
Johnson and Ceerla		60 - 90%
Hansen and Huang		90%
Fulton, et al.	10 - 40%	50 - 80%
Marshall		76 - 85%
Noland	20 - 50%	70 - 100%

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- Yao and Morikawa (2005) develop a model of induced demand resulting from high speed rail service improvements between major Japanese cities. They calculate elasticities of induced travel (trips and VMT) with respect to fares, travel time, access time and service frequency for business and nonbusiness travel.
- Odgers (2009) found that traffic speeds on Melbourne, Australia freeways did not decline as predicted following new urban highway construction, apparently due to induced traffic. He concludes that, “major road infrastructure initiatives and the consequent economic investments have not yet delivered a net economic benefit to either Melbourne’s motorists or the Victorian community.”
- Burt and Hoover (2006) found that each 1% increase in road lane-kilometres per driving-age person increases per capita light truck travel 0.49% and car travel 0.27%, although they report that these relationships are not statistically significant, falling just outside the 80% confidence interval for cars and the 90% confidence interval for light trucks.
- Schiffrer, Steinvorth and Milam (2005) perform a meta-analysis of induced travel studies to identify short- and long-term elasticities of VMT with respect to changes in traffic lane-miles and other variables, as summarized in Figure 2. They predicted the amount of VMT induced by regional highway expansion in the Wasatch Front (Salt Lake City region). They reached the following general conclusions concerning induced travel:
 - *Induced travel effects exist* – The elasticity of VMT with respect to added lane-miles or reductions in travel time is generally greater than zero and the effects increase over time.
 - *Short-term induced travel effects are smaller than long-term effects* – As measured by the increase in VMT with respect to an increase in lane-miles, short-term effects have an elasticity range from near zero to about 0.40, while long-term elasticities range from about 0.50 to 1.00. This means that a 10% increase in lane-miles can cause up to a 4% increase in VMT in the short term and a 10% increase in the long term.
 - *Induced travel effects for constructing new roadways versus widening existing roadways were not definitive* – The research did not include any examples that isolated the effects of constructing new roadways versus widening existing roadways. However, somewhat higher elasticities were found when “new roadways and widenings” were considered together compared to “widenings only.” This finding is based on a limited number of studies and indicates that more research is necessary to isolate these differences.
 - *Induced travel effects generally decrease with the size of the unit of study* – Larger effects are measured for single facilities while smaller effects are measured for regions and subareas. This is mainly due to diverted trips (drivers changing routes) causing more of the change on a single facility, whereas, at the regional level, diverted trips between routes within the region are not considered induced travel unless the trips become longer as a result.
 - *Traditional four-step travel demand models do not fully address induced travel or induced growth* – Land use allocation methods overlook accessibility effects, trip generation often fails to account for latent trips (potential trips constrained by congestion), many models overlook time-of-day shifts, and static traffic assignment algorithms may not account for queuing impacts on route shifts. Errors tend to be greatest when there is more or users are more responsive to travel costs. These weaknesses are due to the static nature of four-step models that carry base-year behavior parameters into future year scenarios when congestion may be much greater. For example, the percent of daily trips that occur during a peak hour is typically hard-coded in most traditional four-step models, and so does not change from the base year to future years. In reality, the percent of daily trips that occur during peak hours reduces as congestion increases. Failing to capture this effect ignores the potential trip suppression effects of congestion.

Figure 2 VMT With Respect to Road Capacity (Schiffer, Steinworth and Milam 2005)



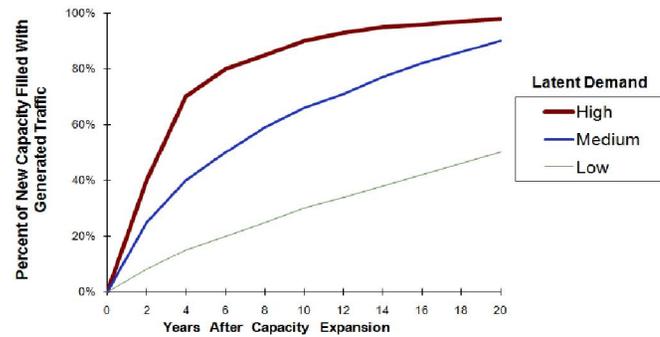
This figure summarizes long term vehicle travel elasticities with respect to roadway capacity.

The amount of traffic generated by a road project varies depending on conditions. It is not capacity expansion itself that generates travel, it is the reduction in congestion delays and therefore per-mile travel costs. Expanding uncongested roads will generate no traffic, although paving a dirt road or significantly raising roadway design speeds may induce more vehicle travel. In general, the more congested a road, the more traffic is generated by capacity expansion. Increased capacity on highly congested roads often generates considerable traffic (Marshall 2000). Older studies of the elasticity of VMT growth with respect to increased roadway lane-miles performed during the early years of highway building (during the 1950s through 1970s) have little relevance for evaluating current urban highway capacity expansion. In developed countries, where most highway expansion now occurs on congested links, such projects are likely to generate considerable amounts of traffic, providing only temporary congestion reduction benefits.

Gridlock?
Highway expansion advocates sometimes predict that roads will reach *gridlock* unless capacity increases. Such claims are usually exaggerated because they ignore the equilibrium tendency of traffic congestion. Gridlock is a specific condition that occurs when backups block intersections, stopping street network traffic flow as vehicles on each street wait for other vehicles to move. Gridlock can be avoided with proper intersection design that prevents such backups. Increasing regional highway capacity can *increase* rather than reduce this risk by adding more traffic to surface streets where gridlock occurs.

Generated traffic usually accumulates over several years (Goodwin 1998). Under typical urban conditions, more than half of added capacity is filled within five years of project completion by additional vehicle trips that would not otherwise occur, with continued but slower growth in later years. Figure 3 shows typical generated traffic growth indicated by various studies. Techniques for modeling these impacts into account are described in the next section (Dargay and Goodwin 1995).

Figure 3 Elasticity of Traffic Volume With Respect to Road Capacity



This illustrates traffic growth on a road after its capacity increases. About half of added capacity is typically filled with new traffic within a decade of construction. (Based on cited studies)

Modeling Generated Traffic

To predict generated traffic, transport models must incorporate “feedback,” which reflects the impacts congestion has on travel behavior, and long-term transport and land use systems. This recognizes that congestion diverts traffic to other routes, times and modes, and reduces trip length and frequency, while reduced congestion has the opposite effects. Because of non-linear speed flow relationships, and typically small net differences between large costs and large benefits, a small amount of induced traffic can have a disproportionately large effect on the cost effectiveness of a roadway project.

Most current traffic models can predict route and mode shifts, and some can predict changes in scheduling and destination, but few adjust trip frequency, and most ignore the effects transportation decisions have on land use (Beimborn, Kennedy and Schaefer 1996; Ramsey 2005). For example, they do not recognize that highway capacity expansion encourages more automobile-dependent urban fringe development. As a result, current models recognize diverted traffic but do not account for most forms of long term induced vehicle travel, and thus underestimate the amount of traffic likely to be generated when congested roads are expanded. In one exercise, Ramsey (2005) found that the net benefits of a suburban highway capacity expansion project declined by 50% if the project caused 60,000 residents (about 2% of the regional population) to move from urban to suburban locations, thereby increasing traffic congestion on that roadway link. Analysis of urban highway expansion impacts on total emissions by Williams-Derry (2007) indicates that emissions from construction and additional vehicle traffic quickly exceed any emission reductions from reduced congestion delays.

Transportation modelers have developed techniques for incorporating full feedback (Harvey and Deakin 1993; SACTRA 1994; Loudon, Parameswaran and Gardner 1997; Schiffer, Steinvorth and Milam 2005). This recognizes that expanding the capacity of congested roads increases the number and length of trips in a corridor (DeCorla-Souza and Cohen 1999). Henk (1989) used analysis of vehicle traffic growth rates at 34 urban highways in Texas to develop a model which predicts the amount of latent demand, and therefore future traffic volumes from highway capacity expansion, taking into account the type of facility, the Volume/Capacity ratio, and local population densities. Even more accurate are integrated models that incorporate interrelationships between transport and land use patterns (Rodier, et al. 2001). Federal clean air rules require that these techniques be used in metropolitan transportation models to evaluate the effects transport system changes have on vehicle emissions, but many metropolitan planning organizations have yet to comply, and few models used in medium and small cities have full feedback.

Full feedback is necessary to accurately predict future traffic congestion and traffic speeds, and the incremental costs and benefits of alternative projects and policy options. Models without full feedback tend to overestimate future congestion problems and overestimate the benefits of roadway capacity expansion. In one example, modeling a congested road network without feedback underestimated traffic speeds by more than 20% and overestimated total vehicle travel by more than 10% compared with modeling with feedback (Comsis 1996). Models that fail to consider generated traffic were found to overvalue roadway capacity expansion benefits by 50% or more (Williams and

Yamashita 1992). Another study found that the ranking of preferred projects changed significantly when feedback is incorporated into project assessment (Johnston and Ceerla 1996). Ignoring generated traffic tends to skew planning decisions toward highway projects and away from No Build and mobility management alternatives such as road pricing, transit improvements and commute trip reduction programs (Boarnet 1995).

The FHWA *Spreadsheet Model for Induced Travel Estimation* (SMITE) was developed to predict the amount of traffic induced by road improvements and the effects on consumer welfare and vehicle emissions (DeCorla-Souza 2000). It is a relatively easy way to incorporate generated traffic impacts into road project assessments. Another approach involves integrated transport/ land use models (such as TRANUS and MEPLAN) that track transport benefits through their land value impacts (Abraham 1998).

Short Cut Methods of Incorporating Induced Demand

Based on comments in the *Transportation Model Improvement Program* listserv (TMIP-L@listserv.tamu.edu) by Phil Goodwin, 2001.

The easiest way to incorporate induced demand into conventional traffic models is to apply an overall demand elasticity to forecasted changes in travel speed, calculated either:

- Elasticities applied to generalized costs (travel time and financial costs) using a price elasticity (about -0.3 for equilibrium, less for short term), with monetized travel time costs. The time elasticity is generally about -0.5 to -0.8 or so, though this is highly dependent on context. Where to apply it depends on the model used. With a fixed trip matrix altered only by reassignment, apply elasticities to each separate cell, or the row and column totals, or the overall control total - depending on how short the short cut has to be. Or add a separate test at the end.
- or
- Direct application of a 'capacity elasticity,' i.e. percent change in vehicle miles resulting from a 1% change in highway capacity, for which lane miles is sometimes used as a proxy, the elasticity in that case usually coming out at about -0.1. This will tend to underestimate the effect if the capacity increase is concentrating on bottlenecks.

Care is needed if the basic model has cost-sensitive distribution and mode split, as this will already make allowance for some induced traffic. Induced traffic consists of several types of travel changes that make vehicle miles "with" a scheme different from "without," including re-assignment to longer routes and some increased trip generation. Allowance for time-shifting, which is not induced traffic at all, is equally important because it has similar effects on calculation of benefits of reducing congestion, and is often a large response. Ideally you iterate on speed and allow for the effect from retiming of journeys, and separate the various behavioural responses which make up induced traffic. These short cuts are subject to bias, but less than the bias introduced by assuming zero induced traffic.

Land Use Impacts

An important issue related to generated and induced travel is the degree to which roadway improvements affect land use patterns, and in particular, whether highway capacity expansion stimulates lower-density, urban fringe development (i.e., urban sprawl), and the costs to society that result (Louis Berger & Assoc. 1998; USEPA 2001; ICF Consulting 2005). Land use changes are one category of induced travel. Such changes take a relatively long time to occur, and are influenced by additional factors, but they are durable effects with a variety of economic, social and environmental impacts.

Urban economists have long realized that transportation can have a major impact on land use development patterns, and in many situations improved accessibility can stimulate development location and type. Different types of transportation improvements tend to cause different types of land use development patterns: highway improvements tend to encourage lower-density, automobile-oriented development at the urban fringe, while transit improvements tend to encourage higher-density, multi-modal, urban redevelopment, although the exact types of impacts vary depending on specific conditions and the type of transportation improvements implemented (Rodier, Abraham, Johnston and Hunt 2001; Boarnet and Chalempong 2002; Litman 2002).

Some researchers claim that investing in road construction does not lead to the sprawl (Sen, et al. 1999; Hartgen 2003a and 2003b), although the evidence indicates otherwise. Even in relatively slow-growth regions with modest congestion problems, highway capacity expansion increases suburban development by 15-25%. These effects are likely to be much greater in large cities with significant congestion problems, where peak-period traffic congestion limits commute trip distances, and increased roadway capacity would significantly improve automobile access to urban fringe locations. This is particularly true if the alternative is to implement Smart Growth development policies and improved walking, cycling and transit transportation (“Smart Growth, VTPI 2006).

There has been considerable debate over the benefits and costs of sprawl and Smart Growth (Burchell, et al. 1998; Litman 2002). Table 2 summarizes some benefits that tend to result from reduced sprawl.

Table 2 Smart Growth Benefits (“Smart Growth, VTPI 2006)

Economic	Social	Environmental
Reduced development and public service costs. Consumer transportation cost savings. Economies of agglomeration. More efficient transportation.	Improved transportation choice, particularly for nondrivers. Improved housing choices. Community cohesion.	Greenspace and wildlife habitat preservation. Reduced air pollution. Reduce resource consumption. Reduced water pollution. Reduced “heat island” effect.

Costs of Induced Travel

Driving imposes a variety of costs, including many that are external, that is, not borne directly by users (Murphy and Delucchi 1998). Table 3 illustrates one estimate of the magnitude of these costs. Other studies show similar costs, with average values of 10-30¢ per vehicle-kilometer, and more under urban-peak conditions (Litman 2003).

Table 3 Motor Vehicle Indirect and External Costs (Delucchi 1996)

Cost Item	Examples	Vehicle-Year	Vehicle-Mile
Bundled private sector costs	Parking funded by businesses	\$337-1,181	2.7-9.4 cents
Public infrastructure and services	Public roads, parking funded by local governments	\$662-1,099	5.3-8.8 cents
Monetary externalities	External crash damages to vehicles, medical expenses, congestion.	\$423-780	3.4-6.2 cents
Nonmonetary externalities	Environmental damages, crash pain.	\$1,305-3,145	10.4-25.2 cents
<i>Totals</i>		<i>\$2,727-6,205</i>	<i>22-50 cents</i>

This table summarizes an estimate of motor vehicle indirect and external costs. (US 1991 Dollars)

Any incremental external costs of generated traffic should be included in project evaluations, “incremental” meaning the difference between the external costs of the generated travel and the external costs of alternative activities (NHI 1995). For diverted traffic this is the difference in external costs between the two trips. For induced travel this is the difference in external costs between the trip and any non-travel activity it replaces, which tends to be large since driving has greater external costs than most other common activities. Most generated traffic occurs under urban-peak travel conditions, when motor vehicle external costs are greatest, so incremental external costs tend to be high.

Incremental external costs depend on road system conditions and the type of generated traffic. Generated traffic often increases downstream congestion (for example, increasing capacity on a highway can add congestion on surface streets, particularly near on- and off-ramps). In some conditions adding capacity actually increases congestion by concentrating traffic on a few links in the network and by reducing travel alternatives, such as public transit (Armott and Small 1994). Air emission and accident rates per vehicle-mile may decline if traffic flows more freely, but these benefits decline over time and are usually offset as generated traffic leads to renewed congestion and increased vehicle travel (TRB 1995; Shefer and Rietvald 1997; Cassady, Dutzik and Figdor 2004).

Table 4 compares how different types of generated traffic affect costs. All types reduce user travel time and vehicle costs. Diverted trips have minimal incremental costs. Longer trips have moderate incremental costs. Shifts from public transit to driving may also have moderate incremental costs, since transit service has significant externalities but also experiences economies of scale and positive land use impacts that are lost if demand declines (“Social Benefits of Public Transit,” VTPI 2001). Induced trips have the largest incremental costs, since they increase virtually all external costs. Longer and induced vehicle trips can lead to more automobile dependent transportation and land use over the long term. These costs are difficult to quantify but are probably significant (Newman and Kenworthy 1998; Burchell, et al 1998).

Table 4 Cost Impacts of Roadway Capacity Expansion

Costs Reduced	Costs Increased		
	Diverted Trips	Longer Trips	Induced Trips
Travel Time	Downstream congestion	Downstream congestion	Downstream congestion
Vehicle Operating Costs		Road facilities	Road facilities
Per-mile crash rates (if implemented in conjunction with roadway design improvements, but these are often offset if traffic speeds increase).		Traffic services	Parking facilities
		Per-capita crash rates	Traffic services
		Pollution emissions	Per-capita crash rates
		Noise	Pollution emissions
Per-mile pollution emissions (if congestion declines, but these may be offset if traffic speeds increase).		Resource externalities	Noise
		Land use impacts	Resource externalities
		Barrier effect	Land use impacts
			Barrier effect
		Transit efficiency	
		Equity	
		Vehicle ownership costs	

Increased roadway capacity tends to reduce two costs, but increases others.

The incremental external costs of road capacity expansion tend to increase over time as the total amount of generated traffic grows and an increasing portion consists of induced motor vehicle travel and trips.

Table 5 proposes default estimates of the incremental external costs of different types of generated traffic. These values can be adjusted to reflect specific conditions and analysis needs.

Table 5 Estimated Incremental External Costs of Generated Traffic

Type	Description	Cost Per Mile
Time and route shift	Trips shifted from off-peak to peak, or from another route.	5 cents
Transit-to-Auto mode shift, and longer trips	Trips shifted from transit to driving alone, and increased automobile trip lengths.	15 cents
Induced vehicle trip	Additional motor vehicle trip, including travel shifted from walking, cycling and ridesharing.	30 cents.

This table indicates the estimated incremental costs of different types of generated traffic.

There is considerable discussion of the emission impacts of roadway expansion (TRB 1995). Although expanding highly congested roadways may reduce emission rates per vehicle-kilometer, expanding moderately congested roads may increase traffic speeds to levels (more than 80 kms/hr) that increase emission rates, and by inducing total vehicle travel tends to increase total emissions, particularly over the long run. According to a study by the Norwegian Centre for Transport Research (TØI 2009):

“Road construction, largely speaking, increases greenhouse gas emissions, mainly because an improved quality of the road network will increase the speed level, not the least in the interval where the marginal effect of speed on emissions is large (above 80km/hr). Emissions also rise due to increased volumes of traffic (each person traveling further and more often) and because the modal split changes in favor of the private car, at the expense of public transport and bicycling.”

Table 6 summarizes roadway improvement emission impacts, including effects on emission rates per vehicle mile, increases in total vehicle mileage, and emissions from road construction and maintenance activities.

Table 6 Roadway Expansion Greenhouse Gas Emission Impacts (TØI 2009)

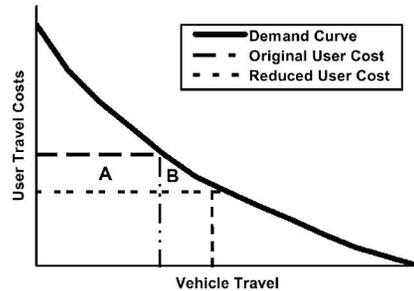
	General Estimates	Large Cities	Small Cities	Intercity Travel
Emission reductions per vehicle-kilometer due to improved and expanded roads.		Short term reductions. Stable or some increase over the long-term.	Depends on situation, ranging from no change to large increases.	Depends on situation. Emissions may decline or increase.
Increased vehicle mileage (induced vehicle travel), short term (under five years)	A 10% reduction in travel time increases traffic 3-5%	Significant emission growth	Moderate emission growth	Moderate emission growth
Increased vehicle mileage (induced travel), long term (more than five years)	A 10% reduction in travel time increases traffic 5-10%	Significant emission growth	Moderate emission growth	Moderate emission growth
Road construction and improvement activity	12 tonnes of CO ₂ equivalent for 2-lane roads and 21 tonnes for 4-lane roads.	Road construction emissions are relatively modest compared with traffic emissions.		
Roadway operation and maintenance activity	33 tonnes of CO ₂ equivalent for 2-lane roads and 52 tonnes for 4-lane roads.	Road operation and maintenance emissions are relatively modest compared with traffic emissions.		

This table summarizes roadway improvement emission impacts according to research by the Norwegian Centre for Transport Research.

Calculating Consumer Benefits

Generated traffic represents increased mobility, which provides consumer benefits. However, these benefits tend to be modest because generated traffic consists of marginal value trips, the trips that people are most willing to forego (Small 1998). To calculate these benefits economists use the *Rule of Half*, which states that the benefits of additional travel are worth half the per-trip saving to existing travelers, as illustrated in Figure 4 by the fact that B is a triangle rather than a rectangle (AASHTO 1977; Litman 2001a).

Figure 4 Vehicle Travel Demand Curve Illustrating the Rule-of-Half



Reduced user costs (downward shift on Y axis) increases vehicle travel (rightward shift on X axis). Rectangle A shows savings to existing trips. Triangle B shows generated travel benefits.

Because induced travel provides relatively small user benefits, and imposes external costs such as downstream congestion, parking costs, accident risk imposed on other road users, pollution emissions, sprawl and other environmental costs, the ratio of benefits to costs, and therefore total net benefits of travel, tend to decline as more travel is induced.

Failing to account for the full impacts of generated and induced travel tends to exaggerate the benefits of highway capacity expansion and undervalue alternatives such as transit improvements and pricing reforms (Romilly 2004). Some newer project evaluation models, such as the FHWA's SMITE and STEAM sketch plan programs, incorporate generated traffic effects including the Rule of Half and some externalities (FHWA 1997; FHWA 1998; DeCorla-Souza and Cohen 1998).

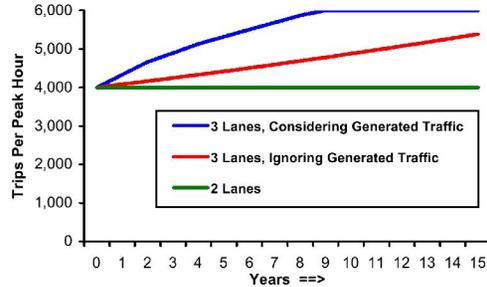
The benefits of increased mobility are often capitalized into land values. For example, a highway improvement can increase urban periphery real estate prices, or a highway offramp can increase nearby commercial land values (Moore and Thorsnes 1994). Because this increase in land values is an economic transfer (land sellers gain at the expense of land buyers), it is inappropriate to add increased real estate values and transport benefits, such as travel time savings (which represent true resource savings). This would double count benefits.

Example

A four-lane, 10-kilometer highway connects a city with nearby suburbs. The highway is congested 1,000 hours per year in each direction. Regional travel demand is predicted to grow at 2% per year. A proposal is made to expand the highway to six lanes, costing \$25 million in capital expenses and adding \$1 million in annual highway operating expenses.

Figure 5 illustrates predicted traffic volumes. Without the project peak-hour traffic is limited to 4,000 vehicles in each direction, the maximum capacity of the two-lane highway. If generated traffic is ignored the model predicts that traffic volumes will grow at a steady 2% per year if the project is implemented. If generated traffic is considered the model predicts faster growth, including the basic 2% growth plus additional growth due to generated traffic, until volumes level off at 6,000 vehicles per hour, the maximum capacity of three lanes.

Figure 5 Projected Traffic

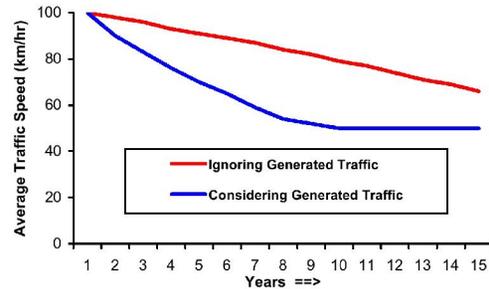


If generated traffic is ignored the model predicts that traffic volumes will grow at a steady 2% per year if the project is implemented. If generated traffic is considered the model predicts a higher initial growth rate, which eventually declines when the road once again reaches capacity and becomes congested. (Based on the "Moderate Latent Demand" curve from Figure 3)

The model divides generated traffic into diverted trips (changes in trip time, route and mode) and induced travel (increased trips and trip length), using the assumption that the first year's generated traffic represents diverted trips and later generated traffic represents induced travel. This simplification appears reasonable since diverted trips tend to occur in the short-term, while induced travel is associated with longer-term changes in consumer behavior and land use patterns.

Roadway volume to capacity ratios are used to calculate peak-period traffic speeds, which are then used to calculate travel time and vehicle operating cost savings. Congestion reduction benefits are predicted to be significantly greater if generated traffic is ignored, as illustrated in Figure 6.

Figure 6 Projected Average Traffic Speeds



Ignoring generated traffic exaggerates future traffic speeds and congestion reduction benefits.

Incremental external costs are assumed to average 10¢ per vehicle-km for diverted trips (shifts in time, route and mode) and 30¢ per vehicle-km for induced travel (longer and increased trips). User benefits of generated traffic are calculated using the Rule-of-Half.

Three cases were considered for sensitivity analysis. *Most Favorable* uses assumptions most favorable to the project, *Medium* uses values considered most likely, and *Least Favorable* uses values least favorable to the project. Table 7 summarizes the analysis.

Table 7 Analysis of Three Cases

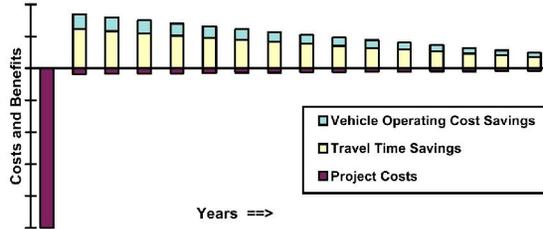
Data Input	Most Favorable	Medium	Least Favorable
Generated Traffic Growth Rate (from Figure 3)	L	M	H
Discount Rate	6%	6%	6%
Maximum Peak Vehicles Per Lane	2,200	2,000	1,800
Before Average Traffic Speed (km/hr)	40	50	60
After Average Traffic Speed (km/hr)	110	100	90
Value of Peak-Period Travel Time (per veh-hr)	\$12.00	\$8.00	\$6.00
Vehicle Operating Costs (per km)	\$0.15	\$0.12	\$0.10
Annual Lane Hours at Capacity Each Direction	1,200	1,000	800
Diverted Trip External Costs (per km)	\$0.00	\$0.10	\$0.15
Induced Travel External Costs (per km)	\$0.20	\$0.30	\$0.50
Net Present Value (millions)			
NPV Without Consideration of Generated Traffic	\$204.8	\$45.2	-\$9.8
NPV With Consideration of Generated Traffic	\$124.5	-\$32.1	-\$95.7
<i>Difference</i>	-\$80.3	-\$77.3	-\$85.8
Benefit/Cost Ratio			
Without Generated Traffic	6.90	2.30	0.72
With Generated Traffic	3.37	0.59	0.11

This table summarizes the assumptions used in this analysis.

The most favorable assumptions result in a positive B/C even when generated traffic is considered. The medium assumptions result in a positive B/C if generated traffic is ignored but a negative NPV if generated traffic is considered. The least favorable assumptions result in a negative B/C even when generated traffic is ignored. In each case, considering generated traffic has significant impacts on the results.

Figure 7 illustrates project benefits and costs based on “Medium” assumptions, ignoring generated traffic. This results in a positive NPV of \$45.2 million, implying that the project is economically worthwhile.

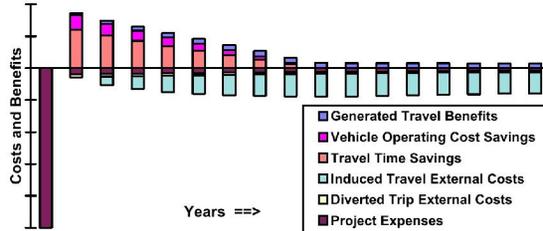
Figure 7 Estimated Costs and Benefits, Ignoring Generated Traffic



This figure illustrates annual benefits and costs when generated traffic is ignored, using “Medium” assumptions. Benefits are bars above the baseline, costs are bars below the baseline. Project expenses are the only cost category.

Figure 8 illustrates project evaluation when generated traffic is considered. Congestion reduction benefits decline, and additional external costs and consumer benefits are included. The NPV is -\$32.1 million, indicating the project is not worthwhile.

Figure 8 Estimated Costs and Benefits, Considering Generated Traffic



This figure illustrates benefits and costs when generated traffic is considered, using medium assumptions. Benefits are bars above the baseline, costs are bars below the baseline. It includes consumer benefits and external costs associated with generated traffic. Travel time and vehicle operating cost savings end after about 10 years, when traffic volumes per lane return to pre-project levels, resulting in no congestion reduction benefits after that time.

This analysis indicates how generated traffic can have significant impacts on project assessment. Ignoring generated traffic exaggerates the benefits of highway capacity expansion by overestimating congestion reduction benefits and ignoring incremental external costs from generated traffic. This tends to undervalue alternatives such as road pricing, TDM programs, other modes, and “do nothing” options.

Counter Arguments

“Widening roads to ease congestion is like trying to cure obesity by loosening your belt” Roy Kienitz, executive director of the Surface Transportation Policy Project

“Increasing highway capacity is equivalent to giving bigger shoes to growing children” Robert Dunphy of the Urban Land Institute

Some highway expansion advocates argue that generated traffic has minor implications for transport planning decisions. They argue that increased highway capacity contributes little to overall growth in vehicle travel compared with other factors such as increased population, employment and income (Heanue 1998; Sen 1998; Burt and Hoover 2006), that although new highways generate traffic, they still provide net economic benefits (ULI 1989), and that increasing roadway capacity does reduce congestion (TRIP 1999; Bayliss 2008).

These arguments ignore critical issues, and are often based on outdated data and inaccurate analysis. Overall travel trends indicate little about the cost effectiveness of particular policies and projects. For example, studies which indicate that, in the past, increased lane-miles caused minimal growth in vehicle travel (Burt and Hoover 2006), provide little guidance for future planning, since, in the past, much of the added highway lane-miles occurred on uncongested rural highways while most future highway expansion occurs on congested urban highways. Strategies that encourage more efficient use of existing capacity, such as commute trip reduction programs and road pricing, may provide greater social benefits, particularly considering all costs (Goodwin 1997).

Highway expansion advocates generally ignore or severely understate generated traffic and induced travel impacts. For example, Cox and Pisarski (2004) use a model that accounts for diverted traffic (trips shifted in time or route) but ignores shifts in mode, destination and trip frequency. Hartgen and Fields (2006) assume that generated traffic would fill just 15% of added roadway capacity, based on generated traffic rates during the 1960s and 1970s, which is unrealistically low when extremely congested roads are expanded. They ignore the incremental costs that result from induced vehicle travel, such as increased downstream traffic congestion, road and parking costs, accidents and pollution emissions. They claim that roadway capacity expansion reduces fuel consumption, pollution emissions and accidents, because they measure impacts per vehicle-mile and ignore increased vehicle miles. As a result they significantly exaggerate roadway expansion benefits and understate total costs.

Debates over generated traffic and its implications often reflect ideological perspectives concerning whether automobile travel (and therefore road capacity expansion) is “good” or “bad”. To an economist, such arguments are silly. Some automobile travel provides large net benefits (high user value, poor alternatives, low external costs), and some provides negative net benefits (low user value, good alternatives, and large external costs). The efficient solution to congestion is to use pricing or other incentives to test consumers’ willingness to pay for road space and capacity expansion.

If consumers only demand roadway improvements when they are shielded from the true costs, such projects are likely to be economically inefficient. Only if users are willing to pay the full incremental costs their vehicle use imposes can society be sure that increased road capacity and the additional vehicle travel that results provides net benefits. Travel demand predictions based on underpriced roads overestimate the economically optimal level of roadway investments and capacity expansion. Increasing capacity in such cases is more equivalent to loosening a belt than giving a growing child larger shoes (see quotes above), since the additional vehicle travel is a luxury and economically inefficient.

Some highway advocates suggest there are equity reasons to subsidize roadway capacity expansion, to allow lower-income households access to more desirable locations, but most benefits from increased roadway capacity are captured by middle- and upper-income households (Deakin, et al. 1996). Improving travel choices for non-drivers tends to have greater equity benefits than subsidizing additional highway capacity since physically and economically disadvantaged people often rely on alternative modes.

Although highway projects are often justified for the sake of economic development, highway capacity expansion now provides little net economic benefit (Boarnet 1997). An expert review concluded, "The available evidence does not support arguments that new transport investment in general has a major impact on economic growth in a country with an already well-developed infrastructure" (SACTRA 1997).

Alternative Transport Improvement Strategies

Since roadway capacity expansion provides smaller net benefits than is often recognized, due to the effects of generated traffic, other solutions to transportation problems may provide relatively more benefits. A “No Build” option may become more attractive since peak-period traffic volumes will simply level off without additional capacity. This can explain, for example, why urban commute travel times are virtually unchanged despite increases in traffic congestion, and why urban regions that have made major investments in highway capacity expansion have not experienced significant reductions in traffic congestion (Gordon and Richardson 1994; STPP 1998).

Consideration of generated traffic gives more value to transportation systems management and transportation demand management strategies that result in more efficient use of existing roadway capacity. These strategies cannot individually solve all transportation problems, but a package of them can, often with less costs and greater overall benefit than highway capacity expansion. Below are examples (VTPI 2001):

- Congestion pricing can provide travelers with an incentive to reduce their peak period trips and use travel alternatives, such as ridesharing and non-motorized transport.
- Commute trip reduction programs can provide a framework for encouraging commuters to drive less and rely more on travel alternatives.
- Land use management can increase access by bringing closer common destinations.
- Pedestrian and cycle improvements can increase mobility and access, and support other modes such as public transit (since transit users also depend on walking and cycling).
- Public transit service that offers door-to-door travel times and user costs that are competitive with driving can attract travelers from a parallel highway, limiting the magnitude of traffic congestion on that corridor.

Legal Issues

Environmental groups successfully sued the Illinois transportation agencies for failing to consider land use impacts and generated traffic in the Environmental Impact Statement (EIS) for I-355, a proposed highway extension outside the city of Chicago (Sierra Club 1997). The federal court concluded that the EIS was based on the “implausible” assumption that population in the rural areas would grow by the same amount with and without the tollroad, even though project was promoted as a way to stimulate growth. The court concluded that this circular reasoning afflicted the document’s core findings. The judge required the agencies to prepare studies identifying the amount of development the tollroad would cause, and compare this with alternatives. The Court’s order states:

Plaintiffs’ argument is persuasive. Highways create demand for travel and expansion by their very existence...Environmental laws are not arbitrary hoops through which government agencies must jump. The environmental regulations at issue in this case are designed to ensure that the public and government agencies are well informed about the environmental consequences of proposed actions. The environmental impact statements in this case fail in several significant respects to serve this purpose. (ELCP)

In 2008 the California Attorney General recognized that regional transportation plans must consider induced travel impacts when evaluating the climate change impacts of individual projects to meet California Environmental Quality Act (CEQA) requirements (Brown 2008). CEQA requires that “[e]ach public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.” The state Attorney General recognizes that transportation planning decisions, such as highway expansion projects, can have significant emission impacts due to induced vehicle travel.

Conclusions

Urban traffic congestion tends to maintain equilibrium. Congestion reaches a point at which it discourages additional peak-period trips. Increasing road capacity allows more vehicle travel to occur. In the short term this consists primarily of generated traffic: vehicle travel diverted from other times, modes, routes and destinations. Over the long run an increasing portion consists of induced vehicle travel, resulting in a total increase in regional VMT. This has several implications for transport planning:

- Ignoring generated traffic underestimates the magnitude of future traffic congestion problems, overestimates the congestion reduction benefits of increasing roadway capacity, and underestimates the benefits of alternative solutions to transportation problems.
- Induced travel increases many external costs. Over the long term it helps create more automobile dependent transportation systems and land use patterns.
- The mobility benefits of generated traffic are relatively small since they consist of marginal value trips. Much of the benefits are often capitalized into land values.

Ignoring generated traffic results in self-fulfilling *predict and provide* planning: Planners extrapolate traffic growth rates to predict that congestion will reach *gridlock* unless capacity expands. Adding capacity generates traffic, which leads to renewed congestion with higher traffic volumes, and more automobile oriented transport and land use patterns. This cycle continues until road capacity expansion costs become unacceptable.

The amount of traffic generated depends on specific conditions. Expanding highly congested roads with considerable latent demand tends to generate significant amounts of traffic, providing only temporary congestion reductions.

Generated traffic does not mean that roadway expansion provides no benefits and should never be implemented. However, ignoring generated traffic results in inaccurate forecasts of impacts and benefits. Road projects considered cost effective by conventional analysis may actually provide little long-term benefit to motorists and make society overall worse off due to generated traffic. Other strategies may be better overall. Another implication is that highway capacity expansion projects should incorporate strategies to avoid increasing external costs, such as more stringent vehicle emission regulations to avoid increasing pollution and land use regulations to limit sprawl.

Framing the Congestion Question

If you ask people, “Do you think that traffic congestion is a serious problem?” they frequently answer yes. If you ask, “Would you rather solve congestion problems by improving roads or by using alternatives such as congestion tolls and other TDM strategies?” a smaller majority would probably choose the road improvement option. This is how transport choices are generally framed.

But if you present the choices more realistically by asking, “Would you rather spend a lot of money to increase road capacity to achieve moderate and temporary congestion reductions and bear higher future costs from increased motor vehicle traffic, or implement other types of transportation improvements?” the preference for road building might disappear.

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Technical notes on 520 4-lane

Capacity Constraints on the Existing SR-520 Bridge

A Technical Memorandum

March 2010

Maurice B. Cooper, P.E.

There are many non-structural capacity-limiting constraints on freeway traffic throughput; these include (i) visibility limits due to precipitation, darkness and driving into direct sunlight (a particular problem on SR-520 because of its east-west alignment, which means that, at rush hour, half the traffic is usually driving directly into the sun), (ii) traffic mix, particularly the auto to truck ratio, and (iii) culturally conditioned driver behavior - for example, drivers in the U.S. are more inclined than those in Europe to be doing other things whilst driving.

There are also certain structural factors which limit traffic capacity, such as the physical condition of the pavement surface.

This memorandum is, however, limited to specific and unique features of the existing SR-520 bridge which cause it to operate at below its possible maximum. These are basically of three types:-

1) On and off-ramp design:

Both east and west end approaches to the bridge are severe bottlenecks.

On the east side of the lake, the problems start at the Bellevue Way on-ramp, where drivers have particular trouble with the weave across the HOV lanes to access the mainline, at a location where the roadway is curving and traffic slowing erratically because of the backup from the next on-ramp.

The next on-ramp is the access westbound from Medina at 84th Avenue Northeast. This on-ramp design is the worst in the 3-mile SR-520 bridge segment. In addition to the cross-HOV weave, there is an immediate and severe width constraint because of a solid bridge abutment, coupled with the visibility limitation imposed by the bridge abutment itself. The on-ramp leads to a freeway segment which, at this point, suffers from both unusually severe changes in vertical and horizontal alignment.

C-040-155

This comment (referenced as Appendix Q in the comment letter, but labeled Appendix J) is a duplicate of comments on pages 30 to 32 of the letter submitted by the Laurelhurst Community Club. Please see the responses to Comments C-031-062 through C-031-067.

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On the west end of the bridge the first problem is caused by the proximity of the merge between SOV and HOV traffic from Montlake Boulevard to the merge between this traffic and the freeway mainline.

The second problem is caused by the abruptness of the end of the on-ramp coming from Lake Washington Boulevard, where the at-grade, on-land portion of the roadway transitions instantaneously to the low-level, structural concrete viaduct portion of the bridge.

Off-ramp design for the SR-520 bridge was handled considerably better than on-ramp design. Neither off-ramps on the eastside, namely at 84th Avenue Northeast nor at Bellevue Way Northeast have significant impact on traffic flow. On the Westside, there is driver confusion because of the proximity of the Lake Washington Boulevard and the Montlake Boulevard exits, but a greater limitation is the frequent backup of traffic down from Montlake Boulevard caused by the equally frequent bascule bridge openings on Montlake Boulevard itself.

2) Lane and Shoulder Width:

Lane width is frequently cited as a traffic-capacity limitation in the literature. On the SR-520 bridge, lane width is adequate throughout. Shoulder width is, however, totally inadequate. This causes driver distraction because of fear of either touching the outside curb with a tire - curbs are not generally included in freeway design because of this issue, and certainly not adjacent to traffic lanes as they are on SR-520 or, in the worst case, scraping the side of the car on the inside concrete Jersey barrier.

3) Horizontal and Vertical Curvature

For the majority of the length of the SR-520 bridge, the roadway is totally straight. However the bridge curves both horizontally and vertically on the approach and departure to/from the western high-rise structure over the ship channel off the east shore of Madison Park. These curves are significantly sharper than modern freeway design standards. The fact that the curves are effectively superimposed yields a distinct roadway capacity limitation.

Typical freeway design does not have any of the above limitations.

Freeway capacity is rated by traffic flow in terms of the number of vehicles per lane per hour. Under normal driving conditions, and without any of the above three constraints, capacities can be expected to be in the range of 2,100 to 2,200 vehicles per lane per hour. The three

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conditions cited above are each approximately responsible for a reduction in capacity of 200 vehicles per lane per hour, with the bridge as constructed currently and normally operating at about 1,500 to 1,600 vehicles per lane per hour. Hence if any or all of the design constraints are removed the lane capacity may reasonably be expected to rise accordingly.

Bridge Re-Design Recommendations and Associated Traffic Capacity Gains:

The cost of re-building the bridge to remove the traffic-limiting constraints could be seen to be a constraint in itself. Hence the question becomes, in an engineering sense, what modifications are appropriate and sensible.

The horizontal and vertical curvature constraints are absolutely inherent in the bridge design and would require a major cost commitment to remove and hence, from an efficiency perspective, should probably be left alone.

The bridge approaches and on and off-ramp configurations are relatively simple to modify and should therefore be modified, in order to capture the available additional 200 vehicles per lane per hour capacity.

The shoulder width issue is more complex because of the design of the existing bridge pontoons. However a pragmatic re-design is possible, by removing the existing pedestrian walkway and lowering that section to roadway grade, and by removing the outermost roadway walls and attaching a new structural barrier to the outside walls of the pontoon box structure itself. This proposed modification would not yield the full gain in capacity which could be realized through full-width shoulders, but is likely to yield half of that capacity increase, i.e. approximately 100 vehicles per lane per hour.

In conclusion, it is readily possible, at modest expense, to increase the capacity of the existing SR-520 bridge by about 300 vehicles per lane per hour, or by some 20 per cent.

For comparison purposes, a totally new, 4-lane bridge, in a straight alignment, with full shoulders, and re-designed on and off-ramps, can be expected to have an increased capacity of 40 percent.



Recommendations Report

Submitted to
Governor Chris Gregoire
and
Washington State Legislature

December 2009

SR 520 Legislative Workgroup

C-040-156

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

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Appendix



SR 520 Legislative Workgroup Recommendations Report

This document was prepared in response to Engrossed Substitute House Bill (ESHB) 2211. Section 3 of this bill created the SR 520 Legislative Workgroup to develop recommendations related to design options and financing strategy for the SR 520 corridor. Their report was due to the Governor and Legislature by January 1, 2010.

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I. Recommendations

A. Background

Passed in April 2009, Engrossed Substitute House Bill (ESHB) 2211 created the SR 520 Legislative Workgroup. The Workgroup consisted of all the legislators from the 43rd and 48th districts; two legislators from each of the 46th and 45th districts; the chairs of the legislative transportation committee; two legislators outside the SR 520 corridor on the joint transportation committee representing a legislative district outside the SR 520 corridor; the Secretary of the Washington State Department of Transportation; and the member of the transportation commission representing King County.

In July 2009, the SR 520 Legislative Workgroup (Workgroup) was formed with the following membership:

Westside Members	Eastside Members	Other Members
Representative Scott White 46 th District <i>Workgroup Co-Chair</i> Westside Subgroup Chair	Senator Rodney Tom, 48 th District <i>Workgroup Co-Chair</i>	Senator Mary Margaret Haugen, Chair, Senate Transportation Committee
Senator Ed Murray 43 rd District	Senator Eric Oemig 45 th District	Representative Judy Clibborn, Chair, House Transportation Committee
Senator Ken Jacobsen 46 th District	Representative Ross Hunter 48 th District	*Senator Dan Swecker Joint Transportation Committee
Representative Frank Chopp Speaker of the House 43 rd District	Representative Deborah Eddy 48 th District	Representative Dan Roach Joint Transportation Committee
Representative Jamie Pedersen, 43 rd District	*Representative Larry Springer 45 th District	Commissioner Richard Ford State Transportation Commission
		Secretary Paula Hammond Washington State Secretary of Transportation

*Also served on the Westside Subgroup.

B. Summary of Engrossed Substitute House Bill 2211 Requirements

ESHB 2211 directed the Workgroup to meet the following objectives:

- Σ Review and recommend a financing strategy, in conjunction with the Washington State Department of Transportation, to fund projects in the SR 520 corridor that reflects the design options recommended by the Workgroup. Base the financing strategy on a total cost of all the intended projects in the SR 520 corridor, not to exceed \$4.65 billion,
- Σ Recommend design options that provide for a full SR 520 corridor project that meets the needs of the region's transportation system while providing appropriate mitigation for the neighborhood and communities in the area directly impacted by the project;
- Σ Form a Westside subgroup to conduct a detailed review and make recommendations on design options on the west side of the corridor, which extends from the west end of the floating bridge to I-5. The subgroup shall consult with neighborhood and community groups impacted by the potential design options;



- Σ Consider forming an eastside subgroup to review current design options on the east side of the corridor, which extends from the east side of the floating bridge to SR 202;
- Σ Consult with the governor and legislators representing the primary users of SR 520; and
- Σ Present a final report with recommendations on financing and design options to the legislature and the governor by January 1, 2010. The recommendations will include the Supplemental Draft Environmental Impact Statement (SDEIS) process for the SR 520 corridor.

C. SR 520 Legislative Workgroup Recommendations

Draft Westside Design Recommendation

Sponsor: Senator Ken Jacobsen, State Senator, 46 th District Seconded: Representative Deborah Eddy, State Representative, 48 th District

A motion of the SR 520 Legislative Workgroup recommending a Westside Design solution to inform the selection of a preferred alternative in the Supplemental Draft Environmental Impact Statement for SR 520 Bridge Replacement and HOV Program.

Background

The SR 520 Legislative Workgroup was established in 2009 under ESHB 2211. The legislation directs the Workgroup to recommend design options that provide for a full SR 520 corridor project that meets the needs of the region's transportation system while providing appropriate mitigation for the neighborhood and communities in the area directly impacted by the project.

Further, it recommended that a west side subgroup be formed to conduct a detailed review and make recommendations on design options on the west side of the corridor, which extends from the west end of the floating bridge to I-5. It directed the subgroup to consult with neighborhood and community groups impacted by the potential design options.

Motion

The Legislative Workgroup recommends adoption of the A+ Option (see Section III, Design Recommendations), developed during the consultation with the communities during the Westside Subgroup process as the preferred alternative for the Westside design. This option is preferred for the following reasons:

- Σ It meets the purpose and need of the project and complies with statutory requirements to implement a six lane (four general purpose and two HOV lanes) bridge replacement project, and
- Σ It meets the transportation needs of the corridor with the least impact to the surrounding environment, and
- Σ It can be constructed within the \$4.65 billion financial threshold, and
- Σ The impacts are covered within the current Supplemental Draft Environmental Impact Statement, and
- Σ It meets the needs of transit providers within the SR 520 corridor and on local surface streets, and



- Σ It has broad based support from local communities including the University District Community Council, Ravenna Bryant, and Friends of Seattle's Olmsted Park and regional organizations including the University of Washington, Seattle Chamber, King County Metro, and the Eastside Transportation Partnership.

Motion Passed: 11-2
Opposed: Representative Frank Chopp; Representative Jamie Pedersen
Absent: Senator Ed Murray; Representative Dan Roach
Non Voting member: WSDOT Secretary Paula Hammond

Draft Financing Strategy

Sponsor: Representative Ross Hunter, State Representative, 48th District
Seconded: Representative Larry Springer, State Representative, 45th District

A motion of the SR 520 Legislative Workgroup recommending a financial strategy for funding the \$4.65 Billion SR 520 Bridge Replacement and HOV Program.

Background

The Legislature established the SR 520 Legislative Workgroup in 2009 under ESHB 2211. The workgroup must review and recommend a financing strategy, in conjunction with the department, to fund the projects in the SR 520 corridor that reflect the design options recommended by the workgroup. The financing strategy must be based on a total cost of all the intended projects in the SR 520 corridor of no more than \$4.65 billion.

Motion

The Legislative Workgroup recommends to the governor and legislature a financing strategy that includes:

- Σ Use of the base funding previously identified, including early tolling of SR520 per Scenario 7, and
- Σ The creation of, and early tolling of HOT lanes on I-90 as soon as is practicable, and
- Σ The remaining gap to be filled by new FEDERAL or STATE revenue, to be identified in the next year or two, and
- Σ IF THAT DOESN'T HAPPEN, THEN general tolling of I-90 to fill the gap starting no sooner than 2014.

The group also recommends the pursuit of cost savings by further refinement of cost estimates and design.

Motion Passed: 12-0
Absent: Senator Ed Murray; Representative Frank Chopp; Representative Dan Roach
Non Voting member: WSDOT Secretary Paula Hammond

D. Minority Statement

Sponsor: Speaker Frank Chopp, State Representative 43rd District
Sponsor: Jaime Pedersen, State Representative, 43rd District

We do not support the recommendations on the design nor the financing strategy for SR 520. We feel it is necessary to issue this statement because the recommendations do not accomplish the goal of maximizing the region's transportation and transit systems in a manner that adequately addresses the



concerns of the communities most directly impacted by the project. Further, the deadlines set for the completion of the supplemental draft environmental impact statement and the 2014 bridge opening are artificial and do not encourage resolution of the issue. Absent a commitment to engage in genuine discussion for a more viable option, we recommend that the Washington State Department of Transportation (WSDOT) address the immediate safety concerns on the existing bridge and work with the affected neighborhood communities and the City of Seattle to find a long term solution that better serves the region.

Since 2007 we have been negotiating in good faith to make significant investments for a bridge project that—in addition to addressing safety concerns and increasing capacity—would create effective connections for bus rapid transit to the light rail station at the University of Washington. The design option recommended by the Workgroup does not accomplish this goal. Option A+ depends on a second bascule drawbridge crossing the Montlake Cut to provide transit connection to Montlake Boulevard from the SR 520 corridor. Dependence on a drawbridge that is subject to unpredictable openings for up to 18 hours a day interrupts the flow of traffic and can hardly be considered an "effective connection" as required by RCW 47.01.408. To be effective, a transit solution must minimize delays and maximize connectivity. Option A+ does neither. Rather it compounds the problem by causing additional damage to the neighborhoods of our district.

In addition to our concerns about transit, we will point out that none of the options reviewed by the Workgroup can be completely funded under the Workgroup's recommended financing strategy. This strategy is based on the hope that state and federal funds will materialize and also assumes that the Legislature will vote to authorize high tolls on both SR 520 and Interstate 90. Even with high tolling, financing for option A+ falls short, when the total cost of the project (construction and interest cost on bonds) are taken into account. A complete and realistic financing plan will take time. Therefore, there is no need to rush and move forward on a flawed design option based on artificial deadlines set by WSDOT.

Finally, we are disappointed that the Workgroup missed the opportunity to reach a solution for SR 520 that is right for the region and respectful of those directly impacted by the project. The residents of the communities we represent see the traffic jams every day. They are the ones who will live with years of construction. Option A+ will not alleviate these concerns; rather it will bring adverse traffic, noise, and environmental issues to the area. We can and should do better.

On behalf of the communities in our district we state our strong opposition to Option A+ and recommend that the immediate focus be placed on addressing the safety concerns via retrofit or rebuild of the existing four-lane bridge from Madison Park to I-5. This can be done for less cost and similar timing as the group's recommended option. We will continue to work with the State, the City of Seattle and the Governor to move forward on a final design that best ensures safety, neighborhood protections, and transit integration.

We will provide additional information and materials to support our position.

E. Why Now? SR 520 Program Schedule and Construction

Background

Since WSDOT published the Draft EIS for the SR 520 Bridge Replacement and HOV Project in August 2006, a number of circumstances have changed. One key change is the 2007 legislation that established the Westside mediation process (ESSB 6099) and the mediation group's development of three new 6-lane design options for the Seattle portion of SR 520.



WSDOT decided to prepare an SDEIS to allow the mediation designs, which are substantially different from those studied in the Draft EIS, to be evaluated fully before a decision is made on a preferred alternative. The project limits of the SDEIS are set at I-5 on the west and Evergreen Point Road on the east. The Evergreen Point Floating Bridge is included within these project limits.

In addition to the designs that resulted from mediation, the SDEIS contains additional detail and analysis—including information on construction impacts, mitigation measures, and transit operations—that was requested in public and agency comments on the Draft EIS. Including this information in the SDEIS allows agencies, tribes, and the public to review and comment on it prior to a final decision.

Legislative Workgroup

The Workgroup was established to develop recommendations to the legislature and governor on the Westside design options and to develop a program financing strategy. The design option recommendations will be considered as input into the SDEIS process.

The Workgroup has received extensive input from mediation participants, permitting agencies, transit agencies, local jurisdictions and other local stakeholders about ideas for modifying the mediation design options. These ideas were intended to reduce costs and/or to better achieve local interests, goals and other project objectives. WSDOT has assisted with layout of the new concepts, but has done only minimal engineering design on them. These revisions are more fully described in Chapter III, Design Recommendations. These revisions generally included:

- ∑ Modifying Option A to increase mobility by adding an eastbound HOV direct-access on-ramp from Montlake Boulevard, adding a Lake Washington Boulevard eastbound on-ramp and westbound off-ramp, and using the Option L roadway profile for improved stormwater management.
- ∑ Revising Option K to develop a new Option M, which would keep a modified single-point urban interchange (SPUI), add ramps, and replace the sequential excavation method tunnel with an immersed tube tunnel that would be built by excavating across the Montlake Cut rather than tunneling below it.

Another key change that has taken place since publication of the Draft EIS is the development of a new project that would build pontoons to be ready to more quickly replace the Evergreen Point Bridge should catastrophic failure occur. The SR 520 Pontoon Construction Project would construct new pontoons that would be used to restore the existing traffic capacity of the Evergreen Point Bridge in the event of a catastrophic failure. WSDOT is preparing an EIS to evaluate the effects of building these pontoons and storing them until they are needed. These pontoons cannot be transported and assembled on the lake until either 1) a catastrophic failure occurs or 2) a decision is reached as part of the I-5 to Medina: Bridge Replacement and HOV Project. Having pontoons ready for such a catastrophic failure would allow the bridge to be restored several years faster than if the pontoons were constructed in response to a disaster. This would, in turn, reduce adverse effects on traffic and the regional economy. Two possible pontoon construction sites in Grays Harbor are being analyzed in the EIS.

Maintaining the schedule of the SDEIS is critical to maintaining the schedule to replace the floating bridge portion of the corridor. In January 2008, Governor Gregoire directed WSDOT staff to develop an accelerated plan and schedule to replace the vulnerable SR 520 structures. That resulted in a letter to the legislature from the governor in March 2008 indicating the need to move forward more quickly and outlining how that would be achieved by opening the new bridge to drivers in 2014. That letter supported legislative action that occurred in 2008 to move the project forward. Move forward with



construction of the bridge replacement is tied to the completion of the SDEIS process on the I-5 to Medina segment of the corridor. As a result, in order to meet the 2014 schedule a preferred alternative must be selected by spring 2010 to complete the environmental process and begin construction by 2012.

The graphic on page 11 outlines the schedule for the various projects that make up the SR 520 Bridge Replacement and HOV Program. The critical path for work continuing across Lake Washington is the I-5 to Medina: Bridge Replacement and HOV Project.

F. Next Steps

The National Environmental Policy Act (NEPA) allows lead agencies to identify a preferred alternative at the Draft EIS stage or to wait until the Final EIS is published. WSDOT has designated the 6-Lane Alternative as the agency's preferred alternative. However, a preferred design option for the Westside interchange has not yet been identified. The preferred option will not be identified until the Final EIS, after agencies and the public have had an opportunity to comment on the choices and the legislative work group has released its findings.

After publication of the SDEIS, a Final EIS and Record of Decision (ROD) will be prepared to:

- ∑ Respond to comments received on both the Draft EIS and SDEIS
- ∑ Identify a preferred alternative
- ∑ Provide additional detail on mitigation measures and commitments that would be incorporated into project construction and operation

Preferred Alternative

Based on the current schedule, the co-lead agencies expect to identify a preferred design option for the SR 520 project in early 2010.

The preferred design option may be one of those evaluated in the SDEIS, or it may be a minor variation on, or combination of, the existing options. Should any new design variations with significantly greater environmental effects be proposed, they would likely need to be evaluated in another supplemental environmental document. This would change and extend the project schedule.

When the Workgroup's deliberations began, WSDOT was already well underway in its NEPA evaluation of Options A, K, and L. Since designs for the modified options have not been fully developed, it is difficult to say exactly how their environmental effects would compare with those of the original design options. If a new or "hybrid" design option were chosen as an outcome of the Workgroup process, WSDOT would reevaluate the SDEIS environmental analysis after publication to determine whether its impacts are within the range already identified. If the changes are within the range of the impacts already disclosed they would simply be described in the Final EIS. However, if the changes resulted in new, substantive impacts that had not been previously evaluated, additional supplemental analysis would be required.

Preliminary analysis of Option M suggests more time would be necessary to address the environmental impacts of this option. The Independent Cost Expert Review Panel's report states that, "Nonetheless, because the Montlake Cut is an environmentally sensitive area, we believe the permitting of Option M's wetlands impacts will be very risky and very costly to mitigate. We also note that Option M's construction impacts do not seem to have been studied in any of the existing SEPA or NEPA documents, so adopting Option M would require an immediate six-month delay to revise the



environmental documents. And we believe there would be a high likelihood of a much longer delay (12 to 24 months) in order to negotiate the permitting issue with the US Army Corps of Engineers.”

Final EIS and ROD

When the Final EIS has been issued, FHWA will prepare a Record of Decision, which documents the course of action it has decided upon as the federal lead agency. It will identify the selected alternative, explain the alternatives considered, and specify an “environmentally preferable alternative.” It will also explain how the lead agencies plan to implement mitigation measures and conservation actions in compliance with NEPA and other laws.

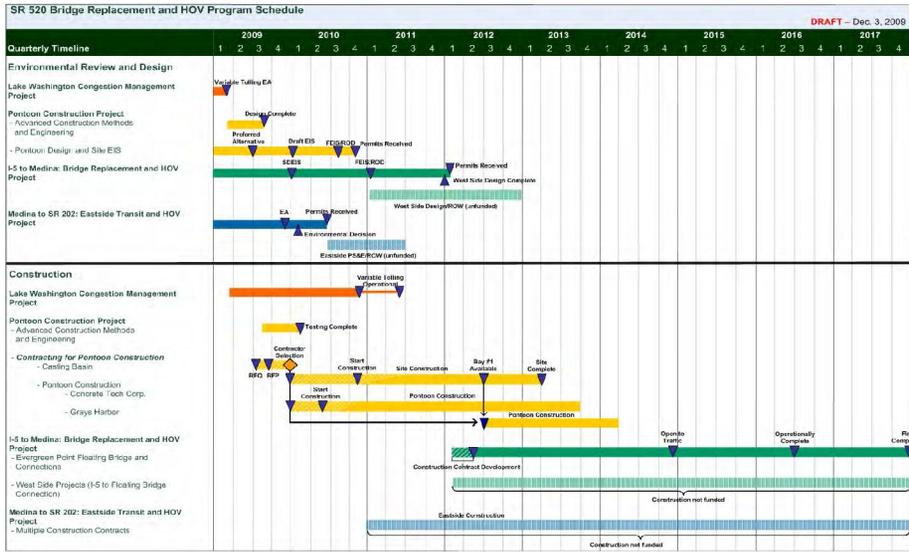
The ROD is the conclusion of the NEPA process and signals the beginning of project implementation. WSDOT will further develop the engineering design for the project, including additional detail on project phasing, construction staging, and construction techniques. Having a preferred design option will allow WSDOT to develop more specific designs for mitigation measures, which will be documented in project permit applications. These designs will be prepared by WSDOT and FHWA, in cooperation with the affected jurisdictions and resource agencies.

Financing

With the completion of the environmental documents the project will be ready to move ahead. Some funding is currently available to begin that work. However, in order to continue progress towards construction on the current timeline, additional funding will be necessary. As the schedule on page 9 notes, the ROD is expected in early 2011 on the I-5 to Medina segment. Full funding of this section is needed at that time to move forward with the floating bridge replacement and final design and phased construction of the 6 lane corridor.









II. Process

The Workgroup held nine meetings – six meetings with the full Workgroup, including two working sessions; and three meetings with the Westside Subgroup. In addition, two public meetings were held. A community forum was held in Bellevue, sponsored by Representative Eddy, at the mid-point in the process, and a Town Hall public meeting held in the University District to solicit public comments on the draft recommendations. The Workgroup held their initial meeting in July 2009 to elect co-chairs for the Workgroup, review a work plan, and set operating rules.

A copy of the approved Rules and Operating Procedures is included in the Appendix. The graphic on page 17 summarizes Workgroup’s work plan and the public outreach that was conducted as part of the process.

A. What did the Workgroup Hear?

The co-chairs recognized that there were multiple stakeholder perspectives and interests held by interest groups and the neighborhoods related to improving the SR 520 corridor. They believed it was critical to have a balanced and open process to allow all comments and opinions to be heard and that it was time to make the decisions necessary to move the project forward. “Doing nothing is not an option,” and a commitment to meeting the goals of the legislation was paramount.

As a result, the work plan was designed to bring forward the different perspectives and interests throughout the corridor. Below is a summary of the groups that provided input to the Workgroup.

Neighborhoods

The Workgroup engaged the community and neighborhood advocates involved in the development of solutions for the Westside design. This included neighborhoods immediately adjacent to the SR 520 corridor as well as communities to the north and south that rely on access to and from SR 520. The advocates were afforded opportunities to present their priorities and goals to the Westside Subgroup and the full Workgroup. All the advocates emphasized the importance of meeting the local and regional transportation needs of the area by providing transit accessibility and reliability. Each Westside design option contained different elements to meet the various constituent and community concerns, but all recognized the need for increased mobility in the corridor and surrounding areas. These conversations led the Workgroup to direct WSDOT staff to work with the proponent groups to refine their options to address the goals of the Workgroup in identifying a design that fit within the \$4.65 billion cap.

WSDOT met with the Option K proponents five times and these discussions resulted in Option M and met with the A and L proponents twice to refine Option A and L to the Option A+. These options are more fully described in Chapter III, Design Recommendations.

Resource and Permitting Agencies

On September 22, 2009, the full Workgroup heard from nine agencies with jurisdiction in the SR 520 corridor. These included:

- Σ Federal Highway Administration
- Σ US Environmental Protection Agency
- Σ US Army Corps of Engineers
- Σ National Marine Fisheries Service
- Σ US Fish and Wildlife Service



- Σ Washington Department of Ecology
- Σ Washington State Recreation and Conservation Office
- Σ Washington Department of Fish and Wildlife
- Σ Washington Department of Archaeology and Historic Preservation

Each agency director or manager provided an overview of their agency's responsibility for the resources the project would affect. The area surrounding the SR 520 corridor is rich in natural resources, many of which are protected through federal and state law. The laws and policies of all the resource agencies require a project design to first avoid, then to minimize, and lastly to mitigate impacts on environmental resources. Of particular note are the numbers of regulations over the aquatic environment involving fish, fish habitat, and wetlands. The agencies with built environment responsibilities described their historic, cultural, and park regulations.

Many of the agencies stated that, based on their current understanding of the design options, Option A appeared to have the least impact on the resources within their jurisdiction. The US Corps of Engineers highlighted that the in-water filling of aquatic resources associated with Option K would render that option highly unlikely to be permitted, given that other available options would avoid impacts.

Representatives from the federal agencies (US EPA, US Corps of Engineers, and the Services) explained the connection between their permit processes and Tribal Government input. Tribal interests in the project area include treaty rights to harvest fish in usual and accustomed fishing areas; in addition, portions of the project have cultural significance, particularly Foster Island.

Transit

Many references are built into the legislation regarding transit accommodation throughout the corridor. There is an interest to build an effective connection with the new Sound Transit light rail station at the University of Washington and in the future to not preclude the addition of high capacity transit or light rail in the corridor. These elements have been covered in the following legislation and documentation.

RCW 47.01.408

"(1) The state route number 520 bridge replacement and HOV project shall be designed to provide six total lanes, with two lanes that are for transit and high-occupancy vehicle travel, and four general purpose lanes. (2) The state route number 520 bridge replacement and HOV project shall be designed to accommodate effective connections for transit, including high capacity transit, to the light rail station at the University of Washington."

RCW 47.01.405

". . . The state must take the necessary steps to move forward with a state route number 520 bridge replacement project design that provides six total lanes, with four general purpose lanes and two lanes that are for high occupancy vehicle travel that could also accommodate high capacity transportation, and the bridge shall also be designed to accommodate light rail in the future. High occupancy vehicle lanes in the state route 520 corridor must also be able to support a bus rapid transit system."

RCW 47.01.410

"As part of the state route number 520 bridge replacement and HOV project, the governor's office shall work with the department, sound transit, King county metro, and the University of Washington, to plan for high capacity transportation in the state route number 520 corridor. The



parties shall jointly develop a multimodal transportation plan that ensures the effective and efficient coordination of bus services and light rail services throughout the state route number 520 corridor. The plan shall include alternatives for a multimodal transit station that serves the state route number 520-Montlake interchange vicinity, and mitigation of impacts on affected parties. The high capacity transportation planning work must be closely coordinated with the state route number 520 bridge replacement and HOV project's environmental planning process, and must be completed within the current funding for the project. A draft plan must be submitted to the governor and the joint transportation committee by October 1, 2007. A final plan must be submitted to the governor and the joint transportation committee by December 2008."

In a letter from Secretary Paula Hammond to Governor Chris Gregoire in February 2008, WSDOT confirmed that the design of lids and tunnels east of Montlake Boulevard will accommodate efficient and effective bus rapid transit in the SR 520 corridor and will not preclude opportunities for transit in the future.

Sound Transit and King County Metro Transit presented several times to voice their needs and concerns. It was noted that approximately 60% of the transit riders in the area use local service provided by King County on surface streets. This means that congestion on Montlake Boulevard is a concern for providing effective transit service. In addition, funding for on-going operations will also be needed to address the added service required from the removal of the Montlake Flyer stop.

Other Stakeholders

The Workgroup also heard from other stakeholders in the area including:

- Σ Mayor of Bellevue, Grant Degginger
- Σ Seattle City Council President, Richard Conlin
- Σ US Coast Guard – regarding bridge opening restrictions
- Σ University of Washington School of Forest Resources and Seattle Parks Department – regarding management of the Arboretum collection
- Σ University of Washington

Finance

The Workgroup identified and researched various funding options for the program. They also reviewed the current state revenues and tolling funding already authorized and how it was being used, including looking at the timing of when funding would be necessary to continue moving the project forward. Starting on October 20, 2009, the Workgroup heard about:

- Σ Federal reauthorization including TIGER Grant requests
- Σ State Legislature's Joint Transportation Committee funding study
- Σ Tolling options
- Σ Local and regional funding options including Transportation Benefit District and Regional Transportation Improvement District options

Independent Cost Expert Review Panel

The Workgroup heard from an independent cost expert review panel (Cost ERP) led by Don Forbes, former Secretary of the Oregon State Department of Transportation, and made up of geotechnical, environmental mitigation, cost estimating, tunnel construction and mega project management



experts. The Workgroup directed the panel to review the methodology used to produce the cost estimates released by WSDOT in November 2008.

A summary of the review is included in Chapter 3, Design Recommendations. The panel stated that the WSDOT cost estimation process is “well managed, with a good rationale” for the development of costs. They identified areas for further investigation to reduce costs in all alternatives and noted there were areas where costs may need to be increased.

In the Phase I review there were several risks identified with Options K and L. As a result the proponent groups identified suggested changes that led to the creation of Options A+ and M. The Workgroup requested that the panel review the preliminary cost estimate for these options as well. A summary of the Cost ERP findings is contained in Chapter III, Design Recommendations.

WSDOT Support

WSDOT staff supported the Workgroup throughout the process in the following ways:

- Σ Met with and provided technical assistance to the proponent groups.
- Σ Provided data for and supported the independent cost expert review panel.
- Σ Presented the Workgroup with information and answered questions regarding the program schedule, environmental and operations analysis, and design elements of the Options A, K, L, A+ and M, tolling and funding.
- Σ Participated in the mid-process Eastside Town Hall meeting, Seattle City Council Committee of the Whole briefing and Workgroup Town Hall meeting.
- Σ Responded to questions and data requests submitted to the Workgroup e-mail.

The technical information related to the design and the impacts for each option is summarized in the Comparison of SR 520 Westside Options tables on pages 18–21. These were provided to the Workgroup in order to compare information between options more easily.



COMPARISON OF SR 520 WESTSIDE OPTIONS: Cost and Design

Sheet 1 of 3

	OPTION A	OPTION K	OPTION L	A+ HYBRID	OPTION M
Total Program cost	\$4,526B - \$4,602B	\$6,574B - \$6,672B	\$5,066B - \$5,146B	\$4,433B - \$4,631B*	\$5,892B*
West side	\$2,022B - \$2,298B	\$4,070B - \$4,168B	\$2,562B - \$2,642B	\$2,156B*	\$3,308B*
I-5	\$322M	\$322M	\$322M	\$322M	\$322M
Portage Bay Bridge	\$482M	\$414M	\$426M	\$375M - \$475M	\$446M
Montlake	\$442M	\$2,346B	\$701M	\$446M	\$1,600B
West approach	\$772M	\$958M	\$1,115B	\$594M	\$762M
DESIGN					
Common to all Options	<ul style="list-style-type: none"> Lids at I-5 and 10th Avenue and Dumas Drive. A direct access HOV ramp to west from I-5. The SR 520 and I-5 interchange ramps would be reconstructed with generally the same ramp configuration as the ramps for the existing interchange. Removal of the Montlake Freeway Transit Station and relocated function. Six-lane corridor with a 4-2 configuration (one HOV and two general-purpose lanes in each direction) Lid in the Montlake area. 				
Portage Bay Bridge	<ul style="list-style-type: none"> Replace with a seven-lane bridge (110 feet wide). 	<ul style="list-style-type: none"> Replace with a six-lane bridge (100 feet wide). 	<ul style="list-style-type: none"> Replace with a six-lane bridge (100 feet wide). 	<ul style="list-style-type: none"> Replace with a seven-lane bridge (110 feet wide). 	<ul style="list-style-type: none"> Replace with a six-lane bridge (100 feet wide).
Montlake Interchange	<ul style="list-style-type: none"> The interchange would remain in the same location as today. A new bascule bridge would be constructed over the Montlake Cut. Westbound transit off-ramp to Montlake Boulevard. 	<ul style="list-style-type: none"> A new depressed interchange would be constructed to the east of Montlake Boulevard. Ramps would be constructed to the north through a sequential excavation method tunnel under the Montlake Cut and to the south near the Arboretum. Direct HOV access ramps to and from the east on SR 520. 	<ul style="list-style-type: none"> A new elevated interchange would be constructed to the east of Montlake Boulevard. Ramps would be constructed to the north across a new bascule bridge over the Montlake Cut and to the south near the Arboretum. Direct HOV access ramps to and from the east on SR 520. 	<ul style="list-style-type: none"> The interchange would remain in the same location as today. A new bascule bridge would be constructed over the Montlake Cut. Direct access ramps to and from the east on SR 520. 	<ul style="list-style-type: none"> Interchange with additional ramp connections to Montlake Boulevard and Lake Washington Boulevard would be constructed to the east (IE3). Immersed tube tunnel concept under Montlake Cut. Number of lanes on ramps at interchange with SR 520 (TB0). Configuration of the Montlake Boulevard and Pacific Street Intersection to improve local congestion (TB0).
West Approach	<ul style="list-style-type: none"> The bridge structure would be wider and higher over Foster Island than today. Between Foster Island and the floating bridge, the roadway is low and flat resulting in less than desirable stormwater treatment. 	<ul style="list-style-type: none"> The bridge structure would be wider and the highway would be under a lid at Foster Island. The tunnel approach ramps would require fill into Union Bay (cost section). 	<ul style="list-style-type: none"> The bridge structure would be wider and higher over Foster Island than today. The slope of the bridge would have a gradual and constant slope to allow stormwater to flow to land. 	<ul style="list-style-type: none"> Ramp connection to Lake Washington Boulevard (TB0). The bridge structure would be wider and higher over Foster Island than today. The slope of the bridge would have a gradual and constant slope to allow stormwater to flow to land. 	<ul style="list-style-type: none"> Pedestrian connection over SR 520 at Foster Island (TB0). Height of the bridge and the navigation channel clearances (TB0).
NOTES					



COMPARISON OF SR 520 WESTSIDE OPTIONS: Traffic Operations

Sheet 2 of 3

	OPTION A	OPTION K	OPTION L	A+ HYBRID	OPTION M
TRAFFIC OPERATIONS					
Common to all options	<ul style="list-style-type: none"> • Six-lane alternative provides a travel time benefit for transit and HOV. • Added shoulder width improves corridor safety and reliability. • Removal of the Montlake Freeway Transit Station and relocate function. 		<ul style="list-style-type: none"> • 50 percent of transit riders are using the local service. • Transfer connectors between the transit service and the University Link Station is the same for all options. • Montlake Bridge openings last an average of five minutes during the off-peak hours. 		
Local	<ul style="list-style-type: none"> • Improves overall local traffic operations compared to No Build. • Lowest volumes in the Arboretum. • Highest diversion to other neighborhoods. 	<ul style="list-style-type: none"> • Improves overall local traffic operations compared to No Build. • Traffic volumes increase through the Arboretum compared to No Build. • Provides full access to SR 520 from the north and south of Montlake Cut. 	<ul style="list-style-type: none"> • Improves overall local traffic operations compared to No Build. 	<ul style="list-style-type: none"> • Improves overall local traffic operations compared to No Build. • Traffic volumes through the Arboretum are similar to No Build. 	<ul style="list-style-type: none"> • Pending modeling, assumed to improve overall local traffic operations similar to Option K. • Traffic volumes increase through the Arboretum compared to No Build.
Transit	<ul style="list-style-type: none"> • Drawbridge openings affect SR 520 buses and the local transit service during off-peak hours. • Improved local transit times over No Build. 	<ul style="list-style-type: none"> • SR 520 buses bypass the drawbridge openings during the off-peak hours. • Local bus service adversely affected by increased local congestion. 	<ul style="list-style-type: none"> • SR 520 buses use new drawbridge thus slightly reducing travel times during the off-peak hours. • Local bus service adversely affected by increased local congestion. 	<ul style="list-style-type: none"> • Drawbridge openings affect SR 520 buses and the local bus service during off-peak hours. • Preferred option by King County Metro and University of Washington. 	<ul style="list-style-type: none"> • SR 520 buses bypass the drawbridge openings during the off-peak hours. • Transit shares ramps with general- purpose traffic to enter and exit SR 520.
Construction	<ul style="list-style-type: none"> • Requires capacity improvements on Montlake to unweave to the south. • Lowest number of construction truck trips. 	<ul style="list-style-type: none"> • Requires capacity improvements on Montlake to unweave to the south. • Highest number of truck trips compared to all options. • Closes NE Pacific Street during construction. • Redirects traffic to Pacific Place. • High level of construction delay. • Removes bus layover space during construction. 	<ul style="list-style-type: none"> • Requires capacity improvements on Montlake to unweave to the south. • Highest number of truck trips compared to all options. • Closes Pacific Street intersection during construction. • Redirects traffic to Pacific Place. • High level of construction delay. • Removes bus layover space during construction. 	<ul style="list-style-type: none"> • Low level of construction truck trips. 	<ul style="list-style-type: none"> • Similar to Option K. • Medium level of construction truck trips.

NOTES

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COMPARISON OF SR 520 WESTSIDE OPTIONS: Environmental

	OPTION A	OPTION K	OPTION L	A+ HYBRID	OPTION M
	ENVIRONMENTAL				
Impacts covered in SDEIS?	Yes	Yes	Yes	Yes	• Will require additional supplemental analysis of the immersed tube tunnel and traffic operations.
Construction Impacts	<ul style="list-style-type: none"> • In-water construction and work bridges would affect aquatic resources and wetlands. • Access disruptions to parks and trails. • Noise impacts on neighborhoods adjacent to the alignment (including pile driving). • Increased traffic congestion from haul and detour routes. 	<ul style="list-style-type: none"> • In-water construction and work bridges would affect aquatic resources and wetlands. • Access disruptions to parks and trails. • Noise impacts on neighborhoods adjacent to the alignment (including pile driving). • Increased traffic congestion from haul and detour routes. • Additional disruption and noise in East Montlake/MCJury Parks and along west shore of Union Bay due to construction of boat section and depressed interchange. 	<ul style="list-style-type: none"> • In-water construction and work bridges would affect aquatic resources and wetlands. • Access disruptions to parks and trails. • Noise impacts on neighborhoods adjacent to the alignment (including pile driving). • Increased traffic congestion from haul and detour routes. • Would not include boat section and depressed interchange. 	<ul style="list-style-type: none"> • In-water construction and work bridges would affect aquatic resources and wetlands. • Access disruptions to parks and trails. • Noise impacts on neighborhoods adjacent to the alignment (including pile driving). • Increased traffic congestion from haul and detour routes. 	<ul style="list-style-type: none"> • Effects have not been analyzed. • Option requires in-water dredging for open-cut trench across Montlake Cut and resulting effects on tribal treaty fishing.
Permanent Impacts	<ul style="list-style-type: none"> • Would displace three residences and the Museum of History and Industry in Seattle. • Would displace part of National Oceanic and Atmospheric Administration facilities. • Fill 0.1 acres of wetlands. • Shade 3.2 acres of wetlands. • Fill 0.5 acres of open water. • 5.8 acres of park land converted to right-of-way. 	<ul style="list-style-type: none"> • Would displace one residence and the Museum of History and Industry. • Fill 1.8 acres of wetlands. • Shade 2.9 acres of wetlands. • Fill 2.7 acres of open water. • 7.6 acres of park land converted to right-of-way. 	<ul style="list-style-type: none"> • Would displace one residence and the Museum of History and Industry in Seattle. • Fill 0.3 acres of wetlands. • Shade 4.3 acres of wetlands. • Fill 0.6 acres of open water. • 7.1 acres of park land converted to right-of-way. • Enhanced treatment for west approach stormwater. 	<ul style="list-style-type: none"> • Would displace three residences and the Museum of History and Industry in Seattle. • Would displace part of National Oceanic and Atmospheric Administration facilities. • Enhanced treatment for west approach stormwater. 	<ul style="list-style-type: none"> • Full design not determined at this time, not possible to calculate impacts.
NOTES					





COMPARISON OF SR 520 WESTSIDE OPTIONS: Data Sheet

	No Build	Option A		Option K		Option L		A+ Hybrid	Option M
		base ¹	suboption ¹	base	suboption ¹	base	suboption ¹		
Cost									
Year of Expenditure (billion)		2.022	2.198	4.070	4.168	2.562	2.642	1.920	2.127
Traffic Operations (Year 2040)									
Local Traffic (AM/PM Peak, bi-directional)									
Crossing the Montlake Cut (vehicles per hour)	4300/6200	4300/6000	4300/3200	5900/5200	5900/5200	7300/3200	7300/3200	4300/6200	Not available
In the Arsenalum (vehicles per hour)	1800/1800	900/1200	1300/1800	2000/2100	2000/2100	2000/2100	2000/2100	3900/1800	Not available
Average local travel time (minutes)	35	10	8	11	Not available	12	Not available	8	Not available
Freeway Traffic (AM/PM Peak, bi-directional)									
Portage Bay Bridge (vehicles per hour)	8700/8700	8700/8700	9100/8900	9100/9200	9100/9200	9100/9200	9100/9300	9100/8900	Not available
Portage Bay Bridge (vehicles per hour)	7500/7500	8000/7900	7600/7400	7700/7200	7700/7200	7700/7200	7700/7200	7600/7400	Not available
Travel (minutes)									
Local peak travel times (Madison-Medtr Ty/Medtr Ty-Medtr Ty)	45/8	38/5	30/5	23/3	Not Available	28/5	Not Available	10/5	Not available
Peak travel time to/from SR 520/Montlake Triangle	5/10	3/5	4/4	5/5	Not Available	5/5	Not Available	4/4	Not available
Non-vehicular									
Regional rail across Lake Washington, Gowanus, Bixby and local paths.									
Environmental Resources-Construction Effects²									
Park Effect (Acres)	8.10	8.4	7.00	7.00	6.30	6.30	8.40	8.40	Not available
Section 6(f) Resource Effect (Acres)	2.99	2.99	5.2	5.2	4.28	4.28	2.99	2.99	Not available
Wetland Fill Effect (Acres) ³	0.6	0.5	1.1	1.1	0.6	0.70	0.7	0.7	Not available
Wetland Shade Effect (Acres)	6.4	6.92	8.1	8.2	6.4	6.40	6.8	6.8	Not available
Wetland Buffer Fill Effect (Acres) ⁴	2.80	3.00	3.30	3.40	2.90	3.00	3.2	3.2	Not available
Wetland Buffer Shade Effect (Acres)	0.20	0.30	0.40	0.40	0.30	0.30	0.2	0.2	Not available
Open Water Fill Effect (Acres) ⁵	0.20	0.20	0.30	0.30	0.20	0.20	0.2	0.2	Not available
Open Water Shade Effect (Acres)	13.40	13.40	10.50	10.50	12.20	12.20	13.40	13.40	Not available
Environmental Resources-Permanent Effects²									
Park Effect (Acres)	5.6	5.6	7.5	7.5	7.1	7.1	5.6	5.6	Not available
Section 6(f) Resource Effect (Acres)	3.04	3.04	4.54	4.54	3.88	3.88	3.04	3.04	Not available
Section 6(f) Resource- Subterranean Easement (Acres) ⁶	0.02	0.02	0.4	0.4	0.09	0.09	0.02	0.02	Not available
Wetland Fill Effect (Acres)	0.1	0.6	1.5	1.9	0.1	0.4	0.2	0.2	Not available
Wetland Shade Effect (Acres)	3.2	3.4	2.8	2.9	4.3	4.4	3.3	3.3	Not available
Wetland Buffer Fill Effect (Acres)	0.7	2.98	5.5	5.5	1.8	1.7	0.8	0.8	Not available
Wetland Buffer Shade Effect (Acres)	4.8	3.7	4.8	4.4	5.9	6.0	4.3	4.3	Not available
Open Water Fill Effect (Acres) ⁷	0.5	0.6	2.7	2.7	0.6	0.6	0.6	0.6	Not available
Open Water Shade Effect (Acres) ⁸	14.5	18.1	13.5	13.5	16.0	16.0	16.1	16.1	Not available
Full Property Acquisitions (number of parcels) ⁹	7	7	0	0	5	5	7	7	Not available
Design									
Number of lanes on Portage Bay Bridge	7	7	6	6	6	6	7	7	Not available
Number of lanes at Marsh Island	0	20	12	12	12	12	10	10	Not available
Method to cross the Montlake Cut	Bascule Bridge	Bascule Bridge	SEM Tunnel	SEM Tunnel	Bascule Bridge	Bascule Bridge	Bascule Bridge	IT Tunnel	



B. Previous Legislative Direction

The Washington State Legislature has passed several pieces of legislation pertaining to the SR 520 Bridge Replacement and HOV Program. The Appendix contains a summary of all legislation related to the SR 520 Bridge Replacement and HOV Program. The Workgroup discussed the specific references to the six lane configuration, transit connections, and tolling. Below is a summary of the references that were discussed with the Workgroup.

Requirements Regarding Six Lanes and Transit Connections

ESHB 2211—Section 3(3)

"All design options considered or recommended by the state route number 520 work group must adhere to RCW 47.01.408."

RCW 47.01.408

"(1) The state route number 520 bridge replacement and HOV project shall be designed to provide six total lanes, with two lanes that are for transit and high-occupancy vehicle travel, and four general purpose lanes. (2) The state route number 520 bridge replacement and HOV project shall be designed to accommodate effective connections for transit, including high capacity transit, to the light rail station at the University of Washington."

Other Requirements Regarding Six Lanes

RCW 47.01.405

"The legislature finds that the replacement of the vulnerable state route number 520 corridor is a matter of urgency for the safety of Washington's traveling public and the needs of the transportation system in central Puget Sound. The state route number 520 floating bridge is susceptible to damage, closure, or even catastrophic failure from earthquakes, windstorms, and waves. Additionally, the bridge serves as a vital route for vehicles to cross Lake Washington, carrying over three times its design capacity in traffic, resulting in more than seven hours of congestion per day. Therefore, it is the conclusion of the legislature that time is of the essence, and that Washington state cannot wait for a disaster to make it fully appreciate the urgency of the need to replace this vulnerable structure. The state must take the necessary steps to move forward with a state route number 520 bridge replacement project design that provides six total lanes, with four general purpose lanes and two lanes that are for high occupancy vehicle travel that could also accommodate high capacity transportation, and the bridge shall also be designed to accommodate light rail in the future. High occupancy vehicle lanes in the state route 520 corridor must also be able to support a bus rapid transit system."

Other Requirements Regarding Transit Connections

RCW 47.01.410

"As part of the state route number 520 bridge replacement and HOV project, the governor's office shall work with the department, sound transit, King county metro, and the University of Washington, to plan for high capacity transportation in the state route number 520 corridor. The parties shall jointly develop a multimodal transportation plan that ensures the effective and efficient coordination of bus services and light rail services throughout the state route number 520 corridor. The plan shall include alternatives for a multimodal transit station that serves the state route number 520—Montlake interchange vicinity, and mitigation of impacts on affected parties. The high capacity transportation planning work must be closely coordinated with the state route number 520 bridge replacement and HOV project's environmental planning process, and must be completed within the current funding for the project. A draft plan must be submitted to the governor and the joint transportation committee by October 1, 2007. A final plan must be submitted to the governor and the joint transportation committee by December 2008."



Requirements for New Tolling Authority

RCW 47.56.820

"(1) Unless otherwise delegated, only the legislature may authorize the imposition of tolls on eligible toll facilities. (2) All revenue from an eligible toll facility must be used only to construct, improve, preserve, maintain, manage, or operate the eligible toll facility on or in which the revenue is collected. Expenditures of toll revenues are subject to appropriation and must be made only: (a) To cover the operating costs of the eligible toll facility, including necessary maintenance, preservation, administration, and toll enforcement by public law enforcement within the boundaries of the facility; (b) To meet obligations for the repayment of debt and interest on the eligible toll facilities, and any other associated financing costs including, but not limited to, required reserves and insurance; (c) To meet any other obligations to provide funding contributions for any projects or operations on the eligible toll facilities; (d) To provide for the operations of conveyances of people or goods; or (e) For any other improvements to the eligible toll facilities."

Requirements for Use of Bonds

ESHB 2211 – Section 2 (3) (i)

"(i) The issuance of general obligation bonds first payable from toll revenue and then excise taxes on motor vehicle and special fuels pledged for the payment of those bonds in the amount necessary to fund the replacement state route number 520 floating bridge and necessary landings, subject to subsection (4) of this section."



III. Design Recommendations and Costs

A. Developing Options A+ and M

In 2008, under the direction of ESSB 6099, WSDOT supported a mediation process to determine interchange options for the Montlake area. Through this process, community representatives developed three west side interchange options known as Options A, K, and L. All of these options, each with sub-options, are currently under analysis in the I-5 to Medina Bridge Replacement and HOV project's SDEIS.

The Workgroup and WSDOT staff worked with the proponents of Options A, K, and L from July through November 2009 to develop the interchange option that best met the goals of the communities and the goals set forth by ESHB 2211. Proponents of Options A and L combined the various design elements to develop Option A+. The proponents of Option K refined design elements that resulted in the development of Option M. Below is a summary of how the Workgroup and WSDOT worked with the proponent groups to develop and refine these options.

Option A+

The Option A and L proponents developed Option A+ to meet the goals set forth by ESHB 2211. At the September 22, 2009 meeting, the Workgroup invited the environmental resource and permitting agencies to present feedback on the SDEIS Options A, K, and L. The proponents incorporated the agency feedback that stated a constant rise profile is more desirable and more likely to receive permits than the other profiles under consideration. The US Army Corps of Engineers noted that of the three options analyzed in the SDEIS, Option A would most likely be the least environmentally damaging practicable alternative.

The estimated cost of Option A, released in November 2008, ranged from \$4.526 billion to \$4.802 billion. To meet the \$4.65 billion cost cap set by the legislature in 2009, proponents reduced costs by refining the design of the Portage Bay Bridge, the Lake Washington Boulevard ramp configuration, and the west approach bridge and Foster Island connections to the Arboretum. The cost estimate was not derived using the full cost estimation validation process (CEVP).

Option A+ differs from Option A in the following ways:

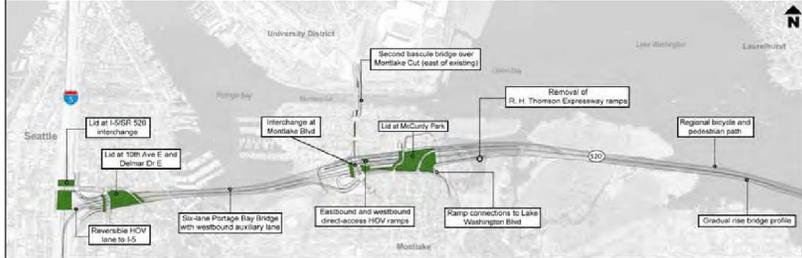
- Σ The specific false arch bridge type is removed and shorter span lengths are proposed for the Portage Bay Bridge while maintaining aesthetic treatments to be defined in a design competition.
- Σ Addition of a pedestrian connection under SR 520 at Foster Island.
- Σ Inclusion of ramp connections to Lake Washington Boulevard to and from the Eastside only (this was a sub-option in Option A)
- Σ Includes enhanced transit connectivity by providing an eastbound HOV direct-access ramp from the Montlake Boulevard interchange and removes the flyover ramp in the Arboretum vicinity.
- Σ Provides for gravity flow stormwater treatment by using a constant slope profile to the west high rise from the Montlake shoreline, which is the same profile as the SDEIS Option L.



Summary of Meetings with Option A+ Coalition			
Date	Meeting	Location	Discussion
September 15, 2009	Westside Subgroup	Seattle	Proponents of Option A presented Option A to the Westside Subgroup highlighting it as a transit friendly, environmentally sensitive, and affordable option.
September 22, 2009	Workgroup	Seattle	Proponents of Option A presented Option A to the Workgroup highlighting it as a transit friendly, environmentally sensitive, and affordable option.
September 30, 2009	Technical Coordination with WSDOT staff #1	Seattle	Proponents of Option A and L met with WSDOT staff to discuss design and cost modifications to Option A.
October 8, 2009	Westside Subgroup	Seattle	Proponents of Option A and Option L jointly presented Option A+ to the Westside Subgroup.
November 5, 2009	Working Session	Seattle	WSDOT presented a preliminary cost analysis provided by the independent cost review panel. Chair of independent Cost ERP reviewed cost analysis of the A+ and M options.
November 10, 2009	Westside Subgroup	Seattle	Subgroup members provided preliminary observations of Option A+.
November 12, 2009	Technical Coordination with WSDOT staff #2	Seattle	Proponents of Option A+ met with WSDOT staff, King County Metro, and Sound Transit representatives to discuss transit operations and cost reductions. Outstanding design issues included the removal of the Lake Washington Boulevard ramps.
November 17, 2009	Workgroup	Seattle	The Workgroup recommended Option A+ as a draft recommendation for public comment.
December 8, 2009	Workgroup	Seattle	The Workgroup recommends Option A+ as a final recommendation to be submitted to Gov. Gregoire and Washington State Legislature.



Westside design option draft recommendation: Option A+



Total project cost, I-5 to floating bridge: \$2.027B to \$2.127B. Total program cost: \$4.531B to \$4.631B.

The upcoming SR 520, I-5 to Medina: Bridge Replacement and HOV Project Supplemental Draft Environmental Impact Statement (SDEIS) analyzes three westside design options, A, K and L, each with sub-options. The Option A+ recommendation is comprised of Option A with specific sub-options and is covered in the SDEIS.

Design features include:
(from west to east)

- A six-lane corridor in a 4 + 2 configuration with two general-purpose lanes and one HOV lane in each direction.
- A reversible HOV and transit lane at the I-5 and SR 520 interchange.
- Lids over I-5 at E. Roanoke Street, over SR 520 between 10th Avenue E. and Delmar Drive E. and over SR 520 at McCurdy Park.
- A six-lane Portage Bay Bridge and westbound auxiliary lane connecting Montlake Boulevard E. with northbound I-5.

- An interchange at Montlake Boulevard E. similar to today's configuration that includes.
- HOV and transit direct-access ramp at Montlake Boulevard E. to and from the Eastside.
- Removal of the existing Montlake Freeway Station.
- A new second bascule bridge over the Montlake Cut east of the existing bascule bridge.
- Provides for three northbound and three southbound lanes on Montlake Boulevard between SR 520 and NE Pacific Street.
- Ramp connections to Lake Washington Boulevard to the northwest of the existing ramps that replace the function of today's Lake Washington Boulevard ramps.
- Removal of the R.H. Thomson expressway ramps near the Arboretum.
- A gradual rise bridge profile from the Montlake shoreline to the west highrise of the floating bridge.
- A navigation passage at the west highrise of 40 feet.
- Regional bicycle and pedestrian path.

Note: Above are preliminary cost estimates. This option has not been reviewed through a CEVP process.

November 19, 2009



Option M

Option K supporters developed Option M to better meet the requirements of the resource and permitting agencies and to reduce costs. At the September 22, 2009 meeting, the US Army Corps of Engineers stated that permitting Option K was unlikely. This is due to the large amount of in-water fill required for the permanent interchange configuration when there is a reasonable and feasible alternative with significantly less in-water fill.

In addition to the permitting concerns, cost estimates released in November 2008 estimated the cost for Option K from \$6.574 billion to \$6.672 billion nearly \$2 billion over the \$4.65 billion cost cap set by the legislature. In an effort to reduce costs, proponents focused on the tunnel construction method, the width of the freeway interchange as it extended into the Arboretum, and the Foster Island land bridge/pedestrian connection.

Option M provides a savings of approximately \$700 million based on a conceptual layout of the option compared with Option K. This includes the new tunnel construction method (\$350 million in savings) and reconfiguration of the interchange ramps and Foster Island pedestrian connection (\$350 million in savings). This estimate does not capture the potential mitigation required for the alternate tunnel method. This estimate also was not derived using the full cost estimation validation process (CEVP).

Option M differs from Option K in the following ways:

Tunnel construction method

- Σ Option K included a sequential excavation tunnel as a method to excavate the ground without disturbing the Montlake Cut. Due to geotechnical investigation, the ground would need to be frozen for this method of tunneling.
- Σ In Option M, the proponents proposed an immersed tube tunnel in order to save costs. The immersed tube tunnel would involve cut and cover dredging across the Montlake Cut in order to create a trench in which to place the tube.

Reconfigures interchange ramps

- Σ Option M removes the keyhole connection to the Arboretum and replaces it with ramp connections to Lake Washington Boulevard to allow access to and from the Eastside only, in a similar location to Option A+.
- Σ Replaces the 24th Avenue East connection from Lake Washington Boulevard to the Museum of History and Industry area with a westbound off-ramp to Lake Washington Boulevard.
- Σ The ramp connection to westbound SR 520 from the Arboretum is removed since this movement is not provided for today.
- Σ To reduce cost and the overall environmental impacts, there are no direct-access HOV and transit ramps.
- Σ Raises the SR 520 mainline profile to the same elevation as Lake Washington Boulevard at the new interchange in order to reduce wetland impacts.



Summary of Meetings with Option M Coalition

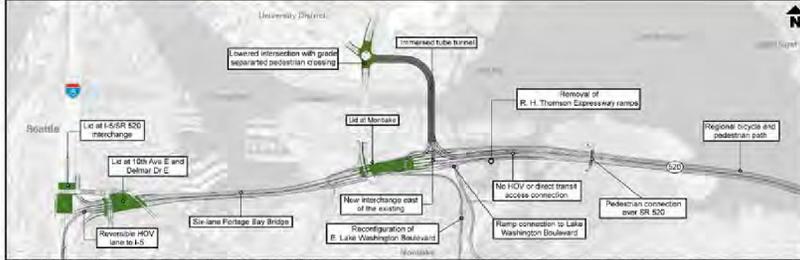
Date	Meeting	Location	Discussion
September 15, 2009	Westside Subgroup	Seattle	Coalition for Option K presented a "Hybrid Plan" to the Westside Subgroup in order to reduce costs and environmental impacts, improve mobility to the south, and reduce impacts to the Arboretum.
September 22, 2009	Workgroup	Seattle	Coalition for Alternative K presented a "Hybrid Plan" to the Workgroup with specific cost saving measures identified.
September 25, 2009	Technical Coordination with WSDOT staff #1	Seattle	Coalition for Alternative K met with WSDOT staff to discuss ways to reduce costs, environmental impacts, construction impacts, improve north/south mobility, maintain transit/HOV access, and maintain six-lane Portage Bay Bridge.
October 1, 2009	Technical Coordination with WSDOT staff #2	Seattle	Coalition for Alternative K coordinated with WSDOT staff on plan to be presented at Oct. 8 Westside Subgroup meeting. The Hybrid Plan includes the removal of the boat section, modifications to the single point urban interchange, a ramp connection to Lake Washington Boulevard, no left turn from Lake Washington Boulevard ramps, an eastbound off-ramp to northbound Montlake movement will be routed into the tunnel and not on Montlake Boulevard, shifting a local access road, and a higher mainline profile at Foster Island.
October 8, 2009	Westside Subgroup	Seattle	Coalition for Alternative K presented an updated Hybrid Plan with associated design modifications and cost reductions to the Westside Subgroup.
October 15, 2009	Technical Coordination with WSDOT staff #3	Seattle	Coalition for Alternative K met with WSDOT staff to discuss further design modifications and cost reductions to the Hybrid Plan.
October 22, 2009	Technical Coordination with WSDOT staff #4	Seattle	Coalition for Alternative K met with WSDOT staff, requested to be called Coalition for Option M. Coalition discussed including Option M in the SDEIS, preliminary traffic operations, west navigation passage, west approach profile, and stormwater issues.
October 29, 2009	Technical Coordination with WSDOT staff #5	Seattle	Coalition for Option M met with WSDOT staff to discuss preliminary traffic operations, west navigation passage, west approach profile, and stormwater issues. Outstanding design issues include the number of lanes in the tunnel, the number of lanes on all the SR 520 ramps, the height of the west navigation passage, the height of the west approach bridge, the improvements necessary at the Montlake and Pacific intersection and north of the intersection, and the desired traffic operation goals.



Summary of Meetings with Option M Coalition			
Date	Meeting	Location	Discussion
November 5, 2009	Working Session	Seattle	Per request of Coalition for Option M, WSDOT presented a preliminary cost analysis provided by the independent cost review panel. The chair of independent Cost ERP provided a review of the cost analysis of the A+ and M options.
November 10, 2009	Westside Subgroup	Seattle	The Westside Subgroup provided preliminary observations of Option M.
November 17, 2009	Workgroup	Seattle	The Workgroup discussed Option M in consideration of the draft recommendations report.



Option M - Preliminary Concept



Total project cost, I-5 to floating bridge: \$3.358B

Total program cost: \$5.862B.

Features include:

- A six-lane corridor in a 4 + 2 configuration with two general-purpose lanes and one HOV lane in each direction except for the areas between the new Seattle interchange and the floating bridge where the corridor would be six general-purpose lanes (three in each direction) and no HOV lanes.
- A reversible HOV and transit lane at the I-5 and SR 520 interchange.
- Lids over I-5 at E. Roanoke Street, over SR 520 between 10th Avenue E. and Delmar Drive E. and at Montlake Boulevard.
- A six-lane Portage Bay Bridge.
- A modified single point urban interchange east of the existing to and from the new tunnel. Number of lanes on the ramps to be determined.
- Does not provide for an HOV or transit direct access connection.
- Removal of the existing Montlake Freeway Station.
- SR 520 mainline profile raised to the level of Lake Washington Boulevard at the interchange areas.
- Ramp connection to Lake Washington Boulevard over SR 520.
- Lowered intersection at the Montlake Boulevard NE and NE Pacific Street intersection with grade-separated pedestrian crossings.
- Four or five lane immersed tube tunnel crossing under the Montlake Cut.
- Removal of the R.H. Thomson expressway ramps near the Arboretum.
- Pedestrian connection over SR 520 at Foster Island.
- A navigation passage at the west high rise. Actual height to be determined.
- Modifications to the configuration of E. Lake Washington Boulevard.
- Profile is low and actual heights are to be determined.
- Regional bicycle and pedestrian path.

Note: Above are preliminary cost estimates. This option has not been reviewed through a CEVP process.

November 19, 2009



B. Independent Cost Expert Review Panel Executive Summary

Responsibility/ Purpose of the Cost Review Panel

The responsibility of the Cost Review Panel was to conduct a comprehensive evaluation of the SR 520 project cost estimate process, including review of the procedures used, level of accuracy, application of the CEVP process, risks that were considered, and the level of development of the design options. The Panel conducted its review in two phases. Phase I review included the mediated Options A, K, and L. The Phase II review focused on two modified options A+ and M (formerly K). The summary of findings from both phases follows below.

Phase I Review: SDEIS Options A, K and L from Mediation

Findings

1. The SR 520 team manages a strong, well-managed process with good rationale and easy retrieval of support material
2. While there are opportunities to adjust the estimate of some individual items to reduce their expected costs, these adjustments would not cause major changes in the total for any of the options. (See also item 6 below.)
3. Options A, K, and L are all at a level of development to appropriately apply the CEVP process. That is, the designs are sufficiently developed to evaluate and fairly compare the options.
4. The CEVP process has been fairly applied across options. Although CEVP is a valid way to compare costs and schedules for options, it is not necessarily the only basis for selecting a project alternative.
5. The Westside Cost Review Panel suggested the redistribution of some costs that had been assigned to the (SEM) tunnel. Those redistributed costs resulted in an improved ability to compare tunnel costs to similar tunnel costs elsewhere and also resulted in a modest overall cost reduction of the K option
6. The CCI (Construction Cost Index) may be too optimistic (too low): While WSDOT policy consistently uses the CCI projection of future inflation rates, the Westside Cost Review Panel is concerned that the CCI projection of a nearly level 1.7% to 1.9 % per year construction inflation rate for the next ten years may lower than what the actual inflation will be over the construction period.
7. Impact of modeled (probability & impact) risks is comparable across options but the Panel is concerned about un-modeled risks (which are still real!) e.g.
 - ∑ Impact of locally preferred alternative [selection] by Spring 2009—which did not occur
 - ∑ Availability of funding that matches the cash flow requirements of the project
 - ∑ Permitting
 - ∑ ‘Boat section’-construction, permitting, and mitigation
8. Decisions by the state and national resource agencies will have a substantial impact on the schedules and costs as well as viability of the Options
 - ∑ Permitting of Wetland fill and impacts: The Westside Cost Review Panel heard the US Army Corps of Engineers expressed serious concerns about the viability of Option K because it has more impacts on wetlands than Options A or L. The legal basis for the Corps concerns could render Option K unpermissible.



- Σ Permitting of the low road profile: Several agencies — the Corps, the National Marine Fisheries Service, and the Washington State Department of Ecology — expressed concerns about the shading impacts created by lowering the road profile to place it close to the lake surface.
- Σ Stormwater permitting: The Department of Ecology expressed concerns that stormwater collection and treatment will be difficult and perhaps unreliable if the road profile is flat. They would prefer a road profile that slopes from the water back toward the land, allowing stormwater to flow by gravity to a land-based pollution control system.

Phase II Review: Options A+ and M

Introduction

Additional concept refinements by Option A and Option K support groups have changed overall costs and risk profiles for both options.

Option A+ is essentially Option A with the addition of three Option A sub-options as established in the mediation process: an eastbound Lake Washington Boulevard on-ramp; a westbound Lake Washington Boulevard off-ramp; and an eastbound HOV direct access ramp at Montlake Boulevard.

Option K has been significantly modified and has become Option M. The major modifications include: replacing the SEM (Sequential Excavation Method) tunnel with an ITT (Immersed Tube Tunnel), elevating the grades through the tunnel section and the depressed SR 520 interchange sufficiently to eliminate the “boat section”, and creating left hand on/off ramps from SR 520 mainline to the Montlake Cut section. Option M still requires substantial lengths of cut-and-cover tunnel each side of the water crossing. Because of the introduction of the new tunnel concept, the ITT, the Cost Review Panel specifically evaluated the constructability, risk, and costs associated with this concept.

Findings

- Σ By changing tunnel concepts and raising roadway grades to eliminate the “boat section”, Option M trimmed nearly \$700 million from Option K expected costs, but the cost differential between Option A+ and M is still significant (approximately \$1.2 billion).
- Σ Option A+ still fits within the cost range for Option A (base costs plus sub-options).
- Σ Options A+ and M have comparable expected costs except for the Montlake Interchange segment. The primary cost difference between A+ and M results from differences in complexity of construction as well as the volume of materials consumed or excavated in the construction of the options. See the enclosed table for highlights of the cost differences.
- Σ By eliminated the “boat section”, Option M has significantly reduced one element of risk related to permitting, but there remain significant risks related to construction permits for the ITT in the Montlake Cut.
- Σ Costs for Option M in the Montlake section divide into approximate thirds. One-third of the expected cost is for tunnels, one-third is for the depressed interchange, and one-third includes a variety of cost items such as right-of-way purchase, the construction of miscellaneous components like the Pacific/Montlake Lid, and engineering development costs.
- Σ Although the A+ and M options have only been developed to approximately 10% of final engineering and unknowns remain, the Westside Cost Review Panel is confident that major costs have been appropriately accounted for. Given that Option M represents considerably more



construction volume and complexity than Option A+, we do not see a way to materially reduce the \$1.2 billion cost differential between the two options.

- Σ While there are operational differences between Options A+ and M, the overall traffic performance of both options on the mainline is similar.
- Σ Were Option M to be included in the environmental process, it would likely delay the Supplemental Draft EIS (SDEIS) by 6 months. The final Record of Decision (ROD) would likely be delayed by 12–24 months.

Highlights of Cost Differential between Options A+ and M at Montlake

<i>Option Comparisons in the Montlake Cut Segment</i>		
Cost Components	Option A+ Costs (\$M)	Option M Costs (\$M)
Construction Cost Components		
<i>Interchange</i>		
Structures (lids, walls, bridges, etc.)	\$104	\$442
Miscellaneous Highway Construction	\$110	\$154
Subtotal for Interchange Construction	\$214	\$596
<i>Montlake Cut Crossing</i>		
Bascule Bridge (244 ft)	\$81	
Cut-and-Cover Tunnels (1575 ft)		\$452
Immersed Tube Tunnel (350 ft)		\$102
Subtotal for Tunnel Construction		\$554
<i>Other Highway Construction</i>		
Structures (lids, walls, etc.)		\$39
UW Parking Allowance		\$126
Misc Highway/Roadway Components	\$28	\$89
Subtotal for Other Highway Construction	\$28	\$254
Subtotal Construction for Montlake Crossing	\$109	\$808
Total Estimated Construction Cost	\$323	\$1404
Right-of-Way, Mitigation, and Engineering	\$125	\$396
Total Estimated Segment Cost	\$448	\$1800

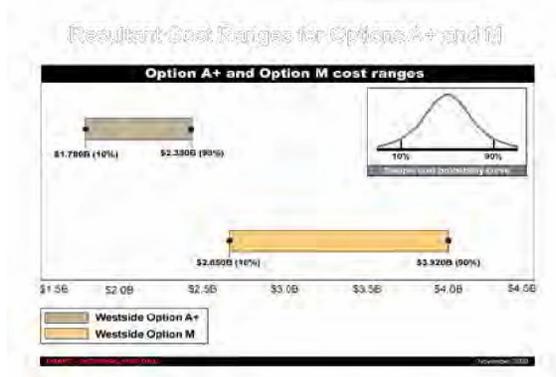
Key observations from the table include:

- Σ The tunnel across the Montlake Cut is composed of two tunnel types, an ITT with “Cut-and-Cover” tunnels at each end. The combined tunnel cost (including inflation and risk) accounts for slightly less than 1/3 (\$554 million) of the \$1.8 billion cost of the Montlake segment for Option M.
- Σ The cut-and-cover tunnel sections account for approximately 80% of the total tunnel costs through the Montlake Cut. While, whereas the ITT only accounts for 20%.
- Σ The Montlake Interchange accounts for approximately 1/3 of the \$1.8 billion segment cost for Option M (\$596 million).
- Σ Of the remaining \$650 million of \$1.8 billion cost for Option M, \$396 million includes right-of-way purchase and engineering development costs. Approximately \$254 million includes roadway work (not already accounted for), a lid at Pacific and Montlake, and work at the University of Washington.



- Σ The Cost Review Panel conducted an independent evaluation of ITT construction costs. Our evaluation yielded base costs (before inflation and composite risk factor) that differed by less than 1% from the base costs prepared by the SR 520 project team. The expected cost of the ITT is comparable with similar installations in the US.
- Σ The Panel also compared expected costs for the cut-and-cover tunnel section of three project segments: Option M, Option K, and the Alaskan Way Viaduct. All three sections were of comparable length and carry comparable expected costs. On that basis, we believe that the cut-and-cover costs are fairly represented.

As noted earlier, the Cost Review Panel does not see a way to further reduce the cost of Option M by a substantial amount. Further, the Panel is concerned that given the range of probable costs for Option M, it is unlikely to fit within the legislatively established budget for the project. As shown in the figure below, the most likely cost projection for Option M carries a price tag of \$2.65 billion which exceeds the west side budget (\$2.15 billion) by \$500 million. This optimistic number only has a 10% probability of occurrence. In other words, it has a 90% probability of being exceeded.





IV. Financial Strategy

The Workgroup spent several meetings discussing the financing options available to meet the \$4.65 billion funding target. They first discussed the current financial commitments for the program and the remaining funding gap. The commitments are summarized below:

A. Current Financial Plan and Remaining Gap

SR 520 Bridge Replacement and HOV Program — Program Costs and Existing Funding

	FISCAL YEARS	AMOUNT
PROGRAM NEED		
Overall Program Cost	Thru FY 2031	\$4.65 B
Less: Deferred Payment of Sales Tax ¹		(\$0.30 B)
Program Cost during Construction Period	Thru FY 2017	\$4.35 B
CURRENTLY FUNDED: FLOATING BRIDGE & LANDINGS		
Floating Bridge & Landings	Thru FY 2017	\$2.11 B
Paid from Toll Bond Proceeds (SR 520 Account)		\$0.33 B
Paid from Federal Bond Proceeds (SR 520 Account)		\$0.66 B
Paid from All Other Funding Sources		\$1.23 B
Less: Deferred Payment of Sales Tax ¹		(\$0.11 B)
Program Cost during Construction Period		\$1.99 B
PROGRAM FUNDING GAP		\$2.36 B

¹ Paid from toll revenues over fiscal years 2022-2031

B. Financing Options Considered

Tables 1A and 1B were provided to the Workgroup to identify the sources and possible revenue generation that could be achieved using each source. These tables outline the feasible sources that were identified. The Workgroup also reviewed the tolling scenarios considered by the Legislature's Joint Transportation Committee and the ability of each scenario to fill the \$2.36 billion gap. Some tolling options could fill the entire gap without additional revenue. However, the Workgroup recommended that tolling beyond early SR 520 tolling and I-90 high occupancy lane tolling only be considered after other revenue sources were pursued.



TABLE 1A: SR 520 Bridge Replacement and HOV Program — Committed Funding Sources — FB&L

Funding Sources	Authorizing Entity	Actions Necessary to Implement	Assumptions & Comments	Funding Committed (\$ Millions)
State: Motor Vehicle Account	State	Funds already expended	Previously established contribution.	\$3 M
State: Nickel & TPA Packages	State	Nickel funding already expended; TPA funding partially expended; no action required for remaining commitment.	Amounts established in 2003 and 2005, remaining funding provided as given in the 2009/11 Transportation Budget.	\$551 M
Federal: Bridge & STP Program Funding Bond Proceeds (SR 520 Account)	State & Federal	None required for current commitment.	<ul style="list-style-type: none"> Bond proceeds portion of the "Risk Pool" Federal funding Financing Assumptions: <ul style="list-style-type: none"> Triple pledge "GO" bonds; Coverage = 1.0x 6.0% interest rate Bond proceeds in FY 2013-16; Interest paid thru FY 2023 	\$658 M
Federal: Bridge Program & Risk Pool Remainder	Federal	None required for current commitment.	<ul style="list-style-type: none"> Includes \$108 M in Federal Bridge Program funding provided by the Legislature in 2007. Includes \$118 M from the "Risk Pool" funding not pledged to bond repayment. 	\$226 M
Federal: Other Future Funding	Federal	Funds already expended	Previously established contribution.	\$10 M
Tolling SR 520 Account: Scenario 7 Pay-As-You-Go Tolls Scenario 7 Toll Bond Proceeds	State	Established with FSHR 2211; none required for current commitment used for Floating Bridge and Landings	<ul style="list-style-type: none"> Combination of toll revenues (pay-as-you-go) and toll bond proceeds Variable Toll Schedule, Single Point Tolling, HOV 3+ Transit Exempt Pre-completion tolling FY 2011-16, post-completion FY 2017 forward PM Peak Period Tolls (2007 \$): <ul style="list-style-type: none"> Pre-completion = \$3.25; Post-completion = \$3.80 Financing Assumptions: <ul style="list-style-type: none"> 30 year triple pledge "GO" bonds; Coverage = 1.25x 6.0% interest rate (6.5% on zero coupon bonds) Bond proceeds in FY 2011-13; Interest paid thru FY 2042 	\$551 M
Regional & Local No regional or local funding sources have been committed to the SR 520 Program.	N/A	N/A	N/A	N/A
Total				\$1,999 M

NOTE: COMMITTED FUNDS ROUNDED TO THE NEAREST MILLION



TABLE 1B: SR 520 Bridge Replacement and HOV Program — Potential Funding Sources

Funding Sources	Authorizing Entity	Actions Necessary to Implement	Assumptions & Comments	Funding Range (\$ Millions)	
				Low	High
State & Federal	State: NEW	State	New legislation	JTC study looking at options, report due December 2009	N/A
	Federal: TIGER Grant	Federal	USDOT selection for funding	Grant proposal for \$300 million submitted in September 2009. Matching funds required. SR 520 Legislative WG recommends range of \$30-50 M.	\$30 M to \$50 M
	Federal: NEW	Federal	New federal authorization bill and potentially annual appropriation(s) legislation	Viaduct rec'd earmarks totaling \$220 million. Average earmark in last authorization was \$3.7million. Reauthorization like in 2010 or 2011. Assume high as similar earmark goal as Viaduct	\$5 M to \$220 M
Tolling	Scenario 7 Tolls: Uncommitted Toll Funding Potential INCREMENT	State	Amend ESHB 2211, section 2, to allow funds for use the Eastside and West Side projects	Unused toll funding from Scenario 7 beyond what has been allocated in the SR 520 Account; same tolling and financing assumption apply as committed Scenario 7 toll funding.	\$400 M to \$500 M
	Higher SR 520 Tolls INCREMENT	State	Commission to set toll rates; Legislature to appropriate expenditure authority	<ul style="list-style-type: none"> Pre-completion tolling FY 2011-16, post-completion FY 2017 forward. PM Peak Period Tolls (2007 \$): <ul style="list-style-type: none"> Pre-completion = \$3.85; Post-completion = \$5.35 Variable toll schedule: single point tolling at bridge mid-span HOV 3+ transit exemption maintained 	\$0 M to \$220 M
	SR 520 Segment Tolling INCREMENT	State	Commission to set toll rates; Legislature to appropriate expenditure authority	<ul style="list-style-type: none"> SR 520 tolling begins in FY 2011 Short trips on either side of bridge tolled beginning in FY 2017. PM Peak Segment Toll (2007 \$) = \$0.80 	\$0 M to \$75 M
	I-90 Express Toll Lanes INCREMENT	State / Federal	New legislation and federal approval	<ul style="list-style-type: none"> HOT lanes on I-90 open in FY 2017. 2 HOT/Express Toll Lanes with dynamic pricing & 2 GP lanes each way. 1 HOT between I-405 & Inaquaah Max I-90 toll (2007 \$) = \$0.05 per mile Some toll funding needed for I-90 lane improvements & toll equipment 	\$0 M to \$250 M
	I-90 Bridge Tolling INCREMENT	State / Federal	New legislation and federal approval	<ul style="list-style-type: none"> I-90 tolling begins FY 2017. Post-completion tolling only on I-90 I-90 PM Peak Period Toll (2007 \$): <ul style="list-style-type: none"> Pre-completion (FY 2017-16): \$3.25 Variable Toll Schedule: HOV Transit Exempt; tolling west of Mercer Island 	\$0 M to \$1,570 M
Regional & Local	TBD Vehicle License Fee: NEW	Cities / King County	Up to \$20 annual fee jurisdiction-wide does NOT require voter approval; \$21-\$100 fee requires voter approval (jurisdiction-wide or subset)	<ul style="list-style-type: none"> Cities: Seattle, Bellevue, Redmond, Kirkland, Medina, Clyde Hill, Hunts Point and Yarrow Point \$20 VLF = \$12.6 M per year; \$100 VLF = \$63.2 per year 1:12 Bonding Ratio Funding available as early as FY 2012 	\$150 M to \$750 M
	TBD Sales & Use Tax: NEW	Cities / King County	Up to 0.2% sales and use tax (currently limited to 10 years); requires voter approval	<ul style="list-style-type: none"> Cities: Seattle, Bellevue, Redmond, Kirkland, Medina, Clyde Hill, Hunts Point and Yarrow Point Sound Transit's sales tax revenue forecast thru 2040 to down 5.3% for 2009 The recession & projections for recovery = uncertain forecasts 	N/A
	TBD Property Tax: NEW	Cities / King County	Property tax as excess levy for capital or a 1 year excess levy; requires voter approval	<ul style="list-style-type: none"> Cities: Seattle, Bellevue, Redmond, Kirkland, Medina, Clyde Hill, Hunts Point and Yarrow Point \$0.03 / \$1000 = \$0.1M; \$0.13 / \$1000 = \$22.7 M 1:12 Bonding Ratio Funding available as early as FY 2012 	\$100 M to \$270 M
	TBD Comm & Industrial Impact Fee: NEW	Cities / King County	Impact fee jurisdiction-wide; voter approval NOT required	This revenue source has not yet been used for a TBD. Calculation would be based on future development; not a very predictable revenue source.	N/A
	Motor Vehicle Excise Tax (MVET): NEW	King County	Voter approval to form a King County Regional Transportation Investment District (RTID)	<ul style="list-style-type: none"> 0.1% annual tax based value of registered vehicles in King County Assumed to start in FY 2012 1:12 Bonding Ratio 	\$155 M to \$185 M

NOTE: SOURCES OF FUNDS ARE NOT NECESSARILY ADDITIVE; FUNDING RANGES BASED ON REVENUE POTENTIAL, NOT FINANCING ASSUMPTIONS





SR 520 Bridge Replacement & HOV Program — Toll Scenarios Analyzed

Scenario	Strategy / Description	Tolling Phase/Dates	Variable Toll Range (2007\$)		Toll Collection Points		HOV Toll Exemptions ³		Financial Capacity ⁴
			SR 520	I-90	SR 520	I-90	SR 520	I-90	
SR 520 General Purpose Lane Tolling Only									
7	Toll only SR 520 during pre-completion at lower toll rates and during post-completion at medium toll rates.	Pre-Completion: FY 2011-16	\$0.75 to \$3.25		Bridge		None		☐
		Post-Completion: FY 2017 forward	\$0.75 to \$3.80		Bridge		HOV 3+		
6 ¹	Toll only SR 520 during pre-completion at medium toll rates and during post-completion at highest toll rates tested.	Pre-Completion: FY 2011-16	\$1.50 to \$3.80		Bridge ²		None & Transit pays		☐
		Post-Completion: FY 2017 forward	\$0.95 to \$5.35		Bridge ²		None & Transit pays		
6, 1 ¹	Toll only SR 520 during pre-completion at medium toll rates and during post-completion at highest toll rates tested.	Pre-Completion: FY 2011-16	\$1.50 to \$3.80		Bridge ²		None		☐
		Post-Completion: FY 2017 forward	\$0.95 to \$5.35		Bridge ²		HOV 3+		
1	Toll only SR 520 during post-completion phase at medium toll rates.	Post-Completion: FY 2017 forward	\$0.75 to \$3.80		Bridge		HOV 3+		☐
2	Toll only SR 520 during pre- and post-completion phases at lowest toll rates tested.	Pre-Completion: FY 2011-16	\$1.00 to \$2.95		Bridge		None		☐
		Post-Completion: FY 2017 forward	\$1.00 to \$2.95		Bridge		HOV 3+		
5	Toll only SR 520 during post-completion at a fixed/flat toll rate.	Post-Completion: FY 2017 forward	Fixed/Flat Toll = \$1.70		Bridge		HOV 3+		☐
SR 520 General Purpose Lane Tolling + Dual I-90 Express Toll Lanes (FY 2017 forward)									
10 ¹	Toll SR 520 during pre-completion at medium toll rates, post-completion at highest toll rates tested, and post-completion -HOT lanes on I-90.	Pre-Completion SR 520 only: FY 2011-16	\$1.50 to \$3.80		Bridge		None		☐
		Post-Completion on Both Bridges: FY 2017 forward	\$0.95 to \$5.35	HOT Lanes / Dynamic Tolls	Bridge / Segments	East / West of Mercer Island	HOV 3+	HOV 3+	
15 ^{1,2}	Toll SR 520 during pre-completion at lower toll rates, post-completion at medium toll rates, and post-completion HOT lanes on I-90.	Pre-Completion SR 520 only: FY 2011-16	\$0.75 to \$3.25		Bridge		None		☐
		Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$3.80	HOT Lanes / Dynamic Tolls	Bridge	East / West of Mercer Island	HOV 3+	HOV 3+	

NOTES:
¹ Assumes variable-rate tolling, where tolls vary by time of day according to a fixed schedule, except as noted in Scenario 5, which tests fixed-rate (flat) tolling.
² On SR 520, segment tolls apply to short bridge on corridors east and west of the main bridge span; on I-90, half of toll charged on west side of Mercer Island, and half charged on east side of Mercer Island.
³ Transit vehicles are assumed to exempt except in Scenario 6.
⁴ Ability to meet the \$4.65 B SR 520 program cost based on existing road-toll financing; note that scenarios with -90 tolls would entail additional capital costs for -90 toll collection equipment and improvements.
 ☐ = more than \$1.4 B short; ☐ = \$1.0 to 1.9 B short; ☐ = \$0.5 to 1.0 B short; ☐ = less than \$0.5 B short; ● = fully funds \$4.65 B.
⁵ Modified to reflect current assumptions regarding start dates, toll collection points and/or exemptions. ⁶ New scenario as of November 2009.



SR 520 Bridge Replacement & HOV Program — Toll Scenarios Analyzed

Scenario	Strategy / Description	Tolling Phase/Dates	Variable Toll Range (\$0.75)		Toll Collection Point ²		HOV Toll Exemptions ³		Financial Capacity
			SR 520	I-90	SR 520	I-90	SR 520	I-90	
SR 520 + I-90 General Purpose Lane Tolling									
13*	Toll SR 520 and I-90 during pre- and post-completion at lower toll rates. I-90 pre-completion tolling begins FY 2014.	Pre-Completion SR 520: FY 2011-16 & I-90: FY 2014-16†	\$0.75 to \$3.25	\$0.75 to \$3.25	Bridge	Bridge	None	HOV 3+	●
		Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$3.25	\$0.75 to \$3.25	Bridge	Bridge	HOV 3+	HOV 3+	
14**	Toll SR 520 and I-90 during pre-completion at lower toll rates and post-completion at medium toll rates. I-90 pre-completion tolling begins FY 2014.	Pre-Completion SR 520: FY 2011-16 & I-90: FY 2014-16	\$0.75 to \$3.25	\$0.75 to \$3.25	Bridge	Bridge	None	HOV 2+	●
		Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$3.80	\$0.75 to \$3.80	Bridge	Bridge	HOV 3+	HOV 3+	
11+	Toll SR 520 and I-90 during pre-completion at medium toll rates, and during post-completion at highest toll rates tested.	Pre-Completion on Both Bridges: FY 2011-13	\$1.60 to \$3.80	\$1.60 to \$3.80	Bridge	Bridge	None	HOV 2+	●+
		Post-Completion on Both Bridges: FY 2017 forward	\$0.85 to \$6.30	\$0.85 to \$6.30	Bridge	Bridge	HOV 3+	HOV 3+	
12	Toll SR 520 during post-completion at lower toll rates and during post-completion at higher tolls; toll I-90 during post-completion at lower toll rates.	Pre-Completion SR 520 only: FY 2011-13	\$0.75 to \$3.25		Bridge		None		●
		Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$4.20	\$0.75 to \$2.60	Bridge	Bridge	HOV 3+	HOV 3+	
4*	Toll only SR 520 during pre-completion at lower toll rates, and I-90 tolling during post-completion at lower toll rates.	Pre-Completion SR 520 only: FY 2011-13	\$0.75 to \$3.25		Bridge		None		●
		Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$3.25	\$0.75 to \$3.25	Bridge	Bridge	HOV 3+	HOV 3+	
3	Toll SR 520 and I-90 only during post-completion phase at lower toll rates.	Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$3.25	\$0.75 to \$3.25	Bridge / Segments	East 1/2 West of Mercer Island	HOV 3+	HOV 3+	●
8	Toll SR 520 and I-90 only during post-completion, with higher tolls on SR 520 and lower tolls on I-90.	Post-Completion on Both Bridges: FY 2017 forward	\$0.75 to \$4.20	\$0.75 to \$2.60	Bridge	Bridge	HOV 3+	HOV 3+	●
9	Toll SR 520 and I-90 during pre- and post-completion at lowest toll rates tested.	Pre-Completion on Both Bridges: FY 2011-13	\$1.00 to \$2.95	\$1.00 to \$2.65	Bridge	Bridge	None	HOV 2+	●
		Post-Completion on Both Bridges: FY 2017 forward	\$1.00 to \$2.65	\$1.00 to \$2.65	Bridge	Bridge	HOV 3+	HOV 3+	

NOTES:
 1 Assumes variable-rate tolling, where tolls vary by time of day according to a fixed schedule, except as noted in Scenario 5, which tests fixed-rate (flat) tolling.
 2 On SR 520, segment tolls apply to both lanes on western end and west of the main bridge span, on I-90, toll of half charged on west side of Mercer Island, and half charged on east side of Mercer Island.
 3 Transit vehicles are assumed to exempt except in Scenario 6.
 4 Ability to meet the \$4.65 B SR 520 program cost based on existing non-toll funding; note that scenarios with I-90 tolls would entail additional capital costs for I-90 toll collection equipment and improvements.
 5 ● = more than \$1.5 B short; ○ = \$1.0 to 1.5 B short; ◐ = \$0.5 to 1.0 B short; ◑ = less than \$0.5 B short; ◒ = fully funds \$4.65 B.
 6 Modified to reflect current assumptions regarding site dates, toll collection points and/or exemptions.
 7 New scenario as of November 2009.



V. Public Outreach

The public was provided many opportunities to provide comment to the Workgroup throughout the process. Below is a summary of the public opportunities as well as a summary of the feedback the Workgroup received on their draft recommendations.

A. Public Outreach Opportunities

- Σ All Workgroup, Westside Subgroup and Working Session meetings were open to the public.
- Σ Several meetings were broadcast by TV-W or the Seattle Channel.
- Σ E-mail notifications were sent prior to all meetings using the SR 520 program and Workgroup public e-mail list (3800 e-mail addresses), as well as a list of key jurisdictional, regulatory and legislative individuals.
- Σ Media advisories were sent prior to all meetings.
- Σ Development and maintenance of the Legislative Workgroup Web site, including access to all materials presented during the meetings.
- Σ Set-up and maintenance of a Workgroup phone number and e-mail address to accept comments.
- Σ Open Community Forum was held on the eastside to provide the public with information on the process and information available mid-way through the process.

B. Draft Recommendations Outreach

The Workgroup hosted a Town Hall meeting on November 24, 2009 that provided the public an opportunity to review information developed during the process and specifically comment on the Draft Recommendations. There were 115 people who attended the meeting and 28 individuals gave verbal comments. In addition to the public meeting the Workgroup also gained input from:

- Σ On-line comment form at the Workgroup Web site.
- Σ Seattle City Council's Committee of the Whole meeting held on November 24, 2009.

C. Summary of Public Outreach Comments

The comments were reviewed and categorized into a simple database. All of the verbatim information is available in the Appendix. In summary, a total of 479 individuals provide public comment during the draft recommendations comment period from November 20 – December 4th.

These included:

- Σ 71 people provided oral comments at the Workgroup Town Hall and the Seattle City Council's Committee of the Whole meetings.
- Σ 377 individuals completed the online comment form.
- Σ 31 people submitted handwritten or e-mailed comments through the Workgroup e-mail.



The comments received were distributed over a wide area with the largest concentration from the Montlake zip code totaling 217 individual responses.

Comments on Westside A+ Design Recommendation

A total of 427 comments were received related to the design. They fell into three general categories below. Some excerpts from some of the comments are included to give a sampling of the types of comments that were received.

Opposition to Option A+ (291 comments)

Neighborhood impacts – noise, proximity of the new bridge to private properties, visual impacts and aesthetics

“Our homes, our livelihood, our neighborhood livability must be of the utmost priority in the selection of your final plan.”

Traffic and mobility impacts

“It further splits the Montlake neighborhood, ...Adding a second bridge next to the existing Montlake Bridge will destroy housing and forever change the demeanor of a wonderful family neighborhood.”

“reduces values in the Montlake area due to noise and obstruction”

Impacts of a ramp connections to Lake Washington Boulevard

“Please avoid adding ramps to Lake Washington Boulevard and take out the existing ones . . . return this historical park road back to its original intent”

“Traffic should be put on Montlake Blvd. and 23 Avenue, a city street where it belongs”

Some comments mentioned the preference for other Options. Of the 66 who commented, 45 indicated a preference for Option M.

Support for Option A+ (88 comments)

Cost

“Option A+ has best design, and gets the job done within reasonable cost.”

Transit/mobility

“This option...coordinates well with the City of Seattle's objectives to encourage more people to use transit and HOV as a mode of travel.”

Environmental Impacts

“It seems to me that all the tunnel options are destructive of the Arboretum.”

Support for A+ but prefer no Lake Washington Boulevard Ramps

“Generally, I we agree with the A+ Option and reject categorically the exorbitant environmental and financial costs of the other options listed. Nonetheless we have reservations about the new Arboretum ramps to replace the Ramps to Nowhere.”

No Preference Identified (57 comments)

- Σ Consider eight or more lanes to accommodate future population growth
- Σ Select an option that will accommodate future light rail
- Σ Keep the Montlake Freeway Transit Stop in the new design



Comments on Financing Strategies Recommendation

A total of 257 comments were received related to the Workgroup's financing recommendations. The comments primarily related to tolling with a few other remarks. The majority (143 comments) supported using additional tolling options to finance the new SR 520 corridor. The themes identified that tolling encourages increased transit use and improves mobility; it is a fair method to increase revenues; and it is a realistic and reliable solution. These respondents have different opinions about what to charge and when to enact tolling on additional roads and under what circumstances. However, they agree on the solution of additional tolling to address the funding gap. Those opposed to tolling cite that it is unfair and that taxes should be the primary way to fund transportation improvements.

Tolling (188 comments)

Σ Consider additional Tolling

"I think you should go forward with tolling of both routes fully and right away"

"The only way for the cross-lake transportation system to properly work is to toll both 520 and I-90"

"Toll 520 and I-90! Those who use these roads should pay for 100% of the funding gap"

"Tolling on 520 and I-90. Whatever closes the gap fastest so the work can be started"

Σ Do not consider Tolling (45 comments)

"Tolling I-90 to pay for 520 is dubious in my mind"

"I would rather see a gas tax added. This would encourage people to use less fuel and move to mass transit"

Other remarks

Σ Support for pursuing maximum state and federal funding opportunities

Σ The vulnerable section of the bridge should be the only segment replaced until future funds become available to pay for the project.

Other Comments for Workgroup consideration

A total of 226 comments were received in this section. Nearly half (106 comments) focused on moving the project forward. Respondents noted the time already invested in the SR 520 program and the need to address the safety issues. Many comments were a summary of remarks already made related to the Design and Financing recommendations. However, while respondents want a decision made to improve the safety and traffic conditions of the corridor, there were varying responses as to what that design decision should be.

"Let's get this project going. Seattle has now been declared to have the worst traffic in the nation"

"I urge you to get this project moving along...We need mobility in this region...We need the project to continue moving forward"



"Please consider better options to mitigate traffic around the exit and entrance ramps of 520 into neighborhoods"

"Build only what you can afford to build with the money available"

"Replacement of 520 is predicated on safety first and foremost. Fund that with presently available money and retrofit the existing bridge"

D. Jurisdictional and Agency Letters Received

The following are individual letters that were received related to the Workgroup recommendations.





December 4, 2009

Members of the SR 520 Legislative Work Group:

We understand that in accordance with ESHB 2211, you have arrived at a set of recommendations related to the financing and west side design of the SR 520 Bridge Replacement and HOV Project. On November 24, the City Council was briefed by WSDOT staff on your review process and findings. In conjunction with the briefing, the Council listened to public comment from hundreds of individuals later that morning. After many years of deliberating over the future of the SR 520 corridor, we share your interest in arriving at a preferred design alternative and financing model that will move this project forward expeditiously.

In the coming weeks, the City of Seattle will thoroughly review the Work Group's recommendations and compare them to the Council's preferences as stated in previously passed resolutions. It is our intent to provide the Governor and State Legislature with our perspective on your work as well as the progress made in the last several years by WSDOT and the impacted communities in Seattle. The City has on several previous occasions articulated financing and design guidance to the State with regard to the SR 520 project. We will be reviewing your recommendations in the context of these prior policy positions.

As you are aware, the City is currently in a period of transition. With Mayor-elect Mike McGinn and Councilmembers-elect Sally Bagshaw and Mike O'Brien taking office in early January, we believe it is appropriate and necessary to engage these newly elected officials on the SR 520 project before issuing a statement on the Work Group's recommendations. Assessing the ongoing concerns being voiced by community members from neighborhoods adjacent to the SR 520 corridor will also take us beyond your final Work Group meeting on December 8. We intend to provide comments and recommendations early in the 2010 Legislative Session.

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Page 2

Thank you for taking time to review the west side design alternatives for the SR 520 project. This is a critical piece of transportation infrastructure not only for our region but the entire state. We look forward to discussing this project with you and your colleagues in the State Legislature in the weeks and months ahead.

Sincerely,


Council President Richard Conlin


Councilmember Jan Drago
Chair, Transportation Committee


Councilmember Tim Burgess


Councilmember Sally J. Clark


Councilmember Jean Godden


Councilmember Bruce Harrell


Councilmember Nick Licata


Councilmember Richard J. McIver


Councilmember Tom Rasmussen

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City of Yarrow Point



November 24, 2009

The Honorable Rodney Tom, Co-Chair
The Honorable Scott White, Co-Chair
SR 520 Legislative Work Group
600 Stewart Street, Suite 520
Seattle, WA 98101

Attn: Ms. Barb Gilliland, Work Group Administrator

Re: Support for a west side design option for replacement of the SR 520 Bridge that keeps the project on schedule and within budget, ensures safety, and moves forward on Eastside projects

Dear Senator Tom and Representative White:

We are writing to you as Mayors of Eastside cities that will be significantly impacted by the decisions made by the SR 520 Legislative Work Group and the State of Washington for replacing the bridge and rebuilding the SR 520 corridor. We believe this project must be viable and affordable, and provide for the safety and mobility of the residents, employees, freight-haulers and transit users that depend on a well-functioning SR 520 corridor.

The following key principles reflect our priorities for the SR 520 Bridge Replacement and Corridor Improvement Project:

- SR 520 is a vital corridor not only for our region but for the State of Washington. It has major safety, seismic and mobility deficiencies. The State cannot afford further delay in replacing the bridge and completing the corridor. Loss of the bridge would be devastating to the State's economy.
- The new bridge must be the six-lane configuration (four general purpose and two HOV) previously agreed to by the Legislature.
- The State needs to ensure completion of the SR 520 Bridge and corridor by 2016 – which means moving forward in 2010 with the bridge and the Eastside transit and HOV projects.



- The State needs to make a decision on the west side design that can be constructed within the financial constraints of the project budget: the Legislature set a cap of \$4.65 billion for the SR-520 project and financing even that amount will be challenging.

In light of these key principles, we believe Option A+ is the only viable and affordable option for the west side design of the project. With this letter, we underscore our strong support for this option and the November 17 recommendation of the SR 520 Legislative Work Group for Option A+.

Sincerely,



Grant Degginger
Mayor of Bellevue



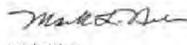
George Martin
Mayor of Clyde Hill



Fred McConkey
Mayor of Hunts Point



James Lauringer
Mayor of Kirkland



Mark Nelson
Mayor of Medina



John Marchione
Mayor of Redmond



David Cooper
Mayor of Yarrow Point



King County Council Motion



KING COUNTY
Signature Report

1200 King County Courthouse
516 Third Avenue
Seattle, WA 98104

November 23, 2009

Motion 13095

Proposed No. 2009-0610.2 **Sponsors** Hague, Gossett and Lambert

1 A MOTION expressing King County's support for a
2 preferred design of the State Route 520 bridge replacement
3 and high-occupancy vehicle program.

4
5 WHEREAS, the State Route 520 bridge is a vital transportation corridor between
6 job centers and growing communities around Lake Washington, carrying about one
7 hundred fifty-five thousand people per day, and

8 WHEREAS, the State Route 520 bridge is heavily congested during morning and
9 afternoon commute times, carrying twice as many vehicles as it was originally planned
10 to, and

11 WHEREAS, the State Route 520 bridge was built in the early 1960s, without the
12 benefit of modern design and safety standards, and the structure's age and condition make
13 it vulnerable to seismic events or windstorms, and

14 WHEREAS, the state and the region have been studying the potential replacement
15 of the State Route 520 bridge for several years and have identified State Route 520 bridge
16 replacement and high-occupancy vehicle ("HOV") program options to replace the
17 existing floating bridge, enhance safety and provide transit and roadway improvements



Motion 13095

18 throughout the corridor, with a total cost capped at four billion six hundred fifty million
19 dollars, and

20 WHEREAS, the eastside transit and HOV project design components of the State
21 Route 520 bridge replacement and HOV program have been agreed upon and are ready to
22 move forward, and

23 WHEREAS, in 2009 the state Legislature created the State Route 520 Legislative
24 Workgroup to recommend a preferred westside design option to the Legislature by
25 December 2009, and

26 WHEREAS, five westside design options are currently under consideration by the
27 legislative workgroup, and

28 WHEREAS, the impact on transit operations of the westside design options
29 should be highlighted for the legislative workgroup's consideration, and

30 WHEREAS, King County Metro transit service will play a key role in
31 accommodating future growth and demand in the State Route 520 corridor, and this
32 service is crucial to making the new bridge and HOV program work for the communities
33 on both sides of the lake both now and in the future, and

34 WHEREAS, the state Legislature recently provided King County with the
35 authority to levy a property tax that would support expanded transit service in the State
36 Route 520 corridor as envisioned in the federal urban partnership, which will help meet
37 growing demand for transit service in the corridor. The metropolitan King County
38 council, as part of its 2010-2011 biennial transit budget deliberations, has levied this
39 property tax in a tax-neutral manner, and



Motion 13095

40 WHEREAS, all of the westside design options include the removal of the
41 Montlake freeway bus station, which will adversely affect capacity through the corridor
42 unless an estimated three to five million dollars annually is provided to offset this loss,
43 and

44 WHEREAS, the King County department of transportation stated its preference,
45 at an October 8, 2009, State Route 520 Legislative workgroup meeting, for option A with
46 specific suboptions as the best means of meeting the transit design needs, and

47 WHEREAS, the cost estimate for westside design option A with suboptions most
48 closely aligns with the total program cost identified by the state in comparison to all the
49 other design options, and

50 WHEREAS, it is in the county's best interests if the legislative workgroup
51 recommends an option that meets the needs of transit now so that the project can move
52 forward on schedule without further delay and allow for a final decision on westside
53 design options by the state Legislature in 2010, and

54 WHEREAS, the SR 520 Legislative Workgroup on November 17 recommended
55 that the A+ Hybrid Option be advanced for review in the supplemental draft
56 environmental impact statement, and

57 WHEREAS, the Eastside Transportation Partnership has expressed support for
58 this proposed motion and the A+ Hybrid Option;

59 NOW, THEREFORE, BE IT MOVED by the Council of King County:

60 A. King County supports a State Route 520 bridge replacement and HOV
61 program design that is most affordable and includes the following transit design
62 components for the westside:



Motion 13095

- 63 1. An eastbound and westbound HOV direct access ramp such as included in the
64 option currently defined as the A+ hybrid;
65 2. Bus layover space, passenger facilities and transit priority in the Montlake
66 triangle and bridge area in the vicinity of Husky Stadium;
67 3. Lake Washington Boulevard ramps to the eastbound State Route 520 and
68 from westbound State Route 520;
69 4. An eastside bus station designed to accommodate buses passing each other;
70 and
71 5. Compensation to King County Metro in the form of an ongoing operating
72 subsidy for the loss of direct service to the University District with the removal of the
73 Montlake Freeway bus station.
74 B. King County supports the A+ Hybrid option because of its compliance with
75



Motion 13095

76 cost and transit connectivity requirements, and ability to improve overall mobility in the
77 region.
78

Motion 13095 was introduced on 11/9/2009 and passed as amended by the Metropolitan
King County Council on 11/23/2009, by the following vote:

Yes: 9 - Mr. Constantine, Mr. Ferguson, Ms. Hague, Ms. Lambert, Mr. von
Reichbauer, Mr. Gossett, Mr. Phillips, Ms. Patterson and Mr. Durn
No: 0
Excused: 0

KING COUNTY COUNCIL
KING COUNTY, WASHINGTON



Dow Constantine, Chair

ATTEST:


Anne Norris, Clerk of the Council

Attachments None





November 18, 2009

Honorable Senator Rodney Tom, Co-chair
Honorable Representative Scott White, Co-chair
SR 520 Legislative Working Group
600 Stewart Street, Suite 520
Seattle, WA 98101

Dear Senator Tom and Representative White:

Thank you for the work you are doing to determine a solution for the Westside of the SR 520 Bridge Replacement project.

The City of Kirkland supports Option A as the best choice of the options that are currently under consideration. The one important reason for our endorsement is that it is the only option that appears to be within the overall SR 520 project budget. We are concerned that an overly expensive Westside project would reduce the funds available to complete the improvements that have been agreed to for the Eastside. We note that the King County Council, the King County Executive and the Eastside Transportation Partnership also support Option A.

All the options under consideration would remove the heavily used Montlake flyer stop. Therefore, it is critical that service be in place that would be transfer points at Pacific Avenue and Montlake Boulevard with the Evergreen Point freeway stop regardless of the option that is selected. This service would mitigate the loss of transfer capability that takes place today at the Montlake flyer stop.

Once again, thank you for your hard work on this difficult issue. The prospect of a completed project is exciting and appears to be closer than ever.

Sincerely,
Kirkland City Council

A handwritten signature in black ink, appearing to read "James L. Lauinger".

By James L. Lauinger, Mayor

123 Fifth Avenue • Kirkland, Washington 98033-6189 • 425.387.3000 • FAX 425.387.3111 • www.ci.kirkland.wa.us





November 30, 2009

The Honorable Members of the SR520 Legislative Work Group:

We are delighted to present you with a summary of the SR 520 Health Impact Assessment report for your consideration and final report. This Health Impact Assessment was required by Engrossed Substitute Senate Bill 6099. The report's goal is to assist the SR 520 Mediation Group, the Washington State Department of Transportation, and the Washington Legislature in making decisions on the SR 520 project design based upon potential health impacts. Important health issues, from chronic disease and mental well-being to climate change, are closely linked to how our cities are built, including our transportation system.

This report recommends elements that will be important in any alternative selected. These elements include increased and improved options for transit use, bicycling and walking; landscaped roadway lids and green spaces; design features that reflect the communities' resources and aesthetics; and, attention to the health-related impacts from the long construction stage. More specifically, the following recommendations have been made in the SR 520 Health Impact Assessment:

Transit, Bicycling and Walking

More and better transit service, combined with bicycling and walking facilities, will provide multiple health benefits by reducing greenhouse gas emissions and other pollutants and providing opportunities for more physical activity.

1. Increase and improve transit service to meet increased demand, attract more riders, and reduce air pollution
2. Install connected walking and bicycling facilities throughout the corridor
3. Create a common way finding system

Landscaped Lids and Green Spaces

Proposed landscaped freeway lids and green spaces will reconnect neighborhoods, reduce noise, and support vegetation that contributes to better air quality.

1. Include six landscaped freeway lids throughout the full corridor (I-5 to I-405)
2. Use landscaping materials throughout the SR 520 corridor, along adjacent rails and roadways, and at transit stops
3. Improve and preserve the integrity of the Washington Park Arboretum, and the ability of visitors to enjoy it and other green spaces and natural areas
4. Preserve access to the waterfront for water-related activities



November 30, 2009 Design Features

A primary public annoyance with roadways is noise, which can be alleviated with available materials and good design. Art incorporated into transportation corridors can help enhance adjacent neighborhoods' visual character. Storm water management practices are an important strategy to reduce water pollution.

1. Reduce noise throughout the corridor
2. Add to the adjacent communities' visual character with art and design
3. Utilize innovative storm water management practices

Construction Period Management

The SR 520 replacement is expected to require seven or more years to build. The construction period can produce detrimental health effects due to exhaust emissions, congestion, and longer travel times.

1. Reduce construction-related pollution
2. Increase traffic management
3. Provide for construction noise control

Health Impact Assessment Project Guiding Principles

Ensure health elements are integral to the project plan
Support all recommendations even in difficult budget times for optimal health benefits

We recommend the final design should be selected based on which option can most effectively and efficiently incorporate all of the health elements into its specific design. All of these elements are integral to the project and only through incorporating these measures will the air quality and health benefits be fully realized. More specific recommendations are shown in the full report available at <http://www.kingcounty.gov/healthservices/health/ehs/hia.aspx>. A hard copy of the report is also available.

The Puget Sound region has a unique opportunity to rebuild a SR 520 corridor that helps to create healthy places to live, work and play while moving people throughout the region. We would be happy to answer any questions you have about the report and would welcome an invitation to present this report to you. We hope to be able to work you with on more transportation planning projects in the future.

Sincerely,



David Fleming, MD
Director & Health Officer
Public Health – Seattle & King County



Dennis McLerran
Executive Director
Puget Sound Clean Air Agency



Sound Transit



November 13, 2009

Senator Rodney Tom
Co-chair, SR 520 Legislative Workgroup
321 John A. Cherberg Building
PO Box 40448
Olympia, WA 98504-0448

Representative Scott White
Co-chair, SR 520 Legislative Workgroup
321 John L. O'Brien Building
PO Box 40600
Olympia, WA 98504-0600

Dear Senator Tom and Representative White:

This is in regard to your concern about how the SR 520 Westside Options serve transit and light rail riders at the Montlake Multimodal Center.

Sound Transit, King County Metro, WSDOT and the University of Washington worked diligently to develop a high capacity transit plan and a Montlake Multimodal Center Plan that were responsive to each of the three alternatives being developed for the Westside Montlake interchange. Our analysis determined that none of the alternatives denied transit accessibility or the ability to make a direct connection to the Montlake Multimodal Center in the Montlake "triangle" area and the new Sound Transit light rail station. We also recognize that there are different transit markets in question: those traveling across SR 520; those utilizing SR 520 to access the University of Washington or other destinations in the vicinity; and those transit users crossing the corridor on Montlake Boulevard, whether or not they are making a transfer to a SR 520 route. All the Westside options provide access to local and regional bus service and light rail at the same location, at the Montlake Multimodal Center.

Each is a distinct market and each is affected differently under the various interchange alternatives. Additionally, transit operations are only one of many considerations in making a decision on a preferred alternative. To date we have seen developing analysis from WSDOT as the alternatives have evolved and we look forward to reviewing the final analysis once the alternatives have been fully defined and studied. While we remain committed to working with our partners and the community on transit issues, needs and concerns, Sound Transit will defer commenting on interchange preferences until the full analysis has been conducted and the draft supplemental environmental impact statement is released for comment. Once a preferred interchange design is adopted we will work with WSDOT and our

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King County Councilmember

CHIEF EXECUTIVE OFFICER

Joni Earl



partners to make sure it is optimized for transit operations to the fullest extent possible.

I look forward to obtaining more information about Option M and how it works for transit. It appears to combine transit, HOV and general purpose traffic into single lane on-and off-ramps to the tunnel under the Montlake Cut. If this is the case I would expect the WSDOT analysis to show the resulting detrimental impact to transit as operations are slowed, resulting in decreased speed and reliability.

Thank you for the opportunity to provide input on the SR 520 project.

Sincerely,



Gregory A. Walker, AICP
Planning and Development Director
Sound Transit





UNIVERSITY OF WASHINGTON

OFFICE OF REGIONAL RELATIONS
Theresa Doherty, Assistant Vice President

November 24, 2009

Senator Rodney Tom
Representative Scott White
Co-Chairs, SR 520 Legislative Workgroup

RE: University of Washington prefers Option A+

Dear Senator Tom and Representative White,

The University of Washington has been an active participant in the ongoing discussions regarding the westside design options currently under review by the SR 520 Legislative Workgroup. As recently as December of 2008 President Emmert wrote the attached letter regarding "A, K and L". This letter, along with letters from each of the other 33 mediation members, was included in a report titled "SR 520 Project Impact Plan" and was submitted to the 2009 Legislature.

While the University of Washington can and will work with any one of the westside design options chosen by the Governor and the Legislature, the University's preference is option A+. Option A+ has the least impact on our resources and assets. It is preferred by our transit partner King County Metro because it provides the best transit connectivity on the local roadways and as Metro's largest client; we want an option that works for them. Option A+ causes less environmental damage to the Washington Park Arboretum which is both a City park and a research laboratory for our faculty and students and managed jointly by the University and the City. Lastly, we are very concerned about rebuilding this critical transportation corridor before Mother Nature takes it out in a winter storm. Option A+ is at or under the budget cap for the project and according to the environmental agencies testifying at recent meetings, it is an option that could be permitted and built.

Thank you for taking the time to hear from your constituents on this critical issue.

Sincerely

Theresa Doherty
Assistant Vice President for Regional Relations

225 Gerberding Hall Box 351243 Seattle, Washington 98195-1243 206/221-2603 FAX: 206/685-1201
tdoherty@u.washington.edu
www.washington.edu/community/





UNIVERSITY OF WASHINGTON

OFFICE OF THE PRESIDENT

Mark A. Emmert, President

December 23, 2008

Governor Christine Gregoire
Joint Transportation Committee

RE: SR 520 Project Impact Plan

Dear Governor Gregoire and Legislative Members of the Joint Transportation Committee:

The University of Washington is a world-class institution that is an essential asset to our community and our state. Granting over 12,000 degrees annually, we have numerous highly rated academic programs, including bioengineering, drama, microbiology, computer science and engineering, medicine, and much more. We win more research funding than any other public university in the nation, more than \$1 billion annually. Our partnerships with business and industry have spawned more than 200 startups out of the intellectual property that has flowed from our laboratories and our research. Additionally, the University is home to one of the top ten hospitals in the nation, serving all patients regardless of where they come from or their socioeconomic background.

The University is also a national leader in environmental stewardship. Through our aggressive Transportation Management Plan more than 75 percent of the campus population commutes to campus in a greener mode than driving alone. Despite a 24 percent growth in employee and student population since 1990, today's University-related peak hour traffic remains below 1990 levels. Furthermore, we have committed to reducing greenhouse gases by signing the Seattle Climate Partnership Agreement. We are a strong partner in managing the internationally renowned Washington Park Arboretum, which offers recreation and educational opportunities for citizens state-wide.

The State's investment in SR 520 is critical to the region's continued prosperity. SR 520 and its connection to Montlake Boulevard is one of the principal gateways to the campus. But we cannot allow the investment in the SR 520 infrastructure to adversely affect the investment that already exists at the University of Washington. With proper mitigation, we could accept any of the alternatives being considered so long as they:

301 Gerberding Hall Box 351230 Seattle, Washington 98195-1230 206-543-5010 FAX: 206-616-1784



Governor Christine Gregoire
Joint Transportation Committee
December 23, 2008
Page Two

- Allow the University to grow in the future by retaining the building capacity of our property south of Husky Stadium.
- Fund the needed transit service and facility enhancements that result from removal of the Montlake Flyer Stop.
- Maintain the campus parking supply by replacing parking lost due to construction or permanent facilities.
- Do not degrade traffic operations through the Montlake Boulevard corridor.
- Protect the University's assets, including UW Medical Center, Husky Stadium, Washington Park Arboretum, and Waterfront Activities Center.

Attached are the University's comments on the SR 520 Project Impact Plan. These reflect specific elements that we believe need to be included in the various plan options in order to mitigate the project impacts to the University. Any final plan must commit to fully funding mitigation of University concerns. Otherwise, a project meant to solve transportation problems in the region may permanently damage one of the state's greatest assets.

Sincerely yours,

Mark Emmert
President, University of Washington

Enclosures



ATTACHMENT

**UNIVERSITY OF WASHINGTON COMMENTS ON THE
SR 520 PROJECT IMPACT PLANS**

The University of Washington has been an active participant in the SR 520 Mediation process and has considered the questions posed to all 34 members of the SR 520 Mediation Panel.

- A. Which west side interchange Option do you prefer and why?
- B. Are there changes that could be made to the other Options that would make them more acceptable?

The University has no position regarding a west side interchange option. Any of them could work if properly mitigated to address the UW's concerns. There is no question that Option A has the least impact on University of Washington property. The other two options (K & L) would require extensive mitigation to retain the UW's building capacity and parking in the area south of Husky Stadium. Our mitigation requirements are outlined in these five pages. The final page presents a matrix of our requirements for all three options.

OPTION A REQUIREMENTS:

- **Retain the SR 520 ramps to Lake Washington Boulevard.** WSDOT's analysis shows that eliminating these ramps would increase congestion at the SR 520/Montlake Boulevard Interchange, but would not substantially reduce traffic through the Arboretum.
- **Implement traffic calming through the Arboretum.** The project should provide design treatments in the Arboretum to slow traffic and enhance mobility for non-vehicular modes.
- **Construct the auxiliary westbound lane on SR 520 between the Montlake Boulevard On-ramp and the Roanoke Street/I-5 Off-ramp.** WSDOT's analysis shows that this auxiliary lane would dramatically improve traffic operations of Option A through the Montlake corridor. The lane would require very little additional pavement width on the Portage Bay Viaduct since much of the width would be required for the ramp transitions at each end. The operational benefits of this slight widening warrant including the auxiliary lane in Option A.
- **Construct the second Montlake Bridge.** The second bridge allows transit lanes to be provided across the Ship Canal, which would improve transit reliability to the UW.

OPTION K AND L REQUIREMENTS

- **Retain future building opportunities.** Construction of the new tunnel/depressed roadway south of Husky Stadium must maintain the UW's potential development capacity of that area, which is the largest remaining building area on campus near the Medical Center. Options to maintain development capacity could include relief of development regulations such as increasing the height, reducing set backs and other options. It must also include allowances for future development over and under the tunnel/depressed roadway, and increased cost of building over this tunnel.

1



ATTACHMENT

- **Depress and lid the Montlake Blvd/Pacific Street intersection to accommodate unencumbered, at-grade pedestrian crossings.** Creating a four-leg intersection at the Montlake Boulevard/Pacific Street intersection (the new tunnel connection would be the new east leg) requires that pedestrian crossings be grade-separated. This provides the needed capacity at the intersection and improves pedestrian safety. Unlike other lids in the plan, this lid is required for the system to function and cannot be eliminated as a cost-trimming measure.
- **Replace parking displaced by construction.** Parking that is temporarily eliminated during the multi-year construction period must be replaced prior to construction. There are about 1,600 parking spaces in the stadium area parking lots. Replacement parking could be accomplished with a new parking structure somewhere south of the stadium or elsewhere on the southeast portion of the campus, such as an underground parking facility beneath Rainer Vista, near the Medical Center, or along side the stadium in a tiered garage as initially shown in the stadium renovation drawings completed by HOK Architects.
- **Do not degrade operations on Montlake Boulevard between Pacific Street and Wahkiakum Lane.** The Pacific Street Extension will become the higher-volume route across the Ship Canal. The design should provide a dual-left-turn lane from southbound Montlake Boulevard to eastbound Pacific Street to optimize the capacity and reduce potential queues for this route. This may be accomplished without (or with limited) widening of Montlake Boulevard. Operations with Option K or L should be no worse than expected for the No Build condition.
- **Provide direct access from Pacific Street Extension.** After construction is complete, any vehicular parking facility located south of the stadium must have access to all directions of the Pacific Street Extension. If parking is located in this area during construction, temporary access, including the ability to unload the garage in a timely manner after events, must be retained.
- **Retain pedestrian access to Husky Stadium from new parking facilities.** Replacement parking facilities must retain pedestrian access during construction.
- **Relocate the Waterfront Activities Center, moorage docks and Climbing Rock.**
- **Indemnify UW for potential structural damage to Husky Stadium and historic Canoe House.** Excavation and dewatering in the vicinity of Husky Stadium has the potential to affect the foundation and structural integrity of the stadium. A plan to monitor and remedy potential settling and damage during construction must be developed in association with the UW.

REQUIREMENTS THAT ARE THE SAME FOR ALL OPTIONS

- **Fund improvements recommended by the High Capacity Transit (HCT) Plan.** All three Westside interchange options propose eliminating the Montlake Flyer Stop to decrease the width of I-5 through the Montlake neighborhood. Replacing the function of the Montlake Flyer stop will require significantly increased bus service hours between the Eastside and the University District, as well as improvements to the Montlake Multimodal Center to handle the increase in passengers and transit layover.
- **Implement the Rainier Vista Concept Plan by lowering Pacific Place at Rainier Vista to improve pedestrian movements and accommodate transit layover.** Elimination of the

2



ATTACHMENT

Montlake Flyer Stop on SR 520 will increase bus transit trips to the UW from the Eastside. Additional bus layover space may be needed to accommodate added bus transit trips. The UW has proposed a plan to lower Pacific Place between Pacific Street and Montlake Boulevard to provide for grade-separated pedestrian crossings as well as to increase the curb space available for transit layover. This location would also be a logical transit transfer point due to its proximity to the planned Link Light Rail station.

- **Minimize dust and noise impacts on the UW Medical Center during construction.** WSDOT must develop a plan subject to UW Medical Center (UWMC) requirement to minimize dust and noise impacts on the UWMC. This would be similar to the requirements that UWMC imposes on its own construction, and were also imposed on Sound Transit construction.
- **Retain emergency access to the UWMC from Pacific Street.** The existing driveway to the hospital's emergency unit is located off Pacific Street. Access to and from both directions on Pacific Street must be maintained.
- **Signalize driveway at Montlake Boulevard/Wahkiakum Lane.** Increased capacity across the Ship Canal and increased volumes Montlake Boulevard would require that the intersection be signalized.
- **Provide bicycle parking displaced by removal of the Montlake Flyer Stop.** It is expected that removal of the flyer stop will increase bicycle parking in the vicinity of the Sound Transit station.
- **Provide for additional event management staff during construction.** Construction adjacent to Husky Stadium will create confusion for vehicular and pedestrian access. Additional event management and traffic control staff will likely be needed.



ATTACHMENT

SR 520 Project – Summary of University of Washington Requirements

Mitigation Element	Alternative		
	A	K	L
<i>Features that Must be Included</i>			
Retain SR 520 ramps to Lake Washington Blvd	✓		
Construct 2 nd Montlake Bridge with transit/carpool lanes	✓		
Construct Direct HOV Access Ramps to Montlake Blvd	✓		
Provide two-lane on-ramp with auxiliary lane to westbound SR 520	✓		
Improve transit service and facilities in the vicinity of the Montlake Station	✓	✓	✓
Retain future building opportunities on E-11/E-12 lots		✓	✓
Depress and lid the Montlake Blvd/Pacific Street intersection to accommodate unencumbered, at-grade pedestrian crossings		✓	✓
Replace parking from E-11/E-12 displaced by construction		✓	✓
Provide direct access from Pacific Street Extension to parking replaced in E-11/E-12 lots		✓	✓
Retain pedestrian access to Husky Stadium from new replacement parking facilities in E-11/E-12		✓	✓
Relocate the Waterfront Activities Center, moorage docks and Climbing Rock		✓	
Retain access to Waterfront Activities Center and Climbing Rock			✓
Indemnify UW for potential structural damage to Husky Stadium due to tunnelling and/or trenching		✓	✓
Indemnify UW for potential structural damage to historic Canoe House		✓	
Minimize dust and noise impacts on the UW Medical Center during construction	✓	✓	✓
Retain emergency access to the UWMC from Pacific Street	✓	✓	✓
Do not degrade operations on Montlake Boulevard between Pacific Street and Wahkiakum Lane	✓	✓	✓
Signalize driveway at Montlake Boulevard/Wahkiakum Lane (access to Montlake Parking lot)	✓	✓	✓
Lower Pacific Place at Rainier Vista to improve pedestrian movements and accommodate transit layover	✓	✓	✓
Provide bicycle parking displaced by removal of the Montlake Flyer Stop	✓	✓	✓
Provide for additional event management staff during construction	✓	✓	✓



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I. Legislative Workgroup Recommendations Report – December 2009

II. Workgroup Operations

1. Rules & Operating Procedures
2. Workgroup Plan
3. Public Outreach and Engagement Plan
4. Member Roster

III. Workgroup Meetings and Materials

- A. Workgroup Meeting #1 - July 29, 2009 11 a.m.-12:30 p.m.
Sound Transit - Union Station
Ruth Fisher Board Room
401 South Jackson Street, Seattle

Agenda Summary

1. Report on ESHB 2211 Requirements
2. SR 520 Program Overview
3. Action Items
 - Election of co-chairs
 - Workgroup operating rules
 - Westside subgroup members
 - Proposed work plan
 - Proposed outreach plan
4. Next Steps

Materials Presented

1. Letter from Governor Christine Gregoire
2. Letter to Governor Christine Gregoire from Paula Hammond
3. Presentation Slides

Meeting Minutes



- B. Westside Subgroup #1 - September 15, 2009, 9 a.m.-12 p.m.
Seattle Center Northwest
Fidalgo Room, Seattle

Agenda Summary

1. SR 520 Independent Cost Review
2. Community Presentations on Westside Interchange Options
3. Discussion on Option Refinements
4. Summary of SR 520 Project Environmental Effects
5. Follow-up and Next Steps

Materials Presented

1. Background Materials, I-5 to Medina: Bridge Replacement and HOV Project Transportation and Design Information
2. Option A Community Presentation Materials
3. Option K Community Presentation Materials
4. Presentation Slides

Meeting Minutes

- C. Workgroup Meeting #2 - September 22, 2009, 10 a.m. -1 p.m.
Puget Sound Regional Council Board Room
1101 Western Avenue Suite 500, Seattle

Agenda Summary

1. Report on 9/15 Westside Subgroup Meeting
2. Community Presentations on Westside Interchange Options
3. Environmental Regulatory Requirements and Westside Interchange Options
4. SR 520 Independent Cost Review
5. SR 520 Finance Plan Update
6. Process for Developing Recommendations
7. Follow-up and Next Steps

Materials Presented

1. Option A Community Presentation Materials
2. Option K Community Presentation Materials
3. Option L Community Presentation Materials
4. Presentation Slides

Meeting Minutes



- D. Westside Subgroup #2 - October 8, 2009, 1 p.m. – 4 p.m.
The Center for Urban Horticulture
3501 NE 41st Street, Seattle

Agenda Summary

1. Transportation Operations for Westside Options
2. Community Design Update
3. Option K Hybrid Conceptual Design
4. 9/15 Subgroup Meeting Follow-up
 - Montlake Bridge Openings
 - Arboretum Overview
 - Transit Operations
5. City of Seattle Update
6. Eastside Update
7. Preliminary Observations and Discussion
8. Follow-up and Next Steps

Materials Presented

1. Option A and L Community Presentation Materials
2. Option K Community Presentation Materials
3. Seattle City Council Update
4. Presentation Slides

Meeting Minutes

- E. Working Session #1 - October 20, 2009, 10 a.m. – 2 p.m.
Sound Transit - Union Station
Ruth Fisher Board Room
401 South Jackson Street, Seattle

Agenda Summary

1. Current Funding – SR 520 Delivery Plan
2. Financial Phasing and Timing
3. Federal Reauthorization
4. Local Transportation Benefit District (TBD) Overview
5. Tolling Options
 - SR 520 Only
 - I-90 Options
6. Joint Transportation Committee Funding Study
7. Preliminary Observations and Discussion
8. Follow-up and Next Steps

Materials Presented

1. Supporting Materials – Taxing Authorities & Project Eligibility
2. Presentation Slides

Meeting Minutes



- F. Working Session #2 - November 5, 2009 1 p.m. – 4 p.m.
University of Washington Waterfront Activities Center
3900 Montlake Boulevard NE, Seattle

Agenda Summary

1. Finance Follow-up
 - Tolling Policies and Current Practices Related to I-90
 - Arboretum Ramp Tolling
 - Transportation Benefit Districts
2. Funding Options
 - Q&A Follow-up
 - Committed Funds/Financing Overview
 - Future Funding Scenarios
3. Current Options Review
4. University of Washington Update
5. Cost Overview
6. Independent Expert Review Panel Update
7. Preliminary Observations and Discussion
8. Follow-up and Next Steps

Materials Presented

1. Letter to Governor Christine Gregoire from Mark Emmert; President, University of Washington
2. E-mail to Sen. Oemig from constituent
3. Presentation Slides

Meeting Minutes

- G. Westside Subgroup #3 - November 10, 2009 9 am-12pm
University of Washington
Waterfront Activities Center
3900 Montlake Boulevard NE, Seattle

Agenda Summary

1. Design Elements Review of Options A, K, L, A+ and M
Member Observations and Comments
 - Design
 - Operations
 - Environmental Impacts
 - Costs
2. Finance Follow-up
 - Funding Scenario Chart
3. Key Observations Overview



Materials Presented

1. Cost Estimate Comparison Summary
2. Detailed Option A Cost Map
3. Detailed Option K Cost Map
4. Detailed Option L Cost Map
5. Detailed Option A+ Hybrid Cost Map (see [updated version](#) presented 11/17)
6. Detailed Option M Estimate Cost Map (see [updated version](#) presented 11/17)
7. Comparison of SR 520 Westside Options: Cost and Design
8. Comparison of SR 520 Westside Options: Traffic Operations
9. Comparison of SR 520 Westside Options: Environmental
10. Comparison of SR 520 Westside Options: Data Sheet
11. Comparisons of SR 520 Westside Options: Considerations (in development)
(see [updated version](#) presented 11/17)

Meeting Minutes

H. Workgroup Meeting #3 - November 17, 2009 10am-2pm

Sound Transit - Union Station
Ruth Fisher Board Room
401 South Jackson Street, Seattle

Agenda Summary

1. Finance Plan Update
 - Funding Decision Timeline
 - Tolling Scenarios
 - Funding Sources Matrix
2. Transit Agency Update
3. Westside Subgroup Observations
 - Statute Review
4. Design Option Update
 - Westside Option A+ Cost Update
 - Retrofit Options
 - West Approach Profile
5. Design Option Recommendations
6. Finance Plan Recommendations
7. Next Steps and Public Involvement

Materials Presented

1. Floating Bridge and Landings Critical Path Elements
2. SR 520 Program Funding Requirements
3. Tolling Scenarios Analysis
4. Potential Funding Scenarios
5. Letter from Sound Transit
6. SR 520 Statutory Provisions
7. 4-Lane Retrofit Options
8. West Approach Profile Options: Draft
9. Detailed Option A+ Hybrid Cost Map
10. Detailed Option A Cost Map



11. Detailed Option K Cost Map
12. Detailed Option L Cost Map
13. Detailed Option M Cost Map
14. Comparison of SR 520 Westside Options: Cost and Design
15. Comparison of SR 520 Westside Options: Traffic Operations
16. Comparison of SR 520 Westside Options: Environmental
17. Comparison of SR 520 Westside Options: Data Sheet
18. Presentation Slides

Meeting Minutes

- I. Workgroup Meeting #4 - December 8, 2009 10am-12pm
Sound Transit - Union Station
Ruth Fisher Board Room
401 South Jackson Street, Seattle

Agenda Summary

1. Overview of Public Comments on Draft Recommendations
2. Agreement on Design and Finance Plan Recommendations
3. Review Draft Workgroup Report

Materials Presented

1. Draft Recommendations Report
2. Public Comment Summary
3. Minority Statement
4. Presentation Slides

Meeting Minutes

IV. Other Meetings and Public Outreach

- A. SR520 Rep. Deborah Eddy Community Forum - October 6, 2009 7pm
Bellevue City Hall
450 110th Avenue NE, Bellevue

Materials Presented

1. Presentation Slides

- B. Seattle City Council Committee of the Whole - November 24, 2009 9:30am
Seattle City Hall
600 Fourth Avenue, Seattle

Agenda Summary

1. Chair's Report
2. Briefing on the Washington State SR 520 Legislative Workgroup Preliminary Recommendations
3. Public Comment



Materials Presented

1. Presentation Slides

Meeting Minutes

- C. Legislative Workgroup Town Hall Public Meeting - November 24, 2009 6-8pm
Center for Urban Horticulture
3501 NE 41st Street, Seattle

Agenda Summary

1. Welcome and Opening Remarks
2. Presentation on Legislative Workgroup's Draft Recommendations
3. Public Comment
4. Closing Remarks

Materials Presented

1. Presentation Slides

Meeting Minutes

- D. Public Feedback Period

1. Letters/e-mails received
2. Verbatim comments

- V. Additional Resources

1. SR 520 Floating Bridge Strengthening Discussion (Dec. 18, 2007 mediation)
2. SR 520 Approach Bridges Retrofit Discussion (Dec. 18, 2007 mediation)
3. Proposal K – Tunnels at East Montlake and the Arboretum Conceptual Design and Cost Estimate, Part I - Report
4. Proposal K – Tunnels at East Montlake and the Arboretum Conceptual Design and Cost Estimate, Part II - Figures
5. SR 520 Health Impact Assessment
6. Tolling Implementation Committee Final Report
7. SR 520 Medina to SR 202: Eastside Transit and HOV Project TIGER Discretionary Grants Program Application
8. Independent Cost Review Panel Report

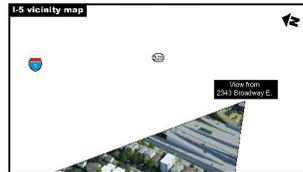


DRAFT - Reversible transit/HOV ramp to/from I-5

APRIL 2010



Looking slightly northwest from 2343 Broadway E.



C-040-157

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

Most Respected Studies of the Relationship between Traffic Associated Air Pollution and Cardiovascular Mortality

Relative Risk is the probability of the outcome for one exposure group divided by the probability of the outcome for another exposure group

American Cancer Society Study (Krewski et al.2000).

Relative risk (RR) for cardiopulmonary mortality of 1.30 (95% confidence interval [CI], 1.18–1.45) for a 24.5- $\mu\text{g}/\text{m}^3$ increase in PM2.5

Harvard Six Cities Study

association between an 18.6- $\mu\text{g}/\text{m}^3$ increase in PM2.5 exposure and cardiopulmonary mortality (RR,1.31; 95% CI, 1.07–1.61)

NLCS-AIR (Brunekreef et al 2009)

cardiopulmonary mortality associated with black smoke exposure in these three Dutch cities, The Hague, Rotterdam and Utrecht (RR, 1.17; 95% CI, 1.00–1.36)

Also:

Smith KR, Jerrett M, Anderson HR, Burnett RT, Stone V, Derwent R, Atkinson RW, Cohen A, Shonkoff SB, Krewski D, Pope CA III, Thun MJ, Thurston G. Health and Climate Change 5 Public health benefits of strategies to reduce green house-gas emissions: health implications of short-lived greenhouse pollutants. *Lancet* (2009) 374:2091-2103

Brugge D, Durant JH, Rioux C. Near-highway pollutants in motor vehicle exhaust: A review of epidemiologic evidence of cardiac and pulmonary health risks. *Environmental Health* (2007) 6 (URL <http://www.ehjournal.net/content/6/1/23>), (DOI:10.1186/1476-069X-6-23)

Dockery DW, Pope CA, Xu X, Spengler JD, Ware JH, Fay ME, Ferris BG, Speizer FE. An Association Between Air Pollution and Mortality in Six U.S. Cities. *The New England Journal of Medicine* (1993) 329:1753-1759

Krewski D, Jerrett M, Burnett RT, Ma R, Highes E, Shi Y, et al. Extended Analysis of the American Cancer Society study of particulate ate pollution and mortality. Boston: Health Effects Institute; 2009

Krewski D, Burnett R, Goldberg MA, Hoover K, Siemiatycki J, Jerrett M, et al Reanalysis of the Harvard Six Cities Study and the American Cancer Society Study of Particulate Air Pollution and Mortality, Part II: Sensitivity Analysis: A Special Report of the Institute's Particle Epidemiology Reanalysis Project. Health Effects Institute, Cambridge, MA, Cambridge, MA: 2000.

C-040-158

As discussed in the SDEIS and confirmed in the Final EIS, the SR 520, I-5 to Medina project would not increase air pollutant emissions compared to No Build, and would actually reduce emissions for certain pollutants. By 2030, criteria pollutant emissions are expected to be lower than they are today both with and without the project. Hence, the project is not expected to result in adverse health effects associated with traffic-related air pollution.

Pope CA III, Health Effects of Fine Particular Air Pollution: Lines That Connect. J Air Waste Manag Assoc. 2006 Jun;56(6):709-42.

Brunekreef B, Beelen R, Hoek G, Schouten L, Bausch-Goldbohm S, Fischer P, Armstrong B, Hughes E, Jerrett M, van den Brandt P. Effects of long-term exposure to traffic-related air pollution on respiratory and cardiovascular mortality in the Netherlands: the NLCS-AIR study. Res Rep Health Eff Inst. 2009 Mar;(139):5-71; discussion 73-89.

Appendix T: Analysis of SDEIS assertions on air quality

Supplemental Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation SR 520 Bridge Replacement and HOV Program - Executive Summary

January 2010

C-040-159

This executive document asserts that all options meet air quality standards and that the modeled concentrations of air pollutants are well below the 1-hour and 8-hour National Ambient Air Quality Standards for all design options. Page 33

RESPONSE: This statement does not specify the pollutants and toxics considered in this assertion. The statement does not specify the locations where the estimates of modeled concentrations of air pollutants were made relative to the center of SR 520. Effects are known to increase with vehicular traffic and fall off exponentially with distance from the road. The statement does specify the vehicular traffic volume at the time of estimates. There are standards for limited air pollutants and none for air toxics. The estimates are not specified with respect to distance from the center of the road.

Estimates of levels of air pollutants are unsatisfactory. Direct measurements are required. Direct measures of health effects are more relevant measures of the effects of traffic associated air pollution than modeled estimates.

C-040-160

"All options would reduce annual energy consumption by between 5 and 10 percent on SR 520 between Seattle and Medina" page 34

RESPONSE: This statement is not backed by factual data. In the HIA report it was asserted that increased capacity would result in a higher average speed. However, that hypothesis assumed that the limit on average speed was solely determined by number of lanes ignoring the limitations imposed by limited capacity for I-5 and I-405 to receive SR 520 traffic. Furthermore the hypothesis was not based upon any estimate of increasing traffic volume over the next 20 years when estimated population growth is 30 percent or 2 million people. Furthermore the assessment does not provide the public with figures comparing the effect upon annual

C-040-159

This comment (as well as the other comments in Appendix T) refers to text found in the Executive Summary of the SDEIS. As noted on page 2 of that document: "This summary is not intended to provide all the information contained within the SDEIS, and the reader should refer to the complete SDEIS for details on information provided herein." The information requested in the comment was provided in Chapter 5 of the SDEIS and in the Air Quality Discipline Report in Attachment 7 to the SDEIS. The remainder of this comment response provides a brief overview of the information that was contained in those analyses. Please see also the responses to Comments C-040-065 through C-040-071.

During the NEPA process, WSDOT has addressed effects on air quality by conducting analyses to test compliance with national, state, and local air quality standards. The analyses, which were conducted using accepted methodology, demonstrate that the project would comply with all current air quality standards. Please see pages 17 through 22 of the SDEIS Air Quality Discipline Report (Attachment 7 to the SDEIS) for a discussion of applicable standards, and pages 23 through 25 for a description of the methodology.

WSDOT performed two types of analysis: a regional "burden" analysis, and a local analysis to test worst-case intersections (sometimes referred to as a conformity analysis). The regional burden analysis showed overall effects of the SR 520, I-5 to Medina project. It also tested the alternatives against the region's carbon monoxide budget. The test showed that the SR 520, I-5 to Medina project would not cause the region to exceed the budget. The region does not have a budget for other criteria pollutants, because it has been in attainment of the standards for those pollutants. To augment the SDEIS analyses, WSDOT conducted a quantitative analysis of mobile source air toxics (MSATs) for operation of the Preferred Alternative and No Build Alternative. The MSAT analysis is also a regional "burden" analysis. The region does not

C-040-160

energy consumption between use of the additional two lanes for HOV versus transit with Rapid Bus Systems or Light Rail.

Current US oil consumption is 21 million barrels of oil per day, 25% of the total world's consumption. We are 4% of the world's population. We import 2/3 of our oil, 14 million barrels of oil per day. Five million barrels come from the Middle East. We produce 7 million barrels. All of the projected new exploration is likely to result in a maximum of 1-2 million barrels per day for a limited time, 10 years. We cannot base our future planning on f assertions not based upon fact and careful projections.

C-040-161

"All options would reduce greenhouse gas emissions by approximately 10 percent in the project area." Page 34

RESPONSE: The report fails to recognize the difference between greenhouse emissions per vehicle and total greenhouse emissions. If the assertion were correct that greater SR 520 vehicle capacity would lower greenhouse emission per vehicle, the total greenhouse emissions would rise with greater vehicle use overwhelming any possible but unlikely benefit of a lower in greenhouse emission per vehicle traveling at a more optimal speed.

C-040-162

"Air Quality – No mitigation proposed or necessary."

RESPONSE: This response is not based factual. It ignores consensus of extensive scientific literature from the US and other parts of the world and it ignores the growing body of literature from highly respected research groups at *the University of Washington*. The response is deaf to appropriate scientific methodology.

Three highly respected studies linking traffic associated air pollution with cardiopulmonary health are:

American Cancer Society Study (Krewski et al.2000)

Harvard Six Cities Study (Dockery et al, 1993)

NLCS-AIR Study (Brunekreef et al 2009).

The relative risk for cardiopulmonary mortality associated with traffic associated air pollution in areas of high exposure was 1.30, 1.31, and 1.17 respectively. Persons living in area close to busy highways have a 17 to 31 percent high risk of cardiopulmonary mortality higher than those living at a

have a budget for MSATs, and thus the analysis simply compares the expected concentrations of MSATs with and without the SR 520, I-5 to Medina project. The analysis showed that emissions of MSATs would decrease as a result of the project. Please see the Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS) for more information.

The local analysis tested the worst-case intersections against the 1- and 8-hour National Ambient Air Quality Standards (NAAQS) for carbon monoxide. Please see Exhibit 12 in the SDEIS Air Quality Discipline Report for the modeled intersections, as well the Project Effects section of the Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS). The local analysis included dispersion modeling. The carbon monoxide analysis focuses on intersections because carbon monoxide emissions from idling vehicles are higher than from moving vehicles. An intersection represents a "hot spot" where many vehicles are idling at once. It is assumed that if a congested intersection does not cause a violation of the NAAQS, then other roadway segments would not cause a violation either. None of the intersections evaluated showed a violation of the NAAQS as a result of the project.

C-040-160

Please see the response to comment C-040-159. Information on how the project's effects on energy were calculated can be found in Chapter 5 of the SDEIS and in the Energy and Greenhouse Gases Discipline Report in Attachment 7 to the SDEIS. The remainder of this comment response provides a brief overview of the information that was contained in those analyses. The HIA report was not prepared by WSDOT and was not part of the project NEPA analysis.

The analysis of energy use for the SR 520, I-5 to Medina project is based on the transportation analysis for the project, which is based on regional planning data, including expected population increases. The analyses account for the regional transportation network, including

C-040-162

distance. The conclusions stated in the EIS report are the result of conjecture based upon inadequate investigation.

Until the appropriate pollutants are measured directly in the zones of known high exposure adjacent to the existing SR 520 highway, it must be inferred that "Traffic-related air pollution is associated with cardiovascular morbidity and mortality" (Allen J 2009 in background to study on diesel exhaust) and that people are currently becoming ill and dying from traffic associated air-pollution along side high traffic highways in Seattle. There is no hope that these effects will get anything but worse with a growing population, increasing traffic and the lack of will to plan more appropriate transportation systems.

"Taken as a whole, the health studies show elevated risk for development of asthma and reduced lung function in children who live near major highways. Studies of particulate matter (PM) that show associations with cardiac and pulmonary mortality also appear to indicate increasing risk as smaller geographic areas are studied, suggesting localized sources that likely include major highways. Although less work has tested the association between lung cancer and highways, the existing studies suggest an association as well. While the evidence is substantial for a link between near-highway exposures and adverse health outcomes, considerable work remains to understand the exact nature and magnitude of the risks." (Brugge D 2007)

Douglas Stewart, M.D.
April 4, 2010

existing capacity and planned improvements. The Final Transportation Discipline Report (Attachment 7 to the Final EIS) provides a detailed explanation of all of these considerations. The NEPA and SEPA environmental review process has tested the effects of the SR 520, I-5 to Medina project, comparing the effects of proposed alternatives to the effects of the No Build Alternative. While the process incorporates information from adopted regional plans and tests consistency with adopted regional plans, it is not intended to replace regional planning processes.

Please see Chapter 2 of the Final EIS for a discussion of high-capacity transit on the SR 520 corridor in relation to the environmental review processes for the SR 520, I-5 to Medina project. Please also see Section 2.4 of the Final EIS for a discussion of why some alternatives suggested by SDEIS commenters were not studied further, including an alternative that would include light-rail transit on SR 520 when it opened, rather than accommodating it as part of a future project.

C-040-161

Please see the response to comment C-040-159. Information on how the project's effects on greenhouse were calculated can be found in Chapter 5 of the SDEIS and in the Energy and Greenhouse Gases Discipline Report in Attachment 7 to the SDEIS.

The analysis of the effects of operation of the SR 520, I-5 to Medina project on greenhouse gas emissions was based on vehicle miles traveled for each 15-minute period for each roadway link (please see page 37 of the SDEIS Energy Discipline Report) as estimated in the transportation model for the project. Vehicle miles traveled for each roadway link was multiplied by the relevant speed-based emission factor for greenhouse gases. Per-vehicle greenhouse gas emissions are expected to decrease in all future build scenarios as a result of reduced congestion and improved speeds, along with more efficient vehicles.

C-040-163

Appendix V: Excerpt from Publicola blog:

Federal Ruling Could Erase \$1 Billion in Funding for 520

Posted by [Erica C. Barnett](#) on April 13, 2010 at 4:30 PM

A ruling last week by US Transportation Secretary Ray LaHood could put funding for the proposed \$4.6 billion 520 bridge replacement in jeopardy, eliminating approximately \$1 billion in potential revenue from tolls on I-90 across Lake Washington.

City leaders have repeatedly [expressed support](#) for tolling the I-90 bridge across Lake Washington (in addition to tolling the 520 bridge) in part because tolling revenues from both bridges could help close the funding gap for a 520 bridge replacement. The state has been counting on tolling I-90 to pay for about \$1 billion of the 520 bridge replacement.

However, last week, LaHood [rejected](#) a petition by the state of Philadelphia to allow toll money from Interstate 80, which cuts across the center of the state, to be spent to help offset a transit funding shortfall. In his ruling, LaHood cited a little-known Bush-era federal law that prohibits the use of tolls collected on interstate freeways to pay for anything other than improvements to the freeway itself.

The ruling presents a huge, perhaps insurmountable, impediment to transportation leaders' plans here in Washington State, where I-90 tolls were supposed to help pay for 520, in addition to improvements to I-90 itself. The loss of that revenue would leave 520 with a funding shortfall of about \$1 billion.

"If Washington State wanted to toll I-90 it would be unable to do so right now, unless [toll money] went right back into that road," Bill LaBorde, policy director at the pro-transit Transportation Choices Coalition, said at a forum last week. "This is one place where the Obama Administration is less progressive than the Bush Administration." (It's conceivable, LaBorde says, that toll funds could be used to build light rail on I-90, but that remains "a bit speculative.")

Contacted by phone today, LaBorde called the ruling "a huge deal" for the region. "A lot of people are thinking the Obama Administration is out of options for financing transportation in the next six-year [transportation] bill," which was supposed to have been adopted in 2009.

"Maybe they'll revisit that issue in crafting a new bill." However, LaBorde adds, the Administration may fear that drivers will revolt (and vote against Democrats in Congress) if their toll money is used to pay for unrelated projects.

(more)

C-040-162

Please see the response to comment C-040-159. The incremental effects of operation of the project on air quality do not constitute significant adverse effects. Instead, the SR 520, I-5 to Medina project would result in improvements to regional air quality compared to the No Build Alternative. Therefore, no mitigation is proposed for effects of project operation on air quality. WSDOT is not required to mitigate for effects that are not associated with the SR 520, I-5 to Medina project.

Please see Attachment 1 to the SDEIS Air Quality Discipline Report for a summary of the characteristics and health effects of criteria pollutants. The air quality analysis was conducted using accepted methodology consistent with the policies of the United States Environmental Protection Agency, Washington Department of Ecology, FHWA, and WSDOT. Air quality standards and guidance from these agencies have been formulated to protect human health and the environment.

C-040-163

Although the SR 520 legislative work group recommended tolling on I-90 as a source of funds for the SR 520 project, such tolling is not a part of the project's current finance plan. Legislation would be required to make I-90 a tolled facility and to allocate funds from any I-90 tolls. WSDOT continues to work with state and federal legislators to identify additional sources of funding.

Appendix W Fish Impacts

By Maurice Cooper PE

C-040-164

The analysis of fish impacts in the SDEIS is characterized by heuristic arguments, not in the least supported by factual data.

Furthermore there is a glaring and outrageous omission of any connection between fish studies and aquatic plant research, particularly with respect to shading by over-water structures, which will certainly lead to unavoidable harm to salmon.

In particular there has been some excellent and recent research conducted, during the SR-520 study period, by the University of Washington, and herein incorporated by reference, which showed migratory patterns of salmon through the Ship Canal adjacent to the University of Washington and out through Union Bay. The results of this study have essentially been ignored. Instead there is the unsubstantiated argument made that shadowing by any bridge structure negatively impacts salmonid species, and this argument is extended to push in general for higher rather than lower bidge structures. The exact opposite is true.

In the ecosystems discipline report, it is pointed out that shadowing by bridge structures inhibits aquatic plant growth. This is certainly true. However this plant growth is almost exclusively of the invasive species kind. As this plant material grows and spreads, and subsequently decays, in the relatively shallow waters of Union Bay, it lowers the dissolved oxygen content of the water column. Salmonid species are extremely sensitive to two critical environmental factors - temperature and dissolved oxygen. This has been documented for the Lake Washington Ship Canal and its contiguous waterways at least as far back as the exhaustive and detailed RIBCO Studies from 1974 (q.v.). The more recent University of Washington study shows the preferred migratory pattern of the salmon emerging from the Montlake Cut, turning southeast as soon as the fish have cleared the weed-choked waters off the north end of Madison Park, and proceeding east following the north - and shaded - side of the existing bridge, until the fish reach the deeper, and cooler waters of Lake Washington. The salmon follow this path because it is (a) cooler, being in the shade, and (b) higher in dissolved oxygen content, being away from the plant growth and the decaying plant material.

To argue, therefore, for a higher bridge structure to decrease shading is to argue for an increase in invasive aquatic plant species, with the attendant lower dissolved oxygen in the water, and to argue for higher water column temperatures. In turn, therefore, to argue for a higher bridge structure in this location is to argue strongly against the health of salmon and hence against preservation of our dwindling and endangered salmon population - a backbone of Northwest Native culture, and an icon of the northwest.

It is essential that the misinformation and/or implied arguments in the DEIS regarding fish behavior be withdrawn and corrected.

C-040-164

The analysis of effects on fish presented in the SDEIS was based on the best available science and on the professional judgment of resource analysts, working in close coordination with staff from regulatory agencies that have jurisdiction over aquatic resources. The potential effects of overwater shade discussed in the SDEIS were based primarily on studies and observations of juvenile salmonids, because shading could relate to the secondary effects of predation and delayed or extended migrations for this life stage. In contrast, the University of Washington study mentioned in the comment was based on information on adult salmonid migration behavior. These two life stages have different sensitivities and vulnerabilities to environmental conditions.

A higher structure would allow more light under the structure, reducing the intensity of the shade. This, in turn, is expected to reduce the structure's potential to affect the behavior of fish, particularly juvenile salmonids. However, increased light does not necessarily cause an increase in water temperature, because the primary mechanism affecting water temperature is solar radiation. In the case of an east-to-west oriented bridge, such as the Evergreen Point Bridge, a higher structure would produce a wider shadow, which would block a wider area from solar radiation. Therefore, if the information provided in the comment is correct, the higher structure would tend to produce a larger area of reduced temperature for adult migration.

Regarding the effects of shade on aquatic vegetation, a higher bridge would result in greater amounts of light under the structure, thereby potentially increasing growth of aquatic vegetation. As indicated in this comment, this could lead to decreased dissolved oxygen in the water when the vegetation dies and decays. However, the proposed bridge would also be approximately twice as wide as the existing bridge, resulting in a wider area shaded from direct sunlight. This shaded area would have reduced potential for plant growth, offsetting some of the

C-040-165



Board of Park Commissioners

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Jackie Ramels, Chair*

April 14, 2010

Jenifer Young, Environmental Manager
SR 520 Project Office
600 Stewart Street, Suite 520
Seattle, WA 98101

RE: The Arboretum and Botanical Garden Committee's Comments to the
SR520, I-5 to Medina: Bridge Replacement and HOV Project Supplemental
Draft Environmental Impact Statement (SDEIS)

Dear Ms. Young,

At its April 8, 2010, meeting the Seattle Board of Park Commissioners unanimously adopted the attached resolution as its official response to the SR520, I-5 to Medina: Bridge Replacement and HOV Project SDEIS. Please add these comments to the official record.

Sincerely,

A handwritten signature in cursive script that reads "Jackie Ramels".

Jackie Ramels, Chair
Seattle Board of Park Commissioners

Attachment: The Seattle Board of Park Commissioner's Comments to
the SR520, I-5 to Medina: Bridge Replacement and HOV Project
SDEIS

cc: Mike McGinn, Mayor, City of Seattle
The Honorable Richard Conlin, Chair, Seattle City Council
The Honorable Sally Bagshaw, Seattle City Council
The Honorable Mike O'Brien, Seattle City Council
The Honorable Nick Licata, Seattle City Council
The Honorable Jean Godden, Seattle City Council
The Honorable Tom Rasmussen, Seattle City Council
The Honorable Sally Clark, Seattle City Council
The Honorable Bruce Harrell, Seattle City Council
The Honorable Tim Burgess, Seattle City Council
Mark Emmert, President, University of Washington
Tim Gallagher, Superintendent, Seattle Parks
Peter Hahn, Director, Seattle Department of Transportation
Stephanie Brown, Seattle Department of Transportation

effects of increased light caused by the higher structure. Overall, the differences in dissolved oxygen levels with the various bridge options would not be significant.

C-040-165

This material is duplicated in a comment letter submitted separately by the City of Seattle Board of Parks Commissioners (Item L-001). Please see the responses to that item.

RESOLUTION

A RESOLUTION expressing the position of the Seattle Board of Park Commissioners regarding the SR 520, I-5 to Medina: Bridge Replacement and HOV Project.

WHEREAS, the Seattle Board of Park Commissioners has been in continuous existence since 1887 and acts in an advisory capacity to the Mayor, City Council, Seattle Parks and Recreation and other City departments; and

WHEREAS, State Route 520 has been, since its completion in 1963, and continues to be to this day, a blight on the Washington Park Arboretum; creating noise and visual intrusions into the park; encouraging cut-through traffic along Lake Washington Boulevard in much higher volumes than was originally intended for the boulevard, disturbing the serenity of the Japanese Garden, and affecting the passage of people and wildlife between Marsh and Foster Islands and the remainder of the Arboretum; and

WHEREAS, the Washington Park Arboretum is Washington State's official State Arboretum and contains internationally recognized woody plant collections and North America's largest collection of *Sorbus* and Maple, the second largest collection of species Hollies and significant collections of oaks, conifers and camellias; and

WHEREAS, a new Master Plan for the Arboretum was adopted in 2001 that was the culmination of five years of planning work undertaken by Seattle Parks and Recreation, the University of Washington, the Arboretum Foundation, community groups and members of the general public; and that will guide improvements to the Arboretum for the next 20 years, including many specific projects to enhance the physical and natural characteristics of the Arboretum such as increasing habitat diversity by restoring the natural function of Arboretum Creek and the northern shoreline; and

WHEREAS, the Washington Park Arboretum contains the largest freshwater wetland complex of its type in the Seattle region, and the Master Plan, in conjunction with the existing wetlands, includes the restoration, enhancement, and creation of new wetlands by restoring the ecological and wildlife function of the former garbage dump surrounding existing SR Route 520 ramps, and creating a Pacific Northwest Marshland collection along the shoreline of Union Bay; and

WHEREAS, implementation of the SR 520, I-5 to Medina: Bridge Replacement and HOV Project, as currently proposed, will forever compromise the aesthetic setting, biological diversity, educational opportunities, and physical connections for people and wildlife within the Washington Park Arboretum:

NOW, THEREFORE, BE IT RESOLVED BY THE SEATTLE BOARD OF PARK COMMISSIONERS THAT:

The Board cannot endorse any of the alternatives identified in the Supplemental Draft Environmental Impact Statement for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project, issued on January 22, 2010, due to the profound negative environmental impacts the project would have on the Washington Park Arboretum and the other City of Seattle Parks along the SR 520 corridor. The Board makes the below recommendations

The preferred alternative chosen must be consistent with the following principles:

- The structure should minimize the impacts on the Washington Park Arboretum, especially the Japanese Garden and Foster and Marsh Islands, and other adjacent and nearby parks such as East Montlake and McCurdy Parks;
- The structure should have the least number of travel lanes possible;
- The structure width should be the minimum necessary for safe passage;
- Any structure should be designed to have the least amount of coverage and shadow impacts on park land below;
- Any structure should be designed to have the least amount of impact to wetlands, aquatic resources and fish, in particular Federally protected salmonids that travel through Portage and Union Bays to and from their spawning grounds and the Pacific Ocean;
- All construction activities must be sited and timed to have the least impact on park users and the natural environment;
- Clear, open, and safe access for people and wildlife under the structure must be provided to reconnect severed components of the Arboretum; and,
- Any required wetland mitigation must occur within the Arboretum first; if the area within the Arboretum is insufficient to accommodate the required mitigation, Park sites within Seattle on or adjacent to Lake Washington must be considered.

Mitigation of the continuing highway and future project impacts must be considered, regardless of the alternative/option chosen, to re-establish the Arboretum experience. As a starting point, the following should be considered in any mitigation package:

- Address the traffic impacts to the Arboretum caused by increased traffic along Lake Washington Boulevard (LWB) including prohibiting access to and from SR 520 to LWB; repaving LWB with “quiet” pavement; incorporating other traffic calming measures in LWB to discourage through traffic movements;

- Completely fund the Arboretum Master Plan, including wetland and shoreline restoration and planting (approximately \$60 million);
- Develop the stormwater pond in East Montlake Park for educational use;
- Provide a park-like lid at Montlake (depending on the option, the lid should extend as far as possible given the geography) which will create a strong connection between the neighborhood and the Arboretum;
- Replace (at WSDOT's expense) all of the functions served by the Museum of History and Industry (MOHAI) building; and,
- Design and provide access and parking at East Montlake Park for access to the Arboretum Waterfront Trail and for hand-launched boats.

The Board also respectfully submits the following comments in response to the Supplemental Draft Environmental Impact Statement (SDEIS) for the I-5 to Medina: Bridge Replacement and HOV Project issued on January 22, 2010:

- **Bagley Viewpoint** - Bagley Viewpoint is a well visited viewpoint along Delmar Drive East which provides views to the east of Lake Washington, Montlake Cut, the University of Washington and the Cascade mountain range. No other viewpoint in Seattle provides this unique view to the east. The viewpoint was redeveloped following the construction of the access freeway to the Evergreen Point floating bridge in 1963. The freeway cut the viewpoint off from its previous connection to Interlaken Park.
 - Loss of this unique viewpoint must be mitigated. The SDEIS indicates that a lid is proposed in this area that will provide similar view functions and also serve to reconnect the neighborhood through the triangle between 10th Avenue East, East Roanoke Street and East Delmar Drive. WSDOT must ensure that this lid remains part of the project and does not get removed due to funding concerns. Absent the lid, WSDOT must provide a view opportunity similar to the one now provided by Bagley Viewpoint and work to reconnect this viewpoint to Interlaken Park as it was originally constructed.
- **Montlake Playfield** - While the physical impacts to the playfield associated with the SR 520 project will be minimal, the visual impacts and noise associated with the project, both during construction and after it is completed will be significant. Every effort must be made to limit the potential for noise from the freeway to impact users of the playfields, members of the public who come to the area to take advantage of the newly reconstructed hand-carried boat launch, and the public and fauna that use the newly enhanced wetland areas.
 - During construction, any temporary work bridges and/or barges must not restrict canoe/kayak access between the Montlake Playfield boat launch and Portage Bay.
 - Seattle Parks is just completing a large wetland restoration project along the perimeter of Montlake Playfield. There are additional wetland

enhancement opportunities available. Montlake Playfield should be considered for any required wetland mitigation/enhancement as part of the projects mitigation requirements.

- **Lake Washington Boulevard** - Lake Washington Boulevard is referred to as a city street throughout the SDEIS. The 4f evaluation fails to identify Lake Washington Boulevard as either a historic resource or a park and recreation resource. This officially designated park boulevard is a 204-acre, 9.2-mile-long linear park wholly owned by the City and under the jurisdiction of Seattle Parks and Recreation. It is a crucial element in the 1903 Olmsted Plan for Seattle's boulevard system, sometimes referred to as the "Emerald Necklace." Decisions about the future design of the SR 520 improvements must be made with the understanding that Lake Washington Boulevard was never designed to function as an extension of direct-access ramps to and from SR 520. Where Lake Washington Boulevard serves as a corridor through the Arboretum, vehicles and bicycles must be able to travel on it in a manner consistent with the design and intent of the surrounding Arboretum.
 - There should be no direct access from SR 520 to Lake Washington Boulevard. From the day it opened, SR 520 and the access ramps to and from Lake Washington Boulevard have encouraged and facilitated traffic through the Arboretum which would not otherwise be there. This increased traffic through the heart of the Arboretum limits access to the Japanese Garden from the rest of the Arboretum, reduces the air quality due to vehicle emissions, increases noise from traffic and makes crossing Lake Washington Boulevard unsafe.
- **Lake Washington Boulevard Access** - If direct access to and from Lake Washington Boulevard to SR 520 is a component of the final design of the project then the following must be considered:
 - Lake Washington Boulevard has become an extension of the on/off ramps to SR 520. Had existing environmental laws been in place, mitigation for the impacts on the Arboretum of the original 520 project would have been significant or more likely, the project would have been redesigned. If direct access to and from SR 520 to Lake Washington Boulevard remains a part of the future project, exacerbating the current condition, the Arboretum should be duly compensated for the use of the boulevard in the future.
 - As mitigation for the increased traffic on Lake Washington Boulevard directly attributable to SR 520, traffic calming measures must be implemented on the boulevard.
 - If the SR 520 project includes direct access ramps to and from Lake Washington Boulevard to SR 520, additional tolls should be included on these ramps. Tolls should be included as a way of travel demand management to discourage people from using Lake Washington Boulevard to access SR 520. Also, the revenue from these tolls should be dedicated to the Arboretum to help mitigate the impacts of the increased noise, air emissions and vehicular distraction on the physical

nature, educational value and visitor experience of the Washington Park Arboretum.

- o The most recent data from the Seattle Department of Transportation indicates that Lake Washington Boulevard carries 16,100 vehicles.¹ The SDEIS indicates that the ramps to and from Lake Washington Boulevard to SR 520 carry 3,000 vehicles in the AM and PM peak hours. Given 3,000 vehicles during two hours, the total amount of traffic that uses Lake Washington Boulevard exclusively to access SR 520 could be as high as 10,000 vehicles per day. Taken together, these traffic numbers indicate that as much as 62% of the traffic which uses Lake Washington Boulevard is directly related to SR 520. While Lake Washington Boulevard is a park boulevard, it is available for City residents to use as they travel throughout the City. However, this direct use of the boulevard as an access ramp to and from SR 520 is a highway use for which the boulevard was never intended. If WSDOT intends to continue to use Lake Washington Boulevard for a highway on and off ramp, then WSDOT must compensate the City annually in the range of \$1 - \$2.1 million, based on present value and an 8% rate of return, for the use of the property in a proportional share to the percentage of traffic which uses the boulevard to access SR 520.
- **Washington Park Arboretum** - The Washington Park Arboretum, State Arboretum for the State of Washington, is a stunning gem in Seattle's park system. It provides respite, scenery, recreation and solace to thousands of visitors in every season of the year. It provides educational, recreational, conservation and volunteering opportunities to those who seek it out. The City of Seattle and the University of Washington have been cooperatively managing this park since the original 1934 agreement.
 - o Since the SR 520 highway was opened, the Arboretum has been fractured by the highway structure itself and the noise, pollution and visual intrusion of the structure on the physical nature, educational value and visitor experience of the Washington Park Arboretum. A percentage of the tolls collected on the main line of SR 520 should be dedicated to improvements in the Arboretum as mitigation for past current and future impacts of siting a transportation facility in the heart of a natural area and arboretum.
 - o The physical nature, educational values and visitor experience within the Washington Park Arboretum should be enhanced by the construction and operation of the SR 520 I-5 to Medina: Bridge Replacement and HOV project if properly designed with sensitivity to the park.
 - o All efforts must be made to avoid any adverse impacts to the Arboretum, both during construction and through the long term operation of the SR 520 facility.

¹ Average Annual Daily Traffic (AAWDT) (5-day, 24-hour)

- To the extent that there will be adverse impacts to the Arboretum, every impact must be thoroughly mitigated.
- Unavoidable adverse impacts must be mitigated. Those of shorter duration must be addressed during the construction phase. Long term impacts of facilitating increased traffic through the Arboretum which has a direct impact on the physical nature, educational value and visitor experience in the Washington Park Arboretum need to be avoided through sound design or mitigated appropriately.
- Design of the new structure should address the potential for increased noise through the Arboretum as a result of the increased traffic. The project must be designed such that noise levels decrease from the levels experienced today.
- The project must be designed such that the visual impact of the structure complements and does not detract from the physical nature, educational value and visitor experience of the Washington Park Arboretum. Designing a “signature” bridge does not reduce the visual impact of a concrete and/or steel structure in the heart of a 230-acre arboretum.
- **Washington Park Arboretum Master Plan** - In May 2001, the Seattle City Council approved the long-range master plan for the Washington Park Arboretum, creating a road map for Arboretum improvements over the next 20 years. The master plan ensures the Washington Park Arboretum will effectively fulfill three primary purposes—conservation, recreation and education—for decades to come. Together, University of Washington Botanic Gardens and Seattle Parks and Recreation, with support from the Arboretum Foundation, are working to implement the master plan. Substantial public and private funds have recently been raised and spent to improve the visitors’ experience. The newly created Pacific Connection Gardens have been created, the Japanese Garden Gatehouse has been redeveloped and a number of other park improvements have been made. All these contributions will likely be negatively impacted by the proposed SR 520 project.
 - The Master Plan adopted in 2001 made note of the fact that there would be limited new buildings built within the Washington Park Arboretum. Instead, UW, the Arboretum Foundation and Seattle Parks and Recreation would address their long term need for additional educational, maintenance and classroom space by expanding into the building which currently houses the Museum of History and Industry (MOHAI), once MOHAI vacated the building. The City of Seattle owns the building which MOHAI currently occupies. Since all of the options in the SDEIS involve expansion of the roadway such that the MOHAI will be demolished, WSDOT must provide replacement space as envisioned in the Master Plan.
 - There are four significant projects at the north end of the Arboretum which are identified in the Arboretum Master Plan: complete the Waterfront Trail as a loop all the way around Duck Bay; add access,

sitting and viewing areas on the west side of Duck Bay; daylight Arboretum Creek; and, create an entry at the west/north end of the Arboretum with the same grand character as the south entry. The redevelopment of SR 520 has the potential to negate the potential to undertake some or all of these projects to the detriment of the Arboretum and contrary to the goals set out in the Master Plan. To the extent mitigation measures are necessary as a result of unavoidable significant impacts associated with the SR 520 project, these identified Arboretum Master Plan project should be fully funded by WSDOT for implementation by Parks and/or UW.

Adopted by the Seattle Board of Park Commissioners the 8th day of April, 2010 and signed by me in open session in authentication of its adoption this ____ day of _____, 2010.



Chair of the Seattle Board of Park
Commissioners

C-040-166



SR 520 Pontoon Construction Design-Build Project

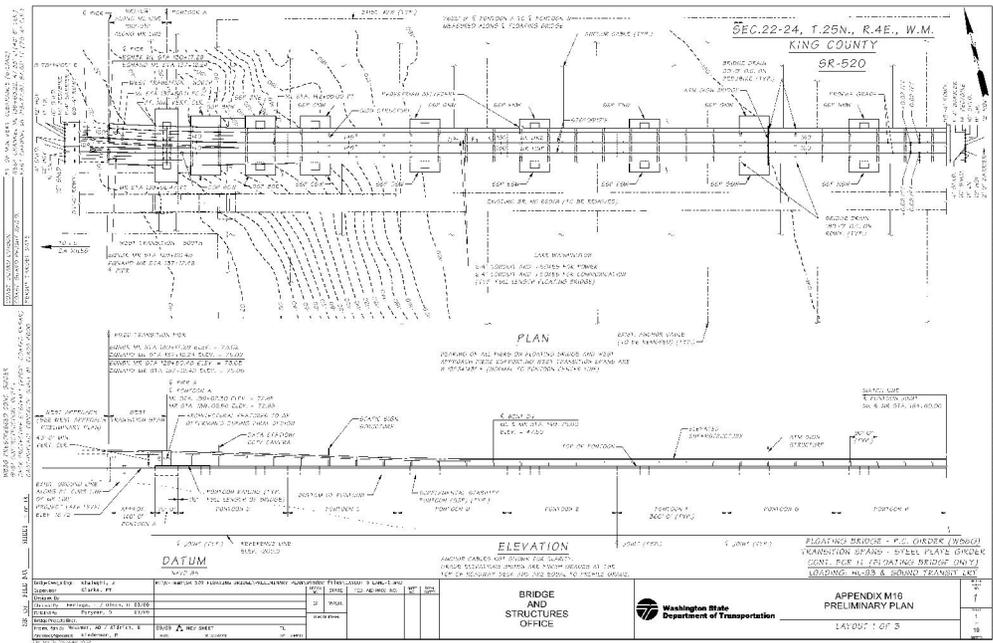
Request for Proposal

September 24, 2009

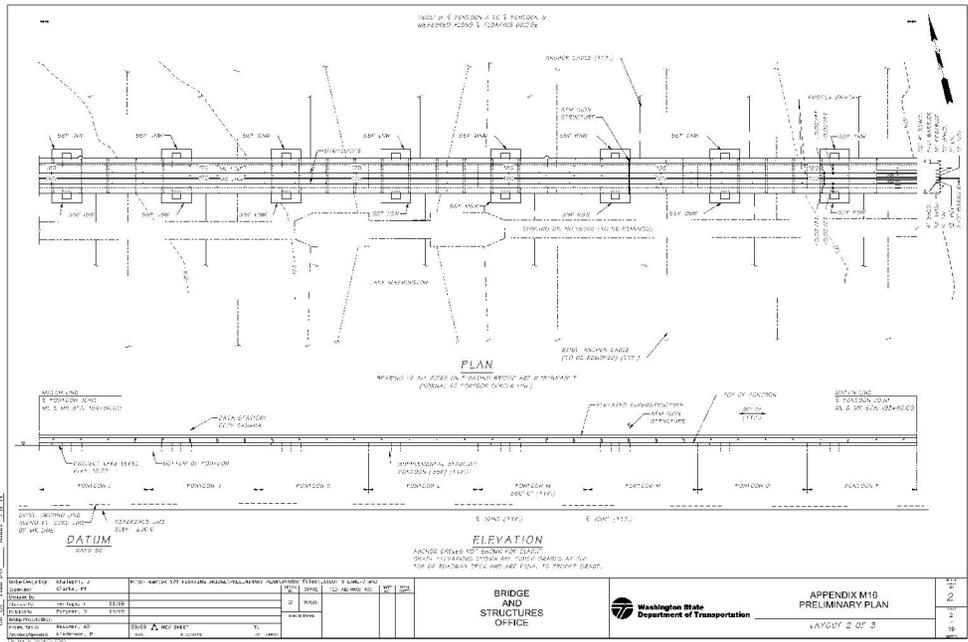
Appendix M16 Preliminary Bridge Plans

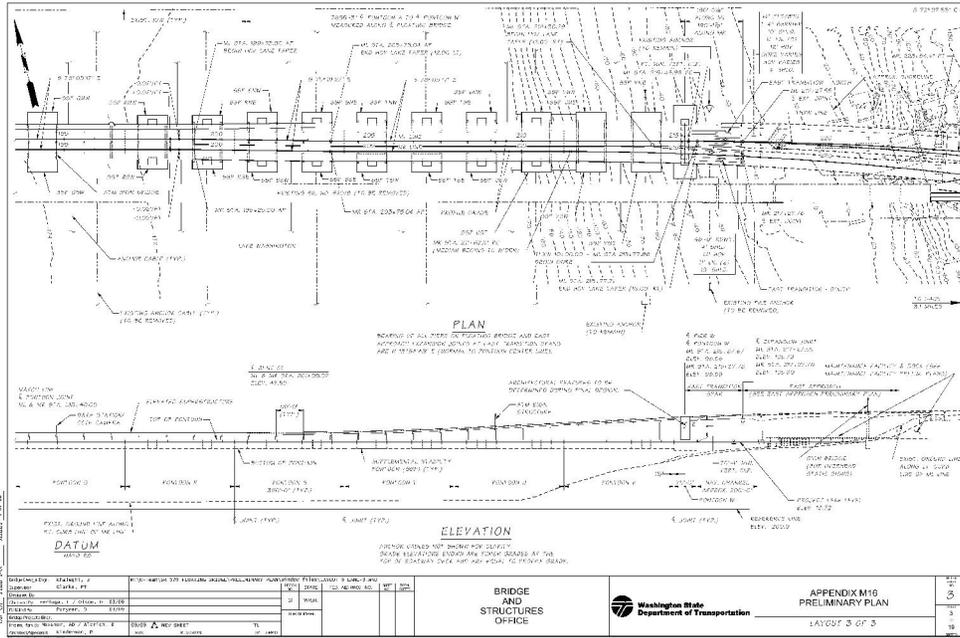
C-040-166

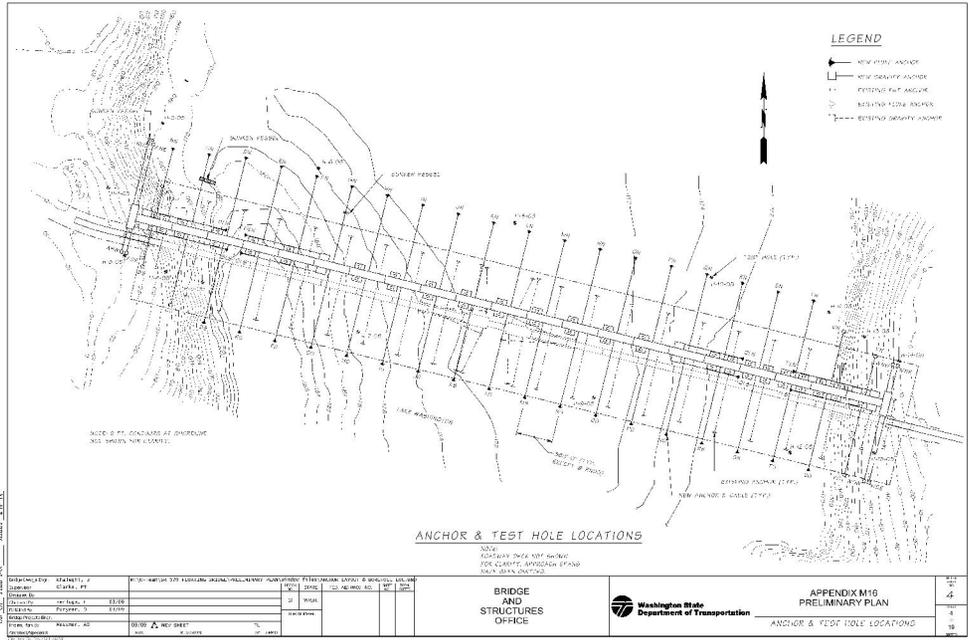
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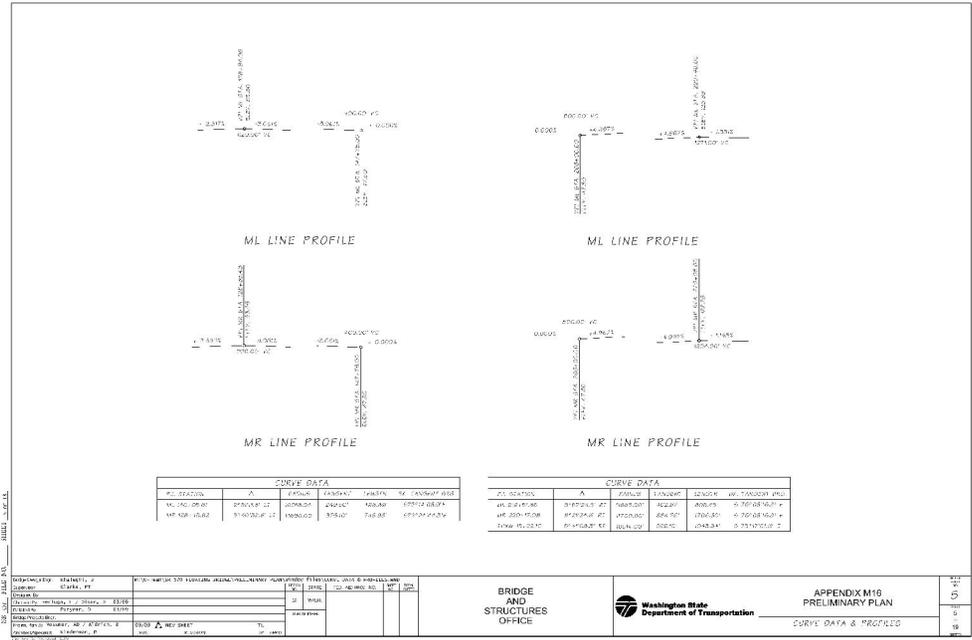


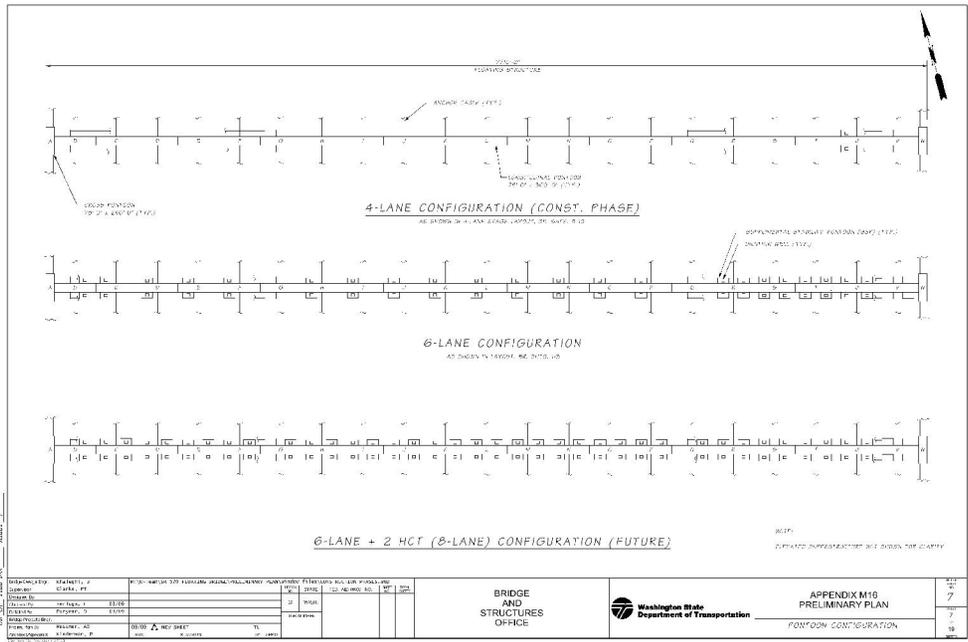
SR 520 Bridge Replacement and HOV Project

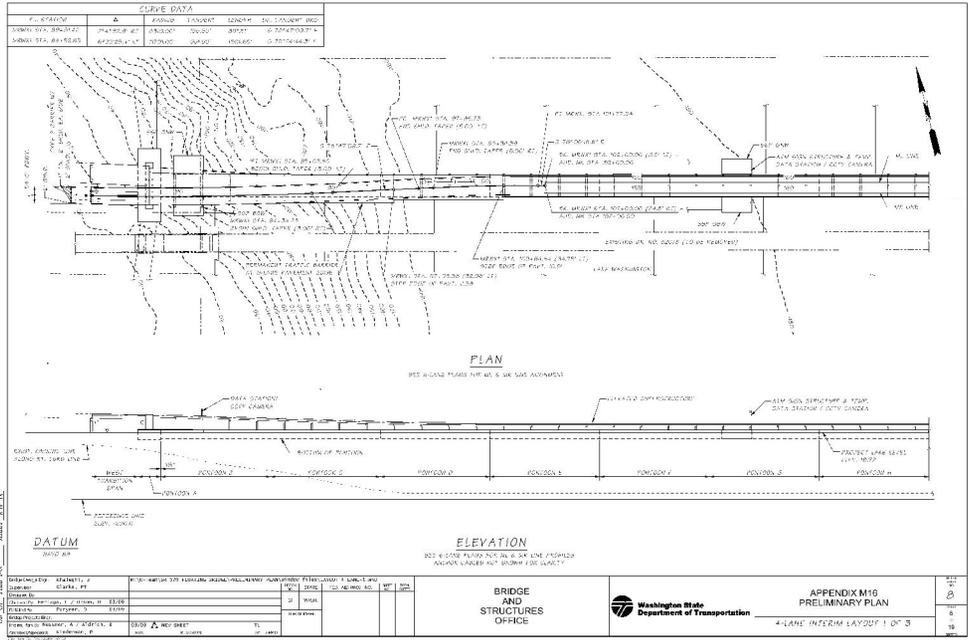


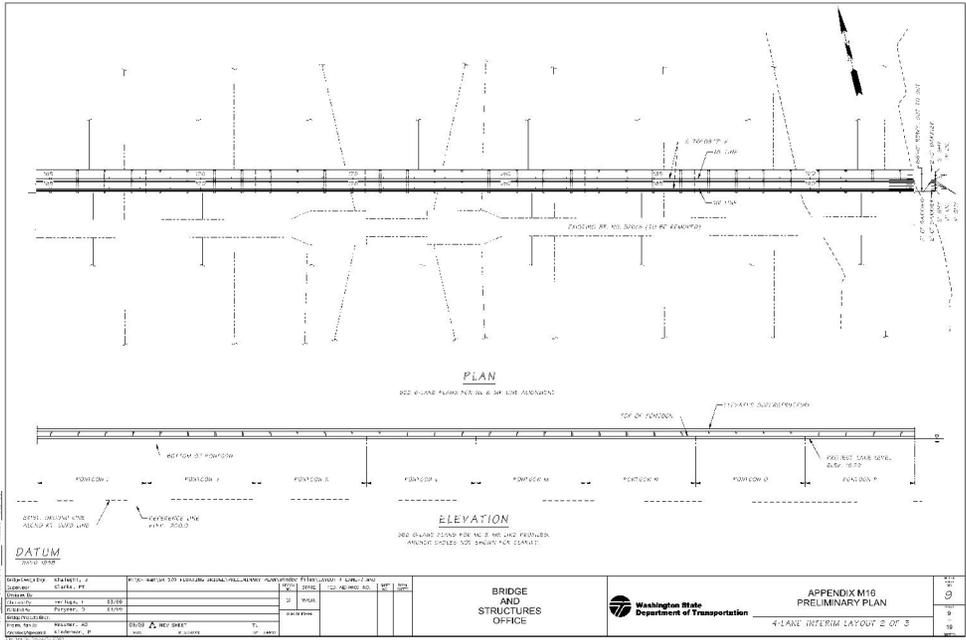


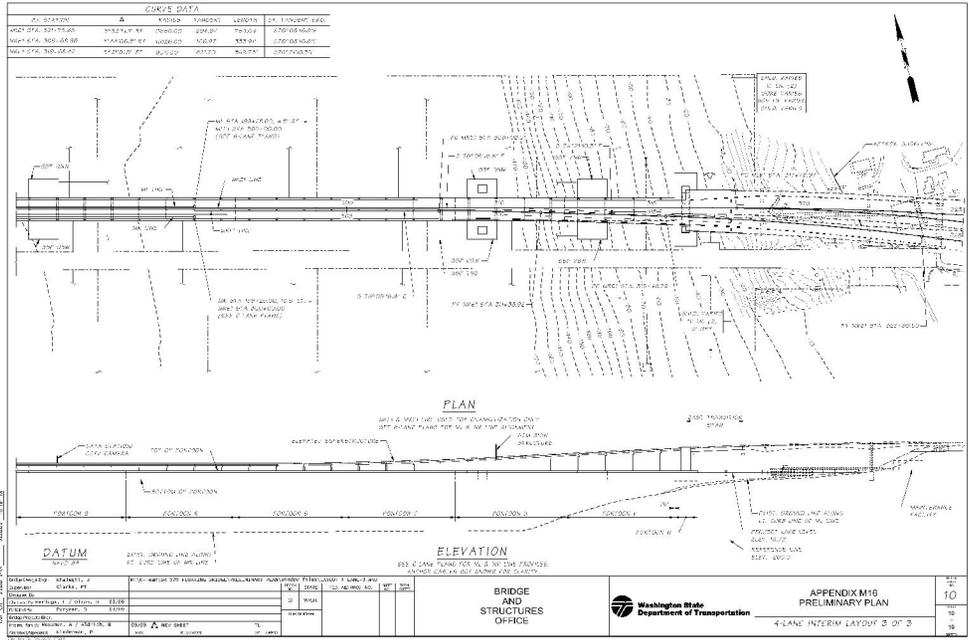


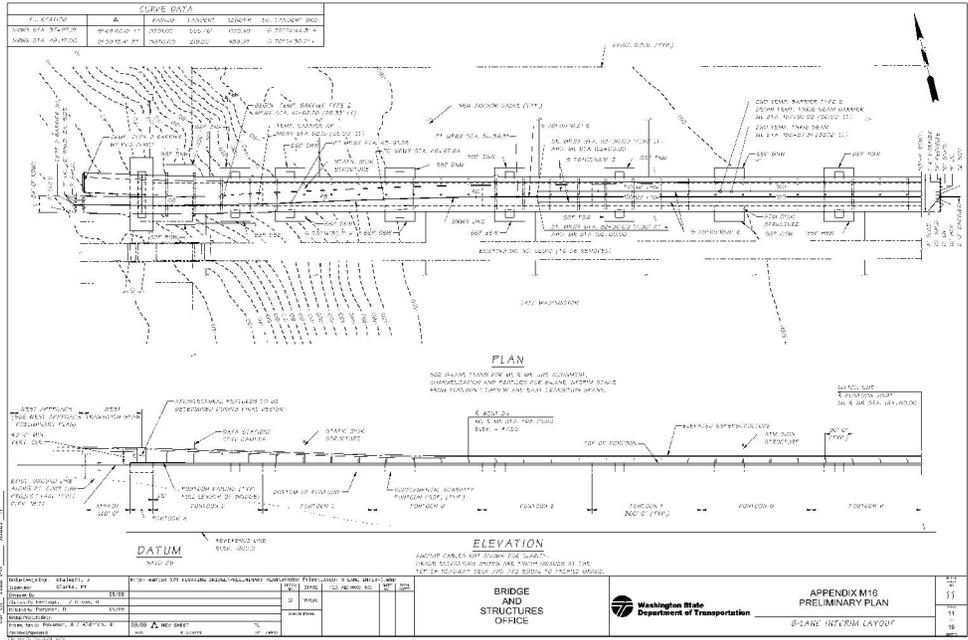


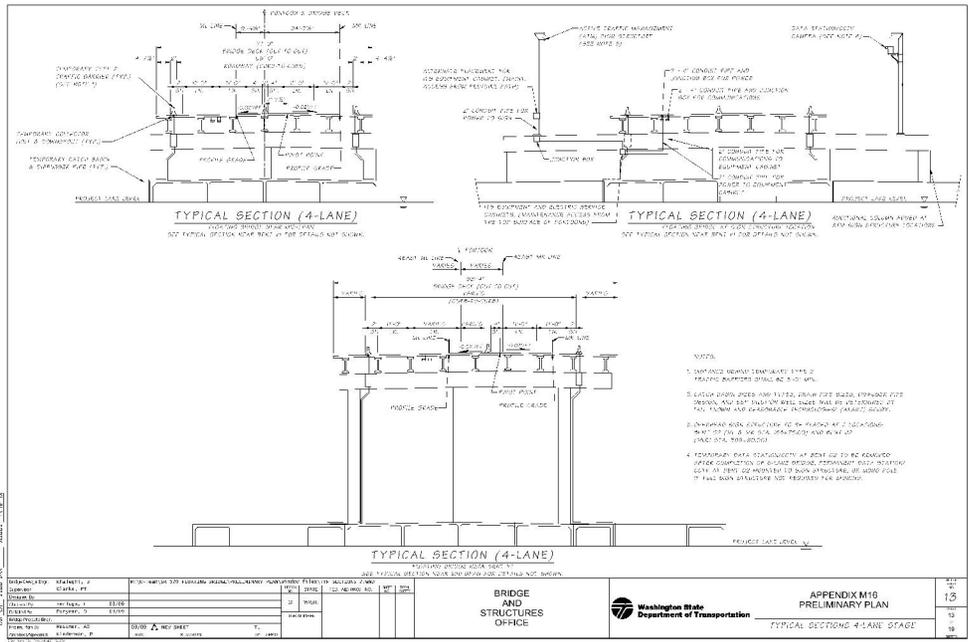




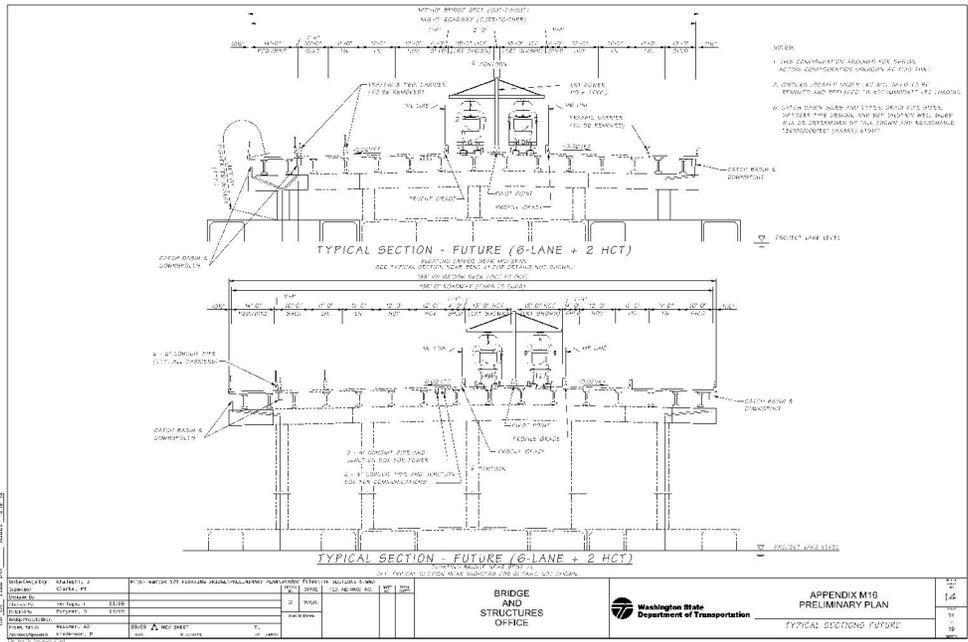






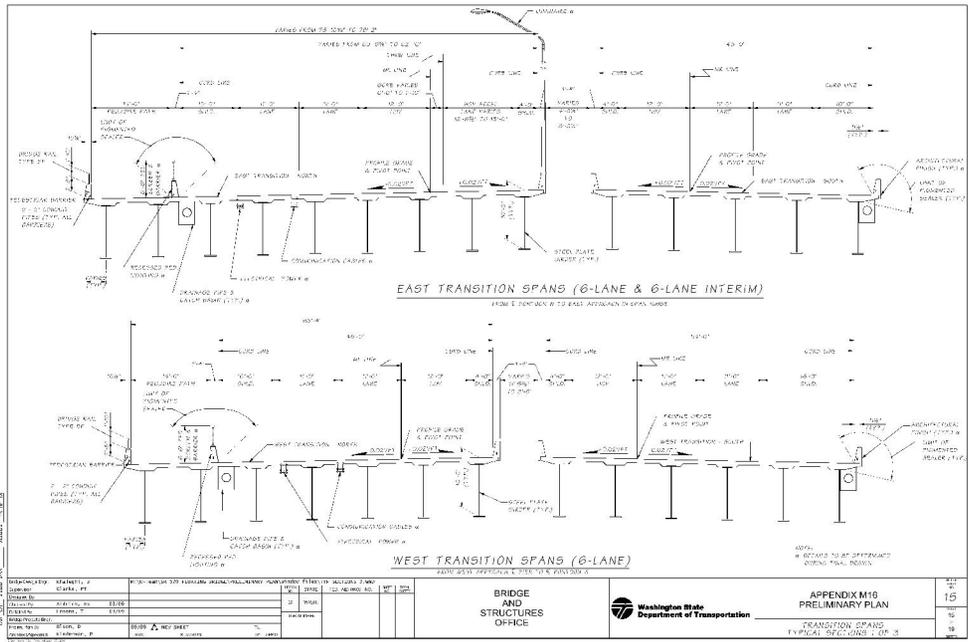


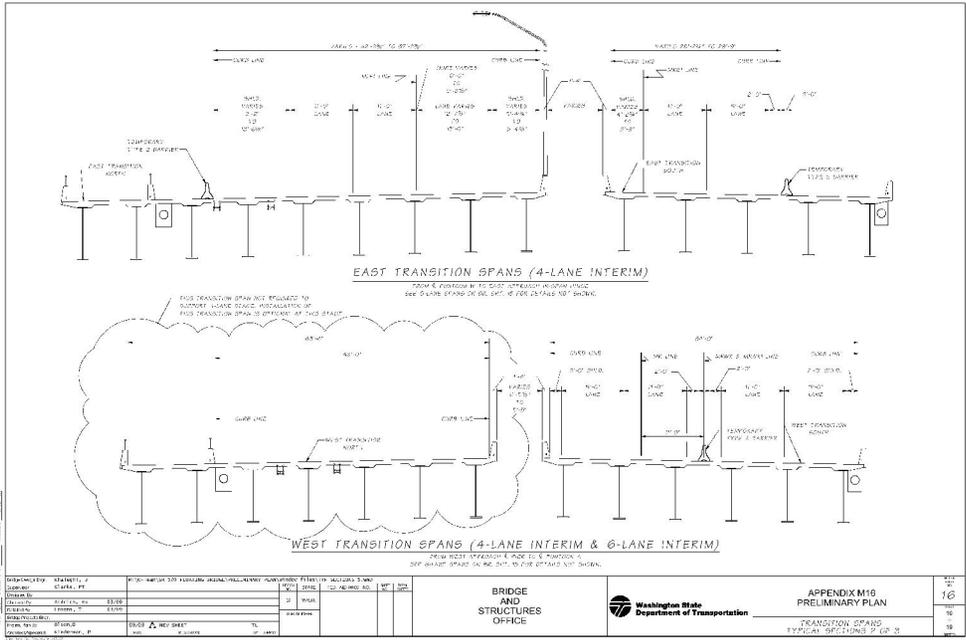
PROJECT NO. SR 520 DRAWING NO. M16 SHEET NO. 13	BRIDGE AND STRUCTURES OFFICE		APPENDIX M16 PRELIMINARY PLAN TYPICAL SECTIONS 4-LANE STAGE	SHEET NO. 13 OF 13
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- NOTES:
1. THIS CONSTRUCTION ASSUMES THE BRIDGE ACTION CORROSION ANALYSIS AT THIS TIME.
 2. DETAILS SHOWN HEREIN ARE TO BE PROVIDED AND APPROVED TO ACCOMPANY THE BIDDING.
 3. SECTION SHOWN HEREIN DOES NOT SHOW ALL DETAILS THE BRIDGE AND REVISIONS WILL BE MADE AS ALL DETAILS SHOWN ON THIS DRAWING ARE NECESSARY TO ACCOMPANY THE BIDDING.

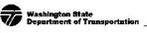
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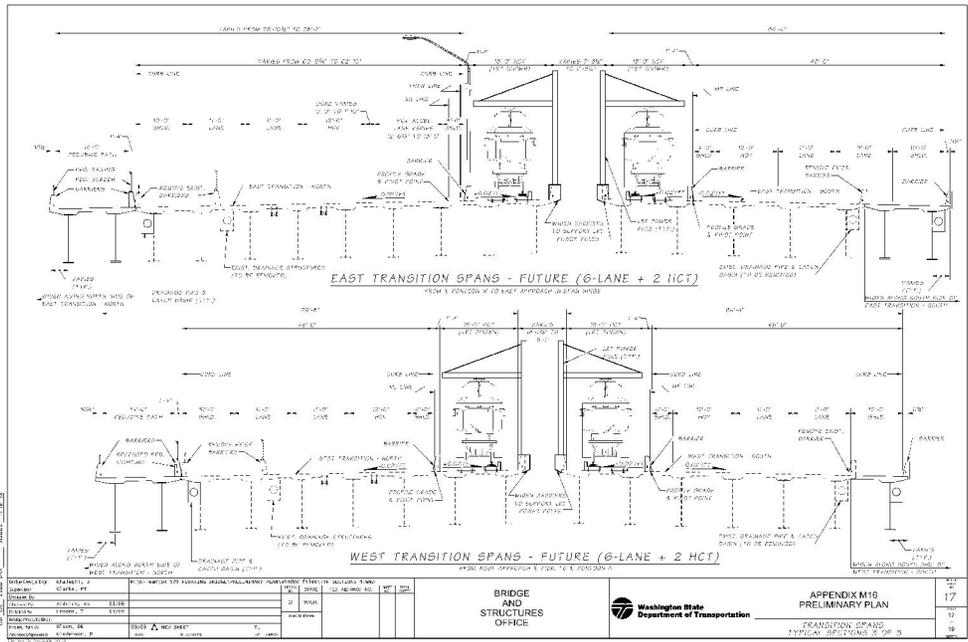
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PROJECT NO.	DATE	SCALE	BY
PROJECT NAME	DATE	SCALE	BY
PROJECT LOCATION	DATE	SCALE	BY
PROJECT DESCRIPTION	DATE	SCALE	BY
PROJECT STATUS	DATE	SCALE	BY
PROJECT OWNER	DATE	SCALE	BY
PROJECT CONTRACTOR	DATE	SCALE	BY
PROJECT ARCHITECT	DATE	SCALE	BY
PROJECT ENGINEER	DATE	SCALE	BY
PROJECT SURVEYOR	DATE	SCALE	BY
PROJECT GEOFYSICIST	DATE	SCALE	BY
PROJECT HISTORIC ARCHITECT	DATE	SCALE	BY
PROJECT ENVIRONMENTAL	DATE	SCALE	BY
PROJECT TRANSPORTATION	DATE	SCALE	BY
PROJECT UTILITIES	DATE	SCALE	BY
PROJECT METEOROLOGICAL	DATE	SCALE	BY
PROJECT GEOLOGICAL	DATE	SCALE	BY
PROJECT ARCHITECTURAL	DATE	SCALE	BY
PROJECT ELECTRICAL	DATE	SCALE	BY
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PROJECT PLUMBING	DATE	SCALE	BY
PROJECT PAINTING	DATE	SCALE	BY
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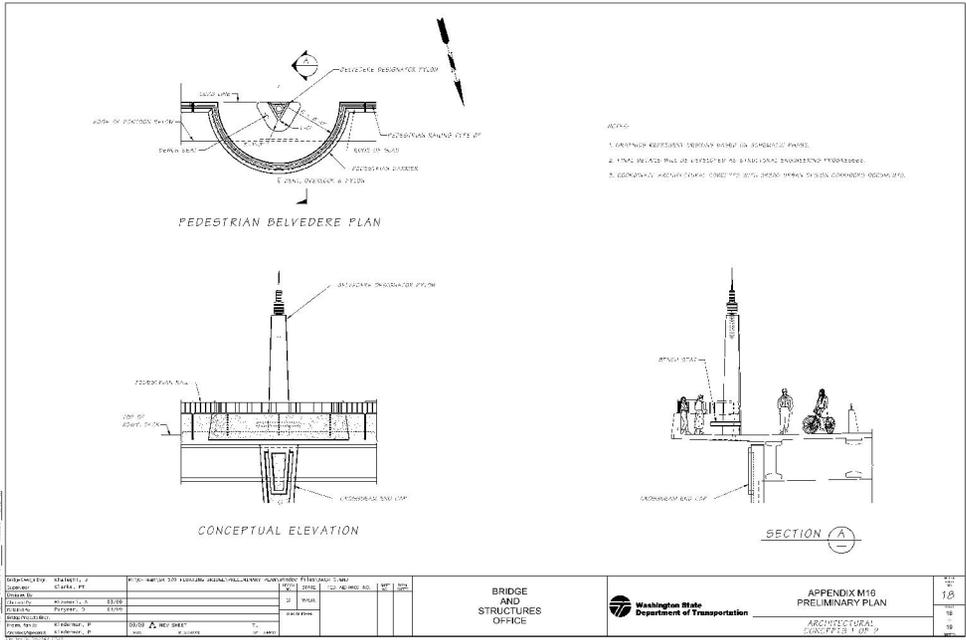
BRIDGE AND STRUCTURES OFFICE



APPENDIX M16
 PRELIMINARY PLAN
 TRANSITION SPANS
 TYPICAL SECTIONS OF LANE 2

APPENDIX M16	16
TRANSITION SPANS	17
TYPICAL SECTIONS OF LANE 2	18





PROJECT NO.	SR 520 BRIDGE REPLACEMENT AND HOV PROJECT
DATE	10/15/2014
DESIGNER	BRIDGE AND STRUCTURES OFFICE
CHECKER	BRIDGE AND STRUCTURES OFFICE
SCALE	AS SHOWN
PROJECT LOCATION	SR 520 BRIDGE REPLACEMENT AND HOV PROJECT
PROJECT PHASE	ARCHITECTURAL CONCEPTS
PROJECT STATUS	IN PROGRESS
PROJECT OWNER	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
PROJECT CONTACT	BRIDGE AND STRUCTURES OFFICE
PROJECT ADDRESS	SR 520 BRIDGE REPLACEMENT AND HOV PROJECT
PROJECT CITY	SPokane, WA
PROJECT STATE	WA
PROJECT COUNTY	BENNETT COUNTY
PROJECT ZIP	99201
PROJECT PHONE	509-325-4000
PROJECT FAX	509-325-4000
PROJECT EMAIL	BRIDGE@WSDOT.WA.GOV
PROJECT WEBSITE	SR520BRIDGE.WA.GOV
PROJECT SOCIAL MEDIA	SR520BRIDGE

BRIDGE AND STRUCTURES OFFICE



**APPENDIX M16
PRELIMINARY PLAN**

ARCHITECTURAL CONCEPTS 1 OF 2

DATE	10/15/2014
SCALE	AS SHOWN
PROJECT NO.	SR 520 BRIDGE REPLACEMENT AND HOV PROJECT
PROJECT PHASE	ARCHITECTURAL CONCEPTS
PROJECT STATUS	IN PROGRESS
PROJECT OWNER	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
PROJECT CONTACT	BRIDGE AND STRUCTURES OFFICE
PROJECT ADDRESS	SR 520 BRIDGE REPLACEMENT AND HOV PROJECT
PROJECT CITY	SPokane, WA
PROJECT STATE	WA
PROJECT COUNTY	BENNETT COUNTY
PROJECT ZIP	99201
PROJECT PHONE	509-325-4000
PROJECT FAX	509-325-4000
PROJECT EMAIL	BRIDGE@WSDOT.WA.GOV
PROJECT WEBSITE	SR520BRIDGE.WA.GOV
PROJECT SOCIAL MEDIA	SR520BRIDGE

ELEVATION
VIEWED FROM THE WATER

PERSPECTIVE
VIEWED FROM THE WATER LEVEL
PROSPECTIVE AT THE "LOOKING UP" VIEW

PERSPECTIVE
VIEWED FROM THE WATER

PERSPECTIVE
VIEWED FROM THE WATER LEVEL
PROSPECTIVE AT THE "LOOKING UP" VIEW

ARCHITECTURAL DETAILS

- EXISTING REVISIONS: DENIAL EDGE OF ALUMINUM PANEL.
- MAIN DETAILS WILL BE DEVELOPED AS NECESSARY DURING PROGRESS.
- SUPPLEMENTAL ARCHITECTURAL LITERATURE WITH THESE DRAWINGS THROUGH CONSULTATION.

PERSPECTIVE
VIEWED FROM THE WATER LEVEL
PROSPECTIVE AT THE "LOOKING UP" VIEW

DESIGNER: STANLEY, J.	DATE: 08/14/2013	PROJECT: SR 520 BRIDGE REPLACEMENT AND HOV PROJECT	SHEET: 19
CHECKER: STANLEY, J.	DATE: 08/14/2013	PROJECT: SR 520 BRIDGE REPLACEMENT AND HOV PROJECT	SHEET: 19
DATE: 08/14/2013	DATE: 08/14/2013	PROJECT: SR 520 BRIDGE REPLACEMENT AND HOV PROJECT	SHEET: 19
DATE: 08/14/2013	DATE: 08/14/2013	PROJECT: SR 520 BRIDGE REPLACEMENT AND HOV PROJECT	SHEET: 19
DATE: 08/14/2013	DATE: 08/14/2013	PROJECT: SR 520 BRIDGE REPLACEMENT AND HOV PROJECT	SHEET: 19

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

APPENDIX M16 PRELIMINARY PLAN

ARCHITECTURAL CONCEPTS 2 OF 2

C-040-167

Erin O'Connor
2612 10th Ave E
Seattle, WA 98102
March 8, 2010

Jenifer Young
Environmental Manager
SR 520 Program Office
600 Stewart Street, Suite 520
Seattle, WA 98101

Dear Ms. Young:

We expect the attached comments to influence the accuracy and thoroughness of the *Cultural Resources Discipline Report* that goes into the *Final Environmental Impact Statement*. These comments will also serve the growing record of our exchanges, over four drafts, with WSDOT consultants over persistent inaccuracies that have led to flawed findings plus the introduction of new misinformation with respect to the Roanoke Park Historic District and historic resources in the Portage Bay neighborhood in the *Cultural Resources Discipline Report* part of the January 22, 2010, *Supplemental Draft Environmental Impact Statement*.

A pattern of repeated mistakes and omissions and the introduction of new mistakes in the four drafts of the *Cultural Resources Discipline Report* we have seen persists. Our prompt, thoroughgoing, and painstaking reviews and sequential commenting that would have made many of the mistakes easy to correct call into question whether the *Cultural Resources Discipline Report* has been competently prepared.

The extensive *Seattle Times* coverage of the sorry history of the Hood Canal Graving Dock project included Governor Gary Locke's reflection that

"It is really unfortunate that so much money has been spent on the project, and that the experts didn't detect the magnitude of this historic site at the beginning."

A subsequent external analysis of the project by Foth and Van Dyke and Associates, "an engineering consulting firm specializing in archaeology and cultural resource management on large scale construction projects," found that

"The permit streamlining process entered the project late and the timeline limited the ability of the permitting agencies to fully consider site alternatives.

"Overly focused on Endangered Species Act concerns, there was inadequate attention given to archaeological, socioeconomic and geological considerations." The archaeologists contributing to the *Cultural Resources Discipline Report* (or

C-040-167

This comment along with the following pages associated with it (total of 65 pages from Erin O'Connor dated March 8, 2010, referenced as Appendix Z in the comment letter) is a duplicate of a comment letter submitted separately by the Portage Bay/Roanoke Park Community Council (Item C-008). Please see the responses to that item.

its equivalent at that time) for the graving dock project estimated that only 25 burials would be found within the construction site, whereas “335 individuals and their funerary objects, along with some 1,000 of isolates” and 10,000 artifacts had been unearthed by the time the project was halted.

The report also found

“Considerable weakness in the archaeological assessment” and said that WSDOT “did not follow consistent protocols or gather sufficient information for addressing compliance with the cultural resources assessment and consultation requirements of Section 106 of the National Historic Preservation Act.”

The report also noted

“WSDOT’s lack of timely notification and involvement of the Lower Elwha Tribe and the State Historic Preservation Officer and the divergent opinions that increasingly surfaced as the true extent of the village was discovered.”^[1]

According to a History Link Essay on the project WSDOT paid less than \$7,000 for the original survey.

According to a brief wikimapia.org account of the project,

“This case stands out as a fine case study of what is wrong with low bid contracting of all sorts. If the state had hired contractors who had then undertaken an in-depth and properly conducted study of the location, then they would have identified that there were intact archaeological deposits (thereby warranting further study).”

A March 20, 2003, joint letter from the Army Corps of Engineers and the Washington Department of Ecology responding to WSDOT’s application for permits for construction of the graving dock highlights a similar inadequacy in WSDOT’s research, this time in WSDOT’s Environmental Investigation Results report (October 25, 2002), WSDOT’s Geotechnical and Hydrologic Study report (December 3, 2002), and WSDOT’s Supplemental Environmental Investigation Results (December 3, 2002). The letter notes that

“The chemical measurements were incomplete and did not include important contaminants” and that “the sampling was insufficient in number and spatial extent.”

The letter also says that the permit’s proposal for disposing of excavated materials

^[1] The Foth analysis project, conducted in collaboration with the State of Washington’s Joint Legislative Audit Review Committee (JLARC) received the 2007 Impact Audit of the Year Award from the National Legislative Program Evaluation Society (NLPEs).

“also threatens historic/cultural resources, a fact not mentioned in the permit application.”

House Bill 2624 signed into law by Governor Gregoire March 31, 2008, legislated new standards for the treatment of human remains, including not just tribal remains but also remains found in all pioneer cemeteries.^[2]

The parallels with WSDOT’s flawed Section 106 process and findings, now with respect to the historic built environment for the SR 520 Bridge Replacement and HOV Project, are striking. We had hoped that analogous higher standards, without the need for lawsuits, audits, and new legislation, would be brought to bear on the representation, assessment, effects findings, and avoidance, minimization, and mitigation strategies for historic resources of the built environment for this project. Instead, we kept receiving apologies and excuses, through four drafts of the *Cultural Resources Discipline Report* for the SDEIS, that there simply was not enough time to do the job properly. The refusal to take that time or to grant that time to its consultants—that is, the refusal to perform accurate and substantiated assessments and findings—reflects poorly on the professionalism and credibility of WSDOT.

We request remedy of the many mistakes in the December 2009 *Cultural Resources Discipline Report* and a Memorandum of Agreement between WSDOT and the Portage Bay/Roanoke Park Community Council that discusses ways of avoiding, minimizing, and mitigating the obvious adverse effects that this project will have on the historic resources of the built environment in the Roanoke Park Historic District and the Portage Bay neighborhood.

In addition, with the prospect of phased implementation looking increasingly more likely and the consequent projection in the *SDEIS* of deferral indefinitely of the construction of the lid at East Roanoke Street over I-5 and the lid between 10th Avenue East and Delmar Drive East over SR 520, we request that projections of noise, air quality, and other effects on the Roanoke Park Historic District and the Portage Bay neighborhood reflect data for both lidded and unlidded construction and operation. (Note that at least one member of the Legislative Workgroup has already proposed not constructing the lid over I-5 at East Roanoke Street as an economizing measure.)

The current *CRDR* bases its findings of no adverse effects on lidded, noise-walled designs. We also request that noise data be developed from measurements and projections of noise levels at bedroom height.

^[2]Although WSDOT was forced to choose a new site and a reburial ceremony was held after the Tribe had brought a lawsuit on treatment of the remains and the site, the some 10,000 artifacts unearthed by WSDOT at the original site reside now in 900 cedar boxes at the Burke Museum. WSDOT refuses to release the artifacts to the Tribe until the Tribe has constructed a cultural center to house them. WSDOT has leased the site to the Tribe but has not taken any steps to help finance a cultural center. Fund-raising to build a center on land that is leased, not owned, is difficult.

And even though WSDOT test results for quieter pavement have been skewed by improper installation, we request that data on the designed use of quieter pavement on the bridges, highway, and local arterials and the effects predicted for bedroom heights be presented in the *FEIS* noise discipline report.^[3]

Misinformation and diminutions in the *Cultural Resources Discipline Report* of the extent and significance of historic resources in the Roanoke Park Historic District and of historic resources in the Portage Bay neighborhood that will be affected by this project, repeated now in the December 2009 *Visual Quality and Aesthetics Discipline Report* and other discipline reports in the *SDEIS*, have been put at the service of findings of “no adverse effect” and thus no need for a Memorandum of Agreement to address adverse effects to the historic resources in these neighborhoods.

The diminishing language needs to be corrected, the adverse effects need to be acknowledged, and the mitigation of the adverse effects should be taken up in a Memorandum of Agreement.

WSDOT’s refusal, announced in its *Indirect and Cumulative Effects Discipline Report*, to mitigate cumulative effects on the ground that it has no jurisdiction over other agencies is a distortion of the intent of the cumulative effects definition. With the exception of the Sound Transit University Tunnel project, which WSDOT promises to discuss with that agency, the past, present, and reasonably foreseeable effects on historic resources in our communities come from WSDOT projects. WSDOT presumably has jurisdiction over itself. “There is already a bridge there, so a [wider, higher] replacement bridge [moved north in front of more of our homes] would not be an adverse effect,” for example, cries out for a cumulative adverse effects finding instead.

Hiding local cumulative effects in region-wide study areas is another evasive tactic that masks real adverse effects—on the salmon in Portage Bay, the Montlake Cut, Union Bay, and Lake Washington, for instance, where huge amounts of money have been spent to make the waters hospitable to salmon after the damage done by the first SR 520 project. WSDOT would undo that work and expenditure and excuse the ruin with a net loss figure that takes in the waters of the whole Puget Sound region.

So much evasiveness and bad faith on the part of WSDOT in the *SDEIS* of January 22, 2010, does not bode well for communities who have earnestly tried to work with this agency and who have been forced by WSDOT’s fecklessness to do much of the work of the agency.

Sincerely,

Erin O’Connor

^[3] Consultation with the Arizona Department of Highways on installment and maintenance of quieter pavement would be a good idea. Quiet pavement in Flagstaff has survived chains, studded tires, and freezing and thawing for more than seventeen years.

Historic Resources Chair, Portage Bay/Roanoke Park Community Council
Roanoke Neighborhood Elms Fund
Friends of Roanoke Park

Cc: Dr. Allyson Brooks, State Historic Preservation Officer, DAHP
Michael Houser, State Architectural Historian, DAHP
Governor Christine Gregoire
Sen. Edward Murray
Rep. Frank Chopp
Rep. Jamie Pedersen
Mayor Mike McGinn
Seattle Councilmember Richard Conlin, Chair, Regional and Sustainable Development;
Chair, SR 520
Seattle Councilmember Mike O'Brien, Vice-Chair, Regional and Sustainable
Development
Seattle Councilmember Tom Rasmussen, Chair, Transportation
Seattle Councilmember Jean Godden, Vice-Chair, Transportation; Member, Regional and
Sustainable
Development
Seattle Councilmember Tim Burgess, Alternate, Regional and Sustainable Development;
Member,
Transportation
Seattle Councilmember Nick Licata, Member, Transportation
Seattle Councilmember Sally Clark, Alternate, Transportation
Seattle Councilmember Bruce Harrell, Alternate, Transportation
Seattle Councilmember Sally Bagshaw
Julie Meredith, P. E., SR 520 Program Director, WSDOT
Randolph Everett, Major Projects Oversight Director, FHWA
Scott Williams, Cultural Resources Program Manager, WSDOT
Ken Juell, Cultural Resources Specialist, WSDOT
Karen Gordon, City Historic Preservation Officer, Seattle
Ted Lane, President and Transportation Chair, Portage Bay/Roanoke Park Community
Council
Cheryl Thomas, Beautification Chair and Alternate Representative PB/RP CC
Dan Bricklin, Esq.
Wes Larson, Esq.

Formal Comments on December 2009 Iteration of WSDOT's *Cultural Resources Discipline Report* included in the January 22, 2010, release of the *Supplemental Draft Environmental Impact Statement for the SR 520 Bridge Replacement and HOV Project*

The three early parts of these comments take up the Multiple Adverse Effects of the construction and operation of the project on historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood, the Cumulative Adverse Effects of

the project, and the Flawed Section 106 Negotiation Process with WSDOT consultants. **The rest of the comments, in the attached file,** take up in a condensed version specific errors and oversights, page by page, with respect to historic resources in these neighborhoods and the thus flawed effects findings in the December 2009 *Cultural Resources Discipline Report*.

Multiple Adverse Effects

More than a third of the contributing 80 historic resources and almost half of the individually eligible 57 historic resources in the Roanoke Park Historic District and many resources in the Portage Bay neighborhood both surveyed and unsurveyed would suffer multiple adverse effects from the demolition, construction, and operation of the SR 520 Bridge Replacement and HOV Project from all of its options and most extremely from Option A and its suboptions. Additional historic resources on the western side of the Roanoke Park Historic District and unsurveyed properties in the Portage Bay neighborhood would suffer adverse effects from hauling, demolition vibration and dust, reconstruction, and operation, particularly if lids are deferred as they are said to be in descriptions of the Phased Implementation Scenario predicted in the *SDEIS* to be the most likely outcome.

Construction

Properties in the Portage Bay basin are noted for their **views**, which would be adversely affected by construction of the wider Portage Bay Bridge moved farther north, construction just south of the NOAA Fisheries Building, and the construction of an additional connector across or under the Montlake Cut. Barges, work bridges, machinery, and construction activity would introduce high contrast changes over a seven-and-a-half-year to eight-year construction period (*Section 4(f) Evaluation*, p 65) to the views east from more than a third of the Roanoke Park Historic District's contributing historic resources and almost half of the historic district's individually eligible historic resources and would thus significantly affect setting, feeling, and characteristic use of the historic district.

The same **visual blight** would be imposed on the three individually eligible historic resources in the Portage Bay neighborhood that have thus far been surveyed and on many more historic resources in the Portage Bay neighborhood that have not been surveyed—on houses along both sides of Delmar Drive East that enjoy spectacular views of the bay and on historic resources in the houseboat community and on both sides of Fuhrman-Boyer Avenue East.

- We request that the survey of historic resources in the Portage Bay neighborhood be complete and that it include historic resources on both sides of Delmar Drive East, resources along both sides of Fuhrman-Boyer Avenue East including the bungalow resources on East Gwinn Street, and historic resources in the houseboat community.^[4]

^[4] Note in addition that the survey of historic resources in the North Capitol Hill neighborhood does not even include Carl F. Gould's own residence (unaltered), designed by Gould, on East Lynn Street.

- We request that historic resources in the Portage Bay neighborhood discovered in the course of completing the survey be included in the Area of Potential Effects (APE) for the project—in other words that the APE boundary be redrawn to include these vulnerable historic resources.
- We request that references to views enjoyed by “only a few” of historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood be amended to reflect the true count and that the adverse effects on views and other aspects of the historic resources from construction of the project be acknowledged.
- We request that a Memorandum of Agreement treat the obvious adverse effects on historic resources of construction with strategies for avoidance, minimization, and mitigation.

The effects of the seven-and-a-half-year to eight-year construction activity described below would be compounded by the current staging, excavation, and hauling of Sound Transit’s deep-bore (300-foot deep) twin tunnel construction project under the Montlake Cut. Trucks will haul excavated material from the deep hole across the Montlake Bridge to SR 520. Construction is expected to last until some time in 2016. WSDOT’s declining to put the multiple and cumulative effects of these two simultaneous major projects into its effects findings “because it doesn’t have jurisdiction over other agencies” (Chapter 7, p 7-1) is disingenuous. And its refusal to consider as **cumulative effects** “the incremental impact of its [SR 520 Project] action when added to other past, present, and reasonably foreseeable future actions” of its own projects is perverse unless the agency hopes thus to avoid, not adverse cumulative effects, but having to negotiate a Memorandum of Agreement on avoiding, minimizing, and mitigating these effects.

- Increases in **noise** from demolition, hauling, staging, and construction at many sites at bedroom height of historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood over the seven-and-a-half-year to eight-year construction period can be expected.
- Nighttime construction **glare** and **noise** from many staging, hauling, and construction sites over the seven-and-a-half-year to eight-year construction period are likely.
- Increased **diesel traffic** during peak construction periods over seven-and-a-half to eight years on local arterials on the west and south borders of the Roanoke Park Historic District and on Fuhrman-Boyer Avenue East and Delmar Drive East in the Portage Bay neighborhood is expected. Diesel traffic is more polluting and noisier than auto traffic.

- Traffic **congestion and air pollution** from idling vehicles detouring along residential streets in both the Roanoke Park Historic District and the Portage Bay neighborhood can be expected.
- Damage to buildings, landscaping, and parked cars (and life and limb) from detouring vehicles speeding along residential streets can be expected as well.
- **Concrete dust** from the demolition of the East Roanoke Street, 10th Avenue East, Delmar Drive East, and Portage Bay bridges and the consequent erosion and soiling of buildings, dusty windows, and damage to landscaping, including the mature shade trees on its south side for which the Roanoke Park Historic District is noted, are expected.
- **Fugitive dust and fugitive emissions** from diesel engines and machinery during hauling, staging, and construction with their contribution to the erosion and soiling of buildings, dusty windows, vibration, and damage to landscaping including the mature trees that buffer the district from the present operation of freeways on its west and south borders are to be expected.
- The **removal** in fifty-foot-wide swaths during construction of **vegetation** that helps to buffer the historic resources from the effects of the present operation of SR 520 on the south is to be expected as well.
- The very real threat from demolition and construction **vibration** to historic resources perched on steep, landslide-prone hills all over the area from I-5 to Portage Bay and the accompanying threat to historic resources below these properties will loom over these properties during the seven-and-a-half to eight years of demolition and construction vibration.
- **Lessened use** of the contributing Roanoke Park because of its proximity to detours, haul routes, staging sites, and demolition and construction sites is to be expected.
- Intermittent and shifting **curtailed access** to homes and neighborhood schools during the seven-and-a-half-year to eight-year construction period is expected.
- The no doubt accurate **perceived damage to healthy livability** of historic resources and the consequent **lowering of values and changes of population** during an extended seven-and-a-half-year to eight-year construction project is to be expected. Single families with children are likely to move away and to be replaced by lower-income renters. The families served by the Portage Bay/Roanoke Park Community Council have among them 126 children under the age of 20, including 79 children under the age of 14. These figures are likely an undercount because in this age parents don't like to disclose this kind of information. The change to this single-family, owner demographic would be an **adverse secondary, or indirect, effect**.

Operation

- From operation, permanent damage to setting and feeling by **high contrast changes to the views** for which properties in the Portage Bay basin are noted, especially caused by the wider and higher Portage Bay Bridge, with massive noise walls in Options A and L, moved farther north in front of these properties, is expected.
- From operation of Option A, **views** of the delicate span of the Montlake Bridge and its Carl F. Gould towers would suffer permanent damage from the adjacent second bascule bridge.
- From operation, **views** from many historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood, of Portage Bay, the Colonial Revival Seattle Yacht Club and the brick and terra-cotta NOAA Fisheries Building, both designed by John Graham, Sr., would suffer permanent damage from the intrusion of the out-of-scale wider and higher adjacent bridge shifted north and right beside the Fisheries Building.
- From operation, a permanent increase in **noise levels** from bus traffic and more vehicle traffic in the two new lanes would reach the bedrooms of residents of the Roanoke Park Historic District and in the historic resources in the Portage Bay neighborhood.
- From operation, a permanent increase in **air pollution** would cause damage to historic resources from exterior erosion and soiling, dusty windows, and damage to vegetation from more lanes for bus and vehicle traffic.
- From operation, a permanent increase in **vibration** from the increase in bus and vehicle traffic on the replacement bridge moved north closer to historic resources and the consequent risk of landslides under historic resources perched on steep hillsides can be expected. (Houses close to the present four-lane SR 520 experience detectable although tolerable vibration already.)
- An **accurate perceived permanent damage to the healthy livability** of historic resources from the project's operation from I-5 to SR 520 and in the Portage Bay basin and a consequent lowering of values and changes in population are to be expected. Single families with children are likely to move away and to be replaced by lower-income renters. The many families with young children have been growing as has the number of single families with children in the Roanoke Park Historic District and the Portage Bay neighborhood. With the operation of a wider, closer SR 520 bridge and increases in traffic, noise, air pollution, and nighttime glare, that single-family, owner demographic trend is likely to change, and that would be an **adverse, secondary, or indirect**, effect.

Cumulative Adverse Effects

“An effect that results from the **incremental** effect of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions. Cumulative effects can result from **individually minor but collectively noticeable actions taking place over a period of time.**”

The collective, multiple foreseeable adverse effects of this WSDOT project described in these condensed comments along with the cumulative nature of these collective, multiple foreseeable adverse effects added to past and present adverse effects of WSDOT projects on these historic resources call for a Memorandum of Agreement between WSDOT and the neighborhoods served by the Portage Bay/Roanoke Park Community Council.

WSDOT's statement of refusal in the *SDEIS* to engage in cumulative effects findings because it doesn't have jurisdiction over other agencies—itsself a questionable rationale—does not excuse it from considering the adverse cumulative effects of its own projects, past, present, and future. Such an obligation to consider adverse cumulative effects of its own past projects, present projects, and future projects should forestall in the *CRDR* and other discipline reports the ubiquity in many of the discipline reports of arguments such as “there is already a bridge there, so a replacement bridge would not create an adverse effect.” WSDOT's determined efforts throughout the *SDEIS* not to acknowledge the temporal, historical aspect of the cumulative effects definition, which is stated in clear language, should be challenged before more damage, perhaps past a tipping point, is done.

Flawed Section 106 Negotiation Process

- We weren't given sufficient meeting time to take up the specifics of our corrections to the September 2009 version of the *CRDR*, the second draft we had reviewed and offered corrections for, or of the writer's many additions and changes to the September 2009 version in the third, 11/16/2009, iteration of the report and our comments on them. The writer, Lori Durio, who was talking to us via telephone, had to close her participation in the meeting, and Environmental Lead Marsha Tolon stayed a bit longer although she was due at another meeting. Connie Walker Gray, the other architectural historian who had been working with us, did not attend the meeting.
- We appreciated the news that editorial and mechanical suggestions we had made in response to the third review question about how the September 2009 document could be improved were passed on to the editor of the document, and we won't repeat many of those suggestions in this round of comments. We will mention editorial problems with the new, December 2009, version of the *Cultural Resources Discipline Report* that interfere with consistency and sense and therefore with clarity, accuracy, and earned, legitimate, and logical conclusions about effects.
- We are dismayed, after so many efforts on our part—over three drafts—to correct misinformation and omissions, that the fourth draft, the flawed December 2009 version of the *CRDR*, was included in the January 22, 2010, release of the

Supplemental Draft Environmental Impact Statement. Even more dismaying than the continued dissemination of misinformation in the *CRDR* is realizing that misinformation in the *CRDR* has been carried over to other parts of the *SDEIS*, such as the Section 4(f) evaluation, Chapter 4 on the project area's environment, Chapter 7 on indirect and cumulative effects, and most egregious to the Roanoke Park Historic District and the Portage Bay neighborhood, both noted for their panoramic and memorable views of high vividness, the December 2009 *Visual Quality and Aesthetics Discipline Report*. Note that these unaltered views were rated and described more favorably in the 2005 *VQADR* than in the December 2009 version of the *VQADR* and that the effects of even the old four-lane and six-lane alternatives on views were said to be profound, that is, "very noticeable." Has the discipline of aesthetics changed so much? Or is a strategy of denigrating present circumstances in order to find no adverse future effects from the project at work?

- We learned in the Monday, November 30, 2009, meeting that our speedy review of the 11/16/2009 iteration of the 213-page *Cultural Resources Discipline Report*, which we received via e-mail nine days later, on Wednesday, November 25, 2009, which review we accomplished over Thanksgiving in time for the Monday morning meeting discussion November 30, 2009, would nevertheless be unlikely to result in substantive corrections to representations of the Roanoke Park Historic District and other historic resources within the APE and to effects findings with respect to the Roanoke Park Historic District and Portage Bay neighborhood historic resources in the version of the *Cultural Resources Discipline Report* that would go into the *SDEIS*. The revised 11/16/2009 version of the *CRDR* could have been and should have been delivered to us in a timely way. Our comments and corrections should have appeared in the December 2009 *CRDR*.
- We were told in a telephone conversation subsequent to our 11/30/2009 meeting that Lori Durio, the writer of the *Cultural Resources Discipline Report*, had three reports due for the *SDEIS*, and while we are sympathetic, we think that the poor quality and the incompleteness of the previous iterations and now of the *SDEIS* version of the *Cultural Resources Discipline Report* are inexcusable. This report after all purports to describe the effects of the construction and operation of a years-long, massive transportation project on our historic homes and some ways of mitigating those inevitable effects on our historic district and on historic resources in the Portage Bay.
- New mistakes were introduced into the table of **eligible** historic resources, Exhibit 15 (formerly Exhibit 13). We had asked in the interest of balance and completeness that similar column heads and information comparable to the column heads and information in the table on eligible historic resources, Exhibit 15 (formerly Exhibit 13), be introduced into Exhibit 13 (formerly Exhibit 12) of **listed** historic resources. Instead the Roanoke Park Historic District, which is listed in the National Register for Historic Places and the Washington Heritage Register, was moved into Exhibit 15, for properties "eligible" for listing. A

description of the Street Address/Location for the Roanoke Park Historic District in Exhibit 15 sites the historic district on the northeast side of the intersection of SR 520 and I-5. Better for conveying the single-family residential nature of the district would be to describe it specifically, as the eligible Montlake Historic District is described in Exhibit 15 and as the Roanoke Park Historic District is described in its NRHP nomination: the Roanoke Park Historic District is roughly bounded by East Roanoke Street, Harvard Avenue East, East Shelby Street, and 10th Avenue East. See this correction and additional corrections for Exhibits 13 and 15 and other pages in the sequential comments section of this document.

- Per our request, the entire nomination form for the Roanoke Park Historic District is now included in Attachment 4. However, in Part 7 of the *CRDR*, a layout problem that originated with the photo of the Mayor Ole Hanson House on one page and its description on the following page next to a photo of the Storm House leads to misidentification of all of the 50-some photographed properties. The Hanson House photo and its information should be on the same page so that all of the subsequent photos will be correctly identified by their descriptions on the same pages as the house photos they describe.
- We had a chance in the one-hour and a little more meeting Monday morning, November 30, 2009, to discuss specific changes to the six-page Executive Summary of the *Cultural Resources Discipline Report* and to ask further about procedural matters including when we would have an opportunity to consult on Section 4(f) findings with respect to the Roanoke Park Historic District and the other historic resources our Community Council represents. We learned then that the Section 4(f) negotiation process, which we had inquired about many times in the course of our meetings with WSDOT consultants, had bypassed us, that we would have no opportunity to review and comment on the report, and that the report would go directly into the *SDEIS* without our having seen the report.
- We request that our comments here on the December 2009 *Cultural Resources Discipline Report* be considered, that they be discussed with us where the WSDOT consultants agree and differ, and that corrections be entered in the *Cultural Resources Discipline Report* for the *Final Environmental Impact Statement*. We hope that the final version of the *CRDR* will finally be free of repeated and new mistakes in depictions of the historic resources in neighborhoods represented by the Portage Bay/Roanoke Park Community Council. Effects findings (and “no adverse effects” findings) based on faulty information must be corrected.
- We request, too, that misinformation about the Roanoke Park Historic District and the Portage Bay neighborhood that has tainted effects findings in other chapters and discipline reports of the January 22, 2010, *SDEIS* be corrected in those chapters and reports as well.

- We request earlier and more review time for the next iteration—an interim draft before the *Final Environmental Impact Statement*—of the *Cultural Resources Discipline Report* and an opportunity to discuss our comments with the writer and the other WSDOT consultants. No matter how long it takes. The rush to publication is not warranted when shoddy work is published.
- We request opportunities to review, inform, and comment on the next iteration of the Section 4(f) Evaluation report as early as possible.
- We request that WSDOT consultants reach out to the North Capitol Hill Neighborhood Association and the Eastlake Community Council as representatives in Section 106 negotiations over historic resources that lie within those local governments' jurisdictions and within the Area of Potential Effects. We had assumed that this would be done. The owners of those historic resources have not been invited to become consulting parties to Section 106 negotiations.
- WSDOT did not reach out to the Portage Bay/Roanoke Park Community Council and ask us to be a consulting party in Section 106 negotiations and waited many months to meet with us after our request January 18, 2009, to become a consulting party. Much time that could have been devoted to the production of an accurate report was lost. Although we had been told that the Section 106 process would resume in January 2010, we heard only last week, on March 4, 2010, from the WSDOT consultants. We are invited to a training on Section 106 negotiation March 16, 2010, to be conducted by the Department of Archaeology and Historic Preservation (DAHP)—this after our struggling with incorrect and constantly changing instruction and information on Section 106 for over a year.
- If such delays and the poor quality of WSDOT work come from overwork and understaffing, WSDOT needs to staff up. The lack of time and lack of staff that have led to the poor quality of the *Cultural Resources Discipline Report* and to the misinformation disseminated from the report into other chapters and discipline reports of the *SDEIS* are not fair to the communities whose fate depends on WSDOT consultants' doing accurate, logical Section 106 work.
- WSDOT and federal and state government should consider as well the evident conflicts of interest that have dogged the Section 106 process in the State of Washington. The contractors employed by WSDOT to lead us through the process and at the same time negotiate with us have been lax about the conditions—lack of time and staff, misinformation about the process—that have led to the poor research and misinformation on which their findings of “no adverse effects,” agreeable to WSDOT, have been based. This has put the communities at a considerable disadvantage. Section 106 law needs to address this conflict of interest. Perhaps DAHP, an agency with its own powers and budget now coming in to instruct us in Section 106 process, should have been introduced into the negotiation process sooner as an advocate for the historic resources we amateurs have been trying to protect. The performance of the consultant professionals in

architectural history and Section 106 negotiation contracted by WSDOT have been so compromised by a lack of staff and time and by loyalty to their employer that they have abandoned concern for the preservation of the historic resources they have been charged to protect.

Comments on the December 2009 *Cultural Resources Discipline Report* in the January 22, 2010, SDEIS

As in the past three of our reviews of CRDR drafts, more than a little repetition, for which we apologize, arises from our effort to keep corrections sequential so that they will be easy to make.

Executive Summary p. i (covered in Monday, November 30, 2009, meeting with WSDOT consultants)

- i, third para The writer agreed to change “several” in reference to the hundreds of historic properties within the study area—the Area of Potential Effects (APE)—to “many.”
- We mentioned at that point that the editorializing addition of much diminishing language (“only,” “slightly,” “minor,” “not substantially,” or “not substantial,”—before a finding of “therefore no adverse effect”—and the frequent insertion of the vague words “generally speaking”—again before a finding of “therefore, no adverse effect”) in the 11/16/2009 iteration of the *Cultural Resources Discipline Report* was distressing to us as were incomplete and minimizing descriptions of the intensity and the extent of effects that have to do with the Roanoke Park Historic District and the other historic resources with which our community council is concerned. The writer agreed to make changes to this language if we would point out the other instances, which we will do in the course of these comments.
- ii, second para under “Seattle” head The writer declined again to add the 101 properties in the Roanoke Park Historic District and the 80 contributing properties in the Roanoke Park Historic District to the 12 count of historic built environment listed properties in the Seattle study area in this paragraph. That one of the listed 12 properties is a 101-property district containing 80 contributing historic resources and we believe 57 individually eligible historic resources is relevant to conveying the great number of historic listed and eligible properties in the Seattle study area. Representing the district as one property leads to a perception that there aren’t many listed historic resources in the Seattle study area. The number is relevant because the large number of listed and eligible historic resources in the APE calls for an especially delicate approach applied widely to design, construction, and operation of a project of such great magnitude in such a small, historic setting.

- iii, second para The writer declined again to include the 101 properties and 80 contributing properties in the count of “surveyed built environmental properties” because the listed properties, unlike the 217 unlisted properties (and 141 eligible properties) mentioned in this paragraph had not been “surveyed,” a strict reading in which a change of verb would permit the breadth and number of historic resources in the APE to be truly represented in this report. The net effect is the continued diminution of the number of historic resources in the Seattle study area.
- For the third time, the writer declined to include individually eligible properties in the Roanoke Park Historic District to these counts, this time on the basis that none of them would be individually eligible because they are in an already listed district. State Architectural Historian Michael Houser of the Department of Archeology and Historic Preservation said, “Not true” (e-mail exchange December 3, 2009), that “many individual properties in historic districts have been listed.” A follow-up question to Michael Houser to be sure that this was true of properties after district listing produced the same reply, and “some folks just like that individual listing.” We are aware of Roanoke Park Historic District residents who want to pursue that individual listing and relieved that we have not misinformed them that they can.
- We formally request again that a count of properties in the Roanoke Park Historic District eligible for individual listing be mentioned in the counts on pp ii and iii as a count of individually eligible properties in the Montlake Historic District has been mentioned in these summaries. If the writer does not have time to determine the individual eligibility of properties among the 80 contributing Roanoke Park Historic District resources, we request that WSDOT have a qualified consultant make these determinations in a fair and complete account.
- In the course of these comments, we will suggest many historic resources within the Roanoke Park Historic District, which lies entirely within the APE, that we think are eligible for individual listing and on what basis. Our initial survey concluded that **28** historic resources of 80 contributing resources in the RPHD would be eligible for listing on the basis of Criterion C alone, as exemplars of the work of notable architects and builders. Our survey among the 80 contributing resources of historic resources that might be individually eligible for listing on the basis of Criterion A alone, for their associations with both events and broad patterns of our history, came up with **8** candidates. In other words, a total of 36 historic resources would be individually eligible for listing on the basis of either Criterion A or Criterion C. We think that another **21** historic resources among the 80 contributing properties would be eligible on the basis of both Criterion A and Criterion C. Realizing that our objectivity might be constrained by our fondness for the history and the architecture of the district, we look forward to a professional evaluation of individual eligibility to corroborate or amend our estimated total number of **57** individually eligible historic resources and would appreciate the forwarding of the result to the State Historic Preservation Officer

for concurrence. And we request that this information inform accounts of the number of historic resources in the Area of Potential Effects.

- We formally request again that properties in the Roanoke Park Historic District both contributing and eligible for individual listing be brought to bear on effects findings for the Roanoke Park Historic District in the *Cultural Resources Discipline Report* as they are in effects findings for the eligible Montlake Historic District. State Architectural Historian Michael Houser, State Historic Preservation Officer Dr. Allyson Brooks, and the National Register have already concurred on identification of contributing properties, easily available in the nomination's table containing addresses, names of houses, and contributing (80) or non-contributing (21) status. Our successful nomination of the Roanoke Park Historic District for listing in the National Register and the Washington Heritage Register, readily available and already accessed by the writer at our suggestion, includes detailed architectural and cultural descriptions as well as high quality black and white photos that along with visits to the district can inform determinations of individual eligibility and whether on the basis of Criterion A or Criterion C or both as well, as has been done for the Montlake Historic District.
- The writer did agree to bring at least consideration of Roanoke Park Historic District contributing properties to bear on effects descriptions and findings in the *Cultural Resources Discipline Report* as has been done for both individual properties identified as contributing and individual properties identified as individually eligible in the report's effects findings for the eligible historic resources in the Montlake Historic District. With respect to effects findings in the Roanoke Park Historic District, this has not been done consistently in the December 2009 *SDEIS* version of the *CRDR*. In the course of these review comments, we will point out places in the *CRDR* in addition to the Executive Summary where both kinds of determinations—contributing and individually eligible—should be mentioned.
- Although not all of the 57 contributing historic resources we think might be eligible for individual listing on the basis of Criterion A or Criterion C or both will suffer direct effects from the construction and operation of the project, the whole district will suffer if a good proportion—well more than half—of those 80 contributing and 57 individually eligible resources experience direct, indirect, multiple and/or cumulative adverse effects. Many of them will.
- iii, first bulleted item The writer also agreed to include in the Executive Summary a total of all historic resources and not count the two historic districts as one property each, so that the Executive Summary can convey the total, a large number, of historic resources in the Seattle study area. As we have indicated, this is relevant because the large number of historic resources within the Seattle study area calls for an especially delicate approach applied widely to design, construction, and operation of a project of such great magnitude in such a small, historic setting. We would like to see the number of individually eligible

resources included in this item describing the Roanoke Park Historic District as the number of individually eligible resources in the Montlake Historic District have been included in the sister bulleted item on page iii.

- iii, paragraph after second bulleted item The 231 count of properties either listed in or eligible for the NRHP seems to be off. The 33 individually eligible properties outside the two historic districts added to the 35 individually eligible properties in the MHD would result in a sum of 68 individual properties either listed or eligible for the NRHP. If the MHD and the RPHD were counted as one property each, 33 plus 2 would be 35. If individually eligible properties in the RPHD, estimated at 57, were added to the 33 individually eligible properties outside the two historic districts and the 35 individually eligible properties in the MHD, the sum at most would be 125. Not all of the 141 contributing properties in the MHD or of the 80 contributing properties in the RPHD are individually eligible. If just contributing properties in the two districts were added to the 33 individually eligible properties outside the two districts, the sum would be 254. What does the 231 count include?
- We have expressed many times in previous comments and in meetings with WSDOT consultants the importance of accuracy and clarity in the Executive Summary, which might be all that many busy people will read of the *Cultural Resources Discipline Report*. We have noted that these passages have been inadequate and confusing, and they remain inadequate and confusing and under-represent the extent and the significance of historic resources in the Area of Potential Effects.
- iii, last paragraph (continued on iv) The preliminary nature of construction effects findings should be emphasized up front in this discussion, not parenthetically at the end of its second paragraph. Given the large number of contributing properties and we believe individually eligible properties and the foreseeable multiple and cumulative adverse effects of design, construction, and operation of all three of the six- and seven-lane options on historic properties in the Roanoke Park Historic District not discussed in the report, we think that the Roanoke Park Historic District should have been and should be included in this bulleted preliminary list of historic properties that might suffer adverse effects.

Note that the paragraph refers to both construction and operation effects as preliminary but says that additional adverse effects might be added once construction details are known. Why are “operation” effects, which have also been identified as preliminary, not subject to such emendation?

- iv, bulleted list We request that the Roanoke Park Historic District be included in this preliminary finding of historic resources that might suffer adverse effects from project construction and operation. We also request that the contributing and individually eligible status of historic resources in the Roanoke Park Historic District be brought to bear on effects findings later in the report as such status is

brought to bear on effects findings for the historic resources in the Montlake Historic District.

- We request that historic resources in the Portage Bay neighborhood likely to experience adverse effects from the project be mentioned in this preliminary list, as well.
- vi, “Pontoon Production and Transport” discussion We wondered again why the highly specific closing section on Pontoon Production and Transport had been tacked on to the end of the Executive Summary, which was otherwise general and summarizing. We wondered, too, as we had in our first review comments, why land hauling (and detours and staging) in addition to water hauling had not been considered in this section if hauling routes were going to be discussed so specifically at all in a summary. The writer declined to take up land hauling (and presumably detours and staging) in this section and agreed at Marsha Tolon’s suggestion to write something early in the Summary that would provide a rationale for including this specific water hauling information in the Summary. The writer added a sentence to the first paragraph of the Executive Summary saying that pontoon transport effects are discussed at the end of the Executive Summary but does not provide a rationale for this detailed treatment of pontoon transport in a summary.
- For reasons of time, we did not repeat the query in our earlier review comments why the accustomed uses seven days a week of St. Patrick’s Church and possible effects on these uses from land hauling had not been taken up in this curiously specific section on the effects of water hauling on the Boating Community’s accustomed Opening Day. The writer told us that someone at WSDOT wanted the section on Pontoon Construction and Hauling to be included in the Executive Summary and did not say why our earlier request for discussion of land hauling and specifically of hauling effects on the customary uses of St. Patrick’s Church were not included in this section or even in a section of its own in this summary. We request in the interest of balance that this be done if the specific section on water hauling will remain in the Executive Summary.

Introduction p. 1

- 1, first bulleted item Include Laurelhurst and the Boating Community among the Seattle project area communities.
- 4, first para under “Seattle” head Say “as well as the existing local street bridges across I-5 and SR 520.” Replacement of the East Roanoke Street bridge across I-5 is a part of the project.
- 4, second para under “Seattle” head Mention first the different designs for the Portage Bay Bridge under the three options. The difference between a six-lane and a seven-lane bridge is substantial enough to be mentioned in this paragraph.

- 5, Exhibit 4 showing Options A, K, and L in the Montlake and University of Washington areas should be preceded by a map showing the different configurations of the Portage Bay Bridge in the three options.
- 6, first para “A new seven-lane bridge” (last draft) has been changed to “six-lanes (four general-purpose lanes , two HOV lanes) plus a westbound auxiliary lane”? What is the difference between an auxiliary lane and a lane?
- 6, second para “Suboptions [plural] for Option A” are the subject of the opening sentence. The second sentence of the para speaks of “The suboption [singular].”
- 7, first para Concluding that quieter pavement cannot be considered mitigation ignores its inclusion not as mitigation but as part of the design of Option K. Note, too, that the results of WSDOT tests of quieter pavement have been so far skewed by improper installation. WSDOT might consult with the highway department of Flagstaff, Arizona, where quieter pavement has successfully withstood studded tires, chains, and freezing and thawing over a goodly amount of time, for 17 years back in 2007.
- 8, first para Update this description. The rows of three ten-foot-tall concrete columns are not shown in recent sketches. The pontoons themselves would be taller, rising more than their current 10 feet out of the water, and their visible height above the water should be added to the height of the columns. The “new spans” (span?) are (is?) estimated to be at least 29 feet, not 22 feet, higher than the existing floating bridge. Noise walls variously said to be from 8 to 12 feet or 8 to 14 feet will add to the height of the floating span.
- 8 Do the descriptions on this page refer to all of the options, or is the discussion still about Option L? According to Exhibit 5’s title, the discussion refers to all of the options. Page 8 should therefore open with language to help the reader see the transition from description of Option L to description that applies to all of the options.
- 11, bulleted list Would the second and third items in the phased implementation bulleted list be built at the same time? The map on page 12 shows both the Portage Bay Area and the West Approach Area as Priority 2. This would affect the intensity and the extent of construction effects.
- 11, last para Can “structures” be collectively called a “scenario”? Should say “The phased replacements of vulnerable structures are collectively referred to as the Phased Implementation scenario”?

Regulatory Context p. 17

- 17, first para Mention “mitigate” along with “avoid or reduce” as in the last para on this page (“avoid, minimize, or mitigate”), and explain, per our earlier request, the technical meanings of these three terms with examples.
- 18, first para, first full sentence (next to last sentence of first para) Include “view sheds” in the list of kinds of historic resources that can experience adverse effects. (And “visual effects” to any discussion of the kinds of effects that might be experienced by historic resources.) The project will affect view sheds that are historic, particularly from the Roanoke Park Historic District, whose period of greatest development was 1908 through 1912, with its views of the grounds and surrounding water, forests, and mountains in the year leading up to, the year during (1909), and the years immediately after the Alaska-Yukon-Pacific Exposition. The Roanoke Park Historic District and the Portage Bay neighborhood are still known for these views, which contribute a great deal to the setting and feeling and the desirability of the predominately single-family historic homes in these neighborhoods.
- 18, second para, first three sentences The writer said that the fact that the present historic SR 520 bridge is a SEPA-protected Scenic Highway with a significant view shed including Mt. Rainier has nothing to do with Section 106 negotiations. The historic present bridge is already said to experience an adverse effect from its prospective demolition, and the noise walls designed into Option A’s new seven-lane bridge and Option L’s six-lane bridge would adversely affect this view shed, which includes Mt. Rainier and other snow-topped Cascade Mountains and which has been enjoyed by drivers over the present historic bridge since its opening in 1963. Although bicyclers and walkers have never had access to the viewshed from the bridge, bicyclers and walkers across the new SR 520 bridge would be deprived by massive noise walls of this spectacular view shed as well.
- The number of historic resources in the Roanoke Park Historic District that enjoy such views, described as “expansive” and of “high vividness” (2005 *Visual Quality and Aesthetics Discipline Report*), of the University of Washington campus, Portage Bay, the historic Montlake Cut, the historic Montlake Bridge, the historic Seattle Yacht Club and marina, the historic NOAA Fisheries Building, Lake Washington, the lights of Kirkland and Bellevue, the treed hills beyond, and the Cascade Mountains, is understated in the report. These views have been largely unchanged since well before 1972, the cutoff date for consideration of historic resources.
- As we will enumerate later in these comments, more Roanoke Park Historic District properties than the report indicates (saying “a few”) and many Roanoke Park Historic District contributing and individually eligible properties, which status the report doesn’t mention in its Roanoke Park Historic District effects findings, enjoy these historic views. These contributing and individually eligible resources would be adversely affected by the seven-and-a-half-year to eight-year construction project’s visual blight, disruption, diesel pollution, noise, vibration,

damage to buildings and landscaping from air pollution and vibration, dusty windows, and nighttime glare. Many historic contributing and individually eligible properties on steep hillsides on the east and north sides of the historic district and unsurveyed resources on steep hillsides on both the north and south sides of Delmar Drive East in the Portage Bay neighborhood already experiencing periodic landslides will be vulnerable to the increased vibration from demolition and construction.

- From operation, the increased width and height, also moved north, of both the wider Portage Bay Bridge and the wider floating span in front of views from the district in all options would be an adverse effect. These operation effects on the views so characteristic of the Roanoke Park Historic District and the Portage Bay neighborhood, along with increased traffic noise and traffic emissions, damage to buildings (erosion and soiling from increased air pollution, vibration damage, and landslides), dusty windows, and damage to landscaping from air pollution and vibration, would affect the setting and feeling and therefore the desirability of heretofore single-family historic properties in the Roanoke Park Historic District and would be adverse effects of the project. Historic, architect-designed resources in the Portage Bay neighborhood, some of which have not been surveyed and included in the Area of Potential Effects (on hillsides on both sides of Delmar Drive East, in the houseboat community, and on both sides of Fuhrman-Boyer Avenue East) and the individually eligible Gunby, Alden Mason, and Kelley houses would also be adversely affected by the increased width and height, moved north, of the Portage Bay Bridge.
- Traffic on the current bridge has produced mild tremors in the houses closest to the freeway for years. More traffic, moved closer, will exacerbate this effect. We would not agree with a finding such as “There is already a tremor there, so more would not be an adverse effect.” (See “There is already a bridge there . . .,” (pp 174, 175, 186). The concept of a literal tipping point is more appropriate to this kind of judgment. Note that the Portage Bay neighborhood experienced landslides during construction of the present bridge back in the 1960s and that residences on the north side of Delmar Drive East including houses designed by Arthur Loveless, Paul Thiry, and Roland Terry (unsurveyed and not included in the *CRDR*) have experienced landslides in recent years.
- Demolition, construction, and operation of Option A’s seven-lane Portage Bay Bridge would have an especially egregious effect on views from many of the district’s contributing and individually eligible properties. So would construction and operation of Option A’s second bascule bridge adversely affect watery views of the exquisite Carl F. Gould Montlake bascule bridge from many contributing and individually eligible historic single-family properties of the Roanoke Park Historic District and in the Portage Bay neighborhood. (See the discussion later in these Formal Comments of the under-representation of the number of properties that currently enjoy these views in the Potential Effects of the Project section of the *Cultural Resources Discipline Report*.)

Historic Context p. 21

- 32, last paragraph, third sentence from end of para Should refer to the establishment of “Roanoke Park,” not “Interlaken Park,” which was established in the 1890s and over many years, although its western terminus, Bagley Viewpoint, might have been established around 1908. Check Don Sherwood’s history for Interlaken Park and Bagley Viewpoint, where the two are treated separately. The Roanoke Park land was acquired by the Parks Department in 1908, and the park was established in 1910.
- 44, first para, first sentence WSDOT did not reach out to owners of individually eligible residential properties outside historic districts as potential consulting parties. Unless their local governments initiated representation of these owners (which the Portage Bay/Roanoke Park Community Council did upon a belated realization that these owners had not been contacted by WSDOT), they went without representation in Section 106 negotiations.
- Nor did the WSDOT consultants identify all of the eligible historic resources in the Portage Bay neighborhood that might be adversely affected by the project, including architected residences by Arthur Loveless, Paul Thiry, and Roland Terry along the north side of Delmar Drive East, architected residences along the south hillside of Delmar Drive East, resources in the houseboat community in northwest Portage Bay, and historic residences along the east and west sides of Fuhrman-Boyer Avenue East. In addition, the commercial Anhalt Building still intact at the intersection of Eastlake Avenue East and Fuhrman-Boyer East will be doubly stressed by hauling for the project along both arterials and has not been included in the survey of eligible historic resources.
- 44, first para, reference to Historic Property Inventory Forms (HPIFs) Mention Attachment 3 as the location of revised or added HPIFs and Attachment 4 as the location of nomination forms for already listed historic resources.
- 44, last para These figures for historic resources in the Seattle segment seem low (eight properties listed in the NRHP) unless districts (misleadingly as elsewhere) are counted as one property and thus diminish the reader’s impression of the number and breadth of historic resources in the APE. Include language such as “including the 80 contributing properties, of which 57 properties are individually eligible for listing, in the Roanoke Park Historic District.” Again, the sheer number of historic resources in the APE, in such a small setting, calls for a delicate touch.
- 49, first para and bulleted list under Built Environmental Resources head Again “eight properties in the Seattle segment listed in the NRHP” minimizes the actual number of Seattle segment historic properties by treating the 101 property district, of which 80 are contributing properties and 57 are individually eligible properties, as one property. We repeat that the large number of historic resources in the

Seattle segment calls for an especially careful approach to design, construction, and operation of such a large project in such a small setting.

- 49, first bulleted item Note that of the 101 properties in the Roanoke Park Historic district, 80 are contributing properties and that of these, 57 are individually eligible. Again, treating an entire district as one property does not convey the large number of historic resources in the Seattle segment.
- 49, second bulleted item The name of the house in the National Register and the Washington Heritage Register is the William H. Parsons House. As a Seattle City Landmark, it is the Harvard Mansion. Note, too, that this thrice-time individually listed historic resource is in the listed Roanoke Park Historic District—that is, does not stand alone as the following items do.

Methodology, p. 53

- 55, bulleted list The examples should indicate which of the three kinds of adverse effect each is as this is where text is explaining at least what an indirect effect is. The other two kinds, direct and cumulative, should have been explained on the preceding and/or on this page, too, with helpful examples.
- 55, first para after bulleted list, second sentence Say “and the two six-lane alternatives and one seven-lane alternative.” (WSDOT used to describe Option A as “the seven-lane alternative.” If WSDOT no longer describes Option A as the seven-lane alternative, use the clunky “and one six lane alternative with an auxiliary lane on the Portage Bay Bridge,” which is WSDOT’s most recent description of Option A.
- 55, first para after bulleted list Delete the third and fourth sentences. For clarity because the passage might be understood in this sense, and if this passage were meant to justify describing the features of the three options in these two areas only once, the sentence might say, “Although the different options may have different effects on historic resources in the areas near the I-5 and SR 520 interchange and between I-5 and the Portage Bay Bridge, the features of the project in these areas are the same in each of the options.” Saying “so the analysis of effects in these areas is discussed only once” cannot be justified. And this section of the Methodology chapter is entitled “Effects Analysis,” not “Feature Description.” That the features of the three options within these areas are the same does not mean that the three options would not have differing potential effects on these areas. This blanket dismissal via faulty reasoning of the differing effects of the three options on the area between I-5 and Portage Bay has led to a deceptive minimization of adverse effects.
 - The construction and operation effects of the different options—say, view impediment or noise, erosion and soiling from air pollution—on the historic resources in the area between I-5 and the Portage Bay Bridge, on the Roanoke Park Historic District, for instance, or on the historic

resources in the Portage Bay neighborhood, are quite different and will require at least three discussions, of each option's effects on each area.

- The construction and operation of the seven-lane Portage Bay Bridge in Option A would have a different effect on views, noise, and air quality in the Roanoke Park Historic District and on views, noise, and air quality in the Portage Bay neighborhood than construction and operation of the six-lane Portage Bay Bridge of Options K and L would.
- The operation of Option A's second bascule bridge would have a different effect on views of the historic Carl F. Gould Montlake Bridge from the Roanoke Park Historic District and from historic resources in the Portage Bay neighborhood than the invisible tunnel of Option K or the bascule bridge farther east and out of sight of Option L would.
- Option K's depressed profile would affect views from these areas differently than Option L's elevated profile would affect views from the areas.
- Delete this recently added text that fails to justify not treating the differing effects of the three options on the areas of the project between I-5 and Portage Bay, and treat the differing effects of all three options on the Roanoke Park Historic District and historic properties in the other areas between I-5 and Portage Bay under the "Option A," "Option K," and "Option L" heads as is done for the areas in the APE east of Portage Bay in the "Potential Effects of the Project" section and in other sections of the text where construction and operation effects on these areas are discussed or summarized under the individual option heads.
- 55, last para "Examples of mitigation" Having seen the term in the *Cultural Resources Discipline Report*, we inquired in an earlier meeting with WSDOT consultants whether there was such a thing as "compensatory mitigation." The writer said, "No." Include "compensatory mitigation," and provide an example in the list here of possible mitigations since it is offered as a kind of mitigation by that name later in the text (p 192).

Historic Resources in the Study Area p. 57

- 62, first para under "Historic Built Environment Properties in the Seattle Study Area" head Say "In the Seattle study area, there are eight properties listed in the NRHP, **including the 101 properties of the Roanoke Park Historic District, of which 80 are contributing resources and 57 are individually eligible for listing.** This will convey a more accurate impression of the number of listed properties in the Seattle study area.
- 64-68 "Exhibit 13. Previously Identified Historic Properties in the Seattle Segment" (Exhibit 12 in the 11/16/2009 draft) and "Exhibit 15. Summary of NRHP-Eligible Properties Identified in the Seattle Segment" (Exhibit 13 in the

11/16/2009 draft) should have comparable column heads and contain comparably full treatments of the historic properties.

- The full description of the Montlake Historic District location in Exhibit 15 under the column head “Street Address/Location” should be balanced by an equally full description of the Roanoke Park Historic District location under that column head (“Roughly bounded by . . .”) in Exhibit 13.
- A “Property Name” column should be included in Exhibit 13 as in Exhibit 15.
- The “Period of Significance 1905 to 1952” for the Montlake Historic District in Exhibit 153 under the column head “Date of Construction” should be matched by an equally informative “Period of Significance 1899 to 1939” for the Roanoke Park Historic District under the column of that name in Exhibit 13.
- The discussion of the Montlake Historic District under “NRHP Eligibility” that discloses the criterion (C) under which the Montlake Historic District is NRHP eligible and includes a second paragraph describing the total number of properties in the Montlake Historic District, the total number of contributing properties in the Montlake Historic District, the number of individually eligible properties in the Montlake Historic District, and the number of non-contributing properties in the Montlake Historic District should be matched by an equally informative two paragraphs covering those two kinds of information (Criteria A and C; 101 properties, 80 contributing properties, 57 individually eligible properties, 21 non-contributing properties) under the column head “Listed Status” for the Roanoke Park Historic District.
- Note that the NRHP- and WHR-listed and City Landmark-designated William H. Parsons House (called the Harvard Mansion as a City Landmark) in Exhibit 13 is **in** the Roanoke Park Historic District.

In response to our request that these changes be made to Exhibit 13 (then Exhibit 12), the writer instead mistakenly inserted the **listed** Roanoke Park Historic District entry into Exhibit 15’s table of **eligible** historic resources. This mistake needs to be undone, and Exhibit 13 needs to be as informative along the lines mentioned above as Exhibit 15 is. Note, too, that the location of the Roanoke Park Historic District as described in the table “on the northeast side of the intersection of I-5 and SR 520” is inaccurate. That intersection is in the North Capitol Hill neighborhood. The “roughly bounded by” description we recommended in our earlier comment, along the lines of the “roughly bounded by” description of the Montlake Historic District in Exhibit 15’s Street Address/Location column would be accurate: “Roughly bounded by East Roanoke Street, Harvard Avenue East, East Shelby Street, and 10th Avenue East” would be accurate

geographically and also do a better job of conveying the single-family residential character of the district than describing it as “on the northeast side of the intersection of I-5 and SR 520” does.

Such treatment seems to be in accord with a widespread depiction in the *CRDR* of the Roanoke Park Historic District as so afflicted, so damaged already, that “no adverse effects” findings can arise out of reasoning such as the notorious “there is already a bridge there, so a replacement bridge would not be an adverse effect.” By means of a lot of work on the part of its residents in cooperation with the City’s Department of Parks and Recreation, Department of Neighborhoods, SDOT, and other agencies, the Roanoke Park Historic District is a remarkably cohesive single-family residential historic district. Its setting and feeling and its characteristic use are intact. A lessening of these characteristics would result in secondary (indirect), multiple (collective), and cumulative adverse effects.

- 81, subhead under “Roanoke Park Historic District” The subhead should say “**Listed** under Criteria A and C,” not “Eligible under Criteria A and C.”
- 81, first sentence The subject of the sentence is “**The** Roanoke Park Historic District . . .” Again, delete the unattractive new description of the Roanoke Park Historic District as “located on the northeast side of the intersection of SR 520 and I-5.” The original, now second sentence, of the paragraph describes the location of the Roanoke Park Historic District accurately and as it is described in its nomination: “Roughly bounded by East Roanoke Street, Harvard Avenue East, East Shelby Street, and 10th Avenue East . . .” This description conveys the single-family residential integrity of the Roanoke Park Historic District. Say “**the William H. Parsons House (the Harvard Mansion as a City Landmark).**”
- 81, first para, third sentence Say “The National Register nomination form **for the Roanoke Park Historic District**” to prevent confusion that the nomination form for the immediately preceding referent, the William H. Parsons House, is meant. Make it easy for the reader to find the nomination by means of a finer description of its location: Vol 4, Attachment 4, Parts 6 and 7.

We have verified that the entire nomination form for the Roanoke Park Historic District is now included in Vol 4, Attachment 4, Parts 6 and 7. However, a layout problem with the nomination photos and their descriptions in Part 7 ripples through the entire sequence of photos so that, for instance, the photo of the Storm house is identified on its page as the Mayor Ole Hanson House, the photo of the Neterer House is identified on its page as the Storm House, the photo of the William H. Parsons House (the Harvard Mansion) is identified on its page as the King-Friedman House, and so on through the entire sequence of black and white photos. Please fix this series of mistakes.

- 81, third full para Although introduced by “According to the nomination,” the beginning of the following text repeats the mistake that the RPHD is “eligible for

listing” rather than up-to-date information from the NRHP nomination. This statement does not come from the nomination, as we pointed out in several reviews of the *CRDR*. The Roanoke Park Historic District is no longer “eligible for listing” but is listed.

- 87, Exhibit 16. We had asked for greater contrast between contributing and non-contributing properties on the map so that the difference will show up better in black and white printouts. We look forward to seeing this revision of the exhibit, which was not accomplished in time for the *SDEIS* release.
- 88, fifth full paragraph The Roanoke Park Historic District is not “**eligible** for listing under Criterion A.” The Roanoke Park Historic District has been **listed** in the National Register and the Washington Heritage Register on the basis of Criterion A **as well as Criterion C**.

Such misleading mistakes have dogged descriptions of and effects findings with respect to the Roanoke Park Historic District in the successive drafts of the *CRDR*. We would like to trust that careless mistakes of this nature and more significant misrepresentations will be corrected in the version of the *CRDR* that goes into the *FEIS*.

- 89–90 bulleted list of architects. The list takes up a whole line for each name—a lot of space used up for no good reason—and could be run-in as a short paragraph. We appreciate the writer’s additional research on Harry W. Kent and the Kenworth trucking company, but the description in the *CRDR* of the Roanoke Park Historic District scants important events and patterns associated with the district—early Seattle history writing, early significant judicial decisions, early and distinguished journalism. With the extra space, a much better account of the district’s significance could be provided first.
 - The end of the sentence about Louisa Boren Denny, midway through the last para on p 88, would be a good place for a new paragraph about the many other prominent Dennys who lived in the district and to mention that many of these Dennys wrote the early histories of Seattle.
 - Louisa Boren and David T. Denny’s eldest child, Emily Inez Denny, who wrote *Blazing the Way* (1909), lived in the district with her mother and the family of her youngest brother, Victor W. S. Denny, a miner and assayer of gold and silver. Arthur and Mary Ann Boren Denny’s granddaughters Sophie Frye Bass, who wrote *Pig-Tail Days in Old Seattle* (1937) and *When Seattle was a Village* (1947), also an archivist of note after whom the library at MOHAI was named, and Roberta Frye Watt, who wrote *Four Wagons West* (1931), daughters of Arthur and Mary Ann’s eldest child, Louisa Denny Frye, lived in the district, too. (See the Elmer E. Green–designed Gates-Bass Mansion, A and C, 1909, in Exhibit 16.) Their younger sister Elizabeth Frye Bogue and her husband, Virgil Bogue, author during the City Beautiful movement of the *Seattle Comprehensive*

Plan of 1911 and longtime collaborator of the Olmsted brothers, also lived in the district. (Interestingly, engineer Virgil Bogue proposed a tunnel under Lake Washington to connect the west side and the east side.) Their cousin Mabel Denny Thompson, daughter of Arthur and Mary Ann Boren Denny's oldest son, Orion Orville ("Double O" to the nieces and nephews), also lived in the neighborhood.

- The account of the Dennys could be followed by a new paragraph in which the Bernice Stern, Alice Franklin Bryant, and Jean Ross material could be used.
 - This account of other notable women from the district could be followed by a paragraph on the distinguished superior court judge Jeremiah Neterer, who lived in a contributing and individually eligible house (A and C, Andrew Willatsen, 1915) in the district and presided over many landmark cases of the day, including the bootlegger Roy Olmstead's [this the correct spelling] trial that involved an early decision on the admissibility of evidence gained by wiretapping and the long-running legal disputes between private power owners Stone & Webster vs. public power advocate J. D. Ross. Many of the neighborhood's attorneys took part in these cases, on both sides. Neterer also presided over early union disputes that involved his neighbor across the alley in a contributing and individually eligible house (A and C, Frederick A. Sexton, 1908), U. S. Attorney Robert C. Saunders.
 - [New paragraph] Mayor Ole Hanson and his elected successor, Hugh M. Caldwell, both lived in the district, in contributing historic houses, and were both caught up in the Stone & Webster disputes and court cases.
 - The Harry W. Kent paragraph could follow then. If it had to be shorter, that would be all right. The information on the Dennys, the women, and the Honorable Jeremiah Neterer is of greater significance.
 - Also of great interest is that Samuel L. Crawford, who founded the *Intelligencer* newspaper and stayed on as editor after its merger with the *Post* to create the *Post-Intelligencer*, at the time of its demise last year the oldest newspaper in the city, also lived in the district, along with William A. Prosser, news editor of the *Post-Intelligencer*. Ed Guthman, the Pulitzer-Prize winning journalist whose investigative reporting led to the exoneration of Melvin Rader and other members of the University of Washington faculty accused of Communist conspiracy by the Cantwell Committee, grew up in the district.
- 89, third para Should say "Also **listed** on the basis of Criterion C," not "Also eligible under Criterion C."

- 89–90 Run the names of the architects into the paragraph, after the colon, with their names simply separated by commas. That will leave more space for the suggested material above that points to the significance of the Roanoke Park Historic District on the basis of both Criterion A and Criterion C.
- 91, para beginning “In addition to the elms in the park,” add “in its southern curb beds” to the end of the last sentence. This is important because a haul route along the southern curb beds, with possible adverse effects from fugitive dust and emissions and from vibration to the mature trees that characterize the district, has been identified. These trees in the south of the district also buffer the historic resources in the district from some of the effects of SR 520. They do not, as alleged later in this report, interfere with the panoramic, memorable views of high vividness east from many, not “a few,” historic resources (34 houses in all, 31 of 80 contributing resources, and 26 of 57 individually eligible resources) in the Roanoke Park Historic District.
- 92, first para After the first sentence, observe that the contributing Elmer E. Green–designed Gates-Bass Mansion (1909) shown in Exhibit 17 is also eligible for individual listing on the basis of Criterion A and Criterion C. It was designed by Elmer E. Green (1909) and was the home of Denny history writers Sophie Frye Bass and Roberta Frye Watt. (As is done p 94, under the two photos, for Exhibits 20 and 21, which show historic properties in the Montlake Historic District eligible for listing under Criterion C.) It is one of the more ornate . . .” “The Betterton-Hillman House at 2601 Broadway Avenue East and its twin next door, the Mayor Ole Hanson House at 2609 Broadway Avenue East, both designed by Elmer E. Green, are substantial residences with . . .” What a shame that only Elmer E. Green houses are shown. One of the two Huntington and Gould houses or one of the two Frederick A. Sexton houses, or one of the two Edwin J. Ivey houses could have conveyed what an architecturally important collection of houses is contained in the roughly 9 blocks of the Roanoke Park Historic District. The account of the Roanoke Park Historic District in even this fourth iteration, released for the SDEIS, has not been done with care.

Potential Effects of the Project, Construction p 135

- What would be the effects on congestion of variable tolling in the No-Build Alternative—that is, effectively what will happen if the variable tolling project does go into operation in spring 2011 before construction, and what would be the effects on congestion of tolling of SR-520 alone and tolling of both SR 520 and I-90?
- 135, Delete the out of date “6-Lane Alternative” head, and treat the area between I-5 and Portage Bay under the three “Option A” (141) “Option K” (149), and “Option L” (160) heads.
 - Use a bulleted list similar to the one on p 147 for multiple construction effects of Option A on the Montlake Historic District to itemize the

multiple construction effects on the Roanoke Park Historic District and the historic resources in the Portage Bay neighborhood of Option A. (See our summary of effects pp 5–6.)

- Use a bulleted list similar to the one on p 157 for multiple construction effects of Option K on the Montlake Historic District to itemize the multiple construction effects on the Roanoke Park Historic District and the historic resources in the Portage Bay neighborhood of Option K.
- Use a bulleted list similar to the one on p 166 for multiple construction effects of Option L on the Montlake Historic District to itemize the multiple construction effects on the Roanoke Park Historic District and the historic resources in the Portage Bay neighborhood of Option K.
- 135, para under “6-Lane Alternative” head (which should be deleted) The first sentence of the paragraph says, “This section discusses potential construction effects and notes all known effects from the project on historic properties.” The paragraph goes on to qualify its construction effects judgments and to indicate as before that they are preliminary. This pattern of making a statement and then qualifying it is confusing. Let the reader know immediately of the preliminary nature of construction effects findings in this iteration of the *Cultural Resources Discipline Report*. Something such as, “This section discusses preliminary identifications of potential adverse construction effects from the project on historic properties. Effects findings here will be finalized only with the concurrence of the State Historic Preservation Officer (SHPO).”
- 135, para under “6-Lane Alternative” head, second sentence Says the effects will be thoroughly analyzed before publication of the *FEIS*. Having not had enough review time and meeting time to discuss with WSDOT consultants their analyses of effects before publication of the *SDEIS*, we ask that explicit provision for post analysis discussion with consulting parties and proposals for avoidance, minimization, and mitigation be discussed with consulting parties and entered into a Memorandum of Agreement before publication of the *FEIS*.
- 135, para under “6-Lane Alternative” head (which should be deleted) The faulty reasoning in earlier statements in the Methodology section about effects analysis (p 55) is repeated: “As noted in the Methodology Section [no initial cap on “section”], for the area near the I-5 and SR 520 interchange, and between I-5 and the Portage Bay bridge [the earlier version of this rationale said “between I-5 and Portage Bay”], the project is [features are] the same under each option, so the analysis of effects is discussed here only once.” This faulty reasoning cannot justify the absence of discussion of effects and the different effects of each of the three options on the area between I-5 and the Portage Bay Bridge. The three options will have differing effects on views, noise, vibration, nighttime glare, and air quality in this area, for instance, during demolition and construction. Delete the two sentences.

- Because the report says that less is known of demolition and construction details in the area near the I-5 and SR 520 interchange, treat the two areas, the area near the I-5 and SR 520 interchange and the area between I-5 and Portage Bay, separately. If more is known about the design and construction plans of the I-5 and SR 520 interchange before the publication of the *FEIS* (and more should be known by then) and if WSDOT is still treating the three options by then (let's hope not!), include that information in the three sections devoted to Option A (147), Option K (157), and Option L (166).

I-5 and SR 520 Interchange, Construction, Options A, K, and L

- 135, under the "Historic Built Environment" head Of the area near the I-5 and SR 520 interchange, say something to the effect of "The redesign, demolition, and construction of the SR 520 and I-5 HOV ramp and interchange is likely to have an adverse effect on the eligible Chung House at 1980 Harvard Avenue East (C, 1932) and possibly on the eligible Talder House (C, 1909) at 2352 Broadway Avenue East. When demolition and construction details are known, possible effects of demolition and construction (and effects of operation in the operation section of this chapter) of this part of the project on historic resources will be more fully evaluated. If the SHPO concurs, avoidance, minimization, and mitigation measures will be proposed in a Memorandum of Agreement."
- 135, Move the material from pp 135 last para to 141 first para into appropriate sections: the discussion of the I-5 and SR 520 interchange (above) and the sections devoted to Option A, Option K, and Option L.

Area Between I-5 and Portage Bay, Construction, Options A, K, and L

Construction—Staging, Options A, K, and L

- 142, under "Historic Built Environment" head, talk about the taking of the Bagley Viewpoint and construction staging effects there on the Roanoke Park Historic District under Option A. The Bagley Viewpoint is very close, across the street from, the contributing and individually eligible (both Criterion A and Criterion C, Elmer E. Green, 1909) Gates-Bass Mansion at 1018 East Roanoke Street and the contributing and individually eligible (A, 1907) Booth House at 1004 East Roanoke Street and is close to the contributing and individually eligible Dalley House (C, Huntington & Gould, 1910) at 2608 10th Avenue East. Staging there would also detract from enjoyment of and access to the contributing Roanoke Park itself; and the contributing houses at 2612, 2616, and 2622, 2632, and 2636 10th Avenue East in the Roanoke Park Historic District would experience adverse effects. This staging, with diesel noise and pollution, vibration, nighttime glare, and fugitive dust, would have an adverse effect on at least these 9 contributing historic resources and on the 3 of these 9 contributing resources closest to the staging area that are eligible for individual listing. These staging effects and ways

of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.

- Speak also to the effects of the taking of land along the front of the individually eligible Fire Station #22.

Construction—Vegetation Removal, Options A, K, and L

- 136, last para, first, second, and third sentences The argument that getting rid of vegetation (50-foot-wide swath along the WSDOT right of way north and south) that has buffered contributing and individually eligible houses in the Roanoke Park Historic District including the contributing and individually eligible Gates-Bass Mansion at 1018 East Roanoke Street, the contributing and individually eligible Booth House at 1004 East Roanoke Street, the contributing and individually eligible Dalley House at 2808 10th Avenue East, and the contributing houses at 2612, 2616, 2622, 2632, and 2636 10th Avenue East along with the contributing Roanoke Park itself, the contributing Betterton-Hillman House at 2601 Broadway Avenue East, the contributing and individually eligible Mayor Ole Hansan House at 2609 Broadway Avenue East, the contributing and individually eligible Storm House at 2611 Broadway Avenue East, the possibly individually eligible Winter house at 2617 Broadway Avenue East (C, 1942) and use of the possibly individually eligible St. Patrick Church (A and C, Krontz & Wrede, 1961) at 815 East Edgar Street, along with the individually eligible Boyd House at 2422 Federal Avenue East, the individually eligible Gunby House (C, John T. Jacobsen, 1940) at 1118 East Roanoke Street on the north and the individually eligible Alden Mason House (A and C, Victor Steinbrueck, 1949) on the south, the individually eligible Fire Station #22 at 901 East Roanoke Street, the individually eligible Keuss Building at 2351 10th Avenue East, the individually eligible Glover Homes Building at 914 East Miller Street, the individually eligible Wicklund-Jarr House at 910 East Miller Street, the individually eligible East Miller Condominium at 904 East Miller Street, and the individually eligible Sagamura House at 2408 Broadway Avenue East from SR 520 provides a good opportunity to get rid of the invasive species that have been smothering splendid stands of mature trees (because WSDOT has failed to deal with the invasives in those areas over many years) is unacceptable, along the lines of “we’ve already blighted it, so it’s OK to get rid of it.” It’s one thing to acknowledge the need to remove buffering vegetation for the sake of the project, another to pretend that this is a good thing.
- Removing mature trees that buffer these **12** contributing resources and St. Patrick Church in the Roanoke Park Historic District including 7 possibly individually eligible resources plus **9 more individually eligible resources outside the district** that would be exposed to more of the **present** SR 520’s noise, visual, and air pollution for an unspecified amount of time would be an adverse effect. A Memorandum of Agreement should specify that vegetation removal be delayed as long as possible and remedied as soon as possible after removal.

- The vegetation removal will expose these contributing and individually eligible historic resources in the Roanoke Park Historic District (those identified above and in the Portage Bay and North Capitol Hill neighborhoods) to construction effects of the widening of the SR 520 roadway, the demolition and rebuilding of replacement bridges at East Roanoke Street and 10th Avenue East and Delmar Drive East, the building of the lids at East Roanoke and 10th and Delmar, and the demolition and reconstruction of the Bagley Viewpoint and the Portage Bay Bridge. These effects of vegetation removal and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.
- 137, top of page Replanting with native plant materials near a freeway, where conditions are most unlike the conditions in which native plant materials thrived 160 years ago, seems like a misguided idea. Hardier choices are appropriate, and the communities would like language in the Memorandum of Agreement to say that they will be consulted on choices of species for both replacement buffering vegetation and lid landscaping.

Construction—Detours, Options A, K, and L

- 137, first full para The last iteration of the *Cultural Resources Discipline Report* proposed a **detour** to and from Fuhrman-Boyer Avenue East up and down 11th Avenue East. This iteration proposes a detour through the Roanoke Park Historic District. Both are objectionable for any length of time, let alone nine months. The 11th Avenue East detour around a steep blind curve would be dangerous for both residents and motorists. A detour through the Roanoke Park Historic District (presently DO NOT ENTER going north on 10th Avenue East and with a traffic diverter in Broadway Avenue East at East Edgar Street—both hard won by the community in order to discourage through traffic—would be dangerous for residents, bicyclists, walkers, and the district’s many young children accustomed to slow moving residential traffic. This would be a substantial change to the setting, feeling, and characteristic use of the historic district. In addition, historic resources in the district would be subject to increased fugitive dust and emissions from idling vehicles and speeding through traffic, noise, vibration, congestion, and erosion and soiling of buildings along with damage to landscaping from air pollution and vibration. Note that in the 2600, 2700, and 2800 blocks of 10th Avenue East and Broadway Avenue East in the district, many residents and visitors to Roanoke Park park their cars on both sides of the relatively narrow streets of the district. These cars would be subject to fugitive dust and emissions and possible damage from traffic traveling at speed through the district. These effects of detours and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.
- 137, second full paragraph At Rob Berman’s request a sketch for a more appropriate design for the intersection of 10th Avenue East and East Roanoke Street, the chief gateway to the Roanoke Park Historic District, has been furnished, has met with WSDOT’s approval, and has been passed to the city’s

SDOT for evaluation. We would like the Memorandum of Agreement to discuss adopting this plan.

Construction—Temporary Closures and Haul Routes, Options A, K, and L

- 137, second full para **Temporary closures** over a 15-month period that would “restrict access to the four contributing [good to see “contributing” mentioned with respect to the Roanoke Park Historic District in the report, although two of them are individually eligible as well] properties along East Roanoke Street” (1018 and 1004 East Roanoke Street, Roanoke Park and 2601 Broadway Avenue East), would also restrict access to its garage of the contributing house at 2612 10th Avenue East and to their garages of the contributing and individually eligible houses at 2609 and 2611 Broadway Avenue East and of the possibly individually eligible Winter house at 2617 Broadway Avenue East (C, 1942) and to the parking lot of the possibly individually eligible St. Patrick Church (A and C, Krontz & Wrede, 1961) at 815 East Edgar Street. (**10** contributing resources among which **8** are possibly individually eligible.)

- 137, last para, Say, “This potential **haul route** along two borders of the Roanoke Park Historic District would adversely affect the setting and feeling of the historic district with increased fugitive dust and diesel emissions, noise, vibration, traffic, congestion, dusty windows, and damage to buildings from erosion and soiling and to landscaping from dust and vibration that would make many contributing and individually eligible historic properties in this part of the Roanoke Park Historic District less desirable as single-family residences.”
 - Along Harvard Avenue East, 8 contributing, 1 thrice individually listed, 6 individually eligible and 2 possibly individually eligible historic resources would be adversely affected by this haul route: the contributing and individually eligible Brady-Alexander House (C, 1900—the second oldest house in the historic district) on the northeast corner of Harvard Avenue East and East Shelby Street, the contributing and individually eligible Dawson House (A and C, 1907) on the southeast corner of Harvard Avenue East and East Shelby Street, the contributing Barter-Devers House (C, 1908) at 2832 Harvard Avenue East, the contributing and individually eligible Stephens House (C, 1913) at the northeast corner of Harvard Avenue East and East Hamlin Street, the contributing and individually eligible Gleason House (C, 1909) on the southeast corner of Harvard Avenue East and East Hamlin Street, the contributing Stokes House (1906) at 2722 Harvard Avenue East, the individually listed William H. Parsons House (A and C, Edward J. Duhamel, 1903; the Harvard Mansion as a City Landmark) on the northeast corner of Harvard Avenue East and East Edgar Street, the accustomed parking (in its lot) and characteristic uses of the possibly eligible St. Patrick’s Church (A and C, Krontz & Wrede, 1961), the contributing and individually eligible King-Friedman House (A and C, 1910), and the contributing and individually eligible

Clemmer House (A and C, 1910). (8 contributing, 1 thrice listed, and 8 possibly individually eligible resources)

- This haul route would also adversely affect in the Roanoke Park Historic District 2 contributing and individually eligible resources along East Roanoke Street, including its contributing and individually eligible Gates-Bass Mansion (A and C, Elmer E. Green, 1909), and its contributing and individually eligible Booth House (A, 1907). On 10th Avenue East, the contributing and individually eligible Dalley House (C, Huntington & Gould, 1910), and the contributing Gifford, Fish, Bogue, Bloxom, and Horner houses would be adversely affected by this haul route. On Broadway Avenue East, the contributing Betterton-Hillman House (Elmer E. Green, 1912), the contributing and individually eligible Mayor Ole Hanson House (A and C, Elmer E. Green, 1911), the contributing and individually eligible Storm House (A and C, McClelland & Pinneh, 1924), the possibly eligible Winter House (C, 1942), and the possibly eligible St. Patrick Church (A and C, Krontz & Wrede, 1961) would be adversely affected by the haul route. (9 contributing and 7 possibly individually eligible resources)
- Discuss effects of the **haul route** along Fuhrman-Boyer Avenue East on historic resources in the Portage Bay neighborhood, including the as yet unsurveyed historic resources on the north and south Delmar Drive East hillsides, historic resources in the houseboat community, and historic resources along both sides of Fuhrman-Boyer Avenue East: “This potential haul route would adversely affect the setting and feeling of residential historic resources with increased fugitive dust and diesel emissions, noise, vibration, traffic, congestion, dusty windows, and damage to buildings from erosion and soiling and to landscaping from pollution and vibration that would make individually eligible historic properties less desirable as single-family residences.”
- 137, last para, 140 Says “with average construction activity, truck trips would range from one to two trips per hour.” Add in their appropriate sections the information that there would be **one to two trips per hour under Option A and Option L, and 1-5 trips per hour under Option K. During peak construction periods truck trips would range from 2-8 trips per hour under Option A, 2-20 trips under Option K, and 2-12 trips per hour under Option L.** The omission of the rest of the information from Marsha Tolon’s 7/17/2009 letter would deceive the reader into thinking that truck trips would be confined to one to two trips per hour. We object to this misrepresentation of information relevant to effects findings. Provide an indication of how many and how often historic resources along this haul route would experience peak construction periods, and provide a comparison of the peak period volume of truck trips with normal arterial truck trip volumes. Note that diesel emissions are more polluting than auto emissions and that construction trucks are much noisier than autos.

- These effects of temporary closures and haul routes and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.

Construction—Demolition, and (Re)Construction of the three arterial bridges and construction of the two lid over I-5 at East Roanoke Street and over SR520 between 10th Avenue East and Delmar Drive East . Option A

- 140–141 Move the discussion of effects on the properties mentioned in these paragraphs to the appropriate Option A, Option K, and Option L sections of the chapter’s consideration of potential construction effects.
- 140 Say, “. . . the entire Roanoke Park Historic District **including its individually listed** William H. Parsons House (Edward J. Duhamel, 1903),” to prevent mistaken impression that the Parsons House is outside the Roanoke Park Historic District as the other individual houses mentioned in the rest of the list are.
- 142 The same. Say, “The Roanoke Park Historic District **including its individually listed** William H. Parsons House,”
- **East Roanoke Street, 10th Avenue East, and Delmar Drive East Bridges, Demolition and Construction, Option A** The demolition and reconstruction of the East Roanoke Street bridge over I-5, the 10th Avenue East Bridge over SR 520, and the Delmar Drive East bridge over SR 520—of all three bridges—is likely to adversely affect contributing and individually eligible houses and use of the contributing Roanoke Park (1910) in the Roanoke Park Historic District along the 2600 block of Broadway Avenue East including the contributing Betterton-Hillman House at 2601 Broadway Avenue East (Elmer E. Green, 1912), the contributing and individually eligible Mayor Ole Hanson House at 2609 Broadway Avenue East (A and C, Elmer E. Green, 1911), the contributing and individually eligible Storm House (A and C, McClelland & Pinneh, 1924). All of these historic resources and the possibly eligible Winter house at 2617 Broadway Avenue East (C, 1942) and the possibly eligible St. Patrick Church (A and C, Wrede & Krantz, 1961) will suffer extreme concrete dust and ensuing building exterior erosion and soiling, dusty windows, damage to landscaping from dust and vibration, noise, vibration, and nighttime construction glare from the demolition and reconstruction of the East Roanoke Street, 10th Avenue East, and Delmar Drive East bridges. (4 contributing and 5 possibly individually eligible resources would suffer adverse effects from all three bridge and lid projects.
- **East Roanoke Bridge** The demolition and reconstruction of the East Roanoke Street bridge alone are likely to produce extreme effects of concrete dust and ensuing building exterior erosion and soiling, dusty windows, damage to landscaping from dust and vibration, noise, vibration, and nighttime construction glare in the areas of the Roanoke Park Historic District adjacent to I-5 near East Roanoke Street and along Harvard Avenue East, including the contributing and individually eligible Clemmer House (Criteria A and C,

1910) at 2612 Harvard Avenue East, the contributing and individually eligible King-Friedman House (A and C, 1910) at 2616 Harvard Avenue East, and the individually listed William H. Parsons House (the Harvard Mansion as a city-designated landmark, A and C, Edward J. Duhamel, 1903) at 2706 Harvard Avenue East. In addition to the aforementioned **4** contributing and **5** possibly individually eligible historic resources in the 2600 block of Broadway Avenue East, **2** contributing and individually eligible and **1** thrice-listed historic resources would be adversely affected by demolition and construction of the lid over I-5 at East Roanoke Street construction.

- **10th Avenue East and Delmar Drive East Bridges** Demolition and reconstruction of the two bridges in the area of the Roanoke Park Historic District across from the 10th Avenue East and Delmar Drive East bridges are likely to cause adverse effects from demolition concrete dust and ensuing building exterior erosion and soiling, dusty windows, damage to landscaping from air pollution and vibration, noise, vibration, and nighttime construction glare on historic resources including buffering mature trees and other vegetation along the south border of the district, and to **8** contributing and possibly **3** individually eligible historic resources: the contributing and individually eligible Booth House (A, 1907) at 1004 East Roanoke Street, the contributing and individually eligible Gates-Bass Mansion (A and C, Elmer E. Green, 1909) at 1018 East Roanoke Street, the contributing and individually eligible Dalley House (C, Huntington & Gould, 1910) at 2608 10th Avenue East, the contributing Gifford House at 2612 10th Avenue East (1924), the contributing Fish House at 2616 10th Avenue East (1922), the contributing Jenner-Bogue House at 2622 10th Avenue East (1923), the contributing Bloxom House (C, 1917) at 2632 10th Avenue East, and the contributing Horner House (C, 1925) at 2636 10th Avenue East, as well as the aforementioned **4** contributing and possibly **5** individually eligible historic resources in the 2600 block of Broadway Avenue East.
- **Delmar Drive East Bridge** Demolition concrete dust and vibration, ensuing building exterior erosion and soiling, dusty windows, damage to landscaping from dust and vibration, noise, and nighttime construction glare from the Delmar Drive East part of the project is highly likely to have an adverse effect on the individually eligible Gunby House at 1118 East Roanoke Street (C, John T. Jacobsen, 1940), the individually eligible Alden Mason House at 2545 Fuhrman-Boyer Avenue East (A and C, Victor Steinbrueck, 1949), and the individually eligible Kelley House at 2518 Fuhrman-Boyer Avenue East (C, 1909). Portage Bay itself along with its marinas and boats will be vulnerable to heavy concrete dust and to possible soil deposits if the demolition activity produces vibration sufficient to start landslides. All of the contributing and individually eligible houses along the 2600 and 2700 blocks of 10th Avenue East, including **11** contributing houses, **4** of which are possibly individually eligible as well, will be vulnerable to landslides produced by bridge demolition vibration. As recently as May 2005, the Seattle Department of

Planning and Development identified the east side of 10th Avenue East as a “Landslide Prone Hazard Area.”

- Along the north side of Delmar Drive East, where houses sit on the edges of precipitous, landslide-prone hillsides that already experience periodic landslides, Arthur Loveless-, Paul Thiry-, and Roland Terry-designed houses as yet unsurveyed and outside the Area of Potential Effects¹ will be exposed to heavy demolition dust and vibration, ensuing building exterior erosion and soiling, dusty windows, damage to landscaping from air pollution and vibration, noise, and nighttime glare from the demolition and construction of the Delmar Drive East bridge. Access to these houses will be blocked by the closure of Delmar Drive East. Note that the properties on which these houses sit already suffer periodic landslides. These properties need to be included in the CRDR’s survey, and measures to prevent construction landslides need to be included in a Memorandum of Agreement with the Portage Bay/Roanoke Park Community Council.
- Architect-designed houses on the steep, landslide-prone hillside on the south side of Delmar Drive East have not been surveyed yet, either, and are likely to suffer the heavy demolition dust and vibration, building erosion and soiling, damage to landscaping from air pollution and vibration, dusty windows, noise, and nighttime glare from the Delmar Drive East Bridge demolition and construction activity, as well.
- Adverse effects to both historic buildings and vegetation from all three arterial bridge and lid projects should be anticipated, and ways of avoiding, minimizing, and/or mitigating the multiple effects of this extremely dusty, clogging, building eroding and soiling, noisy, and earth-shaking demolition and construction activity should be discussed in a Memorandum of Agreement.
- The reconstruction plan for the bridge over I-5 at East Roanoke Street and the 10th Avenue East bridge over SR 520 is to build half lids to serve traffic as temporary bridges north of the present East Roanoke Street Bridge and either east or west of the present 10th Avenue East Bridge over SR 520. The closure of Delmar Drive East, as we understand it, means that a temporary bridge (half lid) will not be constructed adjacent to the present Delmar Drive East bridge over SR 520 at Delmar Drive East, although building one there to avoid the closure of Delmar Drive East could be considered.
- Finishing and landscaping the lids over I-5 and SR 520 immediately after the replacement bridges have been constructed and put into operation would spare historic resources from many of the further adverse effects of the project’s total seven-and-a-half-year to eight-year construction phase and provide an opportunity

¹ It’s difficult to determine, looking at the maps, whether these properties on Delmar Drive East lie within the Area of Potential Effects. Please advise. If they are not, we suggest that both they and the historic resources on the south hillside of Delmar Drive East should be included in the Area of Potential Effects.

for monitoring and fine-tuning to perfect measures to avoid, minimize, and mitigate operation effects on historic resources. Here it is relevant to mention that the **features** in this area are the same for all three options and that building the lids could therefore take place early and even before the rest of the project is undertaken.

- Note that in the Phased Implementation scenario, said in the SDEIS to be the most likely scenario, lid construction would be deferred indefinitely. We request discussion of the adverse effects of this damaging prospect and treatment of the lid timing issue and construction mitigation in a Memorandum of Agreement.
- The effects of demolition and (re)construction of the three arterial bridges and two lids and ways of avoiding, minimizing, or mitigating the multiple effects should be discussed in the Memorandum of Agreement.

Construction—Demolition and (Re)construction of the Seven-Lane Portage Bay Bridge, Option A

- 140 third para, third sentence Saying “The temporary work bridges, barges, and heavy equipment used for demolition and construction of the Portage Bay Bridge **might** also introduce visual effects to the area” is unduly tentative. They will introduce adverse **visual effects** to the area.
- 141 The discussion treats the effects of the 6 years of demolition and construction of the Portage Bay Bridge without mentioning the adverse effects of this six-year period, with **views** of temporary work structures and barges, demolition noise and vibration, concrete dust and ensuing building erosion and soiling, dusty windows, damage to landscaping from dust and vibration, construction noise, and nighttime construction glare to historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood. Adverse effects of the construction of the Portage Bay Bridge, which in addition to being more than twice as wide or wider, depending on the option chosen, and higher, will be moved to the north in front of more homes in the Roanoke Park Historic District and in the Portage Bay neighborhood, are not discussed. These adverse construction effect on the Roanoke Park Historic District and the Portage Bay neighborhood should be discussed and avoidance, minimization and mitigation taken up in a Memorandum of Agreement.
- Again, we request that identification of the contributing and individually eligible historic resources in the Roanoke Park Historic District be brought to bear on effects findings as the contributing and individually eligible status of historic resources in the Montlake Historic District is routinely brought to bear on effects findings for that historic district.
- 141 Moving from west to east, discuss the effects of Option A construction on the area between I-5 and Portage Bay, presently omitted. Discuss historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood including

historic resources on the north and south hillsides of Delmar Drive East that would be adversely affected by demolition and the construction of Option A's seven-lane Portage Bay Bridge, which include **visual blight**, noise, vibration, air pollution and consequent building exterior erosion and soiling, dusty windows, nighttime glare, and vegetation removal and damage.

- Historic properties on East Roanoke Street that would experience adverse effects from the demolition and construction of the seven-lane Portage Bay Bridge of Option A include the contributing and individually eligible Gates-Bass Mansion (A and C, Elmer E. Green, 1909) at 1018 East Roanoke Street, the contributing and individually eligible Booth House (A, 1907) at 1004 East Roanoke Street, and the contributing Roanoke Park (1910). Along the 2600 block of the district's 10th Avenue East, the contributing and individually eligible Dalley House (C, Huntington & Gould, 1910) at 2608 10th Avenue East, the contributing Gifford House at 2612 (1924), the contributing Fish House at 2616 (1922), the contributing Jenner-Bogue House at 2622 (1923) the contributing Bloxom House (1917) at 2632, and the contributing Horner House (1925) at 2636 10th Avenue East would experience these adverse effects. (9 contributing, 3 of which are also individually eligible)
- In the 2700 block of the Roanoke Park Historic District's 10th Avenue East, historic properties adversely affected by the demolition and construction of the seven-lane Portage Bay Bridge of Option A would include the contributing and individually eligible Beckwith-Thompson House (A, 1910) at 2700, the contributing and individually eligible Saunders House (A and C, Frederick A. Sexton, 1908) at 2701, the contributing and individually eligible Parshall House (C, Thomas L. West, 1911) at 2706, the contributing and individually eligible Siegley House (C, E. H. Sanders, 1909) at 2712, the contributing and individually eligible Cavanaugh House (C, 1909) at 2722, the contributing and individually eligible Conly House (A, 1916) at 2726, and the contributing and individually eligible Finley House (A and C, 1909) at 2731 10th Avenue East. (7 contributing, of which all 7 are also individually eligible)
- Historic resources in the Portage Bay neighborhood that would be adversely affected by the demolition and construction of the seven-lane Portage Bay Bridge of Option A include the individually eligible Gunby House (C, John T. Jacobsen, 1940), the individually eligible Alden Mason House (A and C, Victor Steinbrueck, 1949), and the individually eligible Kelley House (C, 1909), which will be adjacent to the wider, higher bridge moved farther north of Option A.
- Other potentially eligible resources in the Portage Bay neighborhood have not been surveyed, including the Arthur Loveless, Paul Thiry, and Roland Terry houses on the north side of Delmar Drive East and the architect-

designed houses at the top of the Delmar Drive East south hillside, which might or might not lie within the APE, and the houseboat community in the west end of Portage Bay, the potential historic bungalow district along East Gwinn Street between Harvard Avenue East and Fuhrman-Boyer Avenue East, and historic resources along many of the other streets that make up the point, and many of the other historic resources along both sides of Fuhrman-Boyer Avenue East, which have been left out of the APE. Most of these properties would be affected by hauling and construction, and some of them would be affected by demolition as well.

- Without the lids that have been designed into the project, that are an integral part of the project, and because the “temporary” construction effects would go on for seven-and-a-half to eight years, these construction effects on historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood would be tantamount to permanent effects and ultimately lead to “demolition by neglect” as property values plummeted, and even then **visual blight**, noise, dust, vibration, and diesel emissions would mean that people would not be able to sell their homes for amounts approaching their present worth. Many of the houses would be rented out to lower income renters, those not in a position to avoid living so close to a mammoth, many-years-long freeway construction project. Many of the houses would become rooming houses. A general deterioration would ensue in the absence of owner-residents who work steadily to improve their historic houses and their communities. Repairs would tend to be done on the cheap, with little regard for the historic integrity that owner-residents have prized and maintained over 100 years. With the deterioration of the social fabric of the communities would come a deterioration of the setting and feeling and characteristic single-family use of the Roanoke Park Historic District and of the historic resources in the Portage Bay neighborhood.
- An accurate **perception that the neighborhoods had become unhealthy** would mean that many families with young children would move away. A recent snapshot, block-to-block survey of the number of children under the age of 20 conducted by the Portage Bay/Roanoke Park Community Council revealed that the predominantly single-family homes in the Roanoke Park Historic District and the Portage Bay neighborhood shelter 126 young children under the age of 20, of which 79 are under the age of 14. Note that the reluctance of many parents in this day and age to release such information means that these numbers of children are probably higher.
- Finishing and landscaping the lids over I-5 and SR 520 immediately after the replacement bridges have been constructed and put into operation would spare historic resources from many of the further adverse effects of Option A’s seven-lane Portage Bay Bridge project’s six-year construction phase and provide an opportunity for monitoring and fine-tuning to perfect measures to avoid, minimize, and mitigate subsequent permanent operation effects on historic resources.

- Scheduling lid construction for an early part of the Phased Implementation scenario rather than deferring lid construction indefinitely would address some of these adverse construction effects. This question and other means of avoiding, minimizing, and mitigating effects of the construction of the Portage Bay Bridge need to be addressed in a Memorandum of Agreement.

Construction—Portage Bay Bridge and Second Bascule Bridge, Option A, Views

- **Views** to the east, of Portage Bay, the historic NOAA Fisheries Building, the historic Seattle Yacht Club and marinas, the historic Montlake Cut, the historic Montlake Bridge, Lake Washington, the lights of Bellevue and Kirkland, trees in the foothills, and the Cascade Mountains from many of the contributing and individually eligible houses in the Roanoke Park Historic District and historic resources in the Portage Bay neighborhood both surveyed and unsurveyed would be adversely affected by the construction of Option A’s seven-lane Portage Bay Bridge and second bascule bridge. Construction of the Portage Bay Bridge expected to last 6 years and of the second bascule bridge expected to last 27 months would be **both visible and audible**. These construction effects would be compounded by Sound Transit’s deep-bore 300-foot-deep twin tunnel project, which is not even mentioned in the *Cultural Resources Discipline Report*. That project is underway now and is expected to go on until some time in 2016.
- Note that the statement that “only a few” historic resources in the Roanoke Park Historic District enjoy this panoramic **view shed** of high vividness is a diminution of the number of houses that enjoy this viewshed and of the extent and the quality of the views enjoyed by these historic resources. This misinformation, repeated in the December 2009 *Visual Quality and Aesthetics Discipline Report*, a reversal of the description in the 2005 *VQADR*, has contributed to a finding of “no adverse effect” and a consequent refusal to engage in a Memorandum of Agreement. The diminishing language needs to be corrected, the adverse effects need to be acknowledged, and the adverse effects should be taken up in a Memorandum of Agreement.
- The East Edgar Street, East Hamlin Street, and East Shelby Street hills continue to slope at the top of the Roanoke Park Historic District plateau from the east side of 10th Avenue East to the plateau’s high point along Broadway Avenue East. Residents in the large houses at the intersections of the Roanoke Park Historic District as far west as the west side of Broadway Avenue East at some intersections enjoy views east variously including Portage Bay, the historic Fisheries Building, the historic Seattle Yacht Club and marinas, the historic Montlake Cut, the historic Montlake Bridge, Lake Washington, the lights of Bellevue and Kirkland, trees in the foothills, and the Cascade Mountains. Many more historic resources in the Roanoke Park Historic District than “a few” enjoy these memorable “expansive” views of “high vividness.”

- Houses from which these expansive views of high vividness may be enjoyed include most obviously the contributing and individually eligible Gates-Bass Mansion at 1018 East Roanoke Street (A and C, Elmer E. Green, 1909) and most of the houses along the east side of 10th Avenue East: the contributing Gifford House (1924) at 2612, the contributing Fish House (1922) at 2616, the contributing and individually eligible Bogue House (A, 1923) at 2622, the contributing Bloxom House (1917) at 2632, the contributing Horner House (1925) at 2636, the contributing and individually eligible Beckwick-Thompson House (A, 1910) at 2700, the contributing and individually eligible Parshall House (C, Thomas L. West, 1911) at 2706, the contributing and individually eligible Siegley House (C, 1909) at 2712, the contributing and individually eligible Cavanaugh House (C, E. H. Sanders, 1909) at 2722, the contributing and individually eligible Conly House (A, 1916) at 2726, the contributing and individually eligible Mayer House (C, Hunt & Wheatley, 1924) at 2802, the contributing and individually eligible Spencer House (C, Ed Merritt, 1909) at 2808, the contributing Turner House (1903) at 2812, the contributing and individually eligible Richardson House (C, Julian G. Everett, 1912) at 2816, the contributing and individually eligible Phillips-Hyde House (C, Huntington & Gould, 1909) at 2822, the contributing and individually eligible Higgins House (A, 1909) at 2832, and the contributing and individually eligible Patten House (A and C, 1909) at 2836. (The contributing and individually eligible Booth House at 1004 East Roanoke Street [A, 1907] and the contributing and individually eligible Dalley House at 2608 10th Avenue East [C, Huntington & Gould, 1909] have their views impeded by trees and other houses.) **(20 contributing, 13 of which are also individually eligible)**
- The four houses on the north side of East Shelby Street at its east end that enjoy these views are the contributing and individually eligible Prosser-Dowling House (A and C, Hunt & Jones, 1909) at 912, the contributing and individually eligible Slater House (C, 1910) at 920, the contributing and individually eligible Ross House (A, 1912) at 926, and the contributing Dart House (C, 1909) at 1000. On the south side of East Shelby Street, the contributing and individually eligible Twelves House (A and C, Edwin J. Ivey, 1923) at 817, the contributing and individually eligible Denny House (A and C, 1910) at 2838 Broadway Avenue East, and the contributing Sutherland House (1908) at 2837 10th Avenue East also enjoy these views. **(7 contributing, of which 5 are also individually eligible)**
- On the north and south sides of East Hamlin Street, the contributing and individually eligible Sullivan-Walker House (A and C, 1899—the oldest house in the district) at 2736 Broadway Avenue East, the contributing and individually eligible Finley House (A and C, 1909) at 2731 10th Avenue East, the contributing and individually eligible Hunter House (A and C,

Frederick A. Sexton, 1909) at 2801 Broadway Avenue East, the contributing and individually eligible Johanson House (A, and C, attributed to Cutter & Malmgren, 1909) at 2800 Broadway Avenue East, and the contributing and individually eligible Wentworth-Elliott House (A and C, Merritt, Hall & Merritt, 1910) at 918 East Hamlin Street enjoy these views east as well. (5 contributing, all 5 of which are individually eligible)

- As do, before leaving out, the contributing and individually eligible Neterer House (A and C, Andrew Willatsen, 1915) at 2702 Broadway Avenue East and the contributing and individually eligible Saunders House (A and C, Frederick A. Sexton, 1908) at 2701 10th Avenue East. (Other houses along the west side of 10th Avenue East have partial views of Lake Washington and the Cascades from their high vantage points.) (2 contributing, **both** of which are individually eligible)
- All of these 34 contributing resources—more than a third of the Roanoke Park Historic District's 80 contributing resources and almost half of the district's 57 individually eligible historic resources—would suffer damage from the adverse effects to the setting and feeling of the Roanoke Park Historic District from the visual blight alone, and from pollution, noise, and nighttime glare at the various sites during the seven-and-a-half-year to eight-year construction project. (The State Historic Preservation Officer will decide finally whether the adversely affected contributing resources identified here include properties also individually eligible for National Register and Washington Heritage Register listing.)

In addition, as has been noted, some of these 34 resources both contributing and contributing and individually eligible—and one listed resource along Harvard Avenue East, more contributing and individually eligible resources along the west side of 10th Avenue East, the as yet unmentioned contributing and individually eligible resources along the east and west sides of Broadway Avenue East, and the four historic contributing and individually eligible resources along East Roanoke Street including the contributing Roanoke Park itself—would experience adverse effects from staging, vegetation removal, detours, temporary closures and haul routes, demolition and (re)construction of the three arterial bridges and two lids, demolition and (re)construction of the seven-lane Portage Bay Bridge, and construction of the second bascule bridge of Option A.

- These multiple adverse effects of demolition and (re)construction to so many contributing and individually eligible resources and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.

Construction— Demolition and Construction, Option K

- 149, Discuss the construction effects of the six-lane Option K on the historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood.
 - The construction effects on historic resources would come from staging, vegetation removal, detours, temporary closures and haul routes, demolition and construction of three bridges and two lids, and demolition and construction of the six-lane Portage Bay Bridge.
 - Construction effects of the six-lane Portage Bay Bridge would be almost as damaging in its effects as construction of Option A's seven-lane Portage Bay Bridge. See the earlier discussion of these effects with respect to Option A, and include them here.
 - Construction of Option K's tunnels under the Montlake Cut, with freezing, boring, and excavation, would be visible and audible for almost four years. Coincident with this part of the SR 520 project in Option K would be Sound Transit's project to excavate, haul, and construct a 300-foot-deep twin tunnel across the Montlake Cut. This project is underway and is expected to go on until 2016.
 - Option K's lower profile at various sites in the project as a whole might mean that visual blight from construction might be a less adverse effect over the seven-and-a-half-year construction phase.
- Without the lids that have been designed into the project, that are an integral part of the project, and because the "temporary" construction effects would go on for seven-and-a-half to eight years, these effects on historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood would be tantamount to permanent effects and lead to ultimate "demolition by neglect" as property values plummeted, and even then visual blight, noise, dust, vibration, and diesel emissions would mean that people would not be able to sell their homes for any amount approaching their present worth. Many of the houses would be rented out to lower income renters, those not in a position to avoid living so close to a mammoth, many-years-long freeway construction project. Many of the houses would become rentals and rooming houses. A general deterioration would ensue in the absence of owner-residents who work steadily to improve their historic houses and their communities. Repairs would tend to be done on the cheap, with little regard for the historic integrity that owner-residents have prized and maintained over 100 years. With the deterioration of the social fabric of the neighborhoods, would come a deterioration of the setting and feeling and characteristic single-family use of the Roanoke Park Historic District and of the historic resources in the Portage Bay neighborhood.
- An accurate **perception that the neighborhoods had become unhealthy** would mean that many families with young children would move away. A recent

snapshot, block-to-block survey of the number of young children under the age of 20 conducted by the Portage Bay/Roanoke Park Community Council revealed that the predominantly single-family homes in the Roanoke Park Historic District and the Portage Bay neighborhood shelter 126 children, 79 of which are under 14. Note that the reluctance of many parents in this day and age to release such information means that these numbers of children are probably higher. A Memorandum of Agreement should treat avoiding, minimizing, and mitigating these adverse secondary, or indirect, effects.

- Finishing and landscaping the lids over I-5 and SR 520 immediately after the replacement bridges have been constructed and put into operation would spare historic resources from many of the further adverse effects of Option K's six-lane Portage Bay Bridge project's six-year construction phase and provide an opportunity for monitoring and fine-tuning to perfect measures to avoid, minimize, and mitigate subsequent permanent operation effects on historic resources.
- The multiple effects of demolition and (re)construction in Option K and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.

Construction—Demolition and Construction, Option L

- 160, Discuss the construction effects of the six-lane Option L on the historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood.
 - The construction effects on historic resources would come from staging, vegetation removal, detours, temporary closures and haul routes, demolition and construction of bridges and lids, and construction of the six-lane Portage Bay Bridge.
 - Construction of Option L's six-lane Portage Bay Bridge over a six-year period would be almost as damaging in its effects as construction of Option A's seven-lane Portage Bay Bridge. See the earlier discussion of these effects with respect to Option A, and include them here.
 - Construction of Option L's second bascule bridge farther to the east and out of sight of these neighborhoods might have little effect on the neighborhoods that surround the Portage Bay basin. Note that any noise from the second bascule bridge construction project that reached the Roanoke Park Historic District or historic resources in the Portage Bay neighborhood would be compounded by noise from Sound Transit's project to construct a 300-foot-deep twin tunnel across the Montlake Cut. This project is underway and is expected to last until some time in 2016.

- Option L's elevated profile at various sites in the project as a whole would mean that visual blight from construction might be a more adverse effect over the seven-and-a-half-year construction phase.
- Without the lids that have been designed into the project, that are an integral part of the project, and because the "temporary" construction effects would go on for seven-and-a-half years, these effects on historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood would be tantamount to permanent and lead to ultimate "demolition by neglect" as property values plummeted, and even then visual blight, noise, dust, vibration, and diesel emissions would mean that people would not be able to sell their homes for any amount approaching their present worth. Many of the houses would be rented out to lower income renters, those not in a position to avoid living so close to a mammoth, many-years-long freeway construction project. Many of the houses would become rooming houses. A general deterioration would ensue in the absence of owner-residents who work steadily to improve their historic houses and their communities. Repairs would tend to be done on the cheap, with little regard for the historic integrity that owner-residents have prized and maintained over 100 years. With the deterioration of the social fabric of the neighborhoods would come a deterioration of the setting and feeling and the characteristic single-family use of the historic district and of the historic resources in the Portage Bay neighborhood.
- An accurate **perception that the neighborhoods had become unhealthy** would mean that many families with young children would move away. A recent snapshot, block-to-block survey of the number of young children under the age of 20 conducted by the Portage Bay/Roanoke Park Community Council revealed that the predominantly single-family homes in the Roanoke Park Historic District and the Portage Bay neighborhood shelter 126 young children including 79 under the age of 14. Note that the reluctance of many parents in this day and age to release such information means that these numbers of children are probably higher.
- Finishing and landscaping the lids over I-5 and SR 520 immediately after the replacement bridges have been constructed and put into operation would spare contributing and potentially individually eligible historic resources from many of the further adverse effects of Option L's six-lane Portage Bay Bridge project's six-year construction phase and provide an opportunity for monitoring and fine-tuning to perfect measures to avoid, minimize, and mitigate subsequent permanent operation effects on historic resources.
- The effects of demolition and (re)construction in Option L and ways of avoiding, minimizing, or mitigating them should be discussed in a Memorandum of Agreement.
- Note that the decline in livability described in many of the *SDEIS* discipline reports and in the *Health Impact Assessment* (regretfully, not included in the

SDEIS) would lead to “demolition by neglect” of historic resources in these areas adjacent to the SR-520 Bridge Replacement and HOV Project. The lids designed into the project are integral, not mitigation, but early **timing** of their completion could be regarded as a construction mitigation of this secondary, indirect, adverse effect in a Memorandum of Agreement.

Potential Effects of the Project, Operation section p 170

- Because the report says that less is known of details in the area near the I-5 and SR 520 interchange, treat the two areas, the area near the I-5 and SR 520 interchange and the area between I-5 and Portage Bay, separately.

I-5 and SR 520 Interchange, Operation, Options A, K, and L

- Of the I-5 and SR 520 interchange, say something to the effect of “The operation of the SR 520 and I-5 interchange is likely to have an adverse effect on the eligible Chung House at 1980 Harvard Avenue East (1932) and possibly on the eligible Talder House (1909) at 2352 Broadway Avenue East. When design and operation details are known, possible effects of operation of this part of the project on historic resources will be more fully evaluated.”

Area Between I-5 and Portage Bay, Operation, Options A, K, and L

Operation—I-5 and 10th & Delmar Lids, Options A, K, and L

- Without the lids that have been designed into the project, that are an integral part of the project, the operation effects on historic resources in the Roanoke Park Historic District and Portage Bay neighborhood would lead to ultimate “demolition by neglect” as property values plummeted, and even then noise, air pollution, and visual blight would mean that people would not be able to sell their homes for any amount approaching their present worth. Many of the houses would be rented out to lower income renters, those not in a position to avoid living so close to a mammoth freeway. Many of the houses would become rooming houses. A general deterioration would ensue in the absence of owner-residents who work steadily to improve their historic houses and their communities. Repairs would tend to be done on the cheap, with little regard for the historic integrity that owner-residents have prized and maintained over 100 years. With the deterioration of the social fabric of the neighborhoods, would come a **deterioration of the setting and feeling and characteristic single-family use** of the historic district and the historic resources in the Portage Bay neighborhood.
- An accurate **perception that the neighborhoods had become unhealthy** would mean that many families with young children would move away. A recent block-to-block, snapshot survey of the number of young children under the age of 20 conducted by the Portage Bay/Roanoke Park Community Council revealed that the predominantly single-family homes in the Roanoke Park Historic District and the Portage Bay neighborhood shelter 126 children including 79 under the age of 14. Note that the reluctance of many parents in this day and age to release such information means that these numbers of children are probably higher. This

demographic would undergo a drastic alteration. A Memorandum of Agreement should treat these adverse secondary, or indirect, effects and ways of avoiding, minimizing, and mitigating them.

Operation, Portage Bay Bridge, Options A, K, and L

- Because the **view shed** is so important to the setting and feeling of the neighborhoods on the steep western and southern hillsides of the Portage Bay basin, we urge the writer to make use of the comments that follow here in discussions of the operation effects of Options A, K, and L on historic residences in the Roanoke Park Historic District and the Portage Bay neighborhood including historic residences that should be in the APE along both sides of Fuhrman-Boyer Avenue East, many as yet unsurveyed, an unsurveyed historic bungalow district along East Gwinn Street between Harvard Avenue East and Fuhrman-Boyer Avenue East, and unsurveyed historic resources along the other streets that make up the point, the unsurveyed houseboat community in west Portage Bay, and the as yet unsurveyed historic resources on the north and south hillsides of Delmar Drive East that might or might not be and should be included in the APE.
- We urge consideration of the 2005 *VQADR* because it is more candid with respect to adverse effects findings than the December 2009 *SDEIS* version of the *VQADR*, because the aesthetic principles the earlier report employed in its effects findings have not gone out of date, and because the earlier report's representations of these neighborhoods and its effects findings have not been tainted by the numerous misrepresentations and omissions in the 2009 *CRDR*, which obviously informed both the later *VQADR*'s account of historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood and the later *VQADR*'s much more sanguine effects findings.
- The *Visual Quality and Aesthetics Discipline Report* of 2005 for the SR 520 Bridge Replacement and HOV project observes of the present Portage Bay Bridge that **“the Portage Bay Bridge is a dominant part of many views from the hills around the bay and from the bay itself”** (p 19). The report also notes that **the present SR 520 structures “are not visually compatible with the natural-appearing landscapes or the smaller scale of the neighborhoods”** (p 24) and **that “the columns and highway break up the visual composition of natural-appearing areas and neighborhoods”** (p 24). The wider, higher prospective bridge, shifted north, and with massive concrete noise walls will be even less compatible with the natural-appearing landscapes and the smaller scale of the neighborhoods. And the higher, wider prospective six- or seven-lane bridge with massive noise walls in Options A and L, moved north in front of these historic resources, will break up **the visual composition of natural-appearing areas and small-scale neighborhoods and bays to an extremely damaging degree**. This is a cumulative adverse effect.

- A section of the 2005 *Visual Quality and Aesthetics Discipline Report* on viewer sensitivity to prospective changes to these views says, “**residents around Portage Bay and along the western shore of Lake Washington form the largest viewer group, with views of the roadway in Seattle. This includes East Roanoke Park . . .**” The report goes on, “**Residents and park and trail users in this [Seattle] area have high sensitivity to landscape aesthetics because they either are in their home community or expect a pleasant, natural-appearing landscape for recreation.**” The Portage Bay Bridge demolition and construction over six years and the permanent operation of the higher, wider bridge, shifted north and with noise walls, will degrade views to an extreme extent.
- Under “Potential Effects of the Project,” the 2005 *Visual Quality and Aesthetics Discipline Report* says that effects of the proposed alternatives on the visual quality and aesthetics of a landscape would differ according to changes in width, elevation, addition or removal of structures and vegetation, and the degree to which new structures would contrast or blend with the existing landscape. It rates visual quality changes on the basis of low, moderate, or high contrast. **High contrast is described as “easily noticeable contrast between scale or character of proposed facilities and existing environment in which viewers are sensitive to visual change and expect attractive views or surroundings and substantial changes in shadow levels of light and glare that would be easily noticeable.”**
- Of the most modest alterations to the Portage Bay Bridge, in the old Four-Lane Alternative, the 2005 *Visual Quality and Aesthetics Discipline Report* says that the new bridge would shift to the north and be 10 to 20 feet higher and about 50 feet wider than the current 54-foot-wide bridge and that the change in scale would be **very noticeable** to motorists and to viewers looking at the bridge anywhere in the Portage Bay basin. The 2005 *Visual Quality and Aesthetics Discipline Report* also observes that the northward placement of the bridge would **noticeably change** the view eastward from Roanoke Park homes north of the bridge by encroaching on their views to the south. It goes on, “Sound walls in the Portage Bay/Roanoke Park area would result in **very high changes to the visual character of SR 520 and to the quality of views from and toward the roadway.** At 18 to 22 feet along North Capitol Hill, the walls would drastically and negatively alter the motorist’s experience and could block views from residences adjacent to the wall. A 10-foot-high sound wall could encroach on Bagley Viewpoint and obstruct views to the south.”
- Of the view from outside the roadway of the Four-Lane Portage Bay Bridge, the 2005 *Visual Quality and Aesthetics Discipline Report* said, “the addition of 8- to 10-foot-high sound walls on the south side of the Portage Bay Bridge would create **a profile that is very different from**

[that of] the existing bridge. The walls, in combination with the taller girders and the greater bridge width, would make the bridge structure more massive and box-like, and would greatly increase the visual presence of the bridge. Moreover, the sound walls would not be consistent with the Scenic Route classification of SR 520 from the driver's viewpoint because the high sound walls would block lateral views outward from the roadway and would partially obstruct long-distance views of the Cascades." (Note that according to a February 1, 2010, letter from Julie Meredith, P. E., SR 520 Program Director, WSDOT, and Randolph Everett, Major Projects Oversight Director, FHWA, the designs for Options A and L now include noise walls on both the north and the south sides of the Portage Bay Bridge.)

- Of the Six-Lane Alternative (before Options A, K, and L had been developed and before Roanoke Park had become the Roanoke Park Historic District), the 2005 *Visual Quality and Aesthetics Discipline Report* said that "sound walls in [the] Roanoke Park [Historic District] would be 12 to 14 feet high on the south side of the highway." It's not clear whether sound walls will also be on the north side of the highway.
- Of a new Bagley Viewpoint to be designed into the 10th & Delmar lid in the Six-Lane Alternative [before Options A, K, and L had been developed], the 2005 *Visual Quality and Aesthetics Discipline Report* said that **the placement of 10-foot-high sound walls near the viewpoint could affect the view.**
- The 2005 *Visual Quality and Aesthetics Discipline Report* also said that in the Six-Lane Alternative [Options A, K, and L had not yet been developed] "vegetation below Bagley Viewpoint and in 50-foot-wide swaths on the north and south sides of the roadway would be removed."
- The 2005 *Visual Quality and Aesthetics Discipline Report* observed that in the Six-Lane Alternative [before Options A, K, and L had been developed], **"the Portage Bay Bridge would be more than twice the width [even wider in the seven-lane Option A] but similar in style" and that the northward alignment and added width would have a moderate to high visual quality effect on views toward and from the roadway.** The report also observed that **"the roadway would be within 70 to 100 feet of a few homes just below the Bagley Viewpoint"** and that **"the view eastward from Roanoke Park homes would noticeably change because of proximity of the Portage Bay Bridge."** The 2005 *Visual Quality and Aesthetics Discipline Report* of course does not say how much closer the then unplanned seven-lane Portage Bay Bridge of Option A would be to the homes below the Bagley Viewpoint or how **much more noticeably** the view eastward from Roanoke homes would change under the seven-lane Option A.

- The 2005 *Visual Quality and Aesthetics Discipline Report* added, “**sound walls on the south [and now north?] side[s] of the Portage Bay Bridge would compound the visual effects of the taller girders and make the highway structure appear more massive when seen from viewpoints outside of the roadway.**”²
- 170, first para What would be the effect of **variable tolling** in the No Build Alternative, considering both tolling SR-520 alone and tolling I-90 as well as SR-520? Tolling is expected to begin in spring 2011, which means it will initially take place on the four-lane bridge.
- 172 The “6-Lane Alternative” head is out of date. Option A has seven lanes on the Portage Bay Bridge with noise walls. Option K has six lanes on the Portage Bay Bridge with quieter pavement. Option L has six lanes on the Portage Bay Bridge with noise walls.
- 172 Note that the 10th Avenue East & Delmar Drive East lid would visually shield the Roanoke Park Historic District from the wider roadway beneath the lid but that it would not visually shield the Roanoke Park Historic District from the wider and higher Portage Bay Bridge moved north in front of the Roanoke Park Historic District.
- 172, third para, second and third sentences The Andrew Gunby House would not be shielded from noise by the 10th & Delmar lid, nor would it be visually shielded by the lid.
- 172, end of third para Include quieter pavement data here, too.
- 172, ff Were noise levels measured at bedroom height?
- 173 Note that the width of the Portage Bay Bridge would be greater in Option A and that whether sound walls are used would affect the profile of the Portage Bay Bridge.
- 173, next to last para Many more contributing (and individually eligible) houses than those mentioned have views of the Portage Bay Bridge, and those views would be adversely affected by the wider, higher Portage Bay Bridge moved north: houses on the east side of East Shelby Street, for instance, and houses at the intersections of East Hamlin Street and East Edgar Street with the east side of Broadway Avenue East and the west side of 10th Avenue East. See the earlier

² In a letter dated February 1, 2010, Julie Meredith, P. E., SR 520 Program Director, and Randolph Everett, FHWA Major Projects Oversight Manager, say that “If noise walls are included on the Portage Bay Bridge under any option, they would run the entire length of the bridge on both sides.” Still to be examined as an alternative to the visual blight of noise walls is the use of quieter pavement, not as mitigation, which the FHWA does not endorse, but as an integral part of any design adopted.

discussion of contributing and individually houses that enjoy these views in the Construction Effects part of these comments, pp 28–31.

- 173, last para An out-of-scale six- or seven-lane higher bridge running beside notable buildings such as the John Graham, Sr.–designed terra-cotta and brick NOAA Fisheries Building and the diminutive John Graham, Sr., Seattle Yacht Club would have an adverse effect on views of those historic buildings, and the scale of the project would visually intrude on views of Portage Bay from many contributing and individually eligible properties in both the Roanoke Park Historic District and theas yet not fully surveyed Portage Bay neighborhood. These historic resources are noted for their views. **The foreseeable effects of the new project added to past and present effects would be a cumulative adverse effect.**
- Once again, note that the operation effects, like the demolition and construction effects, vary in the three options. And note again that Option A is according to WSDOT “the seven-lane option.” The report should treat historic resources in the area between I-5 and Portage Bay as it does the historic resources in the neighborhoods east of Portage Bay with respect to effects from operation of the three different options.
- Discuss operation effects on historic resources in the Roanoke Park Historic District and historic resources in the Portage Bay neighborhood from all three options in the sections devoted to Option A, Option K, and Option L as is done for other historic resources and the other historic district in the APE in this section on the effects of operation of the three different options.
- 174, first para, last three sentences: “Only a small portion of the district has a view of [34 of 80—more than one-third of contributing—and 26 of 57—almost half of individually eligible houses] and would be adversely affected by, the replacement bridge. In addition , there is already a bridge there, so its [higher and wider] replacement [moved farther north in front of historic residences] would not be a substantial change from existing conditions. Therefore, the visual effect from the new bridge would not be an adverse effect.” The “therefore” based on false representation of the number of contributing and individually eligible historic resources in the district that have views of the Portage Bay Bridge and on the imprecise words “would not be a substantial change” is not earned. **The new bridge’s greater height and width moved farther north in front of more homes added to past and present effects would be a cumulative adverse effect.**
- 174, bulleted list of effects on the Roanoke Park Historic District needs to consider the effects separately of the seven-lane Option A and the six-lane Options K and L and the effects if the building of the lids is deferred in the Phased Implementation scenario, said in the *SDEIS* to be the most likely scenario.

- 174, last para, third sentence The seven-lane Portage Bay Bridge of Option A is said to be 35 feet wider than the existing bridge. On p 181, second para, first sentence, the six-lane Portage Bay Bridge of Option K is said to be “approximately 35 feet wider than the existing bridge.” Which one will be 35 feet wider—the six-lane or the seven-lane?
- 175, second para, third to last sentence “Only a small portion of the district has a view of, and would be visually affected by, the replacement [Portage Bay] bridge” is simply not true. See the itemized discussion of the number and the status (contributing and individually eligible) of resources from which views east are enjoyed above, pp 30–31, in the Construction section of these comments.
- 175, second para The last three sentences repeat the specious reasoning re the wider and higher new Portage Bay Bridge from p 174: the infamous “there is already a bridge there, so its [wider and higher] replacement [moved north] would not be a substantial change from existing conditions” denies the definition of cumulative effects and denies the effects finding of the 2005 *Visual Quality and Aesthetics Discipline Report*. (“Would not be substantial” is not substantiated here or elsewhere.)
- 175, last para and 176, first para Changes from the second bascule bridge of Option A to the watery setting and feeling of the delicate span of the Montlake Bridge would also be an adverse effect on views of the historic Carl F. Gould Montlake Bridge from the Roanoke Park Historic District and the Portage Bay neighborhood, including unsurveyed historic resources in the Portage Bay neighborhood. Note that residents of these neighborhoods walk down to East Shelby Street to enjoy the most spectacular view of the Montlake Bridge and Montlake Cut that they have partial views of from their own homes.
- 175, third para The Montlake Bridge is a part of the view from more houses than “on 10th Avenue East between East Hamlin and East Shelby Street.” Large, tall houses along the east and west sides of East Shelby Street and at intersections on Broadway Avenue East and the west side of 10th Avenue East enjoy views of the Montlake Bridge as well. Again a diminution of the number and a disregard for the contributing and individually eligible status of historic resources leads to a finding of no adverse effect in a district known for its spectacular views, where spectacular views contribute “substantially” to setting and feeling.
- 175, third para “Although it would affect the setting and feeling of **this edge of the district** and of these contributing [!] properties, this effect would not be adverse” under-represents the number of affected properties and those that are both contributing and individually eligible. More resources than those at this “edge” of the district would be affected by the adverse effects on views. The finding that “this effect would not be adverse” is not substantiated in any way.

- 177, third para “primarily visible from the rear of houses on 10th Avenue East” condescends to the decks, terraces, living rooms, and upstairs rooms from which the view is enjoyed along the east side of 10th Avenue East and under-represents the number of contributing and individually eligible historic resources from which the view is enjoyed, including many views from the fronts and sides of houses at intersections.
- 177, third para “The width of Portage Bay geographically separates the Montlake Bridge from the Roanoke Park Historic District” seems like an obvious observation. And of course the views across the beautiful waters of the bay and the cut to the delicate span are prized. Is the remark about the geographic separation meant to suggest that the viewer must be on top of the bridge or underneath it or beside it in order to enjoy views of it? The watery expanse before the view of the bridge is part of the charm of the view from one of the neighborhood’s beloved viewpoints.
- 179, bulleted list The following items similar to the bulleted list of operation effects on the Montlake Historic District describe operation effects on the Roanoke Park Historic District and on historic resources, both surveyed and unsurveyed in the Portage Bay neighborhood:
 - “Change to setting caused by wider Portage Bay Bridge”
 - “Change to setting caused by new bascule bridge”
 - “Change to setting caused by widened roadway” on East Roanoke Street
 - “Change to setting” by diminution of Bagley Viewpoint and vegetation removal for widening of the SR 520 roadway “resulting in some loss of landscaped buffer” for the Gates-Bass Mansion and historic houses along at least the 2600 block of 10th Avenue East and Broadway Avenue East and possibly more contributing and individually eligible historic residences in the south part of the district
 - Beneficial change to setting from introducing lid over I-5 at East Roanoke Street and over SR 520 between 10th Avenue East and Delmar Drive East—if the lids are constructed. The statement in the *SDEIS* that the Phased Implementation scenario, with its indefinite deferral of lids, is the most likely scenario throws the prospect of timely lid construction into doubt.
 - To be added: Adverse multiple and cumulative effects on setting from increased noise, air pollution, vibration, and nighttime traffic glare from a wider highway with more vehicle traffic, particularly from operation of the seven-lane Portage Bay Bridge.

- To be added: Adverse secondary, indirect, effects from perceptions of desirability and healthy livability from the direct effects and a consequent change to setting and feeling and characteristic use of the historic district and the historic resources in the Portage Bay neighborhood.
- These effects and others mentioned on pages 4 through 7 of these comments should be mitigated through stipulations outlined in a Memorandum of Agreement.
- 173–174 See the discussion of the 2005 *Visual Quality and Aesthetics Discipline Report* above for its perspective on the **high contrast changes** that even a four-lane or a six-lane alternative would lead to. The minimizing discussion and conclusions here are at the very least debatable, out of touch with the very real adverse effects of Option A’s seven-lane-wide and higher Portage Bay Bridge with noise walls, moved farther north, on **views** from more of the historic resources than those along the east side of 10th Avenue East. Similar adverse effects would result from the wider and higher six-lane Portage Bay Bridge of Options K and L moved north. Correct the information in the passage here, and move the discussion into the following Option A, Option K, and Option L sections.
- The East Edgar Street, East Hamlin Street, and East Shelby Street hills continue to slope at the top of the Roanoke Park Historic District plateau from the east side of 10th Avenue East to the plateau’s high point along Broadway Avenue East. Residents in the large houses at intersections of the Roanoke Park Historic District as far west as the west side of Broadway Avenue East enjoy views east variously including Portage Bay, the historic Fisheries Building, the historic Seattle Yacht Club and marinas, the historic Montlake Cut, the historic Montlake Bridge, Lake Washington, the lights of Bellevue and Kirkland, trees in the foothills, and the Cascade Mountains.
 - Houses from which these views may be enjoyed include most obviously the contributing and individually eligible Gates-Bass Mansion at 1018 East Roanoke Street (A and C, Elmer E. Green, 1909) and most of the houses along the east side of 10th Avenue East: the contributing Gifford House (1924) at 2612, the contributing Fish House (1922) at 2616, the contributing Bogue House (1923) at 2622, the contributing Bloxom House (1917) at 2632, the contributing Horner House (1925) at 2636, the contributing and individually eligible Beckwick-Thompson House (A and C, 1910) at 2700, the contributing and individually eligible Parshall House (C, Thomas L. West, 1911) at 2706, the contributing and individually eligible Siegley House (C, 1909) at 2712, the contributing and individually eligible Cavanaugh House (C, E. H. Sanders, 1909) at 2722, the contributing Conly House (1916) at 2726, the contributing and individually eligible Mayer House (C, Hunt & Wheatley, 1924) at 2802, the contributing and individually eligible Spencer House (C, Ed Merritt,

1909) at 2808, the contributing Turner House (C, 1903) at 2812, the contributing and individually eligible Richardson House (A and C, Julian G. Everett, 1912) at 2816, the contributing and individually eligible Phillips-Hyde House (C, Huntington & Gould, 1909) at 2822, the contributing and individually eligible Higgins House (A, 1909) at 2832, and the contributing and individually eligible Patten House (A and C, 1909) at 2836. All of these contributing and individually eligible resources would suffer degradation of their views and increased noise from the operation of Option A's seven-lane Portage Bay Bridge and second bascule bridge, not only from the sight of the massive Portage Bay Bridge, with its increased height and view-blocking noise walls, but also from the impairment by the second bascule bridge of views of the delicate span of the Carl F. Gould Montlake Bridge. (Note that the views east of the Booth and Dalley houses at the south end of the historic district are impeded by trees and other houses.)

- The four houses on the north side of East Shelby Street at its east end that enjoy these views are the contributing and individually eligible Prosser-Dowling House (A and C, Hunt & Jones, 1909) at 912, the contributing and individually eligible Slater House (C, 1910) at 920, the contributing and individually eligible Ross House (A and C, 1912) at 926, and the contributing Dart House (1909) at 1000. On the south side of East Shelby Street, the contributing and individually eligible Twelves House (A and C, Edwin J. Ivey, 1923) at 817, the contributing and individually eligible Denny House (A and C, 1910) at 2838 Broadway Avenue East, and the contributing Sutherland House (1908) at 2837 10th Avenue East also enjoy these views.
- On the north and south sides of East Hamlin Street, the contributing and individually eligible Sullivan-Walker House (A and C, 1899—the oldest house in the district) at 2736 Broadway Avenue East, the contributing and individually eligible Finley House (A and C, 1909) at 2731 10th Avenue East, the contributing and individually eligible Hunter House (A and C, Frederick A. Sexton, 1909) at 2801 Broadway Avenue East, the contributing and individually eligible Johanson House (A, and C, attributed to Cutter & Malmgren, 1909) at 2800 Broadway Avenue East, and the contributing and individually eligible Wentworth-Elliott House (A and C, Merritt, Hall & Merritt, 1910) at 918 East Hamlin Street enjoy these views east as well.
- As do the contributing and individually eligible Neterer House (A and C, Andrew Willatsen, 1915) at 2702 Broadway Avenue East and the contributing and individually eligible Saunders House (A and C, Frederick A. Sexton, 1908) at 2701 10th Avenue East. (Other houses along the west side of 10th Avenue East have partial views of Lake Washington and the Cascades from their high vantage points.)

- All of these historic resources in the Roanoke Park Historic District would suffer permanent damage to setting and feeling and characteristic single-family use from the visual blight, pollution, noise, and nighttime glare at various sites during operation of the project.

Operation, Option A

- 174 Option A, Historic Built Environment head Moving from west to east, discuss the permanent effects of Option A operation on the area between I-5 and Portage Bay, presently omitted. Discuss historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood including the unsurveyed historic resources on the north and south hillsides of Delmar Drive East that would be adversely affected by the permanent operation of Option A's seven-lane Portage Bay Bridge, higher and moved north, with sound walls, which adverse effects would include visual blight, noise, vibration, air pollution and consequent building exterior erosion and soiling, dusty windows, damage to landscaping from air pollution and vibration, nighttime glare, and the loss and damage of vegetation.
- Note that the east end of the Roanoke Park Historic District, including the contributing and individually eligible Gates-Bass Mansion and the contributing and individually eligible houses along 10th Avenue East would suffer permanent blocking of views south from noise walls on the north and south sides of the Portage Bay Bridge. (See the 2005 *Visual Quality and Aesthetics Discipline Report*.)
- Visitors to the new, much diminished Bagley Viewpoint would have their views permanently impeded by a ten-foot-high noise wall on the south side of the Viewpoint. (See the 2005 *Visual Quality and Aesthetics Discipline Report*.)
- Note that the 10th & Delmar lid will end at the current Bagley Viewpoint and that the historic resources in the Portage Bay neighborhood north of the new Portage Bay Bridge, including many as yet unsurveyed houses, would have no buffering from the visual blight, noise, air pollution and consequent building exterior erosion and soiling, damage to landscaping from air pollution and vibration, dusty windows, vibration, nighttime traffic glare, and the loss and damage of vegetation in operation of the seven-lane Portage Bay Bridge of Option A.
- In operation, degradation in Option A of the views for which the Roanoke Park Historic District is noted would have a permanent adverse effect on the Roanoke Park Historic District. Historic resources in the Portage Bay neighborhood, including unsurveyed historic resources on the hills along the north and south sides of Delmar Drive East, in the houseboat community, and along both sides of Fuhrman-Boyer Avenue East would suffer permanent adverse effects on views as well.

- 174, last para second and third sentences Says “The new Option A Portage Bay bridge would be seven lanes wide, with an overall width of at least 108 feet, which is 35 feet wider than the existing bridge.” Check the present width of the Portage Bay Bridge (54 feet?) and check the projected width in Option A of the Portage Bay Bridge. The 2005 *Visual Quality and Aesthetics Discipline Report* says that the Portage Bay Bridge would be 50 feet wider than the present bridge in the Four-Lane Alternative. The new width of a seven-lane bridge would be much wider than the new width of the Four-Lane Alternative, and the seven-lane bridge would be more than the 35 feet wider than the existing bridge that the *Cultural Resources Discipline Report* claims here.
- The eventual operation of a massive seven-lane bridge with sound walls, a bridge that will be higher than the present bridge, shifted farther north, and more air polluting causing erosion and soiling of historic resources, would be a permanent adverse effect on contributing and individually eligible historic resources in the Roanoke Park Historic District and on individually eligible resources in the Portage Bay neighborhood.
- None of the contributing and individually eligible properties in the Roanoke Park Historic District are noted in Option A operation effects findings even though they will be adversely affected by the operation of the new Portage Bay Bridge, which in addition to being higher and more than twice as wide with noise walls will be moved to the north in front of more homes in the Roanoke Park Historic District—even though contributing historic resource status and individually eligible property status in the Montlake Historic District are routinely brought to bear on operation effects findings.
- In operation, the second bascule bridge would permanently detract from the delicate span of the Carl F. Gould Montlake Bridge visible from many contributing and individually eligible historic houses in the Roanoke Park Historic District. This view is prized by walkers through the district as well.
- Considering in toto these multiple operation effects and the multiple long-term demolition and construction effects of Option A on contributing and individually eligible resources discussed earlier in these comments one would conclude that the Roanoke Park Historic District would be adversely affected by changes to the setting and feeling of the district and its single-family characteristic use.
- Considering in toto the multiple effects from the operation and construction of Option A on individually eligible historic resources in the Portage Bay neighborhood, one would conclude that these eligible historic resources would be adversely affected by changes to their setting and feeling and changes from their characteristic single-family use. Note that individually eligible historic resources along both sides of Fuhrman-Boyer Avenue East including those in the houseboat community, among the bungalows along East Gwinn Street and historic resources and historic resources along the steep hillsides on the north and south sides of

Delmar Drive East have not been identified in the *Cultural Resources Discipline Report's* survey of historic resources in the Portage Bay neighborhood.

Operation, Option K

- 181, second para Moving from west to east, discuss the effects of Option K operation on the area between I-5 and Portage Bay, presently omitted. Discuss historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood including the unsurveyed historic resources on the north and south hillsides of Delmar Drive East that would be adversely affected by the permanent operation of Option K's six-lane Portage Bay Bridge, which include visual blight, noise, vibration, air pollution and consequent building exterior erosion and soiling, damage to landscaping from air pollution and vibration, dusty windows, nighttime traffic glare, and vegetation removal and damage. Refer to the discussion above of the 2005 *Visual Quality and Aesthetics Discipline Report's* findings with respect to adverse effects on views from even the old Four-Lane Alternative and from the wider old Six-Lane Alternative.
- At six-lanes, Option K's Portage Bay Bridge with no noise walls would not be as damaging in its operation effects on views as Option A's seven-lane Portage Bay Bridge with noise walls. See the earlier discussion of effects on views from Option A. Six lanes, higher and wider and moved farther north would still have a noticeable effect on views, however. Speak also to the noise reduction effects of the quieter pavement designed into Option K.
- 181, second para Note that the 10th & Delmar lid ends at the current Bagley Viewpoint and that with Option K's quieter pavement and lack of noise walls the historic resources in the Portage Bay neighborhood north and south of the new Portage Bay Bridge, including many as yet unsurveyed historic houses, might have only modest buffering from the noise and no buffering from the vibration, air pollution, eroding and soiling of buildings, dusty windows, and vegetation removal and damage of the six-lane Option K moved closer to these historic resources. The conclusion that the Portage Bay neighborhood historic resources mentioned in this passage would not suffer an adverse effect from the operation of the Portage Bay Bridge moved closer to these resources seems dubious.
- Option K's quieter pavement might mean that operation of the six-lane project would have the adverse effect of increased noise from buses and autos—more so than in the operation of Option A, which includes sound walls. The effects of the two kinds of noise deterrents at bedroom levels need to be studied and included in the *Cultural Resources Discipline Report*. Unlivable historic resources would quickly deteriorate.
- The absence of noise walls and the narrower width of the Portage Bay Bridge would mean that the historic viewshed would be less damaged in Option K than in Option A (or Option L), but viewers of the roadway in the Roanoke Park Historic District and Portage Bay neighborhood would still experience a high contrast

between the new views and the present views and thus a cumulative adverse effect from the movement of a wider and higher Portage Bay Bridge farther to the north in Option K (and in Option A and Option L).

- Option K's double tunnel under the Montlake Cut would not have a permanent visual effect on historic resources in the Portage Bay basin. Note that construction of Sound Transit's deep-bore twin tunnel under the Montlake Cut is underway and that staging, excavation, hauling, and construction effects of this project will last until some time in 2016. Understanding that WSDOT will not mitigate this cumulative effect of the construction of the two projects "because it doesn't have jurisdiction over another agency," we do expect WSDOT to coordinate with Sound Transit over the effects of the two projects on historic resources in the Portage Bay basin.
- Option K's lower profile at most sites along the roadway with the exception of the six-lane Portage Bay Bridge, which even then would have a lower profile thanks to the absence of noise walls, would make it the least damaging option as far as views are concerned.
- The absence of noise walls and the use of quieter pavement, however, might have an adverse effect in the form of noise, vibration, air pollution, and nighttime traffic glare in operation of Option K.
- Taking the multiple construction and operation effects in toto, one concludes that even the least damaging Option K would have an adverse effect on these historic resources and require a Memorandum of Agreement.

Operation, Option L

- 185, second para Moving from west to east, discuss the permanent effects of Option L operation on the area between I-5 and Portage Bay, presently omitted. Discuss historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood including the individually eligible historic resources on the north and south hillsides of Delmar Drive East that would be adversely affected by the permanent operation of Option L's wider and higher Portage Bay Bridge with noise walls, moved farther north, which include visual blight, noise, vibration, air pollution and consequent building exterior erosion and soiling, dusty windows, damage to landscaping from air pollution and vibration, nighttime traffic glare, and vegetation removal and damage. Refer to the discussion above of the 2005 *Visual Quality and Aesthetics Discipline Report* for its perspective on the high contrast with present views that would be a result of even the Four-Lane Alternative and of Option L's Six-Lane Alternative moved farther north and with noise walls.
- Option L's six-lane Portage Bay Bridge with its noise walls would be almost as massive and almost as damaging in its operation effects as Option A's seven-lane

Portage Bay Bridge. See the earlier discussion of these effects with respect to Option A, and include them here.

- Note that the east end of the Roanoke Park Historic District, including the Gates-Bass Mansion, the contributing and individually eligible houses along 10th Avenue East, and contributing and individually eligible houses at some of the Roanoke Park Historic District's intersections would suffer view blocking 8-to-10-foot noise walls along the north and south sides of the Portage Bay Bridge.
- Option L's noise walls would have a permanent adverse effect on views from historic resources in the Portage Bay neighborhood as well.
- 186, first para See discussions of the views and which of many contributing and individually eligible resources in the Roanoke Park Historic District enjoy these views east earlier in these comments (pp 26–29), and change this statement that “only a small portion of the district has a view of, and would be visually affected by, the replacement bridge [the replacement Portage Bay Bridge]. In addition there is already a bridge there, so its replacement would not be a substantial change from existing conditions. Therefore the visual effect from the new bridge would not be an adverse effect on the Roanoke Park Historic District or its contributing elements.” The movement north of the wider, higher bridge with noise walls would affect views from a substantial number of contributing (34 contributing resources, more than a third) and possibly individually eligible (a preliminary count of 26—almost half) resources in the Roanoke Park Historic District that currently enjoy the “expansive” views of “high vividness” that contribute to the setting and feeling as well as the single-family use of resources in the district.
- We object to the minimization of the number of contributing (and individually eligible) historic resources in the district whose desirability would be affected by permanent degradation of these views.
- We object again to the cavalier and oft-repeated conclusion that “there is already a bridge there, so its [wider, higher, with noise walls, moved farther north] replacement would not be a substantial change from existing conditions.” See the 2005 *Visual Quality and Aesthetic Discipline Report*, which concluded that even a new four-lane or six-lane Portage Bay Bridge with noise walls would appear massive and produce a great alteration to the extent and the nature of views from all sites in the Portage Bay basin.
- Operation of Option L's second bascule bridge some distance east of the Montlake Bridge would be unlikely to have permanent adverse effects on views of the Montlake Bridge from the historic resources on the west side of the Portage Bay basin. Note, however, that construction of Sound Transit's deep-bore twin tunnel under the Montlake Cut is underway and that visible and audible staging,

excavation, hauling, and construction effects of this project would last until some time in 2016.

- Option L's elevated profile at most sites along the roadway would have permanent adverse effects on views from the Roanoke Park Historic District and historic resources in the Portage Bay neighborhood.
- 190, third para, last sentence The new floating portion of the floating bridge is said to be "slightly higher than the existing floating portion." With a maintenance deck resting on pontoons that rise ten feet out of the water topped by tall columns that are topped by the road deck which in turn is topped by noise walls, the floating bridge would be considerable higher than the current 8 to 10 feet above the water.
- 190, last para on Phased Implementation Scenario "As noted earlier, none of these effects [noise and visual effects] would differ substantially from the existing conditions, and none would be considered adverse" is a flawed a conclusion in this context—even moreso now because of lid construction deferral.

Mitigation, p 191

- 191, first para Refresh the reader's understanding of direct, indirect, collective or multiple, and cumulative effects here, and refresh the reader's understanding of the technical meanings of avoid, minimize, and mitigate.
- 191, second para Why the change from "must" to "may" in the second sentence of the passage "Agency officials must provide the public with information about the project and its effects on historic properties, and seek public comment and input. Agency officials **may** [used to say "must"] involve the public in accordance with the agency's published NEPA procedures for public involvement in order to comply with this aspect of Section 106." Which of these obligations and possible inclinations as described is purely discretionary, so much so that "may" rather than "must" is appropriate?
- 191, third para Is data recovery a minimization or a mitigation? Called a minimization here but a mitigation on p 192.
- 192, last para Data recovery called a "mitigation" here. These terms remain fuzzy and should have clear definitions with helpful examples and clear, precise use throughout the *Cultural Resources Discipline Report*.
- 192, third para "Compensatory mitigation" is used and seems to mean any measure that is not conventional data recovery, at least as far as archeological mitigation is concerned. Is compensatory mitigation open as a mitigation measure for cultural resources and historic resources of the built environment as well? (As on p 193, second bulleted item, in a section on avoiding or minimizing adverse effects on historic properties of the built environment: "Install landscaping or

landscaped buffers to compensate in those areas where buffer zones are being removed or reduced, and where new or relocated traffic lanes intrude on the character of a historic district or the settings of individual historic properties.”) Early installation, during early parts of construction, of landscaped buffering needs to be negotiated in a Memorandum of Agreement.

- 193 second bulleted item Removing buffering vegetation should be delayed as long as possible. Replacing removed buffering vegetation should be an early priority, during construction.
- 194, first bulleted item Clean buildings (and vegetation) **periodically and as needed**, not just at the conclusion of the long, seven-and-a-half to eight-year project. Also note that operation of more vehicles on the SR 520 highway, on ramps, and exits closer to historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood and on arterials will permanently increase erosion and soiling from air pollution. What can WSDOT do about this adverse effect on historic buildings?
- 194 last bulleted item Say “. . . and avoid obscuring views of **and from** historic properties.”
- 195, first para, first bulleted item See replacement this iteration of “positive change” for “beneficial effect” in “These measures have a positive change on the adjacent historic properties by reducing anticipated noise.” Reducing anticipated noise is not a positive change. Reducing present noise would be a positive change. Given the increased size and number of lanes in all alternatives of the project and the lack of good data on noise walls collected at bedroom height and the lack of any information on the ability of quieter pavement to reduce noise coming from this expanded highway project, the statement doesn’t have a sound (no pun) basis.
- 195 In the order established in the document of moving from west to east, speak first of mitigation in the area from I-5 to Portage Bay including North Capitol Hill, the Roanoke Park Historic District, and the Portage Bay neighborhood including the unsurveyed historic resources on the north and south hillsides of Delmar Drive East, in the houseboat community, and along both sides of Fuhrman-Boyer Avenue East. Then speak of mitigation for the Seattle Yacht Club, mitigation for the Montlake Historic District, etc., moving east. Note again that historic resources in the Portage Bay neighborhood’s houseboat community, the potential historic bungalow district along East Gwinn Street from Harvard Avenue East to Fuhrman-Boyer Avenue East, and other historic resources on both sides of Fuhrman-Boyer Avenue East have not been surveyed and included in the APE. And note again that historic resources on the north and south hillsides of Delmar Drive East, which might or might not have been included in the APE, have not been surveyed.

- 195 first para, fourth bulleted item Lids are designed into the project and are not mitigation. Be sure that lids are described in the Introduction, which seems to be the only place where description of the project is taken up. Not much information on the options is provided there. A construction mitigation measure might include early completion and landscaping of lids to protect historic resources from the long seven-and-a-half-year to eight-year construction project.

A separate letter will follow, containing recommendations for measures to offset the multiple direct, indirect, and cumulative adverse effects that would be visited on historic resources in the Roanoke Park Historic District and the Portage Bay neighborhood by the construction and operation of the SR 520 Bridge Replacement and HOV project.

C-040-168

From: Fran Conley [mailto:fran@roanokecap.com]
Sent: Friday, April 16, 2010 4:01 PM
To: SR 520 Bridge SDEIS
Subject: Additional comment on SDEIS

I would like to add this to the comments of the Coalition for a Sustainable SR 520 on the SDEIS.

I understand that the deadline was yesterday, but this only became available today. Thank you.

Gov. Gregoire's statement on City of Seattle's comments on SR 520 replacement

For Immediate Release: April 15, 2010

OLYMPIA - Gov. Chris Gregoire issued the following statement today on the City of Seattle's recommendations on the State Route 520 bridge replacement project:

"Delaying 520 is not an option. The forty year old bridge is in danger of sinking in the next earthquake or windstorm and must be replaced. The new bridge will have four lanes plus two carpool and transit lanes to accommodate our region's current and future transportation needs. When a plan to bring light rail to both ends of the bridge is developed and funded, the new bridge, as designed, will be ready to accommodate it.

"I will not delay the selection of the preferred alternative. We will take all comments into consideration as long as they don't delay the project—doing so will cost millions of dollars.

"I thank the Mayor and all nine Seattle City Councilmembers for being engaged in the process. I particularly thank the council for their commitment to opening a new bridge on time in 2014."

C-040-168

Because this material is not a comment on a document that is part of the NEPA process, the Final EIS does not provide a response to it.

Comments Upon the Health Impact Assessment for SR 520, dated September, 2008

Introduction:

“The Puget Sound region has a unique opportunity to build a transportation project that moves people throughout the region while helping to create healthy places to live, work, and play. State Route 520 (SR 520) was constructed in 1963 with little attention to the health problems associated with car emissions, neighborhood disruption, and degradation of the natural environment. Now the region has a chance to correct past oversights and approach the SR 520 Bridge Replacement and HOV Project in a way that embraces the region’s commitment to providing a healthy community for all people.”

Response: This HIA does not reflect these principles. Three general areas of health problems are described; car emissions, neighborhood disruption, and degradation of the natural environment. Of the three, car emissions are the most direct threat to the physical health of the community. The health effects of car emissions are ignored in this HIA.

Who is the community of people affected by traffic control air pollution? A large section of the Puget Sound Community is adversely affected by traffic associated air pollution. While this discussion is currently focused on SR 520, the issues are relevant to all those who live, work, or attend school close to a high traffic volume road. Any road carrying more than 35,000 vehicles per day should be considered high volume. The area, at risk for the adverse health effects of traffic associated air pollution extends out 300 meters from the center of each of those roads. Potentially 30% of the population of Puget Sound is at risk for adverse health effects. The exposure and risk of traffic associated air pollution is potentially greatest near the junction of two or more high volume roadways. SR 520 currently carries approximately 100,000 vehicles daily, I-5 and I-405, 200,000 vehicles per day.

C-040-169

The SR 520 Health Impact Assessment was prepared by the Puget Sound Clean Air Agency and Public Health-Seattle and King County. Since it is not part of the NEPA process, WSDOT will not respond in detail. However, since some of the comments and questions are answered in the EIS, the following general responses are provided to direct readers to a source of accurate information.

- The SR 520, I-5 to Medina project will not increase single-occupant vehicle capacity, as stated in the comment. Rather, it will provide new HOV lanes that will encourage increased use of transit and carpools. As a result, SR 520 will move more people in fewer vehicles than under No Build. Daily transit ridership would increase 33 percent with the Preferred Alternative as compared to No Build. This results in a reduction in vehicle miles traveled and greenhouse gas emissions within the corridor. Please see Section 5.1 of the Final EIS for a discussion of vehicle trips and person-trips with and without the project, as well as an analysis of transit operations.
- Chapter 2 of the Final EIS provides a detailed explanation of how high-capacity transit was considered in the development of alternatives for the project. A regional decision has been made to designate I-90 as the initial light rail corridor crossing Lake Washington, with further study of future light rail transit on SR 520. The Preferred Alternative accommodates future light rail either on a separate right-of-way or in the HOV lanes. In the near term, the SR 520 High-Capacity Transit Plan recommended bus rapid transit in the HOV lanes.
- As noted in the response to comment C-040-158, air pollutant emissions from operation of the SR 520, I-5 to Medina project would be the same as, or less than, emissions under No Build. Emissions of two criteria pollutants (volatile organic compounds and oxides of nitrogen) and six mobile source air toxics would be reduced by the Preferred Alternative compared to No Build, while emissions for

This SR 520 HIA provides no specific evidence for a net reduction in traffic controlled air pollution over current levels. The SR 520 HIA provides no evidence that the vehicle volume will not continue to grow, particularly if added width is used to widen present single occupant vehicle capacity.

The SR 520 offers no plan to measure traffic associated air pollution in the areas most likely to be affected.

There are proven public policy measures that do reduce traffic associated air pollution. These measures are in general disincentives for the use of the single occupant, gasoline fueled vehicle. Measures which are of proven effectiveness include reduction in available lanes for the single occupant, gasoline fueled vehicle, high gasoline taxes, road and bridge tolls, and high urban parking rates.

There is no evidence that traffic associated air pollution is good for the health of the population or that the risk is insignificant. An increasing body of evidence suggests that traffic associated air pollution results in increased health problems and death. So what is the argument?

The argument is that the economic plight of this community is such that people must have access to their cars to travel to work even though the resultant air pollution will adversely affect the health of citizens in ways which include premature death. Is there no other way that people can reach their jobs?

Further, the argument is that the economic plight of Puget Sound is so great that we can ignore the effects of increasing CO₂ emissions upon global warming and the adverse effects upon the rest of the world.

Furthermore the argument is that opponents of the proposal are the sole cause of "analysis paralysis" in asking that the citizens of Puget Sound be provided with answers to relevant issues such as the impact of traffic associated air pollution on Puget Sound citizens.

And still further the argument is that there is a real threat the SR 520 bridge will fail.

other pollutants would be the same as No Build. Please see section 5.8 of the Final EIS for more information.

- The methods used to establish existing pollutant levels and to model future pollutant emissions are described in the Air Quality Discipline Report and Addendum. Methods used in the analysis are consistent with guidance from the Puget Sound Clean Air Agency and the U.S. Environmental Protection Agency.

The planners need to remain aware that the Coalition for a Sustainable SR 520 is not opposed to the construction of a new bridge using funds already allotted to that project for the replacement of the existing span. The Coalition favors the replacement of the central span with existing funds.

DEFINING HEALTH HAS CHANGED.

Response: While true that the definition of health has changed according to the WHO criteria cited (1946), at its core, health remains focused on the opportunity to develop physically and mentally to our full potential. Health is furthermore the right to live in an environment in which hazards of air and water pollution are recognized, acknowledged, measured and kept within safe limits through responsible public policy. In the case at hand this responsibility begins with the recognition of the risk of air pollution associated with the uncontrolled reliance upon the automobile to move goods and people throughout Puget Sound.

“ Seen in this broader context, the SR 520 Project can be designed to support alternatives to the automobile, to reduce emissions that cause pollution, to create community connections, to provide amenities that improve mental well-being, and to contribute to a visually stimulating environment. All these actions help enhance individual health and contribute to health communities.”

Response: The general goals outlined above give rise to the following questions:

1. What avenues were explored to find alternatives to the use of the automobile?
 - a. What funding was requested for this purpose? What funding was provided? For what grants were applications made?
 - b. What instructions were WSDOT planners given to explore alternatives to the automobile by senior managers or outside supervision?

- c. Was Rapid Bus Transportation (RBT) along the lines of the Bogota', Colombia system considered? If so, who participated in the discussion and what were the conclusions?
 - d. Was light rail considered? If so who participated in the discussion and what were the conclusions?
 - e. More specifically what were the guidelines given to WSDOT regarding the balance between automobile and high occupancy public transportation and by whom?
 - f. Were health considerations of vehicle travelers and surrounding citizens considered in weighing the balance between single occupant vehicles and other forms of transportation? What data was considered regarding the potential adverse effects of traffic associated air pollution, on chronic respiratory illnesses, the development of asthma particularly in children, the development of heart disease, the development of cancer, the effects upon the development of children, the particular vulnerability of older people, and the risk to pregnancy. Who presented that data? Who sat in judgment of the data within WSDOT? Who evaluated that data in the preparation of this document SR 520 HIA? The SR HIA contains the names of highly respected experts in the field of Public Health. What is not clear is the role they played in the preparation or the approval of the SR 520 HIA document. It is not clear that the final document is a representation of the advice that they provided. Who ultimately is responsible for the content of this document?
 - g. In consideration of alternatives to the automobile what opinions were sought outside of WSDOT, from other State of Washington, King County, Bellevue or other Eastside Agencies? What national and international consultation was obtained to consider solutions to the SR 520 project that have been tried elsewhere?
2. What is the evidence that any of the SR 520 proposals will reduce traffic associated air pollution?

- a. **The document reflects a lack of understanding of the concept of “to reduce emissions that cause pollution.” The only conjecture offered is that elimination of standing, idling traffic will reduce the emissions of a single vehicle. There is no consideration of the effect of SR 520 upon the emissions per person transported or per unit of goods transported or of the total effect upon emissions of building a highway with greater capacity and leaving the volume of traffic unregulated. Why does not the effect of SR 520 decisions upon climate change enter into the equation?**
- b. **How can WSDOT and the authors of the HIA SR 520 provide assurances that the plan will reduce traffic associated air pollution without making provision for measurement of such emissions at intervals within the 300 meter zone expected to be affected (the HIA seems to prefer “emissions that cause pollution over traffic associated air pollution” for some reason)?**
- c. **Please describe the location of instruments used to measure traffic associated air pollution to include distance from the center of the highway, the traffic volumes currently associated with those highways. Include the measurements taken, the frequency of those measurements, and the method of arriving at the levels reported (i.e. method of determining the mean or other value used.) Include the measurements taken?**
- d. **Please describe how emissions will be monitored going forward.**
- e. **Describe whether or not emissions are being measured at the junction of two or more high use roads (greater than 35,000 vehicles per day) . If not describe the reasons for not doing so.**
- f. **Current evidence suggests that the health effects of traffic associated air-pollution are a function of the age and underlying state of health of citizens, of the vehicular volume on a given road, of the composition of vehicles (i.e. how many diesel propelled vehicles), HOV use, RPT use, and light rail use), distance from the center of the road, height of a person relative to the road, and local climate and geography relative to the road. Furthermore the**

duration of exposure through the day and over time may be important. Please describe whether the authors of the HIA have taken these factors into consideration and the conclusions reached.

- g. What emission standards of traffic associated air pollution does WSDOT adhere to and did the authors of the SR 520 use as benchmarks?**
- h. Does SR 520 meet current EPA standards for traffic associated air pollution? Please cite the measurement levels and locations in responding to this question.**
- i. Does EPA specify where measurement of those standards should take place relative to the center of the roadway, what traffic volume roadway must be measured, and the conditions of measurement relative to peak volume etc?**
- j. Which roadways have required measurement of traffic associated air pollution in the Puget Sound area?**
- k. Who does the measurements required by the EPA?**
- l. Are there any specific types of epidemiologic data relative to the relationship between highway associated air pollution and illness with possible death that WSDOT or the preparers of the SR 520 reject from consideration as invalid? If so, please explain why?**
- m. Current published traffic associated air pollution data appears to be lacking in the SR 520 area, particularly gradients within the zone lying within 300 meters of the highway and at the confluence of two or more high volume highways. Is such data available? If not, describe the thinking on this matter? Is the apparent lack of data due to economic or other constraints? Please specify.**
- n. The authors of the SR 520 HIA did not include analysis of the various design proposals for the project at the time of publication. At this time those proposals are available and such an analysis seems mandatory? Are there plans to provide the public with such an analysis particularly in regard to the relative traffic associated air pollution that might be expected from each of the original three**

proposals. Please include an analysis of any additional proposal that has been sent out to bid.

- 3. What is the evidence that the SR 520 proposal will create community connections? The responses on this document are focused upon the direct, measureable effects upon physical and mental health. WSDOT and those responsible for the SR 520 HIA are referred to the responses of others for those comments. The concern here is that “community connections” may be offered here as substitutes for acknowledgement of direct health effects which are negotiable desirables and not mandatory features of the plan.**
- 4. What is the evidence that the SR 520 proposals provide amenities that improve mental well-being? The response here is the same as to question 3 with the additional comment that noise is likely to have a direct adverse effect upon mental health which through physiologic responses may cause long term adverse affects upon physical health, particularly hypertension, cardiomyopathy, and coronary artery disease. Did the authors of the HIA proposal consider this data and if so what were their conclusions? What standards of noise measure does WSDOT and the author’s of this SR 520 adhere to?**
- 5. What is the evidence that the SR 520 proposals contribute to a visually stimulating environment? This area while important is not the focus of this document.**

Defining Transportation Has Changed:

“The four-county Puget Sound region will gain two million people in the next 50 years, and while roads cannot accommodate all of these people, a transportation system that moves people and not just cars will be better equipped to meet their needs. In addition, a shift in how people travel is already occurring because of the rising cost of gasoline, concerns about global climate change, and the increasing use of non-motorized transportation. These changes are occurring at the same time that 76 million baby boomers reach retirement age and telecommuting and other work alternatives become more common. National reports indicate that

American are driving fewer miles, consuming less oil and using transit more. This supports the need to redefine how to plan transportation systems.”

Response: Here is a missed opportunity to consider the options for adopting transportation policies that effect climate change. Here is a missed opportunity to describe and consider the merits of various options.

It is stated that Puget Sound will grow by 2 million in the next 50 years. Other estimates have stated that the population of Puget Sound will grow by 30% by 2020.

What is the goal envisioned by planners: reducing the emissions associated with movement of individuals or goods per unit? From the global perspective a higher, more appropriate goal is to reduce the region’s emissions absolutely. Current thought suggests that with the will, such a goal is attainable. Switching to non CO₂ producing energy sources requires that will in terms of acceptance of change and the necessary capital expenditures. Many jobs should arise from this change.

The SR 520 HIA refers generally to national data that people are driving fewer miles. While this is hopeful it is unclear whether this reflects the downturn of the economy or a willful switch to alternative travel and transportation. More interesting is the SR 520 data from 2006 through 2008 suggesting a small downturn in vehicular traffic. What does this represent: loss of jobs in the area, policies of large corporations such as Microsoft to encourage travel to and from work with alternative means of transportation instead of the single occupant vehicle, individual decisions resulting from SR 520 gridlock, or fear of SR 520 collapse? What has happened to bus ridership over the same period? What is known about the trends in people working by computer from home?

The authors note that current trends support the need to redefine how to plan a transportation system. Please describe how the information provided altered the current SR 520 Project planning process which is similar in concepts to the planning for the 1963 bridge designed primarily to meet the perceived needs of private vehicular traffic.

Please describe how the SR 520 HIA was used in the decision making process to choose the A+ option. Describe calculations estimating the medical morbidity and mortality associated with the A+ option as compared to other options. Describe the calculations used in estimating the effect of the A+ option upon traffic associated air pollution and particularly upon CO2 emissions.

Reduction in CO2 production and other traffic associated air pollution is brought about by educational processes and by applying disincentives to travel and transportation by gas powered vehicles. Please describe efforts by the State of Washington to educate the population about these issues. Please describe any efforts to measure the effects of such educational efforts. Please clarify the issue of how federal dollars are supplied for highway construction. Is the number of vehicular miles traveled within Washington (VMT) used in issuing federal dollars? If so does not source of funding represent a conflict of interest for WSDOT in planning for alternatives to automobile transportation? Please comment.

“In the August 2006 SR 520 Bridge Replacement and HOV Project – Draft Environmental Impact Statement, the Washington State Department of Transportation (WSDOT) proposed many excellent infrastructure elements (e.g. landscaped lids, pedestrian and bicycling connections, visual design elements, and transit facilities) that would reduced vehicle emissions, create opportunities for physical activity and reconnect communities. The SR 520 mediation process and alternatives being considered continue to include these elements. To embrace the opportunity for creating healthy places to live, work and play, it is critical that these elements be made integral to the project and not viewed solely as mitigation or expendable amenities. This report presents the findings of the health impact assessment report and recommendations that can be incorporated into the mediation process and impact plan. These elements along with other discussed in this report would contribute to creating healthy communities for generations to come.”

Response: The above statement is deaf to the health consequences of traffic associated air pollution. As the financing of the SR 520 project is currently

inadequate it is unlikely that all of the above amenities will survive the budget process. In such a situation what are the plans to weigh the merits of each proposal? Please describe the economic analysis used in making the necessary choices. Is there economic consideration being made for traffic associated morbidity and mortality? What is the cost to State to care for additional cases of asthma, chronic lung disease, hypertension, heart attacks, additional cancers, and complications of pregnancy? What is the economic consideration of years of lost productivity to a family or the premature loss of life? What is the economic cost of paying for the consequences of continued dependence upon oil productions to move services and goods in the present manner?

THE REPORT: "The report explains how a transportation project can affect health and what measures can be taken to avoid unfavorable community health consequences."

RESPONSE: The report does not describe who is affected, how many are affected, nor discuss the data in such a way so as to allow Puget Sound citizens to know if they themselves are potentially affected or the affects of their driving habits on the health of others.

The measures that might mitigate community health consequences are not listed in such a way as to permit informed choices. The necessary background information is lacking.

"The goal for this report is to help the SR 520 Mediation Group, WSDOT, and the Washington Legislature evaluate the alternatives based upon their potential health impacts."

RESPONSE: How will this goal be reached? The extent of health impacts is not quantified in terms of pollutant level or of adverse health effects at present. There are no projections of traffic and pollution by adopting any of the alternatives. The SR 520 Group has been painted as obstructionist. Examples of responsiveness of WSDOT to SR 520 Mediation Group concerns are lacking. Where are health impacts discussed in quantitative terms?

"WSDOT, Sound Transit, and King County Department of Transportation are the primary agencies responsible for implementing the recommendations, but other agencies and municipalities, such as the University of Washington and the City of Seattle are necessary partners."

RESPONSE: Please describe how these entities function together, in what forum and how decisions are made. How are differences in opinion resolved?

"Community participation in the SR 520 Project has been part of its long planning history and continues today with the mediation process."

RESPONSE: If there is a mediation process who is the mediator and what are his/her powers? Have the affected jurisdictions considered bringing in an outside mediator with national experience in planning such effects?

EXECUTIVE SUMMARY:

RESPONSE: The authors mention the impact of chronic disease on health in the 21st century. They would better serve the public interest in this document by restricting their comments to the impact of traffic associated air pollution upon citizens of Puget Sound.

"It is clear from research that public projects impact health."

RESPONSE: How are drivers and persons located near highways, (specifically SR 520) affected by present roads and the impact of the roads planned? Tell us the likely effects of mitigation outlined in the proposal. Tell us the relative benefits of mitigation relative to the encouragement and development of alternative means of travel. Tell us why proven measures to mitigate adverse health effects are not discussed.

WASHINGTON GOVERNOR AND LEGISLATIVE MANDATE HEALTH IMPACT ASSESSMENT:

In 2007, Governor Gregoire signed Senate Bill 6099, a legislative directive to develop a SR 520 interchange design and plan for the Westside of Lake Washington through mediation for a more reliable replacement of the existing SR 520 Bridge. The directive also asked Public Health – Seattle and King County and the Puget Sound Clean Air Agency to conduct a health impact assessment (HIA) of the SR 520 Bridge Replacement and HOV Project, focusing on air quality, greenhouse gas (GHG) emissions, and other public health issues, with final recommendation to be incorporated into the Mediation Group's Project Impact Plan. The HIA research and the following report indicate that choosing the right set of features for the SR 520 Project – regardless of which of the three plans under consideration is adopted – can contribute significantly to improving the health of people in communities adjacent to the corridor and the livability of their neighbors."

RESPONSE: The literature of health effects associated with traffic-associated air pollution raises issues not addressed in the HIA report. Goals are not set for limiting air pollution and greenhouse emissions. There is money available for the necessary replacement of the central SR 520 span. That should happen while discussion of the issues of connecting to East and West side highways in a manner that will protect the health and well-being of East and West side citizens continues.

WHAT IS A HEALTH IMPACT STATEMENT?

“A HIA is a tool to help decision-makers recognize the health consequences of the decisions they make and provide a healthier living environment. HIAs use a combination of procedures and methods by which a policy or project may be evaluated regarding its potential effects on the health of the population and the distribution of those effects within the population. A HIA is much like an Environmental Impact Statement, but it focuses on population health.”

RESPONSE: Please describe the combination of procedures and methods by which the potential effects on the health of the population are described.

1. **What measurements were made of traffic-associated health pollution and the state of health of persons living, working, or going to school in the zone of potential effects on the East and West side.?**
2. **Describe the projected change in total greenhouse gases and traffic associated air-pollution over the projected live span of the SR 520 bridge.**

Historically it is unlikely that high occupancy vehicle lanes are converted to more dense, efficient traffic conduits. For example if an HOV lane is designated for 2 person occupancy and buses, it is unlikely that it will be converted to 3 person occupancy, bus only or light rail systems.

3. **Please compare the relative effect upon Greenhouse emissions and traffic associated air-pollution if added capacity were make available only to rapid bus transport or light rail from the beginning.**
4. **Please compare the relative effect upon Greenhouse emissions and traffic associated air-pollution if additional capacity were used for rapid bus transport or light rail versus used for 2 occupant HOV with mitigation by trees and some liding.**

“In the early steps of the SR 520 HIA, analysis identified nine health focus areas for research, including air quality, a water quality, green space, physical activity, noise, mental well-being, safety, social connections, and emergency medical services.”

RESPONSE: This response focuses on air quality and related health effects. Where is the research to which reference is made in the above paragraph? Of the nine elements what are the most important areas to the HIA response committee?

RECOMMENDATIONS:

“The SR 520 bridge Replacement and HOV Project Draft Environmental Impact Statement published in August 2006 proposes many excellent elements that would contribute to a healthy community. These elements include pedestrian

and bicycling amenities, transit improvements, design improvements, landscaped lids and green spaces, and noise reduction strategies.”

RESPONSE: Is reduction of traffic-associated air pollution on equal footing with bicycling amenities?

“No single action will solve our chronic disease challenges. Multiple actions are needed to create healthy communities. For this reason, it is critical that these elements are integral to the project and that they are supported, despite challenging budget times, for optimal health effects.”

RESPONSE: Optimal health effects within the communities within the zone of influence of traffic associated air pollution are the result of recognition of the health effects of traffic-associated air pollution, good planning for the use of transportation corridors, individual health habits within the zone, and adequate health care delivery services. All are important. The factor most readily affected by the SR 520 project is the control of traffic associated air pollution. That should be the primary focus of this document. Sadly it is not.

TRANSIT, BICYCLING AND WALKING:

“1) Increase and improve transit service to meet increased demand, attract more riders, and reduce air pollution.”

RESPONSE: The ideas presented in this HIA do nothing to curtail the inevitable increase in traffic-associated air pollution. Six landscaped lids are of unproven ability to control the traffic associated air pollution already existing along SR 520 and other high occupancies highways in Seattle. What chance to these lids have against the anticipated population rise in Puget Sound uncontrolled by policies designed to limit use of automobiles and provide rapid bus transport and light rail options?

The communities surrounding SR 520 should require four elements:

1. measurement of current levels of air pollution in appropriate places using appropriate methods
2. Data proving the effectiveness of the lid designs proposed.
3. Assurances that traffic planning will limit traffic associated air pollution to the design limits of those lids.
4. Treatment of mitigation strategies as mandatory

Project Guiding Principles:

- Ensure health elements are integral to the project plan.

- Support all recommendation in difficult budget times for optimal health benefits.

RESPONSE: Lacking the four points above the Guiding Principles lack the reassurances necessary for support of the project by surrounding communities.

Health Impact Assessment Background:

“The SR 520 Replacement and HOV Project have the potential to affect the health of individuals and communities from the beginning of construction through its entire existence.

The SR 520 Health Impact Assessment (HIA) examines these effects from a human health perspective. An example is the effect that environmental pollutants have on human health, such as toxic air emissions’ link with cancer. This is a different focus than examining and mitigating environmental impacts.”

RESPONSE: The SR 520 HIA here acknowledges potential effects of toxic air emissions (referred to in this response as traffic associated air pollution). However the HIA never examines this potential.

GOAL OF SR 520 HEALTH IMPACT ASSESSMENT:

“The goal of the SR 520 HIA is to protect public health by raising the awareness of the Mediation Group and other decision makers about the relationship between health and transportation systems. This will help ensure health consequences are considered in their decision-making process for the development of an environment that supports health people and communities.

RESPONSE: As stated in other responses

- 1. The SR 520 HIA fails to present data relating health and transportation systems.**
- 2. Adequate measurements of traffic associated air pollution are not presented and raise questions as to whether they are available.**
- 3. No data is presented regarding the health of communities likely to be affected by SR 520 or any heavily used highway in the region.**
- 4. There is no significant review and criticism of the literature pertaining to health and transportation raising the question as to whether authors are familiar with the data available accumulating over a number of years.**

“This section of the report outlines the HIA procedures and health focus areas investigated, then moves on to the recommendations that A Puget Sound Clear Air Agency and Public Health – Seattle & King County put forth to the Medication Group for Review.”

RESPONSE: Restricting the focus to health and transportations systems please respond to the following questions:

For Puget Sound Clean Air Agency:

1. Describe current practices for measurements of particle air pollution within 300 meters of highways carrying more than 35,000 vehicles daily. Specifically describe the methods of measurement within that zone as to distance from the center of the highway, what particles are measured, and in what form the data is summarized over periods of time.
2. Describe current practices for measurements of volatile compounds within 300 meters of highways carrying more than 35, 000 vehicles daily.
3. Please describe the results of these measurements of a period of time when the traffic volume has been growing.
4. Please make special note of population areas at the confluence of large traffic systems such as SR 520 and I 405 and SR 520 and I 5.
5. Please describe who is making such measurements and where such data is available for public inspection.

For Public Health – Seattle and King County

1. Describe any data available on the health of individuals living, working, or attending school within 300 meters of any highway carrying greater than 35,000 vehicles per day within the Puget Sound region.
2. Is any such data available for the SR 520 corridor on the East or Westside of the bridge?
3. Specifically describe data or plans to acquire data at the confluence of highways carrying more than 35,000 vehicles daily.
4. Please provide references to literature covering the questions cited above.
5. Is the data requested provided in unpublished data and available for review?
6. If no data is available on the health of individuals living, working, or attending school within 300 meters of any highway carrying greater than 35, 000 vehicles per day, what literature from other cities was used to evaluate the health effects of traffic associated air pollution in developing the HIA statement?
7. Specifically please relate the opinions reached as to the relevance and quality of the literature suggesting an association between traffic associated air-pollution and asthma, retarded lung development of lung capacity in young children, complications of pregnancy, higher incidence of hypertension, higher incidence of Cardiomyopathy, higher incidence of myocardial infarction, and an increased risk of developing various kinds of cancer.

DEFINING HEALTH:

“The long-term goal of Public Health – Seattle and King County and Puget Sound Clean Air Agency is for the SR 520 corridor design to support health people and health, sustainable communities. “

RESPONSE: This section is so general as to be meaningless. The highest priority of the SR 520 plan must be to protect the health of citizens who live, work, and go to school within the range of 300 meters. The population of all those who live within 300 meters of all highways with large vehicle volumes (>35,000) need to be reassured that environmental conditions resulting from traffic associated air pollution are not going to give put them at risk for a serious health condition affecting the heart, lungs, their pregnancies, nor put them at risk for a variety of cancers. No amount of walking, bicycling, or other individual lifestyle choices can be expected to overcome the effects of traffic associated air pollution.

THE HEALTH IMPACT ASSESSMENT MANDATE:

“Senate Bill 6099, passed by the Legislature and signed by Governor Gregoire in 2007, directed the Office of Financial Management to hire a mediator to work with interested parties directly affected by the SR 520 Bridge Replacement and HOV Project (SR 520) to develop a SR 520 interchange design and plan for the Westside of Lake Washington. This plan (due December 2008) is to address the effects of the project on Seattle neighborhoods and parks, including the Washington Park Arboretum, and institutions of higher education. The bill also directed Public Health – Seattle & King County and the Puget Sound Clean Air Agency to conduct a HIA of the SR 520’s effects on air quality, green-house gases (GHG), and other public health issues, with recommendations to be incorporated into the mediation project impact plan. “

RESPONSE: The HIA of SR 520 does not describe the effect of present or future traffic effects upon air quality. The HIA of SR 520 does not address the health hazards of the existing SR 520 bridge nor does it outline a method by which future impacts may be measured. Mitigation of traffic associated air pollution is not quantified nor guaranteed in the present Westside proposal for the Westside of Lake Washington.

WHAT IS A HEALTH IMPACT ASSESSMENT?

“HIA is a combination of procedures and methods by which a policy or project may be judged as to its potential effects on the health of the population, and the distribution of those effects within the population. It is a tool to help decision-makers recognize the health consequences of the decisions they make so they can contribute to a healthier living environment. HIAs have been used widely internationally , in places such as Europe, Canada, and Australia. HIA methodology is still evolving in the United States. Because the nature of the action being

analyzed influences the HIA, detail in these assessments can vary from a simple checklist to a more extensive review of research and other relevant information. HIA strives to anticipate potential consequences for decision-makers and to deliver a set of recommendations intended to minimize and maximize health benefits. “

RESPONSE: The issue is not what an HIA ought to be but rather the data showing the present state of health of those affected by the present SR 520 and how plans for a new SR 520 are likely to affect green house admissions and the health of the surrounding communities. “A simple checklist” is not an adequate response under circumstances where the health and lives of citizens are at stake.

HEALTH IMPACT ASSESSMENT PROJECT AREA DESCRIPTION:

“The HIA focused on the project design mandated by the Legislature in which the SR 520 will be a 4 + 2 configuration – six lanes, with two general-purpose lanes and one carpool lane in each direction. The bridge will be designed to withstand major earthquakes and windstorms up to 95 mph. The new SR 520 will have increased transit serviced that will make bus trips more frequent and reliable. It is also planned to have a bridge pathway for walking or bicycling across the lake, shoulder lanes to keep traffic flowing in the event of stalled vehicles, and new interchanges to reduce traffic impact on communities near the corridor. “

RESPONSE: Simply stated, the health of the surrounding communities is not taken into consideration. Effects on global warming are not considered.

THE WORK OF THE SR 520 MEDIATION GROUP

“The 33-member Mediation Group representing parties interested in the SR 520 Project began meeting in September 2007. Since that time, it has developed three design alternatives specific to the Westside – known as A, K, and L – for further evaluation in the SDEIS”

“The three alternatives are similar in many ways, except for how the Westside interchange is designed and the consequent cost of construction. The health impact differences are difficult to estimate until the specific designs are developed. For these reasons SR 520 review focused on a broad view of the SR 520 Project’s design features (including the alternatives’ common elements” as indicated in the Senate Bill 6099. The specific design decisions have have important implications for individual and community health.”

RESPONSE: A broad view of the SR 520 HIA Project’s design features does not meet the need of citizens to be informed about the health risk of present and future SR 520 traffic-associated air pollution. The HIA in its present form is not responsive to the needs of citizens and those making decisions about the project.

THE RESEARCH STEPS

- 1) "SCOPING: to identify health focus areas to be researched in the analysis: Through a review of previous HIA reports, the SR 520 DE"IS", and public and Mediation Group comments, the SR 520 HIA team selected the following nine health focus areas to review air quality, water quality, green space, physical activity, noise, mental well-being, safety, social connections, and emergency medical services. "
- 2) "ASSESSMENT of how population health could be affected by the transportation project: As the HIA progressed, literature and report reviews and discussions with stakeholders were summarized in background papers for the nine health focus areas. A greenhouse gas analysis was also completed. These reports demonstrated that the initial focus areas were highly interrelated and connected. "
RESPONSE: the literature reviews are superficial, failing to summarize what is known about the health of those located near SR 520, failing to point out the deficiencies in that data assessing both the health and the traffic associated air pollution, failing to document the effect of increased single vehicle traffic in the SR 520 corridor, and failing to provide best estimates of the possible positive effects of utilizing extra lane capacity for Rapid Bus Transport or Light Rail.
- 3) "RECOMMENDATIONS: Development to identify project features that benefit population health: The recommendations were organized into the following critical health elements: Construction Period; Transit, Bicycling and Walking: Landscaped lids and Green Spaces; and Design Features: Specific recommendation were then developed within each of these categories. "
RESPONSE: Project features benefiting project health are submitted with no data indicating effectiveness. Features which might effectively benefit health such as rapid bus transport or light rail or features designed to curtail single occupant vehicle transport are ignored.
- 4) "REPORTING: of the assessment findings and recommendations to the Mediation Group and other decision makers through this report

"The general premises used when review the areas were:

AIR QUALITY – Clean, health air is important for public health, quality of life, and climate protection.

RESPONSE: Why is this comment made when so much useful data for the public is lacking?

Health Impact Assessment Recommendations

Transit, Bicycling, and Walking

Introduction

“Increasing and improving transit service and providing bicycling and walking facilities in the corridor will provide multiple health benefits by reducing greenhouse emissions and other air pollutants through the use of alternative to single-occupant vehicles, increase opportunities for physical activity, and improved social connections.”

RESPONSE: Please respond to the following questions?

- 1. Project the total green house admissions 5 years after completion of the SR 520 project using the plan proposed as compared to the present greenhouse admissions, and as compared to the greenhouse admission of SR 520 using the HOV lanes for Rapid Bus Transport or Light Rail.**
- 2. Describe an example from anywhere in the United States where a similar project with four lanes of uncontrolled traffic and 2 lanes for HOV occupancy was later converted changed from HOV occupancy to Rapid Bus Transport or Light rail.**
- 3. Compare the effect upon total traffic associated air pollution and greenhouse gas admission between building biking and walking facilities and using addition bridge capacity exclusively for Rapid Bus Transport or Light Rail.**

AUTOMOBILES, TRANSIT, BICYCLING AND WALKING AND AIR QUALITY

The concepts introduced in this HIA make no effort to estimate the net effect on pollution and carbon dioxide production in each of the alternative plans and furthermore in some of the even larger solutions sent out to bid. It is fine to assert that Americans are driving less but there is no connection between that assertion and current A+ version of SR 520. It is disingenuous to assert that there is a connection.

The authors pride themselves on the “. . . proposed many excellent infrastructure elements (e.g. landscaped lids, pedestrian and bicycling connections, visual design

elements, and transit facilities, that would reduce vehicle emissions, create opportunities for physical activity and reconnect communities.” There is no reality to these statements. There are no measures to control use of gas consuming vehicles, no priority to alternatives to gas-powered vehicles and in particular no priority to the development of light-rail. Many of the so-called infrastructure elements are already under siege by cost cutting initiatives which will to downgrade the importance of protection the health of the surround affected population. The report states that “... it is critical that these elements be made integral to the project and not be viewed solely as mitigation or expendable amenities.” This is a promise already reneged upon.

The Report: “The report does not recommend one alternative over another since it is difficult to differentiate among the alternatives until the specific designs are developed.” Specific designs have now been developed and even larger proposals put out to bid. No comparison between alternatives in terms of health protection for those living near SR520. That analysis is past due.

“The goal for this report is to help the SR 520 Mediation Group, WSDOT, and the Washington Legislature.” The role of the SR Mediation Group has been undermined by the recent statements of the governor pressing for cessation of the mediation process and negating the stated goal of the report. Please cite any available examples where WSDOT has responded with proposals incorporating concepts introduced by the legislature or the SR 520 Mediation Group in their planning process.

How is it that when “This HIA is the latest in a series of coordination, collaboration, and partnership efforts to successfully complete the SR 520 Project. The measures recommended will require continued coordination, collaboration, and partnerships.” If there is in fact such coordination why is there no effective connection between the University Washington light rail station and mass transportation systems across SR 520? Community participation in the SR 520 project has been effectively proscribed by the recent statements of the governor.

“It is clear from research that public projects impact health.” Yes, it is clear that the current form of SR 520, an open invitation to more traffic and air pollution will affect health, negatively.

What is a Health Impact Assessment?

“A HIA is a tool to help decision-makers recognize the health consequences of the decisions they make and provide a healthier living environment.” How is this HIA which fails to compare alternatives, fails to make mitigation a requirement, and fails to prioritize mass transit is carrying out its mission.

EXECUTIVE SUMMARY:

Paragraph one is redundant

Washington Governor and Legislature Mandate Health Impact Assessment:

Senate Bill 6099 mandated the preparation of an HIA. It did not mandate that its spirit would be carried through to the end of the process. At this point it is an empty promise.

How can the HIA focus on air quality and greenhouse emissions without presenting any data regarding present air quality and green house emissions or projections about the effects of each of the three alternatives upon future changes? No relevant measurements have been presented from the impacted areas particularly in areas affected by the junction of two large highway systems on both sides of Lake Washington.

What is a Health Impact Assessment? Between 10 and 30% of the population of greater Puget Sound areas are potentially impacted in terms of their health by traffic associated air pollution. These citizens have a right to expect that an HIA will help them to make an intelligent choice between alternative proposals and between choosing to ride in their automobile or on one of several mass transportation systems. This report does not provide this information.

Recommendations: “The SR 520 Bridge Replacement and HOV Project Draft Environment Impact Statement published in August 2006 propose many excellent elements that would contribute to a healthy community. These elements include

pedestrian and bicycling amenities, transit improvements, design improvements, landscaped lids and green spaces, and noise reduction strategies.” I doubt that anyone living within the shadow of any highway in Puget Sound would trade a significant reduction of air-traffic associated pollutants for the uncertain benefits of the amenities mentioned above. There is no reason why all the mentioned elements should not be included in the proposal as necessities.

Health Impact Assessment for SR 520, written in September, 2008 acknowledged a broad list of potential impacts on the health of the affected communities.

While acknowledging the potential impact of highways about the quality of life in a city, the reports fails to consider specific health issues:

1. The direct effects of highway traffic associated air pollution upon the health of citizens who live, work, and attend school in the vicinity of highways. Specific entities for investigation include chronic diseases such as asthma, chronic lung disease, heart disease, pregnancy complications and cancer.
2. The potential reduction of exposure to traffic pollutants possible by substituting non-automobile means of transportation the transport of goods.
3. The potential difference in traffic associated air pollution associated with each of the proposed design solutions to SR 520, for example 6 lanes of automotive traffic as opposed to 4 lanes of traffic with two lanes of high occupancy vehicles as opposed to two lanes of traffic and 4 lanes of high occupancy vehicles as utilized in Bogota, Colombia.
4. The potential effects of processes such as lid ding upon the exposure of citizens to air traffic pollutants.

The report does not acknowledge that the health risks of highways in an urban environment are related to distance of an individual from that highway, local weather and geographical patterns, and the length of time exposure.

The report does not acknowledge recent research that implicates traffic associated air pollution in a higher incidence of asthma, a higher incidence of coronary artery disease, and a higher incidence of cancer.

The report does not acknowledge that there are specific age-groups that are likely more vulnerable to the effects of traffic associated air-pollution.

Specific Recommendations Regarding the Assessment of the Health Impact of SR 520 at this time.

1. Place a specific cap on the number of car - miles that will be accommodated upon Seattle highways, roads and bridges.
2. Plan for alternative means of transportation for the anticipated growth in population.
3. Assign a dollar value for the morbidity and death of individuals so that the mortality and morbidity associated with automobile accidents and air pollution might be more rationally weighed against the initial costs of highway and SR 520 design features which mitigate accidents and traffic associated air-pollution.
4. Ask a group of Public Health scientists to evaluate the current state of research regards the effects of traffic associated air pollution upon lung development, asthma, hypertension, coronary artery disease, childhood and adult cancers.

5. Ask a group of Public Health scientists to recommend future research and public policy initiatives needed to reduce the effects of air traffic pollution.

6. Ask a group of Public Health scientists to define acceptable levels of traffic associated air pollution?

The concern for the health impact of highways and bridges runs into the desire for preserve personal freedom and choice, the desire to relieve the economic stresses upon the community, the influence of various lobbying groups upon the

decision of public officials, and a variety of opinions regarding how to deal with transportation problems. For exactly these realities, placement of an economic value for traffic associated mortality and morbidity would allow more rational consideration of the various choices. For example how much of the health care costs of traffic accidents and traffic associated medical illness is paid for out of public funds? Use of public funds for the construction of car-based transportation systems results in a public subsidy to the individual who insists upon traveling alone or with a small group of people often for long distances while producing pollutants that adversely affect the health of all of us.

APPENDIX A: Project Area Demographic and Health Information

Demographics: “The SR 520 study area tends to have less diversity in race/ethnicity, a high proportion of whites, and a higher income as compared to King County. Fewer children and more young adults reside in this area. This can influence the health conditions in the area.” The reality of this characterization is acknowledged. The disregard of health implications of the SR 520 project take on greater importance when one considers how many people live within 300 meters of traffic with even larger numbers of and greater percentages of diesel powered vehicles. The concerns of these comments are for the estimated 30 percent of metropolitan Seattle residents who live within 300 meters of high volume polluting roads. The issues listed here are advanced on behalf of all of these effected citizens.

HEALTH INDICATORS: While the statements listed in this section are true, they are advanced in place of the more cogent discussion of the effects of traffic induced air-pollution upon those citizens who live and work and attend school within 300 meters of busy highways and roads. Whether citizens have sedentary jobs or not the point of concern is whether they are being showered by particles and volatile chemicals being showered upon them 24 hours per day for purposes and values which have not been justified.

I do not feel that questions as to whether neighbors are trustworthy are relevant to the issues under discussion.

That life expectancy of the SR 520 area is slightly higher than the rest of King County is not reassuring unless such a statement is adjusted for traffic volume, distance from that traffic, degree of pollution, exposure and duration of exposure. The authors have not taken advantage of much more sophisticated types of analysis that are available. Such states reflect the lack of active participation by serious scientists interested in the study of traffic associated air-pollution and consideration of their findings.

The statements that “Heart disease, diabetes, and asthma are health conditions in which changes in the built environment can impact through encouraging increase physical activity. Residents of the study area are less likely to be hospitalized or to die from heart disease or diabetes as compared to King County.” The first state is true but unrelated to the discussion of the dangers of traffic associated air pollution. The second statement displays ignorance of the epidemiologic methods required to understand the dangers of traffic associated air pollution and the need to control for the many of factors that affect heart disease and diabetes.

The fact that rates of childhood asthma hospitalization in higher in the study area than in King County is particularly disturbing since other factors of the SR 520 would lead one to expect a lower rate.

I am curious as to who the authors of this particular section of the HIA SR 520 are who would associate themselves with the quality of data and argument submitted in this section.

APPENDIX B: Air Quality Issue Paper

Comments on page 45 of Appendix B summarize known effects of Traffic-associated air pollution. Will the authors of the HIA please discuss in detail how they have incorporated these concerns in assurances to the population of Seattle as to how these risks are to be measured, reduced, and mitigated in a guaranteed manner by offering alternatives to increased vehicle volume and the development of alternative means of transportation.

On page 46, the authors allude to the effects of mitigation on traffic-induced air pollution through construction of lids and the planting of urban trees. Will the authors please discuss the relative benefits of planting trees versus the reduction of vehicular traffic and the track records of trees and lids in such endeavors and the means by which the State intends to monitor pollution effects in areas most likely to be effected, that is near to the high volume highways, specifically at the junctions between several busy highways.

“Design alternatives that create walk able environments and locate the light rail station and the transfer centers near each other are likely to produce more transit ridership, less single-occupancy vehicle use, and fewer mobile-source air pollutants.” Will the authors please describe how the location of the Montlake transfer centers and the light-rail station at the University of Washington Stadium are examples of the planning principles outlined in the above statement.

TYPICAL EMISSIONS DURING CONSTRUCTION INCLUDE:

All of the potential mediating steps listed in this section are strongly negated by announced plans to drive large diesel trucks up the steep hills of the Roanoke neighborhood day and night during the planned closure of Del Mar Way. What are the plans to measure noise and pollutants along this intended route during the periods of construction.” “Covering dirt, debris, and gravel piles to reduce dust” is not reassuring and is testimony to the superficiality of the HIA assessment.

The public affected by the construction of SR 520 is more likely to be reassured by good planning for alternative transportation, measurement of pollution based upon sound scientific principals than by promises to make best efforts to reduce pollution during construction. These most effective reassurances are lacking. If economic considerations are threatening to deprive us of light-rail, highway lids and other effective mitigation, how is the public to be assured that money will be available to use “. . .all new diesel equipment and vehicles or installing emission reduction equipment on existing diesel vehicles and equipment.”

The land side haul routes will occur on approximately a dozen streets in both commercial and residential areas and average 2-5 trips per hour with increase to 3-12 trips per hour during periods of peak activity. As written this sounds like a particularly heavy impact on those areas affected particularly the residential areas. What times of day are anticipated? What relief from the noise, disruptions, and exposure to air-pollutants is offered to those affected? – compensation to obtain alternate housing to those who reside within 300 meters of the affected areas?

The first paragraph of page 48 is typical of the document in the acknowledgment of known facts without related them to the proposed project or specifying data which assures to population effected that these effects are being adequately mitigated.

“The project will reduce emissions compared to not building it because it will reduced future travel times for buses, carpools, and single-occupant vehicles”
This italicized stated is my favorite of the entire document. It is totally devoid of supporting facts or projections of likely traffic and emissions data likely to result in pouring 3 or more lanes of traffic each way east and west into traffic corridors already jammed beyond capacity and moving at well below planned traffic speeds. The statement does not enter into consideration of the effect of providing more single vehicle capacity on the subsequent growth of single vessel travel. WSDOT is requested to provide data supporting the above statement.

“The project will be able to reduce emissions compared to not building it because more people will be traveling in buses and carpools.” WSDOT is requested to provide support for this statement. This statement is likely to be true only if the number of travelers stays the same and shift from cars to buses and carpools. Present plans for SR 520 do not guarantee better access to buses and carpools and are likely to encourage more traffic as a whole. Logically a net benefit would accrue is capacity for single person vehicle traffic remained constant, and plans for increase travel were limited to carpools, buses and light rail. Again where is the data analyzing the relative effect upon air pollution and global warming associated with each of these modes of traffic.

If tolls and congestion are the tools to encourage migration for single vehicle travel, why are not those steps being taken at the present time?

SUMMARY: “Because air pollution produces some of the most significant adverse health effects associated with major transportation projects, it is essential that air quality be a central focus of the SR 520 Project”

This highly principled phrase is without meaning in the context of the plans presented. Even the plans presented for mitigation of air pollution are already considered negotiable to reduce costs. The assertions that new construction will reduce pollution are without support. There is no recognition that the dangers to the health of metropolitan citizens are already adversely affected both in the SR 520 corridor but likely to an even greater degree in other neighborhoods lying beside high occupancy highways. There are no plans to measure pollutants in areas likely affected at the present time with existing roads. There is no balance of the proven morbidity and mortality of traffic associated pollution and effects upon global warming against the reputed economic value of greater vehicle traffic density in the Puget Sound Region.

The references provided with the SR HIA statement are grossly lacking in their lack of references relative to the health consequences of air traffic pollution.

Appendix A Cut from Defining Health Has Changed.

THE END

The authors of the HIA are invited to cite examples where they have “. . . supported and prioritized alternatives to the automobile.” Light rail is not a priority for the latest plan. Where have plans been instituted such that “. . .

emissions that cause pollution” will be reduced. When subsequently citing that more rapid movement of traffic will reduce pollution, please cite evidence that widening of SR520 will speed entry into I-5 at the terminus of 520 or that widening of SR 520 will not simply entice more private vehicles onto SR 520. There is less traffic on SR 520 over the last three years from 2006 to 2008. Where is the courage to introduce further measures that will reduce emissions and improve health: a higher tax on gasoline, immediate introduction of bridge tolls, and higher parking fees in our metropolitan areas? Where is the will to use added capacity on SR 520 to allot lanes to the most efficient and least polluting means of transportation with the following priorities: Light rail> rapid bus transportation> multi-occupant vehicles of other kinds, electric and hybrid cars, and lastly gasoline combustion vehicles?