April 15, 2010

Jenifer Young
Environmental Manager
SR520 Program Office
600 Stewart Street, Suite 520
Seattle, WA 98101
SR520Bridge_SDEIS@wsdot.wa.gov

Dear Ms. Young,

C-031-001

Enclosed is the analysis and comments of the SDEIS on the SR-520: Medina bridge Replacement and HOV Project SDEIS on behalf of the Laurelhurst Community Club which I am a Trustee for the Board.

I respectfully submit my remarks with the hope that that will be reviewed and answered in complete before the process of rebuilding SR520 begins.

Thank you for your attention to our comments and your diligent work on the project.

Sincerely,

Colleen McAleer
3137 West Laurelhurst Drive NE
Seattle, WA 98105
206 525-0219
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C-031-001

Comment noted. Responses to the comments that relate to specific concerns are provided below.

C-031-001

SDEIS Comments for SR520 Laurelhurst Community Club
April 15, 2010

Introduction

1. Options included in the SDEIS
   -lack of inclusion of Plan M and 4 lane
   - light rail imbedded not evaluated in plans
   -100 feet centerline to the north discrepancy

2. Noise issues-lack of inclusion for Laurelhurst
   -techniques for noise mitigation unacceptable and causing more
   - problems with sound deflection using one sided noise walls

3. Air quality-emissions effects on residential population
   - health impacts within bridge vicinity
   -report from Marcia Baker

4. Traffic-lack of inclusion of land use projects in NE Seattle filed by SDEIS
   - LWB ramp problems in Plan A-all traffic routes north in A and L
   - benefits of continuous flow with tunnel Plans K and M
   -planned growth in the NE not included (attached)
   - bascule bridge openings-non-peak impacts 50% increase waits

5. Pedestrian and bike access and safety
   -grade separated crossings -only with Option K
   -University of WA adding another surface pedestrian crossing resulting in increased queues on Montlake Blvd

6. Transit connectivity and lack of access at new Sound Transit station-

7. Visual Quality-bridge moving closer, blocking view sheds and Mt. Rainier.
   -Limited visuals included in SDEIS.

8. Wetlands, water quality and 4-f
   -Save Union Bay findings-fish,
   - Sidles report on waterfowl (see attached)

9. Construction issues-temporary bridges, lighting, barges
   -Mundy report on noise, traffic, recreation restrictions for 7-10 years

10. Cultural disturbances-temporary and permanent-fish impacts shading,
    -artifact findings from native American tribes

11. Cumulative Effects-environmental, traffic, visual, noise and construction

C-031-001

Exhibit Directory for SDEIS-Laurelhurst Community Club
April 15, 2010

Exhibit 1 Capacity recommendations by Maurice Cooper

Exhibit 2 GPS 100 foot northern location of Floating Bridge Segment 1

Exhibit 3 LCC noise documents

Exhibit 4 List of affected Laurelhurst citizens -noise and visual impacts

Exhibit 5 SDEIS Comments from Bill Mundy

Exhibit 6 Marcia Baker-Air Quality and Greenhouse Gas

Exhibit 7 Traffic Modeling analysis Carl De Marken

Exhibit 8 Tilghman Transportation Analysis

Exhibit 9 Cumulative Development Land Use Projects in NE Seattle

Exhibit 10 Photos of Laurelhurst residence by Aaron Weholt-Legal Media

Exhibit 11 Photos -Webster Point residence (new bridge design) -Weholt

Exhibit 12 Save Union Bay analysis and Mitigation recommendations

Exhibit 13 Connie Sidles Expert Birding Inventory near Foster Island

Exhibit 14 Construction Discipline Report Analysis-Jean Amick

Exhibit 15 Muckleshoot Artifact Report-Judy Thorton

Exhibit 16 Cumulative Effects Discipline Report -comments by McAleer

Exhibit 17 Bascule Bridge Opening Data from 2008

Laurelhurst Community Club
Comments on the SDEIS for SR520 Project
April 15, 2010

Introduction

C-031-002

Laurelhurst Community Club (LCC), a 100 year old Seattle community organization, has a long history of participating actively in the re-build of the SR520 bridge which defines its southern border. Residents and the LCC Board had significant input on the RH Thompson Expressway, the Trans-Lake Washington Study, The Trans-Lake Washington Project and the State Mediation Process for the SR520 Bridge Replacement and HOV Project.

The goals of the community have been consistent: the repair to ensure the safety of the structure, provide for access, mobility and egress for residents to and around SR520, minimize the footprint, reduce bridge noise, minimize visual blight, prohibit damage and loss of natural resources such as parks and wildlife habitat, and achieve a design that enhances the use of non-motorized travel.

The attached SDEIS comments fall into two primary categories.
-The first are notes on any omission of important information that is not included in the environmental report itself.
-The second are notes on data that is incorrect, or manufactured as a "fact" to justify one design advantage over another.

Laurelhurst Community Club has attended meetings for 13 years, and most recently has been an official participant in the design process from State Mediation which developed the three most recent options in the SDEIS.

C-031-003

While excellent public and community forums were held, many of the viable suggestions were not incorporated into the final SDEIS. The Health Impact Assessment (September, 2008) was mandated by the State of Washington in SB # 6099. This widely distributed booklet documents a range of health issues that are a direct result of the re-build of the new bridge. However, the results are not necessarily incorporated in the optimal designs and mitigation presented in the SDEIS.

C-031-004

Our community agrees with the problems in the challenging process of the SDEIS in the Coalition for a Sustainable SR520 report submitted by Fran Conley on the group's behalf.

C-031-002

Since the SDEIS was published, FHWA and WSDOT have identified a Preferred Alternative that is similar to Option A, but incorporates design refinements that that respond to community and stakeholder comments to the alternatives analyzed in the SDEIS. Changes include a revised and expanded Montlake Lid, new noise reduction strategies, and changes to the bridge height and shoulder widths in certain sensitive areas. These modifications included in the Preferred Alternative are intended to minimize the effects presented in the SDEIS. WSDOT will continue to work with communities affected by the SR 520, I-5 to Medina Bridge Replacement and HOV Project, including the Laurelhurst community, to minimize, avoid, and/or mitigate the effects of construction and operation.

The process leading to identification of the Preferred Alternative considered input from agencies, tribes, and the public, as well as the findings of the legislative workgroup authorized by Engrossed Substitute House Bill (ESHB) 2211. It followed from many years of study, including the Westside mediation process described on pages 1-17 through 1-19 of the SDEIS and pages 36 through 43 of the SDEIS Agency Coordination and Public Involvement Discipline Report. Please see the Final EIS for more information: Section 1.12 for a discussion of what has happened since publication of the SDEIS; Section 2.5 for information on how and why the Preferred Alternative was identified; Chapter 2 for a description of the Preferred Alternative; and Chapters 5 and 6 for analysis of its environmental effects.

C-031-003

The SR 520 Health Impact Assessment recommended measures that could be incorporated to improve the region's overall quality of health, rather than attributing specific health outcomes to the SR 520, I-5 to Medina project. However, the Clean Air Act authorizes the Environmental Protection Agency to determine whether an EIS project is

C-031-005

I. Options included in the study A, K and L

A. Three options were carried into the SDEIS from the Mediation process.

Plan A and Plan K had support from groups of Westside stakeholders, while Plan L had one supporter. Several times, LCC and Westside neighborhoods asked that Plan L be dropped . Instead, WSDOT insisted upon carrying option L to the SDEIS, which lacked community support in order to fulfill an obligation to the process, rather than include a third viable option supported by Westside Communities mandated for the SDEIS.

The SDEIS omitted Plan M which was a slimmed down, less expensive and less environmentally impacting tunnel plan under the Montlake Cut. Meaningful design work was carried forward after Mediation on this design (M), and it was viable as an option until that process was abruptly halted by WSDOT in the fall of 2009. The original supporters of Plan K had abandoned it by that time in support of Plan M , a more environmentally sensitive and less expensive option.

In addition, Plan A from Mediation featured a Montlake Interchange without ramps from the east to Lake Washington Blvd. It was morphed quickly to Option A+ in the Legislative Workshop which added the ramps back to relieve the traffic gridlock that made Plan A dysfunctional. One of the key reasons for lack of support for Plan A was that it created more gridlock on the Western side which requires LWB ramps, and thus, its supporters opposed.

At press time for the SDEIS, there were no Westside communities who supported the 3 Design Options included for study. The exception remaining is Mark Weed who represented the Seattle Chamber of Commerce's "transportation committee", supporting Plan L alone.
There were no Seattle neighborhoods who supported any of the 3 options as described in the SDEIS (Plans A, if it included the LWB ramps suboption, K or L).

This refutes the goals of the SDEIS (Page 24 in the Executive Summary) which states that these 3 options met the Mediation "goals " and were carried into the SDEIS.

Thus, the objectives of SB#6099 were not met in spirit, but rather led into a truncated decision process unsupported by the vast majority of stakeholders most impacted by the new structure on the Westside.

B. Design Options Omitted from study: Plan M and Four Lane Options

4

satisfactory from the standpoint of public health. While there is rarely a section entitled "Human Health Impacts" in an EIS, protecting human health is one of the reasons behind many of the studies conducted in the preparation of an EIS.

Certain design recommendations were included in the design options. For example, as described in the Health Impact Assessment, completion of the SR 520, I-5 to Medina project would improve opportunities for bicycle and pedestrian recreation by providing a bicycle/pedestrian lane across the floating bridge with connections to regional trails. This was included in the SDEIS design options and is retained in the Preferred Alternative. Please see Chapter 2 of the Final EIS for more information on the Preferred Alternative. See the responses to comments F-003-006 and L-004-018 for further discussion of how the EIS includes recommendations from the Health Impact Assessment.

C-031-004

Comment noted.

C-031-005

Through the analyses conducted for the SDEIS, WSDOT determined that Options K and L would result in higher impacts to natural resources than Option A. In particular, a tunnel option would have substantially more effects on wetland and aquatic resources and received considerable negative comments from regulatory agencies from which permits and approval for the tunnel structure must be obtained.

Please see section 2.4 of the Final EIS for a discussion of why Option M was not studied further. Chapter 2 of the Final EIS discusses the reasons that Option M, proposed during the legislative workgroup, was not considered a reasonable alternative. Please see the SR 520 Legislative Workgroup's Final Recommendation Report available at http://www.wsdot.wa.gov/partners/sr520legislativeworkgroup/. The

C-031-005

1) **Plan M** (page 26 in the SDEIS Executive Summary) is given 2 sentences while in reality, had support of Montlake, Portage Bay, Roanoke Park, Madison Park , the Boating Community, North Capital Hill and Laurelhurst communities. This unprecedented Westside consensus that morphed from the 3 years of interactive participation was cast aside due to rules, artificial process and compressed deadlines. (See Conley's report on process) in spite of the fact that the State of Washington lacked funding to build it.

2) Plan M description.
It is the optimal design for SR520 which has a 700 foot underpass under the Montlake Cut which increases mobility and has visual and noise benefits over other options.

Its design features include:
-a separation of local traffic on the Montlake Bridge for north/south travel
-a continuous flow of vehicles to access the SR520 bridge without the addition of 3 stoplights
- a grade separated crossing at the new Sound Transit Station linking directly to Metro busses and to the University of Washington Campus and Hospital which increases pedestrian/cyclist safety and reduces vehicular wait times.
- reduces noise due to lowering traffic noises below grade level
- reduces visual blight with lower profiles on the water, through neighborhoods and has a berm to green up the Arboretum experience.

C-031-006

2). **The 4 Lane Option**
-With tolling and increased design, connectivity and improved access to transit, a Four Lane alternative with HOV lanes and shoulders was not included in the SDEIS.

-The 4 lane alternative had major support from these Mediation communities on the Westside: Madison Park, Portage Bay, Roanoke Park, Laurelhurst, the Boating Community, Eastlake, The University District and North Capital Hill.
Including the "no build" was a glaring problem since the current structure was deemed "unsafe" and not a viable option to evaluate in the SDEIS.

-See Maurice Cooper's report on " Capacity" (Exhibit 1)which describes enhancements to a four lane design that can result in a 20% increase in capacity, rather than the addition of 2 more lanes, with its ability to simply move the bottleneck to the interchange at I-5.

C-031-007

3) Capacity for light rail in the future.
Building light rail in 20-50 years will require center lanes to be imbedded with rails, and pontoon structures to carry its added weight. The SDEIS does not include a rigorous analysis of the potential addition for pontoons or center lane design.

C-031-008

C. Option discrepancies- location of the northern boundary of the bridge
One key bridge component resulting from Mediation was the location of the floating bridge at the Western high rise.

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 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. The EIS process, as defined by NEPA and SEPA, evaluates a reasonable range of alternatives designed to meet the purpose and need of a project to determine potential effects and mitigation measures. The Draft EIS and SDEIS for the SR 520, I-5 to Medina project accomplished this goal. The Final EIS presents the effects of the Preferred Alternative in comparison to the No Build Alternative, and the addenda to the discipline reports (Attachment 7 to this Final EIS) provide further detail on potential effects.

FHWA and WSDOT developed the Preferred Alternative as a result of the SDEIS analysis, direction from the SR 520 Legislative Workgroup, and input from the community and stakeholders. The Preferred Alternative in the Final EIS reduces effects on the environment and meets the purpose and need for the SR 520, I-5 to Medina project.

C-031-006

The Draft EIS for the SR 520, I-5 to Medina project included analysis of a 4-lane alternative. Although the 4-lane alternative would have improved traffic safety in the corridor and would have the least effects on Section 4(f) properties, it was removed from further study because the traffic analysis demonstrated that it did not adequately relieve congestion or provided reliable movement of people and goods across SR 520, which are fundamental purposes of the project.

C-031-008

- WSDOT's David Dye and Dave Warner acknowledged that The Laurelhurst Community Club and The Madison Park Community Club had agreed that the centerline for the new SR520 bridge would be moved 100 feet to the north of existing.
-The team of bridge engineers agreed on this feasibility on numerous meetings. The SDEIS in Section 1, page 30 under "Floating Bridge area" states that "A new floating span would be located approximately 190 feet north of the existing bridge at the west end and 160 feet north of the existing bridge at the east end"

This location is not accurate for the agreements that were verified by Gary Stone on his boat with the GPS coordinates given by WSDOT and agreed to for all option by the Laurelhurst and Madison park Communities.
(Exhibit #2)Thus, this information is not accurate, and the design should be corrected in the final draft.

C-031-009

D. Lighting on all bridge options have not been described. The SDEIS is incomplete

II. Noise issues and mitigation techniques

C-031-010

A. The Health Impact Assessment of September, 2008

This analysis was required by WA State SB #6099 and offers a comprehensive study of the impact of noise from the SR520 project.
King County and Seattle Public Health Agencies list very serious side effects from intense construction noise, and an increase of permanent noise resulting form a larger 6 lane SR520 bridge. (Page 56 "Noise")

1. Health impacts listed from the HIA
Specifically, serious physical negative impacts will result including:
Degraded Hearing or total loss
Cardiovascular Disease, including high blood pressure,
Communication interference from higher background noise
Sleep Disturbance caused by excessive road noise.
Impaired work and Learning performance degradation due to noise

The negative effects from excess noise emitted from the expansion and construction of the SR520 bridge have been documented many times as a high priority for the Laurelhurst and other surrounding neighborhood.

The Laurelhurst Community Club representative at the State Mediation process worked in concert with neighborhoods surrounding the bridge from both East and West to formulate strategies to reduce noise. The Noise Expert Review panel, City Council and The Legislative Workgroup were also given a document which addressed concerns about noise for the rebuild of SR520.
(see Exhibit #3)

In 2010, based on public comment regarding a transit-optimized 4-lane alternative or a 4-lane alternative with tolling for congestion management, WSDOT used an updated traffic model to evaluate these potential alternatives. The results showed that these 4-lane alternatives would provide substantially lower mobility benefits than the 6-lane alternative for both general-purpose traffic and transit. These alternatives are also not feasible and prudent alternatives under Section 4(f) because though would have fewer effects to such resources, the purpose and need for the project is not adequately met. Therefore, the 4-lane concepts were eliminated from further study. Please see Sections 2.3 and 2.4 of the Final EIS for an overview of the project alternatives considered, including why these alternatives are not being studied further for the SR 520, I-5 to Medina project.

C-031-007

Through coordination with Sound Transit, WSDOT has modified the Preferred Alternative to allow for enhanced future compatibility with light-rail infrastructure in comparison to the SDEIS design options. Light-rail infrastructure could be accommodated either by converting the HOV lanes for rail use or by adding light-rail only lanes. However, additional supplemental stability pontoons would be necessary to support the weight of light-rail infrastructure. Because rail transit in the SR 520 corridor is not programmed in current regional transit plans, the responsible agency would need to undergo an extensive planning and environmental review process prior to implementation of any future project to add rail in the corridor. See Chapter 2 of the Final EIS for further discussion.

C-031-008

As indicated by the comment, during the 2008 mediation process, WSDOT agreed to re-evaluate the new floating bridge alignment, and agreed to refine the design to the greatest extent practicable to keep the new alignment approximately 100 feet from the existing alignment. As

C-031-010

B. Why noise factors are significant

Chronic sound pollution can trigger the body's stress response, and it also can cause excessive stress hormones to be produced.

There are numerous studies conducted by Professor Gary Evans of Cornell University which found that loud environmental noise interferes with children's ability to learn. In addition, researchers in Austria and Germany also concluded that children in noisier neighborhoods experience marginally higher systolic blood pressure, greater heart rates and higher overnight cortisol levels which indicate modestly elevated levels of physiological stress. As a result, constant noise pollution can be linked to the later development of high blood pressure, heart disease and stroke and the lowering of the body's natural immune system.

These studies added to Dr. Evans findings that children and adults (in later studies) exposed to chronic noise can have serious health, learning and task motivation impairments.

C-031-011

C. Analysis of the SDEIS

1.Measurement of noise

It is an egregious omission in the SDEIS that no noise mitigation for the Laurelhurst neighborhood is specified. On page 20 of the Noise Discipline Report, the transmission of sound is described in detail. Lines 1-6 state that sound travel across reflective surfaces (e.g. the water on lake Washington) with minimal attenuation (absorption). In addition, weather can accentuate these conditions (lines 7-15) which states that noise levels can increase during temperature inversions as the warmer air atop the trapped layer of cooler air causes a deflection of skyward-bound sound waves back to the receivers (homes)at ground level. This weather condition describes Seattle at least 60% of the year. To dismiss this effect is an unacceptable in measuring noise from SR520 under "normal" Seattle/Puget Sound area conditions.

2. The criteria for an acceptable noise level is defined as 66dBA in the Noise Discipline Report (page 23) by FHWA and WSDOT. Page 27, lines 20-25, states that only residences within 500 feet are considered (under WSDOT policy). However, this noise (page 20) will carry across **reflective** surfaces such as water **at the same noise level as within 500 feet** and this sound should be measured accurately and mitigated.

The report claims that 7 locations in Laurelhurst were "modeled", but SDEIS Exhibit 10 shows that only 2 locations were actually measured, and of that only 1 for 24 hours. No weather conditions were described. The other location was a very short term one at Belvoir Park, quite a long distance from the bridge, and read for only 15 minutes, providing insufficient readings for total noise received. (page 41) The single reading of 57 dBAs is insufficient.

Attached(Exhibit #4) is a list of 70 residences who have complained about loud "bridge noise" in this neighborhood, that interferes with their sleep and outdoor activities in their yards.

design advanced and the project underwent constructability review, it was determined that the new alignment for the floating bridge would have to be greater than 100 feet from the existing alignment. The additional distance is necessary to accommodate a bridge design that does not preclude light rail, to accommodate construction of the new bridge while maintaining the existing bridge open to traffic, and to minimize effects to built and natural environment resources. Therefore, the alignment of the new floating portion of the Evergreen Point Bridge is correct as written in the SDEIS, and as reflected for the Preferred Alternative in the Final EIS.

C-031-009

Please see Section 5.5 of the SDEIS for a discussion of lighting and glare effects on specific areas as a result of the SR 520, I-5 to Medina project. Please also see Chapter 5 of the Final EIS for updated information. Depending on the location, some residents may experience more illumination than they currently do, primarily due to the loss of existing vegetation. These effects would be minimized over time once vegetation has been reestablished. Design details affecting lighting locations and aesthetics will be determined later in the design process, during project permitting. Lighting design will meet FHWA safety standards and minimize effects to the aquatic and wildlife habitat of the project area.

C-031-010

Please see the response to Comment C-031-003 for information regarding the Health Impact Assessment.

The Preferred Alternative includes a number of noise reduction strategies to manage noise in the SR 520 corridor, such as 4-foot concrete traffic barriers with noise-absorptive coating, and a reduced speed limit on the Portage Bay Bridge. These noise reduction strategies, which were not included in Option A, were included in the Preferred

C-031-011

3. Page 33 of the report notes that topography affects sound transmission. (lines 21-33). Given that information, the report states that "Laurelhurst (page 34) has no noise reducing features in its topography". In fact, the new location of the 6 lane bridge brings it closer to Laurelhurst by 150 (190 feet in your SDEIS report) feet, to the north. These factors **will increase** the noise transmission to residences located at the shorelines and at the top of the hill which will carry the noise upwards as it deflects from the water.

4. Noise mitigation proposed by WSDOT for SR520 for Laurelhurst is absent.(SDEIS exhibit 53) The report (page 103) states that "modeled" noise levels will not exceed NAC. Even on the single measurement for one day, it is However, because a new 6 lane bridge is physically closer by 150 feet and carries more traffic at a higher rates of speed, all of these generate more noise to residents. Further, the noise walls proposed on the southern side will create excess noise echo back to bikers, pedestrians and residences to the north of the bridge.

C-031-012

D. Noise comparison to no build

The noise discipline report is **not accurate** when it states that the "no build alternative" would result in more noise (page 69). This is **not true** due to increase volumes will result in slower speeds and thus less noise emitted. The "no build" leaves the bridge in its current location, rather than bringing more noise closer to the Laurelhurst neighborhood.

C-031-013

E. Construction noise impacts

1) Construction noises should be mitigated as a top priority. the project will take between 4-8 years of pile driving and the use of loud equipment. Pile driving (page 65) is estimated to produce intense noise of 99 to 105 bBA. This is unacceptable to residences. **The 2009 "tests for pile driving techniques" and its results are not included in the SDEIS** for community impacts. This is a serious flaw in the noise discipline report, and needs to be published for adjacent neighborhoods and park users.

C-031-014

2)Pages 172-174 list potential noise reducers during construction. All of these should be required when the project goes out to bid. Monetary incentives should be part of the contract to entice maximum noise reduction during construction. Such practices as restricting use of "back-up" beepers and using spotters makes an enormous difference in reducing annoying noise. Reducing noise from construction is of the highest value to surrounding communities on both the Eastside and Westside to enable their citizens to function more normally.

C-031-015

3) Refer to the Report from Bill Mundy (Exhibit #5), page 3 on construction noise:

There is a significant INCONSISTENCY between WSDOT maximum noise levels and those of the City of Seattle and Washington State Labor and Industries.

- For Seattle:

Alternative after consideration of community and stakeholder reaction to the SDEIS.

With these measures included, the Preferred Alternative would result in fewer residences experiencing noise levels above the FHWA noise abatement criteria compared to the No Build Alternative. Although noise levels would decrease compared to the No Build Alternative, there would continue to be noise effects related to the project; therefore, WSDOT policy dictates that additional mitigation measures must be considered. Noise walls were evaluated as potential mitigation for the remaining residences that would be affected by noise following implementation of the Preferred Alternative design elements. Noise analysts do not recommend noise walls in areas west of the floating bridge, 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 the walls would not meet WSDOT feasibility criteria for noise reduction. While noise analysts do recommend noise walls for areas in Medina, specific locations will require input from affected property owners and the community.

Quieter concrete pavement is included as a design feature for Option A, Option K, and the Preferred Alternative; however, because it is not an FHWA-approved mitigation measure and because future pavement surface conditions cannot be determined with certainty, it is not included in the noise model for the project.

Please see Section 5.7 of the Final EIS and the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for more information on all of the noise reduction strategies that avoid or minimize noise effects for the SR 520, I-5 to Medina project and for corridor more detail description of noise effects.

C-031-015

- Maximum sound level between 7:00am and 10:00pm is 55 dBA. This would be for the permanent operation;
- The maximum exceedence during construction for heavy equipment is 25 dBA;
- Therefore, the total maximum noise level for the 54 month construction period during any day would be 80 dBA (80 dBA is "moderately loud" and equivalent to standing within two feet of an operating garbage truck).

- For WA. Labor and Industries:
  - Noise cannot exceed 85 dBA over an 8 hour period. (WAC 296-817-300).

C-031-016

There is NO mention of pile driving noise in Exhibit 23, page 64. This is a serious OMISSION because in Exhibit 22 it shows that pile driving results in the most serious noise levels of all equipment and ranges between 99 to 105 dBA.

C-031-017

SDEIS Exhibit 26, page 67 and 68, shows pile driving noise level profiles. This exhibit is INCORRECT. The exhibit DOES NOT include the area where the temporary bridge is to be built. Even with this ERROR WSDOT's noise profile exceeds City of Seattle and WA L&I maximum noise limits. This is a serious OMISSION. Your documents show that 2042 piles will be driven (Table 6.7.1) over the 54 month period. Exhibit 8, page 26 is a table showing relative loudness. The reference point is 80 dBA, the noise a garbage truck makes when one is standing within two feet of it and this is not with an idling engine. 100 dBA is 4 times louder, the equivalent to a jet taking off. 100 dBA is classified as "very loud." Interestingly, the noise effects on fish and mammals are discussed, they are NOT discussed regarding humans.

C-031-018

SDEIS Exhibit 31 (approximately page 85). Noise Levels. The following are the noise levels listed for NMP without sound walls: MP1-66, MP2-67, MP3-67, MP4-67. All of these are right at NAC maximums and exceed City of Seattle maximums of 55 dBA. Given that, Exhibit 33 is MISLEADING for it is based on the assumption of sound walls. This is a "best case" scenario and extremely unlikely as sound walls are optional, not required. Due to a lack of funds and WSDOT prior statements, it is more likely than not that sound walls will NOT be constructed in the NMP segment. The SDEIS states regarding mitigation:

- "measures must be considered;"
- "mitigation measures … must be recommended (page 107).

This is NOT the same as requiring mitigation measures to reduce noise levels to an acceptable level.

C-031-019

OMMITTED from the noise section is how the "beep beep beep" of construction vehicles and equipment, when they back up, is quantified. According to a person I interviewed who lived on Mercer Island, in close proximity to the I-90 project, the "beep beep beep" was so annoying that they had to move. And, it was something that went on for 24 hours per day, often 7 days per week. If one has to listen to this for 54 months from 7:00am to 10:00pm it would, indeed, be annoying. It would be more than annoying for 24 hours per day, seven days per week. Based on my review of the DSEIS this noise is not dealt with, it is therefore an OMISSION. If it is dealt with please provide the reference or documentation.

C-031-011

WSDOT's standard methodology for analyzing noise effects is to include all lands within 500 feet of the project. Nonetheless, at the request of concerned citizens, some areas outside the normal 500-foot range are included in the noise analysis for the Noise Discipline Report and Addendum (Attachment 7 to the Final EIS), such as the modeling of seven locations in the Laurelhurst neighborhood. WSDOT measured sound at the two locations in Laurelhurst to verify the noise modeling results, not to determine peak noise levels. The noise modeling used posted speeds and peak-hour predicted year 2030 traffic volumes to determine future peak-hour noise levels. Additionally, the noise modeling included major topographical features that affect the transmission of noise as input, and the results of the analysis represent a worst-case scenario.

Applying this analysis to the Preferred Alternative, noise levels in Laurelhurst would increase by 1 to 2 decibels compared to existing peak-hour noise levels. With the Preferred Alternative, no receivers would exceed the noise abatement criteria, which is the same result as the No Build Alternative and all SDEIS options. Because all receivers within Laurelhurst would remain below the noise abatement criteria, no noise walls were considered, and none were recommended for Laurelhurst. Please see the response to Comment C-031-010 for more information regarding noise walls and other noise reduction strategies.

C-031-012

Noise modeling completed for the SDEIS, and documented in the Noise Discipline Report, showed that noise levels would be higher in the Year 2030 with the No Build Alternative due to higher traffic volumes with more stop and go driving and vehicle idling during peak hours.

Additionally, as stated in the Noise Discipline Report, peak-hour traffic flow conditions on SR 520, I-5 to Medina project roadways represent the

Vibration

C-031-020 Vibration Mitigation (page 172).

This discussed how noise might be mitigated. There is NOTHING on vibration mitigation. This is an OMISSION.
The SDEIS states there is "no effective method to reduce vibration." (page 174). If it can't be reduced how can "it be kept to a minimum."?

If noise and vibration levels are above legal limits what can be done? "Vibration monitoring" (page 61) will NOT cure the problem.

C-031-021 Noise and Vibration, Pile Removal.

The noise and vibration material deals with the 2042 piles that will be driven over the 54 month construction period. It does NOT deal with the process of removing the piles and the noise and vibration that will result from the removal process. This is a serious OMISSION for the experience at CS indicates that the noise and vibration resulting from the removal of the piles is much greater than driving them. We have also discovered that if piles cannot be removed through extraction (pulling them) they are cut off at the lake bottom. The DSEIS does not deal with the debris that remains, for example the creosote laden piles. This is a serious OMISSION, especially due to the remaining hazardous material.

Not only will people be adversely affected by excess construction noise, it will severely impact wildlife such as the bald eagle during its nesting season. (page 66)In addition, fish will be disturbed as these noises actually transmit directly under water.

C-031-022 **F. Noise Mitigation Recommendations**

1. Mitigation for excess noise from the 6 lane bridge is incomplete (Noise Discipline Report, page 107).
Many suggestions listed are effective such as use of heavy landscaping and highway design alignments. However, **the exclusive use of noise walls by WSDOT for mitigation is completely adverse to all of the recommendations made by adjacent neighborhoods, parks and institutions.**

C-031-023 2. The Noise Expert Review Panel published their findings dated November 24, 2008. These meetings were attended by Mediation representatives and the results were comprehensive.
Unfortunately, WSDOT has not integrated these comprehensive and efficient ways to reduce noise into the SDEIS.
Only lids and noise walls are recommended (page 171, lines 28-29) The legitimate reason given is that noise walls are the only federally approved mitigation used by WSDOT. Because they are visually unacceptable and/or do not work effectively with the "bowl" of

worst-case noise levels, because the modeling assumed a posted speed of 55 miles per hour (lower traffic speeds would generate lower noise levels). The same method was used to model the SDEIS options and the Preferred Alternative; therefore, the noise level projections included in the analyses are considered conservative and are likely to be 1 to 3 decibels higher than actual noise levels following project completion.

Please note that the No Build Alternative does not meet the purpose and need for the SR 520, I-5 to Medina project; rather, it is presented in the EIS as the baseline against which to compare effects. See the response to Comment C-031-010 for information on noise reduction strategies included with the Preferred Alternative.

C-031-013

Pile-driving tests for the SR 520, I-5 to Medina project began in 2009; however, the SR 520 Test Pile Project Monitoring Report (*Underwater Sound Levels Associated with Driving Steel Piles for the State Route 520 Bridge Replacement and HOV Project pile Installation Test Program*) was not completed until March 2010, after the SDEIS was published. Therefore, this report could not be included in the SDEIS; please access the report at: http://www.wsdot.wa.gov/environment/air/piledrivingreports.htm. For additional pile-driving information, please see the Social Elements Discipline Report Addendum and the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-014

The Noise Discipline Report Addendum (Attachment 7 to the Final EIS) includes several best management practices for reducing noise effects as a result of construction. As design progresses and construction plans develop, WSDOT will coordinate with stakeholders and the communities that will be directly affected by construction of the SR 520, I-5 to Medina project to define appropriate construction mitigation measures. Some

C-031-023

residences along the 520 spans, these noise mitigation techniques for SR520 should be included in the SDEIS.

The Noise Expert Review Panel's recommendations included:

1. Installation of quieter pavements with periodic renewal of surfaces for effectiveness.
2. Reduce or eliminate use of studded tires on bridge.
3. Design of gentler grades.
4. Use of sound absorptive material on all safety barriers
5. Parallel **transparen**t barriers on structure (with absorptive bases) for noise reduction between vehicles and bike and pedestrians.
6. Use of short, opaque absorptive barriers, designed low to protect view sheds
7. Absorptive treatment/ textures on retaining walls.
8. Quieter expansion joints on bridge surfaces, especially on high rise segments.
9. Use of under deck covering or coating with sound absorption materials.
10. Traffic calming of adjacent arterials.
11. Quieter pavement on adjacent arterials.
12. Use of absorptive materials on inside of lids
13. Dense vegetation on tops of lids or exterior of walls
14. Jersey barriers to be fabricated out of sound absorption materials
15. Prohibition of the use of compression brakes
16. Construction noise plan including penalties and incentives.
17. Addition of more lids and tunnels

WSDOT has included speed, ramp and grade designs and use of lids in some areas.

The SDEIS falls short in the inclusion of these other effective measures to reduce the negative health impacts on nearby residents and park and recreational users.

C-031-024

3. Noise walls as Mitigation

a) Pages 113-120 include the explanation of the placement and function of noise walls to reduce noise from the highway. Most of the discussion is focused on the cost/benefit analysis of sound reduction by standards set by WSDOT.
Page 116, lines 35-38 state, "Noise walls would only be constructed if WDSOT determines that they are feasible and reasonable" and yet states that "WSDOT policy also provides for local jurisdiction and community input to the process of assessing mitigation measures"

This process for local input took place via the noise expert review panel, but the results were not recommended in the SDEIS by WSDOT.

b) Page 119 discusses the effectiveness of noise walls with "above grade" receivers. This type of topography is characteristic of **most** of the 520 corridor on the Westside

construction processes may need to occur outside of the defined city of Seattle noise requirements and WSDOT would seek noise variance for such activities.

C-031-015

Please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS), which states that the City of Seattle recently updated their noise control ordinance (Chapter 25.08, Noise Control, Seattle Municipal Code). Construction noise is discussed in Chapter 25.08.425 (Sound Created by Construction and Maintenance Equipment) of the Municipal Code. SR 520, I-5 to Medina project construction would be required to adhere to the requirements in this section, or obtain a noise variance from the City.

WSDOT will implement best management practices and will comply with the conditions associated with applicable City of Seattle construction permits and approvals to minimize noise generated from pile-driving.

C-031-016

Exhibit 23 in the SDEIS Noise Discipline Report summarized noise levels for typical construction activities, while pile-driving was discussed separately on pages 65 through 67. For additional pile-driving analysis completed for the Final EIS, please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-017

Exhibit 26 of the SDEIS Noise Discipline Report included all areas where work bridges would be constructed, but did not show the interim connection proposed under the Phased Implementation scenario. See Section 2.8 for a discussion of revised potential phasing and the interim connection to the west approach that is evaluated in this Final EIS.

C-031-024

approach. Many homes are located up on hills surrounding the bridge in Madison Park, Laurelhurst, North Capital Hill , Portage Bay and Roanoke Park in a "bowl".
Lines 12-15 in the SDEIS states,
"Noise walls are less effective at reducing transportation noise at locations where receivers are elevated above the roadway (such as North Capital Hill) because the receivers are closer to noise that is diffracted over the top of the noise wall."

c) Thus, residences **over the proposed noise wall of 10 feet would have no benefit from their inclusion as mitigation.** Further, they could carry the sound further to residences above the projection of the noise wall, even to greater distances, increasing impacts.

4. Location of Noise Walls

a) Pages 129-138 and pages 148 and 159 specify which neighborhoods that qualify for noise mitigation using sound walls.
SDEIS Exhibit 54 shows that noise walls would be erected on the south side of SR520 only along Madison Park (pages 135 and 136). The north side (which moves to the north by 155 feet is not protected by installing the same noise walls.
This creates an "echo effect" for the cyclists and walkers and Laurelhurst residences which is shown on USDOT noise wall illustration on page 115.
b) All traffic noises will bounce off the noise walls on the south side, and reflect back to the north side which first hits the bikers and pedestrians right on the bridge. Then the noise carries over the reflective surface of water to Laurelhurst residences, increasing significantly the currently measured decibels. Add to that, the increase in noise due to cloud cover, and noise is magnified to warrant mitigation.

c) Thus, the SDEIS falls short in evaluating the global effect of adding noise walls to only the south side of the bridge. Magnification and reflection of more noise from the south side back to pedestrians, bikers and residences to the north of the noise walls is not measured nor mitigated adequately.

C-031-025

Summary on Noise Impacts and recommended mitigation
In summary, the SDEIS Noise Discipline Report for SR520 is flawed in failing to identify the complete range of impacted receptors of bridge noise, fails to include a range of acceptable and effective mitigation measures and worse, includes techniques such as one-sided noise walls which will create an increase of noise across to bikers, pedestrians.

C-031-026

III. Air Quality
A. The SDEIS fails to address the full impact of air pollution increases that will result in adding two more lanes of vehicular traffic in a new 6 lane SR520 bridge. The Executive Summary (pages 33-34) states that" all options would meet air quality standards".

C-031-027

B. The report inserted here by Marcia Baker (exhibit#6) details the goals of Seattle to reduce greenhouse gas emissions by 7% over 190 levels by 2012, and the goal of the

Please see the responses to Comment C-031-015 regarding City of Seattle noise regulations and Comment C-031-014 regarding construction noise mitigation and best management practices.

C-031-018

Please see the responses to Comment C-031-015 regarding the City of Seattle noise regulations and Comment C-031-010 for more information regarding noise walls and other noise reduction strategies.

C-031-019

Please see page 55 of the SDEIS Noise Discipline Report, which states that the Washington Administrative Code exempts sounds created by warning devices not operating continuously for more than 5 minutes. This exemption does not apply during nighttime hours (10:00 p.m. to 7:00 a.m.) for any residential property identified as a noise receiver. The City of Seattle now requires the use of broadband alarm systems or both back-up spotters and broadband alarms at constructions sites during nighttime hours. The King County and City of Medina codes exempt sounds at all times created by warning devices not operated continuously for more than 30 minutes per incident.

C-031-020

Best management practices for minimizing vibration effects were discussed in the SDEIS Noise Discipline Report; for additional information, please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

By monitoring the vibration effects produced by specific types of equipment and how far vibration might travel, WSDOT will ensure that vibration levels are within the acceptable range according to United States Department of Transportation guidelines. Like noise, vibration is an effect that is managed in the field. WSDOT will work to prevent

C-031-027

Western Climate Initiative to which Washington State belongs is an overall emissions reduction of 15% below 2005 levels by 2020.

Road transportation accounts for 52% of these emission and in Seattle it is 62%. Thus, the SDEIS with adding 2 more lanes of vehicles and, each mile of new highway lane (HOV or not) is projected to increase CO2 by about 100,000 tons over the next 50 years. (This estimate includes optimistic estimates of projected increases in fuel efficiency.)

Adding 2 more lanes of traffic has negative health impacts on Seattle's neighborhood residents who live so close to the newly expanded bridge. These are dense, urban population centers.
Excess emissions will increase adverse health impacts. Asthma, cardiovascular disease and cancers have been tied to more air pollution (see references from Marcia Baker's comments on air quality).

C-031-028

C. Statements in the SDEIS that there will be no adverse air quality impacts are not true.
1. On page 88 of the Cumulative Discipline Report it states that air emissions and the construction process will not change the baseline of NAAQS. The use of heavy construction machinery, excavations and hauling alone will generate pollutants that will be emitted onto residents in nearby neighborhoods, including Laurelhurst.

2. The SDEIS must address specific standards and require construction techniques in the contracts to protect residents for the 4-8 years of continual construction.
Currently, the report omits these important health impacts identified in the Health Impact Assessment Report.

3.The report included here by Marcia Baker notes that we cannot ignore the global impacts of poor air quality and must recognize the commitments the validity of reducing our carbon footprint which the SDEIS falls short.

C-031-029

D. Comments On Greenhouse Gas Emissions and Air Quality Sections of WSDOT SDEIS by Marcia Baker

1. Assumptions. The SDEIS analysis of air pollutants and greenhouse gas emissions from the various alternatives is completely dependent on their projections by 2030.
-Congestion will decrease relative to present levels over the entire area as a result of HOV lanes and tolls.
-Average vehicular speed on 520 will be over 30mph
2. Comments on these assumptions
The projection that increasing the number of lanes open to vehicular traffic will reduce congestion in the long term is not born out by most data in the analyses: on the contrary:
-recent data based reviews (Litman, 2009) show that in congested areas over 90% of increased lane capacity is filled within 5-10 years.
-The period after which time savings due to added road capacity equals time lost during road construction is estimated to range from 2.75 years to infinity. (on occasion, the construction time lost is never recouped!)

vibratory effects and will establish a telephone hotline to address complaints that may be received during construction, including those related to vibration.

C-031-021

For a discussion of the removal of piles, which would be required during the dismantling of construction work bridges, please see the SDEIS Construction Techniques and Activities Discipline Report. Monitoring of this process would be the same as for pile-driving, and the effects are expected to be similar. Please see the Potential Effects section of the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for information on vibratory effects and monitoring.

C-031-022

Please see the response to Comment C-031-010 for more information on noise walls and other noise reduction strategies.

C-031-023

Some of the noise expert review panel's recommendations were included in the SDEIS (lids and noise walls) and have been carried forward in the Preferred Alternative. Although some of the panel's recommendations (such as prohibiting studded tires) are beyond the scope of the SR 520, I-5 to Medina project, others were incorporated after the SDEIS was completed. While noise walls are the only federally approved mitigation used by WSDOT, the Preferred Alternative includes quieter concrete pavement, 4-foot concrete traffic barriers with noise-absorptive coating, noise-absorptive materials around lid portals, and encapsulating expansion joints. (Please see the response to Comment C-031-010.) These noise reduction strategies, discussed in Chapter 2 of the Final EIS, are not listed specifically as mitigation measures. In the Final EIS, noise walls are still recommended as mitigation with the Preferred Alternative at warranted locations in Medina, and potentially

C-031-029

References
(1) Brugge et al (2007) Environmental Health vol 6, p 23
(2) Buonocore et al (2009) American Journal of Public Health (2009) Supplement 3 p S629 (Harvard School of Public Health and community groups analyzing such in particles in Boston neighborhoods)

C-031-030

IV. Transportation and Traffic Analysis

A. The obvious goal of not just rebuilding the SR520 bridge for safety, but also to enhance the mobility of the region, and plan for its future growth.

The SDEIS reveals that the option presented do not achieve these goals for creating a better transportation system.

C-031-031

B. The geographic location of the Laurelhurst Community sets it apart from the other neighborhoods surrounding the SR520 bridge and its access to I-5, the primary federal highway in the region. Laurelhurst is a peninsula, with only two ways to access the major highways of SR520 and I-5:
-Egress from the 5 corners stoplight at NE 45th St and Mary Gates Memorial Drive, then through to SR 513 (Montlake Blvd) to SR520, to points East or Westbound to I-5
-Egress from the 5 corners at NE 45th St and Mary Gates Memorial Dr westbound up the 2 lanes westbound, and 1 lane eastbound through 12 stoplights to I-5 north or south.
Thus, Laurelhurst residences value mobility as a top priority of SR520 and its access.

C-031-032

C. Travel times

1. Data discrepancies
Throughout the Mediation process to determine travel times on .8 mile on Montlake Blvd, the data was constantly changing. Every week, new reasons were given such as "the model had new assumptions" and participants could not get an accurate number on the actual predicted travel times between the 3 alternatives.
See critique in modeling methodology (Exhibit # 7) by Carl De Marken
Also see Tilghman Traffic Analysis (Exhibit #8)

C-031-033

2. Omission of planned development in NE Seattle within 3.6 miles of SR520 by 2020

In addition, there significant data missing from the calculations, especially in NE Seattle from the addition of University Village, The QFC parcel for additional retail and adding 350 residential units, the addition of 400 more rooms at Seattle Children's Hospital, and the expansion in recreational, restaurant and office facilities at Warren G. Magnuson Park. All of these are detailed by permit numbers (Exhibit #9) which were clearly in the Seattle DPD process, several handed to the WSDOT team in person, but in the end omitted in their traffic analysis report:

along I-5 in the North Capitol Hill area where the reasonableness and feasibility of a noise wall is still be evaluated.
Quieter concrete pavement is included as a design feature for Option A, Option K, and the Preferred Alternative; however, because it is not an FHWA-approved mitigation measure and because future pavement surface conditions cannot be determined with certainty, it is not included in the noise model for the project.

C-031-024

In the Preferred Alternative, noise walls are only recommended for areas east of the floating bridge, and potentially along I-5 in the North Capitol Hill area where the reasonableness and feasibility of a noise wall is still be evaluated. The jurisdiction and community input process for assessing noise and other mitigation measures continues throughout the project and happens with a number of forums. The community input during the 2008 Mediation process was one such forum. Please see the responses to Comment C-031-010 for information on noise reduction strategies and C-031-023 for information on the noise expert review panel.

C-031-025

Please see the responses to Comments C-031-010 through C-031-024. The Final EIS includes information at the level of detail required by NEPA and SEPA, and the SDEIS did as well.

C-031-026

The air quality analysis for the SR 520, I-5 to Medina project, which was conducted using accepted methodology, confirmed project conformity with national, state, and local air quality standards. Please see pages 17 through 22 of the SDEIS Air Quality Discipline Report for a discussion of applicable standards, and pages 23 through 25 for a description of the methodology.

C-031-033 This data heavily impacts the accuracy of the SDEIS and requires that it be recalculated, incorporating the additional daily trip generation.

C-031-034 **D. Traffic and Transportation**
In the goal of presenting 3 viable options for transportation solutions, the SDEIS process falls short.
The Tilghman Transportation Group investigated the SDEIS for inconsistencies and missing analyses. (See exhibit #8)
Some of the findings include:
1. The SDEIS (Chapter 4-3) is lacking in full disclosure and analysis of existing back ups on City of Seattle arterials. Back ups "can" extend as far north as NE 25th Ave and to NE 45th Street, and NE Pacific Street. The SDEIS needs to expand on the domino effects of mobility throughout the access points to SR520. Traffic congestion will be worsened by cumulative growth effects, particularly in NE Seattle, and the SDEIS needs to widen its picture of the impacts in it access points, both to the north and south to Madison Street.
2.The whole process of interconnection of the new SR520 with SDOT was almost non-existence. The Westside communities and all Seattle residents were not represented in developing optimal solutions during the 2006-2009 timeline when the 3 options in the SDEIS were developed.
3.Under new mayoral leadership, more information and collaboration could be accomplished in developing more optimal solutions for City streets and SR520.

C-031-035 4. Traffic access routes Options A, K and L in the SDEIS

a) Plan A shows a degradation in mobility for access to SR520 from the north and south Westside residents. Without having the Lake Washington Blvd Ramp for access to Seattle neighborhoods south of the SR520 (Montlake, North Capital Hill, Madison Park, Broadmoor, and Madrona) all traffic north and south bound share one set of off ramps routed to the north.

b) This shared off ramp does not have adequate capacity to handle a reasonable flow of traffic for both directions. **The result instead is a back up queue on SR520 westbound and further gridlock created by Plan A** on a ramp where there is minimal existing congestion today.

c) In addition, travel time and distance is increased for vehicles traveling south by doubling the exit distance. This is a poor transportation design for Seattle residents access to a new bridge, and creates a larger carbon footprint for more travel times than needed.

C-031-036 d) Plan L is also flawed as a transportation system.
Access to and from SR520 from all points south are routed first across the Montlake bascule bridge, and then again as a loop onto another bascule bridge. The existing condition of using a bascule bridge to access a major state highway has already proven ill conceived. Adding another is a recipe for gridlock and congestion through the Montlake Bridge Interchange. The SDEIS states that Plan L the Montlake intersection would still operate at LOS service F (lowest possible rating) on page 29 of the Executive Summary.

C-031-027

The Preferred Alternative would result in operational improvements in air quality and reductions to greenhouse gas emissions compared to the No Build Alternative. Please see Chapters 1 and 5 of the Final EIS for more information.

C-031-028

For a quantitative analysis of construction effects on air quality, please see the Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS). The analysis concludes that the Preferred Alternative is not expected to result in a violation of the National Ambient Air Quality Standards during construction or operation.

WSDOT is developing a Community Construction Management Plan that will establish best management practices and other measures to reduce potential effects, in consultation with affected communities and organizations. Please see the Air Quality Discipline Report Addendum for a list of potential methods for reducing air quality effects during both construction and operation.

C-031-029

With the Preferred Alternative, WSDOT expects congestion on SR 520 to decrease compared to the No Build Alternative, because the number of lanes on the bridge would increase to 6 lanes, and several new features would be implemented. These features include tolling, HOV lanes, and other transportation demand management strategies. Accordingly, effects on air quality and greenhouse gas emissions would be reduced with the Preferred Alternative. WSDOT will also implement best management practices to minimize the effects on transportation during construction as much as feasible.

C-031-036

Thus, Plan L offers no improvement, rather creates more congestion and longer travel times to access SR520 and should not be considered a viable Westside SR 520 option.

e) Plan K is the only option offering key improvements as a transportation system:
-Vehicles accessing SR520 can enter directly via a tunnel under the Montlake Cut which results in shorter travel times (15 minutes on Montlake Blvd). This is for both north and south bound trips.
-Increases capacity on Montlake from the separation of SR520 traffic and local north/south traffic will allow for expected growth in NE Seattle (see cumulative effects-planned land use projects) which are projected to generate 3800 new trips daily by 2020.
-Grade separation at Pacific Place, the University of Washington Triangle bus stops and the Sound Transit Light Rail Station allows two benefits not achieved by the other SDEIS options. This reduces wait time at stoplights for vehicles as well as quicker crossings from the transit centers for pedestrians.
Page 28 states that "the greatest effect on traffic volumes would occur at the Montlake Blvd Interchange area", and Plan K (or omitted Plan M) offers a real solution to relieve some of the anticipated congestion.

C-031-037

E. Impacts of the Bascule Bridge on traffic and access to SR520

In the description of Plan A and Plan L, both designs include traversing a bascule bridge from the north to access SR520 (page 29 in the Executive Summary).

The opportunity to eliminate such a travel impediment should be an overarching goal in the design of a 6 lane SR520 for the following reasons:

1. The U.S. Coast Guard tracked the Montlake Bridge openings for the past 10 years (page 124-Cumulative Effects on Navigation). There are close to 3,000 bridge openings requiring 2 minutes each to clear, creating a backlog of vehicular traffic. This data is not included in the traffic analysis in the SDEIS and it crucial to the mobility around SR520. Non-peak travel is as important in NE Seattle access as any other time of day.
   - The University Village Shopping Center operates 7 days/week at "off peak" hours, and is especially affected by bridge openings on the weekends when recreation boats require opening of the Montlake Bridge
   -Seattle Children's Hospital also operates 7 days a week, much during"'off peak" hours.
   -Warren G Magnuson Park's recreational facilities and large community events occur on weekends, definitely defined as "off peak" hours.
   -The University of Washington popular sporting events occur during "off peak" hours and severely impact traffic around the Montlake Interchange

C-031-030

The purpose of the SR 520, I-5 to Medina 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 effects on affected neighborhoods and the environment. The project addresses two key issues facing the SR 520 corridor: (1) bridge structures that are vulnerable to catastrophic failure; and (2) worsening traffic congestion due to growth over the last two decades. The Draft EIS evaluated a range of reasonable alternatives in response to these issues, and demonstrated the 6-lane alternative as the most effective. The Preferred Alternative was identified as the 6-lane alternative that best met the project's purpose and need.

C-031-031

WSDOT determined the local study area reported in the SDEIS and the Final EIS by the change in peak hour traffic volumes on local streets with the No Build Alternative versus the SDEIS options (for the SDEIS) or the Preferred Alternative (for the Final EIS). Based on standard methodology, the local study areas included only intersections where traffic volumes would increase by more than 5 percent.

This percentage was selected as the criterion because a change in traffic of 5% typically results in measurable operational changes. If traffic volume increases on adjacent streets were calculated to be less than 5 percent, the intersection was not included in the analysis. Thus, with implementation of the Preferred Alternative, all intersections not included in the local study area would experience an overall change in traffic volumes of less than 5 percent during the a.m. and p.m. peak hours.

The intersection immediately to the west of the intersection of NE 45th Street and Mary Gates Memorial Drive was included in the transportation analysis. Please see Chapter 6 of the Final Transportation Discipline

C-031-037

Thus, these non, "off peak" traffic impact are omitted from the SDEIS and should be included to accurately evaluate the operations of Options A and 1 which include a bascule bridge inherent in their design.
Traffic mobility is equally important to citizens during "off peak' times, especially weekends and must be analyzed in the SDEIS.

2. The U.S. Coast Guard estimates that the addition of a second bascule bridge in Plan A or Plan L will increase by 50%, resulting in bridge traffic to be stopped 20 more minutes per day from May through September.(Exhibit #17)

3. The SDEIS is deficient in omitting the critical off peak traffic studies, especially along Montlake Blvd. which will be severely impacted by the use of a bascule bridge in Plans A and L.
Plans K and M eliminate this design obstacle and should be evaluated "off peak" performance as well.

C-031-038

V. Pedestrian and Bicyclist Access and Safety

The SDEIS (4-8) describes the current lack of bicycle and pedestrian access to existing SR520.
A. The addition of a separated bike and pedestrian lane (14 feet) on the north side of the new SR520 will achieve access that will encourage non-motorized crossing of SR520. This will benefit all options, albeit this width seem excessively wide.

1.-Plans A and L will still require cyclists and pedestrians to mingle in more vehicular traffic on bascule bridges from the Westside to go eastbound in their designs.

2. -Plan K (and M) have bicyclists follow traffic separated safer pathways aligned with more connectivity through the Arboretum and existing bike trails- a safer approach..

B. Plans A and L have pedestrians at the new Sound Transit Station crossing traffic at grade level SDEIS (4-8 and 4-9). This type of crossing is problematic for two reasons:
1)-pedestrians are exposed to safety hazards from traffic and stoplights which also creates more "wait time" penalty
2)-vehicles attempting to access SR520 are adding to greenhouse gas with their wait time emissions from longer stops at traffic signals.

C-031-039

C. The University of Washington is proposing to add an additional pedestrian crossing at Pacific Street across from the new Sound Transit Light Rail Station (SDOT 12/09) and eliminate the skybridge as previously approved. The Tilghman Traffic Report (Exhibit 8) analyzed this additional impact on mobility in the Montlake (SDEIS Report page 3,section H). Another stoplight added with longer crossing times and reduced available space for vehicles to queue, results in degraded performances of travel times for Plan A and L.

Report (Attachment 7 to the Final EIS) for descriptions of the effects of the Preferred Alternative on local traffic volumes and intersection operations.

C-031-032

The purpose of the mediation process was to support neighborhood and community participants in the development of alternatives to be analyzed in the SDEIS. The underlying assumptions of the traffic models have remained the same throughout the development process. Operational changes, on the other hand, were the result of design refinements that neighborhood and community participants submitted for modeling by the SR 520, I-5 to Medina transportation team. Design changes were submitted frequently for the various options under study.

C-031-033

The travel demand model used for the SR 520, I-5 to Medina project includes the current land-use assumptions, population estimates and employment forecasts developed cooperatively by local jurisdictions, including the City of Seattle, and Puget Sound Regional Council through the metropolitan planning process. These regional data are part of the background conditions included in analysis of both the No Build Alternative and the Preferred Alternative in the results of direct effects and cumulative effects. Therefore, the results reflect the presence of planned land-use in both cases, with and without the project. The trips associated with these land use plans are included in the results of traffic analysis described in the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

The metropolitan planning process is federally mandated and requires cooperation among all affected agencies, including the State, local jurisdictions and transit agencies, to comprehensively plan for urban development and transportation needs. WSDOT plans transportation projects that are consistent with regional plans. Cities and counties

C-031-039 Plan K avoids this due to due the design of grade separation of pedestrians and cyclists over vehicular traffic and reduces wait time penalties which facilitate transit use.

C-031-040 **VI. Transit connectivity**

Senate Bill #6099 requires a Westside SR520 bridge design to ensure the optimal connectivity of transit to the Sound Transit Light Rail Station.

A. Option A **does not** accomplish this mandate, leaving a long 1200 foot distance between bus service and the Light Rail station. With weather elements always in play, the lack of direct connectivity creates a penalty, rather than an enhancement to encourage use of transit.
B. Option L also leaves transit riders at a long distance from the new Sound Transit Light Rail station.
Both options have pedestrians crossing at grade level, and transversing a bascule bridge with its delays to connect to busses and onward to other destinations.

C. Both Option K and omitted Option M offer direct connections from Sound Transit Light Rail to busses at the University Triangle. The ease of walking at a grade separated crossing to the University without the delays of both Montlake Bridge openings and the closer proximity of transit connections make this option the best choice.

Plans A and L fall short of the mandate of SB 6099 and should be eliminated.
Only options K and M will accomplish this goal for transit connectivity.

C-031-041 **VII. Visual Quality**

The SDEIS insufficiently addresses the permanent visual impacts that will be left by the 6 lane options proposed. Impacts (pages 31-32 Executive Summary) are lumped together in the statement, ""all options would affect visual quality as a result of the new lids and wider bridges and roadways that would be shifted in some areas and lowered in other areas". Photos reveal the completely unacceptable bridge height of 30 feet which obscures view corridors. Neighborhoods were promised a "low profile" and clearly this is not acceptable and destroys open space views.

From the both Eastside and the Westside, neighborhoods have thrived and been built up to enjoy the view sheds of Lake Washington, the Cascade mountains, Mount Rainier and the Olympic Mountains. In urban neighborhoods the relief and value attributed to these visual treasures can be measured by the more expensive land and taxable home values that have these view sheds.

develop comprehensive plans that are coordinated with this process. They regulate land-use within their jurisdictions and they review proposed developments for adherence to regulations. The Washington Growth Management Act requires jurisdictions to prohibit development approvals that would exceed standards established in the comprehensive plans.

C-031-034

WSDOT strives to keep the general public informed and engaged, while also targeting several key audiences for public outreach, including local neighborhoods, commuters, and special interest groups in accordance with NEPA and SEPA regulations. In addition to public meetings, workshops, and briefings, WSDOT has involved the general public in the SR 520, I-5 to Medina project through project and program web pages, e-mail updates, media press releases, informational displays, and information booths to broaden involvement beyond those who attend public meetings. WSDOT will continue to engage communities and agencies as the project progresses, and would provide the public notifications regulated by the permitting and approval agencies and jurisdictions.

In early 2010, the Washington State Legislature passed and Governor Gregoire signed Engrossed Substitute Senate Bill (ESSB) 6392. ESSB 6392 directs WSDOT to work collaboratively with the City of Seattle, University of Washington, regional agencies including King County Metro Transit and Sound Transit, and other stakeholders to consider design refinements for the Preferred Alternative. The ESSB 6392 workgroup process has assisted with refinement of the Preferred Alternative design evaluated in the Final EIS, and the workgroup recommendations will continue to shape the project as further design development occurs.

For additional information, please see the Agency Coordination and

C-031-041

A. The SDEIS statement on Visual Quality is not accurate

1) All options create a wider footprint affecting EVERY neighborhood in its adjacency. The new designs are more than double the current width, creating visual blight.

2) The 30 foot high profile across lake Washington for a new 6 lane bridge ranges from a low profile of 12-15 feet in Plan K and M to a massive 30 foot profile in Plans A and L.

3) The addition of 15 foot noise walls in addition to any bridge design creates an even higher visual barrier to be seen by nearby residents.

4) Option A has an additional bascule bridge which adds an enormous visual blockade to the Monltlake neighborhood

5) Option A adds a seventh lane on the Portage Bay bridge, wiping out view sheds and basic sunlight to the Seattle and Queen City Yacht Clubs, Portage Bay residents, and house boat residents.

6) Option L erects a 40 foot high bascule bridge which obstructs view corridors from the University of Washington, the Arboretum, Montlake, North Capital Hill , Madison Park and Laurelhurst communities.

7) Option A with LWB ramps create a lid in Montlake cut into 2 parts with a freeway ramp. The LWB ramps also create massive visual blight in Montlake.

Only plan K and M improve the visual impact of the 6 lane option by:
1) Lowering the floating bridge profile, preserving Lake Washington view sheds.

2) Covering the passage through the Arboretum with a berm.

3) Creating a pedestrian green passage at the University of Washington Light Rail station
to the campus and bus routes.

4) Creating a land bridge to connect the experience for park users in the Arboretum.

5) Maximizing the size of lids spaces-not by dividing them into freeway ramps.

C-031-042

B. The photos depicting the visual changes from the new design are not accurate.

1. The photos included in section 4.5, pages 34 and 35 are shot at an existing location and not corrected to show the northern shift in the location of the bridge.

2. Attached (Exhibit #10 and 11) are photos that depict the changes in the Laurelhurst neighborhood view sheds due to the new 6 lane bridge.

Public Involvement Discipline Report and Addendum (Attachment 7 to the Final EIS).

C-031-035

The Preferred Alternative would remove the existing Lake Washington Boulevard eastbound on-ramp and westbound off-ramp, as well as the R.H. Thomson Expressway ramps. Westbound SR 520 traffic would access Lake Washington Boulevard via a new intersection on the Montlake Boulevard lid at 24th Avenue East. Please see Chapter 2 of the Final EIS for more information on the Preferred Alternative. As part of the Arboretum Mitigation Plan, WSDOT has also committed to fund traffic calming measures along Lake Washington Boulevard and to work with the Seattle Department of Transportation on additional measures to manage traffic in the Washington Park Arboretum.

Please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for a discussion of the effects of removing the Lake Washington Boulevard ramps, including traffic volumes and operations on Montlake Boulevard, 23rd Avenue, and Lake Washington Boulevard.

C-031-036

Since the SDEIS was published, FHWA and WSDOT have developed a Preferred Alternative that is similar to Option A, but incorporates a number of design refinements that respond to public and agency comments on the SDEIS. Through analyses conducted for the SDEIS, WSDOT determined that Option K would result in more adverse effects on natural resources than Option A. The Preferred Alternative would include a new bascule bridge parallel to the existing Montlake Bridge. The analysis in the Final Transportation Discipline Report (Attachment 7 to the Final EIS) confirms that the Preferred Alternative with the new bascule bridge would improve transportation operations in the Montlake area, compared to the No Build Alternative. The new bridge would allow

C-031-042

The photos were taken in 2 residences on Webster Point in Laurelhurst.(3008 East Laurelhurst Dr NE and 3012 East Laurelhurst Dr NE)

The photos demonstrates the enormous impact of visual blight with corrections for:
-the location of the bridge 190 feet closer to the north
-30 foot high heights in the floating bridge section
-density of the new design on the new pontoon design

3. Clearly, these photos demonstrate a degraded view shed from residents who have paid top dollar in real estate values to view Lake Washington, Mt. Rainier and the Cascade and Olympic Mountains. This loss is unaccounted for in the SDEIS and should be enumerated as a potential reimbursement to homeowners on both sides of the 6 lane options. Lower real estate taxes from loss of real estate values are omitted from the SDEIS.

4. The SDEIS should be re-done to show quantitatively the real impacts of the new footprint in proximity, width and height in all affected neighborhoods to show the real loss of view sheds.

5. In addition, please refer to the Exhibit #4 which lists all residents who are impacted by the new SR520 footprint in Laurelhurst.

C-031-043

VIII. Wetlands , Water Quality and Parkland (4-f)

The Laurelhurst neighborhood southern border is on Union Bay which is a precious wetland area that has been nurtured from its near demise, back to a viable habitat for rare and native wildlife and plants.

A. Union Bay Ecosystem

The organization, Save Union Bay Association (SUBA) has been active in maintaining and restoring the ecological issues that have developed for the past 40 years.

In addition, Seattle City Council President, Richard Conlin, and Councilperson, Sally Clark have been instrumental in helping SUBA become an entity under Seattle Public Utilities for a lake management district, and obtaining resources to continue to restore its viability.

Attached is the report from SUBA (Exhibit #12) which was written in conjunction from Josh Wozniak from Herrera Consultants (water ecology experts). The report outlines the concerns about Union Bay, both during the construction phases, as well as the permanent effects on the condition of the water quality of the bay and its wildlife habitat.

B. Mitigation

Avoidance of harm and mitigation is suggested in this report for Union Bay to enhance its ability to replace the wetlands that will be eliminated with all of the Option A, L or K.

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-031-037

As described in the SDEIS, the purpose of the project is to improve mobility for people and goods across Lake Washington within the SR 520 corridor in a safe, reliable, cost-effective manner, while avoiding, minimizing, or mitigating impacts on affected neighborhoods and the environment. The critical travel times for travel on SR 520 are during the peak periods when travel demand is highest. The results of traffic analysis for the Preferred Alternative show that mobility along SR 520 would be improved with no adverse effect to traffic operations on the local streets, including Montlake Boulevard.

The Preferred Alternative evaluated in the Final EIS includes construction of a new bascule bridge similar to the one in Option A (please see Chapter 2 of the Final EIS). The roadway capacity provided by the new bridge allows for the Montlake Boulevard corridor to include an HOV lane in each direction and a widened bicycle/pedestrian path. The openings of the two parallel bridges for boats would be synchronized. See the response to Comment C-031-036 regarding traffic effects.

C-031-043 The restoration of native habitat from damage from nutria invasion will help as well as the reductions of invasive milfoil and waterlilies that are impediments to the viability of Union Bay.
See Exhibit # 12 for the full report on Save Union Bay, co-authored all by scientists and officers who reside in the proximity of SR520.

C. Water quality and 4-f Parklands

C-031-044 Changes in the turbidity, and quality of water in and around the new 6 lane option are described in the report from SUBA

LCC has concerns that the full impact on water quality for fish, wildlife and recreational uses by humans are not adequately vetted in the SDEIS. More data and mitigation plans need to be delineated.

C-031-045 D. Exhibit #13 complied by Connie Sidles who is an expert birder, (Audubon member) is an inventory of the birds that have been recently documented using the habitats of Foster Island, Portage Bay and Union Bay. There are 85 species of birds who have been seen in the environment affected by SR520. In addition, there are 18 rare birds and 7 very rare birds who may never return unless an inviting habitat and wetland is provided.

To lose this irreplaceable wildlife in our ecosystem would be a shameful legacy of destruction of their habitat by concrete and must be prevented.
The SDEIS must include a more extensive plan for these birds, and not limit its scope to just the migrating ones required by federal law.

C-031-046 In addition to wetlands the LCC has great concern for the destruction of the extensive network of parklands that surrounds the SR 520 project . The loss of parks is unacceptable, and the law mandates that these impacts be avoided by another viable option. See full report by Gerry Conley on 4-f issues.

IX. Construction issues

C-031-047 **A. Impacts**
The Laurelhurst Community will be heavily impacted by the re-build and expansion of SR520 for a minimum of 8 years. Chapter 6 of the SDEIS attempts to describe the construction impacts that will affect surrounding neighborhoods throughout the project.

1. Attached is our full analysis (excel Exhibit #14) compiled by Jean Amick.

2. In addition the adverse affects on residents of this prolonged project are listed by the report by Bill Mundy (Exhibit #5) in regard to visuals and noise concerns:

Please see Chapter 6 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for detailed information regarding the effects of the Preferred Alternative on local street traffic operations in the Montlake interchange area, including analysis of the effect of bridge openings during the off-peak.

C-031-038

In accordance with the requirements of ESSB 6392, WSDOT has worked with the Seattle Department of Transportation, the City of Seattle Pedestrian Advisory Board, and the Seattle Bicycle Advisory Board to develop design refinements for bicycle and pedestrian facilities. For information on the resulting design refinements, please see the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachment 16 to the Final EIS) and Chapter 7 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

The Preferred Alternative in the Final EIS includes a revised and expanded Montlake Lid, nearly 1,400 feet in length. Design refinements would also improve bicycle and pedestrian connectivity and safety in the SR 520 corridor. With the Preferred Alternative, 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. Please see Chapter 2 of 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. Recommended improvements that would be under the jurisdiction of the City of Seattle include a connection between the regional trail on SR 520 and the new bascule bridge, which would include bicycle/pedestrian improvements along Montlake Boulevard.

C-031-047

Effects During Construction (Chapter 6).

There is either NO or ONLY superficial discussions of construction affects on NMP regarding boat access, noise, vibration and wildlife. (page 6-46 to 6-49). Also, see the above comments relating to the Discipline Reports.

C-031-048

B.View Impacts during Construction

In Chapter 6 it states: "*Under all design options, the greatest temporary change to visual character and quality would result from demolition of the Lake Washington ramps to and from the Arboretum and construction and presence of construction and detour bridges because of their size and complexity. Vegetation would be removed in 30- to 60-foot-wide swaths for the work bridges. Subsequent construction of the permanent new west approach bridges would compound the effects. The combination of the construction bridges, detour bridges, finger piers, and the existing and new bridges would result in substantial degradation of visual character and quality of the south part of Union Bay. The structures would block water- and ground-level view for viewers near the structures. The viewers most affected by this change would be commuters crossing the bridges, park users and boaters, and residents in north Madison Park. Views from the Broadmoor Golf Course would be screened most of the year by tall trees along the shoreline.*" (page 6-54 and 6-55). This statement:

- Is inconsistent (an ERROR) with your statement regarding views (Views, Volume I, page 70) where it states: "*possibly blocking views of Laurelhurst Hills but revealing more open water in Union Bay.*"
- *More"openwater" cannot be true with a bay covered in barges and work bridges!*
- Does NOT discuss mitigation, an OMISSION.

C-031-049

Noise. (re: page 6-65+)

The following is relevant information and comments from several tables in this section:
Table 6.7.1: Equipment – Pile Drivers, Noise Level – 99-105 dBA, Number of piles to be driven: 1987 + 55 for Lake Washington Blvd or 2042 piles total.
Table 6.7.2: Maximum City of Seattle sound level, residential – 55 dBA.
Table 6.7.3: Maximum Exceedence:

Minutes/hour	Exceedence
15	+5 dBA
5	+10 dBA
1.5	+15 dBA

For driving in and pulling out the 2042 pilings (that is 4084 operations) the maximum noise criteria for the City, State, and federal government (NAC) will be exceeded. What is the effective mitigation? The answer to this has been OMITTED.
Table 6.7.4.:Noise Levels that "should NEVER be exceeded."

dBA	Time Duration Exceedence Prohibited
90	Continuously*
93	20 minutes
96	15 minutes

Improvements at the future Montlake Multimodal Center (currently known as the Montlake Triangle) are not part of the SR 520, I-5 to Medina project but are part of the project's affected environment. See Chapters 7 and 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for more information.

C-031-039

The improvements to the future Montlake Multimodal Center (currently known as the Montlake Triangle) described in this comment are not part of the SR 520, I-5 to Medina project but are part of the project's affected environment. Nonetheless, WSDOT has worked with the University of Washington, the City of Seattle, King County Metro Transit, and Sound Transit through the ESSB 6392 process to ensure that the Sound Transit pedestrian bridge over Montlake Boulevard is compatible with WSDOT requirements for such facilities. Future adjacent conditions are included in the traffic model of the Preferred Alternative, and are considered in the analysis of motorized and non-motorized traffic performance.

The pedestrian/bicycle lid over Montlake Boulevard between Sound Transit's University of Washington Station and the Montlake Triangle would reduce delays for motorized and nonmotorized vehicles alike and facilitates transit connections between SR 520 bus service and light rail. Please see the Final Transportation Discipline Report, Chapter 8 for descriptions and exhibits of bus facilities and connections with the Preferred Alternative.

See the response to Comment C-031-036 regarding Option K, and C-031-308 regarding design refinements for transit and pedestrian connections that are part of the Preferred Alternative.

C-031-040

The comment incorrectly states that the transfer distance between Husky Stadium Station and nearby bus service would be different among

C-031-049

99 7.5 minutes

*I believe this is an error, for it means at 90 dBA or greater the noise level cannot be exceeded.
Therefore, if any piles are driven the noise levels will be exceeded. But, this must NEVER happen. What is the answer to this dilemma? It has been OMITTED.
In addition, just so we are on the "same page," don't suggest these noise levels will not reach NMP. First, your noise profiles do not take into account the construction bridge. Second, they do not take into account pile removal. Third, they do not take into account the vibration index.

C-031-050

Vibration (reference page 6-69).

Data and analysis on vibration testing has been OMITTED.
Reference "Construction Vibration Effects" page 6-69. In the middle of the paragraph it states "*It is unlikely that vibration levels would exceed 0.5 inches per second at distances greater than 100 feet from the construction sites.*" In that regard:

- Distances from the construction bridge have been OMITTED;
- Data and analysis has been OMITTED regarding vibration tests and levels;
- Based on the experiences at Canterbury Shores regarding driving and pulling piles the vibration level exceeded 1.27 inches per second. This data and the effects have been OMITTED.
- Due to the poor quality of graphics in Exhibit 6.7-3 (at least on my CD), it is not possible to tell where the noise contours are in relation to the land (i.e. shoreline, land improvements, etc.). This must be an ERROR.

C-031-051

In addition to the above observations, **work place lightening is not included in the SDEIS.**
Bright work lighting can have severe adverse affects on fish and wildlife, boaters, drivers on the existing bridge and to residents who must look at bright lights during the construction process.

C-031-052

Effects During Construction (Chapter 6).

There is either NO or ONLY superficial discussions of construction affects on NMP regarding boat access, noise, vibration and wildlife. (page 6-46 to 6-49). Also, see the above comments relating to the Discipline Reports.

C-031-053

View Impact.

In Chapter 6 it states: "*Under all design options, the greatest temporary change to visual character and quality would result from demolition of the Lake Washington ramps to and from the Arboretum and construction and presence of construction and detour bridges because of their size and complexity. Vegetation would be removed in 30- to 60-foot-wide swaths for the work bridges. Subsequent construction of the permanent new west approach bridges would compound the effects. The combination of the construction bridges, detour bridges, finger piers, and the existing and new bridges would result in*

Options A, K, and L. The locations of the bus stops near Husky Stadium Station would not be affected by the I-5 to Medina Project. The nearest stops to light rail would have been the existing stops located on NE Pacific Street near the University of Washington Medical Center. This location is consistent with the Montlake Multimodal Center concept established in the High Capacity Transit Plan in coordination with King County Metro, Sound Transit, and the University of Washington. The location of bus stops relative to the future light rail station is the responsibility of King County Metro, in coordination with affected agencies.

A workgroup established by ESSB 6392 evaluated the transit connections in the Montlake area, identified preferred bus stop locations, and made recommendations that are included in the Preferred Alternative. For information on the resulting design refinements, please see the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachment 16 to the Final EIS). Information about walking distances and transit effects with the Preferred Alternative is provided in Chapter 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS).

C-031-041

The visual quality analysis was conducted in accordance with FHWA's visual quality and aesthetics impacts assessment methodology and WSDOT's Environmental Procedures Manual, using the checklist provided in Exhibit 459-1 of the manual. The purpose of adhering to an approved and established methodology is to conduct an objective, unbiased evaluation. The WSDOT Evaluation Matrix was used to conduct the quantitative assessment, the results of which were summarized in text form in Exhibit 1-1 of the SDEIS Visual Quality and Aesthetics Discipline Report.

The purpose of the visual quality assessment is to disclose how the

C-031-053

substantial degradation of visual character and quality of the south part of Union Bay. The structures would block water- and ground-level view for viewers near the structures. The viewers most affected by this change would be commuters crossing the bridges, park users and boaters, and residents in north Madison Park (underline mine). Views from the Broadmoor Golf Course would be screened most of the year by tall trees along the shoreline." (page 6-54 and 6-55). This statement:

- Is inconsistent (an ERROR) with your statement regarding views (Views, Volume I, page 70) where it states: "*possibly blocking views of Laurelhurst Hills but revealing more open water in Union Bay.*"
- Does NOT discuss mitigation, an OMISSION.

C-031-054

Noise. (re: page 6-65+)

The following is relevant information and comments from several tables in this section:
Table 6.7.1: Equipment – Pile Drivers, Noise Level – 99-105 dBA, Number of piles to be driven: 1987 + 55 for Lake Washington Blvd or 2042 piles total.
Table 6.7.2: Maximum City of Seattle sound level, residential – 55 dBA.
Table 6.7.3: Maximum Exceedence:

Minutes/hour	Exceedence
15	+5 dBA
5	+10 dBA
1.5	+15 dBA

For driving in and pulling out the 2042 pilings (that is 4084 operations) the maximum noise criteria for the City, State, and federal government (NAC) will be exceeded. What is the effective mitigation? The answer to this has been OMITTED.
Table 6.7.4.:Noise Levels that "should NEVER be exceeded."

dBA	Time Duration Exceedence Prohibited
90	Continuously*
93	20 minutes
96	15 minutes
99	7.5 minutes

*I believe this is an error, for it means at 90 dBA or greater the noise level cannot be exceeded.
Therefore, if any piles are driven the noise levels will be exceeded. But, this must NEVER happen. What is the answer to this dilemma? It has been OMITTED.
In addition, just so we are on the "same page," don't suggest these noise levels will not reach NMP. First, your noise profiles do not take into account the construction bridge. Second, they do not take into account pile removal. Third, they do not take into account the vibration index.

C-031-055

C. Vibration (reference page 6-69).

Data and analysis on vibration testing has been OMITTED.
Reference "Construction Vibration Effects" page 6-69. In the middle of the paragraph it states "*It is unlikely that vibration levels would exceed 0.5 inches per second at distances greater than 100 feet from the construction sites.*" In that regard:

existing visual quality conditions would change due to the location, size, and character of the new facility. Disclosing effects allows stakeholders and decision-makers to identify how effects can be minimized or reduced through the design process, or mitigated as warranted. The aesthetics of a finished design will be an important part of the design development process that follows the NEPA Record of Decision.

With the Preferred Alternative, the height of the floating bridge would be approximately 10 feet lower than described in the SDEIS, and most of the roadway deck support would be constructed of steel trusses instead of concrete columns. Thus, the floating bridge roadway would be 20 feet above the water (about 10 feet higher than the existing bridge). The typical roadway cross-section across the floating bridge would be 115 feet wide, which is narrower than the SDEIS options, but still wide enough to allow for potential future light-rail infrastructure.

Please see the response to Comment C-031-010 regarding noise walls. Additional noise reduction strategies are included in the design of the Preferred Alternative, and noise wall locations have changed since the SDEIS was published. Noise walls are recommended only in the east approach area, and potentially along I-5 in the North Capitol Hill area. Please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for more information on noise reduction strategies and noise wall locations.

The new bascule bridge with the Preferred Alternative is similar to the one analyzed in Option A in the SDEIS. WSDOT acknowledges that the new bascule bridge could change the visual quality of the historic Montlake Bridge. Construction of the new bascule bridge parallel to the existing Montlake Bridge would create a change in visual quality for properties on the north side of the Montlake Historic District. Also, the view of the historic bridge would be temporarily altered during construction. However, the new bascule bridge would not obscure the

C-031-055

- Distances from the construction bridge have been OMITTED;
- Data and analysis has been OMITTED regarding vibration tests and levels;
- Based on the experiences at Canterbury Shores regarding driving and pulling piles the vibration level exceeded 1.27 inches per second. This data and the effects have been OMITTED.
- Due to the poor quality of graphics in Exhibit 6.7-3 (at least on my CD), it is not possible to tell where the noise contours are in relation to the land (i.e. shoreline, land improvements, etc.). This must be an ERROR.

C-031-056

D. Lighting
The SDEIS must include a plan for construction lighting that is compatible with the Health Impact Assessment from the SB#6099. There is no plan currently included.

C-031-057

E. Traffic and Mobility
Another major concerns noted in Amick's comments for LCC during the construction phase include mobility and transportation routes for access by vehicles, pedestrians and cyclists during construction. Road closures and crossovers will have severe impacts on NE Seattle access to SR520 and I-5. This is especially true with the cumulative effects of planned land use development such as University Village Shopping Center, QFC retail space and apartments and the addition of 400 more beds and 1200 more staff at Seattle Children's Hospital, along with the completion of the Sound Transit Light Rail Station, all within 1.5 milers of the SR520 project.

Thus, The SDEIS has omitted key information for construction impacts and lacks concrete noise and visual mitigation techniques for building any 6 lane option.

X. Environmental Justice and fish stock quality

C-031-058

A. The Muckleshoot Tribe

This native American tribe has had long cultural ties to the region surrounding the SR520 bridge. The SDEIS describes the issue briefly in the Executive Summary(page 41)

1. Not only with the tribe have diminished access to fishing, but recently there has been a finding of an archeological artifact in Union Bay, near Waterway #1 by Judith Thorton, a University of Washington Professor. A rare mahogany red chert biface was unearthed. Dr. Thorton is in contact with the Burke Museum and the Muckleshoot Tribe archeologist, Laura Murphy to assess the implications of the
(See Exhibit #15)
2. It is essential that the SDEIS address the location of such potential important cultural findings and ways to protect their demise in the construction of SR520.

C-031-059

B. Fish Migration temperatures and shading impacts

view of the existing Montlake Bridge, and the use of context-sensitive design would reduce the visual effects of the new bascule bridge. The Section 106 Programmatic Agreement (Attachment 9 to the Final EIS) stipulates that the new bascule bridge design must be in keeping with the Secretary of the Interior's Standards or the Treatment of Historic Properties guidelines to assure the new bridge design is compatible with the historic bridge.

The Preferred Alternative design for the Portage Bay Bridge replaces the former auxiliary lane with a managed shoulder, which would operate during the peak periods. The managed shoulder is needed to address congestion associated with the volume of vehicles entering from the Montlake interchange as well as those vehicles exiting to I-5. It would also improve operations on both the SR 520 westbound mainline and on Montlake Boulevard compared to the No Build Alternative. The Preferred Alternative would also remove the existing Lake Washington Boulevard ramps. Please see Comment C-031-035 for more information regarding Lake Washington Boulevard.

Please see the response to C-031-036 regarding Option K, and Comment C-031-005 regarding Option M. See Chapter 2 for discussion of how the Preferred Alternative was identified and Table 2-3 regarding design refinements in the Preferred Alternative that respond to public comments.

C-031-042

Because Chapter 4 of the SDEIS described the current conditions of the SR 520, I-5 to Medina project area, all images in Section 4.5 were of the existing SR 520 corridor. Therefore, the images on page 4-34 and 4-35 were not related to the new bridge alignment, and it is difficult to respond to the specific concerns in this comment. Please see Section 5.5 of the SDEIS and the Visual Quality Discipline Report (Attachment 7 of the SDEIS) for information regarding the visual quality effects and

C-031-059

1. In regard to the enhancement of the environment for improving the quality of fish stock, please refer to the report submitted by Maurice Cooper, an expert in the field of fish migration and habitat and engineer. (Exhibit #16)

2. The SDEIS presents an erroneous assumption about the migration of salmon through the Lake Washington passage and on through the Montlake Cut.
With the phenomenon of gradually increasing warmer waters in Lake Washnigton in the summer , migrating salmon have been documented to travel under the bridge structure, whose shaded effects provide cooler water streams that salmon prefer.

The SDEIS (page 46 in the Executive Summary) depicts the negative impact on fish travel and habitat due to shading by each option.
3. Plan K has the lowest profile of the 3 options and that would enable the shading needed to cool the water passages for the salmon.

Thus, the concept that shading is bad for fish is untrue, and not documented. This cooling will become even more important as Global warming continues to raise the temperatures in Lake Washington over the life of the new SR520.

Plan K with its lower profile best protects the fish stocks and should be the preferred option. Plans A and L will produce a warmer temperature and less protection for the summer migration of salmon.

C-031-060

XI. Cumulative Effects
A critique of the Cumulative effects in numerous categories is attached (Excel Exhibit #16).
The document includes inaccuracies in the SDEIS and omissions. Most topics have been addressed in the remarks above. but the page and report references are detailed.

Comments point out inaccuracies in the SDEIS as well as omissions.

Key issues are land use omissions, traffic effects, air quality, visual quality, greenhouse gas, noise and water resources which will be affected by the 8 year project in dense urban neighborhoods and in environmentally sensitive areas.
Specific pages are referenced in this exhibit and must be reviewed.

Summary

C-031-061

The Laurelhurst Community Club supports the re-build of a safer SR520 bridge that meets the transportation goals and is built with a context sensitive design.
In addition, would like to continue active participation in is design and mitigation processes as the final plan develops.
In analyzing the SDEIS, the current three options presented fail to meet the criteria that offers the State of Washington an optimal design for the next 50-75 years.

visualization of the SDEIS options. The visualizations in these sections represented the level of detail available at the time of publication.

The Final EIS includes an analysis of the visual quality of the Preferred Alternative. The visual quality analyses in both the Final EIS and the SDEIS were performed using the FHWA Visual Impact Assessment methodology for highway projects. Please see the Potential Effects Section of the Visual Quality and Aesthetics Discipline Report Addendum (Attachment 7 to the Final EIS) for details regarding potential changes to visual quality, as well as new visualizations.

C-031-043

WSDOT will mitigate the effects of construction and operation of the SR 520, I-5 to Medina project on wetlands and wetland buffers, including wetland fill (loss) and wetland shading. WSDOT has coordinated with the University of Washington, the Seattle Parks and Recreation Department, the Arboretum and Botanical Garden Committee (which includes both agencies, as well as the Arboretum Foundation), and appropriate resource agencies to identify wetland mitigation measures in both the Washington Park Arboretum and the Union Bay Natural Area. WSDOT has also met with SUBA and exchanged data about the Union Bay Natural Area.

After conducting a literature review of milfoil and associated treatment programs, WSDOT determined that the benefits of treatment would be limited and short-term. Other methods of mitigation would be a better use of funds, because the costs of the milfoil treatments would not be justified by ecological benefits. Therefore, WSDOT will not implement a milfoil reduction plan. WSDOT is not proposing to control nutria in the Washington Park Arboretum unless it is determined that nutria are affecting mitigation plantings in the Arboretum (should such plantings occur).

C-031-061

The lack of inclusion of Option M which included a short immersed tube tunnel under the Montlake Cut is a glaring omission of a design solution which has the potential to achieve the region's goals for greater mobility of transit, pedestrians, cyclists and vehicles.
Plans A and L fall short on improving mobility in Seattle to and from SR520. Rather, these plans will cause further traffic congestion by their inherently faulty designs.

An SDEIS design that provides for the future growth of the region must include features (in Plan K) such an improved grade separated connection between transit modes to facilitate transit use and reduce greenhouse gases.
Plans K or M with the tunnel feature under the Montlake Cut are the only designs that include that logical provision.

Plans K and M were "fully loaded" in inclusive mobility and environmentally friendly features from the start, including a berm in the Arboretum and safer pedestrian crossings. However, after Mediation, excess costs including a $500,000,000 kickback to the University of Washington for a parking garage replacement was added to the design after the Mediation process ended.
The actual costs of the tunnel in option M is only $49.5 million, well within the budget of the $4.65 billion total. Unfortunately, the actual cost analysis and data was buried in a cost report that was only revealed on the date that the Legislative Work Group was voting on their "preferred" option. Thus, the tunnel plan costs were over stated by a half billion dollars (at the very least).

In addition, the SDEIS process was hurried along at the end of the calendar year of 2009 by Legislators who were facing the worst budget deficit and recession in the history of the State of Washington. Their mottos were "just get it done" and "go with the cheapest". The results were that Plan A chosen as a preferred solution-easy to understand and the cheapest estimate on the table.

Laurelhurst Community Club believes that the State and its **citizens can do better because we know better.**
WDSOT can produce a more rigorous SDEIS and include more global and environmentally sound options which should be driving this process and bridge design.

Looking back in 25 years from the ribbon cutting of the new bridge, the Governor, the State of Washington, the Cities of Seattle and Bellevue and their surrounding communities who will pay for it, should be able to look at the decision today, and know it was an investment in a transportation system that provides solutions for mobility and preserves the resources that are so valued by its citizens.

Report prepared by:
Colleen McAleer

Laurelhurst Community Club Trustee and State Mediation Representative for SR520

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For information on wetland effects and potential mitigation, please see the Final Conceptual Wetland Mitigation Plan (Attachment 9 to the Final EIS) and the Ecosystems Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-044

Comment noted. Please see Chapters 5 and 6 of the Final EIS for an analysis of the effects of the Preferred Alternative on water and natural resources.

C-031-045

During the shoreline permit process, WSDOT developed suitable mitigation for effects on upland wildlife habitat in coordination with the City of Seattle. Upland buffers will also provide upland wildlife habitat around wetlands where mitigation will occur. Please see the Conceptual Wetland Mitigation Plan (Attachment 9 to the Final EIS) for details.

C-031-046

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.

As required under Section 4(f), WSDOT evaluated whether there were feasible and prudent alternatives that would avoid the use of Section 4(f) properties, including parklands. WSDOT's research and analysis concluded that there were no feasible and prudent alternatives to the use of Section 4(f) resources. Consequently, WSDOT has included all possible planning to develop a Preferred Alternative that would result in the least harm to Section 4(f) properties, and the least overall harm, compared to the other alternatives considered in the Section 4(f) evaluation. The Final Section 4(f) Evaluation (Chapter 9 of the Final EIS)

Exhibit Directory for SDEIS-Laurelhurst Community Club
April 15, 2010

Exhibit 1 Capacity recommendations by Maurice Cooper

Exhibit 2 GPS 100 foot northern location of Floating Bridge Segment 1

Exhibit 3 LCC noise documents

Exhibit 4 List of affected Laurelhurst citizens -noise and visual impacts

Exhibit 5 SDEIS Comments from Bill Mundy

Exhibit 6 Marcia Baker-Air Quality and Greenhouse Gas

Exhibit 7 Traffic Modeling analysis Carl De Marken

Exhibit 8 Tilghman Transportation Analysis

Exhibit 9 Cumulative Development Land Use Projects in NE Seattle

Exhibit 10 Photos of Laurelhurst residence by Aaron Weholt-Legal Media

Exhibit 11 Photos -Webster Point residence (new bridge design) -Weholt

Exhibit 12 Save Union Bay analysis and Mitigation recommendations

Exhibit 13 Connie Sidles Expert Birding Inventory near Foster Island

Exhibit 14 Construction Discipline Report Analysis-Jean Amick

Exhibit 15 Muckleshoot Artifact Report-Judy Thorton

Exhibit 16 Cumulative Effects Discipline Report -comments by McAleer

Exhibit 17 Bascule Bridge Opening Data from 2008

demonstrates that the Preferred Alternative does the least harm to Section 4(f) properties and the least overall harm, and also discusses the mitigation for the project's Section 4(f) use.

C-031-047

Construction of the SR 520, I-5 to Medina project is proposed to be complete by 2018, and the Laurelhurst neighborhood would experience construction effects for fewer than 5 years. Laurelhurst would be physically separated from a large majority of the construction activities.

Effects found to be specific to a site or area are called out as such. The statements in the SDEIS regarding construction effects were applicable to the North Madison Park area as well as other areas. For a detailed discussion of construction effects, please see Chapters 3 and 6 of the SDEIS and Final EIS, as well as the Construction Techniques and Activities Discipline Report and Addendum (Attachment 7 to the Final EIS).

The responses to Comments C-031-048 through C-031-057 address specific concerns about construction effects.

C-031-048

This comment inaccurately compares statements regarding effects during construction of the SR 520, I-5 to Medina project with statements about effects after construction has been completed. While Chapter 6 of the SDEIS discussed effects during construction, page 70 of the SDEIS Visual Quality Discipline Report referred to effects during operation.

Please see pages 50 through 60 of the SDEIS Visual Quality Discipline Report for a discussion of the effects of construction on views. WSDOT included methods for minimizing and avoiding negative visual effects in the SDEIS Visual Quality Discipline Report. This information is updated

Exhibit 1 Capacity recommendations by Maurice Cooper

APPENDIX J Cooper on 520 capacity

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-

C-031-062

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:

C-031-063

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.

in the Visual Quality Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-049

WSDOT will comply with the applicable City of Seattle, and other state and federal permits and approvals obtained for construction to manage pile-driving activities. Additionally, WSDOT will employ best management practices during construction to minimize noise generated from pile-driving. Please see the response to Comment C-031-015 for more information.

C-031-050

WSDOT has found no evidence to conclude that residents at Canterbury Shores would experience vibration levels above those discussed in the SDEIS Noise Discipline Report. WSDOT will implement steps to monitor and manage noise during construction as outlined in WSDOT's construction management procedures and in accordance with local, state, and federal guidelines. Like construction noise, construction vibration is an effect that is monitored and managed in the field. By monitoring the vibration effects at certain locations, WSDOT will ensure that vibration levels are within the acceptable range according to United States Department of Transportation guidelines. WSDOT will work to prevent vibratory effects and maintain means for communication about construction activities, including those related to vibration.

For information on vibration effects and best management practices for minimizing these effects, please see the Noise Discipline Report and Addendum (Attachment 7 to the Final EIS).

C-031-051

In the SDEIS, WSDOT recognized the potential effects of nighttime construction lighting with the following statement: "...slower migration

APPENDIX J Cooper on 520 capacity

C-031-064

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.

C-031-065

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.

C-031-066

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

rates through the area, when combined with the ambient light levels, could result in greater exposure of fish to predators." However, Section 6.11 of the Final EIS and the Ecosystems Discipline Report Addendum include more discussion of the potential effects of nighttime construction lighting.

WSDOT acknowledges that residents of neighborhoods surrounding the SR 520, I-5 to Medina project area may experience some glare from nighttime construction lighting; however, these effects can be minimized by employing best management practices such as shielding lamps on tall poles and minimizing their use. Please see the Visual Quality and Aesthetics Discipline Report Addendum (Attachment 7 to the Final EIS) for information on construction lighting associated with the Preferred Alternative.

C-031-052

Effects found to be specific to a site or area are called out as such. The statements in the SDEIS regarding construction effects were applicable to the North Madison Park area as well as other areas. For a detailed discussion of construction effects, please see Chapters 3 and 6 of the SDEIS and Final EIS, as well as the Construction Techniques and Activities Discipline Report and Addendum (Attachment 7 to the Final EIS). The Final EIS includes updated information on construction effects of the Preferred Alternative. The responses to Comments C-031-048 through C-031-057 address specific concerns about construction effects.

C-031-053

Please see the response to Comment C-031-048. For findings regarding visual quality with the Preferred Alternative, please see the Potential Effects and Mitigation sections of the Visual Quality and Aesthetics Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-066

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.

C-031-067

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 constaints 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.

C-031-054

Please see the responses to Comments C-031-015 and C-031-049 for information regarding noise levels and City of Seattle regulations.

C-031-055

Please see the response to Comment C-031-050 regarding vibration effects during construction.

C-031-056

Please see the response to Comment C-031-003 regarding consistency with the Health Impact Assessment. For information on construction lighting, please see Comment C-031-051. More detailed information on construction lighting will be available during the permitting phase of the SR 520, I-5 to Medina project.

C-031-057

Transportation effects during construction were discussed in Chapter 10 of the SDEIS Transportation Discipline Report. Some assumptions regarding construction, including road closures, and construction trucks were revised since publication of the SDEIS. Traffic analysis indicates that local street operations will be similar to existing conditions during most of construction. Please see Chapter 10 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for information about the effects on transportation during construction of the Preferred Alternative.

C-031-058

The SDEIS included discussions of effects on tribes in the SR 520, I-5 to Medina project area throughout the document, and the Final EIS does as well. Tribal coordination has been an important aspect of the EIS process. For information regarding outreach to tribes, please see the Environmental Justice Discipline Report and the Agency Coordination

Exhibit 2 GPS 100 foot northern location of Floating Bridge Segment 1

C-031-068

From: moz cooper <mozcooper@hotmail.com>
To: billandlin@aol.com; fran@roanokecap.com
Cc: ted@thomaslaneassoc.com; pmiller@arboretumfoundation.org; nbrainard@qwest.net; seattlebelchers@comcast.net; jon@dubman.com; gbstone@comcast.net; jeanseattle@earthlink.net; rosencrantz6@hotmail.com
Subject: RE: GPS segment A
Date: Mon, Jun 2, 2008 12:49 pm

Fran., et al.,

To reinforce Colleen's point, the main issue is unquestionably noise. Whatever happens, or doesn't happen with the bridge, the installation of quiet pavement is paramount. The immediate issue in our neighborhood is, if early tolling is to be implemented, and soon, then what are we getting for it? Evidently quiet pavement would be the request - maybe demand. Or maybe WSDOT will go blindly ahead thinking everyone is just happy as clams to be taxed for no tangible benefit - the uproar may surprise them.

As to our new bridge issues, the key one is height. If the 4 to 5 feet above the water is committed by WSDOT, then we will have less concern about the 100 versus 200 feet movement north of the alignment. The key word here is "if". I'm sure Colleen; Gary and Jean - our happy boaters on Saturday - would agree with this, and share Madison Park's height-of-the-bridge concern.

See y'all Thursday.

Maurice.

To: fran@roanokecap.com
Subject: GPS segment A
Date: Mon, 2 Jun 2008 12:59:15 -0400
From: billandlin@aol.com
CC: ted@ThomasLaneassoc.com; mozcooper@hotmail.com; pmiller@arboretumfoundation.org; nbrainard@qwest.net; seattlebelchers@comcast.net; jon@dubman.com; gbstone@comcast.net; jeanseattle@earthlink.net; rosencrantz6@hotmail.com

Hi Fran and all,
Of course we are absolutely a coalition-no overstepping boundaries intended here, but there is some time saving delegation/specialization of some tasks when it does not change the overall design,schedule or budget which affect the whole group.
On May 20th, David Dye asked specifically of our 2 neighborhoods directly affected by this part of the bridge, to give him a "yes or no" if 100 feet" would be acceptable" so that WSDOT could nail down the footprint under their very tight time constraints for creating the final documents. We promised him a definitive answer by May 31st so the starting point A segment could be integrated in the Parkway Plan drawings for the next meeting.

It appeared that only Madison Park and Laurelhurst was affected/interested to go out for the "look" when Gary volunteered to direct the mission. As it turned out, we waited until Maurice to be on board after his return from his trip and it was very helpful to experience the location from the bridge and the land.

After our tour, we reinforced that all strongly agree that quiet pavement is still the most germaine part of our Plan K (or any A Plan) for that matter, and hope that we can gather a symposium of experts to make this work on 520-in some permanent way and form.

Cheers!

Colleen

and Public Involvement Discipline Report in Attachment 7 to the SDEIS, and new information in their addenda (Attachment 7 to the Final EIS).

WSDOT has taken great care and concern for the protection of the cultural resources within the SR 520, I-5 to Medina project area. WSDOT cultural resource specialists ensure compliance with all relevant laws and regulations related to the protection of cultural resources and that the effects of the project on these resources are minimized.
The SDEIS Cultural Resources Discipline Report discusses the regulatory and historical context of the project, as related to the protection and preservation of archaeological and historic resources. The report describes the extent of records and archival research, the methodology for identifying and evaluating archaeological and historic resources within the project area. It discloses the potential effects of the SR 520, I-5 to Medina project on cultural resources, and describes as the opportunities and commitments for mitigation. Please see the Final Cultural Resources Assessment and Discipline Report (Attachment 7 to the Final EIS) within the project area.

C-031-059

The discussion of potential effects of overwater shade in the SDEIS was based on juvenile salmonids predation and migrations, while the report provided by Maurice Cooper is based on adult salmonid migration behavior. These two life stages have different sensitivities and vulnerabilities to environmental conditions.

The bridge structure could have a marginal effect on the surface of the water column, but there is no information that documents such effects to be substantial enough to affect the migration behavior of salmonids. In addition, the potential cooling effects of the bridge would be greatest in the shallow water areas in the Washington Park Arboretum and Portage Bay, areas which are not expected to be used substantially by salmonids for migration or rearing. Through the analyses conducted for the SDEIS,

C-031-068

-----Original Message-----
From: Fran Conley <fran@roanokecap.com>
To: billandlin@aol.com
Cc: ted@ThomasLaneassoc.com; mozccoper@hotmail.com; pmiller@arboretumfoundation.org; nbrainard@qwest.net; seattlebelchers@comcast.net; jon@dubman.com; gbstone@comcast.net; jeanseattle@earthlink.net; Robert Rosencrantz <rosencrantz6@hotmail.com>
Sent: Sun, 1 Jun 2008 10:18 pm
Subject: Re: New item and possible agenda items for 6/17

I think we need to ask other members of the coalition whether it's ok with them if the center of the bridge is no greater than 100 feet north of the current location. Reactions, people?,,... understanding that those most affected... Laurelhurst, Madison Park, and the boating community... have agreed below.

Our next meeting is this Thursday, June 5, 2 PM at Solid Ground.

I'd like to ask everyone again to be sure to check in with each other, not just with WSDOT, at our upcoming meeting. We are a coalition; we derive our power from the fact that we hang together and support each other.

Fran

billandlin@aol.com wrote:

> Hi Fran and all,
> We can add one more item that was **decided** on Saturday morning to our list:
> "The center line of the new bridge structure will be no greater than 100 feet north of the current location."
>
> Gary Stone gratiously took Maurice, Jean Amick and myself out to locate the GPS points provided by WSDOT.
> It was extremely helpful and the difference in 200 vs 100 feet was enormous.
> We all agreed that it should not be moved any farther north than 100 feet.
>
> On another note, I will be on a conference call to suggest items for the 6/17 official mediation.
> Some points will be obvious:
> -a review of the Parkway Plan K with various options
> -a review of Plan A with various options
> -is anyone serious about L?
>
> Other topics:
> -Report from the international tunnel experts-recommendations and findings-what is our best option?
> -Preliminary review/update from an indepedent transit consultant on mobility/ system functioning for designs
> -Traffic modeling scenarios for all options
> -New budget data
> -Requests for immediate mitigation for Westsiders from early tolling-quiet pavement?
> -Preliminary report on Tribal issues
> -Data from fish and environmental issues
>
> That should cover 6 hours!
> Let me know your feedback by Monday at noon.
> Thanks,
>
> Colleen

WSDOT determined that Option K would result in more effects on natural resources than Option A. Please refer to the Ecosystems Discipline Report Addendum (Attachment 7 to the Final EIS) for a discussion of the effects of the Preferred Alternative.

C-031-060

See the responses to subsequent comments regarding specific concerns.

C-031-061

The three design options analyzed in the SDEIS meet the project purpose and need. However, since the SDEIS was published, FHWA and WSDOT have identified a Preferred Alternative that is similar to Option A, but incorporates design refinements that respond to community and stakeholder comments on the alternative and design options analyzed in the SDEIS, and also meets the purpose and need for the project. Please see the responses to Comments C-031-002 and C-031-005 regarding the SDEIS options and the identification of the Preferred Alternative. Please Chapter 2 in the Final EIS and the responses to comments C-031-035, C-031-038, and C-031-040 regarding the ESSB 6392 process and how stakeholders have been involved in refining the Preferred Alternative.

Through the analyses conducted for the SDEIS, WSDOT determined that Options K and L would result in higher impacts to natural resources than Option A. In particular, a tunnel option would have substantially more effects on wetland and aquatic resources and received considerable negative comments from regulatory agencies from which permits and approval for the tunnel structure must be obtained.

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

Exhibit 3 LCC noise documents

C-031-068

To: Seattle City Council
Communities' request to retain noise protection ordinance laws

Residences in the nearby proximity of construction projects request that existing noise restrictions be of the highest priority in protecting the quality of life in Seattle's dense residential neighborhoods. The current laws are reasonable and we urge the Seattle City Council to retain the regulations as they are written.

The affected neighborhoods adjacent to the 5 -6 year construction of 520 replacement bridge include Madison Park, The Arboretum, Laurelhurst, Montlake, the University of Washington, North Capital Hill, Eastlake and Roanoke Park to the west, and Hunt's Point, Medina and Clyde Hill to the east.
These citizens' residences are the backbone of cities and towns' established communities. The Viaduct replacement will be on the borders of downtown, Belltown and lower Queen Anne as well.

Seattle Children' Hospital will generate 20 years of noisy construction. A home should be a haven away from the daily assault of the stress of congestion and noise experienced from the work day, rather than itself being a source of such.
The density of our urban growth has made the City rich in diversity, but the laws must not be rescinded that protect their environment.

Children should be able to play in their yards and neighborhood parks as well as seniors at home sitting out on their patios without 24 hour noise assaults.
Kayakers in Union and Portage Bays, bicyclists, pedestrians and birders should be able to enjoy a peaceful setting, connecting them more closely to nature. Some time must be allocated for residents to enjoy a respite from the daily stress and noise to re-charge their senses.
With our recent budget cuts and escalating unemployment to families, we must protect the precious environment of the home, parks and public facilities.

Construction noise from repetitious pile driving and pounding carries loudly across Lake Washington and Puget Sound. Jarring sounds from machinery of the structure create a constant irritation to residents.
Trucks loading, unloading and traveling through residential streets are also a source of noise.
These sources of constant pounding noises carry repetitive sounds even through the double pane windows of nearby residences.
Concrete road surfaces amplify these road noises as well.
Seattleites keep their windows open in an effort to save their carbon footprint and will not be able to be at home with comfortable temperatures if their windows must be closed tightly to prevent intrusive construction noise.

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 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.

The new bascule bridge in Option A and the Preferred Alternative 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. See the responses to subsequent comments in this item regarding transportation, and Sections 5.1 of the SDEIS and Final EIS, and Chapter 6 of the Transportation Discipline Report and Final Transportation Discipline Report for further discussion.

C-031-062

The transportation analysis performed for the SDEIS options and the Preferred Alternative accounts for roadway geometric conditions and non-geometric conditions that affect traffic operations. The effects of non-geometric factors including sun glare, traffic composition ("mix"), and driver behavior are all represented in the analysis. However, the purpose of the transportation analysis is to evaluate the effects of infrastructure changes defined in the description of alternatives. The effects of the existing bridge geometry are represented in the no-build alternative, as are the differences that would result from the SDEIS Options and the Preferred Alternative.

C-031-063

On the Eastside, traffic conditions associated with the on-ramps,

C-031-068

December 4, 2009
To: The Legislative Work group
From: Coalition for the Sustainable SR520
Montlake, Madison Park, Laurelhurst, Roanoke Park,North Capital Hill and the Boating Community with respect to guidelines from the Arboretum
Re: Communities' request for noise abatement for SR 520

I. Introduction
Citizens of Washington State whose residences are in the nearby proximity of SR 520 requested in the State Mediation process of 2007-08 that noise reduction be of the highest priority in the design of the new bridge structure and its ramps. Noise reduction continues to be the most important concern. It is not addressed in the current SDEIS SR520 Bridge Design and we request that it be included as part of its integral design.

The communities directly affected by the noise impacts include Madison Park, The Arboretum, Laurelhurst, Montlake, the University of Washington Hospital and Campus, North Capital Hill, the University District, Eastlake and Roanoke Park to the west, and Hunt's Point, Medina and Clyde Hill to the east.
These citizens' residences are the backbone of the cities' established communities.
Bt definition, residences should be a haven from the daily assault of stress from congestion and noise experienced from the workday, rather than be the source of such bombardment.

For recreational users such as the kayakers in Union and Portage Bays, bicyclists, pedestrians and birders in the Arboretum should be able to enjoy a peaceful environment, connecting them more closely to nature without being blasted by SR520 bridge noises. Fish and wildlife are also negatively impacted by greater decibels generated by the expansion of this structure, and our goal is to promote better (not worse) habitats.

The high pitch noises from traffic on today's 520 bridge carry loudly across Lake Washington. Jarring sounds from vehicles (especially trucks shifting gears) as they change speeds on the high rises of the structure create a constant irritation to residents, particularly at night and on cloudy days. Windows must be closed tightly to block sound rather than left open for fresh and cooler air on hot summer days and nights.
Expansion joints are also a source of constant pounding noises that carry repetitive sounds even through the double pane windows of nearby residences.
Concrete road surfaces that wear poorly amplify these road noises, not mitigate them.

II. Why is the noise generated from SR520 such an important issue?
Chronic sound pollution can trigger the body's stress response, and it also can cause excessive stress hormones to be produced.
There are numerous studies conducted by Professor Gary Evans of Cornell University and currently with the Obama Administration, which found that loud environmental noise interferes with children's ability to learn.

weaving across HOV lanes, and poor sight distance due to roadway geometry will be addressed by the SR 520, Medina to SR 202: Eastside Transit and HOV Project, which includes additional measures for an improved Eastside connection to the floating bridge. For information, please see the Medina to SR 202 project website at http://www.wsdot.wa.gov/Projects/SR520Bridge/eastproject.htm. The SR 520, I-5 to Medina Project will construction the transition from that project to the new Evergreen Point Bridge, which will alleviate the capacity constraint associated with the existing roadway cross-section.

C-031-064

The conditions of on- and off-ramps described in this comment are reflected in the operations modeling for existing and no-build conditions in the SDEIS Transportation Discipline Report (Attachment 7 to the SDEIS). The Preferred Alternative would remove the Lake Washington Boulevard ramps and substantially improve the roadway geometry, including ramp connections. 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 highway operations.

C-031-065

Safety issues in the corridor include the need for shoulders consistent with American Association of State Highway and Transportation Officials standards. Current safety standards for both highway design and seismic design are far more rigorous than those in effect when the existing bridge was built. With the Preferred Alternative, the floating bridge would have 4-foot inside and 10-foot outside shoulders. The Portage Bay Bridge would have 2-foot inside and 8-foot outside shoulders.

C-031-066

The Preferred Alternative includes a more gradual curve in the west

C-031-068

In addition, researchers in Austria and Germany also concluded that children in noisier neighborhoods experienced measurable higher systolic blood pressure, greater heart rates and higher overnight cortisol levels which indicate elevated levels of physiological stress. As a result, constant noise pollution can be linked to the later development of high blood pressure, heart disease and stroke and the lowering of the body's natural immune system. These studies added to Dr. Evans findings that children and adults (in later studies) exposed to chronic noise can have serious health, learning impairment effects.
The playfield in Montlake sits adjacent to SR 520, the Madison Park public beach and the Laurelhurst beach are within earshot of the bridge, as well as families' back yards.

III. What can be done to mitigate noise from such a structure? Can design features reduce noise?
During the State Mediation process, WSDOT hosted 3 1/2 days of meetings with global experts on sound mitigation. They suggested numerous proven techniques for noise:
A. Sound walls for noise reduction were suggested including various materials such as clear, textured and using various heights.
Nearby communities however, have asked that these not be used on the westside of SR520 for the following reasons:
-the sound wall will create more of a fishbowl affect which will likely magnify the noise.
-noise walls create a tunnel effect for the users of SR 520 as they drive over Lake Washington especially for bicyclists, rather than a more aesthetic experience.
-noise walls will further obstruct views from adjacent residences who are already heavily impacted with doubling the size, and it also appears, doubling the height of the bridge.
- noise walls add significantly more weight to the SR520 structure which will add more costs to the overall project, requiring bigger pontoons to support them.

B. Westside communities are formally requesting that the Legislative Workgroup require that WSDOT use alternate techniques in the construction of SR520 to reduce noise:

1. We request the use of quiet pavement (open grade friction course asphalt rubber) be applied throughout the bridge and its ramps to create a quieter passage of vehicles. We have the understanding that it will have a shorter lifespan of 5-8 years before replacement is needed. Funds from tolling will have to set earmarked for this resurfacing.

2. We request that the jersey barriers be made of sound absorption materials along the guard rails and in the center median strip. They can be considered low "sound walls".
3. We request the use of under the bridge quieting techniques such as ceiling tiles and appropriate under coatings that absorb sound.

4. Sound absorption materials should be used at expansion joints to reduce noise in the gaps and regular maintenance be given to these joints.
5. All utility and maintenance facilities associated with the bridge should use sound absorption materials and maximum insulation

6. Vegetation barriers and dense plantings can be effective in noise reduction and should be implemented especially in the Arboretum and they can also reduce visual blight.

approach area compared to existing conditions. The new bridge maintains a similar vertical and horizontal curvature to accommodate existing topographical conditions, soil conditions, and to minimize environmental effects to land areas within the Arboretum by keeping the bridge within the existing right of way.

The transportation analysis accounts for the stated effects of roadway design on traffic operations. As with all highway corridors, the capacity and traffic flow conditions on SR 520 vary from point to point based on the unique characteristics of the roadway at each location. The analysis was performed using state of the practice traffic engineering methods, based on appropriate data collection and observations that are needed to form a sufficient evaluation. In addition, the analysis accounts for the fundamental speed-flow relationships that result in variations between actual traffic flow rates and the ideal roadway capacities indicated in the comment. In congested conditions, traffic demand often exceeds the ideal capacity and actual flow rates fall below capacity. The freeway operations results reported in the SDEIS and Final EIS accounted for these variations in roadway capacity, travel demand, and resulting throughput along the corridor. Refer to the Final Transportation Discipline Report (Attachment 7 to the Final EIS), Chapters 4 and 5 for a discussion of demand versus throughput and results of the freeway analysis for the Preferred Alternative.

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WSDOT determined that the 4-lane alternative evaluated in the Draft EIS did not meet the purpose and need for the project and it was not carried forward for further evaluation. The 2006 Draft EIS demonstrated that although the 4-lane alternative would improve safety and reliability in the SR 520 corridor, its ability to improve the movement of people and goods through the corridor would only be marginal.

The Evergreen Point and Portage Bay bridges have undergone a

Exhibit 4 List of affected Laurelhurst citizens -noise and visual impacts

April 14, 2010

C-031 Names

Louise	David	**Luthy**	4505 N E 33rd St.	**527-0214**
Laura	Jim	**Donald**	4315 N E 33rd St.	**985-9962**
Mary	Bill	**Watts**	4219 N E 33rd St.	**524-5567**
Jennifer	Dean	**Maher**	3049 E Laurelhurst Dr N E	**729-7797**
Diane	Steve	**Adam**	3131 E Laurelhurst Dr N E	**522-0925**
Charles	Charles	**Evans**	3012 E Laurelhurst Dr N E	**525-1651**
Eva	Lee	**Rogge**	3042 E Laurelhurst Dr N E	**524-2975**
Jana	Dan	**Flinn**	3112 E Laurelhurst Dr N E	**523-2614**
Delney	Gil	**Hilen**	3011 E Laurelhurst Dr N E	**525-7748**
Betty	Reimert	**Ravenholt**	3156 E Laurelhurst Dr N E	**525-0503**
Diane	Pat	**Colee**	3120 E Laurelhurst Dr N E	**528-9973**
Linda	Kevin	**Wold**	3054 E Laurelhurst Dr N E	**522-0522**
Graciela	Rick	**Rutkowski**	3125 E Laurelhurst Dr N E	**522-7898**
Colleen	Marty	**Taucher**	3124 E Laurelhurst Dr N E	**528-1964**
Tracy	Terry	**Quigley**	3033 E Laurelhurst Dr N E	**524-6088**
Susan	Kevin	**Barrett**	3135 E Laurelhurst Dr N E	**524-2033**
Alta	Stan	**Barer**	3048 E Laurelhurst Dr N E	**527-6122**
Jean ***	Russ	**Amick**	3008 E Laurelhurst Dr N E	**525-7065**
Anne Northrup	Ralph	**Hawkins**	3141 E Laurelhurst Dr N E	**525-7369**
Roella	Mickey	**Mc Coy**	3023 E Laurelhurst Dr N E	**524-3821**
Sherry	Charlie	**Atterbury**	3045 E Laurelhurst Dr N E	**528-1230**
	Dave	**Walter**	3140 E Laurelhurst Dr N E	**523-7215**
Catherine	Jim	**Allchin**	3038 E Laurelhurst Dr N E	**522-8083**
Joan	Jim	**Bassingthwaite**	3150 E Laurelhurst Dr N E	**523-5056**
Anne Moudon	Jim	**Seferis**	3310 E Laurelhurst Dr N E	**524-5011**
Britta	Kevin	**Steele**	3128 E Laurelhurst Dr N E	**525-2455**
Margaret Rosenfield	Dan	**Weld**	3100 E Laurelhurst Dr N E	**523-9058**
Meg Agnew	Steve	**Rupp**	3145 E Laurelhurst Dr N E	**525-9349**
Lisa Frenkel	Jim	**Mullins**	3134 E Laurelhurst Dr N E	**528-1366**
Christina		**Koons**	3302 E Laurelhurst Dr N E	**524-8946**
Anne	Jason	**Totah**	3151 E Laurelhurst Dr N E	**528-1559**
Patti Joyce	Angelo	**Calfo**	3303 E Laurelhurst Dr NE.	**325-5095**
Heather	Steve	**Murch**	3018 E Laurelhurst Dr N E	**525-5020**
Liz	Mark	**Hoffman**	3040 W Laurelhurst Dr N E	**522-3266**
Phyllis	Pete	**Dukes**	3156 W Laurelhurst Dr N E	**523-0022**
Leatrice		**Gutmann**	3110 W Laurelhurst Dr N E	**525-5092**
Ingrid	Stan	**Savage**	3027 W Laurelhurst Dr N E	**522-1695**

number of safety and maintenance retrofits to date, aging and decline of structural integrity make further retrofits and repairs a less effective solution to the replacement of the bridge. Hollow columns support the west approach to the Evergreen Point Bridge, the Portage Bay Bridge, and on- and off-ramps in Montlake and the Washington Park Arboretum. This type of column is vulnerable to damage from earthquakes and cannot be retrofitted effectively to acceptable seismic standards. Nonetheless, the No Build Alternative evaluated in the Draft EIS assumed that routine maintenance and minor safety repairs would continue until the bridge meets the end of its useful lifespan or is damaged beyond repair. The No Build Alternative sets a baseline condition of measurement for Build Alternatives analyzed under NEPA and SEPA; however, a true “retrofit alternative” is not structurally feasible and is not a viable option.

In 2010, based on public comment regarding a transit-optimized 4-lane bridge or a 4-lane bridge with tolling for congestion management, WSDOT used an updated traffic model to evaluate these scenarios. The results showed that a 4-lane bridge would provide substantially lower mobility benefits than the 6-lane alternative and would not support reliable transit operations along SR 520. Tolling to achieve reliable transit operations would not be feasible because it would adversely affect I-90 due to traffic diversion from SR 520. Therefore, the 4-lane concepts were eliminated from further study. Please see Chapter 2 of the Final EIS for a discussion of project alternatives, including why a 4-lane corridor is not being studied further for the SR 520, I-5 to Medina project.

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See the responses to comments C-031-010 regarding quieter concrete pavement, noise reduction strategies in the Preferred Alternative, and noise level reductions, and C-031-041 regarding the proposed height of the floating bridge.

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East & West L'hurst Drive NE, Webster Pt Rd NE, & NE 33rd!
April 14, 2010

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Robin	Jim	**Walker**	3022 W Laurelhurst Dr N E	**524-6879**
Suzy	Rick	**Titcomb**	3115 W Laurelhurst Dr N E	**523-9877**
Joyce		**Talbot**	3119 W Laurelhurst Dr N E	**522-2203**
Betsy	Dick	**Kirby**	3155 W Laurelhurst Dr N E	**523-0384**
Sally	Jeff	**Fiorini**	3132 W Laurelhurst Dr N E	**522-5802**
Annick	John	**Impert**	3163 W Laurelhurst Dr N E	**524-5987**
Debbie	Arley	**Harrell**	3109 W Laurelhurst Dr N E	**523-1107**
Chris	Fran	**Le Sourd**	3143 W Laurelhurst Dr N E	**524-3763**
Janine	Dick	**Lowden**	3144 W Laurelhurst Dr N E	**527-9333**
Sylvia	Jim	**Tupper**	3126 W Laurelhurst Dr N E	**523-7280**
Gay	Scott	**Easter**	3007 W Laurelhurst Dr N E	**527-8979**
Riva	Sheldon	**Biback**	3201 W Laurelhurst Dr N E	**523-5954**
Joanne	Jim	**Plourde**	3164 W Laurelhurst Dr N E	**523-3541**
Kathy	Chris	**Nielsen**	3150 W Laurelhurst Dr N E	**729-6327**
Linda	Rand	**Ebberson**	3030 W Laurelhurst Dr N E	**523-9825**
Jean		**Griffin**	3151 W Laurelhurst Dr N E	**524-1719**
Barbara Ferrante	Henry	**Popkin**	3102 W Laurelhurst Dr N E	**527-3366**
Heidi	Rick	**Rasmussen**	3211 W Laurelhurst Dr N E	**527-4988**
Patricia	Greg	**St James**	3004 W Laurelhurst Dr N E	**770-5735**
Colleen	Bill	**Mc Aleer**	3137 W Laurelhurst Dr N E	**525-0219**
	Steve	**Gould**	3057 E Laurelhurst Dr N E	**425-303-5084**
Tina	John	**Jacobs**	3033 W Laurelhurst Dr N E	**329-2284**
Mathew	Donna	**Bellew**	3129 W Laurelhurst Dr N E	**985-4014**
	Michael	**Corliss**	3101 W Laurelhurst Dr N E	
Helen		**Gurvich**	3006 Webster Pt Rd N E	**524-6224**
Shirley	Gary	**Cummings**	3005 Webster Pt Rd N E	**522-5551**
Betty		**Bottler**	3008 Webster Pt Rd N E	**720-2142**
Marlene		**Ivy**	3007 Webster Pt Rd N E	**525-2984**
Betty	Don	**Kennedy**	3002 Webster Pt Rd N E	**525-5344**
Dave	Dave	**Mc Callum**	3001 Webster Pt Rd N E	**525-1133**
Ginny		**Alvord**	3004 Webster Pt Rd N E	**708-0333**
Barbara		**Ferguson**	3011 Webster Pt Rd N E	**708-1113**

Exhibit 5 SDEIS Comments from Bill Mundy

Bill Mundy, Ph.D., MAI
Chairman, Canterbury Shores SR520 Committee
2500 Canterbury Lane E., #301
Seattle, WA. 98112
bill@mundyfarms.com
mamundy@comcast.net
April 1, 2010

Jenifer Young
SR520, I-5 to Medina: Bridge Replacement and HOV Project
Environmental Manager
SR520 Project Office
600 Stewart Street, Suite 520
Seattle, WA., 98101

Dear Ms. Young:

C-031-069

The following are comments from the Canterbury Shores Condominium regarding the SR520 Supplemental Draft Environmental Impact Statement (SDEIS), January 2010. Canterbury Shores is a 92 unit condominium located on the Northern Shore of North Madison Park. The comments that follow have been reviewed and approved by the Canterbury Shores Board of Directors.

Attachment 7, Discipline Reports

Air Quality

Dust. Particulate Matter (PM). There is NO analysis of PM during construction and operation on a seasonal basis. During summer months wind from the north significantly increases PM along North Madison Park (NMP) and at Canterbury Shores (CS). Your averages MISSTATE the seasonal effects.

Wetland

The amount of wetland that will be affected by construction is significantly underestimated. Material in the DSEIS excludes the impacts of the temporary bridge which will be built to the south of the existing bridge and the boat and barge traffic in this very shallow wetland area. There is NO indication of the type and extent of mitigation.

Wildlife

Great Blue Heron.

The Great Blue Heron (Heron) is a state listed priority species. The DSEIS states there are no species of special interest. The Blue Heron is NOT mentioned. Page 4-43 states "No large trees would be removed therefore potential rockery habitat for the Great Blue

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These comments are duplicates of comments submitted separately by Bill Mundy (Item C-044). Please refer to Comments C-044-001 through C-044-021 for responses.

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Heron would not be affected." Large trees are NOT a determinant. Heron roost in mid-sized to small trees, especially in Arboretum Area 712 where their habitat will be destroyed by construction activity. This is an OMISSION.

Beaver.

Page 4-44 mentions and includes a photograph of one beaver lodge. Due to the nature of the graphics it is NOT possible to determine the location of the cited beaver lodge. However, in this vicinity there are three NOT one beaver lodge. The DSEIS text states the beaver lodge would be destroyed and they would have to construct a new one. It is highly likely that all three lodges would be destroyed as all three are in close proximity to the existing SR520 right of way. Beavers are very protective of their environment. The text states only their reproductive process would be affected.

- How will their reproductive process be affected?
- Where could they build a new beaver lodge?
- How long will it take to construct replacement beaver lodges?
- Where and how will beaver exist as they are replacing the lodges?
- How will the destruction of the lodges affect the beaver population?

There is NO discussion of these issues. There is NO discussion of mitigation.

Hazardous Material

Miller Street Landfill

The only site studied is the Arboretum Playfield. There is NO precise delineation of the Miller Street Landfill. Historical and anecdotal reports indicate a large area between the Arboretum and NMP was used as a landfill. The DSEIS cites a study (Ouet and Kiers, 2007) indicating methane gas was found. The precise location of their study is NOT cited or shown. When canoeing and kayaking through this area (south of the bridge) "air" bubbles rise to the surface therefore there is evidence of methane gas below the surface.

Sediments (page 36). Cited are two studies, 1992 and 2004, in Lake Washington and Portage Bay. The text states these studies indicate there are relatively low concentrations of PCB's, PAH's, and phthalates. There is NO indication of where these sites are. These two studies are NOT consistent with a study carried out by Canterbury Shores. The following indicates the CS study results:

The water sample was collected in a container provided by AMTEST Laboratories following their directions. It was delivered to AMTEST on October 4, 2002. The sample was analyzed by AMTEST and the results reported to us on October 24, 2002.

Diesel and Heavy Oil were found in significant quantities, as follows:

Diesel	*1,500 parts per billion (ppb)*
Heavy Oil	*5,700 ppb*

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In both cases the EPA minimums, or clean up standards, according to AMTEST, are 1,000 ppb. Therefore, both diesel and heavy oil exceed the EPA minimums, the latter by a considerable amount.

The SDEIS does NOT state how the extent and type of hazardous material will be dealt with in the area extending between the western edge of the Arboretum to the eastern edge of NMP.

Land Use, Economics and Relocation

Estimated Construction Time. The DSEIS states construction time in the NMP vicinity will be 54 months (4.5 years). In numerous meetings with WSDOT personnel they have stated construction time will be between five to seven years. Therefore the SDEIS appears to be in ERROR.

Value Impacts. There is NO discussion in the SDEIS about the affect construction or the permanent operation will have on the value of property in the SR520 corridor.

Noise

With tolling the amount of traffic on 520 will be less than without tolling in any of the four cases (No Build, etc). Consequently vehicle speeds will be greater. Therefore the noise level will be greater. This relationship is NOT stated in the SDEIS.

Mitigation is required for residential areas if exterior noise levels are greater than 67dBA based on federal Noise Abatement Criteria (NAC). The following are the forecast noise levels (page 32):

Canterbury Shores, Monitoring Location 35, 65 dBA
Edgewater, Monitoring Location 36, 66 dBA.

Statistically there is no significant difference between 65, 66 & 67 dBA. This is especially true given the variability in measurements [time of day, weather, height of receiving location such as building story (Canterbury Shores is a four story building), person doing the measuring, the objectivity with which the measurements were taken (for example, the noise experts were not retained by an impartial entity but rather by WSDOT), etc.].

Throughout the DSEIS when dealing with noise mitigation and in particular noise walls, which are the only feasible type of noise mitigation strategy for NMP, it does NOT state noise walls will be constructed, rather it states they are "recommended." History shows that at the end of a construction project when funds are minimal or lacking the "recommended" items are frequently NOT provided.

There is a significant INCONSISTANCY between WSDOT maximum noise levels and those of the City of Seattle and Washington State Labor and Industries.

- For Seattle:
  - Maximum sound level between 7:00am and 10:00pm is 55 dBA. This would be for the permanent operation;

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- The maximum exceedence during construction for heavy equipment is 25 dBA;
- Therefore, the total maximum noise level for the 54 month construction period during any day would be 80 dBA (80 dBA is "moderately loud" and equivalent to standing within two feet of an operating garbage truck).

- For WA. Labor and Industries:
  - Noise cannot exceed 85 dBA over an 8 hour period. (WAC 296-817-300).

There is NO mention of pile driving noise in Exhibit 23, page 64. This is a serious OMISSION because in Exhibit 22 it shows that pile driving results in the most serious noise levels of all equipment and ranges between 99 to 105 dBA.

Exhibit 26, page 67 and 68, shows pile driving noise level profiles. This exhibit is INCORRECT. The exhibit DOES NOT include the area where the temporary bridge is to be built. Even with this ERROR WSDOT's noise profile exceeds City of Seattle and WA L&I maximum noise limits. This is a serious OMISSION. Your documents show that 2042 piles will be driven (Table 6.7.1) over the 54 month period. Exhibit 8, page 26 is a table showing relative loudness. The reference point is 80 dBA, the noise a garbage truck makes when one is standing within two feet of it and this is not with an idling engine. 100 dBA is 4 times louder, the equivalent to a jet taking off. 100 dBA is classified as "very loud." Interestingly, the noise effects on fish and mammals are discussed, they are NOT discussed regarding humans.

Exhibit 31 (approximately page 85). Noise Levels. The following are the noise levels listed for NMP without sound walls: MP1-66, MP2-67, MP3-67, MP4-67. All of these are right at NAC maximums and exceed City of Seattle maximums of 55 dBA. Given that, Exhibit 33 is MISLEADING for it is based on the assumption of sound walls. This is a "best case" scenario and extremely unlikely as sound walls are optional, not required. Due to a lack of funds and WSDOT prior statements, it is more likely than not that sound walls will NOT be constructed in the NMP segment. The SDEIS states regarding mitigation:

- "measures must be considered;"
- "mitigation measures … must be recommended (page 107).

This is NOT the same as requiring mitigation measures to reduce noise levels to an acceptable level.

OMMITTED from the noise section is how the "beep beep beep" of construction vehicles and equipment, when they back up, is quantified. According to a person I interviewed who lived on Mercer Island, in close proximity to the I-90 project, the "beep beep beep" was so annoying that they had to move. And, it was something that went on for 24 hours per day, often 7 days per week. If one has to listen to this for 54 months from 7:00am to 10:00pm it would, indeed, be annoying. It would be more than annoying for 24 hours per day, seven days per week. Based on my review of the DSEIS this noise is not dealt with, it is therefore an OMISSION. If it is dealt with please provide the reference or documentation.

Vibration

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Reference page 69, Vibration Effects. The DSEIS states it is: "Unlikely that vibration levels would exceed 0.5 inches per second at a distance greater than 100 feet from the construction site." This is INCORRECT.

- First, there is NO quantitative data provided showing vibration levels were based on the tests WSDOT did;
- We know WSDOT did tests for two reasons:
  1. We gave WSDOT permission to place a "vibration meter" on our property and we accompanied the person who placed it there;
  2. We witnessed and experienced the tests, both putting in the piles and taking them out (both which will occur as a part of the WSDOT construction activity).

Page 61 contains a table that shows the effects of various vibration levels and it states: the "threshold at which there is risk of architectural damage to normal dwellings – houses with plaster ceiling and walls." This is at a vibration level of 1.27 or greater. Management and residents at Canterbury Shores experienced the pile driving noise and vibration level tests.

- Regarding pile driving: it is highly likely that the levels for pile driving exceeded 1.27. During the tests there were many complaints about the noise levels to CS management.
- For pile removal there is no doubt they exceeded 1.27. Homeowners stated that objects on counters and shelves "jumped around." In fact, vibration was so bad numerous governmental agencies were contacted, including WSDOT. Exhibit 1 shows the e-mails that resulted.

Vibration Mitigation (page 172).

This discussed how noise might be mitigated. There is NOTHING on vibration mitigation. This is an OMISSION.
The SDEIS states there is "no effective method to reduce vibration." (page 174). If it can't be reduced how can "it be kept to a minimum."?

If noise and vibration levels are above legal limits what can be done? "Vibration monitoring" (page 61) will NOT cure the problem.

Noise and Vibration, Pile Removal.

The noise and vibration material deals with the 2042 piles that will be driven over the 54 month construction period. It does NOT deal with the process of removing the piles and the noise and vibration that will result from the removal process. This is a serious OMISSION for the experience at CS indicates that the noise and vibration resulting from the removal of the piles is much greater than driving them. We have also discovered that if piles cannot be removed through extraction (pulling them) they are cut off at the lake bottom. The DSEIS does not deal with the debris that remains, for example the creosote laden piles. This is a serious OMISSION, especially due to the remaining hazardous material.

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Recreation

OMITTED from the SDEIS is an analysis and discussion of the effect of the temporary construction bridge to the south of the existing alignment and bridge on boat access to NMP water frontage property. The temporary bridge, barges and working boats will severely and/or completely make ingress and egress impossible.

Transportation

OMITTED. An analysis of the effect on traffic at the Lake Washington Blvd and Madison Street intersection.

View

Volume I.

Regarding the West Approach Landscape Unit. This OMITS the view affect on NMP homes (page 57). It MISSTATES how NMP views would be permanently affected:
"possibly blocking views of Laurelhurst Hills but revealing more open water in Union Bay." (page 70). See the following comments under Volume II.

Volume II.

Exhibit 2-17 and 2-18 show existing and Option A (and the 2 other options also) views. Both exhibits are MISLEADING due to the INCORRECT way the photographs were taken (using an incorrect camera lens that does NOT show what the eye actually sees). Exhibit 2 shows what the view will actually be like from the north shore of NMP on a before and after basis. Exhibit 3 shows what the views will look like from the Madison Street pier, at the east end of Madison Street. These two exhibits were prepared by a professional photographer, Mr. Aaron Weholt, Legal Media, Seattle, WA.

Water Resources

Referencing Page 69. OMISSION. There is no discussion of how the south one-half of the bridge, the east-bound lanes, would be constructed. Also OMITTED is a discussion of the temporary construction bridge that will be located south of the east-bound lanes.

Construction Activities, Chapter 3, 1/5/2010.

The are NO graphics shown and there are NO specifics on the construction bridge to be located south of the current and new east-bound lanes. The purpose of this "construction bridge" is to demolish the existing bridge and build the new east-bound lanes. The construction time period, according to the SDEIS, is 4.75 years. This time period may be IN ERROR as WSDOT staff have indicated it will be between five to seven years. This

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is a very significant OMISSION for the construction affects from noise, vibration, view blockage and water access will be huge.

Project Operation and Permanent Affects (Chapter 5).

Noise.

The SDEIS states "WSDOT's practice is to work with the owners of these properties (those where "noise abatement measures must be considered") during detailed project design to determine the mitigation measures that will be used." (page 5-104). No one from WSDOT, or any other public agency, has discussed this matter with CS management or owners. This is an OMISSION.
As was stated earlier, there is NO assurance of mitigation. Noise walls are the only mitigation proposed for NMP. All options state: "If noise walls are included ..." (page 5-107). This is NOT as assurance that noise will be mitigated.
North Madison Park is NOT mentioned for noise mitigation. (page 5-109 and 5-110).

Wildlife and Habitat.

Referencing the sentence "Remove a large beaver lodge ..." (page 5-140). There are at least three (3) beaver lodges in or in very close proximity to the 520 right-of-way in the arboretum. The SDEIS graphics DO NOT identify where any are located. There is NO scientific analysis or discussion of the effect construction will have on the beaver population

There are NO mitigation measures for wildlife. (page 5-146).

Navigation.

There is NO discussion on how navigation would be affected north of NMP and south of 520 during construction or permanently. (page 5-151).

Effects During Construction (Chapter 6).

There is either NO or ONLY superficial discussions of construction affects on NMP regarding boat access, noise, vibration and wildlife. (page 6-46 to 6-49). Also, see the above comments relating to the Discipline Reports.

View Impact.

In Chapter 6 it states: "*Under all design options, the greatest temporary change to visual character and quality would result from demolition of the Lake Washington ramps to and from the Arboretum and construction and presence of construction and detour bridges because of their size and complexity. Vegetation would be removed in 30- to 60-foot-wide swaths for the work bridges. Subsequent construction of the permanent new west approach bridges would compound the effects. The combination of the construction*

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bridges, detour bridges, finger piers, and the existing and new bridges would result in substantial degradation of visual character and quality of the south part of Union Bay. The structures would block water- and ground-level view for viewers near the structures. The viewers most affected by this change would be commuters crossing the bridges, park users and boaters, and residents in north Madison Park (underline mine). Views from the Broadmoor Golf Course would be screened most of the year by tall trees along the shoreline." (page 6-54 and 6-55). This statement:

- Is inconsistent (an ERROR) with your statement regarding views (Views, Volume I, page 70) where it states: "*possibly blocking views of Laurelhurst Hills but revealing more open water in Union Bay.*"
- Does NOT discuss mitigation, an OMISSION.

Noise. (re: page 6-65+)

The following is relevant information and comments from several tables in this section:
Table 6.7.1: Equipment – Pile Drivers, Noise Level – 99-105 dBA, Number of piles to be driven: 1987 + 55 for Lake Washington Blvd or 2042 piles total.
Table 6.7.2: Maximum City of Seattle sound level, residential – 55 dBA.
Table 6.7.3: Maximum Exceedence:

Minutes/hour	Exceedence
15	+5 dBA
5	+10 dBA
1.5	+15 dBA

For driving in and pulling out the 2042 pilings (that is 4084 operations) the maximum noise criteria for the City, State, and federal government (NAC) will be exceeded. What is the effective mitigation? The answer to this has been OMITTED.
Table 6.7.4.:Noise Levels that "should NEVER be exceeded."

dBA	Time Duration Exceedence Prohibited
90	Continuously*
93	20 minutes
96	15 minutes
99	7.5 minutes

*I believe this is an error, for it means at 90 dBA or greater the noise level cannot be exceeded.
Therefore, if any piles are driven the noise levels will be exceeded. But, this must NEVER happen. What is the answer to this dilemma? It has been OMITTED.
In addition, just so we are on the "same page," don't suggest these noise levels will not reach NMP. First, your noise profiles do not take into account the construction bridge. Second, they do not take into account pile removal. Third, they do not take into account the vibration index.

Vibration (reference page 6-69).

Data and analysis on vibration testing has been OMITTED.

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Reference "Construction Vibration Effects" page 6-69. In the middle of the paragraph it states "*It is unlikely that vibration levels would exceed 0.5 inches per second at distances greater than 100 feet from the construction sites.*" In that regard:

- Distances from the construction bridge have been OMITTED;
- Data and analysis has been OMITTED regarding vibration tests and levels;
- Based on the experiences at Canterbury Shores regarding driving and pulling piles the vibration level exceeded 1.27 inches per second. This data and the effects have been OMITTED.
- Due to the poor quality of graphics in Exhibit 6.7-3 (at least on my CD), it is not possible to tell where the noise contours are in relation to the land (i.e. shoreline, land improvements, etc.). This must be an ERROR.

Respectfully submitted,

Bill Mundy.

Attachments: Exhibits 1, 2 & 3.

Exhibit 6 Marcia Baker-Air Quality and Greenhouse Gas

C-031-070

COMMENTS ON GREENHOUSE GAS EMISSIONS AND AIR QUALITY SECTIONS OF WSDOT DEIS

MARCIA BAKER

1. Assumptions

The DEIS analysis of air pollutants and greenhouse gas emissions from the various alternatives is completely dependent on their projecting that by 2030

- Congestion will decrease relative to present levels over the entire area as a result of HOV lanes and tolls.
- Average vehicular speed on 520 will be over 30 mph

2. Comments on These Assumptions

The projection that increasing the number of lanes open to vehicular traffic will reduce congestion in the long term is not borne out by most data based analyses; on the contrary,

- Recent data based reviews (for example, Litman (2009)) show that in congested areas over 90% of increased lane capacity is filled in 5-10 years, and
- the period after which time savings due to added road capacity equals time lost during road construction is estimated to range from 2.75 years to infinity. (In the latter case the time lost during construction is never recouped.)

3. Greenhouse Gas Emissions

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 :

- 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 CO_2 per mile, before counting emissions from vehicles.

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With the Preferred Alternative, WSDOT expects congestion on SR 520 to decrease compared to the No Build Alternative, because the number of lanes on the bridge would increase to 6 lanes, and several new features would be implemented. These features include tolling, HOV lanes, and other transportation demand management strategies. Accordingly, air quality and greenhouse gas effects would be reduced with the Preferred Alternative. Please see the Air Quality Discipline Report Addendum and the Energy Discipline Report Addendum (Attachment 7 to the Final EIS) for additional information regarding the Preferred Alternative.

C-031-070

(3) Chang et al (2009) Occupational and Environmental Medicine vol 66, p 90
(4) Community Inventory (2008) www.seattle.gov/climate/docs/2008-community-inventory-fullreport.pdf
(5) EPA (2006) www.epa.gov/pmdesignations/2006standards/index.htm
(6) Litman (2009) Generated Traffic and Induced Travel: Implications for Transport Planning at http://www.vtpi.org/gentraf.pdf.
(7) Shendell and Boothe (2008) Journal of Environmental Health 70, no 8, p 33
(8) Williams et al (2009) Environmental Health Perspectives 2009 vol 117, no 3, p 373
(9) Williams-Derry (2007) *www.sightline.org/research/energy/res_pubs/analysis – ghg – roads*

Exhibit 7 Traffic Modeling analysis Carl De Marken

From: Carl de Marcken <carl@demarcken.org>
Date: February 11, 2010 12:11:01 AM PST
To: Richard Dunn <richardrdunn@comcast.net>
Cc: Marina Mella <mmp@stat.washington.edu>
Subject: 520 transportation issues

C-031-071

Richard,

Here are two brief essays concerning the methodologies used in the SDEIS to forecast traffic patterns in 2030 so as to evaluate the 6-lane option vs. the 4-lane option. One was written by Marina and one by me, independently, but they both concern the same issues - each makes a few points the other does not, though they overlap in many ways.

The (implicit) point is that the arguments for a wider highway are based on certain predictions, and at least as can be concluded from the EIS document, these predictions are suspect.

We are not signing these as professionals: the EIS as circulated is a summary and hardly the kind of document to draw strong conclusions from. But if the lawyer wants to pursue these issues further, he is welcome to get in touch with us.

Carl

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.

C-031-072

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-

C-031-071

WSDOT used the state of the practice methodology for estimating travel demand and traffic congestion. The methodology is consistent with transportation planning industry standards, NEPA and SEPA requirements, the metropolitan planning process, and FHWA traffic analysis guidelines for evaluating and comparing existing and future transportation project alternatives. For the SR 520, I-5 to Medina project transportation analysis, WSDOT used the Puget Sound Regional Council travel demand forecasting process, or "travel demand model" as a generalized term. The process consists of seven primary models and it receives input generated by additional economic and land-use forecasting models. There are several model interactions including multiple feedback loops. The process incorporates substantial regional data from about 25 sources across 5 categories and a range of years. The input data represent a variety of demographic, geographic, political, economic, land-use, employment, and transportation characteristics. Documentation about this process is available from PSRC on their website, www.psrc.org. The land-use and travel forecasting process is established by policy through its adoption by PSRC. The field of travel forecasting is a subject of ongoing academic research, however new methods must be thoroughly evaluated, validated, and adopted at the regional level. Therefore, changes to the forecasting methodology are not at the discretion of the I-5 to Medina Project. WSDOT must adhere to federal policies regarding metropolitan planning.

The Transportation Discipline Report is intended to communicate the results of analysis with respect to transportation effects of the project. It is written in a plain language style and provides a level of technical information that is assumed to be of interest to the average reader. Information about the analysis methodology is highly simplified for this purpose. Valid technical scrutiny of the underlying methodologies cannot be performed using only the discipline report descriptions.

C-031-072 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 2030 Seattle transportation well.

C-031-073 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.

C-031-074 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

C-031-072

See the response to Comment C-031-071.

C-031-073

See comment C-031-071. The discipline report contains simplified descriptions of methodology as previously described. The travel demand forecasting process includes a post-calibration step for model validation.

C-031-074

See the response to Comment C-031-071. The forecasting process includes several methods of accounting for uncertainty depending upon the particular model and type of assumption in question. Assumptions and theories regarding human behavior, and travel are based on substantial bodies of research. Transportation infrastructure assumed for direct effects includes only planned and programmed future projects for which construction is imminent. However, the cumulative effects results contain an alternate future scenario including planned projects that are likely to be constructed.

C-031-074

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.

C-031-075

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.

C-031-075

See the response to Comment C-031-075.

Travel demand and traffic flow are distinctly separate concepts that interface in the analysis, but are handled in separate models. Travel demand models are macroscopic, whereas travel flow models are microscopic. Travel demand results are post-processed for use in traffic flow simulations models that are separately calibrated and validated. The conclusions in the comment mix these concepts.

With respect to tolling assumptions, WSDOT tolling studies have tested several scenarios to evaluate the sensitivity of outcomes to various assumptions. Refer to the findings of the Tolling Implementation Committee, or the SR 520 2008 Toll Traffic and Revenue Technical Report for more information.

C-031-075

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. I am 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.

C-031-076

I see the following flaws with the estimation methodology.

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.

C-031-077

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 setting that can fit the current data equally well. However, these parameter setting 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 technicque 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 ris a better estimate of the ability of the model to represent the reality in the field.

C-031-078

3. The inaccuracies in the input variables (demographic, employment,

C-031-076

The SR 520, I-5 to Medina project team selected the travel demand and operations analysis tools in coordination with the co-lead agencies, WSDOT and FHWA. Use of the Puget Sound Regional Council regional travel demand model is the current industry standard and follows best practices, and is accepted by FHWA as the appropriate model for this project. The Puget Sound Regional Council is the Metropolitan Planning Organization for the four-county region of Snohomish, King, Kitsap, and Pierce counties, with representation from its member jurisdictions throughout the region. PSRC works with the State, ports, transit agencies, tribes, local governments, businesses, and citizens to create a long-term vision for the region with respect to land use, economic development, and transportation. The council is responsible for distributing federal transportation funding, developing policies, and making decisions on regional issues. The land-use and travel forecast process adopted by PSRC has received independent review and information about this is available on the PSRC website, www.psrc.org.

C-031-077

See Comment C-031-071. The description of travel forecasting methodology in the Transportation Discipline Report is highly simplified for communication to the average public reader. The land use and travel forecast process is supported by substantial regional data as described in C-031-071. The process of calibration to existing conditions is associated with a separate model that analyzes traffic flow, using travel demand forecasts and detailed roadway geometry as inputs.

C-031-078

See Comment C-031-071.

C-031-078 and land use forecasts were not considered). Nor is it explained how these inccuracies, 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.

C-031-079 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 hsas 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 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.

C-031-080 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-031-079

Please see the response to Comment C-031-071.

C-031-080

See comment C-031-071. WSDOT used the travel forecast model in a manner consistent with federal and regional policies. The input data for model functions is the best available regional data and conforms with procedures adopted by the Puget Sound Regional Council. WSDOT took reasonable and prudent measures to validate model functions and to evaluate forecast results at intermediate steps in the process through independent technical reviews.

Exhibit 8 Tilghman Transportation Analysis

TILGHMAN GROUP
TRANSPORTATION PLANNING

30 March 2010

Jenifer Young
Environmental Manager
SR 520 Program Office
600 Stewart St., Suite 520
Seattle, WA 98101

Dear Ms. Young:

C-031-081

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 ably 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, or Lake Washington Boulevard through the Arboretum. For example:

- The document (SDEIS 4-3) gives only nodding recognition to existing backups 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 "Mountlake 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?
- 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

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C-031-081

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 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-031-081

(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?

C-031-082

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?

2. Assumptions

C-031-083

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, 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.

C-031-084

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 Working Group) differs only by one letter grade at two intersections. Unfortunately, there is too little information in the

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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.

If Option K or L were identified as the Preferred Alternative in the future, WSDOT would ensure that negative effects associated with these options are mitigated to the extent practicable.

C-031-082

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 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

C-031-084

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-031-085

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-031-086

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-031-087

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-031-088

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-031-089

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.

C-031-090

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.

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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-031-083

Please see the response to Comment C-031-081 regarding local 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-031-084

The new bascule bridge would improve mobility for people and goods by adding transit and HOV capacity across the Montlake Cut. It would also

3. Needed Clarifications

C-031-091 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-031-092 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-031-093 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?

C-031-094 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-031-095 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-031-096 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 to reach SR-520? If so, what are the consequences for intersections on E. Boyer and on E. Boyer itself?

C-031-097 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?

C-031-098 H. Option K would reconfigure Lake Washington Boulevard at the north end of the Arboretum. However, the text and maps do no 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?

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provide new pedestrian and bicycle facilities across the Montlake Cut, thus improving conditions for nonmotorized travel.

The analysis in the Final Transportation Discipline Report (Attachment 7 to the Final EIS) confirms that the Preferred Alternative with the new bascule bridge would improve transportation operations in the Montlake area, compared to the No Build Alternative. The new 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. 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. 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).

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. Under the Preferred Alternative and SDEIS Option A, the second

Exhibit 9 Cumulative Development Land Use Projects in NE Seattle

C-031-099

Summary of Cumulative Development in the DPD record for The City of Seattle 2010-2030 within 3.6 miles of SR520 Interchange

1. Permit #3007521 Master Plan Expansion for Seattle Children's Hospital
   4800 Sandpoint Way NE, Seattle , WA 98105
   - submitted (corrected) on 08/03/07
   Proposed expansion of 1.3 million additional square feet
   by 2030, adding 400 additional patient beds and 1200 staff
   Parking stalls to increase to 3100 on campus
   Location: 2.0 miles from SR520 interchange
   Status: Seattle City Council Ruling expected April 1, 2010-construction anticipated 07/31/10

2. Permit #3008972 University Village Shopping Center Expansion
   4500 25th Ave NE, Seattle, WA 98105
   - submitted on 07-29-08
   Proposed expansion of 105,000 square feet of retail and restaurant space
   and additional 702 parking spaces
   Location: .8 mile from SR520 Interchange
   Status-in for permit approval-construction by 12/10

3. Permit #3009681 QFC retail and residential units expansion
   2746 NE 45th Street, Seattle WA 98105
   -submitted on 05-22-09
   Proposed expansion of 31,000 square feet of new retail development and
   350 new residential units and 700 new parking stalls
   Location .9 miles from SR520 Interchange
   Status-in for permit approval-construction by 3/30/11

4. Warren G. Magnuson Park recreation development
   City of Seattle Parks and Recreation-approved 06/2009 and is under construction
   7400 Sandpoint Way NE, Seattle, WA 98115

   Arena Sports facility-80,000 square feet- 500 daily users projected
   Tennis Complex-10 tennis courts and Clubhouse-100 projected users
   Soccer and new lighted ball fields-12 fields X average 24 players= 288 users
   North Shore Building #11- office/ daycare/ restaurant development 25,000 square feet
   projected 120 daily users
   Location is 3.6 miles from SR 520 Interchange
   Status-construction in progress-anticipated completion by 12/2011

Total development is approximately 1,600,000 square feet, with increased daily vehicular trips of 3808 additional on Montlake Blvd (conservative estimates)
(sources:Seattle Children's Hospital 1200, Retail 2100, and Recreation 508 trips)

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).

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-031-085

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.

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.

C-031-099

Exhibit 10 Photos of Laurelhurst residence by Aaron Weholt-Legal Media

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-031-086

The SR 520 High-Capacity Transit Study (December 2008) recommended bus rapid transit as the preferred more 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 65percent of bus trips would use standard buses (42 seats) and 35percent would use articulated buses (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.

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 to cause significant changes in land use. Analysis of differing scenarios for growth, economic conditions, travel pricing structures, and other

C-031-099

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. 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.

C-031-087

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-031-088

See response to comment C-031-033. 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 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.

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

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Exhibit 11 Photos of Webster Point with new bridge design -Weholt

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 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-040-081 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.

C-031-089

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

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

C-031-090

In accordance with the requirements of ESSB 6392, WSDOT has worked collaboratively with the Seattle Department of Transportation, the City of Seattle Pedestrian Advisory Board, and the Seattle Bicycle Advisory Board to develop recommended design refinements for pedestrian and bicycle facilities. These include design refinements for pedestrian and bicycle access in the area of the future Montlake Multimodal Center, including a revised crossing of Montlake Boulevard adjacent to the light-rail station. For more information on the recommended design refinements, please see Chapter 7 of the Final Transportation Discipline Report and the complete ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachments 7 and 16 to the Final EIS).

C-031-091

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

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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 offpeak periods, can be found in Chapter 8 of the Final Transportation Discipline Report.

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-031-092

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

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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 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-031-093

Please see the response to comment C-031-084. 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-031-094

Please see the response to Comment C-031-093. The number of bridge openings would not be affected by the new bascule bridge, because openings would occur simultaneously with the existing Montlake Bridge.

C-031-095

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

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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.

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-031-096

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-031-081 regarding the study area for traffic operations analysis, and Chapter

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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-031-097

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. 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.

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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 Comment C-031-081). 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-031-099

Please see the response to Comment C-031-105 further below.

Exhibit 12 Save Union Bay analysis and Mitigation recommendations

C-031-100

Save Union Bay Association
Response Statement to SR 520 Project SDEIS

SUMMARY

We have reviewed the SDEIS for the 520 bridge replacement project and appreciate the opportunity to discuss some topics within the SDEIS that we feel are missing or not described in adequate detail for WSDOT or public analysis. These topics are:

- The wetland mitigation opportunities discussed, particularly aquatic bed vegetation enhancement, do not include most of the aquatic bed areas infested by milfoil in Union Bay, many of which are closer to, and more directly affected by the proposed project.
- The wetland and shoreline mitigation opportunities do not include or discuss the damage to shoreline and wetland vegetation caused by the invasive mammal, nutria.
- The project, as described in the DSEIS, does not provide suitable refugia for the fish and wildlife species that will be displaced, or will avoid the project footprint during construction.
- The DSEIS does not discuss the risk of releasing milfoil and other invasive species from the project footprint during construction.

In order to adequately mitigate for the impacts associated with the proposed project, we suggest that the following be considered as parts of the overall mitigation approach:

- Enhance the aquatic bed wetlands that cover most of Union Bay by reducing the coverage of milfoil and other invasive plants. This will provide both wetland mitigation (enhancement), and, if conducted prior to construction, will offset the effects to lake habitats and wildlife by providing enhanced refugia for displaced species during and after construction. Long-term control of invasive species will also offset the permanent fish and wildlife habitat losses that will result from the project, including effects on ESA-listed fish species.
- Include restoration of shoreline areas damaged by nutria as part of the shoreline and wetland mitigation approach.
- Eradicate invasive species within the project footprint (which includes boat and barge travel corridors, anchoring locations, temporary work platforms, as well as the construction footprint, PRIOR TO CONSTRUCTION. This will reduce the risk of releasing thousands of milfoil fragments and other invasive species into the surrounding areas of Union Bay and Lake Washington.

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These comments are duplicates of comments submitted separately by the Save Union Bay Association (Item Number C-011). Please refer to that item for responses.

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Introduction

Save Union Bay Association (SUBA) is a neighborhood association consisting of interested individuals and waterfront owners living on Union Bay. There are currently 120 members. Over the 35 years operating, we have dealt with issues of Union Bay including milfoil, sewage spills, Green Lake pipeline, and eutrophication. We are concerned about the disruption that construction of the new SR520 bridge will have on Union Bay and want to work with DOT to offset this impact.

The SDEIS identified effects during construction within the Elements of Nature (Chapter 6). We are concerned about the effects within the following elements during construction on the overall ecosystem of Union Bay (UB): recreation, noise, air quality, water resources, ecosystems, geology and soils, hazardous materials, and navigation.

Although the SDEIS did a good job of describing effects that will occur within the 520 work corridor along UB, there was no mention of the effects on the rest of UB. We contend that there will be multiple effects throughout the UB environment and we want the SR520 program to mitigate these impacts.

Our SDEIS Response statement begins with an overview of Union Bay, describing both the general characteristics of the bay and also the recreational and wildlife usage. We then describe the three most important problems threatening the integrity of Union Bay (UB) and its fragile ecosystem:

- infestation of invasive aquatic plants;
- shoreline habitat degradation by nutria (an invasive mammal), and
- a shallow bay made worse by ongoing sedimentation from sewage overflows, fertilizer use, and erosion.

These problems contribute to algal growth, high water temperatures, low oxygenation, high phosphorus, and wetland degradation. These elements combine to hasten eutrophication. Save Union Bay Association (SUBA) is in the process of developing an Integrative Aquatic Vegetation Management Plan (IAVMP) for Union Bay. Our priority is to preserve the health of the UB ecosystem by managing the invasive aquatic plants, enhancing the habitat, and improving the aquatic ecology.

It is important to understand this situation in order to gain perspective. It is our belief that bridge construction will result in increased use of the bay north of the work corridor. All species will react to and cope with construction activities by moving away from the construction zone. It is most likely that they will look nearby for suitable habitat, migration routes, feeding and nesting grounds and recreation (humans). Hence, they will be drawn to the north-northwest side of Union Bay because it closely resembles the wetlands near SR520.

The current problems of UB (invasive aquatic plants, nutria denuded shoreline, shallow depth and poor water quality due to recent CSO overflows) will make it more difficult for species to use the bay. Many waterfowl and fish have deserted the wetlands of UB north of SR520 because there is not access due to overgrowth of invasive aquatic plants, and there is inadequate shoreline vegetation for protective cover from eagles and other predators. It is important to understand how all of the features of the bay interact in order to accomplish bridge construction while providing adequate resources for the species impacted by the construction. For example, although restoration of UB wetlands

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may partially mitigate wetland loss near SR520, if the waterfowl and fish can not access the wetlands due to milfoil and waterlily mats, then the habitat addition will be meaningless. In the following statement, we respond to each of the Elements of Nature described in the SDEIS which SUBA believes will have impacts on species, wetlands, and recreation outside of the work corridor. There was no discussion in the SDEIS of impacts beyond the work corridor in UB. Our suggestions for mitigation address the three problems we believe are impacting the bay and thus, would affect movement of species from the work corridor into the rest of the bay.

We suggest:

Before construction begins:

1. Eradicate the invasive aquatic plants within and near the work corridor so that construction will not spread invasive plant fragments throughout Union Bay. We are defining work corridor as that area within the project footprint fwhich includes boat and barge travel corridors, anchoring locations, temporary work platforms, as well as the construction footprint, from the southwest end of Portage Bay to the east end of Lake Washington.
2. Provide alternate nesting sites for protected birds/waterfowl nesting within the work corridor.
3. Improve wetlands in Union Bay (invasive species control) so that fish and wildlife species can locate and begin to adapt to new habitat before construction displaces them.
4. Improve water quality, wetlandsand shoreline at Waterway #1, Waterway #2, University Slough, and Belvoir Place Park (north side of Union Bay) to facilitate species use of these areas. (ie., decrease milfoil, waterlilies, and blue-green algae in these areas.)
5. Decrease milfoil and other invasive aquatic plants between the work corridor and Belvoir Place Park,Waterway #1, Waterway #2, and University Slough to ensure that salmon can access this area and survive.
6. Several private residences have naturalized their waterfront and have included shallow gravel beds for salmon nesting. Improve habitat access to these residences so salmon can utilize them. (ie., decrease invasive aquatic plants)

During and/or after construction:

1. Monitor and eradicate invasive aquatic plants as necessary.
2. Monitor the UB wetlands' and shorelands' enhancements and evaluate effectiveness regarding fish and other species.
3. Provide education and work with homeowners to reduce pollutants entering the bay and to improve their shorelines to facilitate fish protection and nesting.

Overview of Union Bay Environment and Ecological Concerns

Union Bay is at the west side of Lake Washington where Lake Washington empties into the ship canal. Union Bay (UB) is in a shallow glacially carved basin covered by a deep layer of peat. It has a surface area of 985,000 squared meters and ranges in depth from 3-12 ft except where it has been dredged to 30 ft in the navigation channel. Union Bay has the largest green belt in the city along its shoreline; its shorelands provide rich

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habitat and yet half of this natural area sits on top of a toxic dump site. Over 2/3 of the shoreline is state/city property. 100 residential properties also front Union Bay.

Union Bay is a favorite spot for recreation. Water sports enthusiasts crowd the bay. People sail, canoe and kayak in UB to explore the inlets around the Arboretum and the Union Bay Natural Area (UBNA); to observe birds and waterfowl; and for enjoyment. Often UW students will rent canoes and paddle to a shaded shoreline to picnic and swim. Hikers and bicyclists use the trails around Union Bay. The Arboretum and Foster Island as well as the UBNA host many people from birdwatchers to sports teams jogging down the paths. In the Laurelhurst neighborhood, there is public shoreline access at Belvoir Park and Waterway #1. Many people launch kayaks or canoes from these sites. Motor boats also fill the bay, whether anchored and enjoying water sports; slowly moving while fishermen cast their lines; or traveling through the bay.

Union Bay and its shorelands host a variety of ecosytems from open water to wetlands and from prairie to forest. It provides habitat for many species of mammals, samphibians, birds, reptiles, and fish. There are several species federally listed as threatened (ESA). Others are protected by the Migratory Bird Treaties. There are over 200 species of birds and waterfowl that either live here or migrate through on an annual basis.

There are three major problems in Union Bay that have affected the ecology of UB and hastened eutrophication. It is important to understand these issues to fully appreciate the impact of the SR520 construction project.

Non-native invasive aquatic plants (Eurasian watermilfoil, Brazilian elodea, fragrant waterlilies, and purple loosestrife) have changed the water quality, interfered with recreational uses, and severely affected waterfowl and fish habitat in Union Bay. Milfoil was first introduced into Lake Washington in 1974. By 1985, 50 acres of Union Bay were infested with milfoil. By 2007, 75% of Union Bay contained well-established milfoil stands. Dense stands of milfoil interfere with all recreational uses (sailing, swimming, canoeing, motor boating) and destroy the natural ecosystem. In the summer, their density in the water as well as floating fragment mats prevent adequate water circulation, resulting in increased water temperature, decreased oxygenation, increased algal blooms and degraded habitat for fish. This makes it very difficult for juvenile salmon to survive throughout Union Bay.

Although milfoil is the primary invasive aquatic plant in Union Bay, fragrant water lilies also heavily infest the bay. By 2007, they extended out 30 feet from the western shoreline forming a thick dense mat. These plants interfere with recreational uses and ecosystem balance due to their density. The thickly matted waterlilies create a threat for waterfowl because it forces them to swim in open water, further from shore, making it more difficult for them to hide among shoreline reeds and making them easy targets for the eagles that nest along the shore. Waterlily mats also provide shelter for salmonid predators.

A second problem area is erosion and destruction of the shoreline by nutria, a non-native invasive rodent. They have eaten roots of native plants denuding the shoreline of plants needed to hold the dirt in place. The loss of reeds, cattails and other native wetland plants has had a devastating effect on the ecology of the area. The loss of plants has meant a loss of shelter and nesting areas for waterfowl and birds. The increase of erosion into the lake has decreased water habitat for fish.

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The final problem is sedimentation which has resulted in the lake becoming shallower. A large portion of sedimentation has occurred secondary both to milfoil and waterlily mats binding into mud islands and also from nutria burrows and denuded shorelines collapsing into the water. Sedimentation has also occurred because there are several CSO outfalls that drain into UB and overflow during periods of heavy rain. For example, measurements of the lake bottom during high water in June, reveal that directly in front of the Belvoir outfall, there is no change in depth since 1980 but in the area where the outfall currents reduce and dissipate, the depth has been reduced from 5ft to 2.5 ft. There have been two major sewage overflows into Union Bay. One (Belvoir outfall), in 1988, released 5 million gallons of raw sewage into the bay. The second one (University Slough), in 2008 released 8 million gallons. The frequent CSO overflows and the major sewage spills have contributed to eutrophication because they have created a nutrient rich environment for aquatic plants to flourish, have been responsible for algal blooms (including cyanobacteria-toxic blue green algae), and have decreased the overall depth of the lake. Run-off from residences and other property around the lake have also increased the phosphorus load in the bay and contributed to water quality degradation and sedimentation.

Save Union Bay Association is addressing the problems of invasive aquatic plants and shoreline destruction by nutria. Since 2009, we have been working with USDA Wildlife Division to eradicate nutria from UB. Over 250 nutria have been removed from the bay. The USDA is also doing research into shoreline restoration of the areas damaged by nutria. In February 2010, SUBA received a grant from the Washington State Department of Ecology to develop a plan to reduce and manage milfoil and other invasive aquatic vegetation in UB. We contracted with Herrera Environmental Consultants to perform an aquatic plant survey and to write an IAVMP (Integrative Aquatic Vegetation Management Plan). This integrative lake management plan will provide an overview of the problems of UB and their interrelationships and present an on-going solution. It will provide a template for ecological stewardship of UB. The plan should be completed by August 2010. We will then apply for an implementation grant from DOE.

SDEIS Omissions

There was no mention in the SDEIS of impacts of bridge construction or lane alternatives on the ecosystem of Union Bay outside the work corridor. (We are defining work corridor as the entire project footprint which includes boat and barge travel corridors, anchoring locations, temporary work platforms, as well as the construction footprint,) Our position is that the entire bay area will be affected by many of the elements described in the SDEIS. The SDEIS described impacts from construction on species inhabiting or migrating through the work corridor but it did not discuss how the species will cope with the 7-10 year construction project. SUBA contends that, as habitat near SR520 is impacted, the species using that area will move to other areas of Union Bay where similar wetland habitat exists. These wetland areas are degraded more than the southern shore within the SR520 corridor because there is less water mixing, less boat traffic, and more invasive species. The north residential shoreline contains some

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shoreline habitat restoration but the salmon are unable to nest there due to the area in front of these properties being clogged with milfoil, waterlilies, and algae.

In addition, not mentioned in the SDEIS is the impact simply from construction itself- the movements and voices of people and machines creating noise, waves, and air-ground movement. These activities will frighten many species and result in their distancing themselves from the source of this activity. (e.g., Currently, waterfowl on the bay may be content to swim or nest near SR520 despite the car movement on the bridge but, as people and machines line the sides of the bridge or during pile driving, these species will seek calmer waters.)

The SR 520 project FEIS should contain information about the impacts to all of Union Bay and proposed mitigation to facilitate species continued existence on UB.

Impact of Bridge Construction on SUBA's Three Priority Areas

Save Union Bay Association has identified the major problems in Union Bay and is working to manage and solve them. Our top priority is to reduce the infestation of milfoil. We believe that, when the density of invasive aquatic plants is reduced, then the water will circulate better improving oxygenation, temperature, and nutrient load. Improving the aquatic ecosystem should make UB more hospitable to fish- especially to salmonids- which currently are unable to travel through most of the bay due to thick aquatic plant growth and high water temperature. The direct impacts of bridge construction on our priority areas are:

1. Invasive aquatic plants. The SR 520 work corridor is choked with milfoil. Milfoil spreads and re-roots from stem fragments. As work is undertaken in this area, these plants will be disturbed and fragments will float to other parts of UB and propagate. Barges and other boats bringing in supplies for bridge construction will probably bring in milfoil fragments from Lake Union and will probably break off stem fragments from the milfoil in Union Bay. This disruption will also create more milfoil infestation in UB.
2. Shoreline-habitat destruction. Nutria and beaver live near SR520. SUBA is currently undertaking a nutria eradication program to deal with the shoreline destruction caused by this invasive mammal. As their habitat is destroyed/impacted by SR520 construction, they will seek new habitat away from this area- most likely along the University of Washington shoreline. We have already eradicated the nutria from this area and are now focusing our efforts on the Arboretum and Portage Bay. Movement of nutria back to the UW will result in more shoreline destruction. There are three beaver dams in the work corridor. The USDA biologists believe that the beaver were impacted by human activities on Foster Island and moved their dam to a more remote location between the cattails in this same general area. Every time beaver move, they take down many more trees to build their home. Bridge construction will impact the beaver living next to SR520 such that it is likely they will move again. The closest habitat is in UB north of the work corridor.

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3. Lake biochemistry and sedimentation. SUBA is concerned about the rich nutrient substrate in Union Bay. The spongy peat bottom is indirectly impacted by any nearby construction vibration and weight. Sedimentation, run off and spills impact the lake's biochemistry and contribute to algal and invasive plant growth. Because Union Bay is shallow with poor water quality in many areas, SR520 construction is likely to have a greater impact on UB than Lake Washington.

Proposed Additions to the SDEIS and Requested Mitigation

Save Union Bay Association's primary concern is the environmental impact of bridge construction on Union Bay. Construction of any of the 6 lane alternative options will impact the environment, slightly more or less depending on the option eventually chosen. Our perspective is that, given the problems currently facing Union Bay, without intervention, the bay will not be able to support the changes engendered by SR520 construction. We need to improve habitat throughout UB and improve access to the area north of the work corridor before bridge construction occurs to enable species to relocate and thrive during construction. SUBA is concerned that construction of SR520 will have bay wide impacts within the following elements of the environment:

1. Recreation

Construction will impact water recreation by limiting small craft access to wetlands around SR520. Canoeists and kayakers will probably explore the wetlands north/northwest of SR520 instead. Larger boats will also be impacted because many of them anchor along the 520 corridor during UW football games or simply during warm summer days. The logical response of boaters during construction is to motor north of the construction area. Large boats as well as small craft will probably move to the N-NW side of UB to be further from the noise, dust, vibration, glare, and accidental damage from construction equipment. Construction will also impact people enjoying nature on the south shore (Arboretum, Foster Island, Montlake Park). Some of these paths will be closed during construction. People visiting the open areas along the Arboretum shoreline will be impacted by noise, dust, vibration, and reduced visual quality. Most people will visit the UBNA on the northwest shore of Union Bay instead. At UBNA, they can have a similar experience as they would have had at the Arboretum (hiking, biking, bird watching, viewing the lake and mountains). People will also utilize the other shoreline parks/access areas on the north shore (Belvoir Place Park, Waterway #1, Waterway #2). More people using UBNA and these other areas will result in more auto traffic in the neighborhood and more degradation to the land and shoreline as people utilize the area.

Mitigation: Improve boat access throughout Union Bay. Work with UW/UBNA to maintain the integrity of their restoration efforts. Work with Seattle Parks Dept and DNR to maintain integrity of the other areas and to improve boat access to them.

2. Noise

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Noise and vibrations will impact all species in the area. Despite all efforts at noise reduction, noise will still be loudest at or near the construction site dissipating with distance. All species will seek habitat areas/migration routes that are further from the source of the noise and vibration

Mitigation: Improve access and habitat on the N-NW side of Union Bay. Provide gravel areas for Chinook salmon nesting and provide access to these areas (ie., decrease milfoil, waterlilies, and blue-green algae). Recommended areas for habitat enhancement are described under the "ecosystem" element. Improve N-NW areas frequented by people who are avoiding the southern shoreline.

3. Air Quality

People (boaters, trail walkers) and other species will be affected by air quality/dust close to the construction site. They will seek areas further from the site, most likely the north and NW side of Union Bay. (e.g., UBNA, Belvoir Park, Waterway #2 and Waterway #1).

Mitigation: Improve access and habitat on the N-NW side of UB.

4. Water Resources

Construction will result in increased water turbidity at the construction site. Sediments may be removed from the bay as part of the construction activities such as dewatering. Fish and other swimming/diving species will be affected by the turbidity and will move away fromthe construction in search of cleaner water and to escape predators.

Mitigation: Improve access and habitat in UB

5. Ecosystems

Construction and implementation of any option will reduce or disturb fish habitat, displace state and federally listed bird species, and affect wildlife by removing vegetation. Loss of wetlands, shading from the new bridge, removal of vegetation, and pile driving will all reduce wildlife habitat. Night lights, vibrations, and run off contaminants will affect water quality, species survival and salmon migration. In addition, these changes will cause disorientation and stress in all species and can alter their natural behavior. Species will disperse to similar habitats located in UB.

Mitigation: To decrease the impact of SR520 construction on species and wetlands, it is suggested that you mitigate the ecosystem affects before bridge construction begins. In this way, species can begin to adapt to new environments under favorable conditions. Specific mitigation suggestions include:

1. Preserve nesting sites of protected migratory birds and waterfowl. It is suggested that you create new, compensatory nesting sites and put these in place by 2011- before construction begins. It is suggested that you help train the species to relocate to these new sites. In this way, they will be able to learn new behaviors in a relatively stress free environment. Trying to discover a

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new nesting site while construction is occurring- with noise, new obstructions, dust, and humans in the 520 work corridor would be very difficult for the migratory Canada geese and cliff swallows and would probably result in death of several birds. SUBA would like SR 520 Mitigation Specialists to work with USDA (Justin Dayton and Aaron Loucks) and other knowledgeable experts to determine appropriate relocation sites and nesting areas.

2. Reduce milfoil in the 520 work corridor from Portage Bay to the east end of Lake Washington. Milfoil and other invasive aquatic plants are a major problem within Union Bay. Milfoil spreads by plant fragments whereas waterlilies spread by root deposits. Construction will cause disruption/uprooting to these invasive plants located within the SR520 work corridor. Plants will be loosened by actions ranging from pile driving to water transportation of materials around the site. It is pointless for SUBA to work at reducing milfoil in the center of UB (to improve access and habitat throughout the bay) if, at the same time, SR520 construction is increasing milfoil fragments. It is recommended that SR520 program eliminate invasive aquatic plants in the 520 work corridor and adjacent environment before construction activities begin. It is recommended that SR520 continue to work with SUBA during construction to monitor milfoil and assist in removal of invasive aquatic plants.

3. Preserve habitat, migration, and reproduction of federally listed migratory fish. Because of construction effects of noise, turbidity, vibration, human activity, shading, and wetland destruction, it is reasonable to assume that the fish will alter their migratory/ habitat routes through UB to the N-NW of the construction. Because construction is a 7 year endeavor, there will be long-term effects on fish if they are not enabled to survive in the N-NW waters of UB. Due to the current conditions of UB, survival would be limited. High water temperature, low oxygenation, overgrowth of milfoil, shallow water, and poor habitat make the N-NW area of UB inhospitable to salmon. To improve the viability of salmon in UB, it is recommended that SR 520 project:
   - Reduce milfoil and other invasive plants.
   - Improve the wetlands, including the islands in the NW corner of UB. It is quite likely that, in some areas of nutria-denuded shoreline, shallow gravel areas could be created to provide spawning grounds for Chinook Salmon. This NW corner used to connect to streams up which the salmon would migrate.
   - Present an education program to waterfront owners describing the effects of their shoreline on fish nesting/predator protection.
   - Work with homeowners to modify their shoreline to establish beach areas/shallow gravel areas for salmon spawning grounds.
   - Improve access to the private property shorelines that have been restored to provide salmon spawning areas. (reduce milfoil)

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- Improve access to Waterway #1 that has been restored to provide salmon nesting areas. (reduce milfoil, waterlilies, blue green algae, and other algal growth.)
- Improve access to the University Slough up which salmon migrated in the past. (reduce milfoil, waterlilies, blue green algae, and other algal growth.)
- Modify the shoreline and dock of Belvoir Place Park and naturalize it so it can provide salmon habitat.
- Improve access, wetlands, and shorelands along the south shore of Union Bay near Madison Park

4. Compensate for wetlands lost during SR 520 construction. Most of Union Bay north of the shipping lanes is considered wetland due to the shallow depth (less than 6 feet) and vegetated cover. The entire Bay should be under consideration as a wetland mitigation site. The removal of invasive species would be similar to the wetland enhancement opportunities discussed in the SDEIS. The only change would be to extend the boundary of the wetland mitigation sites under consideration to the shipping lanes (towards the project area).
5. Restore Shorelines damaged by Nutria. On the NW corner of UB is a small inlet that closely resembles the wetland area near SR520. This wetland is currently devastated due to nutria damage. It is suggested that this wetland be restored so that species can find suitable habitat located nearby during SR520 construction. Without the wetland vegetation, this area is no longer safe for nesting because it is too accessible for eagles and other predators. It is recommended that you work with USDA, DNR, and UW shoreline restoration experts to improve the shoreline vegetation and to improve aquatic access to this area.

6. Geology and Soils

Cofferdams, pile driving, and other construction activity will cause sediments to spread within UB. Union Bay is very shallow. An increase in sedimentation will hamper aquatic species survival.

Mitigation: It is recommended that any sediments removed from the bay not be replaced. Improve access throughout Union Bay so aquatic species can avoid the dangers associated with shading and turbidity.

7. Hazardous Materials

Contaminated sediments exist in Union Bay.

Mitigation: It is recommended that any hazardous sediments encountered during construction be removed from UB.

8. Navigation

Construction along the shipping lanes in Union Bay will cause many motorboats to travel slightly further to the north of the construction corridor. Union Bay is very shallow and infested with milfoil. It is likely that boats will have their motors clogged with milfoil or get stuck as they attempt to distance themselves from construction effects (noise, activity, barges).

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Mitigation: Reduce milfoil and improve accessibility to UB north of the construction area. Maintain navigable channels through UB.

Conclusions

Currently, Union Bay is facing several problems that are increasing eutrophication. The construction of the SR520 bridge will add to the degradation that the bay is experiencing by destruction of habitat on the southern shorelands and relocation of species to the north of the work corridor. In order to accomplish construction with minimal impacts, it is important first to improve the aquatic ecology of UB. All habitat in Union Bay will be impacted to some extent by noise, vibration, light, and activity within the construction zone. As species distance themselves from the noxious intrusions within the construction area, they will seek habitat nearby- north of the work corridor. Because UB is so heavily infested with milfoil, it will be difficult for aquatic species to survive in the shallow, warm waters of the center-north side of UB. The highest priority to compensate for bridge construction is to reduce the milfoil that is choking the bay. The second priority is shoreline restoration to improve wetland habitat inUnion Bay and improve the natural shoreline along the north shore private residences and parks.

Save Union Bay Association wants to work with the SR520 Mitigation Specialists to find ways to minimize ecosystem impacts during bridge construction and to maintain and improve the aquatic environment once the new bridge is in place.

Save Union Bay Association Board of Directors
Susan Holliday, PhD, President
Bill Watts, MD, Secretary
Steve Sulzbacher, PhD, Treasurer
Colleen McAleer, MBA, Mediation Representative
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Exhibit 13 Connie Sidles Expert Birding Inventory near Foster Island

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BIRDS OF FOSTER ISLAND, Union Bay and Portage Bay (4/11/10)
(as prepared by Connie Sidles, Seattle Audubon master birder, in collaboration with other master birders of the state)

Pied-billed Grebe
Horned Grebe
Western Grebe
Double-crested Cormorant
Green Heron (rare on the lake)
Greater White-fronted Goose
Canada Goose
Trumpeter Swan (very rare)
Tundra Swan (very, VERY rare)
Wood Duck
Gadwall
Eurasian Wigeon (rare)
American Wigeon
Mallard
Blue-winged Teal
Cinnamon Teal (rare)
Northern Shoveler
Northern Pintail
Green-winged Teal
Canvasback
Redhead (very rare)
Ring-necked Duck
Greater Scaup
Lesser Scaup
Bufflehead
Common Goldeneye (rare)
Hooded Merganser
Common Merganser
Ruddy Duck (rare and getting rarer)
Short-eared Owl (very rare in the city)
Osprey
Bald Eagle (on the endangered list, I believe)
Red-tailed Hawk
Cooper's Hawk
Sharp-shinned Hawk (getting rarer, especially in the city)
American Coot
Killdeer
Mew Gull
Ring-billed Gull
California Gull
Herring Gull
Thayer's Gull (rare)
Glaucous-winged Gull
Caspian Tern
Rock Pigeon
Band-tailed Pigeon (rare away from old-growth forest)
Common Nighthawk (very, very rare)
Black Swift (rare)
Vaux's Swift
Belted Kingfisher
Downy Woodpecker
Northern Flicker
Western Wood-Pewee
Willow Flycatcher

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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.

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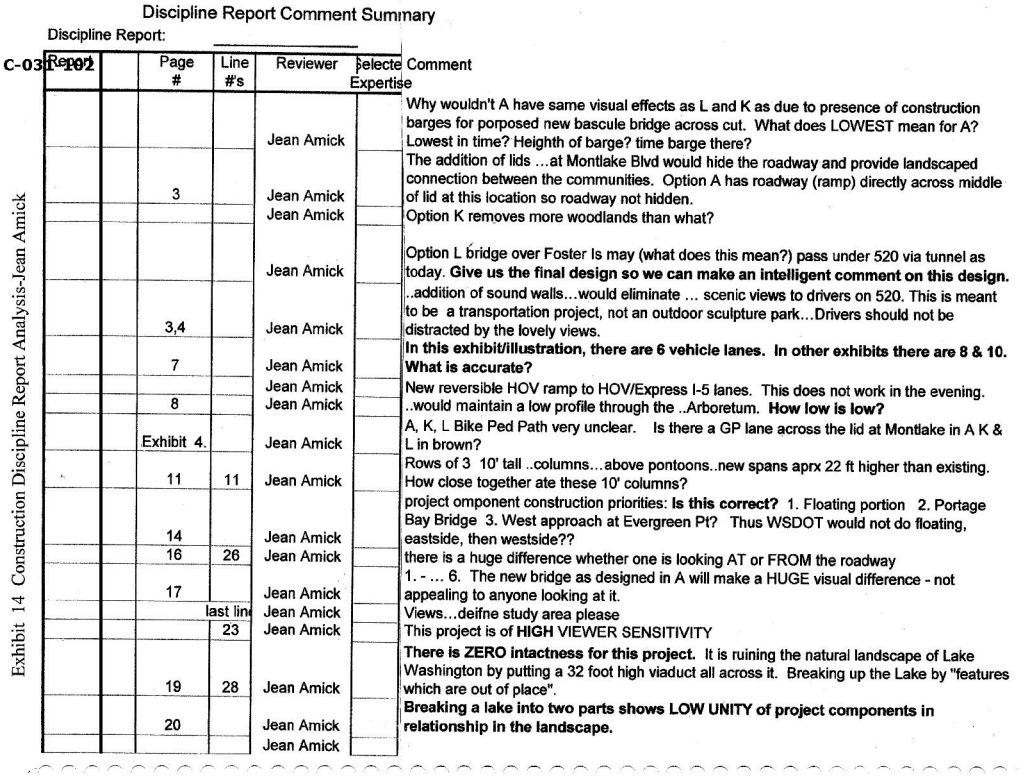
Warbling Vireo
Steller's Jay
American Crow
Tree Swallow
Violet-green Swallow
Northern Rough-winged Swallow
Cliff Swallow
Barn Swallow
Black-capped Chickadee
Bushtit
Brown Creeper (unusual away from conifer forest)
Bewick's Wren
Marsh Wren
Ruby-crowned Kinglet
Golden-crowned Kinglet
Western Tanager (getting rare in the city)
American Robin
European Starling
Orange-crowned Warbler
Black-and-white Warbler (very, very rare)
Yellow Warbler
Yellow-rumped Warbler
Black-throated Gray Warbler
Townsend's Warbler
Common Yellowthroat
Wilson's Warbler
Spotted Towhee
Savannah Sparrow
Fox Sparrow
Song Sparrow
Golden-crowned Sparrow
Red-winged Blackbird

Total 85 species
18 rare
7 very rare

Because the following pages of this item are difficult to read, a full page version of this item is included at the end of the response to comments on the SDEIS in the printed version, and in a separate PDF file in the DVD and online version.



Discipline Report Comment Summary

Discipline Report:

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Exhibit 14 Construction Discipline Report Analysis-Jean Amick

Report		Page #	Line #'s	Reviewer	Selected Expertise	Comment
				Jean Amick		Why wouldn't A have same visual effects as L and K as due to presence of construction barges for porposed new bascule bridge across cut. What does LOWEST mean for A? Lowest in time? Heighth of barge? time barge there?
		3		Jean Amick		The addition of lids ...at Montlake Blvd would hide the roadway and provide landscaped connection between the communities. Option A has roadway (ramp) directly across middle of lid at this location so roadway not hidden.
				Jean Amick		Option K removes more woodlands than what?
				Jean Amick		Option L bridge over Foster Is may (what does this mean?) pass under 520 via tunnel as today. **Give us the final design so we can make an intelligent comment on this design.**
		3,4		Jean Amick		..addition of sound walls...would eliminate ... scenic views to drivers on 520. This is meant to be a transportation project, not an outdoor sculpture park...Drivers should not be distracted by the lovely views.
		7		Jean Amick		**In this exhibit/illustration, there are 6 vehicle lanes. In other exhibits there are 8 & 10. What is accurate?**
				Jean Amick		New reversible HOV ramp to HOV/Express I-5 lanes. This does not work in the evening.
		8		Jean Amick		..would maintain a low profile through the ..Arboretum. **How low is low?**
		Exhibit 4.		Jean Amick		A, K, L Bike Ped Path very unclear. Is there a GP lane across the lid at Montlake in A K & L in brown?
		11	11	Jean Amick		Rows of 3 10' tall ..columns...above pontoons..new spans aprx 22 ft higher than existing. How close together ate these 10' columns?
		14		Jean Amick		project omponent construction priorities: **Is this correct?** 1. Floating portion 2. Portage Bay Bridge 3. West approach at Evergreen Pt? Thus WSDOT would not do floating, eastside, then westside??
		16	26	Jean Amick		there is a huge difference whether one is looking AT or FROM the roadway
		17		Jean Amick		1. - ... 6. The new bridge as designed in A will make a HUGE visual difference - not appealing to anyone looking at it.
			last lin	Jean Amick		Views...deifne study area please
			23	Jean Amick		This project is of **HIGH** VIEWER SENSITIVITY
		19	28	Jean Amick		**There is ZERO intactness for this project.** It is ruining the natural landscape of Lake Washington by putting a 32 foot high viaduct all across it. Breaking up the Lake by "features which are out of place".
		20		Jean Amick		**Breaking a lake into two parts shows LOW UNITY of project components in relationship in the landscape.**
				Jean Amick		

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These comments are duplicates of comments submitted separately by Jean Amick (Item Number I-257). Please refer to comments I-257-002 through I-257-052 for responses.

Discipline Report Comment Summary

Discipline Report: _____

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Report		Page #	Line #'s	Reviewer	Selected Expertise	Comment
Const Techniques		15		Jean Amick		Const of temp roadways. Where?
		17		Jean Amick		2 types paving. Hot mix asphalt & concrete. Where will lane widening occur?
		18		Jean Amick		Closure & Demo of some roads & ramps. ID'd in const. activites
				Jean Amick		* Sound walls cast into traffic barriers (in median?)...will this be on entire length of 520?
				Jean Amick		Location of barges with tall cranes floating on lake?
		20		Jean Amick		Piling installation
		22		Jean Amick		* Decking for Montlake (new & old?) bridges. Open vs closed? Is closed safer/fewer accidents?
		30		Jean Amick		* Do stormwater treatment ponds/wetlands breed mesquitos?
		31		Jean Amick		* Staging areas: Haul routes vehicle access that intersects with roadway network to be monitored by flaggers, police, etc. Designated haul route through Seattle to 520, 1-5, 405 (Exh. 15). Will Montlake Blvd be used? Hours?
Demolition old		34		Jean Amick		Demo NOISE?
		40		Jean Amick		"A" adds SB traffic capacity on Montlake Place E & 24th Ave E?
				Jean Amick		WHAT IS THE % GRADE OF HIGH RISE NOW? COMPARED TO FUTURE? I didn't understand the -.5% in exhibit.
		43		Jean Amick		When 24th Ave Bridge closed at start of construction, what do the many bikers do?
				Jean Amick		What do bus riders do in 1st yr of construction when Flyer Stop closed? Alternative route suggestion in SDEIS are not adequate for bus riders to continue on buses.
		55		Jean Amick		New bridge will be 190 feet N of old in W, 160 feet N on East side.
				Jean Amick		How close are the 10 ft high concrete columns atop the pontoons? Then deck is 22 ft above these 10 ft so bridge is 32 ft high off water, plus footage for side rails???
		59		Jean Amick		Portage Bay Viaduct - "north half 4 lanes, south half 6 lanes". How many total lanes?
				Jean Amick		
Exhibit 1-3				Jean Amick		Option A - has ramp designed right through middle of Montlake lid - BAD for peds and bikes if they can't cross without jumping traffic!
Visual Quality & Aesthetics Discipline Repo						
Intro		1		Jean Amick		"on behalf of the communities in proximity" to proposed project. Define: "in proximity" ?
		2		Jean Amick		construction impacts **"temporary"** changes to visual quality and character for up to **4 years**

Discipline Report Comment Summary

Discipline Report:

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Report		Page #	Line #'s	Reviewer	Selected Expertise	Comment
		22	4	Jean Amick		Correct: SR520 is visible from locations beyond the limits of the project vicinity.
		26		Jean Amick		Exhibit # 2-19 and 2-20 View from Webster Pt looking SE and looking SW to Arboretum
		57	19	Jean Amick		...park users ... and boaters' views. VERY IMPORTANT
		62	6	Jean Amick		new HOV..ramps might be more visible...WELL, WILL THEY?
		65	15	Jean Amick		**Vividness, intactness, and unity would not change from exisiting levels??? Why not, the roadway will be twice as wide?**
		70	17	Jean Amick		YES - noticeably greater width and ..noticeably greater height of the west approach.
			20	Jean Amick		this is transportation project, the panoramic and scenic views of motorists and transit riders are NOT a goal of this project.
			23	Jean Amick		**The new path under the bridge??? Specifically HOW is this different from the going through a tunnel as it does now?**
		72	12	Jean Amick		Is it six lanes or really 11 (including shoulders and bike.ped) or MORE? It is proposed to be 32 ft off the water. That is only 14 ft higher than existing??
			18	Jean Amick		Floating part will have columns 250 ft apart?
			21	Jean Amick		Changes to quality or character of neighborhood views would be slight to moderate because bridge is an existing element. **NEW BRIDGE WILL BE MORE THAN TWICE AS WIDE AND TWICE AS HIGH AND 100-190 FEET CLOSER TO NORTH (LAURELHURST COMMUNITY)...ERROR TO SAY CHANGES WILL BE SLIGHT FROM ADJACENT HOMES.**
		73	16	Jean Amick		Overall vividness, intactness, and unity for the Lake Washington landscape ..would remain high for all options... **WRONG** when looking at it from the north.
		75	6	Jean Amick		**of bridge? What % increase of light pollution will there be for surrounding neighborhoods? Reading further..**it says the floating bridge will not be illuminated except for navigation safety lights and lighting on the bike/ped path. **Your description of bike**
		77	19	Jean Amick		Sound walls "reduce visual quality for motorists by cutting off views.." THIS IS NOT IMPORTANT. THE LESS THE VIEW THE MORE THE DRIVER WILL CONCENTRATE ON THE ROAD.
		78	LAST PARAGRAPH			PUBLIC ART IN CORRIDOR....ZERO PRIORITY WITH State Budget Crunch. ADD IT WHEN ECONOMY PICKS UP and all the westside mitigation has been implemented. Emphasis is on safety and mobility for this project.
		79	LAST PARAGRAPH			Design lids to reconnect divided communities...THE MONTLAKE LID HAS A VEHICLE RAMP GOING ACROSS IT...THUS NOT RECONNECTING THE COMMUNITY and thus NOT A LID as defined by WSDOT in the vocabulary terms in the SDEIS

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Comment

There is no mention of lights or lighting. Does this mean that all work will be done in the daylight hours and there will be no temporary lights as we now see Sound Transit using at night at Husky Stadium ?

From Jean Amick, jeanseattle@earthlink.net
3003 E Laurelhurst Dr NE, Seattle, 98105
206-525-7065

Exhibit 15 Muckleshoot Artifact Report-Judy Thorton

Cultural resources Union bay

-----Original Message-----
From: Judith Thornton <thornj0@comcast.net>
To: SR520Bridge_SDEIS@wsdot.wa.gov
Cc: billandlin@aol.com
Sent: Tue, Apr 13, 2010 10:46 am
Subject: Cultural Resources on Union Bay

TO: Jenifer Young
SR520 Environmental Manager
SR520 Project Office, Suite 520
600 Stewart Street
Seattle, WA 98101
or e-mail
SR520Bridge_SDEIS@wsdot.wa.gov.

C-031-103

Dear Ms. Young:

Thank you for the opportunity to comment on the need to protect valuable archeological sites during the re-building of Highway 520. I am a neighbor on Union Bay who happened to discover an archeological artifact, a mahogany red chert biface, in my garden above Waterway 1 on Union Bay. From this discovery, the Friends of Waterway 1 learned that Waterway 1 and many other locations on Union Bay are important sites of pre-contact historical resources. We are working with archeologists at the University of Washington and Burke Museum, with the Muckleshoot Tribe archeologist, Laura Murphy, and with Washington Department of Natural Resources aquatics archeologist Maurice Murphy to identify and preserve valuable cultural resources. We ask that WSDOT assure similar protection to cultural resources in its plans for Highway 520.

Thank you for your efforts on behalf of the historical and cultural resources of the city.

Judith Thornton
Friends of Waterway 1
and volunteer for Laurelhurst Community Club

cc. Colleen McAlleer,
Laurelhurst Community Club

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WSDOT has taken great care and concern for the protection of the cultural resources located within the SR 520 project area, through the project's Section 106 process.

The National Environmental Policy Act states that the federal government must use all practicable means to preserve important cultural and historic aspects of our heritage. Other environmental laws such as the National Historic Preservation Act (NHPA) also require that effects on significant cultural resources be considered during the public environmental review process. Section 106 of the NHPA requires that all federal agencies consider significant cultural resources as part of all licensing, permitting, and funding decisions.

In accordance with the Section 106 regulations WSDOT began the consultation process with DAHP for the SR 520, I-5 to Medina by identifying the Area of Potential Effect (APE) according to DAHP guidance. The APE boundary was presented to tribes with interest in the project by and confirmed with them. In coordination with DAHP, WSDOT has continued the Section 106 process by performing an historic property survey of the APE, identifying properties listed or eligible for listing on the National Register of Historic Places, and documenting potential project effects.

WSDOT published a Cultural Resources Discipline Report (Attachment 7 of the SDEIS), as part of the SDEIS, to discuss the regulatory and historic context of the protection and preservation of cultural resources. The Report also discussed the extent of records and archival research, the project's methodology for finding and evaluating cultural resources, and the historic resources in the study area. It goes on to analyze the potential effects of the project on cultural resources and opportunities and commitments for mitigation.

Exhibit 16 Cumulative Effects Discipline Report -comments by McAleer

Discipline Report Comment Summary

Discipline Report: _____

Report	Page #	Line #'s	Reviewer	Selected Expertise	Comment
Cumulative effects Discipline Report					
			McAleer	*Laurelhurst Community Club Mediation Representative*	
C-031-104 Transportation Goals	*35*				*The Vision 2040 calls out that transportation development can occur in a sustainable manner.. Without resulting in deterioration of the environment.*
	37	Lines 31-40			The current Plan A is 8-10 lanes through the Arboretum and Foster Island increasing to 7-9 lanes across Portage Bay to I-5. The replacement of SR520 represents a maximum footprint which is in directly in opposition to Transportation 2040 Draft EIS .
C-031-105 Other Projects	38	Lines 19-39			Attachment 1 titled "Reasonably Foreseeable Future Actions-Land Use Plans or Projects.
					Under the City of Seattle, there are omissions of 4 projects which had been submitted under permit request to City of Seattle DPD (see attached report)
Transpot'n	52	Lines 1-3			Four major projects resulting in over 1,600,000 sqare footage in development within 3.6 miles of the Montlake interchange.
					Traffic studies are flawed in not including these projects which are estimated to increase traffic volumes in excess of 3800 trips daily
					These include permit #s
					#3007521 on 08-03-07 for 400 additional rooms and 1,600,000 square feet
					expansion for Seattle Children's Hospital located 2.0 miles from Montlake Interchange. Additional trips projected daily 1200.

WSDOT has also worked to identify and explore potential archaeological sites within the project area. The Miller Street Landfill was identified as one known archaeological site within the project area. WSDOT conducted additional research and subsurface testing (2007) for the site - and has since determined that it is not a historic property and that no NRHP-eligible archaeological resources are located there.

WSDOT also identified Foster Island as potential archaeological site and conducted archaeological explorations and identification efforts on the Island, in the late summer months of 2010. No significant archaeological remains were found. Findings from this archaeological investigation are discussed in the Final Cultural Resources Assessment and Discipline Report (Attachment 7 to the Final EIS). WSDOT has since determined that Foster Island is a traditional cultural property and will be treating it as such.

Coordination with interested tribes and DAHP regarding cultural resources of the area will continue throughout the development of the project. Regarding historic properties, coordination with specific groups acting as Section 106 consulting parties to the project will also continue throughout the development of the project. WSDOT's final analysis of project impacts on cultural resources within the project area can be found in the Final Cultural Resources Assessment and Discipline Report (Attachment 7 of the Final EIS).

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Since the SDEIS was published, WSDOT and FHWA have identified a Preferred Alternative that is similar to Option A, but incorporates design refinements that respond to community and stakeholder reaction to the SDEIS. The Preferred Alternative design includes 6 lanes throughout the SR 520 corridor and replaces the auxiliary lane on the Portage Bay Bridge in Option A with a managed shoulder, which reduces shoulder

C-031-105						#3008972 filed amended on 07-29-08-proposed expansion of 105,000 square feet of new retail/restaurant development with new parking garage adding 702 spaces adjacent to NE 45St Viaduct
						Applicant is University Village, located .8 mile from Montlake Interchange
						#3009681 on 5-22-09 proposed additional of 31,000 new retail development and addition of new 350 residential units and 700 new parking stalls
						Filed by QFC, Kroger Co, located .9 miles from Montlake Intersection
						#s 3010260 on 08-17-09, #6203388 on 05-29-09 and # 36223077 on 08-04-09
						Additional recreation facilities including 80,000 indoor square feet for Arena Sports, Indoor outdoor Tennis Courts and Clubhouse, Soccer and ballfields, lighted and North Shore Building #11 25,000 square feet of recreation, office and restaurant and day care
						Total daily users projected to increase :508 trip generations
						Applicant is City of Seattle, located within 3.6 miles of Montlake Interchange
						Considering the omission of the above planned growth which will affect trip generation and travel times along Montlake Blvd, the "Indirect and Cumulative Effects Analysis Discipline Report" is **not accurate** and fails to accurately predict the foreseeable growth in trip generation and increased travel times along Montlake Blvd and through and across East/West on SR520 and north/south travel through the SR520 Interchange at Montlake Blvd. There will be as many as 3800 additional trips daily when these projects are completed before the SR520 bridge is completed.
Transportation						
		Page 52	Lines 2-3	McAleer		Report claims that "no quantifiable, indirect effects were identified" for the transportation analysis. This claim is refuted by lack of inclusion of the above projects which will directly impact the traffic along Montlake Blvd to access SR520 with extra vehicle trips of up to 3800 a day.

widths and creates room for a landscaped median. Additionally, the Preferred Alternative design minimizes the footprint of SR 520 across Foster Island to the maximum extent possible while accommodating potential future light-rail infrastructure. Please see the response to Comment C-031-041.

C-031-105

See response to comment C-031-033. The transportation analysis for the SDEIS included the most current land-use planning assumptions available when travel demand modeling began. WSDOT updated the land-use assumptions used in the travel demand model prior to the start of analysis for the Final EIS. The City of Seattle is required to review development proposals for concurrency with the established comprehensive plan, which is coordinated with the metropolitan planning process. Transportation analysis for the I-5 to Medina Project is consistent with the goals and assumptions of the metropolitan planning process, which is overseen by the Puget Sound Regional Council.

The purpose of identifying reasonably foreseeable actions is to determine the cumulative effect on a resource, rather than to create a comprehensive list of projects. Council on Environmental Quality (CEQ) and WSDOT guidance does not provide explicit requirements for how to identify other present and reasonably foreseeable actions. Rather, it allows agencies to determine the level of analysis appropriate for their projects. The CEQ guidance does not require an inclusive list of projects, but instead suggests evaluating both individual actions, when they are reasonably well known, and groups of actions, which are typically included in documents such as transportation plans and master plans.

The SDEIS included an extensive group of reasonably foreseeable future actions (projects). In the Final EIS, WSDOT determined that, consistent with the CEQ and WSDOT guidance, most of these projects would be more appropriately evaluated within groups of reasonably

C-031-106 Economic	Page 61	Lines 26-31	McAleer		Economic Activity. There is a claim that land use or development patterns would not change. However, for Alternative A without access to south of SR520 (no LWB ramps),the business districts in both Montlake and Madison Park would lack access and suffer an adverse economic effect. Secondly, the University of Washington and businesses north of SR 520 namely, the University Village Shopping Center would be negatively impacted due to adverse traffic congestion. The tax base of the new growth would be curtailed for the City of Seattle by lack of mobility.
C-031-107					In addition, freight could not access SR520 as well in Plan A and L due to the longer travel times and drawbridge delays.
C-031-108 Community	Page 62	Lines 28-36	McAleer		Claims that after construction, the 6 lane alternatives would add to" community cohesion" is not true. Plan A has a freeway ramp over the planned lid which carves up they value of community connectivity. Plan L cuts a large gouge across the Montlake neighborhood and adds 40 feet high massive drawbridge obstruction across neighborhoods and to the Arboretum's viewpoints. Madison Park in all cases is reduced as a walking community be the elevated bridge structures 30 feet in height and excess noise generated, above conversation levels in all 6 lane alternatives.
C-031-109 Social	Page 63	Lines 5-6	McAleer		"Operation of the 6 lane alternative would not change demographics or existing land use patterns". If in Plans A and L, there are no southbound access to Madison Park, Montlake, North Capital Hill and the Arboretum, all traffic is diverted first to the north in a shared ramp, and then turned south back to the neighborhood. This would render the access to all points north and south of SR520 Seattle businesses and residences gridlocked. The effect would be a diversion of businesses, sporting events at the University of Washington and a devaluation of residences which now live in close access to SR 520, particularly in Madison Park, Washington Park, Broadmoor, Shelby Hamlin, Montlake and Laurelhurst.

foreseeable actions. To identify groups of reasonably foreseeable actions, WSDOT relied on adopted regional and local land use and transportation plans, consistent with CEQ guidance. These plans provide information on the intended development of jurisdictions and transportation networks over a long planning horizon, encompassing multiple future projects that collectively have the potential to influence resource trends.

These regional planning documents (such as PSRC's Vision 2040 and Transportation 2040), local planning documents (such as the City of Seattle Comprehensive Plan and the King County Roads Services Capital Improvement Program), and master plans (such as the Seattle Children's Hospital Major Institution Master Plan) provide estimates of future growth and development that encompass many individual projects. Therefore, it is appropriate for the cumulative effects analysis to rely on these planning documents in identifying regional trends rather than to attempt to catalogue all foreseeable projects in the region. In this way, actions such as those metioned in the comment, although not evaluated individually, were considered as part of the trends affecting the resources into the future.

In the SDEIS, the reasonably foreseeable actions were presented on maps. In the Final EIS, the projects are presented in a list for greater clarity. See Chapter 7 of the Final EIS for further discussion of how reasonably foreseeable actions were identified.

C-031-106

Although traffic patterns would change with implementation of the SR 520, I-5 to Medina project, there is no evidence to suggest that businesses would be negatively affected during operation. The Preferred Alternative contains several features that would reduce overall congestion and improve mobility. Please see the Final Transportation

C-031-110	Public	Page 64	Lines 8-12	M cAleer		Claim that there are no long term effects on public service providers. If the traffic congestion on Montlake Blvd is not improved., Plans A and L offer no plan for improved mobility for the University of Washington Hospital and Seattle Children's Hospital and their staff and emergency vehicles. Having a bascule bridge as an access to SR520 creates a barrie,r and should be eliminated in a new bridge design. Only Plan K with a tunnel under Montlake Blvd can provide for improved travel times and 24 hour access to SR520 without the impingement of a bascule bridge opening.
C-031-111						Metro bus services are also adversely affec ted due to lack of predictable travel times on Montlake Blvd. Plan K offers increases in travel times and the only option which removes the unreliability of a bascule bridge opening for better ridership incentive.
C-031-112	Cultural	page 65	Lines 9-36	McAleer		Impacts to the fishing rights and preservation of the quality of fish environment by the Muckleshoot Tribe must be considered top priority. The salmon runs at this area are protected as endangered species. Plan K with the tunnel preserves fishing in this area by sinking the access to SR520 below in an tunnel. Fishing can then continue as before as fish pass closer to surface waters and they are only maintained under Plan K. Plan A and L cause less opportunity for fishing to to their second bascule bridge interference in the surface waters.
C-031-113						The 6 lane alternatives will be constructed with work bridges which will adversely harm fish habitat, loud pile driving will occur as well as disruptions in water turbidity. The law states that this should be avoided. The tunnel in Plan K can be dropped into place in 48 hours, rather than causing prolonged construction of a second bascule bridge in Plans A and L. Thus plan K is the preferred option.
C-031-114						Recent finding of Muckleshoot archeological artifacts off waterway #1 in Union Bay "mahogany red chert biface" -Care must be taken not to destroy such artifacts in the construction of the 6 lane option.

Discipline Report (Attachment 7 to the Final EIS) for information on traffic on the freeway and surrounding local streets.

C-031-107

Overall freeway travel operations and travel times on SR 520 would be similar for all 6-lane alternative options evaluated in the SDEIS. Please see Chapter 5 of the SDEIS for more information, as well as Comment C-031-093 regarding the new bascule bridge. The Preferred Alternative in the Final EIS includes a new bascule bridge similar to Option A, which would be parallel to the existing Montlake Bridge and would not result in an increase in bridge openings.

C-031-108

A bascule bridge in the location of Option L is not proposed as part of the Preferred Alternative. The Preferred Alternative modifies the design of Option A to include a modified Montlake Boulevard interchange and an enhanced and expanded Montlake lid. Modifications include a lid from Montlake Boulevard to the Lake Washington shoreline and bus stops on the lid for buses traveling between the University District and the Eastside. The intent is to create better pedestrian amenity in the central part of the Montlake neighborhood while providing a better location and environment for the regional bus stops that would be incorporated into the transit/HOV direct access ramps (please see Chapter 2 of the Final EIS). The Preferred Alternative would include features on the Montlake lid such as bike paths, open space, and pedestrian amenities, which would reconnect previously divided areas.

In accordance with the requirements of ESSB 6392, WSDOT collaborated with the City of Seattle and its pedestrian and bicycle advisory boards, King County Metro Transit, and Sound Transit to refine components of the Preferred Alternative. The suggested design refinements are included in the ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (please see

C-031-115	Recreation		Page 71	Lines 20-36	McAleer	Recreation effects are described in long and short term. All of the 6 Lane options remove parklands in an urban region which adversely affects state residents. Permanent transformation of greenspaces into concrete for vehicles passing through is counter to 4-f regulations and should be avoided . The impacts on neighboring communities will be severe. Trails will be stopped for pedestrians, kayakers , canoes and recreational boats will not have access to Union and Portage Bays. The University of Washington's nationally ranked crew teams may have to re-locate at great cost and inconvenience to students and faculty. Green spaces will be changed into staging areas for construction offering little respite from the projects' 4-8 year impacts.
C-031-116						The permanent removal of parklands also removes a repite area from the intensity of the project and removes habitat for passive recreation such as bird watching. The Arboretum will have difficulty with access and will be enveloped in noise from construction for 4-8 years.
C-031-117						Plan L is especially harmful as it adds a visual intrusion that will be seen and heard on bridge openings in nearby neighborhoods and in the adjacent parks.
C-031-118						Plan K with a lower height profile provides the least visual impact on park users. The clearance height for a kayaker or canoe padeler is 6 feet maximum, so no additional height is needed
			Page 73	Lines 3-5		Recreational users would enjoy better views of Mt Rainier with Bridge design K with its lower profile, rather than a barrier from Plans A or L that cut across the horizon.
				Lines 9-13		Plan K is the only 6-lane design that has a land bridge that will enhance the pedestrian experience in the Arboretum and links best to adjacent bike and pedestrian trails.
C-031-119				Lines 24-26		"Inclusion of Sound walls" is mentioned as a benefit for park users with the 6 lane option here but actually is NOT recommended by WSDOT in the Discipline Report on Sound! This is an inconsistency in the two documents.

Attachment 16 to the Final EIS). Most of these recommended refinements are at a higher level of design development than required for NEPA analysis, including the Final EIS.

If Option L were identified as the Preferred Alternative in the future, WSDOT would ensure that negative effects associated with its bascule bridge are mitigated to the extent practicable.

In response to agency and community comments, the height of the bridge has been lowered to approximately 20 feet above water in the middle of the lake, approximately 5 to 10 feet lower than previous designs considered in the Draft EIS and SDEIS. Please see Chapter 2 of the Final EIS for Preferred Alternative design information.

Please see the responses to Comments C-031-010 and C-031-011 for information on noise effects of the Preferred Alternative.

C-031-109

As evaluated in the SDEIS, Option A would provide access to the south from the SR 520 westbound off-ramp at Montlake Boulevard East. Option L provided limited access to the south directly from the westbound off-ramp to Lake Washington Boulevard, and access to other areas through the Montlake Boulevard E/NE Pacific Street intersection. The results of traffic analysis demonstrated that all options would improve local street operations, compared to no-build, on Montlake Boulevard, south of the Montlake Cut. Option A would offer some improvement north of the Cut, while Options K and L would degrade operations in that area.

The Preferred Alternative would eliminate the Lake Washington Boulevard ramps and include an intersection for the westbound off-ramp on the north side of the Montlake lid at 24th Avenue East. This intersection would allow westbound SR 520 traffic to access Lake

C-031-120	Page 75	Lines 17-21			Claims that park users will be better with 6 lanes **is not true.** Connectivity is only better in Option K and noise levels will increase both during construction and permanently since noise walls are NOT called out in this area. Only the ramp removal in all options provide a benefit and this could happen without building any of the 6 lane options.
C-031-121	Page 75	Lines 34-37			Claim that a reduction in 5-7 acres of parkland is a small change. This is not true in densely populated urban communities such as Montlake and North Capital Hill and Portage Bay residents who use the existing park spaces frequently. Any loss of park lands creates a magnified loss in view of the bigger bridge to see and hear among nearby neighborhoods.
C-031-122 Parklands	page 78	Lines 1-4	McAleer		Visual changes states the project "would not produce indirect effects on visual quality and aesthetics because all changes .... Would be confined"
					This statement is false. The profiles of the 6 line options increase the lane widths through Foster Island and the Arboretum from 4 lane to 8-10 lanes, depending upon the design. Plan A class out a 7 lane profile across Portage Bay . The more than doubling of the concrete footprint directly adds a visual blight to The Arboretum, Foster Island trails, Montlake Playfield, Portage Bay trails, Madison Park Public Beach , Union Bay and the Seattle and Queen City Yacht Clubs. The high profiles of Plan A and L completely block out viewsheds of Mt Rainier for nearby residences and the University of Washington Rainier Vista.
					Thus, the permanent visual blight of the 6 lane options of Plans A and especially L should be considered as worst case plans, and Option K is the best solution to avoid those impacts.

Washington Boulevard via 24th Avenue East, reducing the traffic exiting onto Montlake Boulevard. Please see Chapter 2 of the Final EIS for more information on the Montlake lid design for the Preferred Alternative.

C-031-110

Please see the response to Comment C-031-084 regarding the new bascule bridge.

C-031-111

Please see the responses to Comments C-031-037 and C-031-084 regarding the new bascule bridge. Please see Chapter 8 of the Final Transportation Discipline Report (Attachment 7 to the Final EIS) for additional information on transit times with the Preferred Alternative.

C-031-112

WSDOT has coordinated with federal and state resource agencies and tribes to minimize the potential effects of the SR 520, I-5 to Medina project on fish, other natural resources, and tribal fishing rights. However, there is no indication that these issues would be measurably improved by a tunnel under the Montlake cut in comparison to the new bascule bridge.

Please refer to the Ecosystems Discipline Report Addendum (Attachment 7 to the Final EIS) for more information on the effects of the Preferred Alternative.

C-031-113

Please see the response to Comment C-031-112. Although pile-driving (and the removal of piles) could result in localized and short-term turbidity plumes, this is unlikely to cause fish to move far from the immediate area. Once the work bridges are constructed, the sources of turbidity would be minimal except for occasional use of barges and

C-031-123		Page 76	Lines 17-30	McAleer		Parklands in Seattle are protected under Ordinance 118477 which requires that all plans should minimize harm. All 6 lane options inflict harm to parklands. Plan K offers the mitigation of the best continuous lid over Montlake, as well as the additional building of the land bridge to benefit the users in the Arboretum. Further, Plan K minimizes visual blight and reduces noise by lowering its profile below grade. This option (K) should be considered #1 when mitigating the effects under 4-f and the Seattle Ordinance 118477, especially as it offers the solution closest in proximity to the damage incurred.
C-031-124	Visual	Page 77	Lines 19-27	McAleer		Visual Quality and Aesthetics direct and indirect effects Permanent location of the 6 lane option to 100 feet centerline closer to the Laurelhurst neighborhood was left out of the report. This is a significant visual impact to viewsheds and will cause more noise from the structure to residents, especially since the 6 lane options offer no noise mitigation to absorb sound on the north side of the new structure.
C-031-125			Line 33	McAleer		Plan K would have the least adverse visual effect after the berm would be planted and shield visual blight and has a lower bridge profile in height . Thus, it offers the best solution for reducing permanent visual blight. Plan L is the most offensive with the largest bascule bridge span elevated 40 feet over residences, and in full view of park users and residents in 4 adjacent neighborhoods.
C-031-126		Page 80	Lines 18-30	McAleer		To state that the long term presence of a new 6 lane SR520 bridge would not impact visual quality or aesthetics is **not true.**

support vessels.

The construction effects of the Preferred Alternative are similar to those of Option A, except where noted in the Final EIS.

The Preferred Alternative has been designed to minimize effects from piles throughout the SR 520, I-5 to Medina project corridor, especially Foster Island. WSDOT will mitigate for project effects and has developed proposed mitigation measures in close coordination with state and federal resource agencies and local entities. Please see the Conceptual Wetlands Mitigation Plan and the Conceptual Aquatic Mitigation Plan (both in Attachment 9 to the Final EIS), which outline additional strategies for minimizing effects from the SR 520, I-5 to Medina project.

C-031-114

Please see the responses to Comments C-031-058 and C-031-103 regarding the process to ensure that all relevant laws and regulations related to the protection of cultural resources are followed and that effects of the SR 520, I-5 to Medina project on these resources are minimized. Please see the Final Cultural Resources Assessment and Discipline Report (Attachment 7 to the Final EIS) for WSDOT's analysis of the effects of the Preferred Alternative on cultural resources within the project area.

C-031-115

Please see the response to comment C-031-046 regarding the protection of parks, trails, wildlife, and recreation areas. WSDOT will continue to adhere to protective regulations during construction by employing best management practices, and permit and approval conditions granted by local and state and federal entities to avoid and minimize effects to park and recreation resources. Please see the Potential Effects section of the Recreation Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-126					The profile raised in height from 5-10 feet off the water now to 30 feet in the air permanently destroys the viewsheds of residents and park users, especially in the Arboretum, Madison Park, Laurelhurst, Montlake, The Seattle Yacht Club, The Queen City Yacht Cub and Portage Bay and Roanoke Park as well as in Union Bay. In addition, the increase in width from a 60 foot bridge to 118 feet leaves a permanent concrete footprint where there once was green in Seattle. These open spaces can never be replaced or mitigated in urban neighborhoods. Adding a seventh lane on Portage Bay creates permanent shadowing of recreational and boating facilities on Portage Bay. To state there is "no effect" is erroneous.
	Noise	page 85			
C-031-127			Lines 14-24	McAleer	Noise from construction expected to reach 85-100 weighted decibels ABOVE the normal traffic noise which already is over 60 decibels for the residences that border the site in the Laurelhurst neighborhood. (See attached document #2 of 52 homes that are affected, not including LaurelCrest Lane at the water level below. The additional noise will much greater than existing to the neighborhoods including Madison Park, Portage Bay, Roanoke Park, Montlake, North Capital Hill and make recreational activities at the Queen City Yacht Club, The Seattle Yacht Club and the Arboretum severely impacted. Raising these levels in dense urban residential neighborhoods and scarce open spaces will create unhealthy outcomes. (see attached report about the effects of noise on health-attachment #3)
C-031-128					When bridge moves to the north centerline of 100 feet, plus additional width of 55 feet, plus work barges located north of that. Thus, the CUMULATIVE affects of the noise , both during construction and permanently must be measured in total AND mitigated.

Also see the Final Section 4(f) Evaluation (Chapter 9 of the Final EIS), which describes how WSDOT and FHWA will avoid and minimize, or mitigate the use of the Washington Park Arboretum and UW Open Space, as well as for other properties protected by Section 4(f) of the U.S. Department of Transportation Act of 1966.

C-031-116

In early 2010, the Washington State Legislature passed and Governor Gregoire signed ESSB 6392, which directs WSDOT to work with regional agencies to develop a mitigation plan for the Washington Park Arboretum. Final recommendations from the ESSB 6392 workgroup include discussions on traffic management and design modifications to minimize effects on the Arboretum, as well as the Arboretum Mitigation Plan. Please see the complete ESSB 6392: Design Refinements and Transit Connections Workgroup Recommendations Report (Attachment 16 to the Final EIS) and the Arboretum Mitigation Plan (Attachment 9 to the Final EIS).

WSDOT also worked closely with the City of Seattle and the University of Washington to develop mitigation for effects on the Section 6(f) portions of the Washington Park Arboretum and to provide other sites to supplement certain uses of the Arboretum during construction. Please see the Environmental Evaluation of Section 6(f) Replacement Sites (Attachment 15 to the Final EIS) for details on the Section 6(f) process and on proposed replacement recreation sites.

C-031-117

A new bascule bridge in the location of Option L is not proposed as part of the Preferred Alternative. If Option L were identified as the Preferred Alternative in the future, WSDOT would ensure that negative effects associated with its bacule bridge are mitigated to the extent practicable.

C-031-129		Lines 22-36	McAleer		The statement that **noise effects from traffic within the project area would be similar or slightly less is completely false.** There is NO planned mitigation for residences in Laurelhurst to reduce noise. Only noise walls of 15 feet are in the current WSDOT plan and they are erected only on the south side, bringing ALL of the traffic noise to the north into the residential homes in Laurelhurst as it bounces off the south side and projec ts to the north and upward into residences.
C-031-130	Page 87	Lines 12-18	McAleer		The statement that the 6 lane alternative would **decrease the number of residences exceeding NAC code noise levels is not accurate**. As stated above, the additional width, greater volume of vehicles, higher speeds and closer proximity to residences will INCREASE noises. WSDOT has ONLY offered noise walls as mitigation which have been expressly rejected because the actually carry more noise up to residences in the fishbowl geography of the area and unacceptable visual blight by adjacent neighborhoods,
C-031-131					The no-build scenario bridge would **not** increase noise as it has a smaller footprint, away from residences and slower travel speeds from vehicles. Thus, this statement in the SDEIS is false logic.
Air Quality	Page 88	Air Quality	McAleer		
C-031-132		Lines 4-11			Report states that air emissions and construction processes will not cause a change in the baseline of NAAQS. This cannot be true in 4-8 years of heavy highway construction, there will be adverse changes in air quality from use and emissions heavy equipment, excavation and hauling out waste in addition to maintaining 4 lanes of the current traffic. **The "no impact" is a false** assumption, without a basis in fact.

C-031-118

Through the analyses conducted for the SDEIS, WSDOT determined that Option K would result in higher impacts to natural resources than Option A. Option K had substantially greater impacts to wetland and aquatic resources and received a considerable number of negative comments from regulatory agencies.

In response to agency and community comments, the height of the bridge in the Preferred Alternative has been lowered to approximately 20 feet above water in the middle of the lake, approximately 5 to 10 feet lower than previous designs considered in the Draft EIS and SDEIS. Please see Chapter 2 of the Final EIS for Preferred Alternative design information.

Please also see Comments C-031-108 and C-031-038 for more information on pedestrian and bicyclist access with the Preferred Alternative.

C-031-119

In response to public reaction to the SDEIS, the Preferred Alternative in the Final EIS includes noise reduction strategies that were not included in Option A, such as use of quieter concrete pavement and 4-foot concrete traffic barriers with noise-absorptive coating. Additionally, with the Preferred Alternative, the removal of the Lake Washington Boulevard ramps and the expanded Montlake lid would reduce noise effects on the Washington Park Arboretum. For more information regarding noise effects and noise reduction strategies, please see the responses to Comments C-031-010 and C-031-011, as well as Section 5.7 of the Final EIS and the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-120

Please see the response to Comment C-031-119.

C-031-133			Lines 25-28		Statement that the project will provide indirect benefits to air quality from an increase rider ship of HOV fails to account that there are still 4 lanes of SOV on the 6 lane option "in addition" to the HOV, thus, as logic follows more vehicles=more emissions=poor air quality surrounding the residents and wildlife near the 6 lane bridge. Adverse air quality effects will be inhaled throughout 300 meters, or 975 feet of the dense residential neighborhoods of Madison Park, Laurelhurst ,Montlake, North Capital Hill, Portage Bay and Roanoke Park, as well as throughout Medina, Hunts Point on the Eastside. **To say there is any improvement in long term air quality is not accurate. Rather, the 6 lane project will result in increase in asthma, coronary heart disease, lung disease and cancers (see Health Assessment Report)**
C-031-134	Greenhouse Gas	Page 93	Lines 35-38	McAleer	Operations of Plans A, K or L "would consume less energy" than the no-build cannot be true-see above. When there are more vehicles using more lanes emitting a carbon footprint, there is more greenhouse gas emitted. So say otherwise because of any reasoning is simply false logic. All gains in more efficient fuels and vehicles benefit the "no build" just as much as the 6 lane build.
	Gas				
C-031-135		Page 97	Lines 34-36		The same statement that the 6 lane bridge will reduce vehicle miles traveled in total and thus reduce greenhouse gasses is again not true as the "no build" also benefits from reduction from tolling penalties, and more efficient vehicles and fuels, and has fewer vehicles capacity.

C-031-121

The Preferred Alternative has fewer effects on parks within the project area than the design options analyzed in the SDEIS. For example:

- The Preferred Alternative would result in slightly more acreage of recreational space after construction is complete than now exists because land on the north shore of Portage Bay would be developed as a new park site under the requirements of Section 6(f). The Section 6(f) Environmental Evaluation (Attachment 15 to the Final EIS) provides information on that new site and the overall results of the Section 6(f) process.
- Similar to the SDEIS design options, trail connectivity would improve under the Preferred Alternative, with the addition of a regional bicycle-pedestrian path across the Lake Washington Floating Bridge. The Preferred Alternative would further enhance bicycle-pedestrian connectivity through inclusion of a larger Montlake lid, allowing for improved access from north of SR 520 to the Washington Park Arboretum and from south of SR 520 to recreational facilities at the University of Washington.
- As with Option A, the Preferred Alternative would offer no negative effects on recreational boating. Adequate clearance for recreational boats would be maintained underneath and around all bridge structures.

For a discussion of minimization and mitigation measures, please see the Recreation Discipline Report Addendum (Attachment 7 to the Final EIS) and the Final Section 4(f) Evaluation (Chapter 9 of the Final EIS).

C-031-122

Please see the response to Comment C-031-041 for information on the bridge profile and width of the Preferred Alternative. The typical roadway cross-section across the floating bridge would be 115 feet wide, which is similar to Option A, and is wide enough to allow for potential future light-

C-031-136		Page 98	Lines 10-13		The 6 lane bridge in Plan A , L or A+ has the worst connectivity to the riders of the Sound Transit Light Rail infrastructure. Only Plan K will offer a reduction in greenhouse gas in the long run as riders benefit from convenient connectivity. Plan K has a tunnel design which greatly reduces emissions from idling vehicles backing on Montlake Blvd, waiting for bascule bridge openings. The tunnel design of Plan K allows vehicles continuous flow to SR520, reducing the carbon footprint over the life of the SR520 bridge.
C-031-137	Water Resources	Page 102	Lines 23-30	McAleer	Construction will adversely affect water quality with an increase in turbidity, pile driving, building of temporary work bridges, operating and staging barges. The statement that there will be an improvement is false. The treatment of storm water will be an improvement in Lake Washington, but the destruction of the natural water purifying ecosystem in affect now will be destroyed in building a 6 lane bridge.
C-031-138		Page 103	Lines 17-32	McAleer	Option K with a lower profile is similar to the current 4 lane bridge. In tracking the actual salmon which are migrating in the summer, they prefer to swim in the cooler water created by the shading of the SR520 bridge. With Global warming on the increase over the next 50 years, this option (K) provides a lower profile with more shading to protect the salmon runs in the future. The shading also has a positive effect in the waters of Union and Portage Bays . It prevents milfoil formation and keeps invasive plants from growing in the water, thus protecting navigable waterways for these salmon runs (as documented by Mike Grady from US US Dept of Fisheries) To create less shade for the salmon runs in Plans A and L with a raised profile will cause more milfoil to grow, more waterlilies to spread and block the passage of migrating salmon. Thus, Plan K is a preferred alternative.

rail infrastructure.

In the Preferred Alternative, the design of the new Portage Bay Bridge includes two general purpose lanes and an HOV lane in each direction, plus a westbound managed shoulder. In response to community feedback, a separate auxiliary lane is not part of the design; its function is merged with that of the 8-foot-wide managed shoulder, which would be open during certain periods to help manage traffic flow.

C-031-123

Compliance with the Land and Water Conservation Fund (LWCF) Act of 1969, known as Section 6(f), requires WSDOT to replace property protected by LWCF that would be converted to non-park use. Section 6(f) compliance by WSDOT constitutes compliance with Seattle Ordinance 118477 as acknowledged by the City of Seattle Parks and Recreation Department. Please see the Section 6(f) Evaluation (Chapter 10 of the Final EIS) for details on the Section 6(f) process and proposed replacement recreation sites.

C-031-124

The floating span for the Preferred Alternative is located approximately 190 feet north of the existing bridge at the west end and 160 feet north of the existing bridge at the east end.

For more information regarding noise effects and noise reduction strategies, please see the responses to Comments C-031-010 and C-031-011, as well as the Noise Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-125

See the response to Comment C-031-118 regarding Option K.

C-031-139		Page 113	Lines 24-29	McAleer	The statement that a higher bridge height on the western side will improve migration of juvenile fish is not fact. Salmon actually follow the shaded areas of the low profile bridge today, to swim in the cooler temperatures as they migrate in the higher lake temperatures in the summers. Global warming will further increase Lake WA temperatures, and a lower bridge profile in Plan K provides a better cooler path for these migrating salmon.
C-031-140	Wildlife	Page 115	Lines 24-26	McAleer	To state that there will be no permanent effects on wildlife is not accurate. There are physical habitats that are eliminated from expanding to a double profile of a 6 lane bridge. More wetlands are gone,green spaces are reduced and noise and turbidity in the waters of Union Bay will cause wildlife to leave this location. It is a loss for citizens and it affects the entire ecosystem. Species such as black crows will thive in a noisy urban environment at the expense of species such as the American bald eagle who inhabit a wide area from Madison Park throughout Laurelhurst and Union Bay for 6 months of the year. Fireworks on July 4th were cancelled in 2007 due to this nesting/noise problem in Union Bay. The 4-8 years of pile driving and building a double footprint will surely causethese protected eagles to leave. It is currently protected under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act.
C-031-141		Page 118	Lines 1-9	McAleer	**To state that habitat loss will be off set by improvements in noise reduction is completely untrue.** The larger 6 lane bridge will be closer to all wildlife, resulting in more intense noise to their nests, fishing areas and habitat. There is no noise mitigation planned that offers to reduce sound in or nearby the waters by applying techniques such as under bridge accoustical tile to absorb sound. This would be appropriate mitigation, but is not offered.

C-031-126

Please see the responses to Comments C-031-041, C-031-108, and C-031-122 regarding the bridge profile. The Preferred Alternative design minimizes the footprint of SR 520 to the maximum extent possible while accommodating potential future light-rail infrastructure. The height of the bridge has been lowered to approximately 20 feet above water in the middle of the lake, approximately 5 to 10 feet lower than previous designs considered in the Draft EIS and SDEIS.

C-031-127

As design progresses and construction plans develop, WSDOT will coordinate with stakeholders and the communities that will be directly affected by construction of the SR 520, I-5 to Medina project through the permitting and approval process to define appropriate construction mitigation measures. During this process, WSDOT may seek a noise variance and other modifications for construction activities such as haul routes, as appropriate. Please see the responses to Comments C-031-013 through C-031-021 for more information on construction noise effects.

C-031-128

The noise analysis completed for the Preferred Alternative takes into account all features of the SR 520, I-5 to Medina project including location, size, and the limits of construction for the Preferred Alternative. Please see the Potential Effects section of the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for details on the noise effects of the Preferred Alternative.

C-031-129

Please see the responses to Comments C-031-010 and C-031-011 for information regarding noise effects during operation and noise reduction strategies.

C-031-142	Geology	Page119	Lines 4-10	McAleer		Soil erosion, landslides and disturbances in the waters during 4-8 years of construction will occur. To state that they are minor is to not consider the effects of pile driving, dredging and the presence of heavy equipment on or near a "vulnerable" structure. Storms with wind gusts over 50 mph occur several times a year as well as wave action that will cause a cumulative effect of the construction bridges, heavy equipment and barges. There will be permanent changes in the lake bed that can effect the shoreline residences throughout the project, and this can affect shoreline wave actions and navigability of the lake and bays for recreational activities, which is not noted.
C-031-143	Navigation	Page 124	Lines 1-6	McAleer	Navigation is affected by the design of a bascule bridges in plans A and L.	
	Report prepared by Colleen McAleer 3137 West Laurelhurst Dr NE Seattle WA 98105 206 525-0219					Plan K eliminates use of a second bascule bridge and would allow vehicles to pass above while opening for 2500-3000 recreational and commercial boats per year. Plan K would reduce the greenhouse gasses from these idling vehicles substantially, and allow for easier passage of boats through the Montlake Cut.

C-031-130

Please see the responses to Comments C-031-010 and C-031-011 for information regarding noise effects during operation and noise reduction strategies. The Preferred Alternative includes a number of noise reduction strategies that would decrease the noise levels in comparison to the No Build Alternative. These strategies are discussed in Chapter 2 and Section 5.7 of the Final EIS and include noise-absorptive materials around lid portals, and 4-foot concrete traffic barriers with noise-absorptive coating.

C-031-131

Please see the responses to Comments C-031-010 and C-031-011 for information regarding noise effects during operation and noise reduction strategies. The Preferred Alternative includes a number of noise reduction strategies that would decrease the noise levels in comparison to the No Build Alternative. These strategies are discussed in Chapter 2 and Section 5.7 of the Final EIS and include noise-absorptive materials around lid portals, and 4-foot concrete traffic barriers with noise-absorptive coating.

C-031-132

Please see the Air Quality Discipline Report Addendum (Attachment 7 to the Final EIS) for a quantitative analysis of the effects of construction on air quality. The analysis concludes that the Preferred Alternative for the SR 520, I-5 to Medina project would not result in a violation of the National Ambient Air Quality Standards during construction or operation.

C-031-133

The SR 520, I-5 to Medina project would result in operational improvements in air quality and reductions to greenhouse gas emissions compared to the No Build Alternative. Please see Chapters 1 and 5 of the Final EIS for more information. The Air Quality Discipline Report

C-031-144

The proposed second drawbridge: no help

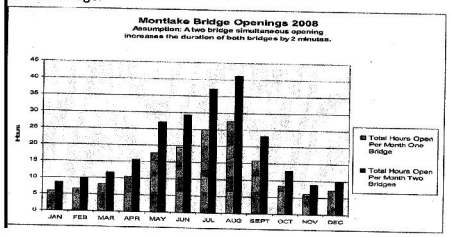
current

-All traffic going from 520 north now must go over the Montlake drawbridge. The bridge opens frequently, causing long traffic backups.

- The proposed 520 A adds a drawbridge just east of the current one. Traffic will still back up each time the bridges open.

- Stopping for a drawbridge makes bus timetables unreliable. Emergency vehicles for UW Hospital must stop and wait.

- A new bridge would detract from the beauty of the historic current bridge.



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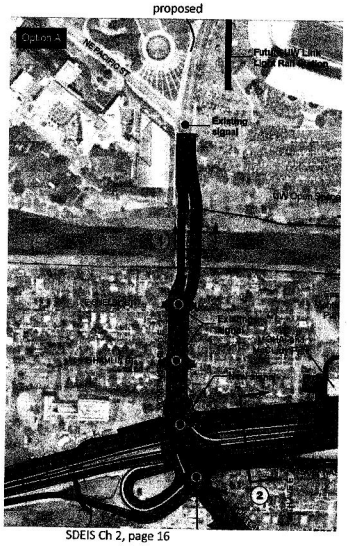
proposed



SDEIS Ch 2, page 16

Exhibit 17 Bascule Bridge Opening Data from 2008

Addendum (please see Attachment 7 to the Final EIS) includes a quantitative analysis of Mobile Source Air Toxics (MSAT). The analysis shows that with the Preferred Alternative, MSAT emissions would decrease compared to existing conditions. Factors that account for the expected improvement include changes to the fleet as older vehicles with higher levels of pollutant emissions are replaced with newer, lower-emitting vehicles; reduced idling and increased speeds as a result of improved intersection and roadway operations, partially because of the HOV lanes; and a higher proportion of trips occurring in HOVs.

C-031-134

Please see page 28 of the SDEIS Energy Discipline Report for a description of the factors that would reduce energy use with the 6-lane alternative options. These factors include:

- A reduction in vehicle miles traveled as a result of tolling single-occupancy vehicles in the SR 520 corridor, which may cause commuters to shift transportation modes or find alternative routes across Lake Washington.
- The addition of HOV lanes, which would improve traffic flow for buses and carpools.
- An increase in the number of people using transit and carpooling rather than driving alone, resulting in improved mobility in the general-purpose lanes.

C-031-135

Please see Section 5.9 of the Final EIS for a description of the effect of the Preferred Alternative on vehicle miles traveled and greenhouse gas emissions; the effect of tolling is discussed in Section 5.9. Energy use and GHG emissions would be reduced with the 6-lane alternative compared to the No Build Alternative, even when vehicle improvements are accounted for in the analysis.

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 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.

C-031-136

Please see Exhibit 24 of the SDEIS Energy Discipline Report, which showed that Option K would have somewhat higher a.m. and p.m. peak-hour greenhouse gas emissions than Option A. See the responses to comments C-031-039 and C-031-082 and Section 5.1 of the Final EIS regarding how the Preferred Alternative was refined to improve transit connections. Also see the response to Comment C-031-118 regarding why Option K was not identified as the Preferred Alternative.

C-031-137

Please see the response to Comment C-031-113 regarding turbidity. Stormwater runoff during construction of the Preferred Alternative would be mitigated by using a number of best management practices, erosion control measures, and a spill prevention and control plan to minimize the entry of waterborne contaminants into surface waters. The stormwater treatment proposed as part of the Preferred Alternative would improve surface water quality during operation and may improve water quality functions of wetlands, thereby making a beneficial contribution to

wetland resources compared to the No Build Alternative. Please refer to Sections 5.10 and 6.10 in the Final EIS and the Water Resources Discipline Report Addendum (Attachment 7 to the Final EIS).

C-031-138

There is no evidence to suggest that the existing bridge benefits salmonid migrations. A higher structure would allow more light under the structure, reducing the intensity of the shade, which is expected to reduce the 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, the higher structure would tend to reduce water temperature in a larger area.

A higher bridge would also result in greater amounts of light under the structure, thereby potentially increasing the amount of aquatic vegetation growth, which could lead to decreased dissolved oxygen. However, the proposed bridge would be about 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 effects of increased light caused by the higher structure. Overall, the difference in vegetation amounts under the bridge between the Preferred Alternative and existing conditions is not expected to be substantial.

C-031-139

Please see the response to Comment C-031-138.

C-031-140

Please see the Indirect and Cumulative Effects Discipline Report and the

Ecosystems Discipline Report (both in Attachment 7 to the SDEIS). These reports stated that both construction and operation of the SR 520, I-5 to Medina project would affect wildlife and wildlife habitat directly. Lines 24 through 26 on page 115 of the Indirect and Cumulative Effects Discipline Report, on the other hand, stated that there would be no permanent effects to urbanized wildlife from construction activities and related structures.

C-031-141

With the Preferred Alternative, noise levels in the project area would generally be reduced compared to the No Build Alternative because of the proposed 4-foot concrete traffic barriers with noise-absorptive coating and other noise reduction strategies. Please see the Noise Discipline Report Addendum (Attachment 7 to the Final EIS) for more information on noise reduction strategies included with the Preferred Alternative.

C-031-142

Please see page 54 of the Geology and Soils Discipline Report (Attachment 7 to the SDEIS) for a discussion of the potential for submarine slope movement resulting from construction of the SR 520, I-5 to Medina project. For an updated discussion for the Preferred Alternative, please see the Potential Effects section of the Geology and Soils Discipline Report Addendum (Attachment 7 to the Final EIS). The design of the project and the construction techniques that will be used seek to minimize the amount of substrate disturbance. No dredging is planned on or near the shoreline of Lake Washington, and construction activities are not anticipated to weaken existing structures.

Please see the SDEIS Navigable Waterways Discipline Report for effects of the project on navigation.

C-031-143

See the responses to Comments C-031-118 and C-031-136 regarding Option K.

C-031-144

See the responses to comments C-031-036, C-031-037, C-031-038 regarding the transportation effects of the new bascule bridge. The bridge would improve congestion and transit reliability as well as nonmotorized connections across the Montlake Cut. See the response to Comment C-031-041 regarding the effect of the new bascule bridge on visual quality and historic resources, and how this effect would be mitigated.