From:	Swanson, Terry (ECY)
To:	Krueger, Paul W (UCO);
CC:	Burcar, Joe (ECY); Harper, Kim; Tallent, Geoff (ECY); McFarland, Brenden; Lange, Sandra; Robohm, Richard (ECY); Luengo, Eric (ECY); Boyer, Michael;
Subject:	Ecology"s Comments on SR-520 Bridge
Date:	Tuesday, October 31, 2006 10:00:19 PM
Attachments:	SR-520DEISfincomms.doc

Paul, I am enclosing Ecology's comments on the 520 Bridge Replacement and HOV project. There are a lot of comments covering Shorelines, Water Quality, Wetlands and Air Quality.

I will submit a formal cover letter with my signature when I return from my three day workshop that I am attending for the last part of this week.

Ecology's main area of concern with the DEIS is that while the document was easy to read for a basic understanding of the project, the alternatives were not adequately analyzed or easy to compare, nor were the impacts associated with the alternatives and the options fully described. Additionally, we had a difficult time jumping back and forth among the main text, appendices, and addenda, making our review cumbersome and more lengthy than expected.

The complexity of the project allowed for several different means of categorizing the material. Therefore, you will find the Shorelines comments organized by Appendices; the Wetlands comments by number and text references; the Water Quality comments primarily by basins; and the Air Quality comments in a more narrative form. I trust that you will find the comments easy to understand and follow.

Because the DEIS has significant gaps in the material necessary to make a reasonable decision when choosing among the alternatives, Ecology strongly encourages that the FEIS contain the information called for in our comments. With that information, Ecology will be able to make a clear decision on Concurrence Point #3, which is concurrence on the Preferred Alternative and draft Mitigation Plan.

I know that you will have many questions regarding Ecology's comments, and I look forward to meeting with WSDOT to go over our concerns and comments with you. Ecology technical staff is prepared to meet with your staff to discuss any and all comments. You and I can set some times up to meet, and I know that we need to meet soon to introduce new staff to the technical committee as well. In the meantime, should you have immediate technical questions, you should contact Joe Burcar for Shorelines, Richard Robohm for Wetlands, Eric Luengo for WQ; and Mike Boyer for Air Quality. Please refer to their email addresses in the cc above or let me know if you need phone numbers.

Sincerely,

Terry Swanson
Ecology Transportation Liaison Team Lead
360.407.6789 <<SR-520DEISfincomms.doc>>

The Department of Ecology

Comments on the

Draft Environmental Impact Statement for the

SR-520 Bridge Replacement and HOV project

October 31, 2006

S-001-001

1. GENERAL COMMENTS

The SR- 520 Bridge replacement Draft Environmental Impact Statement (DEIS) does a good job in providing a general history of the existing bridge, the reasons for replacing that bridge and descriptions of the east and west side locations including an explanation of the DEIS alternatives. Essentially, the DEIS provides broad insight to many of the social and environmental issues surrounding the project in a narrative format but does not provide any clear conclusions on relative environmental impacts for all of the alternatives analyzed. Technical information serving as the basis for much of the information described in the DEIS resides in twenty-four individual appendices (appendix A-X) not physically located within the DEIS.

The original technical appendices (A-X) developed over the past several years considered environmental impacts associated with the following three options:

- no action
- reconstruction of an improved 4-lane bridge
- construction of a 6-lane bridge with two HOV lanes

After completion of these discipline reports, WSDOT added the following four sub-alternatives on both the east and west side of the project to be considered within the DEIS:

- Second Montlake Bridge option
- Pacific Street Interchange option
- 108th Ave Park & Ride
- Bellevue Way

Twenty-four addenda were then created for each of the twenty four original discipline reports. Unfortunately, the addenda do not consider individual impacts for each of the sub-alternatives; rather they compare the sub-alternative individually to the originally identified three project alternatives. Thus the DEIS fails to compare/quantify impacts for all of the currently considered alternatives. Further, the DEIS does not providing any sound conclusions on the relative environmental impacts of all the alternatives.

It is assumed that WSDOT intended to tie the evaluation of the new sub-alternatives into the narrative portion of the DEIS. However, not all of the alternatives are compared within the narrative portion of the DEIS leaving the reviewer to refer back to the more than 4,000 pages of technical appendices within 48 discipline reports/addendums.

S-001-001

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-001

The format of the DEIS does not allow for side-by-side comparison of all of the environmental impacts associated with all of the project alternatives/options. This lack of clarity does not provide a clear conclusion within the DEIS identifying the least-impacting environmental alternative. Through the EIS review process, WSDOT should provide an objective comparison of all of the DEIS alternatives and sub-alternative options in a format that can be easily understood by all reviewers, including the public.

In an effort to dissolve some of the complexity surrounding this project and in the spirit of broad public participation and understanding of the issues, Ecology encourages WSDOT to begin the Final EIS with a clear explanation of unavoidable environmental impacts associated with the project. Initial identification of these issues should provide context for discussion of the pros and con's of the alternatives described within the EIS.

WSDOT should consider all reasonably anticipated future changes to the project within the EIS review process (i.e. future in-water work or project expansion associated with future conversion to light rail etc.).

S-001-002

2. SHORELINE COMMENTS

By way of background and to provide context, Ecology offers the following information relating to the Shoreline Management Act and its implementing regulations:

RCW 90.58.030 – SMA finding of fact…*"insure the development of these shorelines in a manner which, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto"*

Pursuant to WAC 173-27-370 **Lake Washington is listed as a Shoreline of Statewide Significance.** RCW 90.58.020 provides the following goal that in relation to Shorelines of Statewide Significance:

1) *Recognize and protect the statewide interest over local interest;*
2) *Preserve the natural character of the shoreline;*
3) *Result in long term over short term benefit;*
4) *Protect resources and ecology of the shoreline;*
5) *Increase public access to publicly owned areas of the shoreline;*
6) *Increase recreational opportunities for the public in the shoreline;*
7) *Provide for any other element as defined in RCW 90.58.100 deemed appropriate of necessary.*

The above goals will be applied to analysis of all shoreline aspects of the SR-520 project.

The following comments are ordered by Appendices:

S-001-003

Appendix A: Description of Alternatives & Construction Techniques

Exhibit 8-5 on page 8-6 within the DEIS depicts the footprint of the temporary bridges (plan view) also identifying the need for up to 1600 piles to support a temporary bridge structure. However, the **DEIS does not show any elevation views of the structure or diagrams indicating the relationship of the structure compared to the water level of the lake.**

S-001-002

Comment Summary:

Permitting

Response:

See Section 6.5 of the 2006 Draft EIS Comment Response Report.

S-001-003

Comment Summary:

Schedule

Response:

See Section 4.1 of the 2006 Draft EIS Comment Response Report.

S-001-004 Information presented at the DEIS public meetings showed that the 'temporary' detour bridges would be constructed below the current and proposed bridge at the lake level that would exist within the project area for a minimum of 5-years. It is anticipated that in the project areas of the Arboretum and Portage Bay, recreational opportunities (kayaking, canoeing, etc.) would be restricted from currently available recreational opportunities (i.e. passage under the current bridge). Neither Appendix A (Construction impacts), Appendix L (Navigable Waterways), or Appendix O (Recreational Impacts) discusses this potential impact. **The DEIS should provide discussion either identifying the degree to which each of the DEIS alternatives will affect this shoreline use or identify the impact as unavoidable for which some form of mitigation should be discussed.**

S-001-005 **Also, as mentioned earlier, the format of the DEIS does not describe anticipated impacts for all the project alternatives and/or options.** This gap in analysis is illustrated on pgs. 8-6 through 8-9 within the discussion of temporary bridges. The exhibits (8-5 & 8-6) only show temporary work bridges for the 4-lane alternative, the 6-lane alternative and the Pacific Street Interchange option. The Second Montlake Bridge option is not clearly explained or considered within this section. The last sentence of the second paragraph on page 8-7 references the Second Montlake Bridge option, stating that all work associated with the bridge would be done from barges or on land. The reality is that the Second Montlake Bridge option would still be associated with either the 4-lane or 6-lane alternative through Portage Bay, Union Bay and the Arboretum. This gap is carried into the discussion on construction effects to ecosystems on page 8-25 and 8-26. The DEIS compares the amount of in-water work and temporary bridge coverage, but only between the Pacific Interchange option and the 4 and 6-lane alternatives. Based on the diagrams shown in exhibit 8-5 & 8-6, it is anticipated that the Second Montlake Bridge option in comparison to the Pacific Street Interchange option would disturb less aquatic and wetland habitat through both temporary impacts and permanent roadway footprint. However**, this comparison is never explained or analyzed within the DEIS.**

S-001-006

Appendix E: Ecosystems report

As stated below within the reference to the shoreline Conditional Use Permit Criteria[1], shoreline proposals shall only be approved when significant shoreline affects can be avoided and the public's interest suffers no substantial impacts. Also to be considered is the designation of Lake Washington as a shoreline of statewide significance requiring compliance with the goals identified as part of RCW 90.58.020.

S-001-007 **Although not specifically stated within the DEIS, when comparing the relative intrusion to the aquatic environment, it is anticipated that the Pacific Street Interchange option would pose a higher potential for substantial impacts to the aquatic ecology than the other DEIS alternatives. This distinction is not clearly identified within the DEIS, nor are the associated impacts to aquatic species thoroughly described or analyzed within the document.**

S-001-008 WSDOT has proposed a marine maintenance facility to be located under the eastern high rise of the 520 bridge. On page 6-7, WSDOT has stated that effects of the dock on the spawning area are uncertain and that the spawning beach maybe displaced. **As with any other dock proposed in Lake Washington, Ecology would request that WSDOT make additional efforts to first avoid potential impacts to the spawning area. If avoidance is not feasible then the final EIS should provide a detailed methodology to ensure the footprint of the structure is reduced to the absolute minimum necessary.** Exhibit 3-13 on page 3-44 of the DEIS provides a conceptual design of the proposed Bridge operation facility.

[1] Shoreline Conditional Use Criteria – WAC 173-27-160

S-001-004

Comment Summary:

Recreational Boating

Response:

See Section 9.2 of the 2006 Draft EIS Comment Response Report.

S-001-005

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-006

Comment Summary:

Permitting

Response:

See Section 6.5 of the 2006 Draft EIS Comment Response Report.

S-001-007

Comment Summary:

Pacific Street Interchange Option

Response:

See Section 1.2 of the 2006 Draft EIS Comment Response Report.

S-001-008

Comment Summary:

Fish and Wildlife (Mitigation)

S-001-008

The sketch depicts an F-shaped dock with unknown deck width. **The final EIS should evaluate the necessary use of the dock in determining both the orientation (i.e. will an L-shaped dock serve the moorage needs) and deck width (i.e. Does the deck provide walking access to the vessels or a more intensive use).**

Although Ecology believes that the impacts of all of the DEIS alternatives/options need to be further evaluated prior to identification of mitigation options, Ecology would encourage WSDOT to first consider avoidance of impacts followed by identification of mitigation/restoration opportunities within the project area before consideration of regional mitigation opportunities.

S-001-009

Lastly, the DEIS on page 6-8 anticipates that overwater coverage within Lake Washington for the replacement bridge will increase from 10.4-acres to 21.5-acres with the 4-lane option and 27.5-acres under the 6-lane option. **The DEIS acknowledges the increased shading to aquatic habitat, but states: *"the additional shaded area would be negligible compared to the surface area of the lake".* It is not understood what impacts this will have on the aquatic environment, nor is it understood what WSDOT considers *"negligible"*? Regardless of the total surface area of Lake Washington, potential impacts to aquatic environments need to be evaluated parallel with the consideration of project alternatives. The Final EIS should provide additional analysis of the significance of the increased overwater coverage associated with the 520 bridge expansion.** Once the impacts are quantified, consideration of appropriate project minimization, avoidance or mitigation options should then be proposed.

S-001-010

Appendix K: Land-use, Relocation, and Economics

Appendix K provides a section dedicated to review of the project alternatives for "Consistency with local plans and policies". Within the evaluation of the Shoreline Master Program (SMP) WSDOT has generally evaluated locally administered SMP's within all the jurisdictions within the project area. The project will be located within shoreline jurisdiction of Seattle, Medina, Hunts Point and Kirkland. As described in the appendix, depending on the shoreline designation, the project (road or bridge) may be listed as either a permitted or conditional use. **A "special use" permit as described in the evaluation of the Seattle SMP is assumed to be equivalent to a shoreline Conditional Use permit for which Ecology would expect would be required by the City of Seattle.** For SMP's within Medina and Hunts Point, roads are not a listed use, which according to WAC 173-27-030[2] would be reviewed as a Conditional Use permit within these jurisdictions. Within the City of Kirkland, roads are classified as "permitted" requiring review of a shoreline substantial development permit to ensure the project is consist with the SMP.

The analysis did not discuss the necessity for review of a **height variance** for the project. RCW 90.58.320 provides a restriction to approving shoreline approval for structures over 35-feet in height that obstruct the view of substantial number of residences. **Unless more specifically addressed within one of the locally administered SMP's, Ecology would anticipate that shoreline variance approval will be required for the project.**

For shoreline Conditional Use permits, the review criteria listed in WAC 173-27-160 must be considered prior to permit approval. Initial review of the locally applicable SMP's suggests that Conditional Use permits will be required within the Cities of Seattle, Medina, and Hunts Point. **Because these permits will require consistency with the Conditional Use criteria[3],**

[2] "Conditional use" means a use, development, or substantial development which is classified as a conditional use or is not classified within the applicable master program;
[3] WAC 173-27-160

Response:

See Section 16.2 of the 2006 Draft EIS Comment Response Report.

S-001-009

Comment Summary:

Fish Effects

Response:

See Section 16.2 of the 2006 Draft EIS Comment Response Report.

S-001-010

Comment Summary:

Permitting

Response:

See Section 6.5 of the 2006 Draft EIS Comment Response Report.

S-001-010

Ecology would suggest that WSDOT consider the application of the criteria prior to selection of a preferred alternative.

Lastly, all of these jurisdictions are in the initial stages of a comprehensive Shoreline Master Program review which, pursuant to RCW 90.58.080, will need to be completed by the Cities prior to December 1st, 2009. These reviews provide WSDOT an opportunity to engage the local jurisdictions in pre-project planning for the 520 bridge. **Ecology encourages WSDOT to partner with the local jurisdictions in a closer screening of the locally administered SMP to identify any potential conflicts between current SMP regulations and the 520 bridge construction.** Early identification of potential conflicts will allow for either consideration of policy changes during the local jurisdictions SMP update and/or changes in 520 bridge alternatives considered.

S-001-011

Appendix L: Navigable Waterways

It is anticipated that construction barges as well as sections of the existing and replacement bridge will need to be floated to and from the project site through the Ballard Locks. **Even though these impacts would not be considered permanent, impacts to navigation, specifically recreation/commercial vessel operation, could be significant.** It is assumed that these potential impacts would apply to all of the DEIS alternatives currently being considered, with the exception of the 'no build' alternative. **Regardless of the degree of impacts associated with individual built alternatives, prior to shoreline permit submittal WSDOT will need to further explore potential impacts to navigable waterways within the project area and associated waterways leading to Puget Sound including identification of appropriate mitigating measures.**

S-001-012

As mentioned earlier (discussion of Appendix A), impacts of the temporary bridge if constructed at lake level may affect public use of the shoreline. **Special attention within the project area should be focused on Union Bay and the existing waterfront recreational facility at the University of Washington.** The University's facility is both a "water enjoyment" and "water dependent" use which the SMA identifies as preferred uses. **The preferred EIS alternative should result in minimum disruption to these uses to ensure that both the recreational and navigational assets of this area are preserved.**

Lastly, the in-water impacts to recreational opportunities, specifically impacts to water uses associated with the Pacific Street Interchange option, are not adequately evaluated in the appendix. This may partially be due to further concentration within the Navigation analysis (appendix L) as well as the fact that the Pacific Street Interchange option is the only alternative with in-water components. **Regardless, negative impacts to recreational boating/navigation within Union Bay should be fully understood and evaluated** as part of the environmental review and future consistency with the goals of the Shoreline Management Act.

S-001-013

Appendix O: Recreational Impacts

The recreational impact appendix provides an overview of public recreational areas located within the project area with potential to be impacted by one of the following ways:

1. Required acquisition for additional road right-of-way or construction staging area;
2. Relocation of existing trails or additional coverage of trails;
3. Aesthetic/environmental changes or impacts or the potential to degrade recreational experiences.

S-001-011

Comment Summary:

Permitting

Response:

See Section 6.5 of the 2006 Draft EIS Comment Response Report.

S-001-012

Comment Summary:

Recreational Boating

Response:

See Section 9.2 of the 2006 Draft EIS Comment Response Report.

S-001-013

Comment Summary:

Park Effects

Response:

See Section 9.1 of the 2006 Draft EIS Comment Response Report.

S-001-013

The report (including the addendum) begins by inventorying the recreational areas located adjacent or within the project area. Within the addendum the Pacific Street Interchange, South Kirkland Park & Ride, and the second Montlake Bridge alternatives are evaluated independently for their potential impacts to each of the adjacent recreational areas. As described earlier, because of the formatting of the DEIS, impacts associated with each of the DEIS alternatives/options are not compared to each other. However within the Recreational appendix, exhibit 7 (Affected Parklands in the Seattle Project Area – 6 Lanes with Pacific Interchange Option) and exhibit 18 (Affected Parkland in the Seattle Project Area – Second Montlake Bridge Option) provide an objective comparison of the two DEIS alternatives within similar matrices. **Within the charts it apparent that the Second Montlake Bridge option has less adverse effects along with more beneficial effects to recreational resources on the west side of the project area, however this conclusion is not mentioned within the DEIS.**

The recreational discipline report also does not mention the noise affect of a highway/roadway located above (elevated) an existing recreational use. In the case of the Pacific Street Interchange option, the bridge deck would be constructed over the existing University of Washington Waterfront Activity Center. It is understood that sound walls can be used to mitigate noise from transmitting at a similar elevation to an adjacent neighborhood, but it is not understood what mitigating techniques can be deployed to mitigate overhead noise. **Vehicle noise impacts associated with elevated roadways over recreational areas should be considered within the evaluation of all the DEIS alternatives.**

S-001-014

Appendix S: Visual Impacts

As previously mentioned, because of the fragmentation of the comparison of the DEIS alternatives/options within the discipline reports, the Second Montlake Bridge alternative was not compared directly to the Pacific Street Interchange option for comparable visual impacts. As with many of the environmental impact considerations, **the DEIS should compare all of the proposed alternatives for their associated impacts.**

S-001-015

Appendix X: Pacific Street Option Location analysis

Ecology provided WSDOT with initial comments in May of 2005 specific to the Pacific Street interchange option. The comments identified three SMA/shoreline issues associated with this option. Specifically, concerns pertaining to potential impacts to aquatic (fisheries), human (water dependent/water enjoyment uses) and terrestrial (wildlife) were identified. **As previously stated, it is anticipated that the Pacific Street interchange alternative when compared to the Second Montlake Bridge option, the four-lane alternative and possibly the original 6-lane alternative would result in more disruption to recreational opportunities with a higher potential for negative impacts to aquatic resources.**

REFERENCE PROVIDED ON CONDITIONAL USE CRITERIA IN WASHINGTON'S ADMIN. CODE

CONDITIONAL USE CRITERIA (WAC 173-27-160):

(1) Uses which are classified or set forth in the applicable master program as conditional uses may be authorized provided that the applicant demonstrates all of the following:
(a) That the proposed use is consistent with the policies of RCW 90.58.020 and the master program;
(b) That the proposed use will not interfere with the normal public use of public shorelines;
(c) That the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the comprehensive plan and shoreline master program;
(d) That the proposed use will cause no significant adverse effects to the shoreline environment in which it is to be located; and

S-001-014

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-015

Comment Summary:

Pacific Street Interchange Option

Response:

See Section 1.2 of the 2006 Draft EIS Comment Response Report.

S-001-015

(e) That the public interest suffers no substantial detrimental effect.

(2) In the granting of all conditional use permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if conditional use permits were granted for other developments in the area where similar circumstances exist, the total of the conditional uses shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.

(3) Other uses which are not classified or set forth in the applicable master program may be authorized as conditional uses provided the applicant can demonstrate consistency with the requirements of this section and the requirements for conditional uses contained in the master program.

(4) Uses which are specifically prohibited by the master program may not be authorized pursuant to either subsection (1) or (2) of this section.

S-001-016

3. WETLANDS COMMENTS

1. The DEIS is organized such that it is very **difficult to compare wetland impacts**, both among the main alternatives and among the various options under the 6-Lane Alternative.

S-001-017

2. Total permanent wetland and buffer impacts are not shown for the 4-Lane and 6-Lane Alternatives in the DEIS either in text or tables. The DEIS repeatedly separates the east and west sides of the project in all wetland impact tables such that the reader must manually add the impact acreage from both sides to get total project impacts. **The total acreages for permanent wetland impacts for the entire project should be readily available and clearly portrayed in summary tables that compare the alternatives.**

S-001-018

3. **Total permanent wetland and buffer impacts are not shown for all of the options under the 6-lane alternative.** Tables such as Exhibits 4-17, 5-20, 7-17 and 7-18 do not list all of the options that are being evaluated as potential parts of this project. The tables that address Seattle-side wetland impacts include only the main alternatives and the Pacific Street Interchange Option. These tables have a small footnote that states that other Seattle options would not differ from the 6-Lane Alternative. Wetland impacts for the 2nd Montlake Bridge Option and the No Montlake Freeway Transit Stop Option are not shown in any tables in the DEIS. The tables that address the eastside wetland impacts do not show the impacts for the No Evergreen Point Freeway Transit Stop Option and the South Kirkland Park-and-Ride Transit Access – Bellevue Way Option. The eastside tables do not have any footnotes explaining why these options are not included in the tables. These tables are not adequate to compare wetland impacts among the options. All options should be given equal consideration by showing the potential wetland impacts associated with each, regardless of whether they are the same as another alternative or option. The way the wetland impacts information is currently organized in the DEIS, it appears as if the options missing from these tables were not fully evaluated.

S-001-019

4. In addition to showing total project impacts for the base alternatives, **the DEIS should provide a table that summarizes the total permanent wetland and buffer impacts for the entire project area that would result from all the possible combinations of options under the 6-Lane Alternative.** For example, the 6-Lane Alternative combined with the Pacific Street Interchange Option and the Kirkland Park-and-Ride Access – 108th Ave NE Option could potentially result in almost 16 acres of wetland impact. This appears to be the highest total of any of the possible combinations of the options. It also appears that combining the 6-Lane Alternative with the 2nd

S-001-016

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-017

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-018

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-019

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-019

Montlake Bridge Option and the North Bike Path Option (eastside) would result in the least acreage of permanent wetland impacts of the possible combinations at just under 12 acres. There is no mention in the DEIS that permanent wetland impacts could be as high as 16 acres for the whole project. Again, the failure of the DEIS to total wetland impacts for both sides of the project is misleading. By only totaling impacts for each side, readers are left with the impression that project impacts would be much less than 16 acres. The same holds true in comparing total wetland buffer impacts among the possible combinations of options; it appears that wetland buffer impacts could be as high as 20 acres for the entire project.

S-001-020

5. The DEIS has used high (conservative) numbers for estimating permanent shade impacts to wetlands on the west side of the project. All wetland areas under the footprint of the elevated bridge on the west side have been included in the total acreage for shade impacts. However, it is likely that there will be some wetland areas in Portage Bay and/or the Arboretum that may remain vegetated under the bridge, particularly near the edges of the bridge. In the absence of solid quantitative estimates of area under the bridge that may be vegetated, it is appropriate that the DEIS uses the conservative approach in totaling shade impacts.

   WSDOT will need to complete a detailed shade/light intensity study for this project prior to receiving a 401 Certification so that potential shade impacts are more accurately quantified. In assessing which areas are likely to be impacted, the study should:

   - take into account the proposed height and width of the bridge in a specific location, the aspect of the bridge, nearby trees or structures that may increase shade, substrate type, hydrology, depth of water and extent of light penetration down to soil surface in ponded areas, type of vegetation currently present, and other relevant factors;
   - map all wetland areas that are likely to lose vegetation as well as those areas that may remain vegetated but will likely change in species composition. The maps should indicate areas that may switch from forested or scrub-shrub to emergent communities;
   - assess the acreage extent of wetland that will either lose vegetation or convert to a different vegetative class, as well as assess the extent of loss of function in the affected wetlands.

S-001-021

6. The DEIS states on pg. 5-47, 3rd paragraph that the Evergreen Point Approach would be 10-41 ft higher, thus "...allowing more light to penetrate to the surface of the ground or water." However, **the DEIS does not note here how much wider the bridge would be in that area. Width of the new structures is an obvious factor in determining the amount of shading under the bridge.** It is misleading to omit this information and other relevant factors from the discussion on shading on this page. This vague discussion in the DEIS implies that the increased height of the new bridge will result in more vegetated area underneath, but the analysis has not been done to support this.

S-001-022

7. **The DEIS does not address how wetland impacts were avoided or reduced in designing the main alternatives and the 6-lane options, nor does it discuss the feasibility of using various techniques such as retaining walls to avoid or reduce potential impacts.** The DEIS should discuss whether all the options have an equal potential for further reducing impacts as design progresses. For example, is it equally possible to use retaining walls to minimize impacts for both of the access options for the Kirkland Park-and-Ride or does one option offer greater opportunity? The DEIS

S-001-020

Comment Summary:

Wetland Shading Effects

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-021

Comment Summary:

Wetland Shading Effects

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-022

Comment Summary:

Wetland Mitigation

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-022

should clearly address whether and how the basic designs of the options already incorporate efforts to avoid and minimize wetland impacts.

S-001-023

8. **In general, the potential for indirect impacts to wetlands has not been adequately addressed in the document.** For example, the DEIS does not discuss the potential for indirect effects to the large, high quality wetland in the Cozy Cove Basin as a result of losing a substantial portion of the forested buffer that currently lies between the wetland and SR 520. Page 7-32 of the DEIS states that a little less than an acre of this forested buffer would be filled under both the 4-Lane and 6-Lane alternatives. This, and other indirect impacts should be clearly identified and assessed, and options for mitigating these impacts proposed. In this case, it may be advisable to enhance the buffer that would remain around this wetland or to further explore ways to avoid or minimize these impacts. If these impacts cannot be reduced at the affected wetland, then compensatory mitigation for compromised function in this wetland may be necessary at another location. Ratios for this would need to be determined based on the extent of impacts to the wetland functions.

S-001-024

9. Under the 6-Lane Alternative and the options that would provide access to the Kirkland Park-and-Ride, it appears that a substantial area of riparian wetlands along Yarrow Creek will be filled. **The loss of these wetlands is noted on pages 7-33 and 7-34 of the DEIS, but the discussion does not give any perspective as to what proportion of the existing riparian wetlands in this sub-basin will be lost and how that will affect the stream and remaining wetlands.** Filling portions of up to six wetlands in such a small sub-basin may have considerable effects on stream flows, fish use of the creek and other related resources. This is not adequately addressed in either the wetland or fish impact discussions for the east side.

S-001-025

10. **Temporary construction-related impacts to wetlands and buffers are not adequately addressed in the body of the DEIS or in the appendices.** The temporary work bridges that would be constructed through Portage Bay and the Arboretum would have fill impacts from the hundreds of pilings that will support the structures, as well as clearing and shading impacts to wetland vegetation. Appendix E estimates that 1800 pilings for the temporary bridges would be located in wetland or aquatic habitat on the west side. These impacts have not been quantified in the DEIS, nor is there any table or other visual comparison of impacts among the alternatives and options. Acreage estimates that are provided are buried in Appendix E and lump shading and clearing as one number; no acreage is given for temporary fill. These numbers are given only for the main alternatives, not for the 6-Lane options. **The DEIS should include a table summarizing temporary impacts so that comparisons among the options can easily be made.**

S-001-026

11. **The DEIS text on page 8-25 mentions the possibility of temporary impacts to westside wetlands, but it is silent regarding eastside wetlands.** It is highly unlikely that widening of the highway and installing access ramps will have no temporary impacts to wetlands on the east side. It is typical that temporary impacts may extend into adjacent wetlands 15 or even 20 feet beyond the toe of the permanent road footprint depending on the topography and the proposed design. This is particularly common in areas where retaining walls are proposed due to the need to excavate for wall footings and, in many cases, install wells to dewater footing areas where there is shallow groundwater. **Given these considerations, the DEIS should clarify the extent of temporary wetland impacts to both eastside and westside wetlands and show whether those vary among the alternatives and options.**

S-001-027

12. **Where temporary wetland impacts are discussed qualitatively in the DEIS, the assessment is poor.** No specifics are provided and the scope of potential impacts is not made clear. Page 8-25, 3rd paragraph states that the temporary bridges "could affect

S-001-023

Comment Summary:

Wetland Mitigation

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-024

Comment Summary:

Eastside Concerns

Response:

See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-025

Comment Summary:

Wetland Effects During Construction

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-026

Comment Summary:

Eastside Concerns

Response:

See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-027

Comment Summary:

Wetland Effects During Construction

S-001-027

nearby wetlands", yet it is clear that wetlands will be negatively impacted. Though subtle, word choice of this nature tends to downplay the possible effects and leads the reader to conclude that temporary impacts will be minor. In fact, Appendix E indicates that 3 to 4 acres of wetland would be cleared or shaded due to the temporary bridges on the west side.

S-001-028

13. **The DEIS should have clarified that temporal loss of wetland function includes the period during which the temporary impacts persist as well as the time it takes to replant and re-grow the vegetation that was lost due to temporary impacts.** Appendix E of the DEIS indicates that the temporary work bridges on the west side would remain in place for 4 to 7 years. Page 8-25 of the DEIS states that wetland areas that are temporarily disturbed will be replanted following construction to restore the areas to preconstruction conditions. So in addition to waiting 4 to 7 years to replant the areas, it will take time for those plants to grow in size and develop structure so that the wetland functions similar to preconstruction conditions. This lag in replacing actual wetland functions will vary depending on the type of vegetation that is impacted, as well as other variables. Aquatic bed vegetation such as water lily may re-establish within the first year following removal of the temporary bridges; cleared trees may take 50 or more years to grow back to the size of the trees that will be cleared in existing forested wetlands in the area. Ecology considers the loss of wetland functions for a minimum of 4 years (and for much longer in some wetlands) to be a long-term impact. To account for this temporal loss, Ecology may require compensatory mitigation in addition to restoring the temporarily disturbed areas. Ratios for long-term temporary impacts to forested and scrub-shrub wetlands are generally one-quarter of the typical ratios for permanent impacts. Depending on the length of time that wetlands will be disturbed and the nature of the functions that are temporarily lost, compensatory mitigation could also be required for temporary impacts to emergent wetlands.

S-001-029

14. **Appendix E is confusing with regards to wetlands.** The Ecosystems Discipline Report (DR) uses the old Ecology wetland rating system, but the DEIS apparently uses the new version. This is not explained anywhere and one is left to wonder why the impacts to Category I wetlands decreased so much since the Ecosystems DR was written. The Ecosystems Addendum Report shows shade impact acreages that are much less than those shown in the DEIS text and tables and no explanation is given for this. Other inconsistencies exist between Appendix E and the information in the body of the DEIS. **These reports should be updated to be consistent, or clear explanations for these inconsistencies should be provided in the DEIS.**

S-001-030

15. **The majority of wetland effects associated with this project will occur in wetlands that are currently directly adjacent to the existing SR 520 roadway. Therefore these wetlands will be impacted in ways somewhat similar to the original impacts from the existing road, but to a greater extent. One exception to this is Marsh Island** in the Arboretum which is not directly adjacent to the bridge and so has not been affected by direct fill or shading. It is likely that SR 520 has more indirectly affected wildlife use of the island as well as the quality of the water that enters the wetland on the Island. However, the Pacific Street Interchange Option would affect Marsh Island in ways that the other westside options would not. The Union Bay Bridge would cross directly over Marsh Island, shading vegetation, thus affecting a number of wetland functions, as well as increasing the extent of wildlife disturbance in that area. It is also not yet known whether one of the large supports for the Union Bay Bridge would need to be located on the Island thus resulting in direct fill of a portion of this wetland. **The Pacific Street Interchange Option would disproportionately affect the Marsh Island system in comparison to the basic alternatives and other westside options. This important difference should have been identified and discussed in the DEIS.**

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-028

Comment Summary:

Wetland Effects During Construction

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-029

Comment Summary:

Wetland Regulations and Ratings

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-030

Comment Summary:

Pacific Street Interchange Option

Response:

See Section 1.2 of the 2006 Draft EIS Comment Response Report.

S-001-031

16. All of the proposed alternatives and options would pass through the Arboretum at higher elevations than the existing structure. While this may benefit some wildlife species that are currently limited to crossing under the bridge on Foster Island to a very narrow tunnel, it is not clear how this will affect birds and other wildlife that use the canopies of the trees. The DEIS also does not address changes to water access for ducks trying to land and take off in the Arboretum area. The document should discuss these potential impacts and identify any differences among the alternatives and options.

S-001-032

17. **Ecology recommends using the Washington Function Assessment Method (WAFAM, Hruby et al. 1999) to quantify existing wetland functions in the project area.** This would provide more detailed information and a more complete picture of the wetland functions that may be lost than does the method that is more commonly used by WSDOT (Wetland Functions Characterization Tool for Linear Projects, Null et al. 2000). Using WAFAM will help in assessing the potential function loss, particularly for permanent shading and temporary impacts.

S-001-033

18. **The DEIS does not show wetland impacts broken down by Cowardin class or Hydrogeomorphic type in any of the tables in the body of the document, nor in Appendix E. This is important information that should be presented clearly in a table so readers can get a better idea of the extent of the types of wetland lost and relate this to functions lost.** The following table is an example that Ecology composed by gleaning the information from several places in the text of Appendix E.

SR 520 Bridge Permanent Impacts by Wetland Type

	4-Lane Alternative			6-Lane Alternative		
Wetland Type	**Seattle Side**	**East Side**	**Total**	**Seattle Side**	**East Side**	**Total**
Total	4.7	**3.2**	7.9	6.9	6.5	13.4
Cowardin Class						
FO	0.7	0.9	1.6	0.8	1.5	2.3
SS	1.0	0.5	1.5	1.3	1.9	3.2
EM	0.6	1.7	2.3	0.7	3.1	3.8
AB	2.4		2.4	4.1		4.1
HGM Type						
Depressional		0.5	0.5		0.9	0.9
Riverine					1.9	1.9
Slope		2.6	2.6		3.6	3.6
Fringe - Lacustrine	4.7	0.1	4.8	6.9	0.1	0.1

S-001-034

19. **The DEIS provides very little information as to how WSDOT proposes to provide compensatory mitigation for unavoidable wetland impacts beyond some brief statements on ratios.** This information is not sufficient for Ecology to determine whether project impacts will be adequately mitigated. Ecology is aware that specific locations for wetland mitigation have not yet been selected but more information on a general proposed approach should have been provided.

S-001-035

20. The DEIS states on page 5-49 that WSDOT is proposing **a 1:1 ratio** to compensate for shading impacts and then goes on to suggest that planting trees and shrubs in existing wetlands around Lake Washington would be adequate mitigation. **Applying the same ratio across the board does not take into account the wetland ratings or the**

S-001-031

Comment Summary:

Wildlife Effects

Response:

See Section 16.2 of the 2006 Draft EIS Comment Response Report.

S-001-032

Comment Summary:

Wetland Regulations and Ratings

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-033

Comment Summary:

Wetland Regulations and Ratings

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-034

Comment Summary:

Wetland Mitigation

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-035

Comment Summary:

Wetland Shading Effects

S-001-035

extent of loss of function for a particular wetland. Ecology does not have guidance that speaks directly to shading impacts to wetlands but makes clear that compensatory mitigation should adequately replace the functions that are lost in the impacted wetlands. If a wetland is shaded to the extent that it will lose all of its vegetation, it would be necessary to assess the functions that will be lost due to this change. **Ratios should be selected based on the potential loss of function.** For conversion of wetland types, ratios are generally one-half of the typical ratios for permanent fill impacts. If enhancement only is proposed, then ratios are likely to be 4 times the ratios that would apply if re-establishment of wetland were the selected mitigation. However, **the extent of mitigation needed to replace the lost functions cannot be determined without a shade impact study and a wetland function impact study.**

S-001-036

21. The DEIS states on page 7-31 that the 6-Lane Alternative would require 14.2 acres of wetland mitigation for eastside wetland impacts. This section notes that the project team did not find an undeveloped area of suitable size available in the project area basins to accommodate all the mitigation needed. It also notes that they did not find enough suitable areas across the basins to get the total mitigation acreage needed. Therefore, the DEIS states, the project team turned to an existing watershed characterization study to identify potential mitigation sites in the larger Lake Washington/Cedar River Watershed (WRIA 8). It is not clear from this discussion whether the project team asked local jurisdictions or other entities for help in identifying potential mitigation sites closer to the areas that will be impacted. **Ecology is concerned that the project team is considering potential mitigation sites that are a considerable distance from the project area, such as projects that received high priority in the watershed characterization study that are located in the vicinity of Woodinville and Issaquah and that drain to Lake Sammamish or its associated creeks rather than to Lake Washington where the affected wetlands drain. Given that the impacts to the eastside wetlands are in an urban area, we recommend looking for mitigation in the local urban area (e.g., Kelsey Creek basin, Yarrow Creek basin).**

    Ecology and other state and federal agency representatives have discussed possible mitigation options with staff from the City of Bellevue. City staff have identified a number of priority projects in the affected sub-basins or in nearby areas that could be viable options. We have conducted a similar process with City of Seattle staff in looking at options for westside mitigation. Ecology recommends that the SR 520 project team coordinate closely with our staff as well as those from other state, local and federal agencies during the process of mitigation site selection.

S-001-037

22. **Exhibit 3-1b shows a stormwater treatment wetland for the 6-Lane Alternative proposed for the same location in which the project team has proposed locating some of the wetland mitigation. This conflict in use of that area will obviously need to be resolved.** It appears that there is some flexibility in siting the feature because the 4-Lane Alternative shows a similarly-sized stormwater wetland in a different location between two of the ramps that will be removed as part of this project.

Response:

See Section 16.1 of the 2006 Draft EIS Comment Response Report.

S-001-036

Comment Summary:

Eastside Concerns

Response:

See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-037

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

4. WATER QUALITY COMMENTS

A. General:

S-001-038

Regarding the stormwater management efforts, the DEIS does a good job of following the layout for planning for and applying principles found in the Highway Runoff Manual (HRM) and its Ecology equivalent guidance manual. In combination with the narrative found in the DEIS, the Water Resources Discipline Report found in Appendix T has adequately explained and broken down the elements of stormwater management and plans for compliance by satisfying the minimum requirements for treatment and flow control. The amount of early planning and agency coordination has helped create a well-thought-out DEIS concerning stormwater impacts and establishing a clear precedent for projects of this magnitude. The DEIS delivers a message that the stormwater management issues should be addressed by adhering to the policy and associated guidance in the HRM to achieve the intended goals of the state to protect and preserve our important water resources.

S-001-039

Beginning with Chapter 3 "Developing the Alternatives", page 3-38 under Stormwater Treatment does an effective job of providing some background information on the locality of the project limits. Based on the comparable drainage characteristics of the east and west sides of the project area, it is logical to separate the two sides when providing a description of the management efforts in each area. This approach allows the narrative to explain the similar types of design schemes that correspond to the general characteristics or environmental factors that affect that specific area.

S-001-040

In addition, the schematics found in Appendix T or the Water Resources Discipline Report offer an excellent visual aid for displaying the locations of BMPS and the extent of the sub-basins within the project limits. The reader can easily conceptualize Threshold discharge areas (TDAs) from the various exhibits showing schematics of the delineated sub-basins and the constraints of the right-of-way. Specifically, Exhibit 22 does an excellent job of illustrating the TDA limits and the conceptual layout of proposed stormwater BMPs within each TDA or sub-basin area.

Given the limitations and constraints in the project area, the results of the BMP selection process are clear. The fact that vaults have been considered shows that the project team is selecting the best available science in order to achieve compliance regardless of the associated maintenance requirements of these facilities. Selecting vaults is a viable choice based on the fact that the types of maintenance activities required for vaults may already be required in that area so maintenance scheduling can additionally be coordinated with vaults for efficiency. The amount of land acquisition or use of right-of-way is also reduced through use of vaults considering the smaller footprint.

Operational treatment and flow control BMPs may be constructed at a larger scale depending on the alternative that is selected. The amount of new and replaced impervious surface would be greater within each TDA if the 6-lane alternative is selected. Conversely, facility size will be comparably smaller if the 4-lane alternative is selected. Given the consideration that has been explicitly addressed in the DEIS, it appears that the stormwater management requirements will be satisfied regardless of which alternative is selected. Traffic considerations should have a stronger bearing on whether the 6-lane alternative should be selected, however, the space constraints due to limited right-of-way may require that land acquisition be considered in order to have adequate space available for the constructed operational stormwater BMPs. In this case, the stormwater design may have a stronger bearing on the selection of the preferred alternative.

S-001-038

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-039

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-040

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-041

One cautionary comment relates to the section titled "Stormwater Treatment" in that it also includes the details for meeting the flow control requirements. Care should be taken not to confuse the reader with the requirements for controlling water quality and those for water quantity. Detention facilities and other flow control BMPs have an affect on water quality but they also function to reduce the hazard of flooding and property damage or loss. The primary function of flow control BMPs is not to remove pollutants from stormwater runoff, but to control the release rate of water to the receiving water body of the corresponding drainage basin in order to mimic the natural hydrologic cycle. This is a separate objective from those of stormwater treatment BMPs; hence a separate section outlining the details of meeting the objectives of quantity control would be sufficient in differentiating the goals between treatment and flow control.

S-001-042

The chapter tabs of the actual bound document do not do an effective job of marking certain sections for quick reference. The divisions between chapters are marked but the method of highlighting or bolding the color of the tab of the corresponding section does not provide the best clarity for the reader.

S-001-043

B. Stormwater Treatment and Flow Control

Seattle side:

Options for treatment and flow control in the basins on the west side of the project area are limited due to the amount of wetland area, and the other development that is encroaching on the project right-of-way. It is evident from the details in the documentation that careful consideration was taken to ensure that water quality standards will be met despite the limiting factors. **The DEIS would benefit by including tables similar to Exhibits 35 and 37 in order to compare the stormwater impact scenarios for each alternative on the Seattle side of the project area.** It appears that the flow control exemptions on Seattle side of the project area resulted in less attention paid to that side in terms of providing more detailed data on potential pollutant loading scenarios for each sub-basin and for each alternative.

S-001-044

Lake Union Basin:

Once the emerging treatment technology is selected at final design, questions may arise. It is curious that an emerging treatment BMP is being selected for this basin, since not a lot of information is provided as to why this option is being considered. On page 46 of Appendix T the fourth sentence in the first paragraph indicates the facility will be a "...space-efficient underground facility". This information leads one to conclude that space constraints are the limiting factor in the BMP selection. **Ecology suggests a water quality wet vault for consideration as a treatment option. Using an emerging BMP might prove inappropriate given that the potential for a specific proposed BMP to be denied a "use level" designation. If that is the case, the engineering team will be forced to consider more traditional opportunities.**

S-001-045

Portage Bay Basin

The BMP options are more limited in the Portage Bay Basin in contrast to the characteristics of the Union Bay Basin. Little or no wetland areas and the limited availability of right-of-way are an excellent basis for selecting the water quality wet vault for treatment in this basin. As indicated, discharges to the receiving water body in this drainage area are exempt from the flow control requirement; therefore, omitting a flow detention facility is justified. **If discharges are not directly to the exempt receiving water body and are to a non-exempt tributary, the flow control requirement will apply to the discharge from that basin.**

S-001-041

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-042

Comment Summary:

Format and Content

Response:

See Section 23.1 of the 2006 Draft EIS Comment Response Report.

S-001-043

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-044

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-045

Comment Summary:

Stormwater Treatment

S-001-046

Union Bay Basin

WSDOT has explicitly indicated that the "demonstrative" approach will be conducted in the engineering plan for stormwater management in this basin. An impressive design feature in this basin is the water quality vegetation cells that contain compost-amended soils to help facilitate treatment. This feature is an excellent use of resources since they will be constructed in the cofferdams, which will already be in place for the construction of the bridge pilings. **One consideration is ensuring that this design element does not in any way affect the structural integrity of the bridge piling itself. If any findings lead to this possibility then the plan should be replaced with an alternative plan at the earliest stage of design as possible. The structural integrity of the bridge should in no way be compromised for the benefit of achieving compliance for stormwater quality.**

Pre-treatment prior to conveyance into the vegetation cells or bridge pier wetlands is facilitated via sedimentation vaults located below the road surface within the bridge deck. Specific details have not been outlined for the sedimentation vault design leading to question whether the vault is one continuous facility, or whether there are individual vaults located in the proximity above a bridge pier wetland or vegetation cell. **Another consideration is the maintenance of the sedimentation vaults, which is not addressed in the DEIS.**

S-001-047

Evergreen Point Bridge

Lake Washington Basin

The spill lagoons are another excellent innovative technique for effectively managing stormwater runoff; however, because this method of runoff quality control is not proven to meet the treatment standards, the demonstrative approach will need to be followed in this sub-basin for this specific method. While pollutants are not removed in the spill lagoons, the concentrations are diluted within the containment area and later when the runoff is assimilated into the waters of Lake Washington. Is it possible to predict the pollutant concentrations as the runoff is diluted through the spill lagoons and out into Lake Washington**? Monitoring should be in place to ensure that the pollutant concentration thresholds for the acute and chronic mixing zone boundaries are not exceeded, and such that there is no potential for serious impact on the water quality of Lake Washington.**

High efficiency street sweeping in combination with the spill lagoons is definitely an critical factor in removing pollutants from the bridge deck. Pollutants that are not captured in the street sweeping events will more than likely find their way via runoff into Lake Washington. **If it is determined that the street sweeping machine is not achieving the desired level of pollutant removal from the surface of the bridge deck, then a contingency plan (e.g. considering sweeping frequency, etc.,) must be developed otherwise the pollutant concentrations might exceed the maximum that is allowed within the mixing zone boundaries.** This problem can be alleviated by selecting the proper street sweeper. Consideration must be given to ensure that this machine was designed at a level that is conductive to the method proposed. In other words, the street sweeper must be as effective in removing pollutants from the bridge deck as well or better than the conditions assumed in the modeling scenario used to determine the effectiveness of using spill containment lagoons to meet the water quality standards in the lake.

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-046

Comment Summary:

Pier Treatment Wetlands

Response:

See Section 15.0 of the 2006 Draft EIS Comment Response Report.

S-001-047

Comment Summary:

Stormwater Treatment

Response:

See Section 15.3 of the 2006 Draft EIS Comment Response Report.

S-001-048

Eastside

Fairweather Creek Basin
The existing conditions in this sub-basin are such that offsite runoff and stormwater facilities might influence the drainage characteristics of this specific area. Careful consideration must be given to offsite flow contributing to the basin in order to adequately model the hydrologic conditions when designing the onsite BMPs.
The flow control or flow duration standard is applicable in this basin, and it has been noted that there is sufficient planning and scoping for the inclusion of the required flow detention. **One concern is that there are multiple treatment facilities in this basin, however, only a single flow control facility is proposed in the form of a water quality wet vault with flow control**. Perhaps yet again some discharges are still exempt in TDAs within this sub-basin that have direct discharge to an exempt water body, or it is also possible that the BMP with flow control is designed to provide flow control for the entire basin. If the latter is the case, it is evident that this facility will be quite larger to accommodate the detention of flows from the entire basin which has been identified in Exhibit 37 to have a large amount of impervious surface. **The design parameters must be clarified for this BMP when the specific design details are being developed.**

S-001-049

Cozy Cove Basin
There is little information in either the DEIS or Appendix T regarding the effects of urbanization on stream flows and aquatic habitat for this basin. The amount of development surrounding or within this sub-basin leads to the conclusion that the unnamed tributaries in this area may be vulnerable to further development. The DEIS indicates that a water quality wet vault with flow control will also be used in this sub-basin. This is the only BMP identified in this sub-basin area, so the assumption is that the size of this facility will be as large compared to the water quality wet vaults with flow control that are proposed for construction in the Fairweather Creek Basin. The basis for this assumption, besides that it is the single BMP located in this basin, is that according to Exhibits 35 and 37. the Cozy Cove Basin has one of the largest amounts of increase in impervious surface area within the basin depending on the alternative that is selected.

S-001-050

Yarrow Bay Wetland Basin
Flows from the adjacent Yarrow Creek Basin will be treated and discharged to the wetland within the Yarrow Bay Wetland Basin. **It is not clear whether flow control is required for the drainage area that is being proposed to be discharged into the wetland, or if the wetland itself is being utilized to meet the flow duration standard in this sub-basin. This needs clarification.**

S-001-051

Yarrow Bay Creek Basin
This sub-basin is the largest of all the basins on the eastside and the number and size of the flow control and treatment BMPs onsite reflects that fact. There is a relatively low increase in the amount of impervious surface that is being added to this sub-basin; however, given the larger size of the sub-basin, the magnitude of the scaling will be similar to that of adjacent sub-basins.

S-001-052

West Kelsey Creek Basin
The BMPs in this sub-basin are only proposed for the 6-lane alternative. Does this mean that the amount of new and replaced impervious or disturbed land is low enough such that the minimum requirements for treatment and flow control are not triggered in the 4-lane alternative, or that this sub-basin will not be part of the 4-lane alternative? **This needs clarification.**

S-001-048
Comment Summary:
Eastside Concerns

Response:
See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-049
Comment Summary:
Eastside Concerns

Response:
See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-050
Comment Summary:
Eastside Concerns

Response:
See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-051
Comment Summary:
Eastside Concerns

Response:
See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-052
Comment Summary:
Eastside Concerns

S-001-053

5. AIR QUALITY COMMENTS

Ecology's Air Quality comments mirror our recent comments on the DEIS developed for the Alaska Way Viaduct and the I-405 expansion project. We commend WSDOT for addressing and meeting the state and federal transportation conformity requirements for this technically challenging construction project. **However, the "SR 520 Bridge Replacement and HOV Project Draft EIS" does not address mitigating the impacts of diesel particulate emissions caused by the construction phases of the project.**

S-001-054

The EPA, Ecology, and the Puget Sound Clean Air Agency have determined that diesel particulate emissions have serious cancer and non-cancer health effects that occur below the National Ambient Air Quality Standards for particulate matter. As stated in the draft EIS, the Seattle area ranks in the nation's worst 5% for air toxic emissions. Although federal diesel fuel and vehicle emission standards will eventually provide substantial benefits for reducing emissions, increases in diesel emissions due to eight to ten years of construction of mega-sized highway projects in the Central Puget Sound Area will offset many of these benefits.

Federal, state, and local air quality agencies in Washington are aggressively pursuing the adoption of voluntary programs that reduce exposure to diesel emissions. These voluntary programs include the use of cleaner fuels, the installation of retrofit emissions control technology, and the adoption of no-idle policies. Counties, cities, ports, school districts, transit authorities and state agencies actively participate in these voluntary programs.

In fact, the Washington State Department of Transportation (WSDOT) is already an active participant in many of these voluntary programs that reduce diesel emissions. WSDOT emission reduction activities include the early use of ultra-low sulfur diesel fuel, the use of bio-diesel fuel, installation of diesel oxidation catalysts (DOC) and closed crankcase ventilation (CCV) filters on WSDOT equipment, and the reduction of idling of emergency vehicles by replacing light bulbs with light emitting diodes (LED) on informational signs. Although these efforts are commendable, WSDOT lags behind many other states for reducing diesel emissions from construction equipment on highway projects.

States such as California, New York, Massachusetts, and Connecticut have demonstrated the success of reducing diesel emissions by retrofitting equipment with retrofit emissions control technology and adopting anti-idle policies. These programs are cost effective and reasonably easy to implement. **Ecology urges WSDOT to work with the Puget Sound Clean Air Agency to adopt the appropriate emission control strategies that mitigate any increases in diesel emissions due to the construction of SR 520 Bridge Replacement and HOV Project. Mitigation measures should reflect increases in emissions due to the use of construction equipment and the delay and diversion of highway traffic.** As with the WSDOT equipment retrofit, Ecology staff can provide technical assistance for retrofitting contracted diesel equipment.

Response:

See Section 24.0 of the 2006 Draft EIS Comment Response Report.

S-001-053

Comment Summary:

Air Quality (Construction)

Response:

See Section 13.2 of the 2006 Draft EIS Comment Response Report.

S-001-054

Comment Summary:

Air Quality (Construction)

Response:

See Section 13.2 of the 2006 Draft EIS Comment Response Report.