From:	Reichgott.Christine@epamail.epa.gov
To:	Draft EIS Feedback;
CC:	Somers.Elaine@epamail.epa.gov;
Subject:	EPA Comments
Date:	Tuesday, July 01, 2008 6:20:12 PM
Attachments:	CRC 7 1.doc

F-002-001 Hello Heather,
Our comments are attached. We would very much like to meet with you and others who are most closely associated with the subjects in our comments for further discussion at your convenience. Thank you!

(See attached file: CRC 7 1.doc)
~*

Teena Reichgott, Manager
NEPA Review Unit ETPA 088
Office of Ecosystems, Tribal and Public Affairs
EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101
206-553-1601

F-002-001

We continued to work with EPA as we prepared the FEIS. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) are committed to ensuring this project proceeds in accordance with applicable federal regulations, and we welcome on-going input from EPA about how this project can ultimately meet or exceed environmental requirements. Since receiving your letter, the CRC project team has met with EPA staff and developed a Sole Source Aquifer report and other additional studies to address concerns.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

July 1, 2008

Reply to
Attn of: ETPA-088 05-052-FHW

Mr. John McAvoy, PE, Major Projects Manager
Federal Highway Administration
Western Federal Lands Building
610 E. 5th St.
Vancouver, Washington 98661

Ms. Linda Gehrke, Deputy Regional Administrator, Region 10
Federal Transit Administration
915 Second Avenue, Suite 3142
Seattle, Washington 98174

Dear Mr. McAvoy and Ms. Gehrke:

F-002-002

The U.S. Environmental Protection Agency has reviewed the Interstate 5 Columbia River Crossing Project Draft Environmental Impact Statement (DEIS) and Draft Section 4(f) Evaluation. We are submitting comments in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The Columbia River Crossing (CRC) DEIS is a bridge, transit, and highway improvement project proposed by the Oregon and Washington Departments of Transportation (ODOT and WSDOT), Southwest Washington Regional Transportation Commission (RTC), Metro, Clark County Public Transportation Benefit Area (C-TRAN), and Tri-County Metropolitan Transportation District (TriMet) to improve safety and mobility in the I-5 corridor between Portland, Oregon and Vancouver, Washington. The CRC project is focused on a five mile segment of the I-5 corridor from SR 500 in Vancouver to approximately Columbia Boulevard in Portland. The alternatives include the No Action alternative and four multi-modal action alternatives. The action alternatives each contain similar highway improvements, high capacity transit in the form of either Light Rail Transit (LRT) or Bus Rapid Transit (BRT) with several transit alignment and length options, and either replace or supplement the existing bridges over the Columbia River. Each action alternative also improves bicycle and pedestrian facilities, considers tolling on the bridges, and implements transportation system management and demand measures (TSM and TDM).

EPA is generally supportive of this project, however we have concerns about certain aspects of the project as represented in the draft EIS. EPA commends the project proponents for proposing a multi-modal project and tolling along with Transportation System Management and Transportation Demand Management (TSM/TDM) measures. These are positive steps to reduce single occupancy vehicle (SOV) travel as well as to expand, diversify, and help to fund the transportation system. We also appreciate being involved in the InterCEP process, where, to the extent resources allowed, we offered comments regarding several natural resource aspects of the project. Our scoping comment

F-002-002

See comments about additional coordination above and responses to individual specific comments below.

F-002-002 letter of 12/14/05 identified additional points of interest for EPA. As a result of our review, we are primarily concerned about:

- The need for more information about potential impacts to groundwater and the Troutdale Sole Source Aquifer, particularly from pile driving activities in waters containing contaminated sediments, construction in hazardous materials sites, and routine excavation and construction activities.

- The need for project-related air quality analysis, particularly for near roadway concentrations of, human exposures to, and potential health effects from air toxics, diesel exhaust and particulate matter. Susceptible individuals and populations and sensitive receptor locations were not identified, and no mitigation is proposed.

- The need for identification, analysis, disclosure and mitigation for potential disproportionate environmental and human health impacts to low income and minority populations and communities residing in and near the project area.

- The need for more information regarding impacts to aquatic resources, including stormwater and construction-related impacts to water quality, 303(d) listed streams, and subsistence fishing uses.

We have additional concerns regarding the potential impacts resulting from land use changes and reduced travel times. More detailed discussion is provided in the enclosure. Based on the issues identified above, we have rated the EIS and each of its alternatives as EC-2, Environmental Concerns, Insufficient Information. An explanation of this rating is enclosed.

EPA thanks the Columbia River Crossing Environmental Office for meeting with us on June 10, 2008, and we thank the Federal Transit Administration, the Federal Highway Administration, and the CRC Office for the June 18, 2008 conference call with us to discuss environmental justice and related issues. We look forward to continued dialog to resolve outstanding issues. We are hopeful that our continued collaboration will result in a project that offers exceptional benefits for transportation as well as the human and natural environment.

If you have questions or would like to discuss our comments, please contact me at (206) 553-1601 or at reichgott.christine@epa.gov, or Elaine Somers of my staff at (206) 553-2966 or at somers.elaine@epa.gov. Thank you for the opportunity to be involved in this important project.

Sincerely,

Christine B. Reichgott, Manager
NEPA Review Unit

Enclosures

cc: Ms. Heather Gundersen, CRC Environmental Manager

U.S. Environmental Protection Agency
Detailed Comments on the
I-5 Columbia River Crossing Draft EIS

Groundwater

F-002-003

The CRC DEIS has limited information on the groundwater system underlying the proposed project, including information about the federally designated Troutdale Sole Source Aquifer and about groundwater underlying the Oregon portion of the project area. It is important to disclose in the EIS that for a designated Sole Source Aquifer, the Safe Drinking Water Act states that "…no commitment for federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the [EPA]Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for federal assistance may, if authorized under another provision of law, be entered into to plan or design the project to assure that it will not so contaminate the aquifer."

The Hydrology and Water Quality Technical Report mentions the Sole Source Aquifer and wellhead protection zones within the primary and secondary Areas of Potential Impact (APIs), and indicates that there may be temporary groundwater quality impacts from the construction of roadways or fixed guideways below-grade and close to the water table. The Report also states that the City of Vancouver has designated the entire area within the City boundary as a Critical Aquifer Recharge Area, and that no detailed analysis of the depth to water table within the project area has been conducted.

We are concerned that neither the Draft EIS nor the Technical Reports provide details regarding the physical environment of the aquifer and of the contamination risks. The discussion of potential groundwater impacts is equal in importance to the analysis of potential air and surface water impacts. It is important to provide this information in the EIS along with mitigating measures that will ensure the project is protective of the Sole Source Aquifer. As presented, the EIS does not enable EPA to make an informed evaluation of the potential impacts of the project on the groundwater resource.

Recommendations:

F-002-004
- In the Final EIS, include a section devoted specifically to groundwater, which includes the description of the Affected Environment, the impacts associated with the alternative and alignment options, and the environmental and human health effects of each.

F-002-005
- In the Affected Environment discussion for groundwater, describe the groundwater resources underlying the project area. In order to analyze potential impacts to groundwater and to the sole source aquifer in particular, the following information is needed: a figure that shows water level elevation contours of the area, cross sections depicting aquifer stratigraphy and water level depth, maps of any contaminant plumes known to exist in the area, and maps showing ground water flow directions. The project area should then be overlain on the figures and maps.

F-002-006
- We would suggest that the following information be included in the Environmental Consequences discussion for groundwater:
  - Maps of locations of all existing hazardous materials sites;

F-002-003

We share your interest in identifying and working to avoid or minimize potential impacts on the Troutdale Sole Source Aquifer (SSA) from the construction of this project. As part of our evaluation of impacts to groundwater resources for the FEIS, we included: a detailed analysis of potential impacts to the Troutdale SSA; a description of the existing conditions of the aquifer, including a map of the known hazardous materials sites within the project area; a map displaying beneficial groundwater use and a map displaying groundwater contamination; and a map displaying water level and groundwater flow information. We used this information to evaluate potential effects to the quality and quantity of this important water source caused by construction activities and long-term operations. Potential impacts were discussed in the context of other past, present, and reasonably foreseeable impacts in our cumulative effects evaluation.

F-002-004

The FEIS addresses groundwater in Chapter 3 (Sections 3.14 and 3.17), Water Quality and Hydrology and Geology and Groundwater. This includes a description of the affected environment, potential impacts, and mitigations, primarily for the LPA. Adverse effects to human health and the environment related to groundwater are not anticipated to result from the LPA.

F-002-005

This information is in the updated Hazardous Materials Technical Report.

F-002-006

Maps covering these issues, except for existing soil contamination, are presented in the existing conditions section of the Hazardous Materials Technical Report. See also the conclusions discussed in the long-term and temporary effects sections. Though there was no map, potential

F-002-006

- Maps showing existing ground water contamination;
- Maps showing existing soil contamination;
- Indicate whether there is a potential for an existing plume of contamination to be transported to a deeper part of the aquifer system as the holes are dug for the bridge pilings or other structures, or otherwise exacerbate the groundwater contamination issues in the project area;
- A description of the impacts of the placement of bridge and overpass piers and pilings (indicate if there is a potential for contaminants to be transported from the soil or sediments into the ground water at any of these sites);
- A map of existing wells, both private and public, and a description of the anticipated impacts on the wells and on the wellhead protection areas.

F-002-007

- Evaluate the groundwater impacts from all the proposed alternatives, including cumulative effects. Include in the ground water evaluation the specifics of existing contamination plume locations and proposed mitigation measures.

Air quality, Mobile Source Air Toxics

F-002-008

Operational impacts: The Draft EIS estimated operational emissions of all air pollutants from mobile sources for the four-county region and from four subareas or highway segments along the I-5 corridor. Based on the projected changes due to EPA regulations and fleet change over time, the EIS concludes (p. 3-277) that year 2030 emissions would be less than current conditions and the differences among alternatives would be unsubstantial. This regional scale air pollutant emissions discussion may be misleading since emissions at this scale do not necessarily correlate with ambient air quality. We believe that the Draft EIS needs to include additional

F-002-009

information on the actual air quality effects of the project:

- The focus of the EIS should be on the change in air quality and clearly distinguish between project induced emission changes vs. changes caused by fleet turnover and more stringent new vehicle emission standards.
- The Draft EIS analysis focuses on emission trends that are not influenced by the project. It is difficult to provide meaningful disclosure of impacts of air pollutants through an evaluation of emissions alone. This approach dismisses the air quality impacts at the micro scale, meteorology and prevailing wind direction, topography, proximity of mobile sources to sensitive receptors, and the combined effects of other air pollution sources. The Portland Air Toxics Assessment demonstrates that there are tools available for this type of analysis.
- There is no analysis or disclosure of near roadway pollutants – their composition, concentrations, identification of the sensitive receptor locations and populations, and the associated potential human health effects[1]. This information would be particularly relevant to the communities and populations living within approximately 500 yards of the

[1] A large number of recent studies have examined the association between living near major roads and different adverse health endpoints. Several well-conducted epidemiologic studies have shown associations with cardiovascular effects, premature adult mortality, and adverse birth outcomes, including low birth weight and size. Traffic-related pollutants have been repeatedly associated with increased prevalence of asthma-related respiratory symptoms in children. Also, based on toxicological and occupational epidemiologic literature, several of the MSATs, including benzene, 1,3-butadiene, and diesel exhaust, are classified as known and likely human carcinogens. Thus, cancer risk, including childhood leukemia, is a potential concern in near roadway environments. For additional information on MSATs, please see EPA's MSAT website http://www.epa.gov/otaq/toxics.htm.

impacts from existing soil contamination are discussed in the temporary effects section.

F-002-007

The FEIS updates analysis for the Locally Preferred Alternative (LPA), not all of the alternatives included in the DEIS. The FEIS summarizes the LPA's direct, indirect, and cumulative effects on groundwater, and describes potential mitigation measures. The Hazardous Materials Technical Report describes the existing contamination plume in greater detail.

F-002-008

As noted in our meeting subsequent to the DEIS, EPA and other regulatory agencies worked with CRC project staff as part of the "Interstate Collaborative Environmental Process" (InterCEP) during the spring and summer of 2006 to develop analysis methods for each environmental discipline, including the approach for assessing air quality impacts[1]. This work included several meetings discussing analytical approaches and culminated in a formal comment from each InterCEP agency indicating their agreement on the Methods and Data reports prepared for each discipline. Each Methods and Data report documents the approach for analyzing impacts from the CRC project to a specific environmental discipline.

We agree that it is important to distinguish between projected air quality improvements that are a result of this project and changes in air quality that are outside the influence of the project (i.e. anticipated improvements in vehicle emissions). The effects of the project were found to be very small, revealing differences between the build alternatives and the No Build alternative that are within the range of error in the model used to assess future air quality conditions. These minor differences, even from the micro-simulation done for subareas within the project corridor, provided little information for meaningful comparison

F-002-009 roadway, although the distance may vary depending on traffic and environmental conditions, and are hotspot in nature when there are localized concentrations.

Recommendation: Provide an analysis of project related air quality impacts in the Final EIS that is responsive to the above comments.

F-002-010 Construction impacts: One of the important findings of the Portland Air Toxics Assessment was the impacts of construction sites on micro scale air quality. These air quality effects can be significant. Air toxics emissions, particularly diesel exhaust, are known or suspected to cause cancer or other serious health effects, such as respiratory, neurological, reproductive, and developmental effects.

Recommendation: Include in the air quality section additional information on the duration, nature of, and special extent of construction impacts on air quality. Include a discussion of potential health impacts. Identify the affected populations and sensitive receptor locations.

F-002-011 There are now many opportunities to reduce the effects of project construction. Please see the Clean Construction USA website at http://www.epa.gov/otaq/diesel/construction/. At this website are examples of construction mitigation measures not included in the Draft EIS. The website also includes case studies and examples of institutional arrangements for implementing this mitigation.

Recommendation: Augment the construction mitigation measures listed in the Draft EIS to include additional mitigation measures listed on this website, and commit to their implementation.

F-002-012 There is also a Construction Sector within the West Coast Collaborative at http://www.westcoastdiesel.org, which is a public private partnership to reduce diesel emissions. The Construction and Distributed Generation Workgroup explores opportunities to share information and/or seek funding for a variety of projects including: using the NEPA review process to require construction emissions mitigation plans; contractual incentives, and providing incentive funding for smaller companies for pollution controls. Projects such as the Columbia River Crossing are encouraged to participate in this Workgroup.

Recommendation: Participate in the Construction and Distributed Generation Workgroup to share information, and help to advance additional means to mitigate construction emissions.

F-002-013 Correction to text: A correction is needed on page 3-274, where the text states that "No regional conformity analysis is required for the Vancouver area."

Recommendation: Revise the above language to state, "No regional emissions analysis for conformity is required for the Vancouver area."

between alternatives, whereas the future conditions of all scenarios were significantly different (better) than existing conditions mainly due to improvements in vehicle emissions and fuel efficiency. The Draft EIS distinguished between effects resulting from one of the project alternatives versus effects from projections about improvements in the future fleet mix that are not caused by this project. We have to emphasized this distinction in the FEIS.

We do not plan to use air quality dispersion analysis in the FEIS, as current techniques do not provide a resolution that would be meaningful at the scale of this project. This was an important reason for not including a dispersion analysis in the analysis framework outlined in the Air Quality Method and Data report. The Portland Air Toxics Assessment (PATA) used dispersion analysis that provided a spatial resolution of 1 km or 2 km, depending on the location of the estimate, and with an accuracy that is at best in the range of an order of magnitude. This scale and level of accuracy would not allow for meaningful distinction between alternatives regarding potential health effects to communities adjacent to I-5 in the project area. Given the serious limitations of the current analysis methods, EPA and other regulatory agencies agreed[2] on an approach employing a comparison of emissions resulting from vehicles in the project corridor, and broken out into four subareas within the corridor. We tied these results to the PATA study so that readers could get a sense of the current understanding of health risk from air toxics. This approach is consistent with FHWA guidance on air toxic analysis[3], developed in close coordination with EPA. We remain committed to this approach that was agreed upon by EPA and other state and federal regulatory agencies, and feel it is still the best technique for providing meaningful results without giving a false sense of accuracy.

Roadway pollutants are evaluated in the FEIS; however, it is not feasible to calculate concentrations or compositions of toxins relative to health risk in a meaningful way.

Environmental Justice

F-002-014 The CRC project would potentially result in direct and indirect impacts to project area residences, businesses, and neighborhoods, which meet the criteria under Executive Order 12898 on Environmental Justice as being inhabited predominantly by low income and minority populations. Affected neighborhoods also include those that have unusually high populations of elderly and disabled residents. Children are also present throughout these communities, but they do not appear to have been accounted for in the demographic analysis of the EIS. Due to the diverse, largely disadvantaged, multi-cultural, and multi-lingual characteristics of the affected populations, neighborhoods, and communities, and because the project has the potential to exacerbate conditions that are currently affecting human health and well being in the project area, EPA believes that extra measures may be necessary to ensure effective public participation and sufficient and appropriate mitigation for project impacts.

F-002-015 We have environmental justice concerns primarily related to human health and safety, which are both project specific and cumulative in nature. These include air quality, noise, and neighborhood safety, particularly for children, the elderly, and the disabled. We also note potential impacts to community resources and the disproportionate economic burden to low income, elderly, disabled, and minority communities posed by current and potential future property impacts, potential human health effects, taxes, and tolls. We believe that that the potential mitigation concepts presented in the Draft EIS may not go far enough to address the magnitude and scope of potential impacts to these disadvantaged neighborhoods.

Our Environmental Justice concerns with the Draft EIS are that:

F-002-016
- The direct and indirect environmental, human health, social, and economic project impacts would likely affect the low income, minority, elderly, and disabled populations disproportionately as compared to populations that reside outside the project area and throughout the region.

F-002-017
- Some potential impacts, that could be significant, are not identified in the EIS.
- Analysis, disclosure, and mitigation for many impacts of the proposed project appear insufficient. As a result, the project may exacerbate conditions that are currently affecting human health and well being in the project area (such as air pollution, noise, financial stress, construction zone traffic, safety hazards, and health effects, potential contamination of drinking water and subsistence food supplies);

F-002-018
- Citizen allegations and documentation indicate that there is concern that the public participation process, while extensive in nature, may not have fully engaged and informed affected populations so that they feel they are well informed, involved, heard, and responded to in project development, implementation, and operation.

F-002-019 Census demographics: Two vulnerable populations are identified in the census demographics exhibit, "disabled" and age 65 or older. There has been no mention of children. The schools, (but not the childcare centers), in the project area were identified but there was no indication of how these vulnerable populations might be impacted by air pollution, noise, diesel construction vehicles, increased traffic, and other activities. Key to the vulnerable population

[1] CRC Methods and Data Report, Air Quality (January 2007)
[2] EPA and other regulatory agencies worked with CRC project staff as part of the "Interstate Collaborative Environmental Process" (InterCEP) during the spring and summer of 2006 to develop analysis methods for each environmental discipline, including the approach for assessing air quality impacts. This work included several meetings discussing analysis approaches and culminated in a formal comment from each InterCEP agency indicating their agreement on the Methods and Data reports prepared for each discipline. Each Method and Data report documents the approach for analyzing impacts from the CRC project to a specific environmental discipline.
[3] Federal Highway Administration. *Interim Guidance on Air Toxic Analysis in NEPA Documents*. February 2006. Available online at: http://www.fhwa.dot.gov/environment/airtoxic/020306guidmem.htm

F-002-009

See response to comment F-002-008.

The DEIS included data on existing, no-build (which included assumed changes in population, employment, the vehicle fleet and fuels) and the build alternatives (which included all the assumptions of no-build, plus the changes due to the project itself). We have reviewed the DEIS to see how we might better clarify the air quality changes due to changes in background/no-build versus the changes due to the project. Even so, the biggest change by far is background conditions, such that changes due to the various build alternatives are minimal or even negligible. That's why there was an emphasis on the changes due to the evoloution of the vehicle fleet and fuels.

Control of source emissions is the primary method of control for vehicle emissions and has been for decades. Health risk assessments are performed over a 70 year lifetime risk and the fact that vehicle emissions

F-002-019 discussion is health information. For example, the asthma rate for the school age population should be disclosed. Specific information of this nature with details on potential impacts can provide a better sense of where the impacts are actually occurring and who, which racial minority, for example, might be disproportionately impacted.

Recommendations:

- In the Final EIS, expand the demographic analysis to include children that would potentially be affected by the proposed project.

F-002-020

- Characterize/provide a baseline description of the existing health within the potentially affected communities and neighborhoods. For example, the following types of information would be relevant and useful: the asthma rate for children and adults, information about the rates of cardio-vascular disease, other respiratory impairments, and premature deaths.

F-002-021 Public involvement: There is not sufficient information in the Environmental Justice (EJ) Section of the Draft EIS to determine the extent and quality of the public involvement efforts. In our discussions with CRC Environmental Managers on June 10, 2008, we became aware of the depth and breadth of outreach and involvement efforts that were not described in the draft EIS. It was clear that an initial mailing of hundreds of post cards informing residents of possible displacements produced surprisingly few attendees at the subsequent public meeting on that subject. While later meetings reportedly saw improved participation, it is not yet clear whether affected individuals were adequately informed or involved. The fundamental question is whether or not the community members are satisfied with the level of participation, quality of information and the responsiveness of the CRC project proponents to their input. We would also like to know more about how the Community and Environmental Justice group evaluates the quality and effectiveness of its interactions and outreach efforts.

Recommendations:

- In the Final EIS, disclose more information about the participation levels and cross neighborhood representation at the various meetings, the concerns of the residents, what was learned in the process of trying to reach and involve diverse communities, and indicate how public input was incorporated into the project and decision making.

F-002-022 Cumulative impacts: Given the importance of cumulative impacts to EJ communities and other on-going and anticipated projects in the CRC project area or nearby, such as expansion of rail infrastructure, port expansions, and other road improvements and projects, a thorough analysis specifically dealing with EJ implications of cumulative impacts is warranted. The cumulative impacts discussion in the EIS for EJ (p. 3-427) mentions only tolling as a possible negative effect on the affected communities, and implies that because the construction of I-5 in the early 1960s divided neighborhoods and displaced residents that were composed of more minority and low income persons than in Portland and Vancouver as a whole, that the CRC related impacts are comparatively minor and can therefore be dismissed. We do not agree that past impacts of greater magnitude should negate the current and potential future impacts of the communities affected by the CRC project. The E.O. 12898 was issued specifically to address these injustices, with the intent to fully confront the impacts and give a voice to those similarly affected in the future.

have been decreasing for decades and that these trends are expected to continue is very pertinent to the risk people living near freeways may experience. Based on the magnitude of this effect, it is likely that it overshadows small differences between project alternatives.

Methods that provide a “number” with an accuracy that is at best in the range of an order of magnitude cannot be used to differentiate between alternatives where the emissions are shown to vary by approximately 30 percent at most in any subarea. Any differences likely to be attributable to the alternatives would be overshadowed by the inaccuracy in the estimation methods. The spatial resolution for the dispersion modeling in the PATA study was either 1 km or 2 km, depending on the location of the estimate. Methods that can be used to estimate accurate freeway adjacent concentrations have not been identified or demonstrated by any research with which we are familiar.

The PATA study itself was able to do no better than to assert that geographically elevated cancer risks appear to (or may) align with major highway corridors within the Portland area for acetaldehyde, formaldehyde, and benzene. We would not be able to reach a stronger conclusion than this very general statement using the methods in the PATA study. Given the limitations of current analysis methods, the InterCEP group - including staff from EPA, Oregon DEQ and Washington Dept of Ecology - agreed that it would be appropriate to compare the results of emission estimates from the Metro modeling for CRC with the results tied to the PATA study so that readers could get a sense for the current understanding of health risk.

Regarding near roadway pollutants, the FEIS includes a general discussion under the 1502.22 requirements in Chapter 3 (Section 3.10). We are not able to provide information on concentrations, composition, or hot spots relative to health risk.

F-002-023 Environmental Justice views traditional environmental concerns, such as water quality, open space, and wildlife as connected to social, cultural, and economic life. There should be information in the EJ section that attempts to portray a holistic picture of the impacts on diverse communities.

Recommendation: In the Final EIS, discuss the following issues and any other pertinent examples:

- How the project might impact subsistence fishing by local residents in the project area;
- Whether there is any information on the extent of this kind of activity given the Russian, Vietnamese and African-American populations, the poverty levels and the proximity of shoreline in the project area;
- Whether there are urban creeks in the neighborhoods (such as Burnt Bridge Creek);
- How communities value and use these resources; and
- How this information has been incorporated into our understanding of impacts.

F-002-024 Mitigation: For impacts that primarily affect the neighborhoods and communities adjacent to I-5 and within the project area, particularly the populations of low income, minority, elderly, and or disabled, the potential mitigation measures do not appear sufficient to offset project impacts that are largely born by the most disadvantaged populations in order that substantial public benefits may be derived. Thus, in addition to other mitigation recommendations included in our CRC Draft EIS comments, we suggest a number of ways in which mitigation might be strengthened:

F-002-025 To mitigate the impacts to disadvantaged neighborhoods in the project area, the DEIS discusses potential relocations, such as displaced homes, businesses, and facilities. However, there is no mitigation discussed for impacts associated with partial takings that do not result in full displacement, or for impacts such as encumbered home sales and business leases due to potential project impacts. A means to mitigate these impacts should be discussed and developed with those affected.

F-002-026 For noise impact mitigation, residential sound insulation is mentioned as an FTA-allowed measure, but not traditionally funded by FHWA. Only noise walls were deemed feasible and reasonable by FHWA and appear as the only likely mitigation to be offered. We recommend including the FTA residential sound insulation mitigation measures, and other measures that would be appropriate and feasible, including, but not limited to, the planting of vegetation.

F-002-027 The potential mitigation listed for CRC tolling impacts do little to alleviate these financial impacts. Reduced rate transponders are not very helpful for those who cannot afford to own a car. Considering the scope of current and additional impacts being borne by the affected neighborhoods, it would seem appropriate to offer the low income residents free fare transit passes, and reduced fare passes to other affected residents.

F-002-028 The Delta Park transportation project in Oregon provided the affected low-income and minority communities with community enhancement funding. The communities do not administer the funds, but they select the projects that would be of benefit to their respective

F-002-010

In the FEIS, Chapter 3 (Section 3.10) provides additional information, analysis, and mitigation regarding air emissions during construction.

The DEIS and FEIS analyses of impacts to air quality, noise, electromagnetic fields, and other factors that can affect human health, are based on comparing the project's impacts to specific standards that have been established to protect public health. Ensuring the project will meet or better these standards is used as a method to determine whether the project will have an adverse effect on human health. The criteria used in the DEIS and the FEIS are based on government regulatory standards where they have been established (such as for criteria air pollutants). Where regulatory standards do not exist, then the criteria are based on government agency guidelines or thresholds established by public health and safety professionals. Modeling conducted for the DEIS and FEIS indicate that air emissions from I-5 traffic will be significantly lower by 2030 than they are today, and will be well below established regulatory standards designed to protect human health (see Section 3.10 of the DEIS and Section 3.10 of the FEIS). Noise impacts from I-5 traffic, with the mitigation proposed for the CRC project, will also be substantially lower than today. Noise from the light rail can be mitigated below FTA's noise impact criteria as well (see Section 3.11 of the DEIS and Section 3.11 of the FEIS).

The DEIS did not explicitly evaluate potential effects on physical activity or obesity. However, the DEIS and FEIS both discuss how the project could affect the surrounding urban form that would increase opportunities for physical activity, including: improved bicycle and pedestrian facilities crossing the river; improved connections between existing and new bike and pedestrian paths and across I-5; the LRT extension and transit stations that support increased pedestrian-oriented development; improved sidewalks in Vancouver; and new pedestrian and bicycle connections crossing I-5. The project would also reduce daily

communities. This is a positive form of mitigation that could be provided in the affected Vancouver and Portland neighborhoods. F-002-028

Disabled and elderly individuals could be especially impacted by project construction within their neighborhoods, and by increased traffic accessing Park & Ride facilities located in or near their communities. To mitigate safety hazards to disabled and elderly pedestrians, it would be helpful and appropriate to provide shuttle services to meet their transportation needs both during project construction and to access public transit once the project is operational. F-002-029

Recommendation: Adopt these mitigation measures and/or others not listed here that are recommended by concerned individuals and organizations, to lessen the existing CRC project-related, and cumulative impacts on the affected communities. F-002-030

Aquatic resources

Water quality and stormwater: The DEIS states (p. 3-384,385) that between 35 to 38 acres of untreated impervious surface would remain for each build alternative, and refers the reader to the CRC Conceptual Design Stormwater Report for a discussion of applied guidelines. It would be helpful to include an explanation as to why the remaining 35-38 acres would be untreated. It would also be helpful to know how stormwater would be treated and managed on the replacement or supplemental bridges. F-002-031

The DEIS also states (p. 3-385) that Burnt Bridge Creek and the Columbia Slough could have increases in certain pollutants as a result of the CRC project compared to current conditions. The existing conceptual stormwater design would result in increased loads of dissolved copper in both of these 303(d) listed water bodies, and it is not stated whether or not other pollutant loadings would also be increased. On page 3-386, pollutant loadings are provided but effects on water quality and pollutant concentrations in water bodies are not quantified/estimated. F-002-032

Construction impacts and stormwater pollutants would further degrade Burnt Bridge Creek, which flows into Vancouver Lake. Area residents, particularly people of low income, commonly fish in Vancouver Lake for subsistence. The DEIS does not disclose this or discuss the potential human health effects from this potential environmental consequence of the proposed project. F-002-033

Recommendations:

- Provide a description of the stormwater treatment/management design in the Final EIS. Disclose the fate of stormwater from the remaining 35 to 38 acres of impervious surface, and describe how stormwater would be managed on the new proposed bridges. F-002-034
- Disclose the environmental consequences of project specific and cumulative stormwater pollutants upon all project area water bodies, including Burnt Bridge Creek, Columbia Slough, and Vancouver Lake. Discuss the potential human health effects from swimming and fishing activities in Burnt Bridge Creek and Vancouver Lake from project specific and cumulative pollutants. F-002-035

hours of congestion on I-5 and provide greatly improved transit service, both of which decrease the amount of time travelers spend in cars, thus further promoting physical activity.

F-002-011

For the FEIS, the discussion of potential construction impacts and mitigation is more robust and includes more data and commitments as well as additional measures that will continue to be considered. Please see Chapter 3.10 of the FEIS for more details.

F-002-012

WSDOT, TriMet, and the City of Portland are listed as sponsors for the West Coast Collaborative. The construction team will participate in calls as appropriate.

F-002-013

Thank you for the clarification. The FEIS document has been revised.

F-002-014

We have conducted an extensive public involvment program, which will continue as the project makes commitments to specific mitigation before the issuance of the record of decision. None of the potential human health impacts have been found to result in a disproportionate high and adverse impact to EJ populations. There have been EJ-specific mitigations proposed for other EJ impacts, such as those related to tolling. See responses to comments F-002-016, -017, and -019 regarding the other issues raised in this comment.

F-002-015

Please see responses to comments below.

F-002-036

Wetlands and waters of the U.S: The DEIS, page 3-367, states that the Stacked Transit Highway Bridge (STHB) design would avoid more wetland acres of fill than the replacement design and would have 18% less structure in the Columbia River, although more smaller piers may be added to support this design (p. 3-372). The STHB design would also decrease the pollutant load in stormwater slightly more than the other bridge alternatives. It appears that the STHB design could potentially be considered to be the Least Environmentally Damaging Practicable Alternative (LEDPA), but the DEIS does not address this issue.

Recommendation: Consult with the Corps of Engineers and EPA to ensure that proposed actions will comply with legal requirements, including the Section 404(b)(1) guidelines, determination of the LEDPA, and to discuss conceptual mitigation plans. Include a discussion of these issues in the Final EIS.

F-002-037

The Draft EIS (p. 3-336) states that the Vanport wetlands connect to a wildlife corridor to the west that has few development interruptions. These wetlands are connected to other large remnants of the floodplain wetland system, which increases its value to wildlife needing larger habitat areas. Currently, large numbers of ducks, geese, swallows, and other migrating birds use this habitat.

Recommendation: Due to their high value wetland functions and connectivity, impacts to the Vanport wetlands and to their connections within the floodplain wetland system should be avoided.

F-002-038

Impacts to the Columbia River: The Draft EIS provides little information regarding the logistics and impacts involved with demolition and/or construction of new bridges and other project components on the Columbia River. Consequently, the impacts of construction and the need for mitigation are not sufficiently disclosed in the EIS.

Recommendation: In the Final EIS, disclose the nature, timing, and duration of any habitat modifications or impacts, such as dewatering, loss of riparian areas, bank hardening, debris and pollutant loadings, or other impacts, that would be necessary or likely as a result of project construction and demolition activities.

F-002-039

Noise and vibration – impacts on fish and aquatic wildlife: The DEIS, p. 3-314, indicates that noise from pile driving in deep water at 150 ft from the source can reach 190 dB, and that fish are killed or injured at 180 dB and above. While attenuation is quicker in shallow water, there is no explanation of how deep is deep, or how shallow is shallow. There is also no disclosure about the likely effects on the protected species and species of concern listed on p. 3-340 of the Draft EIS, which includes numerous fish species and two species of marine mammals, or on diving birds, from the project construction. Mitigation measures such as bubble curtains are mentioned, however, there is no explanation of the effectiveness of mitigation.

Recommendation:

- Include in the Final EIS information about the anticipated impacts on fish and wildlife in the project area, and beyond the project area, from noise and vibration during project construction, operation, and maintenance.

F-002-016

Your suggested approach to measuring disproportionality is not consistent with widely accepted standards of practice. The appropriate methods for determining disproportionate impacts include both a comparison of the impacts to EJ and non-EJ communities within the project area and the comparison of benefits to impacts. For the former, the project team evaluated any impacts (noise, acquisitions, etc) that may disproportionately impact EJ populations. For the latter, analyses were completed to compare which populations were going to benefit from the project and which were impacted.

In support of the methodology, please reference: Environmental Justice What You Should Know, FHWA Washington Division Office (http://www.fhwa.dot.gov/wadiv/CRP/ejwadiv.htm). The report suggests how an EJ analysis should be conducted for a transportation project, including – the analysis of disproportionately high and adverse effects: *1. Is the adverse effect predominantly borne by the EJ population? For example, are more minority or low-income people impacted than non-minority or non-low-income people? 2. Will the adverse effect on the EJ population be appreciably more severe or greater in magnitude than the adverse effect on the non-minority or non-low-income population? In other words, will the EJ population carry an unfair share of the impact? For example, if ten EJ residences and ten non-EJ residences will each experience noise levels above the federal standard, but noise at the EJ residences will increase by 20 decibels and noise at the non-EJ residences will increase by 10 decibels, there may be a disproportionate impact.*

F-002-017

The Environmental Justice analysis and report included with the FEIS have gone beyond that which is required, including additional demographic surveys, atypical research into specific topics, and dozens of meetings with EJ communities.

F-002-039 | ○ Discuss potential mitigation measures and their effectiveness, and include mitigation commitments.

Impacts of Land Use Changes and Reduced Travel Times

F-002-040 | The DEIS indicates that land use changes and growth are anticipated, both as a result of local planning and as a result of this project. Some growth will be concentrated near transit stations (transit-oriented development or TOD) and some growth may occur at the margins of urban growth boundaries as a result of reduced travel times. Neither the Land Use section nor the Cumulative Impacts Section discuss the potential impacts of growth on natural resources such as air and water quality.

F-002-041 | Replacement Crossing Alternatives propose to double the number of highway lanes from six to twelve. EPA is concerned that roadway expansion of this magnitude, even with tolls and transit, may stimulate travel demand for use of privately owned vehicles (POVs), and may contribute to pressures for dispersed development.

F-002-042 | In the Land Use Section (p. 3-135), the DEIS indicates that the analysis of potential induced growth was performed using a comprehensive literature review and comparative analysis of case studies. While this can be a helpful approach, we believe that additional analysis is merited for a project of this magnitude and importance for the region. We could agree in principle with the conclusions of the analysis that having a centralized urban core with good public transit, zoning, and transit oriented development would tend to foster maintenance of the urban centers and help to minimize dispersed development. However, the recent and current trends in land use and growth, particularly in the Vancouver area (see *The Columbian*, 5/16/08 article by Michael Andersen: "Growth board rules in favor of preserving farmland"), provide a stronger indication of the growth pressures and patterns that may be expected with the significant transportation improvements proposed by the CRC project, and in combination with other significant transportation improvements along I-5 and near the project area that are listed in the Draft EIS. We think more work is needed to evaluate the travel and land use change that would be stimulated by these individual and cumulative projects, and their associated impacts upon air, water, and land resources, as well as their socio-economic and human health effects.

F-002-043 | Stimulated travel, dispersed development, and loss of natural resource lands may also be at odds with the Oregon and Washington Governors' goals for reducing greenhouse gas emissions. While tolls and transit would soften these effects, there is insufficient analysis and disclosure in the DEIS to compare the Supplemental (8 traffic lanes) and the Replacement (12 traffic lanes) Alternatives with respect to their potential to stimulate travel and growth and their associated impacts to air, water, and land resources, including climate change. It seems logical to expect that some degree of congestion, such as may result from the more moderate I-5 expansion proposed in the Supplemental Alternatives, would likely encourage greater use of alternative travel modes (which is anticipated in the Supplemental Alternatives as proposed), and affect discretionary travel decisions.

For the EJ Report, the project team reviewed the impacts identified by other technical reports in order to determine if these impacts (displacements, air quality, noise, etc) would constitute a disproportionate high and adverse impact to EJ populations. It is necessary to review these other reports for the details of how they developed findings, mitigation, etc. Construction impacts would be temporary and are discussed in the FEIS. The project will remove and reduce many safety hazards, as discussed in the FEIS. In the air quality analysis, for example, it was found that I-5 traffic emissions will improve in the future and that the project will not cause an adverse effect. Regarding noise impacts, new sound walls with the project will actually reduce highway noise compared to existing or no-build. Consequently, if there are not impacts related to air quality, for example, there will not be high, adverse, and disproportionate air quality effects to EJ populations.

F-002-018

Please see response to comment F-002-021.

F-002-019

The FEIS includes analysis of children in the assessment of community impacts, but does not separately evaluate this demographic in the environmental justice analysis. For environmental justice, the analysis adheres to the definitions set forth in Executive Order 12898 and subsequent agency policies that define environmental justice populations as those that are low-income and/or minorities. FHWA guidelines state that: "Within the framework provided by Executive Order 12898 on Environmental Justice, the U.S. DOT Order (5610.2) addresses only minority populations and low-income populations, and does not provide for separate consideration of elderly, children, disabled, and other populations. However, concentrations of the elderly, children, disabled, and other populations protected by Title VI and related nondiscrimination statutes in a specific area or any low-income group will be discussed. If

Recommendations:

F-002-044 • In the Final EIS, include a discussion of potential impacts of growth on air and water quality.

F-002-045 • Consult the FHWA web page for additional methodologies to evaluate the indirect effects of stimulated travel and growth. Results should reveal changes in travel behavior and the likely destinations/locations of eventual land use change.

F-002-046 • Seriously consider selecting a preferred alternative that places less emphasis on the expansion of I-5 and more emphasis on the provision and use of public transit, bicycle and pedestrian modes, and on TDM and TSM strategies.

Ecological connectivity, wildlife

F-002-047 We fully agree with the statement on page 3-336 of the DEIS that I-5 is an important barrier to wildlife passage for land-based species, and that the existing underpasses and stream crossings on I-5 provide for some connectivity, but they are not well-suited to or designed for wildlife movement. Substantially widened highway and bridge facilities with higher traffic volumes and speeds would present additional safety hazards for motorists and wildlife, and would exacerbate and the impassable nature of I-5. To improve human and wildlife safety and prevent wildlife-vehicular collisions, maintain biodiversity, and provide corridors that contribute to regional adaptation to climate change, we believe that all possible opportunities be taken to improve the permeability of I-5. For the same reasons, it is important to take this opportunity, as suggested on page 3-353 of the DEIS, to re-establish or improve riparian features along the Columbia River and its associated water bodies wherever feasible as a form of mitigation for past and current project-related environmental impacts.

F-002-048 Ecological connectivity is a broader concept than wildlife movement in the landscape. It includes the connections and interactions between land and water, the transfer of water, wood, soil, nutrients, genes, species, and related processes. For example, ecological connectivity is impaired when a stream is channelized and separated from its flood plain; when shoreline structures or bank armoring block sediment flows and shoreline enrichment processes; when dams are built or culvert installation block fish passage; when wetland fills or impervious surface prevent ground water aquifer recharge; when hillslope cuts breach seepage areas, springs, or underground aquifers; and when aquatic habitat hydrological alterations and development interfere with surface water/ground water interactions and riverine hyporheic zones. Environmental impact assessments need to focus much more on identifying these connections and the consequences of severing them; project design should incorporate the means to preserve and restore them.

F-002-049 As discussed in the DEIS, bridges also provide habitat for wildlife, such as the swallows and peregrine falcons that inhabit the existing bridges. Replacement or supplemental bridge design could and should also incorporate features that would provide needed wildlife habitat.

they are described as low-income or minority, the basis for this should be documented". Thus, children in minority and low-income communities are considered to be part of an environmental justice population, but children as a stand-alone population are not.

F-002-020

We are not aware of data on the geographic distribution of health conditions (e.g. asthma rates) at a scale that could provide for meaningful distinction between the area inside versus outside the project area. The FEIS includes a description of potential health effects caused by air pollutants in the project area, and note that this area is projected to see a substantial reduction in future vehicle emissions and continues to meet the National Ambient Air Quality Standards established to protect human health. The FEIS also includes recent air toxics monitoring data collected by EPA in the project vicinity.

The FEIS provides more information on project benefits and potential adverse impacts to environmental justice populations. Because we did not identify any adverse health impacts that would be borne disproportionately by minority or low-income populations, we have not identified mitigation specifically for the environmental justice community. However, there have been findings that select upper-story apartments may experience high noise levels associated with the highway. For these units, the project is considering additional mitigation beyond that which is typcial for highway projects. The record of decision (ROD) will finalize the mitigation measures that will be part of this project.

F-002-021

Please refer to the Environmental Justice Technical Report and its appendices and Chapter 3 (Section 3.5) of the FEIS. Based on your guidance, we have documented a much more comprehesive review of outreach activities, specific EJ outreach activities, and an assessment of what we learned from those activities.

Recommendations:

F-002-050

- Consult with ODFW and WDFW, USFWS, and NOAA Fisheries, tribes, and interested/concerned non-governmental organizations regarding the opportunities, needs, locations, number, and design of wildlife crossing features and improved hydrological and fish passage structures that could be incorporated into the design of the CRC project.
- Consult with these same entities and other relevant landowners regarding the potential for riparian area re-establishment and improvement along the Columbia River and its associated water bodies as a form of environmental mitigation for project-related impacts.
- Consult with the above agencies and relevant interest groups, such as Bats International, Audubon Society, and other wildlife organizations regarding bridge and highway design features that would provide wildlife habitat. Include discussions regarding management of roadside vegetation to either attract or detract wildlife from the roadways and guideways as appropriate.

Financial analysis

The EIS provides helpful discussion of economic and financial related issues. There remain a few items that we believe would contribute to a better understanding of the project's impacts and feasibility:

F-002-051

Ensuring fair distribution of benefits and adverse effects: Mitigation for tolls is discussed in the EIS (p. 3-179), however that mitigation should be strengthened to provide meaningful mitigation for adverse financial effects to low income residents (see comments on Environmental Justice above). The impact from potential sales and property taxes to the affected populations in general, and particularly to those segments of the population that would fall within the Environmental Justice discussion, have not been addressed.

Recommendation: Include a discussion of potential sales and property taxes that may be imposed to finance components of the CRC project. Disclose what these taxes would be used for, and what the potential economic impacts would be, particularly for low income communities and residents. Express the economic impacts in relevant terms, such as, per capita costs per year.

F-002-052

Finance plan: In Section 4.2.1 the EIS states that "A finance plan will be developed during the FEIS stage and will incorporate both the FHWA and FTA methodologies." An issue relevant to the inclusion of a finance plan is a project's financial feasibility, as mentioned in the DEIS's Project Abstract (p. iii). We note that this approach does not allow reviewers and the public the opportunity to compare alternatives' financial feasibility at the DEIS stage in order to inform the choice of alternatives.

We believe that sufficient information should currently be available, with the necessary caveats and assumptions, that can form the basis for a Draft EIS stage Financial Plan appendix, for the purpose of addressing project financial feasibility issues. The project's four action alternatives lend themselves to facilitating the inclusion of a preliminary financial feasibility analysis in that there is little substantial variability among them. The analysis could also use sensitivity analysis to address issues where variability would have to be considered

F-002-022

We agree that past impacts of greater magnitude do not negate current and potential future impacts to the communities affected by the CRC project. However, there is a difference between impacts caused by the proposed action (or project) and existing conditions. We have revised the text as needed to clarify. We have identified the impacts of this project and attempt to avoid, minimize, and mitigate for them. In some cases, basic elements of the project (such as improved auto, transit, and bike and pedestrian access, the addition of sidewalks, and cohesive urban design) as well as proposed mitigation such as sound walls, will help to reduce the magnitude of some cumulative impacts related to the historic construction of I-5 and the effect this had on adjacent communities. However, the project does not intend to specifically mitigate for impacts caused by existing conditions or non-CRC actions.

F-002-023

The project has hosted more than 400 public involvement events and numerous contacts with EJ communities and Tribes, and has observed the shorelines for fishing activities. The only waterway directly impacted by the project is the Columbia River. The river provides opportunity for subsistence and sport fishing and would continue to do so with the CRC project. Bridge construction activities could temporarily exclude sport fishing boats from the immediate construction area. However, there is no known subsistence fishing in the vicinity. A search of all public input has revealed no suggestion that this has been identified as an issue. Though anecdotal, numerous staff members of sponsor agencies, as well as project staff, all of whom work in the study area and many of whom live within the study area, have never seen subsistence fishing being practiced from the bridge or its shoreline components. The existing bridge can not be used for fishing, and neither would the new one. Considerable attention has been paid to habitat impacts and other impacts to fish in the Columbia River.

F-002-052 *Recommendation*: Include sufficient and necessary financial information, if possible, in a document for public review prior to issuing the FEIS. This could be accomplished by using the approach and formats suggested in FTA's *Guidance for Transit Financial Plans*. The *Guidance* is based on currently available information.

F-002-053 Business mitigation measures: Loss of revenue to a displaced business is an adverse effect resulting from the project, particularly within the low income and minority communities. These impacts should be evaluated and steps should be taken to mitigate these impacts.

Recommendation: Include in Section 3.4.5 a discussion of loss of revenue to businesses and what mitigation could be anticipated as part of the relocation assistance program.

F-002-054 Hazardous Materials: The DEIS (p. 3-406) indicates that 427 potential hazardous materials sites were identified within 500 ft of the project area. Of these, 31 sites ranked as potentially high risk. The Marine Drive south alignment is located adjacent to the Harbor Oil Superfund site on North Force Avenue where petroleum, PCBs, pesticides, and other hazardous materials are located. In the Draft EIS, it is unclear whether the identification, site assessment, liability investigations, and clean up of hazardous materials sites have been factored into construction schedules and cost analyses. Detailed investigations have not occurred, but are needed to estimate environmental hazards, human health risks, cost and time needed for clean up and subsequent project construction.

Recommendation: Disclose whether the project construction schedule and cost estimates have factored in the site assessment, liability investigations, and clean up of the hazardous materials sites that would be encountered during project construction. If not, provide an estimate of time and costs associated with the cleanup of these sites and include these in the project financial analysis.

Tribal consultation

F-002-055 We commend the CRC project for their efforts to consult with Native American tribes, and for being responsive to their request to avoid upriver bridge placement to avoid potential burial grounds. We also commend the project proponents for their discussions with tribes regarding plants and animals of cultural significance as traditional food, craft, and medicinal sources. The DEIS, however, does not indicate whether anything would be done to protect or enhance these resources.

Recommendation: Clarify in the Final EIS how the information provided by the tribes regarding traditional food, craft, and medicinal sources will be used in project planning and implementation.

F-002-056 **EIS Document Design**

Unusual features of the CRC DEIS are that it provides only a rudimentary Table of Contents, but at the beginning of chapters, provides a listing of chapter subjects and sections.

Additionally, the project has analyzed effects to fish and fish populations in the project area, and these findings are included in the FEIS. Substantive impacts to the majority of anadromous fish are avoided through timing of impact pile driving. Native, resident fish will be affected, but quantification of those effects is not possible. Through continued coordination with state and federal agency biologists, effects to recreational fishing opportunities have not been raised as issues, with the possible exception of effects on white sturgeon. However, spawning and congregation by white sturgeon in the project area is very limited. Further discussion on potential effects from impact pile driving during specific periods and general construction activities is included in the FEIS.

During the very short spring Chinook salmon fishing season, there are numerous sport fishers in boats both upstream and downstream of the bridge and sometimes sport fishermen casting from the shore. Other fisheries near the project area include those for white sturgeon, shad, warm-water fishes, and walleye. The majority of these fishing activities are conducted from boats as pedestrian access to suitable shoreline fishing sites is very limited on both shores of the Columbia River and both shores of North Portland Harbor. There may be poverty level populations among these fishermen but that is not known. The only fishing near the project that has been observed outside of the short salmon seasons has been from the private dock of Jantzen Beach Moorage on the North Portland Harbor just downstream of the I-5 bridge. This has not been observed to be a regular activity and it is unknown whether the fishers are low income or minority. The dock is privately owned and is not intended for public use. Effects to fisheries, and related impacts to fishing activities, are discussed in the FEIS.

F-002-024

The demographic data for the adversely affected residents indicates that EJ populations will not be subject to disproportionate high and adverse

F-002-056 We think that a more traditional approach of providing a complete Table of Contents would facilitate the review of this large EIS. The reader is also frequently referred to the Technical Reports on each subject for more information, as the analytical information in the DEIS often seems minimal to cursory. It is customary to include all important information, including a description of assessment methodologies, in the main document, the EIS, and reserve unnecessary details for the appendices for those who simply desire more detailed information. By relying heavily on the readers' use of the Technical Reports for each subject, the EIS may not sufficiently inform the reader as a stand-alone document, and through its reliance on the Technical Reports may become "encyclopedic" in nature.

F-002-057

Recommendations:

F-002-058
- Include a complete Table of Contents in the Final EIS.

F-002-059
- Incorporate more information from the Technical Reports to sufficiently inform the public and decision maker about the assessment and analytical methodologies and results in order to sufficiently support conclusions made in the EIS.

effects. This has been further verified in the FEIS. The FEIS further explores and develops mitigation measures for property acquisitions. Reimbursement of reestablishment expenses is used to mitigate the cost of moving a business. Eligibility for such payment is restricted to nonprofit organizations, farms, and small businesses. The Uniform Act Standards for Displaced Businesses (49 CFR24.304) does not afford the same benefits to businesses as homeowners, and does not reimburse for loss of goodwill or loss of profits. While the 1987 amendments to the Uniform Act provided some additional benefits for businesses, these amendments do not require businesses to be protected to the same extent as homeowners and tenants.

There has not been a determination that the displaced businesses and residents disproportionately constitute EJ populations for which unique mitigations are needed. The project will mitigate for all property acquisitions, including partial acquisitions, but has not determined any of these to have specific EJ implications. Similarly, tolling has not been found to have a high, adverse, and disproportionate effect on EJ populations, and has not, thereby, been the topic of mitigation conversations.

F-002-025

Please see the response to comment F-002-024.

F-002-026

For traffic noise analysis, the FHWA criteria as defined by ODOT and WSDOT must be used for the analysis. By policy, the FHWA uses sound insulation as mitigation only for institutional land uses, and there are no institutional noise impacts. The FHWA does not, by policy use residential sound insulation.

For light rail noise analysis, the FTA criteria must be used. The FTA does allow for residential sound insulation. Residential sound insulation

was recommended as a form of noise mitigation for some of the noise impacts related to transit Sound walls were also recommended for some of the transit noise impacts.

Neither the FTA or FHWA typically use the planting of vegetation as noise mitigation. Vegetation does little to reduce noise, and tests have shown that it takes over 100 feet of dense foliage to reduce noise by 3 dB. Given the project corridor, vegetation is neither reasonable or feasible as noise mitigation and cannot be considered as noise mitigation under FHWA or FTA regulations.

F-002-027

As you have noted, reduced rate transponders do not benefit those who don't own or travel by car. At the same time, people who don't own or travel by car will not be subject to the new highway toll. They will, however, directly benefit from the project if they travel by transit, bicycle or walking across the bridge. The project has not determined the tolls to cause a disproportionate high and adverse impact to EJ populations that is not adequately mitigated by the greatly improved transit and pedestrian systems. Furthermore, economic benefits are likely to result from the project, with much of the potential for job growth in the project area.

The acquisition and management of transponders was found to potentially have EJ impacts, which is why specific mitigations are proposed for such.

F-002-028

The CRC project will not have a discrete and separate community enhancement fund, but community enhancements are a part of the project design. As engineering progresses, the project team will continue to evaluate the best method to integrate community enhancements, where feasible, into the project design. We are working with surrounding

communities to support their goals and provide enhancements as part of the overall project design rather than establish a separate account for activities separate from the project. See discussion in Section 1.2 of the FEIS.

F-002-029

The project is improving pedestrian facilities in many locations, and will make improvements specifically to mitigate increased traffic accessing park and rides. The improvements will include crosswalks, signalization of intersections, and ADA modifications for sidewalks. Construction period mitigations, such as shuttle buses, have not yet been fully decided. The project team, including TriMet and C-Tran, are considering various means of alleviating construction period impacts, and will pay special attention to the needs of the elderly, disabled, and student groups from the Washington State School for the Blind and the Deaf.

F-002-030

Please see the above responses which address each recommendaton for mitigation.

F-002-031

With the selection of a Locally Preferred Alternative (LPA), we were able to advance stormwater design. The LPA will treat stormwater runoff from all existing, new or reconstructed impervious surfaces within the contributing impervious area. Please see Chapter 3.14 of the FEIS for an updated discussion of stormwater management and water quality. For more information, please see the CRC Water Quality and Hydrology Technical Report.

F-002-032

Please see response to F-002-031.

F-002-033

Under the LPA, improvements in stormwater management will result in improved water quality in Burnt Bridge Creek. As such, adverse human health effects and/or adverse environmental impacts are not anticipated to result from LPA induced changes in water quality in Vancouver Lake.

F-002-034

Please see response to P-002-031.

F-002-035

As discussed in Chapter 3.14, the LPA will result in a net improvement in surface water quality. Please see the response to P-002-033 for a specific discussion of Burnt Bridge Creek and Vancouver Lake.

F-002-036

The Marine Drive interchange design included as part of the LPA is a Least Environmentally Damaging Practicable Alternative. The minimization measures are included in the current interchange design, which avoids the wetland boundary of both the small isolated wetland adjacent to Expo Road and the Vanport wetland. The USACOE has provided written concurrence on the purpose and need, written concurrence on the LPA, and comments on other relevant decisions such as range of alternatives, methodologies, the LPA, and minimization and mitigation measures.

An example of this LEDPA approach is that the on-ramp onto I-5 north bound will be built on a bridge structure 40 to 85 feet off of the ground, rather than structural fill. This design feature would eliminate any encroachment or impact to the Vanport wetland. The bridge support piers could be designed to avoid, or at least minimize, encroachment into the small (<0.06 acres) isolated wetland adjacent to Expo Road.

F-002-037
Direct impacts to the Vanport Wetlands are avoided under the LPA.

F-002-038
These issues have been discussed in the FEIS and are described in greater detail in the Biological Assessment.

F-002-039
These issues have been discussed in the FEIS and are described in greater detail in the Biological Assessment.

F-002-040
The growth expected in the project area has been planned as part of the heavily-regulated and very public comprehensive growth management planning completed by local governments. The CRC project will not cause any growth to occur that is inconsistent with these adopted plans and was not considered in their development. The comprehensive plans are supported by their own environmental impact statements, and are the subject of numerous studies, meetings, and public conversations. It is these plans (these *actions*) that consider the effects of growth and plan accordingly. The plans and their EIS's address the impacts to natural resources caused by growth under these plans.

With the completion of the CRC project, development will continue (both around transit stations, and throughout the urban growth areas). But the project is not expected to cause growth to occur outside the urban growth boundary, or in any other way that would be inconsistent with the locally adopted comprehensive plans. The FEIS provides further discussion of the potential indirect and cumulative impacts the project would have on natural resources.

F-002-041

As described in Chapter 3 (Section 3.4) of the DEIS and FEIS, and in the Indirect Effects Technical Report, highway capacity improvements and access improvements can induce development in suburban and rural areas that were not previously served, or were greatly underserved, by highway access. The DEIS outlines a comprehensive analysis of the potential induced growth effects that could be expected from the CRC project. A review of national research on induced growth indicates that there are six factors that tend to be associated with highway projects that induce sprawl. These are discussed in the Indirect Effects Technical Report. Based on the CRC project team's comparison of those national research findings to CRC's travel demand modeling, Metro's 2001 land use / transportation modeling, and a review of Clark County, City of Vancouver, City of Portland and Metro land use planning and growth management regulations, the DEIS and the FEIS conclude that the likelihood of substantial induced sprawl from the CRC project is very low. In fact, the CRC project, because of its location in an already urbanized area, the inclusion of new tolls that manage demand, the inclusion of new light rail, and the active regulation of growth management in the region, the CRC project will likely reinforce the region's goals of concentrating development in regional centers, reinforcing existing corridors, and promoting transit and pedestrian friendly development and development patterns.

In October, 2008, the project convened a panel of national experts to review the travel demand model methodology and conclusions, including a land use evaluation. The panel unanimously concluded that CRC's methods and the conclusions were valid and reasonable. Specifically, the panel noted that CRC would "have a low impact to induce growth…because the project is located in a mature urban area," and that it would "contribute to a better jobs housing balance in Clark County…a positive outcome of the project". These results are summarizes in the "Columbia River Crossing Travel Demand Model Review

Report" (November 25, 2008).

In 2010, Metro ran the MetroScope model (an integrated land use and transportation model) to forecast growth associated with transportation improvements of a 12-lane river crossing and light rail to Clark College. Even with a 12-lane river crossing, the model showed only minimal changes in employment location and housing demand compared to the No-Build Alternative.

For a more detailed discussion regarding potential indirect land use changes as a result of the CRC project, including the likely land use changes associated with the introduction of light rail, please see Chapter 3 (Section 3.4) of the FEIS.

F-002-042

The DEIS and land use technical report included more than just literature review and case studies. They also referenced and summarized the results of integrated transportation/land use modeling. That modeling provided quantitative estimates of the potential impacts on employment distribution and housing distribution (using a proxy of housing price impacts). Since the DEIS, we have reviewed these analyses for the FEIS, and sought an independent expert review of the induced effects analysis. Please see Chapter 3 (Section 3.4) of the FEIS.

F-002-043

See response to comment above regarding induced growth. The FEIS further evaluates how indirect effects on land use could indirectly affect and benefit natural resources.

As discussed in the EIS, the supplemental bridge alternatives would result in substantially higher congestion and slightly higher transit ridership than the replacement bridge alternatives. Based on the survey of national research on induced growth and the Metroscope modeling

discussed in the EIS, it is likely that the higher congestion associated with the supplemental bridge alternatives would result in a slightly lower redistribution of jobs from around the region to the urbanized I-5 corridor (and thus less reinforcement of the existing transportation corridor and urbanized area). The slight increase in transit ridership would provide added support to transit oriented development around station areas.

F-002-044

We have assessed the potential for induced growth as well as the related impacts to air and water quality. For the Biological Assessment as well as for the EIS, such analyses were completed. As has been documented, the project is part of maintaining critical urban infrastructure and as such facilitates already planned growth including growth managment objectives. Specifically, the dense, urban development which has been embraced in the Vancouver City Center Vision (VCCV) Plan, the Hayden Island Plan, and the area's comprehensive growth management plans will be facilitated by the extension of light rail and the addition of new stations.

F-002-045

The methodology used to determine induced growth and related impacts was based on FHWA guidance, and approved by FHWA staff. The FEIS provides additional information on such, including a more comprehensive discussion of the possible effects of tolling.

F-002-046

The six sponsoring agencies all voted for the replacement bridge, but also voted for additional study to determine the appropriate number of auxiliary lanes through the project area. The agencies' leadership and staff of these agencies have been supportive of TDM, TSM, transit and other alternative transportation modes. Early screening and evaluation

revealed alternatives without substantial highway investment wouldn't meet the project purpose and need.

F-002-047
Although opportunities to improve wildlife passage are limited in the urbanized project area, under the LPA, wildlife passage opportunities will be improved with construction of the community connector across I-5 in Vancouver and with shoreline re-vegetation.

F-002-048
To the extent possible, we have sought to preserve and enhance ecological connectivity. The CRC project would not channelize any streams or separate them from their flood plain; the project would not block sediment flows and shoreline enrichment processes; no dams would be built; no delineated wetlands would be filled; and the project would improve stormwater treatment.

F-002-049
We have worked with resource agencies on habitat improvements and mitigation measures, as described in the Ecosystems Technical Report. Substantial habitat restoration projects have been proposed and are discussed in the FEIS and Biological Assessment. Discussions with resource agencies on mitigation for fish and wildlife, including native species that currently use the I-5 bridges, will continue.

F-002-050
Please see response to F-002-049.

F-002-051
We do not anticipate using a property tax to fund this project. A sales/use tax may be used, and is discussed in Chapter 4 of the FEIS. This discussion includes the funding potential of such a tax (what portion

of the project it could fund), as well as its economic impact. The FEIS and the Environmental Justice Technical Report also discuss the effect tolling has on low-income commuters.

Significant portions of the needed funds are expected to come from the FTA New Starts grant program and from tolls. The only increase identified is a sales tax increase of less than 1% to fund light rail operations.

F-002-052

The level of detail in the DEIS was intended to inform the public and other stakeholders with relevant information in order to understand the impacts and trade-offs associated with various alternatives. While some readers felt that the DEIS did not have enough detail, others felt that it was too long and detailed. For those who wanted more detail, the DEIS referred them to the technical reports that informed the analysis presented in the DEIS. These were made available on CD and on the project web site, as well as in hard copy. For those who felt that the DEIS was too detailed, an executive summary was distributed along with the DEIS and made available separately in hard copy and on the project web site. Public open houses and numerous public meetings were also held to provide opportunities for public participation. Additionally, the project team attempted to respond to questions about the location of certain information in the DEIS during the DEIS comment period. Staff, with the help of the Community and Environmental Justice Group, also developed a reader friendly table of contents and DEIS guide, to help individuals locate the information most important to them, develop and submit comments on the DEIS, and to understand next steps. Both of these documents were distributed with DEIS materials as inserts, and were available on the project website. Since 2002, WSDOT has been developing a process of determining cost and schedule estimates, the Cost Estimate Validation Process® (CEVP®), to help deliver major projects. Compared to conventional cost estimating, CEVP® is a risk-

based estimating process, iterative in nature, and represents a “snapshot in time” for that project under the conditions known at that time. CEVP® is the expression of project cost and schedule as a range rather than as a single number. Providing cost information as a range accounts for risk factors that might otherwise cause costs to balloon over time. The cost information is given for the year of expenditure and includes everything, even “unknown” issues that may arise. CEVP® is a construction cost estimate tool and does not estimate long-term operations and maintenance costs. WSDOT now mandates all projects over $25 million use the process. Chapter 4 of the DEIS, and the Cost Risk Assessment included as an appendix to the DEIS, include information about how costs were estimated for the DEIS. See Chapter 4 of the FEIS for more discussion on how project costs were estimated in the CEVP® that was conducted following publication of the DEIS.

F-002-053

The potential for lost employment and lost revenue associated with displaced businesses is discussed in the FEIS. However, the revenue and jobs will be lost only if these businesses close rather than reloacte. The project will provide relocation assistance so displaced businesses do not necessarily equate to lost revenue. Mitigation options for loss of sales are generally limited. As explained in 49 CFR 301(h), a displaced business is not entitled to payment for loss of profits. That said, there are a variety of strategies for minimizing impact to businesses near or within the area of construction. The recent construction in downtown Portland of the new MAX guideway provides some good examples of such strategies.

F-002-054

Our cost estimates include risk assessments that account for factors such as this.

F-002-055

Chapter 3 (Section 3.16) of the FEIS includes a discussion of plants and animals of cultural significance to tribes. Those resources that might be impacted by the project are found primarily in waters and wetlands, and the project has taken steps to avoid, minimize, and mitigate for impacts. As a result, the overall project approach is consistent with efforts to protect and enhance tribal resources.

F-002-056

The FEIS includes a detailed Table of Contents.

F-002-057

Please see response to comment F-002-052. It should also be noted that the FEIS focuses on the LPA which allows it to include more detail and still keep the document to a reasonable length.

F-002-058

Please see response to comment F-002-056.

F-002-059

Please see response to comment F-002-057.