

**P-0500-001**

Thank you for taking the time to submit your comments on the I-5 CRC DEIS.

**From:** [Maye Thompson/Doug Allen](#)  
**To:** [Draft EIS Feedback](#);  
**CC:**  
**Subject:** Comments on DEIS  
**Date:** Sunday, June 29, 2008 8:02:50 PM  
**Attachments:** [Stockholm\\_data.pdf](#)  
[A Plus Strickler.pdf](#)  
[BNSF\\_FAQ.pdf](#)  
[BNSF\\_Summary.pdf](#)  
[Council\\_to\\_CRC\\_Ltr\\_Oct\\_19\\_2006.pdf](#)  
[Ignored\\_Induced.pdf](#)  
[Main\\_Comments\\_Douglas\\_Allen.pdf](#)  
[MetroWorkSession\\_02-13-07.pdf](#)  
[Noland\\_Emissions\\_CongestionRelief.pdf](#)  
[Noland\\_Lem\\_Induced\\_Demand.pdf](#)  
[Resolution\\_02-3237A.pdf](#)  
[Resolution\\_07-3782B.pdf](#)

**P-0500-001** Attached are my comments regarding the CRC DEIS, and supporting documentation for those comments.

The main comments are in file Main\_Comments\_Douglas\_Allen.pdf.

The other 11 attached files are entitled:

A\_Plus\_Strickler.pdf  
BNSF\_FAQ.pdf  
BNSF\_Summary.pdf  
Council\_to\_CRC\_Ltr\_Oct\_19\_2006.pdf  
Ignored\_Induced.pdf  
MetroWorkSession\_02-13-07.pdf  
Noland\_Emissions\_CongestionRelief.pdf  
Noland\_Lem\_Induced\_Demand.pdf  
Resolution\_02-3237A.pdf  
Resolution\_07-3782B.pdf  
Stockholm\_data.pdf

This means there are a total of 12 files comprising this set of comments.

Sincerely,

Douglas R. Allen  
734 SE 47th Ave.  
Portland, OR 97215  
(503) 232-6167

\*\*\* eSafe scanned this email for malicious content \*\*\*  
\*\*\* IMPORTANT: Do not open attachments from unrecognized senders \*\*\*

**P-0500-002**

Thank you for taking the time to submit your comments on the I-5 CRC DEIS.

**From:** [Maye Thompson/Doug Allen](#)  
**To:** [Draft EIS Feedback](#);  
**CC:**  
**Subject:** Supplemental Comments on DEIS  
**Date:** Sunday, June 29, 2008 8:52:26 PM  
**Attachments:** [Time for congestion pricing 12 19 07.pdf](#)  
[21\\_bad\\_reasons.pdf](#)  
[BNSF Dist Exec Summ.pdf](#)  
[BNSF Dist Recs.pdf](#)  
[BNSF Frt Prior Memo.pdf](#)  
[BNSF HWY Benefits.pdf](#)  
[Clark Co LandUse.pdf](#)  
[Final remarks on I-5.pdf](#)  
[Phased Alternatives.pdf](#)  
[SDC CityCouncil CRC letter June 2.pdf](#)  
[SeismicSummary.pdf](#)  
[The Arterial Bridge haunts CRC.pdf](#)

**P-0500-002** Attached are supplemental comments regarding the CRC DEIS, which are in addition to my main comments that were previously sent.

The attached comments cover a variety of topics critical of the DEIS and the CRC analysis, and should be included in the DEIS comments.

There are 12 attached files entitled:

21\_bad\_reasons.pdf  
 BNSF\_Dist\_Exec\_Summ.pdf  
 BNSF\_Dist\_Recs.pdf  
 BNSF\_Frt\_Prior\_Memo.pdf  
 BNSF\_HWY\_Benefits.pdf  
 Clark\_Co\_LandUse.pdf  
 Final\_remarks\_on\_I-5.pdf  
 Phased\_Alternatives.pdf  
 SDC\_CityCouncil\_CRC\_letter\_June\_2.pdf  
 SeismicSummary.pdf  
 The\_Arterial\_Bridge\_haunts\_CRC.pdf  
 Time\_for\_congestion\_pricing\_12\_19\_07.pdf

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Douglas R. Allen  
734 SE 47<sup>th</sup> Ave.  
Portland, OR 97215  
June 29, 2008

Columbia River Crossing  
c/o Heather Gunderson  
700 Washington Street, Suite 300  
Vancouver, WA 98660

Comments on Columbia River Crossing DEIS

Dear Ms. Gunderson:

Here are my comments on the Draft Environmental Impact Statement prepared for the Columbia River Crossing. These comments consist of this document plus attached supplementary and supportive material.

#### Five Categories of Defects:

1. The project "purpose and need" statement is defective. As a result, the range of alternatives that were developed is inadequate and misdirected, because the range was based on that statement.

The "purpose and need" statement declares: "Daily traffic demand over the I-5 crossing is projected to increase by 40 percent during the next 20 years, with stop-and-go conditions increasing to at least 10 to 12 hours each day if no improvements are made."

This is not a statement of an objective existing condition or need, but instead defines a future hypothetical problem. If the likelihood of this future problem could be objectively determined, it would be reasonable to regard it as a legitimate "need." However, a future problem that is not based on any scientifically solid methodology, or even a methodology that can be objectively evaluated by others, does not meet any standard of reasonableness. The DEIS fails to substantiate this 40 percent growth projection by citing any identifiable analysis that is open to public scrutiny. By the use of some unsubstantiated travel demand-modeling technology, the CRC has predetermined the outcome of the analysis. It used the statement of "purpose and need" as a touchstone by which all proposals were evaluated and by which many reasonable alternatives were improperly screened out. While it may be reasonable to use a valid "purpose and need" statement for screening alternatives, as advocated by FHWA, the DEIS provides no scientific basis for accepting the claimed 40 percent increase in traffic demand in the face of growing congestion and increasing fuel costs and likely environmental regulation of carbon dioxide emissions.

2. Reasonable and better alternatives were wrongly screened out by staff, so they were not available for analysis in the DEIS. The reasons that were wrongly used include the

#### P-0500-003

The traffic analysis used in evaluating project alternatives has been robust. Traffic forecasts reported in the DEIS and used to inform decisions on a locally preferred alternative were derived from adopted regional employment and population forecasts and state-of-the-art modeling and evaluation conducted by Metro, RTC and the project team, and reviewed by all project sponsor agencies as well as the FTA and FHWA. In addition, an independent panel of traffic modeling experts was convened in October 2008 to review the modeling methods and findings. These experts concluded that the project's approach to estimating future travel demand was reasonable and that it relied on accepted practices employed in metropolitan regions throughout the country. These findings are summarized in the "Columbia River Crossing Travel Demand Model Review Report" (November 25, 2008). This independent review confirmed the approach CRC modeling used to address multiple variables that can affect travel demand, including gasoline prices, tolling, travel demand measures and induced development.

Regarding the evaluation process, evaluation of the five alternatives in the DEIS was preceded by screening of a wide array of possible solutions to the CRC project's Purpose and Need. Chapter 2 of the DEIS (Section 2.5) explains how the project's Sponsoring Agencies solicited the public, stakeholders, other agencies, tribes and other experts for ideas on how to meet the Purpose and Need. This effort produced a long list of potential solutions, such as new transportation corridors across the Columbia River, various transit modes, tolling, other demand management measures, and techniques for operating the existing highway system more efficiently. After identifying this wide array of options, the project evaluated whether and how they met the project's Purpose and Need, and found that alternatives that do not include improvements to the existing I-5 facility generally do little or nothing to address some of the identified needs, including reducing traffic



- P-0500-004** | scientifically invalid travel projections in the purpose and need, mistaken assumptions about the ability to seismically retrofit the existing bridges, and refusal to consider modifications to the BNSF railroad bridge as a component of any solution. The range of alternatives excludes options that are not only reasonable, they were explicitly recommended by the transportation MPO for the Portland/Vancouver region (Metro).
- P-0500-005** | 3. The range of alternatives that was actually studied in the DEIS was too narrow, and unrepresentative of the range of reasonably desirable options. The “supplemental bridge” options were too similar to the “replacement bridge” options to permit any analysis of the possible benefits of re-using the existing bridges. The appearance is that the “supplemental bridge” options cost just about as much as the “replacement bridge” options, have similar negative impacts from traffic and project scale, and have additional negative qualities in terms of bridge lifts and impeded navigation. These additional negative qualities were the result, largely, of improperly defining the supplemental bridge options to exclude modification to the BNSF railroad bridge.
- P-0500-006** | 4. The analysis of the alternatives is biased and incorrect. The analysis of the options that were actually studied for the DEIS is defective regarding projected traffic volumes, projected energy use, and projected effect on climate change. There is also a defective analysis of hours of congestion comparing Alt. 2 & 3 to Alt. 4 & 5. The cited difference in congestion is all in one direction, and is “turbulence” that causes only a minute difference in travel time for through trips, and unfairly makes Alt. 4 and 5 look bad. There is no clarification in the DEIS about the supposed congestion experienced by Alt. 4 and 5 regarding when in the future this congestion is expected to start happening, and the explanation of the nature of the congestion is so far removed from the comparison tables that any reasonable person might assume that the “hours of congestion” comparison involves congestion of comparable magnitude and effect. Using “hours of congestion” rather than travel time savings as a high-level statistic for comparing the various alternatives is unjustified and biases the presentation of the alternatives in favor of the replacement bridge. “Hours of congestion” is repeatedly used in summary tables, whereas differences in travel time must be computed by the reader in order to obtain a meaningful comparison among the alternatives.
- P-0500-007** | 5. The outcome was pre-determined. As early as November 5, 2004, David Cox, FHWA Oregon Division Administrator stated that he was certain that the existing bridges would be replaced. He made this statement at a seminar presentation at Portland State University’s Center for Transportation Studies, entitled “The FHWA View of Transportation in Oregon.” He also opined that one might look at moving the river channel south in order to allow for a lower bridge with less impact, but this would require modifications to the downstream railroad bridge, implying that this option was clearly off the table, regardless of how reasonable it might be. This seminar is available as a video record from the Center for Transportation Studies archive of such seminars, available at <http://www.cts.pdx.edu/seminars.htm> while the specific seminar is at [http://www.media.pdx.edu/Transportation/Transportation\\_110504.asx](http://www.media.pdx.edu/Transportation/Transportation_110504.asx) and is a multi-media file.

congestion, improving the safety problems and reducing crashes on I-5. Traffic modeling showed that even significant investment in improving transit options in the I-5 corridor or building a third highway corridor would not substantially reduce future traffic demand or address identified safety hazards. It is important to note that components were not eliminated simply because they did not expand highway capacity. Components that helped reduce travel demand without increasing capacity were also advanced for further evaluation. For example, bus rapid transit, light rail transit and tolling all help to decrease auto demand without expanding highway capacity. See Appendix C of the DEIS for an explanation and the results from early screening processes.

#### **P-0500-004**

The screening process and development and evaluation of the alternatives in the DEIS was thorough, and included examination the benefits and weaknesses of seismically upgrading the existing bridges, peer reviewed traffic modeling, and an assessment of relocating the BNSF railroad bridge swing span.

#### **P-0500-005**

Eliminating bridge lifts would provide a safety improvement. Relocating the BNSF railroad bridge swing span could reduce the number of times the I-5 bridge would need to lift, but it would not eliminate the need for bridge lifts. The I-5 bridge would still need to lift for regular monitoring and maintenance and for occasional taller vessels such as construction barges and high-mast recreational vessels. More importantly, simply moving the BNSF swing span, which is private property, would address only a small portion of the identified traffic safety issues, and almost none of the other stated Purpose and Need for the proposed action as described in Chapter 1 (Section 1.3) of the DEIS and FEIS.

**P-0500-007****Analysis of Predetermination:**

In addition to the statements by David Cox cited above, the time-line for decision-making indicates that the outcome of this DEIS was pre-determined. In other words, the DEIS was not written in order to allow unbiased analysis of reasonable alternatives, but was instead created for the purpose of anointing the desired alternative. The CRC Task Force met and selected a preferred alternative on June 24, 2008, prior to receipt and compilation of DEIS comments, and there was a massive lobbying effort by the CRC staff to convince local governments to pre-commit to their desired alternative prior to close of comment on the DEIS. It is also a fact outlined in the DEIS that in the fall of 2006, CRC staff had already determined that only two alternatives should be advanced to the DEIS, (beyond the no-build), namely Replacement Bridge with LRT and Replacement Bridge with BRT.

The DEIS makes the following claim, under the heading "The 12 alternative packages: January 2007 Screening results"

*Reusing the existing bridges appeared to warrant further evaluation primarily because of the possibility for reduced capital costs compared to replacing the existing bridges. This led the Task Force to explore how the existing I-5 bridges could be reused and still meet this project's purpose and need. An additional alternative was therefore developed that uses the existing bridges for northbound I-5 traffic, bicycles, and pedestrians. With this alternative a new, supplemental bridge would carry high-capacity transit and southbound I-5 traffic. In March 2007 the CRC partners incorporated the Task Force recommendation into the DEIS range of alternatives. This produced the range of alternatives being evaluated in this DEIS:*

The facts speak otherwise. The CRC added the supplemental bridge alternatives as sham alternatives, purely to satisfy the political pressure being applied to them to widen the range of alternatives. Here is a chronology of the actual process:

The Metro Council sent a letter to the CRC in October, 2006, asking for better alternatives. [See attached Council\_to\_CRC\_Ltr\_Oct\_19\_2006.pdf]

Here are some quotes from that letter:

*...we all concur with the following recommendations.*

**Recognize the I-5 Transportation and Trade Partnership Strategic Plan**

*In 2002, all of the stakeholders in this effort, from both sides of the Columbia River, agreed with the following five principles:*

- The Interstate 5 crossing of the Columbia River should be a maximum of five lanes in each direction (three through lanes and two auxiliary lanes), for a total of ten lanes to accommodate additional auto and truck travel. These lanes could be a combination of freeway, arterial and managed lanes. ...*

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Volume over capacity is a common metric for comparing roadway performance. However, for systems where traffic volumes exceed capacity, "hours of congestion" provides a more useful way to compare performance of various alternatives. Travel times were also discussed in the DEIS, as were the effects of different alternatives on safety. This was another important differentiator between the replacement crossing and the supplemental crossing.

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The evaluation of the five alternatives in the DEIS was preceded by an evaluation and screening of a wide array of possible solutions to the CRC project's Purpose and Need statement. Chapter 2 of the DEIS (Section 2.5) explains how the project's Sponsoring Agencies solicited the public, stakeholders, other agencies, and tribes for ideas on how to meet the Purpose and Need. This effort produced a long list of potential solutions, such as a possible third transportation corridor across the Columbia River, alternative transit modes, and techniques for operating the existing highway system more efficiently. After identifying this wide array of options, the project evaluated whether and how they met the project's Purpose and Need, and found that alternatives that do not include improvements to the existing I-5 facility generally do not address the seismic vulnerability of the existing I-5 bridges, traffic congestion on I-5, or the existing safety problems caused by sub-standard design of I-5.

The supplemental bridge option was sincerely considered. It was possible, early on, to conclude that bridge replacement was likely. Early indicators included the presence of the only lift-span between Mexico and Canada and the seismic vulnerability of the original bridge footings.

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- Commitment to a comprehensive use of innovative measures such as Transportation Demand Management/Transportation System Management strategies.

...

**Use desired outcomes as a guide**

...

*According, we recommend that all transportation alternatives be evaluated for their land use implications. Obviously, added lanes of traffic, varying levels of transit, etc., and their impact on travel time and access will have an influence on settlement patterns and development. These implications need to be very carefully studied. ...*

**Coordinate with the railroad bridge**

*...believe that options that involve even greater coordination, including possible improvements to the railroad bridge, should be further explored. We understand the the railroad bridge is privately owned. However, we believe that the railroad system, including this bridge, performs a public function, and the freight carried on it is part of a larger system that needs to be considered. Further, if a CRC alternative further restricts barge turning movements, mitigation in the form of alterations to the railroad bridge may be warranted.*

**Provide alternatives in the DEIS that demonstrate the fundamental choices before us**

*We believe a wider range of alternatives must be studied in order to find the solutions that deliver the best results at the lowest costs. In addition, we believe that alternatives should be considered in the draft environmental impact statement that include both capital intensive and alternative approaches – unless it is clearly demonstrated during the current phase of analysis that such approaches are not viable.*

On February 13, 2007, the Metro Council discussed the Columbia River Crossing. Some on the Council expressed surprise and concern that the CRC had essentially ignored their requests from the previous fall. [see attached MetroWorkSession\_02-13-07.pdf]

Following is a quotation from the official Metro minutes of that meeting:

**2. COLUMBIA RIVER CROSSING DIRECTION**

*Councilor Burkholder talked about upcoming steps and guidance in attending next week's Columbia River Crossing (CRC) meeting. Metro was one of 39 team members. He distributed two documents (a copy of each is included in the meeting record) and mentioned some of the previous alternatives over the past two years. An important issue was the functionality of the existing bridges and whether they could be retained. Councilor Burkholder personally supported the Task Force recommendation to replace the bridges. He acknowledged that the analysis to date had not been at the level of a Draft Environmental Impact Statement (DEIS)—23 proposals was too many to do a DEIS on all of them.*



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*Councilor Liberty offered a PowerPoint presentation (a copy is included in the meeting record). He pointed out the similarities of the two "non no-action" alternatives. He estimated the total cost at \$2 to \$6 billion. He described the weaknesses that he saw in the analyses done to date, including ways in which they did not meet our desired outcomes. He gave information about the estimated useful life of the existing bridges and how it might be longer than was assumed. Seismic standards were being used to declare the existing bridges unacceptable, but he felt that no bridge in the region met those standards. He gave an alternative seismic standard that was more realistic and an estimated cost of upgrading the existing bridges to meet that standard. He said the bridge lift limitations were being used as a means to eliminate the existing bridges. He felt that land use had not been used as either a ranking or an alternative. He said there was no system management alternative presented, as had been requested by the Metro Council. He gave some information on the potential effects of tolling in managing congestion. The amount of money spent studying just for this one project was about 10-30 times greater than the amount spent for all other regional transportation planning combined.*

*Councilor Newman asked if there had been another alternative that was a close second in some way, but that had not made the final alternatives. Councilor Burkholder said everyone would have preferred a less expensive alternative. There was not a well-articulated third alternative, however, not substantive enough to do a good study on it. He mentioned some of the issues that would need to be addressed, such as maintenance. Councilor Newman shared Councilor Liberty's general concerns about the scale and the cost of the project. If the starting assumption was that the existing bridges would be kept, then the no-build would be the best recommendation. He asked about the clarity of the need for a transit option. Councilor Burkholder felt the Council was pretty well on record as preferring a transit alternative.*

*Councilor Liberty thought that one of the plans did not necessarily talk about the form of the lanes. He felt incremental improvement—such as upgraded onramps—could remediate many of the safety concerns. Councilor Burkholder observed that the existing bridge had too many interchanges. Many of the fender-bender type accidents were caused by bridge lifts.*

*Councilor Park asked how much discussion had occurred around the issue of river traffic. Councilor Burkholder said the tugboat operators, in particular, had attended the discussions. Their concerns were about the "weave" between the vehicle bridge and the railroad bridge. The medium-height bridge alternative had been chosen to be above the barges and below Vancouver air traffic.*

*Councilor Burkholder said there was a mix of responses. What had been analyzed, what was part of the DEIS process? He talked about some design issues. Those were still somewhat in the future. He talked about the use of MetroScope. There had been some land use analysis, but a lot of it had been outside the scope of this project. Councilor Harrington said she had heard an expectation that the various things in the October memo had not been addressed. Councilor Burkholder agreed that some of the Council values were not addressed in the DEIS process.*

*Council President Bragdon asked about freight capacity, as it related to new induced single-occupancy vehicle travel. The greatest inhibition to freight in that corridor was SOV traffic. Would capacity be sucked up by more and more people traveling to Battle Ground? Councilor Burkholder stated that the performance objectives included freight. Systems management had not been addressed deep enough as of yet. He talked about some ideas that had been proposed to improve things for freight.*

*Council President Bragdon asked when and how the impacts to downtown Vancouver and Hayden Island would be accounted for? Councilor Burkholder said, by replacing rather than keeping the existing bridges, that was one way to reduce impacts. The height of the bridge, the interchanges, and SR-14 were all factors.*

*Council President Bragdon felt strongly that light rail needed to be extended. That should be a condition of Metro's support. Councilor Liberty said there was a basic difference in understanding in what we were doing and what we were asking. If the recommendation were approved, we would get a 10-12 lane bridge with light rail; land use analysis would then be a derivative of that choice. Seismic standards were going to preclude something else. Other bridges did not meet that standard. The result would be a high, without lifts, 12 lanes, with some form of transit, and no other options were being studied. He compared it to saying Metro would do a fairly large UGB expansion or a really large UGB expansion. Our thrust should be to carry forward not just 2-3 alternatives with additional analysis, but look at the fundamentals and allow us to think about more choices. The crossing still had \$60 million of study money; we should use it to really think creatively.*

*Councilor Newman felt there was a lot of skepticism out there. The final recommendation simply might not be implementable. He would like to see an alternative recommended that could actually be accomplished. He'd like to see how Option 3, with the existing I-5 bridges for traffic, and something else with transit, functioned under all the analysis for the next stage, including the political situation and what the political leadership would support. He was not 100% comfortable with the staff recommendation. His preferences were moving forward, being explicit about our preferences, not shutting the door, but keeping Option 3 or some variation, whether the bridges were refurbished, seeing what could be done at a lower cost, and addressing local traffic.*

*Councilor Park asked who would pay the bridge operating costs currently borne by the states? Would that information be in the DEIS? Councilor Burkholder said that was the smart thing about keeping the bridges, because they were part of the interstate system, it was about \$4 million per year to maintain them. New bridges should be less. The state departments of transportation would not want to help maintain them. No one really wanted to take on the new responsibility.*

*Council President Bragdon was worried about narrowing the options down too quickly. That would be a fiscal and political mistake for a project of this magnitude. For example, he had not seen enough information on community impacts. He wanted Metro's recommendation to be consistent with our other transportation values. He did not see anything like a low-cost option and was not convinced about the longevity of the existing bridges. He'd like to see more study on some of the alternatives.*

*Councilor Harrington asked Councilor Burkholder if he felt the Council's issues would be addressed with the larger group. Information would be available on congestion, freight mobility, land use impacts, and air quality impacts. There would be no information on a supplemental bridge unless we put it in there. Councilor Liberty thought that the net had not been cast very wide at the very beginning of the project, due to no bridge lifts and seismic. If a supplemental bridge had to be 80 feet high, it would be rejected because of the cost. Councilor Burkholder said he did not know what the outcome would be. The studies showed a lot of negatives to a supplemental bridge, but a study of that option would provide good data.*

On February 22, 2007, the Metro Council passed Resolution 07-3782B, which provided the inspiration for the "4th Alternative Subcommittee" following a public hearing in the

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Metro Council Chamber. [see attached Resolution\_07-3782B.pdf] Here is their request for a "supplemental" bridge, in that resolution:

*In addition to the CRC staff recommended alternatives, the Metro Council supports including in the DEIS for additional analysis an alternative that includes a supplemental bridge built to current seismic standards to carry cars, trucks, high capacity transit, bicycles and pedestrians. This alternative retains the existing I-5 bridges for freeway travel with incremental improvements to those bridges and the key access ramps, to improve flow and increase safety on I-5. Additionally, this alternative could include replacing the swing span of the downstream railroad bridge with a movable span located in a mid-river location.*

This restatement of the similar request made in their 2006 letter has been ignored by the CRC in their "supplemental bridge" options in these key respects: 1. I-5 traffic is placed on the supplemental bridge. 2. The railroad swing span is not replaced, which would have eliminated most, if not all bridge lifts on I-5. 3. Bikes and pedestrians were left on the existing bridges, rather than using the new supplemental bridge.

The failure of the CRC to follow the Metro recommendations is not reasonable. The Metro recommendations are not some ad hoc opinion, but are themselves based on a comprehensive consensus process that culminated in the approval of the I-5 Transportation and Trade Partnership's "Final Strategic Plan" of June 2002. Here is relevant language from Metro Resolution No. 02-3237A of November 14, 2002 [see attached Resolution\_02-3237A.pdf or <http://rim.metro-region.org/webdrawer/rec/19475/view/Metro%20Council%20-%20Metro%20Legislation%20-%20Reso-he%20Purpose%20of%20Endorsing%20the%20I-5%20Transportation%20and%20Trade%20Study%20Recommendations..pdf>]

Of particular note is this recommendation of the I-5 Task Force, restated by Metro and JPACT in their resolution:

*"Three through-lanes in each direction on I-5, between I-405 in Portland and I-205 in Clark County including southbound through Delta Park including designation of one of the three through-lanes as an High Occupancy Vehicle (HOV) lane as feasible."*

*"An additional span or a replacement bridge for the I-5 crossing of the Columbia River, with up to 2 additional lanes in each direction for merging plus 2 light rail tracks"*

*"Capacity improvements for freight rail that will improve freight and intercity passenger rail services"*

*"Bi-state coordination of land use and management of our transportation system to reduce demand on the freeway and to protect the corridor investments"*

*"Develop additional transportation demand and system strategies to encourage more efficient use of the transportation system"*

Metro's Resolution 07-3782B further states, among other recommendations:

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...the following should be part of any DEIS analysis: a) land use changes that reduce the amount of 2035 peak-hour commuting across the Columbia River;

...  
e) transportation demand management (TDM)/ transportation system management (TSM) policies augmenting build options

It is clear that the DEIS has failed to meet these reasonable expectations, apparently because the choice of the ultimate outcome was predetermined.

#### **How CRC Response to Metro Resolution 07-3782B was flawed:**

Metro's requests in Resolution 07-3782B were transmitted to the CRC Task Force by Metro Councilor Rex Burkholder. The Task Force responded by creating a "4<sup>th</sup> Alternative Subcommittee." The packet of meeting materials for the March 27, 2007 CRC Task Force meeting [from CRC Library at <http://www.columbiarivercrossing.org/FileLibrary/MeetingMaterials/TaskFo...>]

contains minutes of the February 27th meeting, describing the setup of the committee. I hereby request that this packet be made part of the official DEIS record of comments.

Appendix 3 has the Metro resolution and letter from Councilor Burkholder.

Appendix 7 is the 4th Alternative Subcommittee report itself. It recommends a "supplemental bridge" option in which the existing bridges would be used for I-5 northbound, and a new bridge would be built for I-5 southbound. It does not give an adequate explanation why they chose this alternative.

A few clues to the committee's deliberations can be obtained by examining the meeting packets for the three subcommittee meetings, here:

<http://www.columbiarivercrossing.org/FileLibrary/MeetingMaterials/4AltSu...>

<http://www.columbiarivercrossing.org/FileLibrary/MeetingMaterials/4AltSu...>

<http://www.columbiarivercrossing.org/FileLibrary/MeetingMaterials/4AltSu...>

I hereby request that these packets be made part of the official DEIS record of comments.

However, according to my conversations with CRC staff, the CRC made no audio or video recording of these task force subcommittee meetings, and there are no minutes available on the CRC web site of the final meeting, the latter in apparent violation of Oregon's open meetings law.

Among the options studied by the subcommittee was Option A+.

This option consisted of these components: A new, stand-alone bridge for high capacity transit (LRT or BRT), continued use of existing bridges by I-5, seismic strengthening of the existing bridges, and moving the opening span of the close-by downstream railroad

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bridge to the south to line up with the “hump” span on the I-5 bridges, thereby eliminating the need to raise the I-5 bridges for barge traffic, and expanded bike and pedestrian pathways on the existing bridges.

Option A+ was defined in the first meeting, and at the second meeting, a CRC staff report was presented to the subcommittee, and at that point A+ was dropped. This was a crucial mistake, because A+ had the potential, if further refined, to become a worthwhile option for future construction.

The March 19th meeting packet contains a March 15, 2007 memo from Kris Strickler to the Fourth Alternative Subcommittee, defining option A+ and giving the CRC staff perspective. [see attached A\_Plus\_Strickler.pdf for memo text only.]

If one examines this memo, one will find both that A+ met the “purpose and need” of the project, and A+ was unacceptable to CRC staff. This memo makes this remarkable statement: “If Option A+ is selected as the locally preferred alternative (LPA) it is unlikely that either ODOT or WSDOT would continue funding work on the project. Identified Interstate improvements would be prioritized, funded and built along with other highly needed improvements in each state.”

In other words, CRC staff told the Subcommittee that if they chose option A+, then the State highway departments would “pick up their marbles” and abandon the CRC project, taking their funding with them. This is “predetermination” personified!

The March 15, 2007 Strickler memo further prejudiced the choice of the Fourth Alternative Subcommittee by falsely characterizing European experience with Transportation Demand Management and Congestion charges:

***OPTION A+ CRC STAFF OBSERVATIONS***

*• To achieve a significant reduction in the projected hours of congestion for 2030, travel demand for Option A+ would need to be reduced about 30% which far exceeds reductions in the 15-20% range achieved through congestion pricing programs currently underway in London, Singapore, Stockholm and Germany.*

The May/June 2007 issue of “ITS International” magazine on page 6 has an article entitled “Stockholm congestion charging scheme to become permanent” [see attached Stockholm\_data.pdf] and it states:

*Congestion charging, which was introduced as a trial from January to July last year by the outgoing Social Democratic government, far exceeded the government’s expectations of a 10-15 per cent reduction of cars entering and leaving the capital. The average reduction was up to 25 per cent. When the trial ended on 31 July last, traffic in and out of the Stockholm city centre shot back up to the pre-trial level of around half a million cars a day, according to official estimates.*

This information is at variance with what Strickler’s memo told the committee. Strickler’s memo was issued at a time when correct information about Stockholm was likely available. Furthermore, Strickler’s memo also leaves off the fact that the

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Stockholm reduction is not a reduction from future growth, but a reduction from existing levels. Common sense suggests that preventing future growth should be much easier than reducing existing traffic.

P-0500-008

### Flawed Analysis of Climate Change and Energy:

Page S-31 of Executive Summary, Exhibit 27, sets forth the CO<sub>2</sub> emissions of the various alternatives analyzed:

#### CO<sub>2</sub> Emissions (tons/day)

Alt 1 463 (No-build)  
 Alt 2 452 (replacement bridge)  
 Alt 3 452 (replacement bridge)  
 Alt 4 494 (supplemental bridge)  
 Alt 5 491 (supplemental bridge)

The analysis claims that all build alternatives are projected to reduce personal vehicle travel demand over No-Build conditions and improve the operations of the I-5 crossing, as described in the Traffic section of the DEIS on page 3-434.

Subsequently, page 3-435 exhibit 3.19-4 claims that supplemental alternatives produce significantly more CO<sub>2</sub> than the replacement or no-build options. (490-493 versus 452 for replacement and 463 for no-build). Existing condition is 342. Units are daily tons.

The DEIS, Chapter 3, goes on to claim that these estimates are conservative, because they do not capture all the potential reductions in CO<sub>2</sub> associated with the highway improvements.

However, hidden inside the Energy Technical Report (ETR), which is part of the DEIS, one finds contradictory information. Exhibit 5-6 on page 5-14 of the ETR is consistent with the Chapter 3 information, as are other tables in chapter 5 of the ETR. What is not stated, let alone made clear, is that these tables are not valid for comparing alternatives, because the methods used for calculating energy use and CO<sub>2</sub> emissions from transit and from personal vehicles are totally incommensurable.

Page 2-12 of the ETR, in section 2.5.2.1 states:

*Using this approach, the estimates associated with personal automobile use are not intended to be representative of the total or complete amount of energy used or CO<sub>2</sub> emitted by the project. Rather, these estimates should be considered in concert with each other and the value of these estimates lie in their relative differences.*

Similarly, section 2.5.2.2 "Bus Transit Energy Use," starting on page 2-12 of the ETR says:

*Dissimilar from the personal automobile energy use and CO<sub>2</sub> emission estimates, where the emphasis should be placed on the relative differences between alternatives, this*

### P-0500-008

We fully acknowledge that the approach used to estimate greenhouse gas emissions in the DEIS was a work in progress. As one of the first transportation project EISs in the nation to estimate greenhouse gas emissions, there was no standardized methodology or approach at that time. However, working with federal and state agencies, the project team developed an approach that would (1) use the best available data, and (2) provide results that could be used to reasonably compare alternatives.

After the DEIS was published, the DEIS greenhouse gas analysis approach was reviewed by a panel of independent experts in November 2008. This panel found the methodology valid and the findings reasonable; they also provided suggestions for further improvements. Since then, the EPA has developed an updated version of a computer model (MOVES 2010) that allows projects to estimate the effects of a transportation project on regional (rather than just very localized) greenhouse gas emissions from highways. This model has been used for the FEIS analysis see Chapter 3 (Section 3.19). The FEIS modeling also includes other updates described in the FEIS and Energy Technical report. While the methodology and some assumptions have been updated, the order of the alternatives in terms of lowest to highest estimated GHG emissions remains largely unchanged between the DEIS analysis and the FEIS analysis.

As described in Chapter 3 (Section 3.4) of the DEIS and the Indirect Effects Technical Report supporting the FEIS, 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



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*approach provides complete estimates of energy use and CO2 emissions associated with the project since the transit system is finite.*

In other words, the numbers in the summary tables do not represent valid estimates of either the greenhouse gas emissions or the energy used by the various alternatives, because they were computed by adding apples and oranges. This invalid mathematical manipulation causes a distortion in the very summary information that would most likely be relied upon by decision-makers, who might not be aware of the totally dissimilar methodology used to compute the bus and transit emissions.

Beyond this glaring mathematical error in summarizing the energy and CO2 data, the DEIS ETR incorrectly focuses on emissions from personal vehicles solely in the 0.9 mile segment between SR 14 and Hayden Island interchange. The analysis of energy use and CO2 emissions purports to be a rational analysis based on EPA and other accepted methodologies for estimating vehicle fuel use at various operating speeds. However, it is not a meaningful representation of the global climate change and energy use impacts of the project alternatives. By citing an extensive analysis of only one component of energy use and greenhouse gas emissions, the DEIS falsely conveys the notion that energy and greenhouse gas impacts have been properly studied for the project alternatives.

Energy use and CO2 emissions over this 0.9 mile segment have no scientifically valid relationship to the actual total vehicle emissions that are caused by (are an environmental impact of) this project. Neither the DEIS nor the ETR cite any evidence that there is a scientifically valid relationship between total project emissions and those on the 0.9 mile segment. Never the less, the DEIS reports their numbers as if they were a fair representation of total emissions, and a fair representation for comparing project alternatives. All of the verbiage about reducing emissions due to reduced congestion, are false and misleading as applied to the actual environmental impacts of the project. The complex analysis of fuel use is a complete and possibly deliberate red herring, giving the reader the impression that science is happening.

Unless and until there is an analysis of the total vehicle miles traveled that occur because of the construction or non-construction of the various alternatives, any claims regarding energy use and CO2 emissions should be stricken from the DEIS. In other words, the DEIS is insufficient and inadequate until supplemented with correct information.

The DEIS also assumes, implicitly, that the various alternatives will have no effect on either trip length, for those trips crossing the Columbia, or on the length and number of other trips taken in the region. Proof that the DEIS makes this assumption is that it should otherwise have reported these effects.

There is no scientific justification cited for this assumption. Logic dictates the contrary. Real estate values and development patterns are well known to be strongly affected by accessibility. To the extent that the CRC alters accessibility (travel time and cost) this will affect not only development patterns, but also the patterns of trip origins and destinations within the development patterns. For a given number of dwelling units and

associated with highway projects that induce sprawl. These are discussed in Chapter 3 (Section 3.4) of the FEIS. 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 summarized in the "Columbia River Crossing Travel Demand Model Review Report" (November 25, 2008), available on request.

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.

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employment opportunities, it is obvious that individual choices to live closer to work can result in fewer vehicle miles traveled, even with a given pattern of residential dwelling unit locations. No analysis of these factors (trip length of CRC trips, and changes to length and number of non-CRC trips in the region) as they relate to the various alternatives, is available in the DEIS, yet these factors obviously result in important environmental impacts.

Furthermore, the actual travel demand estimates that are being used for trips that cross the Columbia, as opposed to total travel caused by the various options, are also of questionable validity. This further erodes any possible validity of the DEIS and ETR analysis regarding energy and CO2 emissions. As many members of the public, and the press, have noted, the CRC travel demand analysis utterly fails to take into account the changes in land use that would be expected from the various alternatives. This fails to meet either FHWA standards, or simple standards of common sense. For example, the Oregonian published a news article on June 22, 2008 which says: "Columbia River bridge plans ignore effects of growth, Designers decide not to factor in the extra sprawl, leading to traffic and pollution, that a bigger I-5 span might bring" [see attached Ignored\_Induced.pdf]

Conservative studies have validated the notion of "induced demand" which, to a large extent, is merely the concept that consumers and developers respond to market forces in a rational manner by altering their choices about where to live and work, and what trips to make. For the CRC to take the contrary position, without any scientific basis, is to act against common sense and the weight of informed opinion in this subject area. I will cite a very conservative study done in 2001 by Robert B. Noland (Centre for Transport Studies, Dept. of Civil and Environmental Engineering, Imperial College of Science, Technology and Medicine) and Lewison L. Lem (US Environmental Protection Agency Office of Transportation and Air Quality). This study is entitled: "A REVIEW OF THE EVIDENCE FOR INDUCED TRAVEL AND CHANGES IN TRANSPORTATION AND ENVIRONMENTAL POLICY IN THE UNITED STATES AND THE UNITED KINGDOM" [see attached Noland\_Lem\_Induced\_Demand.pdf]

**Quoting from the Abstract:**

*This paper reviews recent research into the demand inducing effects of new transportation capacity. We begin with a discussion of the basic theoretical background and then review recent research both in the UK and the US. Results of this research show strong evidence that new transportation capacity induces increased travel, both due to short run effects and long run changes in land use development patterns.*

The Abstracts also states: *The role of the new knowledge of induced travel effects would be expected to lead to changes in the conduct of transportation and environmental policy.*

Mr. Lem subsequently worked for the California Automobile Association, and currently is Principal Consultant with PB, well-known international planning and engineering firm.

Mr. Lem spoke in Portland on March 7, 2008 at the PSU Center for Transportation Studies "Transportation Seminars" series, cited above. In his presentation entitled

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“Taming the Dragon: Reducing the Climate Impact of the Transportation System” he reiterated that technology alone will not solve the problem, and so reductions in VMT are necessary. In the question and answer period, he confirmed that expanding capacity to reduce congestion is not a good long-term strategy for reducing green house gases, because traffic volume will grow to fill the capacity.

Simulation studies also point to flaws in the simplistic “speed-emissions” methodology used in the Energy Technical Report. In a study entitled “INDUCED TRAVEL AND EMISSIONS FROM TRAFFIC FLOW IMPROVEMENT PROJECTS” [see attached Noland\_Emissions\_CongestionRelief.pdf] that was presented to the 82nd Annual Meeting of the Transportation Research Board, authors Noland and Stathopoulos conducted traffic simulations showing:

*In the short-run, when traffic volumes are held constant, results demonstrate that the smoothing of traffic flow will result in a reduction in emissions.”*

However,

*Simulation of long-run emissions is done by synthetically generating new trips into the simulated networks in order to represent potential induced travel.*

The result:

*Our conclusions are that in most cases long run emissions reductions are unlikely to be achieved for the two scenarios evaluated.*

Of course a simulation study is not definitive for proving an hypothesis. However, it does show beyond any doubt that it is improper to assume, ad hoc, that one may properly compute the energy use and emissions that result from improving traffic flow by a wrote computation based purely on vehicle characteristics, without taking human behavior into account. The energy use and CO2 emissions analysis found in the CRC DEIS have cited no credible scientific basis for the approach used. The analysis cites authoritative sources for numbers, values, quantities, and formulas, but these sources do not provide any scientific support for using the numbers and formulas in the way that the CRC DEIS does. For that reason, the DEIS is inadequate until supplemented by analysis grounded in science, not ad hoc calculations (however complex those calculations may appear to be, and however correct each individual calculation might be in some particular individual context).

### **Supplemental Bridge Alternatives as they relate to the downstream Railroad Bridge and Navigation**

**P-0500-009**

In the DEIS, Chapter 2 page 2-50 “Description of alternatives, further screening.” We see this claim:

### **P-0500-009**

There are far more problems with the supplemental bridge than those that you have focused on. Your support for a 72 foot clearance results in a project that would still require bridge lifts, though less frequent. The LPA will have 95 feet of clearance, and provide for better marine navigation. This is critical to recreational boaters as well as marine contractors. Additionally, the BNSF bridge, unlike the I-5 bridges, does not belong to the public, does not align well with population centers and cannot help provide a functional, effective transit network on Hayden Island or in Vancouver.

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*A new low-level bridge would have required a moveable span to allow passage of large ships, similar to the lift span on the existing I-5 bridges. Operation of a moveable span would disrupt traffic, cause more accidents on the bridges, have a greater impact on navigation, be more expensive to construct, and cost substantially more to maintain and operate. A low-level bridge was dropped from further consideration once project staff determined that a mid-level fixed-span bridge could safely avoid height restrictions imposed by Pearson Field and still provide clearance for river users.*

Unfortunately, the determination that a low-level bridge would have all of the problems described above, was unjustified when applied to a supplemental bridge. To sum up the CRC staff position, a low-level bridge has numerous disadvantages, and no cost advantage. The question of cost should have been separately determined for a low-level supplemental bridge. Instead, costs were computed for a low-level replacement bridge, found to be disadvantageous, and were used as an excuse for ruling out all low-level alternatives. Logic would suggest that a low-level supplemental bridge might well be cheaper than a high-level supplemental bridge, but we can't know, because the DEIS analysis is non-existent on this point.

Now consider the other claimed flaws of a low-level bridge: that operation of a moveable span would disrupt traffic, cause more accidents on the bridges, and have a greater impact on navigation than a high-level bridge. These can not be substantiated by an analysis that considers the possibility of moving the river channel south and modifying the BNSF railroad bridge.

By allowing consideration of a low-level supplemental bridge, the DEIS would have been enhanced by studying an alternative that better met the reasonable desire to examine reduced capital costs and reuse of the existing bridges. Furthermore, this would have better met the reasonable requests from Metro, cited above, that suggested modifying the railroad bridge.

The Columbia River Towboat Association made a presentation to JPACT at their January 15, 2004 meeting, requesting that modification to the Burlington Northern Santa Fe Railroad bridge be made a high priority in the Regional Transportation Plan.

Following are quotes from material that they provided to JPACT:

***How would changing the rail bridge improve the situation at I-5?***

*If a lift opening were placed at the span just to the south of the current opening, it could be about 300 feet wide and could be approached from either the I-5 wide or high spans with relative ease. There would be no need for towboat captains to use the lifts during high water. At 72 feet (at zero gauge) the high span is high enough to accommodate any towboat under any possible river condition except very high flood levels, when there would be no river traffic anyway. Thus I-5 lifts from towboat traffic could be eliminated with a modification of the rail bridge. Source: CRTA to JPACT -- FAQ page 3 [see attached BNSF\_FAQ.pdf]*

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*A [railroad bridge] lift opening placed more toward the middle of the river would allow marine traffic to nearly always avoid using the I-5 lifts. Source: CRTA memo to JPACT page 2 [see attached BNSF\_Summary.pdf]*

*The Coast Guard has the legal ability to order a rail bridge improvement for the benefit of marine safety, but declines to use highway benefits in making its cost/benefit analysis to justify such an order. Source: CRTA memo to JPACT page 4*

*However, Congress can declare on its own that the bridge is an unreasonable hazard to navigation, and it can direct the Coast Guard to apply Truman-Hobbs procedures. This has been done for other bridge projects. Thus the Coast Guard would conduct the engineering study, do the EIS, and contract the entire project from beginning to end. The Coast Guard's Truman-Hobbs director at headquarters has indicated that their Congressional liaison office will work with our Congressional representatives to properly craft the necessary legislation. Source: CRTA memo to JPACT page 4 [see attached BNSF\_Summary.pdf]*

*The significant point is this, and bears repeating: Thus I-5 lifts from towboat traffic could be eliminated with a modification of the rail bridge.*

Clearly any low-level supplemental bridge that followed the profile of the existing bridges would also require no lifts due to towboat traffic, if the rail bridge were modified. The DEIS itself reports that non-towboat lifts are minimal. If these occasional lifts were restricted to periods of low highway traffic and low or no transit traffic, their impact would be minimal, as opposed to the major impact suggested by the DEIS.

Failure of the DEIS to report on the possibility of modifying the railroad bridge, as an adjunct to a supplemental bridge, is a fatal flaw. We know that Metro, JPACT, and the I-5 Transportation and Trade Partnership all supported modification of the railroad bridge. It was also a component of the "4<sup>th</sup> Alternative Subcommittee" recommendation, yet was inexplicably deleted from that recommendation when the two supplemental alternatives were studied as options in the DEIS.

Modification to the railroad bridge is an obvious and reasonable component of a supplemental bridge. Failure to include it, and the failure to even mention or explain why it was not included, must be regarded as a serious and fatal defect in the DEIS.

Although Alternative 4 and Alternative 5 are arguably not the supplemental bridge options that should reasonably have been studied for the DEIS, they are the only supplemental bridge options that were studied. They should not have been fatally hobbled by refusal to consider modifications to the railroad bridge. By eliminating all bridge lifts due to towboat traffic, a whole category of safety, congestion, and traffic delay impacts would have been drastically reduced for these supplemental bridge alternatives. One can only further conclude that Alternatives 4 and 5 are sham alternatives, studied pro forma in response to Metro's request, but never intended to be given serious consideration, and therefore burdened with unnecessary fatal flaws.

**P-0500-010****Conclusion:**

The DEIS is defective and deficient, and must be withdrawn or supplemented by a DEIS that properly responds to law and common sense.

**P-0500-010**

Extensive technical and public review and input has been included in all phases of the CRC project, from developing a purpose and need statement, screening a wide variety of alternatives, and developing a Draft and Final EIS. A supplemental draft is required if changes to alternatives after the draft are substantial and/ or if there are new significant impacts not previously discussed in the draft and/or there are changes in laws or regulations after the draft. The DEIS identified potential mitigation measures for all potentially significant as well as many non-significant impacts, and the FEIS further analyzes and develops mitigation measures and plans to a higher level of detail and refinement. CEQ NEPA regulations (40 CFR 1502.9(c)) do not require agencies to prepare a supplemental draft EIS just because an FEIS includes refined alternatives and additional information. Such changes are typical and expected in the planning process, and are consistent with CEQ and FHWA NEPA regulations. Between publication of the DEIS and FEIS, FTA and FHWA prepared three NEPA re-evaluations and a documented categorical exclusion (DCE) to complete changes in the project since the DEIS. The NEPA re-evaluations addressed the change in the project from: 1) the 17th Street transit alignment, 2) the composite deck truss bridge type, and 3) all other changes in design between the DEIS and the FEIS. The DCE addressed the impacts from the track work on the steel bridge.

Both agencies concluded from these evaluations that these changes and new information would not result in any significant environmental impacts that were not previously considered in the DEIS. For more information, see Appendix O of the FEIS.



NEWS

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**Intitech acquires Peek Traffic Holdings**

Intitech NV, a major player in the infrastructure market in the Netherlands and Belgium, has announced it is acquiring the entire share capital of Peek Traffic Holdings and its subsidiary companies held by the BNP Paribas Group and other investors. Peek Traffic enjoys a strong position in the rapidly growing mobility market across Western Europe (especially in the UK and The Netherlands) as well as parts of Eastern Europe with its broad range of intelligent traffic solutions.

According to Intitech, the acquisition fits in with its strategy

# Stockholm congestion charging scheme to become permanent

The Swedish Government will reintroduce congestion charging in Stockholm from 1 August. The announcement, that a bill will be put before Parliament, makes good on a promise that Sweden's Alliance government made after it was elected last September: that it would reintroduce congestion

charging in Stockholm and use the money to build a relief road around the capital. Congestion charging, which was introduced as a trial from January to July last year by the outgoing Social Democratic government, far exceeded the government's expectations of a 10-15 per cent

reduction of cars entering and leaving the capital. The average reduction was up to 25 per cent. When the trial ended on 31 July last, traffic in and out of the Stockholm city centre shot back up to the pre-trial level of around half a million cars a day, according to official estimates.

## TransCore milestones



### P-0500-011

The CRC project proposes to include a variable rate toll. The goal of variable-rate tolling is to reduce congestion and maximize the flow of traffic through this corridor. With a variable rate toll, a lower toll is charged when traffic demand is lower and a higher toll is charged when the corridor is at its highest demand. Because a toll is charged by time of day, variable-rate tolling gives travelers an incentive to change travel times, reduce optional trips, take an alternate route, or choose transit as an alternative to driving alone. Experiences in other cities in the U.S. and around the world have shown that these fees can help reduce congestion and improve the performance of the roadway.

**P-0500-012**

Thank you for taking the time to submit your comments on the I-5 CRC DEIS.

**P-0500-012**

[NOTE: ORIGINAL FORMATTING LOST WHEN COPIED FROM PDF IN CRC LIBRARY]

March 15, 2007

TO: Fourth Alternative Subcommittee

FROM: Kris Strickler

SUBJECT: **Fourth CRC DEIS Alternative**

**Description of Potential Options**

**COPY:**

The purpose of this memorandum is to provide CRC staff feedback on development of the three options discussed at the initial March 12<sup>th</sup> committee meeting. Options were developed based on achieving the

following goals:

- a. Maximize the utility of the existing bridges
  - b. Provide high capacity transit (HCT) between Clark and Multnomah counties
  - c. Provide high quality bicycle and pedestrian access
  - d. Minimize impacts on downtown Vancouver and Hayden Island
  - e. Ensure better freight mobility
  - f. Address issues of barge and ship traffic on the Columbia River
- During the meeting there was additional discussion on other goals that needed to be addressed.

In

addition to the above, there was general agreement among the subcommittee that a fourth alternative

should be lower cost and use the existing infrastructure most effectively.

CRC staff has spent an intensive three days evaluating the proposed options for best performance to

meet the above goals. Please note that the descriptions and data below are based on the limited time

allowed and represent reasonableness estimates that are not based on detailed analysis. The information is organized as follows:

- Description of option with additional detail on modes
- Performance evaluation based on criteria used for Step A Screening
- CRC staff observations to help inform the selection process

**OPTION A+ DESCRIPTION**

This option places a strong emphasis on implementing congestion pricing as a disincentive to making

automobile trips across the Columbia River. No new capacity is added to I-5. Interchange improvements

are intended to improve safety and system flow. Transit service is increased substantially to meet the

need to move people, not vehicles. This option will aspire to meet purpose and need by reducing travel

demand through aggressive congestion pricing and providing attractive alternatives to driving alone by

improving transit service.

**Highway**

- I-5 traffic stays on existing Interstate Bridges. Peak hour directional capacity will remain in the range

of 5,500 vehicles per hour.

- Hayden Island Interchange will undergo minimum changes to the dangerous short ramp connections

because of the need to maintain existing profiles and alignments on I-5.

- Marine Drive Interchange will be modified to improve intersection performance.

2

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- SR 14 Interchange will remain as is due to limited opportunities for improving safety.
- Minor improvements may be feasible between SR 14 and Mill Plain.
- Spot safety improvements will be made such as widening shoulders in Oregon.
- Traffic system management tools will be incorporated to improve I-5 operations.

#### **Transit**

- This option includes a new river crossing bridge to serve HCT.
- HCT is increased to serve approximately 30,000 to 40,000 persons per day or 4,000 to 6,000 in the peak direction during the peak hour. This includes a new bridge dedicated for HCT.
- Depending on whether HCT is Light Rail or Bus Rapid Transit, service hours are increased to meet the demand in riders.
- Express bus service is increased from the existing 19 busses per peak hour to 60. Local and feeder bus are increased substantially.
- Park-and-ride lot capacity is increased from the existing 1,872 spaces in the I-5 corridor to approximately 10,000 to 15,000 spaces in the I-5 corridor.
- Van-pool programs are added to increase vehicle occupancy for point to point service.
- Transit queue bypass lanes are added at interchange on-ramps.

#### **TDM/TSM**

- Congestion pricing is included for both I-5 and I-205 with variable pricing to reflect peak hour demand.
- Pricing is focused on reducing vehicle trips by 15-20 percent. A pricing range of \$5 to \$10 each direction during peak periods may be needed to achieve this goal.
- Transit operating subsidies are provided to encourage increased transit service and use.
- Mandatory parking pricing for all businesses and major public facilities in Vancouver and Portland.
- Transportation system management tools are incorporated to improve I-5 system flow.

#### **Freight Mobility**

- Modifications to the Marine Drive Interchange will be made to improve truck flow through intersections.
- On-ramp queue by-pass lanes are provided at Hayden Island, Marine Drive, SR 14 and Mill Plain Interchanges to improve traffic flow. These lanes could be reserved for transit and trucks.

#### **Bicycle/Pedestrian**

- Bicycle and pedestrian traffic will use the existing Interstate Bridges. Existing facilities will be widened to provide 10 feet wide bike/ped lanes on each bridge.
- Bike/ped connections are improved throughout the corridor to encourage bicycles and walking.

#### **Seismic**

- Seismic retrofit to "no-collapse" standards would be left up to the State DOT's to implement as funding becomes available.

#### **Railroad Swing Span**

- A new railroad marine navigation moveable span will be constructed to align with the main river channel.

3

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## OPTION A+ PERFORMANCE

### ***Increase vehicle capacity or decrease vehicle demand on I-5***

- Vehicle capacity on I-5 will not be increased under this option. Minor improvements in traffic flow within the Interchanges will benefit off-peak periods.
- Vehicle congestion will increase to 8-10 hours per day depending on the aggressiveness of pricing.
- A decrease in vehicle demand will be targeted at 15-20%. This is in line with the most aggressive programs currently in place worldwide.
- Increased people capacity will result from added transit service.
- Providing a movable span at mid-channel will reduce the number of bridge lifts and improve traffic flow that would normally be disrupted.

### ***Improve transit performance***

- I-5 would be the most transit-intensive corridor in the states of Washington and Oregon.
- Transit service throughout Clark County and the three county TriMet service area will be increased to improve connectivity and throughput.
- Increased transit service will impact system operation levels and may exceed capacity at spot locations throughout the system.
- Increased park-and-ride capacity will be difficult to achieve at the proposed levels due to lack of suitable sites along the I-5 corridor.
- A regionally approved vanpool program will provide more point-to-point service from park-and-ride facilities to major employment centers.

### ***Improve freight mobility***

- With no increase in freeway mainline capacity, freight throughput will be affected by freeway congestion for much of each day.
- Minor intersection improvements will aid truck movements, mainly during off peak periods.
- On-ramp queue by-pass lanes for trucks entering I-5 will help improve freight traffic flow.
- Providing a railroad movable span in mid channel will help barge traffic.

### ***Improve safety and decrease vulnerability to incidents***

- Congestion levels somewhat better than "No-Build" will result in increased accident rates compared to today.
- Spot improvements and wider shoulders will help offset the increased accident rates.

### ***Improve bicycle and pedestrian mobility***

- Improved bike and pedestrian facilities on the existing Interstate bridges and connecting facilities will encourage walking and use of bicycles.

### ***Reduce seismic risk of the I-5 River Crossing***

- This option will not immediately address seismic risks. Seismic upgrade to a "no-collapse" level will be completed by the State DOTs when funding becomes available.

## OPTION A+ CRC STAFF OBSERVATIONS

- To achieve a significant reduction in the projected hours of congestion for 2030, travel demand for

P-0500-012

Option A+ would need to be reduced about 30% which far exceeds reductions in the 15-20% range achieved through congestion pricing programs currently underway in London, Singapore, Stockholm and Germany.

4

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- If little or no reconstruction is done on I-5, FHWA will require a rigorous process to approve variable pricing proposals for implementation on both I-5 and I-205 aimed at relieving congestion. Ultimately

FHWA will have approval authority over congestion pricing strategies.

- Transit service increases proposed for Option A+ are more than double CRC staff recommendations

for the DEIS. CRC staff recommendations proposed to triple current service capacity across the Columbia River. This service level would result in more than a 500% increase compared to existing.

- Although some safety improvements would be made, the highest accident locations would not be fully addressed because the deficiencies are located on the bridge, immediately off the bridge, and some are connected with bridge lifts.

- If Option A+ is selected as the locally preferred alternative (LPA) it is unlikely that either ODOT or WSDOT would continue funding work on the project. Identified Interstate improvements would be prioritized, funded and built along with other highly needed improvements in each state.

P-0500-013

## FREQUENTLY ASKED QUESTIONS

About the Vancouver Rail Bridge Project

Prepared for JPACT meeting 1/15/04

by

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Chair, Bridge Committee, Columbia River Towboat Association

Co-Chair, Ad Hoc Committee for the Vancouver Rail Bridge Upgrade Project

### 1. How many lifts are called for at the I-5 bridge?

That depends entirely on the river levels. In low water years, when the river level does not rise above 6 feet at the Vancouver gauge, we may have very few lifts requested by towboat operators. But in some years, the river may be above 6 feet for six or seven months. The ten-year average is about 275 annual lifts at I-5. But in 1997, a high water year, there were over 100 lifts per month for seven months straight, most of them called by towboat captains. Similarly, 1996 had six straight months with over 100 lifts per month. Washington DOT predicts that the average annual number of lifts will increase to about 400 in 2021.

In the winter up to 90% of lifts may be called by towboat captains, while in the summer perhaps as few as 60%. Whether recreational vessels would be able to use the high span to the same extent as commercial tows may depend on mast heights. But certainly the I-5 lifts could not be immediately disabled upon construction of a rail bridge lift, for a small percentage of vessels would continue to require the use of the 175-foot high I-5 lifts.

### 2. Why is no one complaining about traffic delays on I-5 caused by lifts?

We have had three straight low-water years, and consequently very few lifts. But after the high water years of 1996 and 1997, there was a great deal of public outcry about the lifts. Identity Clark County (ICC) and others appealed for further restrictions on the times the towboat captains could call for lifts, and in fact, the Coast Guard was compelled to look at the issue very closely, holding several public hearings on the matter. The Columbia River Towboat Association was pressured by Washington's Senator Gorton to negotiate a settlement of the issue with ICC, the Coast Guard and ODOT, participating. In the end, we agreed to increase the lift restriction period by an additional 1 & 1/2 hours.

After the agreement was made, we entered the current period of low water years, where few lifts have been requested. Naturally, some people assume that because of the outcry, the towboat industry has reformed itself, no longer requesting unnecessary lifts. Even ICC officials have occasionally complimented the industry on its admirable restraint.

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Eliminating bridge lifts would provide a safety improvement. Relocating the BNSF railroad bridge swing span could reduce the number of times the I-5 bridge would need to lift, but it would not eliminate the need for bridge lifts. The I-5 bridge would still need to lift for regular monitoring and maintenance and for occasional taller vessels such as construction barges and high-mast recreational vessels. More importantly, simply moving the BNSF swing span, which is private property, would address only a small portion of the identified traffic safety issues, and almost none of the other stated Purpose and Need for the proposed action as described in Chapter 1 (Section 1.3) of the DEIS and FEIS.



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But this is certainly not the case. As soon as the river again reaches 6 feet, captains will be calling for lifts. This year's mountain snow pack would lead to a reasonable conjecture that we will again see lifts in 2004.

And of course, I-5 traffic has gotten worse in the last few years, and the outcry will again be noisy when the lifts begin stopping traffic. Both ODOT and WSDOT have indicated that they will again seek further lift restrictions from the Coast Guard when the pressure rises.

### **3. Why does increasing the I-5 lift restriction time make navigation more dangerous?**

When the river level is over 6 feet, downbound captains are no longer able to safely use the wide or high spans of I-5 and must use the lifts. If they are unavailable, captains must schedule the arrival time to coincide with non-restricted hours (sometimes by holding the tow upriver). As the opening time becomes more restricted, more tows must schedule their arrivals at the daytime hours of opening, which thus become more crowded with towboat traffic, or at night, when the rail bridge transit is even more hazardous.

And of course, with added opening restrictions, there is increased pressure on captains to avoid the lifts by attempting the maneuver through the wide or high spans. The cautious captain might choose to wait; but the close calls, the difficult decisions will always arise. Much depends on the captain's judgment of the situation. Considering the complexity of factors involved, an error is perhaps inevitable if the conditions are not improved.

### **4. If the rail bridge is so hazardous, why haven't there been more accidents?**

Although Columbia/Snake river towboat captains appear to agree that this is the most dangerous man-made hazard on the river, very few of them have actually had a significant accident at the bridge. It is of course relevant that all captains are very much aware of the dangers. Before navigating between the I-5 and rail bridges, the captains will have thought out the route before making the approach, and will have considered the variables, from weather conditions to river levels, speed and likely currents that will be encountered. Partly this is because he knows it can be treacherous, partly because he must arrange in advance both openings and will thus be alert to the current situation. He will not attempt the downbound approach through I-5 without making sure the rail bridge is open, even if he can avoid using the I-5 lifts.

To say that captains are highly skilled and careful operators may certainly be an accurate assessment. However, these same captains have all had harrowing close calls at the bridge and assert in written and oral testimony that a major accident is inevitable unless the rail bridge opening is changed. Partly this belief is based on the fact that I-5 lifts are now less available (and may even be less so in the future), so he must make harder decisions about how to make the transit. Should the high span be attempted when the river is at six feet, or should he play it safe and wait several hours for lifts to again be available?

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Some have expressed the view that the "old guard" is retiring, and a new crop of untested captains must learn the ropes at a time when the region is going through an extended period of low water years, so there will be a steep learning curve when river levels return to historic conditions.

**5. What would be the effect of an accident on rail traffic?**

Since the local Coast Guard and river operators all agree that a major accident is just a matter of time unless changes are made, we should note the likely effects. If the rail bridge were put out of commission, resulting delays along the west coast would take weeks and months to unravel. Rail traffic would be diverted to Eastern Washington, to Eastern Oregon (the closest crossing is at Wishram) and back through the Columbia Gorge. The cost to Burlington Northern and Union Pacific would be about \$156,000 a day (taken from Congressman Blumenauer's testimony at the Truman-Hobbs hearing). West Coast Amtrak service would simply stop. River traffic would stop. If the cargo involved in the accident happened to include petroleum products or hazardous materials, the ecological effects could be catastrophic.

**6. How would changing the rail bridge improve the situation at I-5?**

If a lift opening were placed at the span just to the south of the current opening, it could be about 300 feet wide and could be approached from either the I-5 wide or high spans with relative ease. There would be no need for towboat captains to use the lifts during high water. At 72 feet (at zero gauge) the high span is high enough to accommodate any towboat under nearly any possible river condition except very high flood levels, when there would be no river traffic anyway. Thus, I-5 lifts from towboat traffic could be eliminated with a modification of the rail bridge.

**7. How much cargo moves on this stretch of the river?**

The ten-year average for cargo moved in barges through the two bridges is about 10 million tons per year. The estimated value for the cargo (mainly grain, wood products, containerized agricultural products, petroleum and other bulk commodities) likely approaches \$2 billion.

**8. Is there a bottleneck for marine traffic at the bridge?**

Current barge traffic stack-ups result from two major causes: 1) When the river level is above six feet, downbound tows can collect at Ryan point to await their turn to use the I-5 lifts; and 2) When the rail bridge is occupied by train traffic, tows must also wait for the rail bridge to clear, although river traffic has theoretical priority.

Because of the constricted and dangerous nature of the downbound approach to the rail bridge, only one tow at a time can approach the two-bridge intersection at a time, and both the I-5 lift and the rail swing span must be in the open position before a captain can commence the

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downbound approach. All this can take some time to coordinate, and the effect on freight mobility can be significant for all three modes. Obviously, when a barge queue develops, the result on highway and train traffic is to create two more bottlenecks for these modes as the barge tows navigate one by one through the bridges. As river, highway and train traffic increases, these bottleneck effects will only worsen.

A modification in the rail bridge will have positive impacts on all three modes, for it will allow quicker barge transits, shorter rail bridge openings, and far fewer I-5 lifts. The cascading bottleneck that is now developing at the intersection would be nearly eliminated, certainly for marine and highway traffic, and it would be greatly lessened for train traffic as well.

**9. Why did the Coast Guard rule against Truman-Hobbs funding?**

The Coast Guard's Eighth District, which is headquartered in St. Louis, was asked to do the study and conduct the hearing because of its extensive experience in handling Truman-Hobbs matters. After holding the hearing and considering the facts, it strongly recommended that action be taken to fix the problem. It flatly declared in its report that in its opinion the Vancouver Rail Bridge is an unreasonable obstruction to navigation.

However, when the case got to Headquarters in Washington, D.C., there were other factors to be considered. Namely, the cost/benefit analysis showed that unless the benefits from reducing I-5 lifts and avoiding a hypothetical future accident were factored into the equation, the \$42 million cost of modifying the bridge was not justified by the other benefits to navigation. And it found that the regulations did not provide the flexibility to look at those benefits, particularly the benefits to highway traffic on a nearby bridge, a bridge that was not even under Truman-Hobbs consideration for modification.

We subsequently learned that the Truman-Hobbs program is currently starved for funds, and that nationally it handles about one bridge per year. Had the Vancouver rail bridge been approved for Truman-Hobbs funding, the project would have been put in a queue with a long list of other approved projects, waiting for appropriations.

**10. Why is the Coast Guard now willing to undertake the project?**

Even after ruling against Truman-Hobbs funding, the Coast Guard's Washington D.C. Headquarters has expressed an interest in managing the project. If funding can be assured without reducing the dollars available for approved projects, the Truman-Hobbs managers at Headquarters would be willing to undertake and complete the project. It is our opinion, based on many conversations with Coast Guard officials, that while the Coast Guard views this project as important to navigational safety, Coast Guard officials also see that its importance to regional multi-modal freight transportation, including I-5 freight mobility, is also a very significant factor and should be considered when deciding the funding issues,

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The local Coast Guard Commander, after calling the rail bridge opening “an anachronism from another era without the nostalgia of that era” that represents the greatest man-made navigational challenge to river traffic, stated at the hearing that “to put it simply, the proposal represents an unusual win-win-win-win situation for three modes of transportation and for reduced risk of casualties and environmental harm... and will simplify the planning and construction of future regional transportation links by rail and highway across the Columbia River.” (Truman-Hobbs testimony, March 5, 2002)

The Eighth District agreed with the local Commander and recommended that the project go forward, and also pointed out the benefits to the other modes of transportation. On this latter point rests the hope expressed by so many in the Coast Guard after the failure at Headquarters. The project is important to the region, to multi-modal and intermodal traffic, and even to the rail system. If the region pulls together and recognizes the far-reaching positive impacts of the project, funding will be found. If Truman-Hobbs cannot use the benefits to I-5 traffic in its cost-benefit analysis, the region and its Congressional delegations are certainly able to do so. Authorizing this multi-modal transportation project under TEA-21 makes a great deal of sense, and with proper legislation the Coast Guard will be able to use the mechanisms of Truman-Hobbs to fully manage and complete the project.

**11. Why should the project not be considered a rail project?**

It is perhaps unfortunate, and certainly misleading, that the I-5 Trade and Transportation Partnership categorized the project as a rail project. Obviously, in a sense it is a rail project, since it involves the rail bridge. But other than the rather large benefit of reducing the likelihood that the rail bridge itself will be hit by a barge tow, the economic benefits derive mainly from a modernized opening. Theoretically, a new lift can be operated with greater speed than the old swing span. But BNSF has put a great deal of money into making sure the old swing span can continue to operate for years into the future. It has expressed little interest in building a new lift. The capital costs would hardly justify such a project in the near future merely on the basis that a new opening could be faster.

It is clear that the justification for the project comes primarily from its effects on maritime safety and its benefits to I-5 traffic. This is not a rail project, and to so classify it induces a kind of torpor, an inclination to wait for the railroads to weigh in on the need for it.

There was some concern expressed at the Truman-Hobbs hearing that the rail bridge ought to be upgraded to accommodate increasing rail traffic, and that perhaps the upgrade could be done at the same time as the safety modification. We believe that this is an independent issue and ought to be decided on its own merits rather than be tied to the critical issue of navigation safety; certainly it should not be used to impede the decision to improve the opening. A new lift could easily be configured to accommodate a third rail if necessary.

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**12. Why not wait for planning on the new highway crossing to be done?**

With the I-5 Trade and Transportation Partnership calling for a new Columbia River crossing, shouldn't the planning be done before we undertake a change at the rail bridge? The new crossing, by the most optimistic forecasts, is a good number of years away, and planning will take considerable time. But that's not the main point. If we go ahead now with the rail bridge project, we open up possibilities for the I-5 planners, and we get immediate benefits for I-5 traffic and freight mobility.

By moving the rail opening to the south, we can eliminate the need to have a high span at the north end of any new I-5 bridge. This is because river traffic will no longer have to line up on the north side of the river to get through the rail bridge. The new bridge can be designed with its high spans nearer the middle of the river, lining up with the new lift at the rail bridge, also nearer the middle of the river.

Thus the new highway bridge could be planned without lifts and without a high span at the north end. This will certainly facilitate access to the street system at Vancouver USA, and will allow more efficient use of the current freeway infrastructure north of the river. A modification of the rail bridge accomplished early in the planning process for the I-5 crossing would thus facilitate that effort, reduce the projected costs of the new crossing, and at the same time ease the congestion currently forecast by WSDOT and ODOT on the existing bridge.

**13. How much would the project cost?**

The Coast Guard estimated for purposes of the Truman-Hobbs study that the cost would be about \$42 million. This figure includes the costs of the engineering and environmental impact studies and contemplates that the entire project would be managed by the Coast Guard itself. It is frankly an estimate, and it may be high. It was based partly on an unrelated study conducted by HDR Engineering for SW Washington RTC for adding a third track to the bridge, and was considered relevant because it also contemplated removing the swing span and adding a lift.

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See discussion of relocating the BNSF railroad bridge swing span above.

## Summary of the Vancouver BNSF Rail Bridge Project

From: Ad-Hoc Steering Committee for the Vancouver Rail Bridge Upgrade Project:

Co-Chair	Jerry Grossnickle Chair, Bridge Committee Columbia River Towboat Association (CRTA) Phone: 503-289-3046	Co-Chair	Ginger Metcalf Executive Director Identity Clark County Phone: 360-695-4116
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To: JPACT  
January 15, 2004 Meeting

**P-0500-014**

### The Request

We are asking JPACT that the Vancouver Rail Bridge Project be included as a high priority of the Regional Transportation Plan.

### The Project

The project is to replace the existing "swing span" with a "lift span" and place it closer to the middle of the river.

### The Problem

1. **Opening Too Narrow.** The current opening is too narrow. At less than 200 feet wide, it was built (in 1908) to handle much smaller paddlewheel-type freight vessels; today's tows are often over 600 feet long and over 80 feet wide. If there is current, wind or fog, passage can be very difficult and dangerous. Because of the way the bridge opens, with the swing span turning parallel to the navigation channel, the opening is analogous to a tunnel, forcing tows to line up and head straight through, without any significant ability to slide through to compensate for wind or current. This requires considerable forward momentum in order to maintain course, which only adds to the danger of a catastrophe in the event of a miscalculation.
2. **I-5 Bridge Problems.** The navigational difficulties for downbound tows are compounded by the nearby I-5 bridge. The distance between the bridges is barely adequate to allow the difficult maneuvers required to safely negotiate the bridge openings. Although the rail bridge opening is reasonably well lined up with the I-5 lifts (both are near the Washington shore), captains do not call for these lifts when they can be avoided, nor are they allowed to use them during the peak traffic periods of morning and evening "rush hour" (6:30-9 AM and 2:30-6PM). So they usually navigate under the I-5 bridges' higher spans toward the middle of the river, which require tows to make a difficult "S" turn to line up with the narrow rail bridge opening. This maneuver

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becomes more dangerous as river levels rise and currents increase. When the river reaches 6 feet at the Vancouver gauge, the maneuver (through the high span) becomes too dangerous, and captains use the I-5 lifts. In years of high run-off, the river can remain above 6 feet for 6 or 7 months at a time.

- 3. Increasing Danger.** The dangers to tug & barge tows from a miscalculated maneuver are obvious and immediate, with the possibilities for loss of life and property a constant consideration for towboat captains. With increasing I-5 traffic, there has been increased pressure on captains to avoid using the lifts, and in 1999 the Coast Guard extended the length of rush-hour closures of the lifts. Thus the danger of a miscalculation has steadily increased. If a tow were to hit and disable the rail bridge (the closest alternative is east of The Dalles, at Wishram), the cost to the regional economy would be enormous.

#### The Benefits of a Relocated Lift Span

- 1. Safer Navigation.** If a rail bridge lift span is placed nearer the middle of the river, towboat captains will be able to use the higher spans of the I-5 without making the dangerous "S" turns to line up with the opening. The lift span would be about 300 feet wide if it were placed on current pier structures, making it a much safer opening for marine traffic, and of course, the "tunnel" effect would be eliminated.
- 2. Faster Opening.** A lift opening could be made considerably faster than the present swing opening, resulting in less disruption to rail traffic.
- 3. Significant I-5 Traffic Benefits.** A lift opening placed more toward the middle of the river would allow marine traffic to nearly always avoid using the I-5 lifts. Of course, each time a captain calls for an I-5 bridge lift, all I-5 traffic comes to a dead halt to wait for the tow to pass through. It is precisely analogous to a rail crossing on the freeway. Nowhere else in the country has such a lift been allowed to remain on the interstate highway system. WSDOT calculated that the current average annual cost of lifts in I-5 traffic delay is about \$0.8 million and will steadily increase to a projected annual cost of \$12 million by 2021. Currently a lift causes about 20 minutes in midday traffic delay, but by 2021 the midday delay is estimated to exceed 90 minutes. Compounding the problem is that the current rush hours, with very slow, full capacity traffic, will grow to include the entire mid-day period. Thus lifts will cause greater disruptions to traffic and freight mobility.