

# Councilor Robert Liberty

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**METRO**

TO: Rex Burkholder  
FROM: Robert Liberty  
DATE: October 2, 2006  
RE: Comments on Columbia Crossing Alternatives  
COPY: Councilors, Michael Jordan, Andy Cotugno

I have quickly reviewed the September 20, 2006 “Draft Memorandum: Considerations for Replacing Versus Reusing the Existing Interstate 5 Bridges” and “Preliminary Alternative Packages; Columbia River Crossing” dated 08/09/06 and “Final Problem Definition” dated December 27, 2005. Below are some questions and comments.

## **Observations about the Problem Definition**

The problem is defined entirely in terms of vehicle movement (cars, trucks, bikes, pedestrians, transit) and safety.<sup>1</sup> The definition does not encompass the *sources* of the congestion (greater job growth south of the Columbia; more houses north of the Columbia) nor does it articulate any broader purpose for the bridge improvements (urban design, economic development, environmental or equity goals of some kind.) In other words, vehicle movement and related safety are stated as the ends, not the means.

The problem definition also does not indicate relative importance of the various objectives identified (e.g. safety versus speed, freight<sup>2</sup>, transit, cars, barge traffic) nor does it indicate any limitations on the costs of possible solutions. Instead each of these objectives is treated as essential and as the grounds for eliminating some alternatives from consideration. Similarly, the project website gives the percentages of traffic in various categories, (local, regional, long distance, etc.) but does not indicate which of these movements is more or less important.

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<sup>1</sup> See:

<http://www.columbiarivercrossing.org/materials/MeetingMaterials/010406%20CRC%20Problem%20Definition%20Final.pdf>

<sup>2</sup> Here is an illustration of the need for some quantification and priority setting regarding objectives. An April 2003 report by ODOT, Cambridge Systematics and David Evans, entitled *Regional Economic Effects of the I-5 Corridor/Columbia River Crossing Transportation Choke Points*, noted that without a new or upgraded bridge the value of congestion-caused delays for trucks on I-5 would increase by \$20 million per year. Assuming a 5.5% return on \$1.5 billion that would be invested in a new bridge, the opportunity cost of the new bridge is about \$83 million/year or four times the value of the increased truck congestion.

Finally, I note that the problem definition is presented in terms of the study area, which is a corridor along I-5 between 134<sup>th</sup> in Vancouver and the I-5/I-405 junction. The interrelationship with I-205, with I-5 through central Portland (and beyond) and with regional land development patterns are not discussed (in these documents at least.)

This narrow focus helps explain what I believe are some deficiencies in the range of alternatives considered.

*Recommendation:* Given our discussions about the importance of the purpose statement/problem definitions for other projects, it would be appropriate for the Council to offer a comment on the problem definition for this project.

### **Alternatives Packages:**

The first thing that caught my eye is that the maps presented with the alternatives packages. They show only the area from Columbia Slough to about 45<sup>th</sup> in Vancouver; no alternatives discuss how changes or improvements outside this small area might address some of the issues related to congestion.

With respect to the structural alternatives, they all assume the construction of a new bridge; either a replacement bridge or a supplemental bridge.

There is no proposal that includes modifications to I-205.

There is no element in any alternative that proposes changes to the downstream rail bridge, even though the problem definition discusses the challenge for barges trying to make the swerve between the two openings. (See also section 4, “Navigation Considerations” in the Replacement versus Re-use memo.) One way to address that particular problem is to remodel or rebuild the I-5 bridge, the other is to modify the rail bridge.

The non-structural alternative (or supplement) is described as “Transportation System Management/Transportation Demand Management Focus”. All that is provided under the section devoted to “Transportation System/Transportation Demand Management” in this alternative are the words “Aggressive level.” What falls under this heading and at what level of cost? Does it include tolling on I-5 and I-205? Does it include employee trip options? ITS elements? Does it include accident and incident responses?

It does not appear to include any change in land use designations or plans. Possible changes to land use patterns deserves its own alternative but as far as I can tell it is not considered at all.

Finally, there is something unreal about presenting these alternatives without even a preliminary discussion of cost/benefit ratios, without any consideration of induced demand or land use impacts, without any acknowledgement of financial constraints and without any indication of the relative importance of different trip movements.

## Comments on Draft Memo on Considerations for Replacement Versus Reuse of Existing I-5 Bridges

The memo outlines many important issues but suffers from some serious limits as a basis for making a decision. These limitations include:

- The memo lists “costs” as a “key issue” but does not actually provide any cost information on the various replacement versus re-use options. (At page 11 the memo notes that cost estimates will be available in November<sup>3</sup>; however all of these costs are hard construction and demolition costs.) Instead it offers *opinions* about costs. For example on page 3, the memo states: “Upgrading the existing bridges to reduce vertical grades and provide sufficient shoulder widths is not prudent because it is too expensive. Reducing the vertical grades would require significant modifications to piers and reconstruction of selected truss spans. Though technically feasible, this would be prohibitively expensive and would impact river navigation by lowering vertical clearance under the high span channel.” (Note: There is no discussion of raising the length bridges in order to reduce vertical grades while increasing barge clearance.)

Under section 3.5 it references the conclusion of a seismic panel which met for a two-day workshop<sup>4</sup>: “The panel determined that it is technically feasible to retrofit the existing bridges to a level of service that would meet “no collapse” criteria, though the expense could be equal to a substantial portion of the cost of a new structure.” What does “substantial portion” of the cost mean – 30%, 50%, 90%? The analysis also assumes a design for the improvements (and no changes to the railroad bridge) such that barges will still have to weave between the two bridges.

Given the potential for a new bridge to cost \$1 to \$2 billion, it would be interesting to know how upgrading an existing bridge could be more expensive than building a new one.

- The memo offers conclusions that rule out re-use but does not provide the facts or analysis that support that conclusion. For example, the memo states: “Given their through-truss design, it is not prudent to widen the existing structures to meet current interstate highway design standards. Therefore, alternatives that keep interstate traffic on the existing bridge would not meet the project’s purpose and need.” Why isn’t it prudent?
- The memo treats meeting *all* of the current highways design standards as the sine qua non for any alternative, regardless of cost, or of cost relative to benefit. But why isn’t a cost-effective *improvement* in the current design a valid alternative, even if it means the entire project does not meet all of current standards? Is this a standard we have applied to other projects? Just changing this assumption could dramatically change the conclusions in the

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<sup>3</sup> More to the point, it is interesting that we have some kind of cost estimate for the overall project (\$1 to \$2 billion) without having had any formal cost estimates at all.

<sup>4</sup> Is a two-day workshop on seismic safety sufficient basis for ruling out alternatives that might save hundreds of millions of dollars? Given the budget for this study it would seem a much more extensive study is justified.

memo. And what about nonstructural ways to increase safety, such as by reducing the speed limit?

- More importantly, there are no comparisons of the differences in costs and benefits between the re-use and replacement options.
- The memo puts great emphasis on how an arterial crossing would “likely substantially increase through-traffic in downtown Vancouver and on Hayden Island.... Motorists taking longer trips may divert to an arterial crossing...” increasing traffic in downtown, causing arterial congestion and interfering with pedestrian movement etc. Later in the memo, this increased traffic is described as inconsistent with local plans. (Page 9) But I do not see any similar consideration about what induced traffic effects there might be up and down I-5 from a new, wider, bridge and whether those alternatives are consistent with local land use plans or state planning requirements.

*Some Recommendations:*

- Recommend that before deciding on alternatives, especially with respect to re-use or replacement, the Task Force decide on the relative importance of the different objectives they have identified including travel/access, barge movement and safety objectives. It will probably be necessary to identify the objectives and their relative importance by both mode and market. Community development objectives should be added.
- Before narrowing the alternatives, prepare some preliminary cost/benefit information for all the alternatives, including structural and nonstructural solutions, seismic retrofits and covering a bigger geographic area than in the current alternatives. “Costs” means more than construction and demolition costs. Any land use effects and construction caused delays should be factored into the costs part of the equation.
- Add a land use alternative.
- Consider structural and nonstructural solutions involving I-205, the rail bridge and areas further north and south of the current project area.