

Memorandum

Date: December 27, 2004
To: Geoff Larkin
Mary Jo Porter
Rob DeGraff
From: Steven M. Siegel
Subject: Review of Vollmer WP 10.2

Generally, I agree with MJP's comments. However, this is a critical report that leads to significant strategic choices. It needs to be able to withstand a high degree of technical scrutiny. My comments below focus on some technical concerns, as well as some places where additional clarity needs to be added.

While the report seeks to summarize the technical methodology and input data, we need to get the detailed data and calculations (i.e. the 22x22 trip tables, the 9 x 9s, the annual growth rates and Figure 3 for each scenario, etc.). There are several places where I just cannot tell exactly what was done, and I would help to comb the detailed data. Make sure it is provided in electronic form and hard copy, please.

Specific Comments:

- The terminology used for describing the two tolling scenarios needs to be changed to make it easier for outside readers. I think it should be:
 - Toll I-5 Only
 - Toll I-5 and I-205Calling the I-5 Only scenario "Two Direction Toll Scenario" confused the RCC when they saw the results, and I am sure it will continue to. Moreover, whether we are tolling in one direction or two directions really isn't the policy distinction at issue.
- There needs to be a disclaimer as the very first paragraph in the report, stating something like the following:

"ODOT and WSDOT are preparing to undertake environmental studies of Columbia River Crossing Project alternatives. It is possible that tolling options will be included in these studies. The analysis documented in this Working Paper is preliminary in nature, and seeks only to provide tolling traffic and revenue information for project scoping. Three potential future options are addressed in this report: the No-Build, Tolling I-5 Only, and Tolling I-5 and I-205. A decision as to which, if any, of the tolling options to include in the environmental studies will be made through "project scoping." A decision as to which, if any, tolling option will be

recommended for implementation will occur at the conclusion of the environmental studies.”

- MJP comments on the need for sensitivity analysis. The WP mentions it, but does not provide one. One should be provided. It needs to address sensitivity to toll rate and traffic growth; perhaps something like toll rates that are half and twice the base, and traffic growth rates that are half and twice the base.
- Table 1, Page 2: I would like to see added to this table, for the AM and PM peak, traffic volumes by Production-Attraction direction. This may help verify the forecasts.
- Page 2, Third Paragraph: The sentence “*Nonetheless, it is possible that I-205’s traffic volumes could reach over 300,000 per day before 2020, under the No-Build scenario, if actual growth exceeds an average of one percent a year and the regional travel demand model’s predictions*” concerns me. We are showing 2020 No-Build forecasts for I-205 of 155,200 – so the 300,000 means we think we may be off by almost 100%. Also, can 300,000 work on I-205, given the peaking assumptions we are making?
- Figure 1 should be two-way arrows, I think.
- Figure 2: First, some explanation of how this figure was prepared needs to be included. If it is based on actual data from somewhere, that should be included in note. If not based on data, where did it come from? Second, I was expecting this to be done by trip purpose – that is, transportation theory would lead one to believe that diversion would be greater for less valued trips, i.e., non-work. My first preference would be to have different diversion curves for trip purpose (presumably based on empirical evidence of some sort). If not, then there must be some good explanation (not just an abrupt dismissal) of why that is not needed. If possible it should include some kind of verification or validation, such as a showing where this methodology was used and a comparison to what actually happened or what a more elaborate forecast showed.
- Also Figure 2: This curve is for a \$2 toll. Apparently there must be diversion curves for other toll rates. For example, in Figure 3 there are different diversion factors for Cash and ETC/SOV – I can only guess that this is due to toll rate differential. If there are multiple curves for different toll rates, the WP should explain that and include the different curves, perhaps in a technical appendix. If not, then how does Figure 3 work? And how can we do sensitivity tests on toll rates?
- Table 5: same comments as for Figure 2, above.
- Toll Rates: Page 9: This would not be clear to many readers that I-5 only scenario has twice the toll rate for round trip. Needs to be explained more clearly. For

example, in Table 6, I would show that as a round trip cost – otherwise it seems to say that both scenarios have the same toll rate.

- Page 9, third paragraph. What does this sentence mean?: *The frequency of use of the facility is a large factor in determining how likely a user is to be carpooling or to take advantage of the Electronic Toll Collection (ETC) discount rates which are assumed in this analysis.* How is this accounted for in the methodology?
- Table 8, Page 11: This whole thing with showing toll revenue for the No-Build and 2002 doesn't make sense to me. I would take it out of the table and the related narrative. PS: Same on Table 10.
- I don't know that the traffic volumes in Table 8 make sense. Compare the 2020 No-Build Toll-Free volumes with the 2020 Build Tolloed volumes. On I-5 the traffic volume drops from 140,000 to 133,300. The 6700 trip loss essential means that benefit of the added capacity on I-5 is less than the disbenefit of the higher cost. Now look at the volumes on I-205. Here they rise from 155,200 to 173,100; and increase of about 18,000. Even if we assume that all of the 6700 trips lost to I-5 were diverted to I-205, this means that about 11,300 trips were added to I-205 because we built a project on I-5 where the disbenefits to drivers outweighed the benefits – how does this work? This may show a flaw in the methodology.
- There appears to be something wrong with the interim year forecast methodology. First, on page 14, first paragraph, it says: *“For the Build condition, it is assumed that these same No-Build growth rates are applied to the traffic streams between 2002 and 2012, just prior to the opening of the new I-5 river crossing (the Build and No-Build volumes between 2002 and 2012 are identical). For simplicity, these same growth rates are applied to the higher 2020 Build volumes to determine the volumes in 2013 through 2025 in both the tolled and toll-free analyses.”* I do not understand this – at a minimum, it needs to be written better, and perhaps it is the cause of the problem that follows.
- Second, Page 14, Table 12: Look at year 2020 traffic volumes for I-5 and I-205. They do not match the 2020 Build Tolloed volumes in Table 8; they need to. In addition, the 2020 traffic volumes are lower than 2018 and 2019; the 2022 forecast is lower than 2021, etc.
- Similar problems as above occur in Table 13.
- The interim forecasts should exhibit the following:
 - Pre-opening, as described in WP.
 - Include a step-up in 2013
 - 2020 numbers should match forecasted numbers
 - Straight line forecasts in between are fine, should be a constant growth rate.