

Note to the Congestion Pricing LISTSERV by Matthew Kitchen, Puget Sound Regional Council

Findings from the Puget Sound Congestion Relief report should be used with caution when trying to determine the broader implications of the general usefulness of various investment approaches. Remember that this specific piece of analysis examined some specific (and somewhat problematic) investment scenarios. The findings tell us little beyond the relative usefulness of the individual strategies that were examined.

This is true for all types of investments that were analyzed, and I will offer a few observations to illustrate the point.

The transit intensive scenario involved a couple of types of improvements to existing transit services in our region. 1) Decreasing headways for existing service routes, and 2) dedicated ROW for certain higher ridership corridors. Effectiveness was assessed by examining congestion reduction, but also as a benefit-cost measure, where not all benefits were defined as travel time/cost savings as stated previously by someone. The two transit service improvement strategies mentioned above often result in a lower benefit-cost finding, but have the attractive feature of being relatively easy to model in conventional travel demand models. For the moment, let's restrict our thinking to non-dedicated ROW bus systems only. Decreasing the headways uniformly across a network (as was basically done in this work) should by definition lower the cost-effectiveness of your system. Presumably existing transit service planners know something about what they are doing and uniformly decreasing headways from a current state should result in some over deployment of service exactly where it does not belong. Alternately, reconfiguring route structures to say integrate feeder and line-haul services may often result in substantially lower user costs by eliminating transfers. In other words more point to point service might be a better strategy than reducing headways, but it requires recoding transit networks in the model, which is very time intensive and requires a different way of conceptualizing transit service planning, one that focuses more on user benefits, not transit operator costs.

This is just an example, and is not a criticism of the WSDOT report. We just need to be careful, when we analyze strategies that are sub-optimal we cannot claim that the results are indicative of the results that would be obtained from the entire class of investment strategies. This same principle applies to the highway side as well. I'm afraid that what we can learn from the Congestion Relief Analysis is fairly limited. Here are some ideas about what might be responsible conclusions.

Investing dozens of billions of dollars in new highway capital stock, indiscriminately, (in an environment with a fairly mature transportation system and quickly rising urban land costs) will result in a fairly inefficient allocation of resources. But, yes there are individual highway projects that will produce sizable returns on investment. Now we just have to figure out which one's those are.

The same goes for transit investments. A huge investment in decreasing headways everywhere independent of the demand conditions, is generally

unwise. And building dedicated ROW outside of the limited urban environments that can support the investment with significant ridership demand is going to be a pretty expensive way to go.

The primary finding of interest here is that pricing produces sizable benefits in excess of costs. But those on the Listserv sort of already knew that. I will say that defining a tolling rule where price equals marginal costs kind of pre-determines that the results will be cost beneficial. Of course, it would be silly to do anything else, right?

Here is an analytical construction concept that might actually advance our understanding of how to achieve congestion relief (steps in order):

- 1) Employ a marginal cost price rule on existing roadways
- 2) Examine transit demand "pressure" from mode choice models to determine where, and how, to improve transit supply in response to road pricing - endogenize the transit supply response
- 3) Examine locations in the roadway network where toll revenues are sufficient to support capacity investments - endogenize highway supply response

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The study entitled

Congestion Relief Analysis, Central Puget Sound Area Report can be found at <http://www.wsdot.wa.gov/mobility/4chapter2pugetsound.pdf>