Attachment E

SOUNDTRANSIT

July 13, 2006

Mr. Richard C. Harkness
PhD Urban Systems Planning
4635 138th Ave. SE
Bellevue, WA 98006

Dear Mr. Harkness:

Thank you for your interest in Sound Transit's studies of high capacity transit (HCT) in what Sound Transit refers to as the East Corridor and the years of study which have gone into addressing this issue.

Your letter of April 25, 2005 ran for 22 pages, listed 5 "concerns" and posed 29 questions. Taken as a whole, your missive seems to boil down to two main contentions:

1. The transit needs of the Eastside and I-90 could be fulfilled with a bus system utilizing mostly existing HOV lanes (HOV/BRT); and

2. The range of studies undertaken by Sound Transit are inaccurate and/or biased. Specific instances of alleged bias include:
   a. Allocating the costs of improvements to the HOV system to the HOV/BRT option, but not to the light rail option; and
   b. Costs of interchange improvements were incorrectly calculated.

This letter addresses each in turn:

HOV/BRT vs. transit in a dedicated right-of-way

HOV/BRT can be an effective transit alternative is certain situations. For example, the I-405 study which you reference in your letter has identified HOV/BRT as the transit alternative of choice. You suggest that we have ignored this study. To the contrary, Sound Transit knows of and agrees with those plans. We are developing capital projects and operating service in the corridor. Examples include transit facilities in Canyon Park, Totem Lake, downtown Bellevue, and Renton, as well as the ST Express 560 and 530 series routes. Sound Transit's Long Range Plan contemplates developing the transit market along I-405 over the next three decades.

Cross-lake transit is a very different subject, and the I-405 studies bear little relation to the I-90 studies. Transit ridership in the I-405 corridor is far lower than the trans-lake corridor, and the Seattle to Redmond via Bellevue corridor across I-90 links the region's biggest economic engines with the most dense population and employment centers.

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In the course of our work, we looked at a wide range of transit technologies for the east corridor, including HOV/BRT, monorail, light rail, and BRT options that operated in dedicated rights of way. When it came to HOV/BRT we learned the capital improvements necessary to make such a system function effectively would be immense, and yet relying solely on HOV lanes for transit reliability would carry a number of significant risks. There are several problems:

- **Reliability**—Buses in the HOV lanes are going to get stuck in traffic, especially during rush hour. This will make schedule delays inevitable. Paint-separated HOV lanes can run only slightly faster than the general purpose lanes, so when things are jammed, the buses will run late. The risks of delay become more acute during inclement weather, automotive breakdowns, or traffic accidents. Our analysis shows current HOV/BRT service typically runs late by five minutes or more over 25 percent of the time, given the frequency of the aforementioned conditions.*
- **Highway-to-highway connections**—Adding to the reliability problem is the movement of these buses from the HOV lanes on I-90, say, to the HOV lanes on I-405. That's no easy task, with the need to get back over to the exit lane, take the interchange over to the other freeway and get back into the HOV system while competing with all the other traffic.
- **Highway-to-bus-stop connections**—Getting the buses off the highway and into the stations adds significantly to travel time. That's why the Downtown Seattle Transit Tunnel was built in the 1980's at a cost at that time of $400-500 million. The streets of downtown Bellevue and Seattle are already crowded and really can't take the additional buses that an HOV/BRT system would add.
- **Risk of HOV conversion to general purpose lanes**—HOV lanes have historically been threatened with conversion to general purpose lanes by the state legislature, raising the issue of placing long-term reliance on a transit system reliant on those lanes.

To address these problems, HOV/BRT advocates suggest a range of capital investments that increase the degree to which right-of-way is dedicated to transit use. Once you start down that path, you no longer have a "cheap and easy" alternative but something that can approach the size and scale of a light rail investment. For example:

- You correctly identify HOV lane performance as a critical issue—effective operation of the HOV system is vital to the health of our transportation system. Some argue that one can improve the performance of HOV lanes by either turning them into HOT lanes or bumping the 2-passenger HOV cars back into the general purpose lanes. Either approach is designed to move commuters out of the HOV lanes that currently use them—adding more cars to the general purpose lanes and clogging them further. Even so HOV lanes would be vulnerable to congestion, weather, breakdowns and accidents, unless they were separated by more than paint. This of course would add to the costs.
- When we studied highway-to-highway HOV connections for I-90 to I-405 and I-405 to SR520, we found that putting in the minimal number of ramps (2 out of a possible 7) would cost over $2 billion dollars given the complexity of modifying the interchanges between I-405, I-90 and SR-520. This would constitute a substantial capital investment for a transit service that would still be vulnerable to the operational risks inherent with HOV lanes, in other words costly but not necessarily effective at moving people. And as with HOV lanes, there would exist a risk of later conversion to general purpose.

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* Sound Transit studied the route between Westlake and the South Bellevue Park-and-Ride, using the Downtown Seattle Transit Tunnel and diamond lanes—a route segment that matches the definition of HOV/BRT. This segment's scheduled travel time is 23 minutes.

- For dealing with crowded arterials and downtown city streets, some bus advocates suggest building a dedicated busway for those sections. This is exactly what a light rail system contemplates, except that a busway would need to be wider and would therefore likely carry greater right-of-way costs and be more challenging to accommodate while maintaining existing surface street capacity.

Taken as a whole, compared to transit in a dedicated right-of-way, HOV/BRT does not deliver an effective and reliable transit system that can grow over time, take people out of their cars and support the population growth of 1.2 million people that we expect in this region by the year 2030. Capital investments to address its greatest problems are not trivial, and risks are substantial. Because of these and other factors the Sound Transit Board decided in adopting its updated Long Range Plan in July, 2005 that it would place an emphasis on developing a grade-separated High Capacity Transit technology that could deliver the highest degree of mobility improvement in the corridor.

A final note: the cities of Bellevue, Mercer Island and Seattle along with King County, WSDOT and Sound Transit are working from the 2004 Memorandum of Agreement regarding I-90 as planning for HCT across I-90 moves forward. As I'm sure you are aware, this agreement, which is actually an update of a 1976 agreement, calls for the "ultimate configuration" of I-90 between Seattle and Bellevue to be "high capacity transit in the center lanes".

The quality of Sound Transit studies
I have been pleased and impressed with the quality, depth and breadth of the planning work that has gone on in support of Sound Transit 2 and the question of transit technology for the Eastside HCT system. This good work has been independently recognized.

From the outset, Sound Transit has placed a high priority on effective cost estimating that incorporate lessons learned over the past decade and take full advantage of our hard-earned experience. Our internal review process has ensured that every planning assumption has been vetted by those who actually make our regional transit system work on a day-to-day basis.

The Expert Review Panel (ERP) is an independent state-appointed body tasked with overseeing and evaluating our planning effort. In its letter of March 17, 2006, it noted that, "there is greater clarity about project scopes at this early stage of project cost estimating than existed in the Sound Move process... Sound Transit also has nearly a decade of experience in constructing Sound Move projects to inform its cost estimating" for Sound Transit 2. Moreover, "the internal teams used by Sound Transit enable staff to utilize experience on Sound Move, and to create ownership that will ultimately have to construct and manage the projects if a ballot measure is successful."

Additionally, the ERP has consistently found our methodology reasonable for transit planning in the East corridor. In its June 23, 2005 letter to Gov. Gregoire and others, the Panel wrote, "... the various corridor studies conducted by Sound Transit provide the Board, and the broader community, with a good foundation for considering transit options in the three-county region." The ERP has stated that, "the methodology used for forecast population and employment is reasonable and serves as a defensible basis for transit planning."

Allocating highway improvements to HOV/BRT but not to other modes
One issue you specifically take issue with is the decision in our studies to allocate the multi-billion dollar cost of constructing HOV-to-HOV connections at the major freeway interchanges to the HOV/BRT option but not to do so for the options that would operate in a dedicated right-of-way. All of our studies of HCT options in the east corridor assume the right of way costs needed to make them function properly. For example, the busway BRT option included the cost of acquiring the BNSF right-of-way, and the light rail cost estimates likewise assume right of way acquisition costs throughout the Seattle-Bellevue-Redmond corridor.

Transit systems with dedicated right of way do not need HOV connections on the freeways, whereas the HOV/BRT system does, if it is to have any reliability at all. In a perfect world, all these improvements would be built. But our world is far from perfect and our transportation infrastructure is significantly underfunded. The HOV connections are otherwise unfunded and this is unlikely to change in the near future. Sound Transit cannot assume otherwise. In the real world, it would fall to the agency needed the facilities to shoulder the cost—thus to fairly and accurately evaluate the viability of the HOV/BRT system, this needed to be in the calculus.

A word on the cost estimates for the HOV-to-HOV interchanges
Some of the cost questions you raised in your letter were also identified and addressed by Sound Transit and WSDOT—see the attached memorandum on the subject. Note that as issues have been identified by our Expert Review Panel, corrections and/or improvements to our work have been made quickly and publicly

Again, we thank you for your letter.

Sincerely,

John W. Ladenburg
Chair, Sound Transit Board