

# Puget Sound Public Interest Transportation Forum

February 22, 2002

Mr. Maurice Foushee'  
Federal Transit Administration  
400 - 7th Street SW – Room 9413  
Washington, DC 20590

Re: Sound Transit New Starts Submittal of October 19, 2001

Dear Mr. Foushee':

With the help of colleagues, I have prepared this letter to alert you to significant problems associated with the FY 2003 New Starts submittal by Sound Transit dated October 19, 2001, covering the central Puget Sound Link light rail Initial Segment project: 14 miles, \$2.1 billion, 42,500 average weekday boardings in 2020.

By drawing FTA's attention to the issues described in this letter I hope to ensure that the revised Sound Transit proposal receives careful, objective attention by Federal professionals in order to ensure that both Federal and local resources are committed wisely. A number of us (See signatories on Attachment A) are deeply concerned that the Link Initial Segment project is not good for our community, and that there has been distortion of data to justify it. We are alarmed at the ongoing circumstance of Federal resources being used as a local motivation for pursuing a low performing project.

A reading of the referenced submittal leads me to conclude that Sound Transit is attempting to manipulate the New Starts process by omitting pertinent information and misrepresenting the costs and benefits of the Link light rail project. Sound Transit's New Starts submittal does this in several ways, most importantly by improperly defining the baseline alternative.

## Problems of the Baseline Alternative

Sound Transit should not be permitted to use a No-build alternative as the baseline. FTA guidance allows a No-build alternative to be used as the baseline "where the adopted financially constrained long range transportation plan includes all reasonable cost-effective transit improvements within the study area short of the proposed New Starts project". That is not the case in the Puget Sound region. For example, the enclosed King County Metro Bus Rapid Transit proposal (Attachment B) shows that cost effective improvements beyond those included in the adopted plan are entirely feasible. These improvements, and many others, do not appear to have been included in the New Starts baseline alternative. Attachment C shows that new King County BRT corridors are being selected by transit planners in the present day with intent not to overlay them on the planned route of the Link Initial Segment that Sound Transit hopes to build. It appears that light rail is the baseline, and bus system improvement is the afterthought.

FTA guidance also states, "the use of the no-build or no-action alternative as a New Starts baseline is expected to be rare and limited to highly urbanized portions of major metropolitan areas with saturated transit coverage already present." Since peak transit service levels through the Downtown Seattle Transit Tunnel (the existing 1.4 mile Bus Tunnel) are currently at less than half the tunnel's design capacity, no one can reasonably argue that "saturated transit coverage" is present. But even accepting a No-build as the baseline, the alternative defined by Sound Transit still fails to comply with FTA guidance for definition of a baseline alternative.

FTA guidance states that the baseline should be defined as "the best that can be done" to improve transit service in the corridor without major capital investment in new infrastructure. I don't think Sound Transit's baseline meets this requirement. Sound Transit's submittal mentions "changes in the bus deployment network contribute to differences between the baseline and the New Starts results." The definition of these changes is a mystery that reading the New Starts submittal will not resolve. Because Sound Transit has failed to provide any information on the bus network changes it is not possible to directly measure their impact. But transit professionals who know what is going on in Seattle urge that the FTA ask:

- Has Sound Transit assumed interlined bus service through the tunnel to reduce transfers and improve transit travel time? Or are they still treating the Bus Tunnel like a cave, where buses enter empty and leave full, or vice versa?
- Has Sound Transit incorporated into its baseline the arterial BRT improvements proposed by King County Metro? Or have they ignored the plans for signal priority improvements, increased service frequency and stop consolidation?
- Has Sound Transit developed a baseline that optimizes use of the Bus Tunnel and the existing fleet of electric powered transit vehicles? Or are they assuming a large fleet of expensive new dual-mode vehicles is the only way to provide service through the Tunnel?

The improvements listed above are examples of what FTA guidance calls for, and they are consistent with what the region could expect in the absence of the New Start project, but I can't find evidence that Sound Transit has included any of them in the baseline alternative. These improvements would probably yield ridership increases much greater than the small increase attributed to Link. As FTA staff may have already noticed, even according to Sound Transit's own numbers, the baseline cost per passenger is less than a penny per mile above Sound Transit's proposed New Start. A growing number of transit professionals and civic leaders in this region are sure that an enhanced baseline, such as a TSM alternative, would produce higher transit ridership at lower cost than the proposed New Start.

Evidence of how the baseline alternative has been manipulated can also be seen in an analysis of cost increases between the 1999 Link FEIS and the 2002 Environmental Assessment on the Initial Segment ordered by Region 10. This comparison shows that capital cost per rider has

increased by 129%, and operating cost per rider has risen by an amazing 340%. But according to Sound Transit's calculation in the New Starts submittal, the incremental cost per new rider has only increased by 50%, rising from \$10.40 in the 1999 FEIS to \$15.60 for the Initial Segment. If the New Start's capital and operating cost per rider have doubled and quadrupled respectively, how can it be that cost per new rider has increased so little? My conclusion from what I see is that Sound Transit must have made numerous unfavorable assumptions that increase the cost of the baseline alternative while simultaneously penalizing its performance. Rather than "the best that can be done," Sound Transit's baseline appears to be more like the worst that could be done.

#### Capital Cost Assumptions in the Baseline

For reasons the finance plan does not explain, the baseline fleet costs a whopping 38% more than the fleet assumed for the build alternative. This difference, which comes to more than \$450 million, is all the more peculiar since the two alternatives have nearly the same number of buses (2046 in the New Start, and 2085 in the baseline). Obviously those 39 additional buses in the baseline didn't cost an extra \$450 million dollars. One can only surmise that Sound Transit has chosen to assign an extraordinarily high cost for buses to operate in the downtown tunnel. Sound Transit may even have used the \$1.3 million per unit cost of a recent dual-mode bus purchase for the Boston Big Dig as input to the baseline. If so, they have seriously misrepresented baseline capital costs. As the page from the Puget Sound Regional Council shows (Attachment D), Sound Transit intends to purchase hybrid diesel-electric articulated buses specifically for regional service through the downtown bus tunnel. Although this purchase is only for a small number of demonstration vehicles, the unit price is still far below the Boston dual-mode price. Therefore, the high costs assumed by Sound Transit for the baseline are unreasonable.

Nor are new hybrid coaches the only vehicles capable of operating through the tunnel. King County Metro currently operates a fleet of electric trolley buses which run on the same DC electrical system already in place in the tunnel. Metro is now putting into service 100 new trolley buses that have been obtained at a cost of less than \$400,000 per unit. These buses will be deployed on a number of high demand routes including several that approximate large segments of the proposed light rail alignment. A baseline alternative designed to make the most efficient use of the existing fleet would run these vehicles through the tunnel rather than assuming only expensive new dual-mode buses could be used for tunnel service.

In the New Starts worksheet Sound Transit has also assumed all rubber tired vehicles will have a useful service life of only twelve years. However, the FTA standard for trolley buses is 18 years, not 12. And 18 years is a conservative assumption, because bus and trolley bus fleets in the Puget Sound region are nearly always maintained in service well beyond the FTA standard. The trolley buses now being replaced have been in service since 1979.

Colleagues and I believe that if correct inputs are used in the capital cost spreadsheet, the cost of the baseline alternative would drop by several hundred million dollars. The net effect would be to reduce the annualized cost of the baseline by a substantial amount, thus increasing the cost-effectiveness of the baseline relative to the proposed New Start. As a result, the incremental cost per new rider for the New Start would be far higher than the \$15.60 cost claimed by Sound Transit, a point which is directly relevant to Federal decision making on Link Light Rail.

### Conclusion on the Baseline

The information in the New Starts submittal in conjunction with information gleaned from the environmental review process still underway raises many serious questions about the validity of the baseline alternative. We think they have used a straw man in the sense described by Professor John Kain's classic article, Attachment E. I believe the situation in Seattle warrants a thorough review of the underlying service and capital assumptions of the baseline. Unfortunately, such a review cannot be completely done with the sparse information Sound Transit has provided for their baseline alternative.

### Mobility Improvements

Moving on to other New Starts criteria, a close examination of the data reveals that all, or nearly all, of the new riders claimed for the Link project are attributable to projected population and employment growth, not the light rail line. This can be seen in Sound Transit's estimate of total system ridership with current land use and population on page 11. The total given, 96.6 million linked trips, is very close to the actual number of linked trips provided in the region in 1999. The local transit providers in the region reported a total of 119.9 million unlinked trips in that year. If the transfer rate in the region is 1.25, then total linked trips for 1999 would have been 95.92 million. This is within one percent of the New Start total. In other words, investing \$2.1 billion in the Link project may produce an increase in ridership so small that it is statistically insignificant. This shows that mobility improvements resulting from the New Start are virtually non-existent. On this evidence alone the proposed New Start should be rated "Not Recommended".

### Land Use

The New Starts submittal includes an extensive section describing the region's land use and growth management policies. On page 93 of this section, there is a remarkable statistic; the base year total population living within a quarter mile of *all* the New Start stations is only 12,881. This is less than 2.5% of the City's population! It represents less than half of one percent of the total regional population. With such a small number of people living near the stations it is simply impossible for the New Start to serve the mobility needs of the City, much less the entire region.

Link's projected ridership levels in 2020 require that the areas along the route experience a large increase in population and employment, as shown in the Quantitative Land Use Data beginning on page 93. Considering that the proposed route travels through some of the slowest growing areas in the region this is a rather optimistic assumption about the effect of the various transit oriented development policies that are being implemented. Sound Transit does not mention that similar transit oriented policies and density incentives are being implemented by jurisdictions throughout the region. In many of these locations the conditions for development are far more conducive than along the Link alignment. And since other transportation investments are being made around the region that will do far more to increase mobility than Link, it is probable that growth and development will continue to occur much more rapidly in areas not served by the light rail line. This highlights the difference between a plan that might be construed as merely "consistent" with land use policies, and a plan that is truly effective at bringing about the desired outcome.

The New Starts submittal provides historical population and employment trends for the region. While it appears that the information provided is accurate, it fails to show the wide variation in growth from one part of the region to another. These differences are vitally important if the region's transportation investments are going to effectively respond to anticipated growth. For example, between 1970 and 2000 the City of Seattle's population increased by 22,895, or about 4.3%. During the same thirty years the population of the area east of Lake Washington including (Bellevue, Kirkland and Redmond) grew by 245,495 people, an increase of over 100%.

Thus, even though the New Starts submittal talks at great length about the State Growth Management Act and other land use policies, the Link plan is not an effective response to the region's growth trends. Link does not in any way help the fastest growing areas of the region comply with the Growth Management Act or other local land use policy measures. Link does not even comply with Sound Transit's own goal of connecting the region's urban centers. The project as now proposed will connect only two of 21 designated urban centers in the region, a low batting average for a high priced project.

Even in downtown Seattle the light rail project is likely to have mixed results. The fastest growing part of downtown is an area known as the Denny Triangle. It is served by the Convention Place Tunnel Station, shown in map on Attachment F. The City and County have worked together to establish a transfer of development rights program to facilitate development of the area and the City has zoned the area to accommodate additional growth. Unfortunately, the proposed New Start would not include the Convention Place Station in the Bus Tunnel as a light rail stop and it may decrease peak bus service. As a result, the fastest growing part of downtown Seattle would not have a light rail stop within its boundaries. This is not consistent with the intent of the Growth Management Act or the mobility needs of this growing area.

The land use impacts described here, which Sound Transit has neglected to mention in their submittal, demonstrate that the proposed New Start will not be nearly as supportive of regional

land use goals as Sound Transit asserts. Considering how little Link would accomplish in the corridor where it is planned, and what it fails to accomplish on the regional level, a land use rating of "medium" would be generous.

### Local Financial Commitment

The financial plan for the proposed New Start is far less optimistic than the plan submitted to FTA just over a year ago. However, it is still far more optimistic than circumstances warrant. Rather than the comfortable cushion Sound Transit has forecast for 2010, it is entirely possible that Sound Transit's reserves will be exhausted prior to project completion. This outcome would not require catastrophic events or continued bad management. All that it would take is for a few of the many sources of financial risk to go outside the parameters Sound Transit has assumed in the New Starts financial plan.

- Sound Transit assumes that farebox revenue for Link will cover approximately 30% of operating costs, and that across all the Sound Move service the farebox recovery ratio will be 29%. It is interesting to note that for 2000 Sound Transit reported a farebox recovery ratio of 21% (Attachment G). And, on average, the service Sound Transit has added in the intervening time is less productive than the service in place in 2000. While the farebox revenue estimates made by Sound Transit may seem conservative, evidence suggests they are still optimistic.
- The fare revenue forecast also assumes that commuter rail service will be operating to Snohomish County in 2003 and that this service will generate more fare revenue than service on the southern segment to Tacoma did in 2001. Since Sound Transit has no firm timeline for starting commuter rail service to Snohomish County, has not yet reached agreement with the BNSF Railroad for use of its tracks, and has not constructed the additional trackage needed to operate the service, this appears to be an optimistic assumption.
- Sound Transit forecasts taxable retail sales will increase at an average annual rate of 4.4% from 2000-2005. This is a slightly lower rate of increase than the historic average, but it is looking like a far more optimistic assumption than conditions warrant. Local economic forecasts have been steadily revised downward over the last six months. It is entirely possible that there will be no net increase in retail sales tax revenues in 2002. If the sales tax growth is near zero for the second half of 2001, and it remains flat in 2002, the region would need to experience explosive growth in 2003-2005 to make the 4.4% growth assumption a reality. Given the large amount of vacant office and commercial space, and the ongoing Boeing layoffs, such a rosy scenario is hard to justify.
- The New Starts submittal does not mention that a state-wide initiative has been filed that would revoke the Motor Vehicle Excise Tax that currently provides approximately \$50 million per year to Sound Transit. Several similar tax roll-back initiatives have passed in

recent years. Though the wisdom and legality of the initiative are going to be challenged, its passage would complicate the issuance of bonds and could have political implications for the agency.

- The Sane Transit volunteer coalition (disclosure: I am a member) has sent Sound Transit a letter that questions Sound Transit's legal authority to sell bonds to finance this project (Attachment H). Since the finance plan now assumes a much higher level of debt, legal action on this point has the potential to prevent the New Starts funding proposal from being carried out.

These risk factors are beyond Sound Transit's control. The pending citizen's initiative will be decided at the polls by a disgruntled electorate. Inflation and borrowing costs will be determined by financial markets. Legal issues may eventually be decided in court. As recent trends have shown, the inputs to the financial plan can easily take a turn far less favorable than anything Sound Transit contemplated as recently as a year ago. In some instances, this has already occurred.

Summing up, this is our New Starts Rating Scorecard for the Central Puget Sound Link Project:

<u>Link Initial Segment Project Justification:</u>	
Mobility Improvements	low
Environmental benefits	low
Operating Efficiencies	low
Cost Effectiveness	low
Land Use	low-medium
Other Factors	very low
<u>Link Light Rail Local Finance:</u>	
Non 5309 Share	medium
Stability and Reliability of Capital	low-medium
Stability and Reliability of Operating	medium

In conclusion, our review of the Sound Transit New Starts submittal reveals numerous, serious problems. Unrealistic and unjustified assumptions have been used to inflate the cost of the baseline alternative and an inefficient service plan appears to have been used to make the baseline perform poorly. Going beyond the questionable baseline, careful review of the data submitted by Sound Transit for other New Starts criteria fails to provide adequate justification for the proposed project.

I commend your continuing efforts to ensure that Sound Transit follows FTA rules and procedures. If the Puget Sound region is going to successfully address its growing mobility needs, we will need a New Start proposal that scores better than Sound Transit's dubious attempt to achieve an unjustified recommendation.

Please call me at 1-206-781-4475 or write me at [jniles@alum.mit.edu](mailto:jniles@alum.mit.edu) if you have any questions about the information presented here.

Yours truly,

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Attachments