



January 29, 2004

Mr. James Irish  
Link Environmental Manager  
Sound Transit  
Union Station  
401 S. Jackson Street  
Seattle, WA 98104

Re: Sound Transit North Link DSEIS – Insufficient Information and Analysis

Dear Mr. Irish:

One of the key tools to evaluate the route alternatives is "cost effectiveness". Unfortunately, the methods used to determine "cost effectiveness" in the DSEIS are likely to produce misleading results. More accurate and up-to-date cost and ridership data is critical for the Sound Transit Board to make an informed decision. In addition, the Board's choice of alignment will have significant impacts on the region's growth management and economic development efforts. The materials presented to the Board should include information about and an informed analysis of the economic development and growth management benefits of the various route alternatives.

In this letter, we discuss the need for more accurate information and additional analysis. We also discuss the need for and importance of a connection between South Lake Union and the University of Washington, a Convention Place Station, and a financing plan for a complete North Link project.

#### Cost Effectiveness

Since the publication of the DSEIS, much attention has been paid to the analysis of "cost effectiveness" of the various Segment B route alternatives. Unfortunately, the method of determining "cost effectiveness" in this analysis is likely to produce misleading results.

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To determine the "cost effectiveness" of each alternative in this DSEIS, the estimated annualized construction cost of the alignment is simply divided by the projected number of riders per year. This analysis would be an appropriate measure on which to base an alignment decision if: (1) The construction costs were perfectly accurate; (2) the assumptions underlying the ridership estimates were perfectly accurate; and (3) light rail were the only public transit alternative available.

As discussed in detail below, none of these three things are true. Therefore, reducing the analysis of the various route alternatives to this simple measure is likely to result in the selection of a route in the mistaken belief that the chosen route is the most "cost effective" alternative, when in fact it may not be.

#### (1) Construction Costs

It is clear that, in the process of developing and "refining" cost estimates for the various alternatives, little work has been done to fully comprehend and refine the exact construction costs associated with the Eastlake alignment and particularly, the West Tunnel alternative. Instead, a higher fixed percentage contingency is applied to these alignments, simply because Sound Transit knows less about the real conditions along these alignments. This does not provide an accurate basis for a cost effectiveness analysis. It may very well be that, if more engineering analysis were performed on the Eastlake and West Tunnel alternatives, some of these risks would be discounted or eliminated with great confidence.

It also defies common sense that the Montlake alignment, with its additional .2 to .4 miles of tunnel and track, is estimated to be less expensive than the West Tunnel alignment. We question whether the full costs and risks associated with this additional Montlake alignment tunneling have been taken into account.

Finally, all Montlake crossing cost estimates appear to be understated, due to the recent agreement with the University of Washington on the new location of the Montlake Station. It is assumed that these additional costs will be included in the final DSEIS analysis. Therefore, it is necessary to conduct further cost effectiveness analysis to more accurately compare the costs of the various alternatives.

#### (2) Ridership

A fundamental problem with the DSEIS ridership analysis is the fact that it is based on an incremental model. In other words, the ridership forecasts start with the assumption that the

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percentage of people riding transit will be the same for new residents and workers as it is for current residents and workers in the areas around proposed stations.

That is probably true for some alignments (Capitol Hill) but is simply not true for other alignments (Eastlake). In South Lake Union currently, 10-15% ride transit. New higher density development in South Lake Union will result in a much higher percentage of people in that area riding transit than currently exists. In fact, future mode split assumptions for a redeveloped South Lake Union neighborhood are in the range of 50 to 60 percent of people riding transit. If this assumption were applied in the DSEIS, it would produce a great many more transit riders along the Eastlake alignment than the incremental model which is used in the DSEIS. Therefore, even if the growth projections for South Lake Union were adequate (and we believe they are underestimated for reasons described in the following paragraph), the underlying assumption on which the ridership forecasts are based is faulty. Add to this the fact that the PSRC growth forecasts for the South Lake Union neighborhood are likely understated, and you have the recipe for grossly understated ridership projections for the Eastlake alignment.

The PSRC growth forecasts have been recently updated and are much more accurate than the previous forecasts for the Forecast Analysis Zone (FAZ) encompassing the South Lake Union neighborhood, where densities have already exceeded the previously forecasted year 2020 level. However, after allocating growth to the various FAZs, the PSRC is required to conform the growth projections to the overall regional forecast. In order to accomplish this, the PSRC is forced to reduce the growth projections for each FAZ. It appears that this adjustment is made pro rata across all FAZs, without regard to the unique characteristics of South Lake Union, which is growing much faster than many other neighborhoods, where development activity has stalled.

Furthermore, the pace of new higher-density development will surely increase in South Lake Union if land owners and potential tenants can plan with certainty the availability of a new high capacity transit system.

(3) New Transit Riders

The ridership forecasts used in the preliminary measure of cost effectiveness are based on nothing more than projected light rail boardings. There is no attempt to analyze whether these light rail riders would be coming out of their cars or off buses. Would they be taking other forms of transit or would they be driving cars if light rail were not in close proximity to their origin or destination? The primary purpose of a new public transportation system like Sound

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Transit should be to get people out of cars and onto transit, not simply to get people to abandon one mode of transit in favor of a different one.

The concept of "new transit riders" is nowhere to be found in this DSEIS. We understand that the FTA New Starts user benefits measure will be used to compare the user benefits of the light rail system versus buses, which get delayed by traffic, automobiles and other forms of transportation. However, it appears that this analysis will be applied only to the preferred alternative in the Final EIS. Therefore, the comparison of the various Segment B alignments will not benefit from any more in-depth analysis than what is contained in the DSEIS. This is very problematic.

Capitol Hill, Seattle's most densely populated neighborhood, is already very well-served by the Metro bus system, because rubber tire transit follows the investment patterns of the past. For the same reason, there has been little demand for bus service so far in the South Lake Union neighborhood. However, by the time the North Link is constructed, the new densities in South Lake Union will demand much greater reliance on transit. Therefore, the policy decision before the Sound Transit Board regarding the appropriate alignment of the North Link should be informed by an analysis of the cost of the system per new transit rider. If one of the Capitol Hill alignments is selected and built, resulting in tens of thousands of individuals getting off buses and onto light rail, but very few riders moving from automobiles to light rail, one would have to wonder about the cost effectiveness of that alignment.

Growth Management and Economic Development

Washington State's Growth Management Act encourages greater densities within designated Urban Growth Areas in order to minimize suburban sprawl. These intended development patterns have the beneficial impacts of reducing congestion on our highways, thereby reducing air pollution and increasing productivity. As mentioned previously, Capitol Hill is an already densely developed neighborhood which is unable to accommodate much more growth. By way of contrast, the South Lake Union neighborhood can accommodate a tremendous amount of new urban growth and therefore, take pressure off our region's suburbs and highway system.

Many jurisdictions, such as Portland, Oregon, have recognized that fixed rail transit systems drive new investment, whereas rubber tire transit follows old investment patterns. Our region has the unique opportunity, through its recent commitment to fixed rail transit, to influence development patterns in support of good growth management policy. For this purpose, the Eastlake alignment is clearly a much better alternative than any of the Capitol Hill alignments. Unfortunately, the DSEIS is not required to take into account the impact of light rail on future investment patterns.

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All of our local leaders at the State, County and City levels have come to recognize the next great opportunity for economic growth in this region is the life sciences sector of the economy. Our region has many competitive advantages, but still lags behind with respect to our transit system. Perhaps the most important connection that can be made in order to foster this industry of the future is the connection between the premiere research institution in this part of the country, the University of Washington, and the burgeoning biotech research and industry hub in South Lake Union. As Sound Transit contemplates how to connect downtown to the northern part of Seattle, it is critical to consider the need to connect these two interdependent neighborhoods. Selecting the Eastlake alignment would solve this problem. However, if Sound Transit selects one of the Capitol Hill alignments, you must also determine how to connect South Lake Union to the UW by way of light rail or streetcar (the technology you have used in Tacoma).

### The Convention Place Station

The Washington State Trade and Convention Center is one of the most important public facilities ever constructed by the State of Washington. The Convention Center generates significant tourism business, attracting "imported" dollars to our region. The Downtown Transit Tunnel serves the Convention Place Station. However, despite plans for joint use of the Transit Tunnel by light rail and buses, only the Eastlake North Link alignment will allow for a station at Convention Place. Bypassing the Convention Place Station with light rail would constitute a significant blow to our region's tourism economy.

### The North Terminus of the Light Rail System

It is imperative that any of the North Link alternatives include Segment A to Northgate. There is no appropriate terminus in the University of Washington area. Unlike other stations on the line, the stations at the termini must have adequate parking and minimal traffic congestion in order to function effectively. The UW neighborhood cannot accommodate parking for mass transit nor can it serve as a regional transit hub where regional buses meet the light rail system. It is simply too congested. As a result, the joint use of the bus tunnel and the ongoing need for virtually all regional buses to travel all the way downtown from the North and the East means that Seattle's downtown streets will be crowded with buses in a way not seen since the completion of the Downtown Transit Tunnel. You must identify sufficient funding to extend the system all the way to Northgate before you begin construction on the North Link.

### Light Rail and Streetcars

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We mentioned previously that the South Lake Union neighborhood and the University of Washington need to be connected by a permanent, fixed-rail transit system in order to encourage continuing investment in this region by the biotech industry. One way in which this could be accomplished would be to extend the proposed Westlake-to-South Lake Union streetcar all the way to the UW campus. Sound Transit has built this technology, and is already operating it successfully in Tacoma (where ridership numbers have already exceeded projections for 2013).

### Conclusion

We appreciate the hard work and long hours that have gone into producing this DSEIS. The policy decision to be made by the SoundTransit Board on the basis of this analysis is extremely important for the future of Seattle and this region. In light of the importance of this decision, we request that certain additional analysis be conducted before the Board takes action.

First, another round of cost effectiveness analysis is warranted in order to compare the Eastlake/West Tunnel alternative to the Capitol Hill/Montlake alternatives, incorporating the following additional data:

1. Inclusion of the additional Montlake Station costs required to meet the terms of the agreement between SoundTransit and the University of Washington;
2. More refined cost estimates for Eastlake and the West Tunnel, replacing the high contingencies with real cost estimates;
3. Recognition of the potentially dramatic shift in mode split for the South Lake Union neighborhood as the density of development increases; and
4. A comparison of the raw numbers of new transit riders resulting from the alignment alternative selected.

Second, the materials presented to the SoundTransit Board should include an informed analysis of the economic development and growth management benefits of the various route alternatives, including an analysis of which route alternative best serves the high-growth industries of the future.

Third, the Board should also consider how link light rail fits within the context of our multi-modal transportation system to create the most effective and seamless transit system for the future.

Fourth, before SoundTransit begins construction on any portion of the North Link, you must identify and secure funding for the entire link to the Northgate Transit Center and for an

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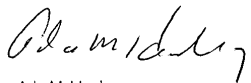
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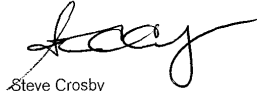
effective transit connection between the South Lake Union biotech hub and the University of Washington.

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Sincerely,



Ada M. Healey  
Vice President, Real Estate



Steve Crosby  
Vice President Corporate Communications

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**NL 149 Vulcan/Ada M. Healey, Steve Crosby**

**NL 149-1**

The 2003 Draft SEIS provides information related to economic development and growth management in Section 4.2, Land Use and Economic Activity. Chapter 6, Evaluation of Alternatives, describes the economic and growth impacts each alternative may produce and a discussion on the criteria used to evaluate alternatives.

Accurate and up-to-date ridership and cost information is provided in Chapters 3 and 5 of the SEIS, respectively, and was used to calculate cost-effectiveness. The cost-effectiveness measures used by Sound Transit are considered the most appropriate to compare alternatives at the EIS stage of the project.

**NL 149-2**

The cost-effectiveness analysis found in the 2003 Draft SEIS, Chapter 6, Evaluation of Alternatives, was provided for comparisons relative to each alternative. Cost and ridership forecasts are performance indicators. Sound Transit is not evaluating other transit alternatives. See response to common comment PP-1.

While cost effectiveness is an important consideration for evaluating North Link alternatives, it is one of many factors the Sound Transit Board will weigh in choosing a North Link route.

**NL 149-3**

As stated on page 5-3 of the 2003 Draft SEIS, at this stage of design development, cost figures support only a comparative cost evaluation of alternatives. Chapter 5 of the 2003 Draft SEIS also provides a discussion on assumptions, limitations of estimates, and contingencies.

Sound Transit has made reasonable efforts to quantify the costs and risks associated with each of the North Link alternatives at the EIS level of design development. The same cost estimating methodology was used for all alternatives in the SEIS. For the West Tunnel alternative crossing of Portage Bay, these efforts included additional geotechnical exploration conducted at the direction of the Sound Transit Board. In April 2003, Sound Transit consultants conducted nine in-water borings and eight cone penetration tests to further characterize geotechnical conditions under Portage Bay, and an independent tunneling expert was brought in to review the test results.

**NL 149-4**

Please see response to comment NL 149-3. It is not clear why the commenter believes all Montlake crossing costs are underestimated. The cost of the Modified Montlake Alternative is provided in the Final SEIS using the same cost estimating methodology as the other alternatives.

**NL 149-5**

The Sound Transit Ridership Forecasting Model (ST Model) is three-stage incremental model. This means that transit forecasts are based on transit users' observed travel patterns in a base year, which are incrementally adjusted based on external changes in demographics, highway travel time, and costs, as well as changes to the transit network itself. These adjustments are made at a transportation analysis zone (TAZ) level. A TAZ is a geographical zone, and the ST Model uses 737 TAZ's to reflect variations in demographics, etc. within the Central Puget Sound region.

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In the first stage, household and employment growth data provided by the Puget Sound Regional Council (PSRC) is used to increment transit trip tables. This stage accounts only for changes in households and employment. In the second and third stages, a mathematical mode choice model is applied to increment the transit trip table two additional times. The second stage accounts for change in mode choice due to the effects of the cost of driving -- changes in highway travel time, parking cost, and income data provided by PSRC. The third and final stage accounts for changes in mode choice to changes in transit travel time, as represented by the transit network.

Thus, the ST Model does not assume that the transit share in each TAZ for future years will be the same as in the base year. Instead, the three incremental stages of the model account for changes in demographics, highway travel time, and costs, as well as changes in the transit network itself, yielding different transit shares in future years than in the base year.

#### **NL 149-6**

Sound Transit coordinated with PSRC and the City of Seattle to use updated forecasts of population and employment to develop its transit forecasts.

#### **NL 149-7**

Your comment is noted. The potential for transit access to improve the convenience and desirability of surrounding properties has been identified in both the Central Link Final EIS and North Link 2003 Draft SEIS (see Section 4.2), with the North Link 2003 Draft SEIS noting the redevelopment programs of South Lake Union.

#### **NL 149-8**

The commenter is correct in that the ridership forecasts are based on projected light rail boardings. The ridership projections are used to evaluate the potential impacts of stations for various environmental parameters, including traffic, parking, and public services as well as to partially reflect the benefit of the project to the public in terms of the number of trips for which the light rail system is used. All light rail riders, both existing transit riders and new transit riders, will benefit from North Link. Existing riders (or more correctly, existing ridership levels) also should not be discounted, particularly in areas that are mature and are not anticipated to have high levels of growth. Those riders will also benefit from the improved service and access that light rail would provide, and would be expected to use light rail not only for similar connections to what they may take today, but for other trips that would be more difficult using the existing bus system. For example, riders from the University District could travel without transfer to the Rainier Valley or to Airport. There is not more reason to discount existing transit riders for a transit project than there would be to discount existing vehicle drivers for a new road project. Transit System User Benefit, the FTA's cost effectiveness measure, reflects this by including the transit benefits to all riders, not just new riders. The preliminary measure of cost effectiveness presented in the Draft SEIS was chosen because, like the FTA cost effectiveness measure, it responds to both project cost and project ridership.

#### **NL 149-9**

See response to comment NL 149-8 regarding new riders. The potential benefits of light rail over bus transit are analyzed Section 3.2.2 "Regional and Local Transit Impacts and Mitigation". The effects of traffic on bus service reliability is discussed in the "Reliability (On-Time Performance and Headway Adherence)" sub-section on pages 3-9 and 3-10. The travel time savings generated by the light rail project are discussed in the "Transit Travel Times" sub-section on pages 3-12 and 3-13. Both these sections contain comparisons of the transit markets served by the various Segment B alignments.

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The cost per rider, calculated as the annualized construction cost of the North Link project divided by the projected annual ridership in 2030, provided in the 2003 Draft SEIS allowed for effective comparison of route alternatives in terms of cost-effectiveness, which is one of many factors considered in selecting the Preferred Alternative.

#### **NL 149-10**

Speed and reliability improvements offered by light rail will attract new riders to all routes studied in the SEIS and existing riders will benefit from improved quality of service. Although all bus routes analyzed in Segment B would experience substantial benefits, Table 3.2-6 of the 2003 Draft SEIS indicates that the Capitol Hill and First Hill areas would experience greater bus LOS benefits than Harrison and Convention Place. As stated in Section 4.2.1 of the 2003 Draft SEIS, Sound Transit consulted over 30 comprehensive plans, state and regional land use policies, and local neighborhood plans (see Appendix P4.2) to characterize existing land uses as well as future projects, which were factored into ridership projections. Furthermore, Chapter 6 discusses comparative capital costs and shows that the Capitol Hill-Montlake route is the most cost-effective, while the Eastlake-West Tunnel is the least cost-effective.

#### **NL 149-11**

Comment acknowledged. Growth potential in the South Lake Union area is reflected in adopted land use plans and policies as well as trends in population, employment, and economic activity. These characteristics are discussed in Section 4.2 of the Central Link Final EIS and North Link 2003 Draft SEIS. See response to comment NL 149-6.

#### **NL 149-12**

Comment noted. To the extent that "future investment" in residential and commercial development is captured in forecast population and employment growth, it is reflected in the analysis.

#### **NL 149-13**

As discussed in Chapter 3 of the 2003 Draft SEIS, implementation of the North Link light rail project will increase the region's level of public transportation services and will change the structure of those services. King County Metro plans to restructure much of the bus route network to provide improved access to and from North Link and to support transit centers not served by Link. There is no requirement that the North Link project provide a direct connection between South Lake Union and the University District. South Lake Union and the University of Washington are currently connected by existing bus service. Existing bus service and the City of Seattle streetcar will also connect South Lake Union to the light rail station in downtown Seattle. The purpose and need for the North Link project is to connect the region's major regional growth centers, including the University District and Capitol Hill.

#### **NL 149-14**

While it is true that the Convention Center area would be better served by a Convention Place light rail station, Tables 3.2-11a and 3.2-11b of the SEIS also suggest that ridership at this station would be lower than all other stations under consideration. This may, in part, be due to the fact that the Westlake Station, which is being constructed as part of the Initial Segment of the Central Link Light Rail system, will be located just a few blocks west of the optional Convention Place Station. The existing bus station at Convention Place Station would likely remain regardless of the North Link route selected.

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**NL 149-15**

We concur that a north terminus at Northgate would be preferred over a University District terminus to provide more riders the benefit of using light rail. However, terminating North Link in the University District would not be expected to result in any substantial increase in traffic or parking impacts than a full-length alternative. As described on pages 3-19 and 3-20 of the 2003 Draft SEIS, ridership at the University District Stations could increase if North Link terminates in this area. Pages 3-40 and 3-41 of the 2003 Draft SEIS explain that the resulting increase in project trips to the area would only minimally affect delays in the area. Parking impacts would not be expected to increase in the area, since no parking would be provided to serve light rail patrons.

Page 3-14 of the 2003 Draft SEIS describes the potential impacts to bus service if North Link terminates in the University District. In general, bus service to the University District is not expected to increase if North Link terminates in the University District rather than at the Northgate or Roosevelt Stations. The only exception is if the Montlake Station is the northern terminus. In this case, King County Metro routes 71 and 73, which already serve the University District, may be rerouted along Pacific Street to serve the station.

Page 3-15 of the 2003 Draft SEIS also explains that terminating North Link in the University District would eliminate 22 downtown bus trips per hour per direction by the year 2015 or 2030. With joint operations in the tunnel, this would result in a net decrease of approximately 22 bus trips per direction on downtown surface streets in the year 2015 and a net increase of approximately 8 bus trips per hour per direction on surface streets in the year 2030. With a full-length alternative, fewer buses would be able to operate in the DSTT than if North Link terminates in the University District. As a result, a net increase of 2 and 6 buses per hour per direction in the years 2030 and 2015, respectively, is expected on downtown surface streets. In either case, the net increase in surface bus trips would result in negligible impacts to downtown intersection operations.

**NL 149-16**

Comment noted. In May 1996 the Sound Transit Board adopted *Sound Move*, the ten-year regional transit system plan that envisioned a starter regional system. In November 1996 voters within the *Sound Move* District authorized local taxes to implement Central Link from S. 200th Street to downtown Seattle and that part of the North Link project between downtown Seattle and the University District. *Sound Move* did not include funding for the segment of North Link from the University District to Northgate, and, therefore, this segment can be constructed only if additional funds above that identified in *Sound Move* become available. This information is provided in Chapter 5, Financial Analysis, of the North Link Supplemental Environmental Impact Statement, which also describes areas of potential resources for extending light rail from downtown Seattle to Northgate.

**NL 149-17**

Thank you for your comment. The Westlake to South Lake Union Streetcar is a City of Seattle project.

**NL 149-18**

Sound Transit believes that the information provided in the 2003 Draft SEIS was accurate and addressed the full range of alternatives and impacts. No final decision will be made by the Sound Transit Board until after the publication of the Final SEIS.

**NL 149-19**

Comment noted. See response to comments NL 149-2, 149-5, and 149-16.

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**NL 149-20**

Comment noted. See response to comments NL 149-2, 149-5, and 149-16.

**NL 149-21**

Comment noted.

**NL 149-22**

Please see response to comments NL 149-16 and NL 149-13.

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