

## Sound Transit 3 Expert Review Panel

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August 11, 2015

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Dear Madam and Sirs,

This is the first comment letter from the Sound Transit 3 (ST3) Expert Review Panel. We are honored to serve in this capacity. A panel such as ours plays an important role in providing peer review and advice to an agency planning a large regional initiative, and can provide the public with the assurance that the planning work that supports a future ballot measure has been prepared using industry best practices. We are committed to performing both of those roles to the best of our ability.

As you know, state law requires the creation of a panel of outside experts to review the key assumptions and methodologies used by Sound Transit when planning a potential ballot measure. We will be reporting to you at the conclusion of each of our meetings regarding key comments, observations and questions, consistent with our charge outlined in state statute. We will also provide a mid-point report and a final report to all of our appointing authorities, including the Governor and state legislative leaders.

Our panel has met twice. Our first meeting was in May, when we received a good orientation regarding Sound Transit's history, its range of services, its long-range plan and the system planning work it is doing to prepare for ST3. We also took a tour, visiting the Capitol Hill light rail station, and traveling the East Link alignment from Seattle, through Bellevue, to Redmond. Our most recent meeting was in mid-July, when we were briefed on the Puget Sound Regional Council's (PSRC) land use and transportation vision, various methodologies being used to plan ST3 (ridership forecasting, operation and maintenance cost estimating, capital cost estimating, and evaluation), Sound Transit's financial plan, ST3 public engagement efforts, and review of potential ST3 projects and the templates that will be used to describe projects. This letter will focus on these topic areas. We should note that at this early stage of our work, for a number of the topics we discussed, we have more questions than comments.

Our panel is comprised of ten members with an impressive and broad range of skills and knowledge. A list of panel members is attached to this letter.

The following provides a summary of the Panel's comments and questions from our July meeting.

### **PSRC Population and Employment Forecasting**

Among the most important determinants of the future viability of high-capacity transit system improvements is the future strength of the regional economy and forecasted population growth. These assumptions have a significant impact on future revenue assumptions and ridership forecasts. The Puget Sound Regional Council provides the population and employment forecasts that are used by Sound Transit.

We have raised questions about the relationship between the forecasted employment and population estimates. Today, approximately 54 percent of the population in the Sound Transit service area is working. In comparison with other large metropolitan areas around the country, this puts the greater Seattle area near the top. For the nation as a whole, the average percentage of the population working is 46.5 percent. We noted during our May meeting that the Regional Transit Long-Range Plan states that between today and 2040 population in the Sound Transit service area is expected to grow by 900,000, while employment is expected to increase by 1 million. That would mean that by 2040, 67.5 percent of the population would be working. This ratio initially seems high, and raises questions for us regarding the underlying assumptions behind the PSRC forecasts.

We discussed this topic with PSRC staff at our July Panel meeting, and again in a follow up meeting. Our discussions are ongoing and we have not drawn a conclusion that we are ready to share with you. We wanted you to be aware that we are engaged in discussions about this topic.

### **Ridership Forecasting**

The panel received a briefing on the methodology used by Sound Transit to estimate ridership for the alternatives being considered as part of ST3. We suggest that Sound Transit consider refining some of the assumptions it is using to forecast ridership. Specifically, Sound Transit's modeling assumption that long-term traffic congestion will be unchanged from today's levels seems unrealistic given that nearly 1 million additional residents are forecast in the region by 2040. Such an assumption might tend to underestimate transit ridership, particularly in corridors where extreme Single Occupancy Vehicle (SOV) congestion would compare unfavorably with travel times for High-Capacity Transit (HCT) in dedicated lanes. A second underlying assumption that should be reconsidered is the level of freeway tolling assumed in the model. The current ridership forecast assumes tolls of \$.24 per mile on ALL freeways in the region. The panel understands that this assumption is taken from the PSRC Transportation 2040 plan, but given the most recent legislative discussions of this issue, this assumption would seem to be overly aggressive.

Additionally, the model assumes that parking prices increase linearly with development density. We believe parking price tends to be a step function, meaning that parking prices are zero until development density reaches a point where space is at a premium, at which point parking is no longer provided free of charge. Parking prices can then increase substantially depending on the density of development occurring, and the local jurisdiction's requirements to supply parking with that development. (That is, if new development must supply a space for each new employee or resident, parking remains free or inexpensive, otherwise parking prices can jump substantially.) Given the rise in "shared transportation services" such as Car2Go, ZipCar, and Uber, many cities are reducing the amount of parking required for a given level of development. As density grows, this suggests that paid parking will occur at lower levels of density, and that prices for parking will increase more rapidly.

Given the ST3 focus on those parts of the region where density exists or is planned, we feel a more nuanced approach in predicting parking prices is important, especially as parking prices are a major factor in mode choice. Our initial suggestion would be two-fold: 1) to pay specific attention to the price of parking in the areas surrounding each proposed Light Rail and BRT station, adding or removing priced parking where development densities are, or become, high. In other words, Sound Transit staff should interact with staff from the cities where the stations are planned to better understand the zoning and development plans for that area, which will help them forecast likely parking prices. And 2) run additional sensitivity tests on ridership levels using different assumptions about the price and availability of parking in areas served by Sound Transit.

In addition to reconsidering some of the assumptions in the forecasting model, the panel suggests that an analysis be conducted to determine the sensitivity of the model's forecasts to changes in other key variables. For example, we would like to see the results of sensitivity testing related to the assumptions mentioned above regarding freeway tolling and freeway congestion. Such a sensitivity analysis will provide information useful in policy decisions where uncertainty might exist regarding future population and employment projections, different options for transportation system improvements, or significant changes affecting regional transportation behavior. If such an analysis has been conducted already, the panel would be interested in seeing the results of that work. We would also like to see documentation of the latest Federal Transit Administration (FTA) review of Sound Transit's forecasting process. Per FTA requirements, has there been before & after studies conducted on central link? Has Sound Transit conducted any before & after studies independently? If so, the panel would like to see the documents.

As ST3 alternatives are better defined, the panel would like to see the modeling assumptions regarding the size and location of park and ride lots and plans for feeder-bus services at stations, both key elements to insure easy access for potential riders.

Uncertainty is always an item that needs to be managed in analysis. Ridership forecast model runs that illustrate the degree of change that various assumptions make in the results are useful. For example, understanding the connection between planned and future land-use actions and

transit investment is a helpful planning tool for policy makers. A key model run that is being promoted by FTA is one that keeps all base year model inputs constant except for the introduction of the new transit system. This run provides valuable information with regard to the merits of the transit infrastructure investment under today's conditions. A strong companion to this model run is one that adds only land-use growth to the previous run. This result provides information as to the additional ridership that emerges due to population and employment growth. Comparing the ridership that is due to transit infrastructure investment vs. population and employment growth is useful in managing the uncertainty found in land-use growth rates, and in understanding the relative importance of proposed land-use changes. We suggest that these two model runs be completed. We would like to review them at one of our future meetings. These runs link to the population and employment forecasting discussion found in the previous section.

The panel believes that Sound Transit maintaining its own model for the ST3 analysis is acceptable for ridership forecasting. However, two long-range forecasting models are maintained in the Seattle region. One of these is found at PSRC with the other at Sound Transit. This situation provides the potential to create conflicting forecast numbers with regard to ridership. Does Sound Transit have clear documentation that is available to the public, other agencies and the panel that clearly states the rationale and confidence level for using a separate tool for HCT/LRT analysis? If such language exists, it would be useful to share with the panel. If not, we suggest that this documentation should be prepared.

The panel would also like to better understand capacity constraints of the light-rail system. Specifically, we would like to see estimates of the location and capacity utilization at maximum load points, including the downtown Seattle transit tunnel) in the completed ST2 system, and how that would change with different ST3 options. We would also like to see how the ST3 project alternatives would affect overall downtown Seattle street capacity for bus service.

### **Operation and Maintenance (O&M) Cost Estimating**

The panel was briefed on the proposed methodology for estimating these costs. Generally members' initial reaction to the methodology was that it is consistent with industry best practices. However, we would like to review the accuracy of past Sound Transit O&M cost forecasting. In particular, the panel would like to review the original (pre-vote) O&M forecasts for the ST2 system and the current estimates for those expenses once ST2 is completed. Similarly, we would like to see the 2014 actual O&M costs for the currently operating Link system, and previous forecasts of those costs.

### **Capital Cost Estimating**

Before the panel provides further comment on the capital cost estimating methodology, we have several requests for additional information. We would like to see a comparison between ST2

original cost estimates and current cost estimates or bids (where available). We would like to understand what has changed and why (e.g. the effects of changes in scope, unanticipated regulatory requirements, bidding climate, etc.).

The panel had considerable discussion regarding how contingencies are embedded in the capital cost estimating methodology. We have requested a presentation at the next meeting regarding the philosophy, procedures, and practice for taking projects from cost estimation through project delivery, including how contingencies are adjusted along the way. Specific examples would be useful. We would also like to see a comparison of Sound Transit contingencies with other peer agencies at this stage of planning and design.

Panel members had several specific questions about the estimating methodology. What is the estimate of soft costs as a percentage of the total project cost? What have been historical soft costs as a percentage of the total project cost? Has Sound Transit considered using an owner controlled insurance program (where Sound Transit would procure insurance on behalf of contractors) as a strategy for reducing costs?

Also see related comments below (page 7) regarding the project templates, and development of letters of understanding with local jurisdictions.

### **ST3 Finance Plan**

In July we received an overview of Sound Transit's sources and uses of revenue, projected revenue growth, and the model for developing the ST3 finance plan, including some of the key assumptions that will guide that plan. The panel is interested in better understanding the aggressiveness of Sound Transit's future grant assumptions. We would like to know the finance plan's assumptions for the amount/percentage of the region's "competitive" FTA funds that Sound Transit expects to receive and the amount/percentage of the "new starts" program at the federal level (or other federal programs) that would be expected as funding for ST3.

We also had several questions regarding sales tax revenues. We would like to understand how sales tax revenue is estimated in the finance plan model given the different sales tax rates in the different jurisdictions, and we would like an explanation of the taxable sales chart presented to the Panel.

Panel members observed that the likely cost of the potential draft priority project list far exceeds the available revenue sources. This challenge will be exacerbated by the new requirement for Sound Transit to finance certain non-transit-related costs that the Legislature included in the authorization of new, voter-approved taxing authority to finance the ST3 projects.

Members suggested that there seem to be numerous projects that could be included in ST3 where development of a cost sharing agreements with public or private entities would be appropriate, and would enable Sound Transit to stretch its available revenues further.

Future ST3 cost sharing agreements with potential partners could include: (1) Direct grants or fee waivers from local jurisdictions, agencies and private entities to Sound Transit helping to finance facilities such as stations, parking facilities or even longer and more expensive routes leading to certain locations; (2) local jurisdictions, agencies and private entities constructing these facilities for Sound Transit; (3) local jurisdictions, agencies, and private entities giving Sound Transit land on which its facilities are located; and (4) Sound Transit creating local improvement districts (LIDs) and imposing special assessments on property benefitted by its facilities. (RCW 81.112.150) Part of the costs of the Downtown Seattle bus/light rail tunnel were financed using a LID. Sound Transit has already had success with cooperative projects and locally financed extensions to its projects, such as the First Hill Streetcar and its Broadway Extension.

### **Evaluation Methodology**

The panel was briefed on the proposed evaluation methodology that the Sound Transit Board will use to make decisions about which projects to include in the ST3 ballot measure. We have several suggestions for strengthening the evaluation criteria. First, we suggest that the board consider including evaluation criteria that measure cost effectiveness, such as cost per rider and cost per new rider.

Second, we suggest that the board and staff look for opportunities to make the evaluation criteria more quantitative, with an understanding that there is also a need for a good balance between the qualitative and quantitative measures. Panel members noted that evaluation criteria that are quantitative are typically more useful in making decisions regarding competing priorities. Third, panel members suggested that Sound Transit consider weighting the criteria to express which of the criteria are more desirable than others.

### **Public Outreach and Engagement**

The Panel was briefed on the public outreach and engagement work that Sound Transit has done to solicit comments on the ST3 draft priority project list. We were impressed by the volume of responses received to the online survey. We were not briefed on the themes and messages that emerged from the public outreach, and we look forward to hearing about that at our next meeting. Panel members would like to see the results of the December 2014 poll commissioned by Sound Transit.

One of the graphics used during the public outreach process showed anticipated light rail ridership through 2025, growing from 30.3 million in 2013 to 101 million in 2025. We would like to see the documentation for the ridership forecasts, for 2015 – 2025, as it is important to verify the accuracy of the materials being used for public outreach.

## **Project Templates**

The panel reviewed the draft project template that will be used to describe each project proposed for the ST3 ballot measure. We have several suggestions for improving the template. We suggest that the template include more information regarding project partnerships. For example, what commitments will be requested or are needed? Have any commitments been made? What approvals are likely required from project partners and regulatory agencies? This information will help the board and staff better understand project risks, constraints and opportunities.

There is a section of the template that addresses risk and complexity. The panel suggests that this information should also be captured in the final section of the template regarding “Key Issues and Benefits.”

We also had considerable discussion regarding an issue that was included in the ST2 Expert Review Panel recommendations. The major concern the panel has with potential cost estimates at this stage of planning is that history tells us that significant alignment changes can occur between the cost estimates provided to the public prior to public votes, and the final alignments actually built. When this has occurred, the “as built” costs can be very different than the initial cost estimates. This is not a fault of the cost model, but of the lack of agreement on the vertical (and sometimes horizontal) alignment between Sound Transit and the jurisdictions through which that alignment travels. We understand that the details of the alignment are very hard to pin down at the time when preliminary costs are being developed. However, large changes in cost estimates can result in a loss of public confidence in the cost estimation process.

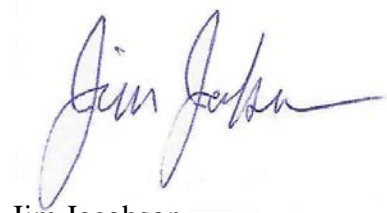
To produce a more reliable cost estimate for the public, the panel strongly encourages Sound Transit to create a more detailed term sheet or letter of understanding between Sound Transit and the jurisdictions through which the ST3 alignment will pass. In particular, we would like to see the vertical alignment of the ST3 infrastructure agreed to by both Sound Transit and the jurisdiction. That is, will the alignment be elevated, at grade, or underground as it passes through that jurisdiction? We also think that the number of stations, their general location, and their vertical profile (i.e., above ground, below ground) should be specified in those letters of agreement. We believe the letters of understanding should also specify the size of any parking structures to be built, and other access improvements to be made and who is responsible for paying for the construction of that infrastructure. To the extent Sound Transit is discussing cost sharing agreements (see comments on page 5), with local jurisdictions, businesses and agencies for specific light rail routes, extensions, alignment and scope of projects, stations and parking facilities, letters of understanding should address those funding issues as well.

The project template should have a summary of this agreement. Having a clear understanding about the nature of the infrastructure to be built by Sound Transit is key to developing a valid cost estimate. It is also key to controlling cost overruns which occur when jurisdictions request changes to the scope of the project after the public has approved the overall budget.

### **Conclusion**

The Panel's next meeting will be in the Fall. We look forward to following up on the issues and information requests described in this letter. We would be happy to answer any questions you may have about this letter and the issues or questions we've raised.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jim Jacobson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Jim Jacobson  
Chair, ST3 Expert Review Panel

Cc: Expert Review Panel Members  
Ric Ilgenfritz, Sound Transit  
Amy Scarton, WSDOT