



West Seattle and Ballard Link Extensions

Stakeholder Advisory Group Meeting #3 – April 17, 2018

Meeting Notes

Agenda Item #1 – Welcome and introductions

Diane Adams, Facilitator, welcomed the Stakeholder Advisory Group (SAG) members to the group's third meeting. She reviewed the materials added to SAG members' binders since the second meeting.

Agency directors, project leads and staff in attendance were:

- Andrea Burnett, Community Outreach Supervisor, Sound Transit
- Cathal Ridge, Central Corridor Director, Sound Transit
- Diane Adams, Facilitator
- Jim Parsons, Consultant Project Manager, HNTB
- Kate Lichtenstein, Senior Project Manager, Sound Transit
- Leda Chahim, Government & Community Relations Manager, Sound Transit
- Ron Endlich, Project Director, Sound Transit
- Stephen Mak, High Capacity Transit Development Manager, Sound Transit
- Jeanne Krikawa, Consultant, Underhill
- Sandra Fann, High Capacity Transit Development Manager
- Wesley King Central Corridor Operations Director, Sound Transit

SAG members in attendance were:

- Abigail Doerr, Transportation Choices Coalition
- Andres Arjona, Community Representative – Ballard
- Becky Asencio, Seattle Public Schools
- Brian King, Community Representative – West Seattle
- Bryce Yadon, Futurewise
- Colleen Echohawk, Chief Seattle Club
- Deb Barker, Community Representative – West Seattle
- Erin Goodman, SODO Business Improvement Area
- Ginny Gilder, Force 10 Hoops/Seattle Storm
- Greg Nickels, Former Mayor of Seattle
- Jon Scholes, Downtown Seattle Association
- Julia Park, Community Representative – Ballard
- Larry Yok, Community Representative – Chinatown-International District
- Mark Nagle, Expedia
- Mike Stewart, Ballard Alliance
- Paul Lambros, Plymouth Housing
- Peter Schrappen, Northwest Marine Trade Association
- Robert Cardona, Community Representative – Uptown
- Savitha Reddy Pathi, Wing Luke Museum of the Asian Pacific American Experience
- Scott Rusch, Fred Hutchinson Cancer Research Center



- Steve Lewis, Alliance of People with disAbilities
- Walter Reese, Nucor Steel
- Warren Aakervik, Community Representative – Freight
- Willard Brown, Delridge Neighborhood Development Association

NOTE – the following SAG members were not in attendance:

- Dave Gering, Manufacturing Industrial Council
- Hamilton Gardiner, West Seattle Chamber
- Katie Garrow, Martin Luther King Labor Council
- Maiko Winkler-Chin, Seattle Chinatown-International District Preservation & Development Authority
- Ron Severt, Space Needle

Agenda Item #2 – Previous meeting summary

Diane reviewed the meeting summary from the second SAG meeting, noting that early scoping feedback was used to inform alignment concepts that have been refined to be alternatives to be presented later in the meeting. Additionally, the SAG's feedback and comments were used to inform revisions to the purpose and need and screening criteria.

Agenda Item #3 – What we've heard – March

Andrea Burnett, Sound Transit, provided a preview of the Early Scoping Summary Report and highlighted key metrics from the March 2018 External Engagement Report. She also presented an update on the schedule for the neighborhood forums (listed below) and invited SAG members to attend the forum for their respective neighborhood and share the opportunities with their networks.

- 4/21: Chinatown-International District
- 4/23: Denny / South Lake Union / Seattle Center
- 5/2: Midtown / Westlake
- 5/5: Delridge / Avalon / Alaska Junction
- 5/9: SODO / Stadium
- 5/12: Ballard / Interbay / Smith Cove

Agenda Item #4 – Alternatives development process

Cathal Ridge, Sound Transit, oriented the group to the alternatives development process, meetings held to-date and upcoming events and briefings. During each of the three screening levels, the alternatives will be further developed, refined and screened until a preferred alternative and other alternatives to study in the EIS are identified by the Sound Transit Board in early 2019. Cathal noted that the focus of the next two SAG meetings is to come to a Level 1 recommendation. He began an overview of the alternatives evaluation framework. Cathal explained that the concepts presented during the last SAG meeting had been developed into alternatives, which are organized by segment. These alternatives will be screened at the end of each level using increasingly detailed metrics and criteria. At each level the



alternatives will be eliminated or further refined until a preferred alternative and other alternatives to study in the EIS are identified at the end of Level 3 screening.

Cathal walked through the changes to the project purpose and need statements and evaluation criteria. He highlighted and explained the below edits:

- One purpose and need statement changed to: “Connect regional ~~growth~~ centers as described in adopted regional and local land use, transportation and economic development plans and Sound Transit’s Long-Range Plan.”
 - This change was made to broaden the focus to also include manufacturing centers.
- The following bullets were added to the Level 1 criteria and measures:
 - Burden on historically underserved populations
 - Freight movement and access on land and water
 - Business and commerce effects

See the PowerPoint [presentation](#) for details about all changes and additions.

SAG members will collectively make recommendations at an April 24 meeting based on information shared at the April 17 meeting. That recommendation will be shared with the Elected Leadership Group (ELG) and Sound Transit Board.

Agenda Item #5 – Level 1 alternatives and evaluation results – presentation and small group discussions

Following the update on the alternatives analysis process and purpose and need statements, Sound Transit staff provided explanations of the Level 1 alternatives and evaluation. These presentations included a map of the alternatives, the evaluation measures for each alternative and a segment summary. For additional details about each alternative and segment, see the PowerPoint [presentation](#).

West Seattle and Duwamish

Stephen Mak, Sound Transit, presented the alternatives, evaluation measures and segment summary for the below alternatives.

- ST3 Representative Project
- Pigeon Ridge / West Seattle Tunnel
- West Seattle Bridge / Fauntleroy
- Yancy Street / West Seattle Tunnel
- Oregon Street / Alaska Junction
- West Seattle Golf Course / Alaska Junction

Questions and comments from SAG members during the breakout group discussion included the following:

Q: What is the planned future use for the West Seattle Golf Course?

A: This is a question for the City but our understanding is that potential future uses are being examined.



Q: Why is the Duwamish tunnel not a practical alternative? Is it because of the cost?

A: A tunnel under the Duwamish would have to be very deep and very long.

C: One SAG member expressed interest in learning more about the topography, existing street network, and density centers to better understand the context of the alternatives.

C: A station at 38th Avenue Southwest is set up nicely to eventually extend south under 35th Avenue Southwest.

Q: Is there an opportunity to explore any additional alternatives in addition to the ones being presented?

A: Sound Transit is not planning to add new alternatives but will be continually refining the existing alternatives.

Q: Could King County Metro circulators operate on streets surrounding the stations?

A: Circulator routes have not been evaluated at this stage, but bus-rail integration will be part of the evaluation during Levels 2 and 3.

C: Station placement in the Pigeon Point Ridge alternative would reduce neighborhood impacts and allow for better movement into SODO and across the Duwamish.

C: One SAG member voiced support for utilization of public lands for public transportation.

C: The tunnel options are the least impactful for the neighborhoods, and for people experiencing homelessness.

C: The top priorities should be limiting impacts on surface traffic and operational efficiency.

Q: What are the challenges related to a Pigeon Point?

A: There are challenges with building on the steep slopes in the area and space constraints between the slope and the West Seattle Bridge.

Q: Building through the West Seattle Golf Course option is advantageous because it minimizes impacts. If Sound Transit replaced some of the land being utilized for the station elsewhere in the City, would that influence the Federal Transit Administration's (FTA) position?

A: Sound Transit will need to go through the process with FTA to know what alternatives are feasible.

C: There would be conflicts with existing rail lines and other structures near Nucor Steel.

Q: Will there be future analysis related to walksheds and potential affordable housing opportunities?

A: Those components will be analyzed during Level 2 screening.

Q: What qualitative cost measures were used during Level 1 screening?

A: Cost assumptions for elements such as longer tunnels, right of way impacts and construction techniques were used. Level 2 screening will assign more specific dollar figures for these elements, which can be higher cost drivers.



Q: What is the rationale for eliminating stations?

A: The alternatives that contemplate eliminating a station are informed by early scoping comments. The alternatives were developed in response to comments provided during Early Scoping.

C: One SAG member noted that limiting socioeconomic impacts should be a major consideration when evaluating station locations.

Q: What are the impacts of the Oregon Street / Alaska Junction alternative?

A: This alternative places tracks in neighborhoods that are predominantly single-family homes, which would likely result in neighborhood impacts.

C: The station near Nucor Steel is not walkable. Moving the station south of Andover would result in additional access for Delridge residents and improved freight operations.

Q: What environmental considerations are the most challenging?

A: Building near critical slope areas and the in-water work in the Lower Duwamish Superfund site.

Q: Is Sound Transit required to purchase all the land above tunnels? Would it be more cost effective to tunnel in some cases because of acquisition costs?

A: Sound Transit will be required to acquire tunnel easements, which are less expensive than property acquisition. Costs will be more closely analyzed during Level 2 screening.

Q: What are the challenges of a north-south orientation of the Junction station?

A: Costs would be higher to build the additional curve. Geographic feasibility is another consideration.

C: One SAG member noted potential noise concerns and pedestrian access challenges for an elevated station in Delridge.

Q: Which alternatives are being advanced into Level 2?

A: The goal of the next SAG meeting is to identify which alternatives should be carried forward into Level 2.

Q: What does "impact on port operations" mean? How big of deal is that?

A: Harbor Island is important to port operations along with other properties along the Duwamish. We are still trying to understand the impacts of these alternatives to port operations.

Q: How do station accessibility of bus integration relate to the ST3 plan?

A: The Purple line (Pigeon Ridge/West Seattle Tunnel) and Orange line (Oregon Street/Alaska Junction) performed better than the ST3 representative project because of the station and bus layover locations. The other alternatives are similar to the ST3 representative project.

Q: Has the Port shared any long-term vision for what they plan to do on Harbor Island and in SODO? It would be good to know the long-term plan of the Port.

A: We have not gotten to that level with the Port yet. We are just starting conversations with them.

Q: Is it Nucor's plan to stay along the alignment?

A: We have met with them but have not heard they are moving.

Q: I understand the City is really tackling what's the best use of the golf course. Are they reassessing whether it's being used to its full capacity? How does that align with the project?

A: We have not heard anything definitive from the City.

C: There are impacts to Longfellow Creek because of the golf course. The City and community are starting discussions on how it will be operated in the next year. We need to see how that gets resolved. This issue has just been thrown in their face, so it won't be solved anytime soon.

Q: How is Sound Transit evaluating costs?

A: Right now, it's based on how much tunnel, elevated structure, property acquisition there is, without any actual numbers yet. For Level 2, we'll be doing some high-level cost estimating.

Q: Is there coordination so that the stations will promote business expansion and development?

A: That evaluation will be ongoing. We will be starting station charrettes over the summer and that's where we'll look at station details, including development potential. Right now, we are still looking at general locations.

Q: How do you account for changing views with an elevated structure versus a tunnel? It's an important issue for property owners.

A: That falls under protecting built and social environments. We haven't dug into noise and visual impacts yet; that will happen in Level 2.

Q: Would an elevated bridge over the Duwamish be same height as the existing bridge? If a new alignment is north of the West Seattle bridge, what should we know about air space and the Port's concerns? Are there any issues now with the West Seattle bridge?

A: The Coast Guard dictates the height restrictions of the bridge, not the Port. The Port would be more concerned with piers as opposed to a movable or fixed bridge. We are not aware of any issues with the current bridge.

Q: Is there a hierarchy of these evaluation measures?

A: No. We haven't formally weighted or prioritized the evaluation measures.

Q: Could the West Seattle Golf Course be redeveloped into housing?

A: We have not examined that question; soil conditions would need to be examined.

Q: Are the criteria and measures applied equally to the alignment and station areas?

A: Some criteria are more station-focused. However, most are applied to the entirety of the alternative.

Q: What level of analysis has been completed regarding impacts to commerce, especially for the Port of Seattle?

A: Sound Transit is engaging in conversations with the Port of Seattle to identify strategies to minimize impacts.



Q: How crucial is the north-south station orientation in West Seattle for future connections?

A: Sound Transit's long-range plan includes extending light rail south from West Seattle. A north-south station orientation would make it easier to build that future connection.

Q: For the Duwamish River crossings, is there a possibility to combine alternatives that follow the same general alignment?

A: This may be possible. The next step for the engineering team will be to refine and optimize the alternatives that advance to Level 2 screening based on input received.

C: The West Seattle Golf Course / Alaska Junction alternative seems to be the best option for the Delridge neighborhood because it provides service in the neighborhood's commercial center. Neighborhood impacts are also limited.

Q: Is there any consideration to make a connection or place a station farther north to provide connections to Alki?

A: Such an option would not be consistent with the voter-approved ST3 plan.

Q: Does the FTA rule about public parks apply to elevated alignments?

A: Yes.

C: The station in Delridge should be located closer to Genesee Street.

Q: What analysis has been done so far related to the feasibility of building over the Lower Duwamish Superfund site?

A: It has only been identified as a challenge.

Q: What are the potential sources for third party funding?

A: Potential funding sources have not yet been identified.

Q: How much engineering work has been done on the alternatives compared to the representative alignment?

A: There was preliminary planning work completed which informed ST3, but not significantly more than what has gone into the Level 1 alternatives thus far.

SODO

Ron Endlich, Sound Transit, presented the alternatives, evaluation measures and segment summary for the below alternatives. See the PowerPoint [presentation](#) for additional details about each alternative.

- ST3 Representative Project
- Massachusetts Tunnel Portal
- Surface E-3



Questions and comments from SAG members during the breakout group discussion included the following:

Q: What is the E-3 busway?

A: It is the existing dedicated busway in SODO. The assumption in ST3 was that light rail would utilize the corridor.

Q: What are the challenges in SODO with freight mobility?

A: There are currently at-grade crossings at South Massachusetts Street, South Lander Street and South Holgate Street. Under the representative alignment, these crossings would remain.

C: Minimizing construction impacts in Chinatown-International District is important. The community has faced many challenges in the past and will likely continue to face more in the future.

Q: Did Sound Transit consider a 4th Avenue alignment?

A: A 4th Avenue alignment would affect the ease of transfers in SODO. Additionally, at the Chinatown/International District there is insufficient clearance to transition from 4th to 5th over the existing tunnel.

Q: Would at-grade options be significantly less expensive than a bored tunnel?

A: Cost analysis during Level 2 screening will determine which options are cheaper.

Q: Are there any potential conflicts with the City of Seattle's Lander Street overpass?

A: The two projects are compatible.

Q: Would buses be displaced when light rail is built on the E-3 busway?

A: Sound Transit is still looking into this with Metro. Some of the buses may not need to be there once the new line opens. For example, when the Federal Way extension opens there will be fewer buses coming into downtown. ST will continue discussions with Metro in relation to the future utilization.

Q: Where is Royal Brougham on the map of alternatives?

A: It's very difficult to see, but it's under the ramps. We should consider labeling it on future maps.

C: One SAG member noted concerns about moving boats in and out of the Century Link Events Center during the Boat Show. Royal Brougham is currently used to do this.

Q: With the Surface E-3 Alternative, you would permanently close Royal Brougham. Would that close access for pedestrians as well?

A: That has yet to be determined, future station design could potentially allow for a ped crossing alternative.

C: One SAG member asked for more information about limiting impacts in Chinatown-International District.

Q: What would the areas above a cut-and-cover tunnel and station look like in Chinatown-International District?



A: The new station would be deeper than the existing station and would facilitate transfers well. The station itself will be under 5th Avenue. Sound Transit has not determined where the entrances and exits would be yet.

Q: What is the reasoning behind closing Royal Brougham Street?

A: There would be four tracks crossing the street, with very frequent trains causing the gates to close. This makes it impractical.

C: One SAG member noted that a Stadium station would be valuable, but only if impacts on the neighborhood are limited.

C: There appears to be different evaluation measures for the tunnel options in SODO compared to in West Seattle.

C: The existing station in SODO is isolated and surrounded by sidewalks in poor condition. The area is difficult to navigate. At night, the lighting is poor, and people have to walk long distances to get to their destinations.

C: The benefits of light rail in SODO are limited. The focus in SODO should be limiting neighborhood and freight impacts to the extent possible.

C: There should to be improved bus connections to the SODO station, especially for east-west routes.

C: One SAG member voiced support for grade separation in SODO.

C: Fright concerns seem to be managed for the three SODO alternatives.

C: Too many stations along the alignment will reduce the operational efficiency. If efficiency is reduced, more people will opt to drive.

Q: What are the existing ridership numbers for the Stadium station?

A: Weekdays: 2121 boardings (Q2 2017 average)

Q: What is the anticipated construction duration in Chinatown-International District?

A: We don't know the answer to this question at this time. More design work and construction planning is needed before we can suggest a likely construction duration range.

Q: Given slope constraints coming off the West Seattle Bridge, could a bored tunnel start north of South Massachusetts Street?

A: A portal at Massachusetts Street appears to be the least disruptive location for the portal and tunnel staging work. Sufficient property appears to be available at this location for the portal and extending the bored tunnel north also avoids impacts to the WSDOT ramp structures along Royal Brougham, besides avoiding cut-and-cover tunnel construction along 5th Ave.

Q: Can additional tunnel alternatives be considered for Chinatown-International District to limit impacts to businesses and the community?



A: A tunnel alternative on 4th Ave would have insufficient clearance to get over the existing tunnel. An alignment on 6th Ave would likely result in greater potential impacts.

C: Given anticipated construction impacts and duration, impacts to businesses should be limited as much as possible. Impacts would be long-lasting and must be weighed against one-time costs.

C: The alternatives in SODO lack creativity. Additional alternatives should be developed that feature a tunnel portal further south and utilize Union Station.

Q: What challenges exist for transfers in SODO? Is this transfer point required?

A: Having a transfer point in SODO was part of the voter-approved ST3 plan. Long term, it allows for transfers from West Seattle to the south (and from West Seattle to the north in the interim condition).

Q: What alternatives can be brought forward at this point in the process?

A: Alternatives must align with the specifics in the voter-approved ST3. Alternatives will be refined during the next level of screening based on input received.

C: The options presented in Chinatown-International District force a difficult choice: pay more for a [bored] tunnel or build a highly-impactful cut-and-cover tunnel.

Q: Since the South Massachusetts Street tunnel would most likely require eminent domain, is that option feasible?

A: Sound Transit's property acquisition process is designed to not eliminate potential options.

Downtown

Ron Endlich presented the alternatives, evaluation measures and segment summary for the below alternatives. See the PowerPoint [presentation](#) for additional details about each alternative.

- ST3 Representative Project
- 5th/Harrison
- 5th/Mercer
- 6th/Boren/Roy
- 8th/6th/Republican
- 5th/Roy/Consolidated South Lake Union Station

Questions and comments from SAG members during the breakout group discussion included the following:

C: One SAG member requested that the alternatives with the fewest potential construction impacts should be advanced through Level 1 screening.

Q: What are the approximate distances between the stations in SODO and West Seattle compared to Downtown and South Lake Union? Are those distances reasonable?

A: The stations in South Lake Union station for the representative alignment are less than ½ mile apart. This appears reasonable given the ridership demand in the area.



C: One SAG member requested employment and residential centers be placed on the maps for reference.

C: The station on Denny is in a good location, but the alignment to reach that station would have additional neighborhood impacts.

Q: Are the potential stations located in places where pick-ups and drop-offs are feasible?

A: Sound Transit will be examining pick-up and drop-off locations as part of the station planning process.

C: One SAG member noted that a station off of 8th Avenue is difficult to justify given the challenges of tunneling under I-5 twice.

C: Additional connections should be considered to ease transfers between the downtown stations.

C: One SAG member advocated for stations on 5th Avenue, Denny Way and near Key Arena.

C: Several SAG members voiced opposition to consolidating stations in South Lake Union.

C: Service reliability should be one of the most important considerations in evaluating the alternatives.

Q: Are sewer conflicts significant enough to eliminate any of the alternatives?

A: Not at this time. However, modifications will need to be made as the Level 2 Alternatives are refined that could result in less desirable alignments (such as deeper or lower speed curves) or potentially require additional private property acquisition.

Q: Could a bored tunnel start south of South Massachusetts Street?

A: It would be difficult to extend the portal further to the south due to the topography in the area.

C: As stations move further to the east, they become increasingly difficult to access, especially for people with disabilities.

C: A cut-and-cover tunnel in Chinatown-International District would have significant impacts. Additional alternatives should be considered in the area that have fewer community impacts.

Q: What is the feasibility of the station under what will be a newly renovated Key Arena?

A: A tunnel station directly under Key Arena would need to be studied further to determine feasibility. However, it would likely not be desirable due to construction complexity. Additionally, a station directly adjacent to the arena could potentially include entrances that are incorporated directly into the arena. Alternatively, it may be more desirable to locate the station at a distance away from the arena that facilitates staging of large crowds entering the station.

C: Sound Transit should build additional connections to the Sounder platforms at King Street Station to facilitate connections between different transportation modes.

C: Stations in South Lake Union should be located further apart, if possible.



C: One SAG member called attention to the density and walkability in the areas around a station on 8th Avenue. They advocated for not eliminating the station until additional data is collected to determine its feasibility. However, there is a general understanding of the constructability challenges.

C: A station on Denny Way should have entrances on both sides of the street.

Q: Does Sound Transit own any tunnel boring machines. Would that reduce costs?

A: The specific logistics of the bored tunnels are not known yet.

Q: What would the impacts be of tunneling under the I-5 retaining wall and under the Westlake station?

A: We don't know these details yet.

C: Downtown has so much traffic and public transportation. I'm not able to determine what makes the most sense. I need more information about how everything links together.

C: Tunneling downtown must be very expensive and should be weighed with which alternative has the greatest potential.

C: One SAG member noted concerns about the First Hill station, highlighting soil conditions and safety issues.

C: One SAG member noted that they like the First Hill option. It adds a whole new area for light rail and it helps people get downtown. They also also noted concerns and would like to see the ridership numbers and understand what it looks like in the long run.

C: One SAG member expressed in the Seattle Center station — would like to see the access/connectivity to the center itself. Want it to stay close. Would like to better understand the development in Uptown for the right placement.

C: One SAG member felt we should eliminate a station from the SLU area. Need to be looking at the future, not just the now. We are just beginning to see all the development in that neighborhood, so it's critical to look at the future.

C: The Seattle Center Station needs to be close to the Key Arena redevelopment, so people have direct access. This will help reduce single occupancy vehicles heading to the arena. The representative project probably keeps the station closest to Key Arena.

Interbay and Ballard

Kate Lichtenstein, Sound Transit, presented the alternatives, evaluation measures and segment summary for the below alternatives. See the PowerPoint [presentation](#) for additional details about each alternative.

- ST3 Representative Project
- Elliott/15th/16th/Fixed Bridge
- West of BNSF/20th/17th/Fixed Bridge



- East of BNSF/20th/17th/Tunnel
- East of BNSF/14th/Moveable Bridge
- Elliott/Armory Way/14th/Tunnel
- West of BNSF/20th/Tunnel

Questions and comments from SAG members during the breakout group discussion included the following:

Q: Is a tunnel under Salmon Bay feasible?

A: A similar tunnel was constructed under the Montlake Cut, but it is anticipated to be more complicated in the Salmon Bay area.

Q: What are soil conditions like in the Salmon Bay area?

A: Sound Transit will be analyzing the conditions in the area.

Q: Is weather a challenge for fixed bridges?

A: Weather would only cause delays in very rare conditions.

Q: What additional challenges are there related to a fixed bridge?

A: The adjacent stations may need to be higher because of the grades on the north and south sides of the bridge.

Q: What is the long-range plan for light rail in Ballard?

A: There is an additional line planned to the east which would provide access to the University of Washington.

Q: Is there a way to serve residents of both Magnolia and Queen Anne?

A: The rail yard between the neighborhoods is a challenge for serving both neighborhoods; both communities are currently connected by Dravus St.

Q: How often would a moveable bridge over Salmon Bay need to open?

A: Prior analysis during ST3 concluded that the bridge would need to open 2 to 4 times per day.

C: The voter-approved plan allocated money for a rail only bridge.

C: The City of Seattle is studying replacing the Ballard Bridge. The new bridge is expected to include facilities for bikes and pedestrians.

C: The Seattle Armory is considering relocating which would make additional land available to transit-oriented development and influence potential station locations.

C: The alternatives for stations west of 15th Avenue in Ballard are appealing because of density in the walkshed. With these station locations, underground stations would be preferred as they would limit impacts in the area.

C: Station locations on 15th Avenue would have the greatest construction impacts. These impacts should be called out in the evaluation.



C: While the bored tunnels are likely more expensive, they could generate more ridership than elevated alternatives depending on where the stations can be located.

C: The Smith Cove station should be located near the new Expedia headquarters. There will be about 5,000 employees in the building who would benefit from and use of light rail year-round.

Q: Are tunnels generally more expensive than bridges?

A: There are multiple factors that would impact the costs of each. Data collected during Level 2 screening will begin to answer these types of questions.

Q: What are the challenges of crossing waterways?

A: In addition to the technical challenges, the waterways are tied to several different agencies, jurisdictions and tribes. All of these would require Sound Transit to acquire approvals to cross the waterway.

C: Due to reduced neighborhood impacts, tunnels should be built wherever possible.

Q: Would future plans for the Magnolia Bridge impact any of these alternatives?

A: Sound Transit is coordinating with the City of Seattle regarding future access near the Magnolia Bridge.

C: I want to understand the definition of the ST3 plan. Why are we taking ideas out of each segment because they don't meet the ST3 plan? If other agencies want to contribute to a multi-modal bridge, why would you take it off the table? I'd like to know what's in and what's out of the plan.

A: Will be addressed in April 24 meeting presentation.

Q: What is the bridge height we're talking about for a fixed bridge? If the bridge doesn't open how high does it need to be?

A: What we're looking at right now is the clearance of the Aurora Bridge. That's the starting point.

C: Fishermen's Terminal is not the only maritime business in the Ballard area — Sound Transit needs to consider the other businesses and the industry as a whole.

Q: If the bridge is as tall as the Aurora Bridge over Salmon Bay, what would the descending angle to Ballard be? It seems like a very tall bridge.

A: The max grade for light rail is 5-6 percent.

Q: The representative project in Ballard currently ends in an elevated state. How do the trains reverse directions?

A: There would be tail tracks at the end of the elevated structure to allow trains to reverse direction. Angle Lake is a good example of a station that ends in an elevated station.

C: It seems like the Ballard station should be more in the central/night life area. Having the station more centrally located would be better. The 14th [Street] and 20th [Street] alternatives would be outliers.



Q: Are there any concerns about construction near the BNSF tracks, particularly near oil and coal trains? Would the light rail trains have right of way over oil/coal trains?

A: The light rail guideway would be separated from the BNSF tracks to ensure there is no potential for conflict with freight trains.

Q: What is the justification for tunneling under Salmon Bay?

A: Navigation for boats is one concern. Also, with a movable bridge there are operational constraints, so a tunnel could perform better. In addition, building piers in the water can impact tribal fishing and navigation.

Q: Would a movable bridge impact travel times? Why aren't there more open circles in the travel time column?

A: Those considerations are reflected in the reliability of service, not travel times.

C: The tunnel alternatives would help the new Seattle Maritime Academy, they are near the Trader Joe's and it would be advantageous to avoid schools in the area.

C: Stations should be built in dense residential areas, rather than industrial areas.

Q: What options exist for third party funding? Is it reasonable to carry forward alternatives that require such funding?

A: At this time, options for third party funding are not known. Ultimately, if an alternative requires additional funding for elements beyond those identified in the ST3 Plan, 3rd Party funding would need to be identified or the alternative would not be practical.

Q: Would the height of the structures change the character of existing neighborhoods? Are there renderings of what the various structures would look like, especially in Ballard?

A: Profile information will be provided.

C: Walksheds around stations should be a consideration during alternatives screening, especially for the Smith Cove station.

C: Station locations that are farther north and/or west in Interbay would not provide good connections to Queen Anne.

C: Several SAG members voiced concerns about the cruise terminal station related to luggage transport, shuttle requirements and seasonal variations in demand.

C: There is a lot of new development underway in Interbay which should be served by a station.

Q: Could the tunnel stations east of 15th Avenue be located farther west?

A: Yes. Those types of options could be explored during Level 2 screening.

C: Connections between transportation modes vary between alternatives and should be considered when determining which alternatives move forward.



C: There need to be ways to access the station from both sides of 15th Ave.

C: Sound Transit should be cognizant of building elevated lines that will be an eyesore and impact the character of the neighborhoods serviced.

C: One SAG member requested bridge options include accommodations for pedestrians and people on bikes.

Agenda Item #6 – Next steps and next meeting

Diane Adams thanked the SAG members for attending the meeting and asked that they come prepared to discuss the alternatives at the next meeting where they would be providing recommendations. In closing, Cathal Ridge asked SAG member to consider the pros and cons of the various alternatives and how they might be refined moving forward. The next SAG meeting is scheduled for April 24 at Union Station.