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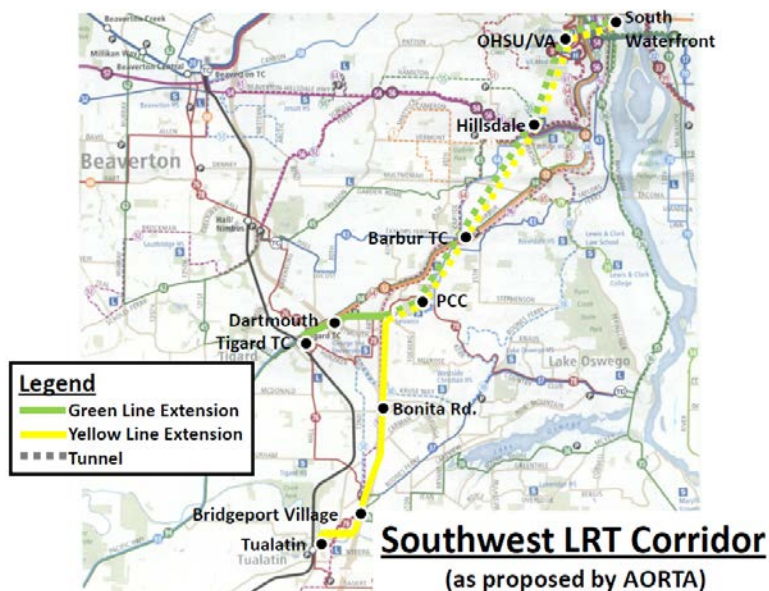
Date: Friday, July 10, 2015
To: SW Corridor Steering Committee
From: Matt Bihn and Chris Ford, Principal Planners, Metro
Subject: AORTA proposal

The Association of Oregon Rail and Transit Advocates (AORTA) submitted a letter to the Southwest Corridor Steering Committee, dated July 3, advocating for a long tunnel option. The letter asserts that their proposal has not been analyzed for ridership or costs, that it is not more costly or risky than the Marquam Hill-Hillsdale tunnel and suggests it would have higher ridership. AORTA requests you to direct staff to analyze potential ridership and running time on their proposals.

Our continued position on the AORTA proposal is that it does not meet the Southwest Corridor Plan purpose and need. In addition, while project staff analysis and steering committee decisions have not addressed AORTA's proposed alignment in its entirety, nearly all of its individual elements have been studied as parts of other proposed alignments. Therefore, **we recommend the steering committee approve the HCT alignments for further study as described in the Draft PTL Recommendation** included in your July 13, 2015 Steering Committee Meeting Packet.

Summary of AORTA proposal

The most recent AORTA light rail concept includes a long tunnel with a northern portal in South Waterfront and a southern portal in the Tigard Triangle, with a surface station in South Waterfront and underground stations at Marquam Hill, Hillsdale, Barbur Transit Center, and PCC-Sylvania. The remaining portions of the alignment are relatively similar to the SW Corridor Plan's Branch Service option, with one branch terminating at Tigard Transit Center and one branch terminating in downtown Tualatin. From the northern portal, the AORTA line would utilize Portland-Milwaukie light rail (PMLR) tracks to continue north to the downtown Transit Mall or could branch across the Tilikum Crossing. Please see the map below.



Grounds for Recommendation #1: Does not meet Purpose and Need

The Southwest Corridor project purpose and need includes the following statements that would not be supported by the AORTA proposal:

Improve potential for housing and commercial development in the corridor and encourage development in centers and transit-oriented development at stations along the corridor

The Southwest Corridor Plan began with the coordination of six separate land use planning efforts within the corridor. The Barbur Concept Plan, adopted by the Portland City Council on April 24, 2013, is a major element of this effort. The concept plan recommends key future transportation investments and changes to City policy and zoning along the six-mile Barbur Boulevard corridor, and identifies implementation of high capacity transit as necessary to fulfill its vision. The project's proposed high capacity transit alignments were shaped by the Barbur Concept Plan and the other five plans.

All of the SW Corridor alignments under consideration would travel on or directly adjacent to Barbur Boulevard and provide multiple stations along the route. In contrast, the AORTA proposal would intersect underneath Barbur at a single location, with only a single station at the existing Barbur Transit Center. As a result, the AORTA proposal would not advance the City's land use vision for this corridor and would likely preclude its implementation as envisioned.

Advance transportation projects that increase active transportation and encourage physical activity

Largely due to topography, there are extensive gaps in the sidewalk and bicycling networks in the corridor. Barbur Boulevard provides the most direct connection between the corridor and downtown Portland, but the bike route is dangerous. All of the SW Corridor alignments under consideration would greatly improve the environment for pedestrians and bicyclists traveling along the route and accessing stations. The 6-mile tunnel portion of the AORTA proposal would exclude bicycle and pedestrian improvements along the route, and would provide fewer stations for transit users to access. As a result, the AORTA proposal would not address this need across a significant section of the Southwest Corridor.

Provide transit service that is cost-effective to build and operate with limited local resources

SW Corridor Plan partners want to ensure both a cost-effective project and a project that is within the means of region's funding capacity. Project partner staff has recommended that the Marquam Hill-Hillsdale tunnel be removed from further consideration, due in part to ridership benefits not being commensurate with the much higher costs compared to surface alignments. The Marquam Hill-Hillsdale tunnel would increase project costs by 35% to 46% compared to surface options. In comparison, the AORTA tunnel would be more than twice as long, likely with proportional increases in cost. The high cost of a 6 mile long tunnel option would make it difficult for the region to fund a project extending all the way to Tualatin.

Ensure benefits and impacts promote community equity

The AORTA proposal prioritizes travel time over access and would provide fewer stations compared to SW Corridor alignments. Ridership and redevelopment benefits would be focused at those station areas and would not be shared by bicyclists and pedestrians along the 6-mile tunnel route. Staff analysis has demonstrated considerable impacts at tunnel portals and tunnel stations. Because of the longer tunnel distance, the impacts at the portals of the AORTA-proposed tunnel would occur over a much longer duration. AORTA's northern portal, very near I-5, streetcar and PMLR tracks, and South Waterfront development would be especially impactful to the South Waterfront area.

Grounds for Recommendation #2: Already evaluated by Steering Committee

Nearly all of the individual elements of the AORTA proposal have been studied as part of other proposed alignments and have either been subject to steering committee decisions or are scheduled for future decisions. Those elements are tunnels starting in South Waterfront, long tunnels to Barbur Transit Center, PCC-Sylvania tunnel and branch service.

1. Tunnels starting in South Waterfront

On June 9, 2014 Steering Committee recommended against tunnels between South Waterfront and Marquam Hill because they would:

- provide an indirect connection between the transit mall and the corridor;
- would require significant structure (briges and/or tunnels) that would be very expensive;
- cause significant construction impacts near OHSU's Collaborative Life Sciences Building and planned Schnitzer campus, streetcar, and Portland-Milwaukie LRT.

Indirect connection between Transit Mall and SW corridor

SW Corridor Plan surface LRT alternatives would utilize either Barbur Boulevard or Naito Parkway to connect the corridor to the Transit Mall. Travel times between Jackson Station, the southernmost existing mall LRT station, and a station near Gibbs Street where a new connection to Marquam Hill would be constructed, would be 2.4 minutes with a Barbur alignment and 3.7 minutes with a Naito alignment. The Naito alignment includes an additional station (and associated dwell time) at Lincoln Street. Either alignment would include walk access to South Waterfront via the existing Hooley pedestrian bridge.

The Marquam Hill-Hillsdale tunnel would take 2.7 minutes between Jackson Station and a Marquam Hill station. Access to South Waterfront would be via the tram.

The AORTA alignment would use the PMLR tracks between the Jackson Station and a tunnel portal in South Waterfront, with two stations, Lincoln and South Waterfront, between Jackson and the Marquam Hill Station. It would take about 4.5 minutes to travel between the Jackson Station and the tunnel portal, based on PMLR travel times, and can be assumed to take at least an additional minute based travel time calculations for SW Corridor tunnel routes.

LRT Travel time, Jackson to Gibbs or OHSU (mins)

Barbur Surface	2.4
Naito Surface	3.7
Marquam Hill-Hillsdale Tunnel	2.7
AORTA Tunnel	5.5

The AORTA alignment would provide direct access to Marquam Hill and to South Waterfront, but as a result would take longer between the Marquam Hill/Gibbs area and downtown compared to surface options that would both provide indirect access to both Marquam Hill (via the new connector) and South Waterfront (via the existing pedestrian bridge). These slower times would affect all riders on the LRT not using Marquam Hill or South Waterfront stations, but who are instead passing through—this group would constitute the majority of riders.

Requires significant structure (bridges and/or tunnels) that would be very expensive

A portal from South Waterfront as proposed by AORTA would require a longer tunnel to reach a Marquam Hill station compared to SW Corridor tunnel options. This would increase the costs of the project and would limit future I-5 lane expansion or modification.

Significant construction impacts near OHSU's Collaborative Life Sciences Building and planned Schnitzer campus, streetcar, and Portland-Milwaukie LRT

The portal location proposed by AORTA (see image below) would present immense challenges due to its small footprint and location between I-5 to the west and Moody Avenue, streetcar tracks, and a cycle track to the east, and due to its proximity to PMLR tracks and the OHSU Collaborative Life Sciences building, which houses a research facility, a dental school, and classrooms. The proposed staging area is across Moody Avenue and the streetcar and cycle tracks from the portal, and AORTA has proposed a conveyor belt to carry mined materials over those facilities to a staging area where trucks or to barges in the river could remove them. It would be difficult for boring machinery to cross the streetcar tracks, which are built on lightweight fill and would be at risk for settlement that would render streetcar inoperable. The proposed staging area is owned by the Zidell family, which recently entered into a development agreement with the City of Portland to develop the land into office, residential, and commercial space. A recent Portland Tribune article details the agreement and plans: [City agrees to Zidell deal on South Waterfront](#)



2. Long Tunnel to Barbur Transit Center

Also on June 9, 2014, the Steering Committee recommended against the Long Tunnel alignment option under consideration (serving Marquam Hill, Hillsdale, Multnomah Village, with a portal near Barbur Transit Center) because it would

- result in severe construction impacts;
- not support the Barbur Concept Plan as HCT would bypass the historic section of the Boulevard;
- be very expensive.

Severe construction impacts

Analysis of the Marquam Hill-Hillsdale tunnel has revealed the complexity of both tunnel mining and station construction. Approximately three acres would be required for station construction, and work could potentially require years of drilling and blasting to connect station areas to the tunnel. This is especially problematic for a Marquam Hill Station, where space is constrained and noise and vibration would affect surgery scheduling, overnight patients, and sensitive equipment. The AORTA tunnel would have the same stations as the Long Tunnel (excluding a Multnomah Village station, which was removed from consideration in 2014), but would be even longer and would have greater impacts at the north portal as it would require a longer time frame for excavation.

Would not support the Barbur Concept Plan

As detailed earlier, the AORTA proposed tunnel would not support the Barbur Concept Plan. The Long Tunnel would have completely avoided the key portion of Barbur Boulevard as identified in the plan, as would the AORTA-proposed tunnel. This was a basis for the steering committee's recommendation against further study of this alignment option.

Very expensive

As detailed earlier, the tunnel included in AORTA's proposed alignment would be twice as long as the Marquam Hill-Hillsdale tunnel, and longer than the Long Tunnel option removed by the Steering Committee in 2014. While costs have not been estimated for the AORTA proposal, they would far exceed the other options studied.

3. PCC-Sylvania Tunnel

The AORTA-proposed tunnel would continue between the Barbur Transit Center and the Tigard Triangle, with an underground station at PCC-Sylvania. A PCC tunnel for light rail is still under consideration as part of the SW Corridor Plan, with a decision scheduled for October 2015.

4. Branch Service

The AORTA proposal envisions the alignment surfacing in the Tigard Triangle and splitting into two branches: one serving Tigard and one serving Tualatin. Similar branch service is under consideration as part of the SW Corridor Plan, with a decision scheduled for December 2015.