



Light rail or bus rapid transit? Answers to frequently asked questions

One of the major decisions for the Southwest Corridor plan is whether light rail (LRT) or bus rapid transit (BRT) is the preferred mode for high capacity transit (HCT) in the area. On December 30, 2015 project staff released a comprehensive HCT Mode Comparison memo (available on the project website) that presents detailed information on a wide range of considerations and relationships between key factors. This spring the steering committee is scheduled to make a recommendation about which mode will continue into the project's Draft Environmental Impact Statement. Throughout the last several months, project staff have discussed this decision with many individuals and groups to better understand what information the public wants to know about the performance and trade offs of each mode. This document presents answers to some of the most frequently asked questions during our public outreach and provides a high-level comparison of the two modes. You can read the complete list of frequently asked questions and answers regarding mode at www.swcorridorplan.org.

Comparing the two modes

Will one mode be more reliable than the other? Light rail is projected to be more reliable due to 100% exclusive transitway and more consistent signal priority. In mixed-traffic segments, BRT buses may be slowed by traffic. However, light rail is more likely than bus rapid transit to be disrupted by hot weather, power outages and other extreme circumstances.

Would one mode be constructed earlier than the other? Would one be able to be put in service earlier?

It is difficult to say at this time. While BRT may have less significant capital construction in some segments of the alignment, other segments will require as extensive construction as LRT. BRT is also a new mode for the region which could require more time to refine operations.

Does one mode come with more bike and pedestrian improvements than the other? Both modes would include road, bike and pedestrian improvements along the length of the alignment as well as improved access to stations. Because a funding strategy for either mode has not yet been developed, it is too early to tell what implications the difference in project capital cost between BRT and LRT would have on the capacity to fund other bike and pedestrian projects in the corridor.

Are there route differences between the modes? There are few differences in route between the modes. One exception is how the project could serve the PCC Sylvania campus. A bus rapid transit route could run on Capitol Highway and provide a station on campus. Due to steep grades southwest of the campus, light rail is not a viable surface option on Capitol Hwy. An underground tunnel is required to provide a light rail station on campus and also make connections in the Tigard Triangle.



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What are the overall costs for each? Based on conceptual designs, construction costs for bus rapid transit are estimated at \$1 billion in 2014 dollars; estimated construction costs for light rail are \$1.8 billion-\$2.1 billion. Daily operational costs per rider are less expensive for light rail because the vehicles hold more passengers.

Where will the money come from? Funding for either mode will come from a combination of federal and local sources. The project is eligible for up to 50% of project construction costs paid for by the federal government, but projects must apply for funding through a competitive process. The local funding could come from contributions by state and local jurisdictions and a regional bond measure.

Would both light rail and bus rapid transit stations be equally attractive for building shops, housing and offices? Research has shown that the development of light rail stations can increase property values and catalyze local development. Since there are few BRT lines in the United States with a design similar to that of the proposed Southwest Corridor BRT, there is a lack of viable data to establish the impact that BRT may have on property values and development. However, the BRT envisioned for the Southwest Corridor would include many of the design elements of light rail and streetcar projects that are known to encourage private investment and is likely to induce some level of development. There is insufficient data to quantify if the level of investment would be equal to that of LRT.

Traffic impacts

Where would transit get preferential treatment at signals? LRT and BRT would receive signal priority over auto traffic at most intersections when traffic

conditions allow. At busy intersections or freeway off ramps it is more challenging for high capacity transit to receive signal priority, especially during peak rush hours. During rush hour in 2035, LRT is expected to be delayed 1-2 minutes and BRT to be delayed 6 minutes from estimated travel times due to high traffic volumes at busy intersections.

Can local buses use the same exclusive right of way as the bus rapid transit or light rail vehicles? Generally no, local buses cannot use right of way that is designated for light rail or bus rapid transit because of operational, safety and travel time considerations. There can be some exceptions to this when a shared transit way is developed. A shared transit way provides a paved section that allows local buses to use the dedicated high capacity transit lane. There are additional construction requirements and property impacts to develop a shared transit way. Three segments of the alignment are being considered for shared transit ways: near the I-5 crossing between PCC Sylvania and Tigard Triangle areas, in “the woods” section of Barbur north of Capitol Highway, and between Barbur Transit Center and “the woods”. Since fewer LRT vehicles are necessary to serve the forecasted ridership demand, it is more likely that some local buses could share the right of way with LRT vehicles than with BRT vehicles.

Would the transit-only lanes be added as new lanes to roads, or would existing lanes be converted to transit only? Will either of these options reduce Barbur Blvd. down to one lane? In most cases, transit only lanes are created by widening the roadway with a new lane, or using the center turn lane or under-utilized parking lanes. There are a few locations in the current design where the traffic volumes are low

(FAQ continued on page 4.)



Light rail and bus rapid transit side by side



11 to 12 mile alignment serving 14 to 15 stations between downtown Portland and Bridgeport Village	11 to 12 mile alignment serving 14 to 15 stations between downtown Portland and Bridgeport Village
Would connect with either the Green or Yellow MAX Line in downtown Portland to provide a one-seat ride across the Willamette River	Would terminate near Union Station at the north end of the downtown Transit Mall because there are no existing BRT lines to connect to from the north
Would run entirely in exclusive transitway, which would provide faster and more reliable travel times than existing bus service	Would operate mostly in exclusive transitway like light rail, but also mixed with traffic in regular auto lanes for about 15 to 20% of the line
Electric two-car trains that would each hold around 266 passengers	60-foot articulated buses that would each hold around 86 passengers (fuel/propulsion type not yet determined)
30 to 32 minute in-vehicle travel time from Portland State University to Bridgeport Village	34 to 42 minute in-vehicle travel time from Portland State University to Bridgeport Village
A light rail station on the PCC Sylvania campus would require an underground tunnel and underground station (an additional expense)	Could provide direct service to PCC Sylvania at the same cost as a BRT alignment on Barbur Boulevard, but would add travel time
Could cost around twice as much to build as bus rapid transit	Could cost around half as much to build as light rail
Total operating costs would be similar between light rail and bus rapid transit, but light rail would be cheaper to operate on a per rider basis because of higher ridership projections	Total operating costs would be similar between bus rapid transit and light rail, but bus rapid transit would be more expensive to operate on a per rider basis because of lower ridership projections
Cannot navigate around obstacles on the tracks	Would be able to navigate around obstacles on the busway
New and expanded park-and-ride lots	New and expanded park-and-ride lots
Advanced fare collection	Advanced fare collection

(continued from page 2.)

and there appears to be excess capacity for autos. In these areas additional study will be needed to determine if converting existing lanes to transit only can be accomplished without impacting traffic. In some cases, choosing to convert an existing lane to transit only, or running BRT in mixed traffic, can avoid property impacts associated with widening a roadway.

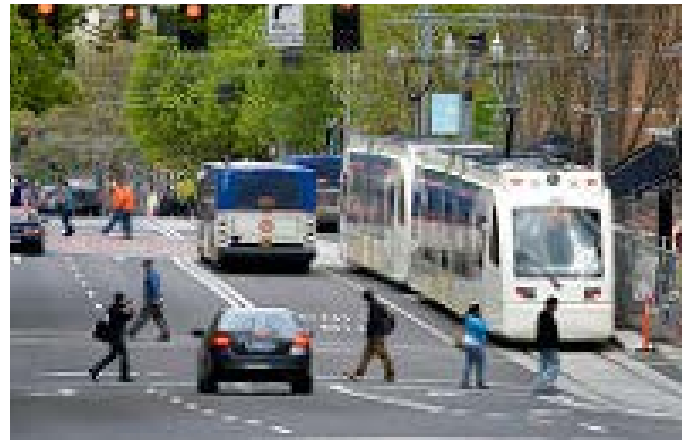
Current designs assume that two travel lanes in each direction would be maintained on Barbur Blvd. from its confluence with Naito Parkway to the Barbur Transit Center. Current designs only consider converting auto lanes to transit use where preliminary traffic analysis indicates it might be possible without negatively impacting traffic flow. We will evaluate this in more detail during the Draft Environmental Impact Statement in 2017.

BRT specific

Why is BRT not in 100% dedicated right of way?

Where would the 20% mixed-traffic segments for BRT be located? BRT will not run in 100% dedicated right of way because there are areas along the alignment where there is relatively less congestion and running BRT in mixed traffic does not significantly impact travel times. This approach can reduce impacts or costs of building an exclusive busway. BRT as currently envisioned would run in mixed traffic along portions of Lincoln Street in SW Portland, along Barbur Blvd from Capitol Highway (east of Hillsdale) to Terwilliger Blvd, and through the Tigard Triangle. There are other possible mixed-traffic segments under consideration on Capitol Highway/SW 49th Ave and on Barbur Blvd. south of Crossroads (Barbur Transit Center).

You can access a comprehensive Mode Technical Memo via the project's online library at www.swcorridorplan.org. The full mode memo details information on a range of factors including land use, mobility, travel time, reliability, access to key places, future demand, transit signal treatment, public opinion, equity, cost-effectiveness and financing.



Is BRT different from traditional “express buses” or “express routes”? Yes, express buses typically only stop at transit centers and other major destinations. They sometimes run on the freeway and most only run during the weekday rush hours. The goal of BRT is to provide faster and more reliable travel times like express buses, but with service all day and on weekends and more frequent stations every ½ to ¾ mile to serve the community centers.

Impact to existing local bus service

Will existing local bus lines in the area be changed?

The addition of high capacity transit in the area could free up resources for operating hours for new bus lines and service improvements in the under-served areas of the corridor. With either BRT or LRT some existing bus lines may be re-routed to optimize service and provide increased access to the high capacity transit line for areas that are currently not well served. The process to determine the details of any changes to local bus routes will begin about two years before the project opens for service and will include extensive public outreach.

How would either mode connect to existing TriMet lines? More than a dozen existing local bus lines would connect to the high capacity transit line, including several lines at the Barbur and Tigard transit centers. LRT would interline with either the existing Yellow or Green MAX line, which means that riders would not have to change MAX trains to cross the Willamette River. Because no BRT lines will connect to downtown Portland from the north, a BRT alignment would terminate at the north end of the Transit Mall near Union Station.

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