



## Metro | Agenda

Meeting: SW Corridor Plan Steering Committee & Public Forum  
Date: April 6, 2016  
Time: 6:00 to 8:00 p.m.  
Place: SW Community Center, 6820 SW 45th Ave, Portland, OR 97219  
Purpose: Discussion of PCC connection options. Presentation of staff recommendation. Public discussion between steering committee, PTL and attendees.

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6:00 p.m. Welcome and introductions Co-chair Stacey

### **ACTION ITEM**

6:10 p.m. Consideration of the Steering Committee meeting summary from January 11, 2016 **ACTION REQUESTED** Co-chair Stacey

### **DISCUSSION ITEMS**

6:15 p.m. Staff recommendations on mode and PCC tunnel Chris Ford and Matt Bihn, Metro  
*Overview of project staff's recommendations on preferred mode and continued study of a light rail tunnel to PCC Sylvania. Summary of comparative performance and characteristics of options for connecting HCT to PCC Sylvania campus.*  
***Discussion: Does this provide you with the information to make your decision? What would you like to know from the public?***

### **PUBLIC COMMENT**

6:45 p.m. Public Comment Co-Chair Dirksen  
*Opportunity for citizens to provide short testimony and/or submit written comments to inform the Steering Committee decisions.*

7:00 p.m. Adjourn Steering Committee meeting.

### **PUBLIC FORUM**

7:00 p.m. Opening overview Chris Ford and Noelle Dobson, Metro  
*Brief overview of current status and future timelines for the project.*

7:20 p.m. Open house format Chris Ford and Noelle Dobson, Metro  
*Committee members and project staff will join facilitated group conversations with attendees regarding the Southwest Corridor Plan and staff recommendations.*

8:00 p.m. End of public forum



**Southwest Corridor Plan Steering Committee**  
**Monday, January 11, 2016**  
**9:00a.m. to 11:00a.m.**  
**Beaverton City,**  
**Council Room**

Committee Members Present

Craig Dirksen, Co-chair  
John Cook  
Denny Doyle  
Steve Novick  
Krisanna Clark  
Al Reu  
Rian Windsheimer  
Bernie bottomly  
Lou Ogden  
Gery Schirado  
Denny Doyle  
Andy Duyck

Metro Council  
City of Tigard  
City of Beaverton  
City of Portland  
City of Sherwood  
City of King City  
ODOT  
TriMet  
City of Tualatin  
City of Durham  
City of Beaverton  
Washington County

Metro Staff

Malu Wilkinson, Elissa Gertler, Brian Harper, Chris Ford, Matt Bihn, Yuliya Kharitonova, Michaela Skiles, Noah Siegel

## **1.0 Welcome and introductions**

Co-chair Craig Dirksen called the meeting to order at 9:09 am and welcomed the committee members and guests to the meeting. Co-chair Dirksen reminded the committee that in today's meeting they would be taking action based on the draft staff recommendations. Staff recommendations included:

- **Downtown Tigard**  
Remove Commercial Loop and Downtown Loop alignment options and look for ways to improve remaining options
- **Central Barbur**  
Remove the adjacent to I-5 segment north of SW 13<sup>th</sup> Avenue in Portland
- **Terminus**  
Remove the downtown Tualatin terminus option, emphasizing strong local bus connections to the High Capacity Transit (HCT) line.

Committee members and guests proceeded to introduce themselves.

## **2.0 Consideration of the Steering Committee meeting summary from October 12, 2015.**

Co-chair Dirksen asked the committee for approval of the meeting summary from October 12, 2015. Hearing no objections, the meeting summary was accepted unanimously.

## **3.0 Public Comment**

Ms. Lisa Avery, Portland Community College (PCC) - Sylvania Campus President, requested that committee members continue consideration of connection to PCC. She noted that the number of students at the campus is expected to grow, and that the college plans to expand its worker retraining programs. Ms. Avery stated that many students are enrolled at both PCC and Portland State University campuses, and that there are concerns about the connection between campuses. She added that this is a social justice issue, due to many low income students heavily dependent on transit to connect to educational and employment opportunities.

Mr. Jim Howell, a member of the Association of Oregon Rail and Transit Advocates (AORTA), proposed to look at a new option - upgrading the existing WES connection between Beaverton and Tualatin to light rail. He stated that this option would significantly reduce traffic congestion and have fewer environmental and construction impacts. He suggested the SW Corridor project be paused until such a date that enough funding is available for the optimal transit option.

Mr. R. A. Fontes, a Lake Oswego resident, expressed concern that extra fixed cost coming from any Light Rail extension would make it difficult for TriMet to survive society's transition to autonomous vehicles. He also noted concerns that bus services are not explored enough in mode analysis, and that safety should be emphasized more.

Ms. Becky Olson, PCC Communications Content Manager, urged the committee to find a more direct, reliable, and safe High Capacity Transit (HCT) connection to PCC. Ms. Olson strongly emphasized the need for PCC employees and students to have a better way of commuting to PCC-Sylvania campus.

Ms. Ja'qlyn Slaughter, PCC-Sylvania Legislative Director of the student government, stressed the importance of direct connection to PCC, especially for financially struggling students. She noted that many low income students depend on public transit and need that access to educational opportunities to improve their financial situation.

Mr. Tony Vezina, PCC-Cascade Student Body President, advocated on behalf of students the need to have a faster, more direct transit option to connect to PCC-Sylvania campus. He noted that it would greatly benefit students who struggle financially, those who are single parents, and also students with disabilities.

Mr. Gerritt Rosenthal, a Tualatin resident, expressed support for the light rail option. He inquired about information on how Bus Rapid Transit (BRT) would impact other transportation modes compared to light rail, and also would like to see direct analysis on long term energy costs and long term greenhouse gas emissions.

#### **4.0 Upcoming materials and calendar overview**

Co-chair Dirksen introduced Mr. Chris Ford, Metro staff, to give an overview of upcoming reports, meetings, and decisions, including recent adjustments.

Mr. Ford pointed out that the next two Southwest Corridor Steering Committee meetings would be on February 29, 2016 at Metro Regional Center, and May 9, 2016 at a location to be determined later on. He also informed the committee on upcoming materials and reports.

#### **5.0 Engagement update**

Co-chair Dirksen presented Mr. Chris Ford, Metro staff, to give an update on public engagement.

Mr. Ford gave a brief summary of the engagement activities and its key findings which included:

- Overall support for HCT in general; slight preference for light rail
- Reliable, fast travel times are important
- Concern about removing auto lanes for transit capacity
- Support for protecting neighborhoods; concern about potential property impacts
- Support for new bike/pedestrian/car crossings over OR-217
- Support for strategies that relieve congestion by providing viable alternatives to driving
- High priority to support transit and pedestrian access for seniors and low-income communities
- Support for direct service between Tigard and Tualatin
- Questions about how HCT will interact with WES
- Questions about how a project can connect to and support important destinations not on the HCT alignment, including Sherwood, Beaverton, Wilsonville, Kruse Way, King City

Comissioner Steve Novick expressed concern that decisions should be based on what the broader public would think, and therefore a cost comparison needs to be provided when asking for public input.

#### **6.0 Project staff recommendations regarding alignment and terminus options, and technical modification**

Co-chair Dirksen introduced Mr. Matt Bihn, Metro staff, and Dave Unsworth, TriMet, to give an overview of project staff's recommendations on alignment options in downtown Tigard, terminus options, and proposed HCT alignment modification.

Mr. Matt Bihn started his presentation by outlining which options staff recommended for removal from further consideration and which options staff recommended for continued study.

Mayor John Cook agreed with the recommendation to remove the Commercial Loop and Downtown Loop alignment options, as well the need for further refinement of the remaining three alignments, but stressed the importance of ensuring that Downtown Tigard is not excluded from any refined options.

The committee members deliberated and commented on the proposed staff recommendations. Inquiries were made to explore impacts on walking, biking, and business development. In addition, the committee members requested cost-benefit analysis of the remaining options, in order to decide which options to support.

## **7.0 Consideration of which terminus and alignment options to study further and proposed HCT alignment modifications**

**MOTION:** Co-chair Dirksen moved, seconded by Mayor John Cook, to adopt proposals from the following staff recommendations:

- **Downtown Tigard**  
Remove Commercial Loop and Downtown Loop alignment options and look for ways to improve remaining options
- **Central Barbur**  
Remove the adjacent to I-5 segment north of SW 13<sup>th</sup> Avenue in Portland
- **Terminus**  
Remove the downtown Tualatin terminus option, emphasizing strong local bus connections to the High Capacity Transit (HCT) line.

**ACTION:** Without further comments, the motion for all three proposals was approved unanimously.

## **8.0 Mode evaluation**

Co-chair Dirksen introduced Mr. Matt Bihn, Metro staff, to give an overview of mode evaluation.

Mr. Bihn started his presentation comparing Bus Rapid Transit (BRT) and light rail mode options by looking at the following aspects:

- Travel time
- Average weekday ridership
- Capacity for long-term ridership growth
- Capital cost
- Operating and maintenance costs
- Public opinion

The committee members deliberated and commented on the impact of shifted ridership and public preference on mode options.

## **9.0 PCC connection options update**

Co-chair Dirksen introduced Dave Unsworth, TriMet, to give a summary of alternative connection options to PCC and findings on feasibility.

Mr. Unsworth presented the alternative connections to PCC, which included:

- Use shared transit way concept from Barbur Transit Center to Portland
  - New bus line would provide service from PCC to Portland and could stop at all Light Rail Transit (LRT) stations
- Use shared transit way from Hwy 10 to Portland
  - Line 44 could be improved (streamlined stops and traffic signal priority) between PCC, Multnomah and Hillsdale, and would enter shared transit way at Hwy 10

Commissioner Steve Novick inquired if improvement of bus line 44 would trigger other bus lines being taken out of service and raised concern over any potential decrease of bus service, while having population increase. In addition, he expressed concern about having too many alternative connection options and not enough time to evaluate them properly to make decisions about which options to keep and which options to remove.

Mr. Unsworth responded that bus and light rail services, if needed, would be decreased strategically, so that viable services are still provided. He acknowledged Commissioner Novick’s concern about lack of time for options evaluation, and commented that as the alternatives and ridership information is being refined, there would be additional discussions with PCC, partners, and neighborhoods.

**10.0 Adjourn**

There being no further business, Co-chair Dirksen adjourned the meeting at 10:54 am.

Attachments to the Record:

Item	Type	Document Date	Description	Document Number
1	Agenda	01/11/16	Meeting agenda	011116SWCSC-01
2	Summary	10/12/15	10/12/15 meeting summary	011116SWCSC-02
3	Document	01/04/16	Upcoming Southwest Corridor Plan	011116SWCSC-03
4	Report	November 2015	Staff Recommendations for December 2015 Decisions	011116SWCSC-04
5	Document	11/17/15	Wilsonville Letter to Metro Councilors	011116SWCSC-05
6	Document	12/02/15	David Edelman Letter to Metro Councilor	011116SWCSC-06
7	Report	January 2016	Southwest Corridor HCT Mode Comparison	011116SWCSC-07
8	Report	January 2016	Mode FAQ	011116SWCSC-08
9	Memo	12/31/15	PCC Sylvania Enhanced Connection Options	011116SWCSC-09

## Southwest Corridor Plan

# Staff Recommendations for May 2016 Decisions Transit Mode and PCC Sylvania Tunnel

April 4, 2016

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## Overview

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The Southwest Corridor Plan is a package of transit, roadway, bicycle and pedestrian projects that can help reduce congestion, increase transportation options, improve safety and enhance quality of life in Southwest Portland and southeastern Washington County. The Plan defines investments to help realize the local land use visions adopted by each community in this area. These visions include the City of Portland's *Barbur Concept Plan*, the *Tigard High Capacity Transit Land Use Plan*, *Linking Tualatin* and the *Sherwood Town Center Plan*. A major component of the planning process has been the analysis and evaluation of both bus rapid transit (BRT) and light rail transit (LRT) performance on potential alignments to link Central Portland, Southwest Portland, Tigard and Tualatin.

The Plan is being developed by a group of partners, including jurisdictions in the project area and agencies involved in funding, constructing and operating the selected transportation investments. A steering committee consisting of elected leaders and appointees from these partners is leading the planning process. Past decisions of the Southwest Corridor Steering Committee include:

- 2013, adopting a Shared Investment Strategy that prioritizes key investments in transit, roadways, active transportation, parks, trails and natural areas to support the local land use visions.
- 2014, narrowing the high capacity transit design options under consideration and directing staff to develop a Preferred Package of transportation investments to support community land use goals.
- July 2015, removing high capacity transit (HCT) tunnels to Marquam Hill and Hillsdale from further consideration and adopting several technical modifications to transit alignments.
- January 2016, removing two HCT alignment options in downtown Tigard, a terminus in downtown Tualatin and the adjacent to I-5 alignment north of SW 13<sup>th</sup> Avenue from further consideration, and making Bridgeport Village the preferred HCT terminus.

### Project goals

The Southwest Corridor Plan Purpose and Need statement, adopted January 2014, includes thirteen project goals:

1. Serve the existing and projected transit demand in the corridor
2. Improve transit service reliability in the corridor
3. Improve transit frequency and travel times
4. Provide options that reduce overall transportation costs
5. Improve multimodal access to a range of housing types and businesses in growing communities
6. Improve potential for housing and commercial development in the corridor and encourage development in centers and transit-oriented development at stations along the corridor
7. Ensure benefits and impacts promote community equity
8. Increase multimodal transportation options and improve mobility in the corridor
9. Complete multimodal transportation networks in the corridor
10. Advance transportation projects that increase active transportation and encourage physical activity
11. Provide transit service that is cost effective to build and operate with limited local resources
12. Advance transportation projects that are sensitive to the environment, improve water and air quality and help reduce carbon emissions
13. Catalyze improvements to natural resources, habitat and parks in the corridor



## May 2016 Decisions

The decisions on mode and the PCC tunnel will complete the 18-month workplan established by the steering committee in December 2014. The workplan calls for the development of a Preferred Package of transportation investments to support community land use goals, including a preferred transit mode and terminus. The Preferred Package outlines what proposed actions will be studied in the Draft Environmental Impact Statement (DEIS) under the National Environmental Policy Act.

On May 9, 2016, the Southwest Corridor Plan Steering Committee will consider two major, inter-related questions: What is the preferred high capacity transit mode, BRT or light rail, for the Southwest Corridor? If light rail is the preferred mode, should a light rail tunnel directly serving the PCC Sylvania campus be advanced into the DEIS?

## Summary of Staff Recommendations

Based on direction from the committee, technical analysis, and consideration of input from community and business groups and the general public, staff proposes the following recommendations for steering committee consideration:

- Light rail is the preferred high capacity transit mode for the Southwest Corridor
- Remove the light rail tunnel alignment to PCC Sylvania from further consideration
- Continue to explore and refine alternative options for improved transit connections to the Sylvania campus

### The main reasons to select light rail are:

#### *Greater long-term carrying capacity*

- Growth in ridership demand beyond 2035 could be accommodated with light rail, but not with BRT.
- The lack of long-term peak hour capacity for BRT implies it could not be extended to other destinations in the future. The high volume of BRT buses during peak service (20 per hour) would also impact vehicular traffic on roadways throughout the corridor.

#### *Better transit performance*

- Light rail would provide faster and more reliable transit service than bus rapid transit.
- Light rail would attract more riders to the HCT line and more new riders to the overall transit system than bus rapid transit.
- Light rail would be more cost-effective to operate, with a projected lower cost per boarding.

#### *Ability to integrate into the existing light rail system*

- Light rail would have little effect on existing Transit Mall operations because a Southwest Corridor LRT line would interline with an existing MAX line (Green line or Yellow Line).
- Concerns exist about the number of BRT buses needed to serve the 2035 peak hour demand and subsequent impacts to bus traffic and light rail operations on SW Lincoln, through the Jackson Street Terminus, and along the Portland Transit Mall.

- During peak periods in 2035, Southwest Corridor BRT would add up to 20 buses an hour to the Transit Mall in each direction, utilizing capacity that light rail would preserve for future transit service needs.

*Higher level of public support*

- Input gathered through community engagement efforts shows a clear public preference for light rail over BRT for the Southwest Corridor.

**The main reasons to remove the PCC tunnel from further study are:**

- Ridership gains are not commensurate with the cost of tunnel construction, thereby reducing the project's cost effectiveness.
- The capital cost of a tunnel option could substantially reduce funding available for station connectivity projects throughout the alignment, such as locally desired bike and pedestrian investments.
- A tunnel option would likely result in a light rail terminus at the Tigard Transit Center due to the additional capital cost of the tunnel, resulting in no LRT service to Bridgeport Village and a significant drop in line ridership and cost effectiveness compared to a "no tunnel" LRT alignment.
- Tunnel construction would result in greater construction-period noise and traffic impacts along and near SW 53<sup>rd</sup> Avenue, compared to a surface alignment on Barbur/I-5, as well as residential displacement in an established neighborhood.
- Future investment on the Sylvania campus in response to an on-campus station is unclear.
- Several viable options that would connect the Sylvania campus to the light rail line on Barbur/I-5 have been developed and analyzed. These options would not perform as well as a tunnel and on-campus station, but would improve convenience, system ridership and travel times for campus transit users over existing conditions at a much lower construction cost.

## High Capacity Transit Mode

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Staff evaluated two high capacity transit modes for the Southwest Corridor: BRT and light rail. On December 31, 2015, staff released a comparative analysis of the mode options, the *Southwest Corridor High Capacity Transit Mode Comparison* document, which is available on the project website, [www.swcorridorplan.org](http://www.swcorridorplan.org), and at this location:

<http://www.oregonmetro.gov/sites/default/files/SWCP-ModeComparisonMemo-20151231b.pdf>

The *Mode Comparison* document explains the modes and assumptions made in the analysis. The analysis evaluated the modes against twenty criteria:

- Thirteen criteria measured the modes against the project goals identified in the Southwest Corridor Plan Purpose and Need.<sup>1</sup>
- Seven criteria measured the modes against logistical considerations that reflect operational and financial realities—vehicle capacity, service frequency, Transit Mall capacity, transit signal treatment, interlining, federal funding and local funding.

The *Mode Comparison* found that both modes would support Southwest Corridor goals for the corridor and the region. The analysis also noted that each mode has some advantages but found some major concerns related to long-term capacity of BRT to meet future travel demand in the Southwest Corridor.

The steering committee is being asked to select a preferred mode because studying both modes in the DEIS would require substantial additional time and money due to the greater scope and complexity of analysis required.

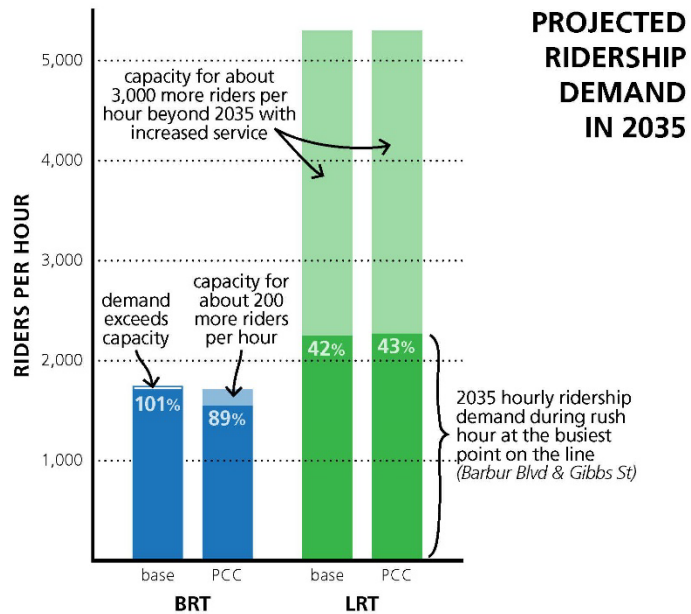
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<sup>1</sup> The criteria used follow, with the related project goal(s) as listed on page one noted: land use and development (5, 6), access to key places (8), travel time (3), reliability (2), rider experience, capacity for current and future demand (1), road bike & pedestrian projects (8, 9, 10), local bus service (8), public opinion, equity (7), ridership (1), capital cost (11), and operating and maintenance costs (11).

## Light rail benefits

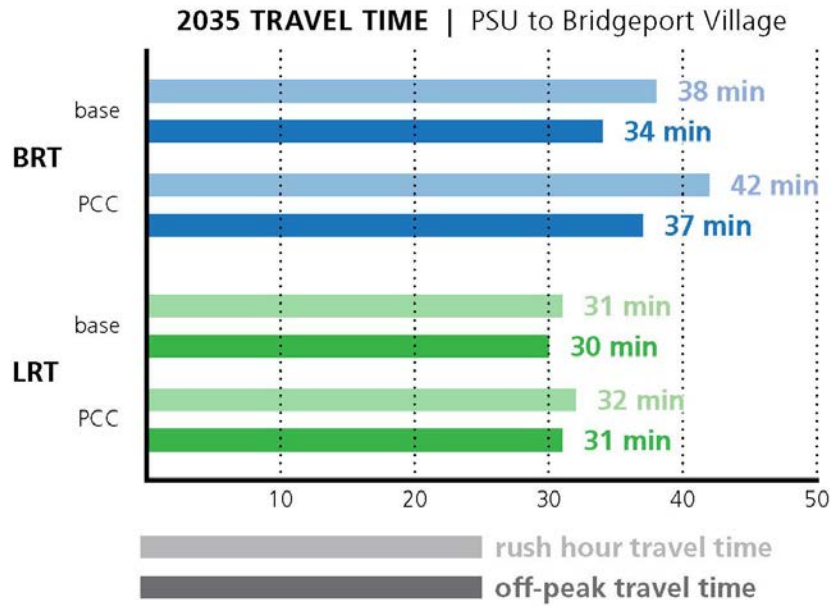
The primary advantage of light rail is its superior rider capacity and resulting ability to accommodate future transit ridership growth.

- A light rail vehicle can carry 266 people per two-car train while BRT can carry about 86 people per bus. Therefore, it would require far fewer light rail trips than BRT trips to meet rush hour demand.
- As a result, light rail could operate at about 7 minute frequencies to accommodate rush hour demand in 2035, while BRT would need to run every 3 minutes during rush hour.
- A 3-minute service frequency is roughly the maximum frequency for transit service to effectively operate in the corridor and on the Transit Mall. Consequently, as shown on the adjacent chart, BRT would already be at rush hour capacity in 2035, ten years after opening, while light rail would have capacity far beyond 2035. Light rail could add extra capacity by running more frequent trains, while BRT would already be at the maximum frequency.
- In addition, a 3-minute frequency means 20 articulated BRT bus vehicles in each direction during rush hour, navigating in mixed-use traffic segments of Barbur Boulevard and the Tigard Triangle, and possibly Capitol Highway and SW 49<sup>th</sup> Avenue. This volume of buses would likely affect local traffic operations.
- Due to its greater ridership capacity, a light rail line in the Southwest Corridor has the ability to be extended to other destinations in a later phase. Because BRT would be at rush hour capacity by 2035, it would be impractical to extend the line.

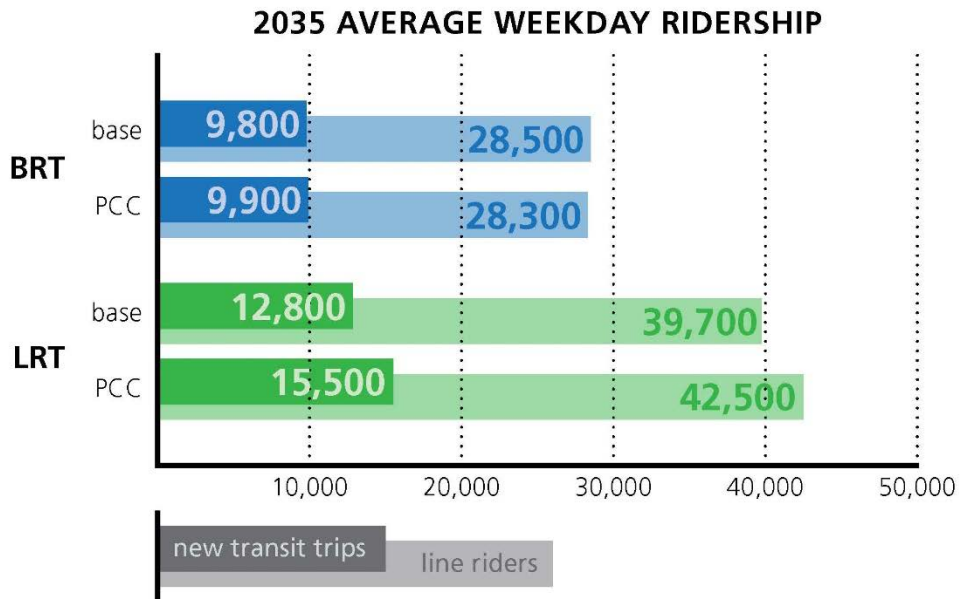


Light rail would also provide faster and more reliable transit service through the corridor, due to its use of a 100% exclusive right-of-way and greater ability to gain traffic signal priority. The following chart shows 2035 travel times during rush hour and other times, both a “base” alignment along Barbur/I-5 and an alignment that directly connects to the PCC Sylvania campus. Light rail would be faster on the base alignment by 7 minutes during rush hour and 4 minutes at other times.

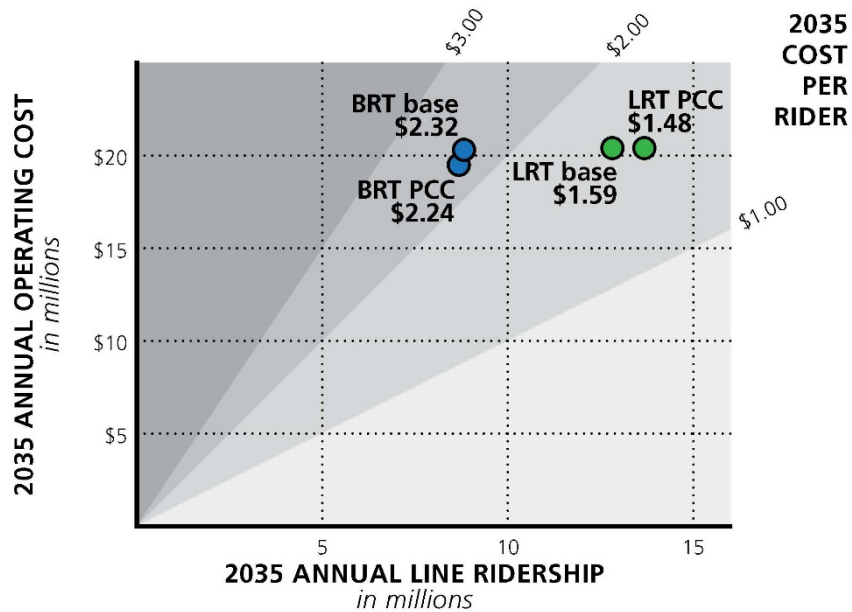
Staff analyzed whether placing BRT in a fully exclusive right-of-way would eliminate these differences, but found that a notable discrepancy in travel time and reliability would persist due to required vehicle frequencies to meet projected demand.



As a result of its better travel time, higher rider preference (per federal modeling guidelines) and greater vehicle capacity, light rail is projected to attract nearly 40 percent more daily line riders than BRT in the year 2035. The below chart shows that light rail is projected to have around 11,000 more daily riders than BRT in 2035 on the base alignment.



The differences in ridership and service frequency would also affect operating costs, with a light rail cost per rider about 55 percent lower than BRT in 2035, as shown in the following chart.



Finally, light rail would be able to interline with the existing regional MAX system and avoid adding many additional vehicles on the Transit Mall.

- Just as the Orange line MAX operates as an extension of the Yellow Line, a Southwest Corridor LRT line could utilize Green line MAX vehicles that already travel along the Transit Mall. As a result, few if any new light rail vehicles would be added to the Transit Mall.
- In contrast, BRT would add up to 20 additional buses per hour onto the Transit Mall because it could not interline with TriMet’s only other anticipated BRT line, the Powell-Division line (both BRT lines would enter and exit the Transit Mall from the south).



## **Bus rapid transit benefits**

Although staff does not recommend BRT as the preferred HCT mode for the Southwest Corridor due to the high future travel demand, BRT does offer some benefits. The chief benefit of a BRT alignment would be its lower capital cost. BRT does not require construction of tracks or electrification systems and has less substantial utility relocation requirements. BRT would also require fewer structures and result in slightly less property acquisition because trains require a slightly wider transitway and a wider turn radius. BRT can also operate in mixed traffic, reducing capital costs and property impacts by avoiding the need to widen the roadway in places. The capital costs of the base BRT alignment assumed in the analysis would be about 44 percent lower than the capital costs of the base light rail alignment.

Another advantage of BRT in the Southwest Corridor is the ability to connect directly to PCC Sylvania without an underground tunnel. Due to the steep grades between the campus and the Tigard Triangle, a direct light rail connection would require a tunnel that would increase construction costs for an alignment that goes to both Tigard Transit Center and Bridgeport Village by 21 percent compared to an alignment that is in Barbur Blvd or adjacent to I-5. BRT could be routed along SW Capitol Highway and SW 49<sup>th</sup> Avenue to reach the campus without significant differences in costs compared to a route remaining on Barbur Boulevard below the campus.

## Public Input: Light rail or bus rapid transit

Throughout the last year there were several opportunities to connect with stakeholders to understand their questions, concerns and preferences regarding whether bus rapid transit (BRT) or light rail is the best choice to serve residents in the Southwest Corridor and surrounding communities. To date, project partners have collected public input on a preferred mode through open-ended questionnaires, online surveys and in-person dialogues.

During all types of public outreach, four themes consistently rise to the top when the public is asked what benefits they want a Southwest Corridor project to deliver:

- shorter travel time,
- higher ridership,
- greater reliability,
- increased access to employment and education centers.

When asked specifically about the choice between light rail and bus rapid transit respondents echoed the above themes and added additional factors that people feel are important when making the mode decision:

- capacity to serve future rush hour demand,
- capacity to extend line in the future,
- lower ongoing cost to operate per rider,
- flexibility under road blockages and extreme weather.

“Not completing the [MAX] system would be unfair to the thousands of daily SW commuters who have so far supported MAX to every other part of the metro area.”

“High speed bus service can change with the times.”

“Simply adding more buses is not going to provide any relief to the growing congestion in that coridor.”

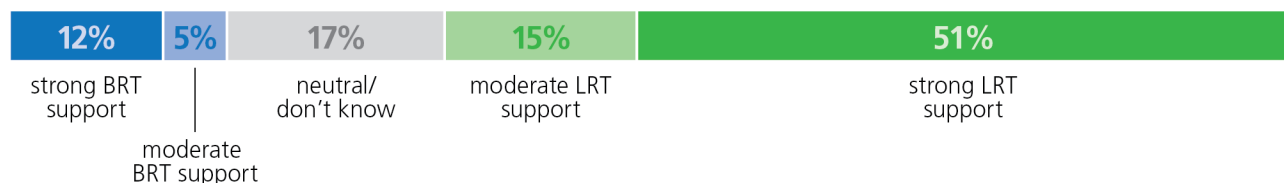
“This is about improving transportation and supporting neighborhood development for the next 50 years. It makes sense to go big.”

“Expanding the light rail system is prohibitively expensive to build and operate, and inflexible for changing transportation needs.”

Open-ended survey questions and in-person discussions provided a sense of how the public views the trade-offs between the mode options and their perspectives in selecting their preferred mode. The largest number of open-ended comments were in support of light rail, citing the need to think long-term, higher ridership capacity, automatic exclusive right of way and more positive public perceptions of light rail as comfortable and modern. Comments in support of BRT cite the perception that BRT is more flexible, it doesn't require fixed infrastructure, that the fleet is easier to upgrade than MAX, lower construction costs and public perception that MAX is unreliable.

## What is your opinion about whether bus rapid transit or light rail is better for the Southwest Corridor?

Results from Jan-Feb 2016 online survey (2,412 responses)





## Staff Recommendation

### ***What is the preferred high capacity transit mode for the Southwest Corridor?***

Staff recommends light rail for these reasons:

- **Long-term carrying capacity:** The additional construction cost of light rail is justified by its ability to meet demand while maintaining capacity for future transit projects on the Transit Mall. The *Mode Comparison* finds that BRT would not meet rush hour ridership demand in the Southwest Corridor after 2035 and therefore would not be an effective investment for this corridor despite its lower construction costs.
- **Better transit performance:** Light rail would provide faster and more reliable transit service, attract more riders to the HCT line and more new riders to the overall transit system, and be more cost-effective to operate.
- **Ability to integrate into the existing light rail system:** Light rail would have little effect on existing Transit Mall operations because a Southwest Corridor LRT line would interline with an existing MAX line, preserving future capacity for future transit service needs.
- **Higher level of public support:** Input gathered through community engagement efforts shows a clear public preference for light rail over BRT for the Southwest Corridor.

Overall, light rail would best meet the project's Purpose and Need. Compared to BRT, it would be better at serving the existing and projected transit demand in the corridor, improving transit service reliability in the corridor, improving transit travel times and providing transit service that is cost effective to build and operate with limited local resources.

Staff notes this recommendation is specific to the Southwest Corridor. Mode decisions for future HCT alignments each need analysis that accounts for unique features in a project area. In particular, BRT may be a promising option for corridors with lower ridership projected than in the Southwest Corridor.

The implications of this recommendation are:

- BRT would no longer be studied as part of the Southwest Corridor Plan. Only light rail would be evaluated in the DEIS.
- Alignment options that are unique to BRT, including a direct surface connection to PCC Sylvania, would be removed from further consideration.
- The steering committee will consider a separate action on whether to continue study of a light rail tunnel to PCC Sylvania. The staff recommendation on this decision is outlined in the following section.

## Tunnel to PCC Sylvania campus

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The PCC Sylvania campus is a major regional destination and direct HCT service would serve its employees and students, who travel from across the region. PCC Sylvania was identified as an “essential place” in the SW Corridor during existing conditions analysis in 2012, and project partners are in strong support of improving transit access to the campus. Better transit connections would allow PCC to further develop the campus and reduce its expenditures on inter-campus shuttles, lower transportation costs and/or travel times for students, and help meet climate action goals related to vehicle greenhouse gas emissions.

The Sylvania campus, however, is difficult to reach by light rail, requiring a tunnel for access. In June 2014, the steering committee identified a cut-and-cover option as the most promising tunnel approach to serve the campus. The committee removed from consideration longer bored tunnels via SW Barbur Boulevard and via SW Capitol Highway because both would cost considerably more than the cut-and-cover option without providing significantly greater benefits in terms of ridership and travel time.

In July 2015, the steering committee directed project staff to conduct additional analysis and public outreach to better understand trade-offs of direct service versus cost and construction impacts, and to learn more about future campus planning efforts. In response, staff:

- Explored additional tunnel designs that would reduce neighborhood impacts and indirect connection options to the campus
- Worked with PCC to develop campus visioning and identify potential redevelopment in response to an investment in an light rail station on campus, and collect student and staff travel data
- Engaged the neighborhoods surrounding the campus and the college community
- Met with PCC staff to define an ongoing partnership in support of the Southwest Corridor Plan.

Staff documented its efforts in a series of published reports:

On August 14, 2015, staff released the *PCC Sylvania Light Rail Options Technical Memo* (<http://www.oregonmetro.gov/sites/default/files/SWCP-PCC-Tunnel-Technical-Memo-20150814-web.pdf>). This document reported research on different tunnel design options and possible mechanized and pedestrian connection options from a station on SW Barbur Boulevard to the campus. A bored tunnel option under SW 53rd Avenue was introduced as a way to reduce neighborhood impacts at a comparable cost to a cut-and-cover tunnel design.

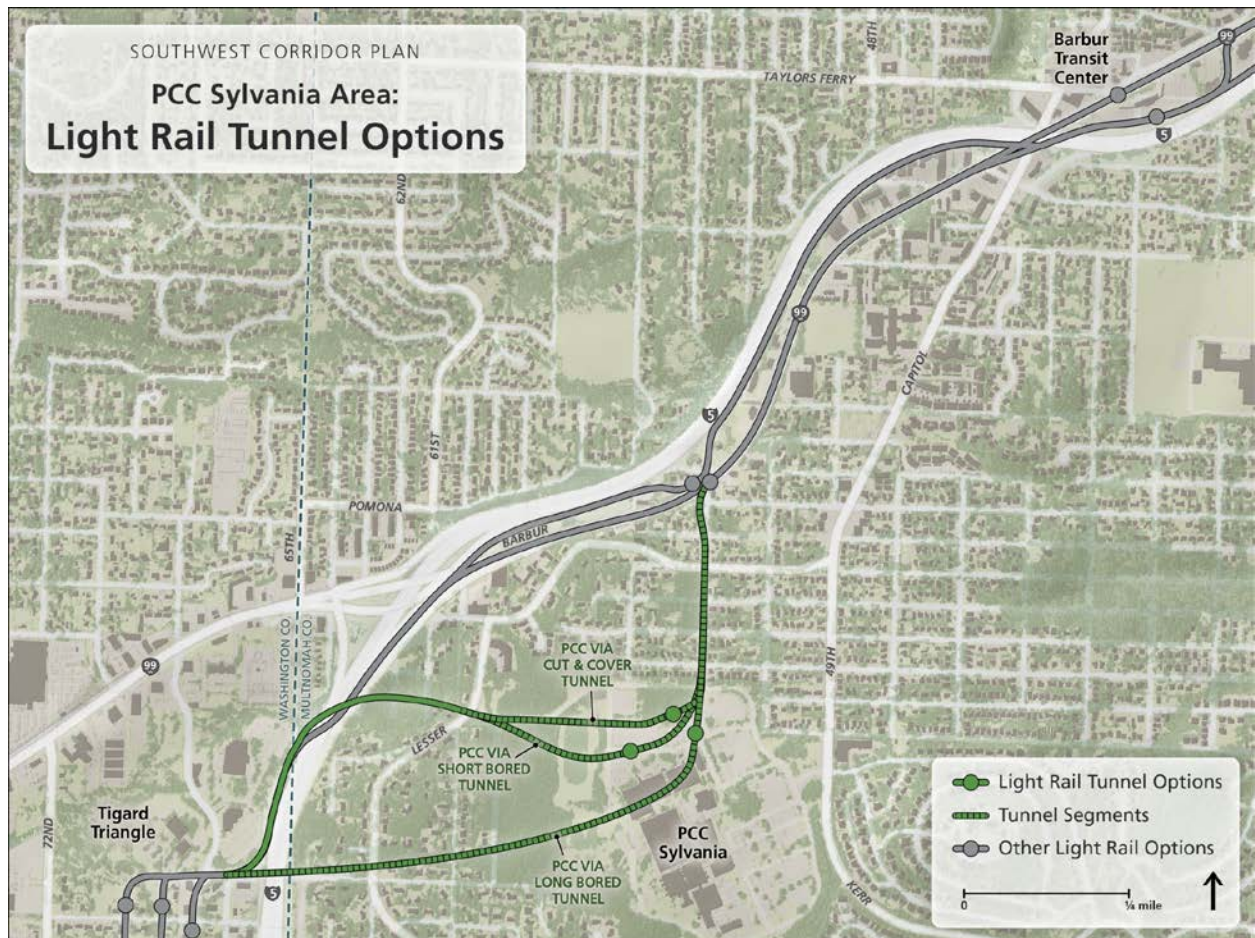
On September 11, 2015, staff released the *PCC Sylvania Connection: Status of Further Investigation* (<http://www.oregonmetro.gov/sites/default/files/SWCP-PCC-Status-Memo-20150911.pdf>). This document reported staff’s progress refining tunnel designs and exploring alternative connection options; PCC’s progress in developing campus visioning and providing student and staff travel data; and joint progress in engagement with surrounding neighborhoods and the campus community as well as defining a formal partnership.

On December 31, 2015, staff released the *PCC Sylvania Enhanced Connection Options Technical Memo* (<http://www.oregonmetro.gov/sites/default/files/SWCP-PCCConnections-TechnicalMemo-20151231.pdf>). This document described potential non-HCT connections to PCC Sylvania and provided basic information on relative performance and feasibility.

On March 11, 2016, staff released the *High Capacity Transit Technical Evaluation: Direct and Indirect Connection Options to PCC Sylvania Campus* (<http://www.oregonmetro.gov/sites/default/files/SWCP-PCC-connection-options-tech-evaluation-20160311.pdf>). This document quantitatively assessed the tradeoffs and comparative performance between various options for direct and indirect HCT access to the campus.

## Tunnel options

There are three tunnel designs under consideration—a cut-and-cover tunnel, a short bored tunnel with a bridge over I-5 and a long bored tunnel that would pass under I-5. All of the tunnel options would include a station and park-and-ride lot near Barbur and 53<sup>rd</sup> and an underground station in the northern portion of the PCC Sylvania campus. The tunnel designs would vary in their impacts on surrounding neighborhoods, but would be similar in cost and performance.



A tunnel would provide the best transit access for the campus compared to an indirect connection. According to 2035 projections, a light rail tunnel to PCC Sylvania would improve transit mode share at the campus compared to an alignment along Barbur, with almost 70 percent more transit ons and offs. That increase is mainly because, compared to a walking connection to station at Barbur and 53rd, a tunnel would provide a notably faster travel time between the Sylvania campus and regional destinations such as Portland State University (saves 6 minutes), Barbur Transit Center (3 minutes), Tigard Transit Center (6 minutes), Bridgeport Village (7 minutes) and other PCC campuses (7 to 9 minutes). A tunnel would increase travel time for light rail riders traveling between downtown Portland and Tigard by about one minute.

Input provided by the campus community has indicated strong support for a direct HCT connection to PCC Sylvania, and general public input shows interest in further study of a tunnel.

Despite these advantages, the tunnel would result in numerous issues that would threaten the Southwest Corridor Plan's ability to operate effectively and reach other destinations:

- **Overall cost, shortened alignment and lower ridership:** A tunnel to PCC Sylvania would increase total light rail project construction costs by about 21 percent. This capital cost would exceed the project's ability to reach Bridgeport Village within projected funding levels, so staff modeled a tunnel alignment that terminates at the Tigard Transit Center and would cost about the same as a light rail alignment along Barbur with a walk/bike connection to the campus and terminus at Bridgeport Village. The analysis, documented in *Direct and Indirect Connection Options*, found that in comparison, the cost-constrained tunnel alignment would have many more transit boardings on the campus (+69%, about 2,200 more boardings) and more households within a 60 minute transit trip of the campus (+2%), but would result in
  - Fewer system and line riders (18% and 6% less, respectively)
  - Higher operating costs per rider (10% higher)
  - Fewer households with a one-seat ride to campus (3% less)
- **Reduced bike/walk network investments:** High construction costs may preclude funding for complementary pedestrian, bike and roadway projects in the SW Corridor—both priority Shared Investment Strategy projects and locally identified needs for station access

In addition, the Far Southwest Neighborhood Association, representing the area most affected by a tunnel, has indicated strong opposition to a tunnel alignment for the following reasons:

- **Substantial construction-period impacts** (noise and traffic, among others) to surrounding neighborhoods
- **Possible permanent noise and vibration** impacts to nearby residences
- **Displacement of residences** from an established neighborhood

The return on a tunnel investment is also unclear:

- **Seasonal use of Sylvania campus:** An on-campus station would have limited use during weekends and in summer when classes are not in session
- **No updated campus plan:** There is no specific plan for a campus response to this major regional investment. PCC staff has discussed possibilities for the Sylvania campus, but the College's long-term vision for the campus and development in response to an HCT investment remain undefined.

## Alternative connections

Staff has developed and analyzed several enhanced ways to connect the campus to a light rail station around 53<sup>rd</sup> and Barbur. (The indirect connection scenarios all assumed a light rail mode, because a direct BRT alignment to PCC Sylvania would have been possible without a tunnel.) These alternative connections include:

- A bus hub, which would re-route local buses and/or add new bus service to the campus, thereby providing one-seat rides (no transfer) to PCC Sylvania from all directions (north, east, south and west).
- A TriMet shuttle, which would run frequent dedicated buses between PCC Sylvania and the light rail stations at Barbur Transit Center and in the Tigard Triangle. Unlike the bus hub option, the shuttle would only need to run when the campus is in session and could be timed with light rail train arrivals in order to minimize waiting time.
- An aerial tram or some other mechanized connection between a light rail station at 53<sup>rd</sup>/Barbur and the campus.

In addition, an enhanced pedestrian and bicycle connection between a light rail station around 53<sup>rd</sup> and Barbur and the Sylvania campus would be included in any light rail alignment.

See *Direct and Indirect Connection Options* (dated March 11, 2016) for further description and comparison of these options. Based on the analysis to date, there are multiple viable alternatives to a direct tunnel connection. The alternatives do not provide the same level of transit ridership or travel time savings for the campus as an underground on-campus station, however they would:

- Cost substantially less to construct and have a lower level of neighborhood impacts than a tunnel
- Result in higher line ridership, system ridership, and comparative operational costs per rider and household access to the campus, compared to the cost-constrained tunnel (Tigard Transit Center terminus)
- Save time for PCC Sylvania transit riders and increase system ridership, compared to a walk/bike connection only

Additional technical analysis is required for a final assessment of performance.



## Access to PCC Sylvania campus

The public has a diverse set of opinions about the need to improve transit access to PCC Sylvania and what direct and indirect options are most preferred. Staff generated input through open-ended questionnaires, online surveys and in-person discussions from winter 2015-winter 2016.

### Key overall themes

- A majority of people who responded online and in person felt that directly serving the campus with high capacity transit or increased bus service was important.
- Many people online and in person felt that the high cost of tunnels exceeded their benefits. Others felt the cost was worth it to create opportunity and deliver the most benefit to the region over the long term.
- People who participated in-person at meetings felt more strongly than online respondents that construction impacts to communities should be a major factor for decision makers to consider.
- Many respondents felt that improved local buses or campus shuttles were the best way to connect to campus.
- Many respondents wanted the project to improve campus connections from communities in Washington County.



### January-February 2016 online survey (2,424 respondents)

We presented high-level details and links to additional technical information on each of the eight options to directly or indirectly serve the PCC Sylvania campus with high capacity transit or improved local bus service. We asked respondents to select any and all options that they felt were promising.

- 25-38% of respondents selected bored light rail tunnel (38%), light rail on Barbur Blvd. with local bus hubs (38%), improved walk/bike facilities on SW 53rd Ave. (32%), cut-and-cover tunnel (30%), use of shared transit way and “branded” buses (26%) as promising options.
- 11-23% of respondents selected aerial tram plus walk/bike improvements along SW 53rd Ave. (22%) and bus rapid transit options on Capitol Hwy. (23%) and Barbur Blvd. (19%) as promising options.

The input highlighted in this report occurred throughout many months during which new options for serving the campus were added or refined. Not all surveys asked about the same set of connection options.

Spring 2015: cut-and-cover tunnel to campus, light rail on Barbur Blvd with SW 53rd Ave. walk/bike improvements and bus rapid transit on Capitol Hwy. or Barbur Blvd.

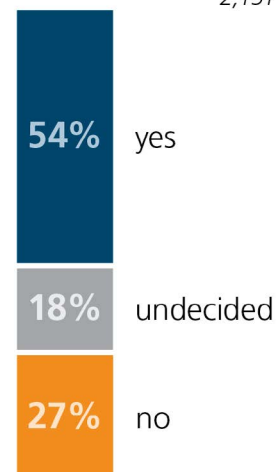
Fall 2015: light rail bored tunnel option and mechanized connections from Barbur Blvd. to campus added

Winter 2015: aerial tram, local bus improvements using shared transitway, bus hub and branded lines added

Spring 2016: additional evaluation of all options being considered

### Should the steering committee continue more detailed study of the light rail tunnel options?

2,151 responses



## West Portland Park Neighborhood Association

Neighborhood leaders developed their own online survey in September 2015 that generated 69 responses.

- Survey results indicated overall support for the Southwest Corridor project (83%), and support in general for a high capacity transit connection to PCC Sylvania and the West Portland Park area (74% support).
- Support was split somewhat evenly between a light rail tunnel (42%) and bus rapid transit (52%) as the preferred high capacity transit option for the area.

## Far Southwest Neighborhood Association

Neighborhood leaders developed their own online survey in September 2015 that generated 58 responses.

- Results show a majority opposition to both a bored tunnel (67% oppose) and a cut-and-cover tunnel (79% oppose) to directly serve the Sylvania campus.
- A majority of respondents (65%) and many open-ended comments favored increasing the frequency of current bus lines or creating new express bus lines to PCC Sylvania from downtown Portland.
- Respondents were divided in their support (56%) or opposition (40%) for Metro continuing plans for any high capacity transit.

“I understand the need to improve access to PCC. However, I urge the committee to focus its efforts on the other options [than the tunnel].”

“Tunnels always greatly exceed budget predictions.”

“PCC or bust. Not serving a major regional destination with a major regional transit line would be a huge mistake.”

“A light rail line [to campus] would greatly assist students and decrease excessive on-campus parking.”

“Please keep in mind that Sylvania is in session something like 180 days a year. It’s not a business where employees go on a daily basis.”

## PCC student and staff survey

Project staff engaged in person and developed an online survey for PCC students, faculty and staff in September-October 2015. The survey generated 676 responses.

### Key findings:

- Most respondents (78%) would use transit more if there was improved transit service to PCC Sylvania.
- A majority of respondents (61%) think a light rail tunnel is the most viable way to serve campus.
- A majority of respondents (60%) said they were somewhat likely or very likely to use improved bike and pedestrian access along SW 53rd Ave. to campus.
- Open-ended comments addressed a variety of issues including a need to improve frequency and reliability of existing TriMet routes and campus shuttles, and concerns regarding cost and neighborhood disruption with tunnel construction.

You can read the previously published full summaries of these online surveys and public discussions, and appendices of all survey data at the project library, [www.swcorridorplan.org](http://www.swcorridorplan.org).

## Staff Recommendation

### ***Should a light rail tunnel directly serving the PCC Sylvania campus be advanced into the Draft Environmental Impact Statement?***

PCC is an important partner and the Sylvania campus is a high-profile destination that needs to be well-served by transit for the Southwest Corridor Plan to be successful. A tunnel would clearly succeed in growing transit ridership to the campus. However:

- The **significant cost** of constructing a tunnel and **potentially high neighborhood impacts** would not be commensurate to the ridership benefits and would jeopardize construction of a cost-effective LRT project that includes station connectivity projects and local pedestrian, bike and roadway investments.
- Preliminary analysis suggests there are **viable other ways to link the Sylvania campus to light rail** which would improve convenience, system ridership and travel times for campus transit users over existing conditions at a much lower cost than a tunnel.
- Because the **long-term plan for the Sylvania campus is unclear**, it is not possible to evaluate the amount and type of new development that would result from a direct versus an indirect LRT connection. Project and PCC staff have been meeting to discuss the benefits and disadvantages of a tunnel compared to indirect connection options. PCC staff has stated its preference for a direct HCT connection, but also acknowledged the issues listed above. The **College is willing to support an alternative connection** that greatly improves upon its existing transit service in lieu of a direct tunnel connection.

Overall, a light rail alignment on Barbur/I-5 with an improved link to the PCC Sylvania campus would best meet the project's Purpose and Need. Due to the cost trade-offs of a tunnel option, an alignment without a tunnel would be the better option to serve the existing and projected transit demand in the corridor, increase multimodal transportation options and improve mobility in the corridor, complete multimodal transportation networks in the corridor, advance transportation projects that increase active transportation and encourage physical activity, and provide transit service that is cost effective to build and operate with limited local resources.

Staff therefore recommends:

- Removing a light rail tunnel to PCC Sylvania from further consideration.
- Continued exploration and refinement of alternative transit connections to the campus, working with PCC to plan appropriate service improvements.
- Renewed emphasis on the importance of robust bike and pedestrian connectivity both to the Sylvania campus and throughout Southwest Portland.

As a result of this recommendation, the DEIS would include light rail alignments in Barbur Boulevard and adjacent to I-5 in the area from Barbur Transit Center to Portland city limits. Both alignments include a station at or around SW 53<sup>rd</sup> Avenue, a park-and-ride facility near the station, and enhancements to SW 53<sup>rd</sup> Avenue to improve the pedestrian and bike connection from light rail to the campus.



## Next Steps

Project staff will present these recommendations to the Southwest Corridor Steering Committee at the April 6, 2016 steering committee meeting, which will be followed by a public forum allowing for discussion of these recommendations. Staff will also provide opportunities for online public feedback on these recommendations, and will reach out to PCC as well as community members in neighboring areas to solicit their comments. One week prior to the May 9, 2016 meeting, staff will share any feedback regarding these recommendations and report any adjustments for steering committee consideration.

After the May 9, 2016 decisions, staff will publish a *Draft Preferred Package* document summarizing the HCT project resulting from the refinement decisions made in July 2015, January 2016 and May 2016. At its June 13, 2016 meeting, the steering committee will review the *Draft Preferred Package* and make any adjustments necessary to finalize and endorse it. That will conclude the Refinement Phase of the Southwest Corridor Plan and initiate the beginning of the Environmental Review and Project Development Phase. The below table summarizes the currently anticipated schedule.

The Preferred Package as well as selected roadway, bicycle and pedestrian projects<sup>2</sup> will receive full environmental review in an Environmental Impact Statement (EIS) under the National Environmental Policy Act. Public input on the scope of the EIS is currently anticipated to occur in August and September, 2016. Further details on the EIS process and schedule will be released in upcoming months.

<b>Upcoming Southwest Corridor Plan Schedule</b>	
April 2016	<ul style="list-style-type: none"> <li>• Public comment on staff recommendations for mode and PCC Sylvania tunnel</li> <li>• April 6 steering committee meeting and public forum – presentation and discussion of staff recommendations</li> </ul>
May 2016	<ul style="list-style-type: none"> <li>• May 2 – release of steering committee packet, including summary of public input received on staff recommendations</li> <li>• May 9 steering committee meeting – decisions on mode and PCC Sylvania tunnel</li> <li>• Publication of <i>Draft Preferred Package</i></li> <li>• Public engagement on road/bike/pedestrian projects</li> </ul>
June 2016	<ul style="list-style-type: none"> <li>• June 13 – adjustments to and endorsement of <i>Draft Preferred Package</i></li> <li>• Publication of <i>Final Preferred Package</i></li> <li>• End of Refinement Phase, Start of Environmental Review and Project Development</li> <li>• Public engagement on road/bike/pedestrian projects</li> </ul>

<sup>2</sup> A public input process will occur in spring and summer 2016 to help select which roadway, bicycle and pedestrian projects are studied in the DEIS. These road/bike/pedestrian projects will be largely drawn from the set of priority Shared Investment Strategy projects adopted by the steering committee in July 2013, and may include other projects identified locally.