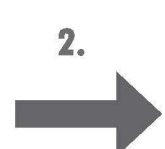
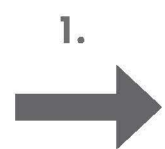
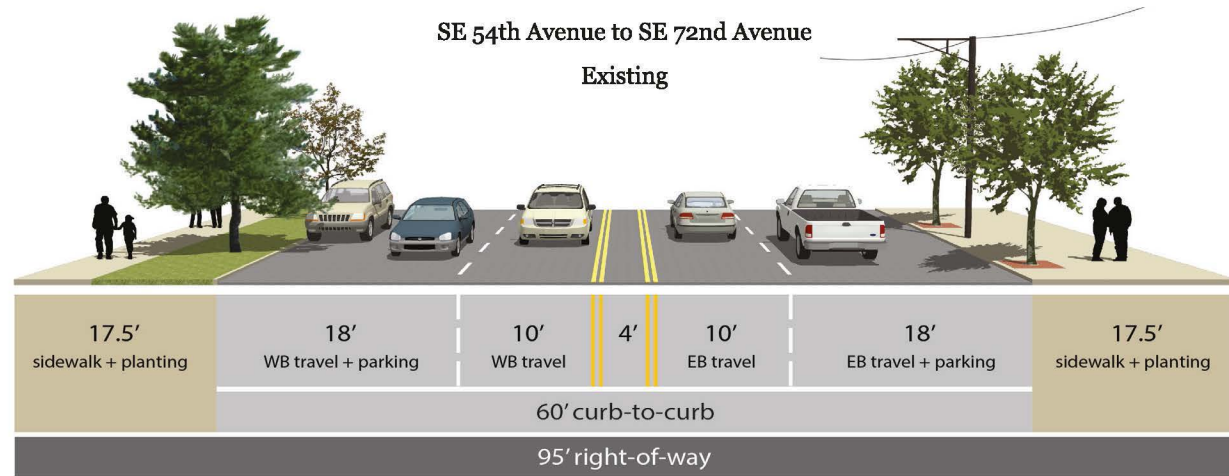


Figure 2-5 Existing and Proposed Cross Sections



Source: Nelson\Nygaard

Source: Nelson\Nygaard

Note: Actual cross sections may vary depending on the segment.

Pedestrian Enhancements

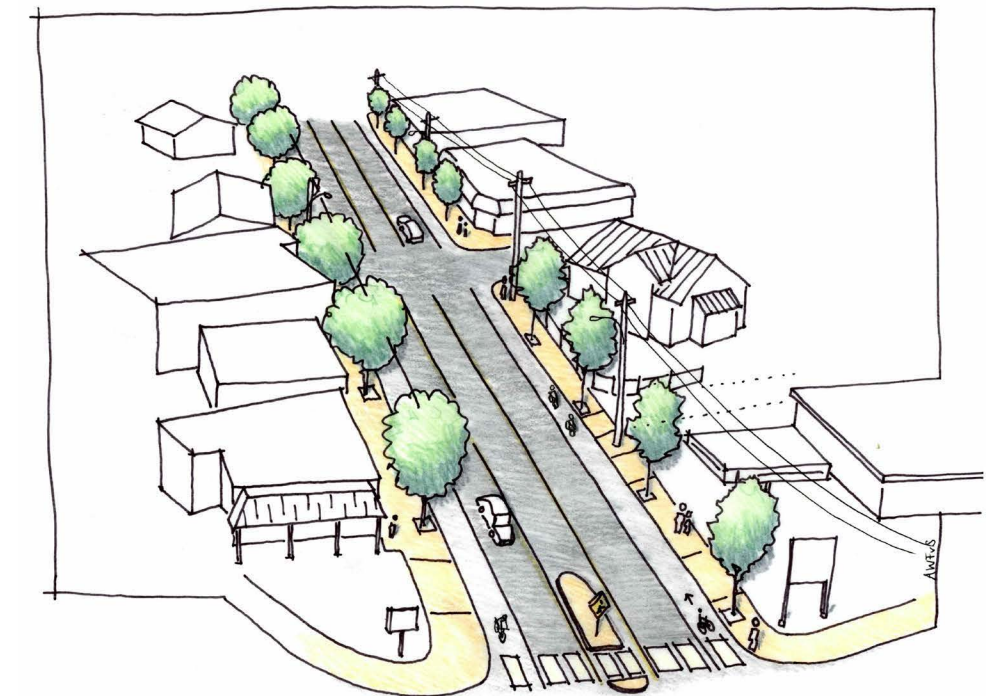
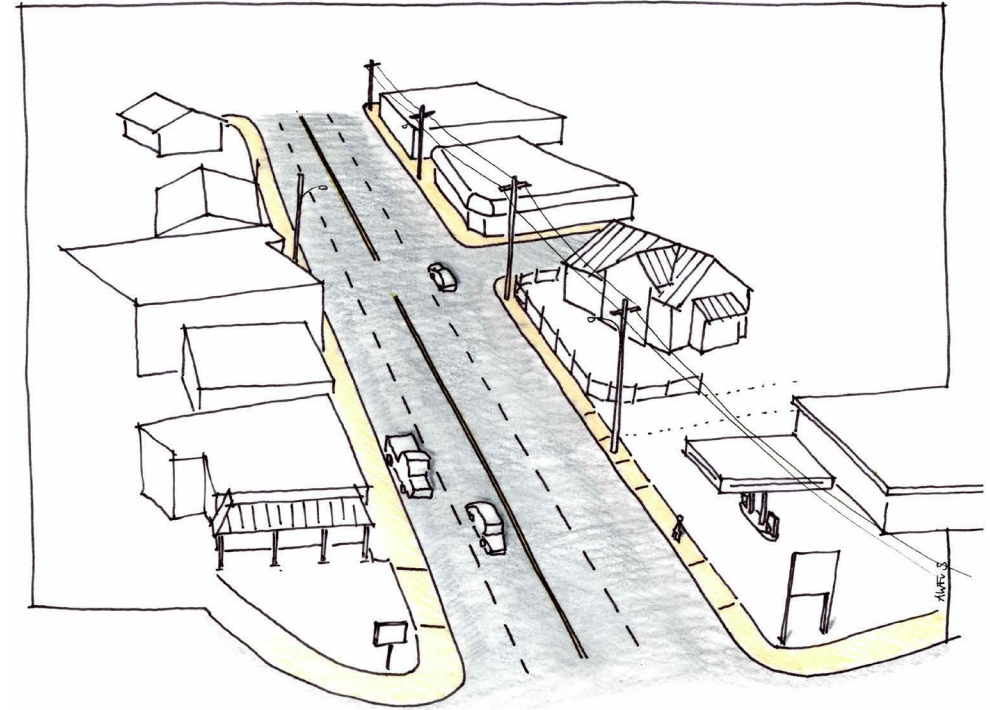
With a 3-lane cross section, pedestrians would have fewer lanes to cross, and they would cross only one travel lane in each direction, eliminating a major safety problem known as the “double threat.” This describes a situation when there is more than one travel lane in each direction, and a driver in the outside lane stops for a pedestrian crossing, but a driver in the inside lane does not stop because he or she cannot see the pedestrian attempting to cross. This scenario has resulted in several recent pedestrian fatalities in Portland. There would also be fewer conflicts between left turning vehicles and traffic coming in the opposite direction. This change could lead to a potential decrease in the total number of crashes by all modes of transportation by at least 20 percent.

- The large sidewalks unique to Foster Road are retained west of 80th Avenue. This maintains sidewalk space for a wide pedestrian corridor, the planting of larger trees, street amenities such as transit shelters, bicycle parking, benches and street lights, and the provision of café seating.
- By providing on new nine-foot sidewalks with ADA accessible features (e.g. curb ramps) and street trees, pedestrian conditions will be improved in the stretch east of SE 84th Avenue to Lents Town Center (SE 90th Avenue).
- Widening the sidewalks in the east segment in Lents from an average of five-feet to nine-feet would significantly decrease the amount of right-of-way dedication needed from private property (from seven to three feet) to meet the City’s standard of 12-foot wide sidewalks.



Widening sidewalks and planting street trees will improve the pedestrian environment on Foster Road east of SE 84th Ave.

Source: Portland Bureau of Transportation



Artist renderings of Foster Road between SE 84th and 85th Avenues, before and after installation of wider sidewalks, a new crossing, bicycle lanes, and street trees.

Source: Portland Bureau of Transportation

Bicycle Improvements

Bicycle access and user comfort will improve with the provision of bicycle lanes on Foster Road from SE 54th Avenue to the bicycle lanes in Lents Town Center at SE 92nd Avenue, generating 3,000 daily riders by 2035.

- The bicycle lanes will also provide additional connections to the upcoming bicycle lanes at SE 52nd Avenue as well as the neighborhood greenways in near proximity, such as the bikeway at SE Center Street, the planned bikeway at SE 72nd Street, and SE Raymond Street.
- West of SE 72nd Avenue, a two-foot buffer would provide a separation between the bicycle lane and the general travel lane.
- Various intersection crossing improvements will provide safe and comfortable connections across Foster Road. Improvements throughout the recommended corridor design include marked and signed crossings, rectangular rapid flashing beacons, mixing zones, and a green turn queue facility (northbound at SE 72nd Avenue).

On-Street Parking

On-street parking and loading is largely maintained (over three hundred spaces or 94% is maintained). Marked “protime” parking (north side travel lane that doubles as parking lane during non AM peak times) from SE 72nd Avenue to the east would be eliminated but it is widely understood that it is never utilized. Between SE 84th to SE 90th Avenues, about 21 on-street parking spaces on the south side would be lost along a total of six blocks of the corridor. Surveys indicate that this parking is little used. About five parking spaces may or may not be lost in the stretch from SE 52nd to SE 56th Avenues, depending on the final design. In the longer term, if sub options A or B are implemented, there would not be impacts to on-street parking.

On-street parking may be added as a result of the recommended cross section, as space for median islands will be provided by the center turnlane instead of on-street parking as it is presently the case.



Proposed bike lanes on Foster Road will vastly improve bicycling conditions.

Source: Portland Bureau of Transportation



Ninety-four percent of on-street parking will be maintained with the redesigned Foster Road.

Source: Portland Bureau of Transportation

Motorized Traffic

Realizing the benefits derived from the recommended cross section required difficult tradeoff decisions by the City. It is often the case that in redesigning a roadway, it is not always possible to address every issue or concern. This is particularly the case for streets such as Foster Road that carry large numbers of people and goods, while providing multimodal local access to adjacent businesses, organizations, schools and neighborhoods. Below are some of the benefits and impacts of the recommended cross section related to motorized traffic.

- There would be reduced opportunities for traffic to speed through the corridor since it would be hard to pass slower traffic with the new street configuration.
- A center turn lane would provide a dedicated space to make left turns onto adjacent streets and businesses and is a buffer from opposing traffic.
- Though the general travel lanes would be 10 feet wide (11 feet is preferable for trucks), the cross section provides larger effective turning radii for freight vehicles and a center turn lane to make left turns for delivery vehicles at unsignalized intersections and provides additional room from opposing traffic.
- Motorist safety would increase as the 3-lane configuration would eliminate weaving movements that often result in rear-end collisions.
- Traffic patterns and flow would remain largely unaffected throughout most of the day.
- During the peak periods, some traffic would divert to other arterials. In the PM peak, the traffic model estimates up to thirty percent of eastbound Foster Road traffic would divert. During this time, average travel speed would decrease from 19 mph to 14 mph, increasing eastbound travel times for the 2.3 mile corridor from seven to ten minutes in the short-term. The average Foster Road driver travels a shorter distance than the entire corridor. As a result, the average added travel time is estimated to be two minutes instead of three. Finally, since the average travel time for Foster Road drivers is about 20 minutes to get from one place to the next, the additional two minute travel time equals to about a 10% increase in travel time.



The proposed design will provide enhanced opportunities for motor vehicles to make left turns.

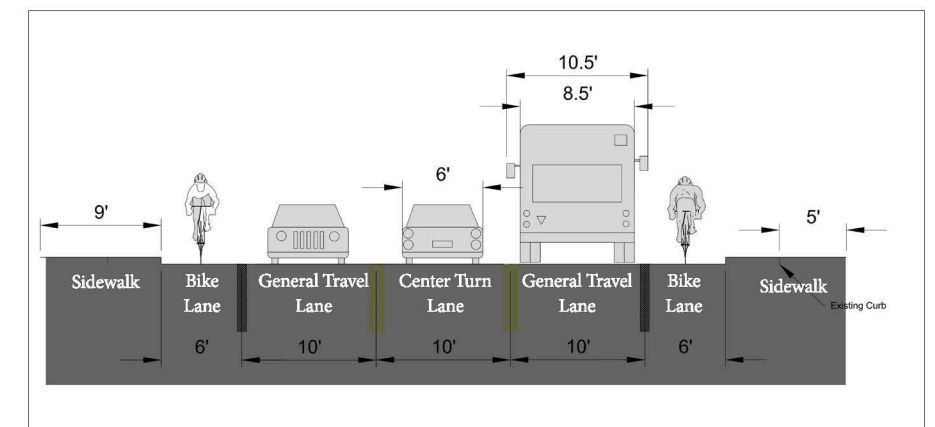
Source: Portland Bureau of Transportation



Foster Road is a City-designated Major Emergency Response route. The new cross section provides space for emergency vehicles to get through (using the center turn lane, as needed) and for private vehicles to use the bicycle lanes and parking space to move out of the way and stop.

Source: Portland Bureau of Transportation

- By 2035 the model estimates that the difference narrows from 16 mph to 14 mph or one additional minute of travel time (because under existing configuration Foster Road would continue to get more traffic and congestion over time).
- Travel lanes would be narrower than the 11-foot preferred for buses and streetcar but they could be restriped if a streetcar project is pursued in the future. In addition, a center turn lane is available that provides additional room to maneuver in some special situations. In addition, bicycle lanes (plus a 2-ft buffer west of Se 72nd Avenue) would separate buses from fixed objects such as parked vehicle mirrors and doors.



This image shows the proposed street design and dimensions for the section of SE Foster Road between 84th to 89th Avenues compared to the dimensions for a typical TriMet bus and private vehicles.

Source: Portland Bureau of Transportation

Special Transition Areas (short and longer term)

In addition to the recommended typical cross section, special areas are identified that require unique treatments. One is between on Foster Road between SE 52nd and SE 54th Avenues. The other is the area around SE 82nd Avenue.

a. Gateway Transition (SE 52nd to 54th Avenues). In this segment Foster Road needs to transition from four lanes to three before bicycle lanes can be introduced. This creates an issue of connecting to the upcoming bicycle lanes at SE 52nd Avenue.

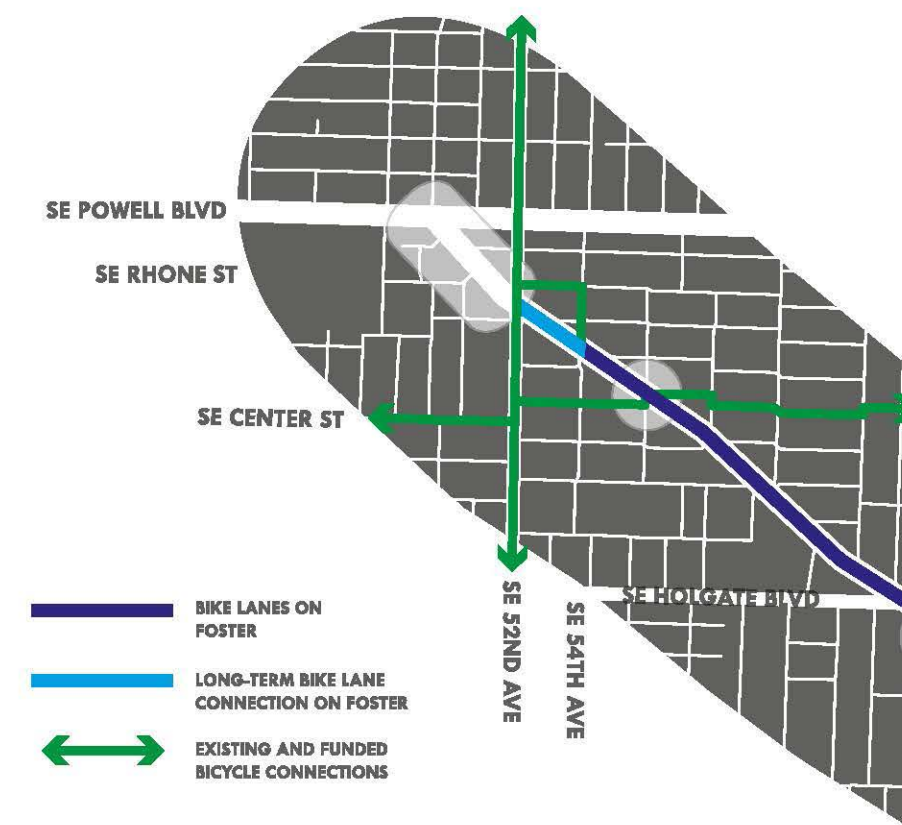
b. Crossroads Transition (SE 80th to SE 84th Avenues). In this segment Foster Road needs additional lanes for traffic. Future suboptions would separate bicyclists from motor vehicles.

Connecting cyclists to bicycle lanes on SE 52nd Avenue.

In addition to the cross section and bicycle facility type, bicycle connectivity was analyzed. Connecting the bike lane on Foster Road to the bike lane on SE 52nd Avenue (to be constructed in 2014) was a key element of the alternatives analysis and public outreach. The plan recommends connecting SE 52nd Avenue to Foster Road eastbound via SE Center Street, and from Foster Road westbound via SE 54th Avenue and SE Rhone Street (Figure 2-6).

In order to provide motorists adequate space to merge, the transition from four general travel lanes to three requires a minimum of 550 feet. In the eastbound direction this will take place between SE 52nd and 56th Avenues. Maintaining bike lanes in this stretch would therefore require the removal of on-street parking. Due to a lack of off-street parking for businesses in this area, relatively high parking usage in this segment, and concerns about parking spillover into adjacent residential areas, the recommendation is to not continue bike lanes directly to SE 52nd Avenue. The recommended Foster Road-52nd Avenue connections are described the next page.

Figure 2-6 Bikeway Connectivity in the Western Corridor



People on bicycles can connect to north-south and east-west bikeways via SE Center Street and SE 54th Avenue, respectively. A longer-term option will extend the Foster Road bike lanes directly to the SE 52nd Avenue bike lanes.

Source: Nelson\Nygaard

Recommended eastbound bicycle connection at SE 52nd Avenue:

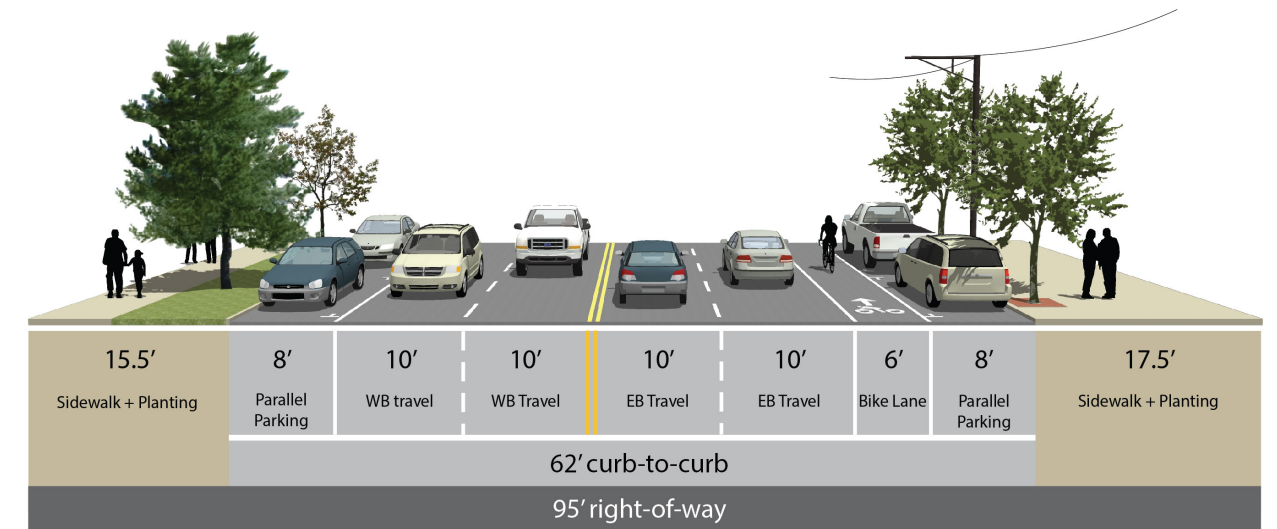
For southbound cyclists on SE 52nd Avenue who wish to head eastbound on Foster Road, a direct connection at SE 52nd Avenue would ideally include a left turn bike box at SE 52nd Avenue and Foster Road. Without a left turn box, cyclists would be required to merge across traffic between Powell Boulevard and Foster Road in order to use the left turn signal at SE 52nd Avenue and Foster Road. However, a box at this location would require relocating the curb and a utility pole, and would likely require right-of-way acquisition to maintain adequate pedestrian space. Therefore, the recommended connection is best accommodated via SE Center Street for southbound-eastbound cyclists. Northbound-eastbound cyclists will also be directed to Foster Road via SE Center Street.

Recommended westbound bicycle connection at SE 52nd Avenue:

In the westbound direction, cyclists will be directed to SE 52nd Avenue via SE 54th Avenue and SE Rhone Street (Figure 2-6). This will result in approximately 250 feet of additional travel distance for cyclists rather than a continued bike lane on Foster Road. Westbound to southbound cyclists will be directed to SE 52nd Avenue via the existing signalized crossing at SE Center Street.

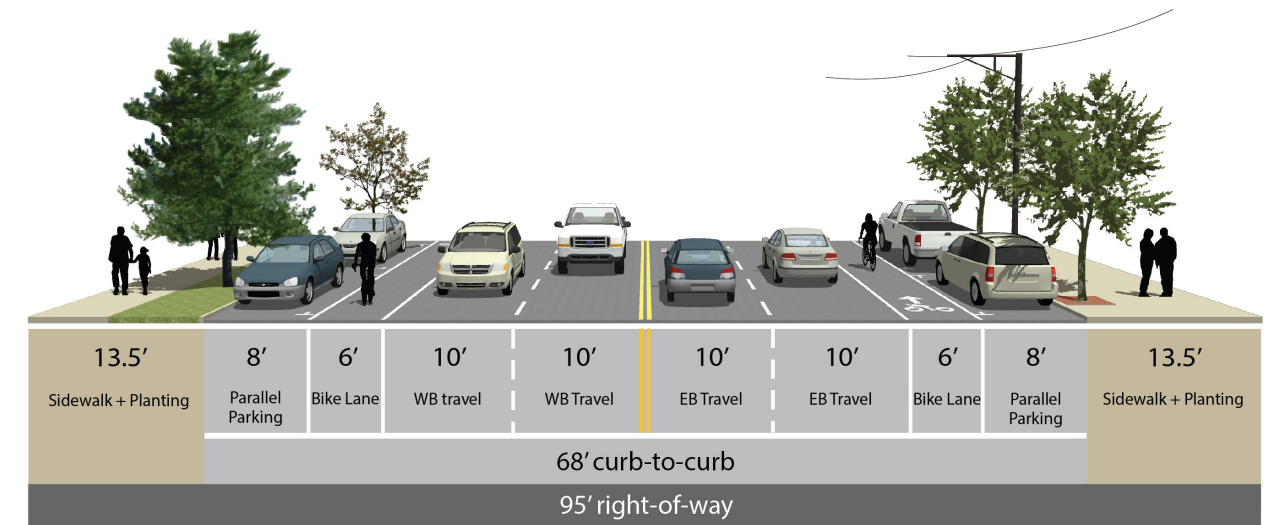
Two future suboptions connect cyclists to SE 52nd Avenue. As a longer-term solution, a westbound bike lane could be provided all the way to 52nd Avenue while retaining on-street parking. This would require narrowing the sidewalk on one side of Foster Road from 17.5 feet to 15.5 feet to provide the additional space necessary (Figure 2-7). Eastbound and westbound bike lanes on Foster Road could extend to SE 52nd Avenue by narrowing the sidewalk to 13.5 feet on both sides of Foster Road. (Figure 2-8)

Figure 2-7 SE 52nd Avenue and Foster Road (future suboption A)



Source: Nelson\Nygaard

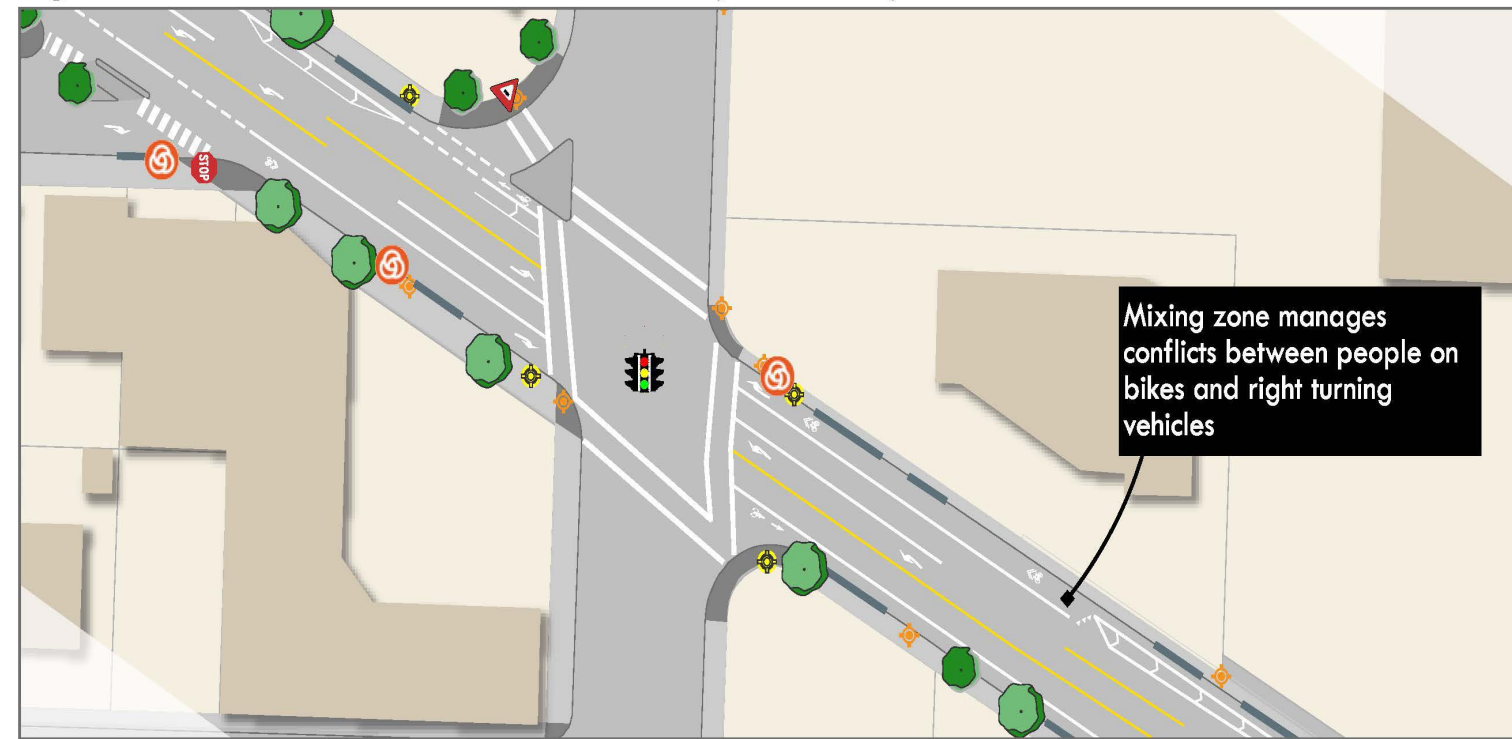
Figure 2-8 SE 52nd Avenue and Foster Road (future suboption B)



Source: Nelson\Nygaard

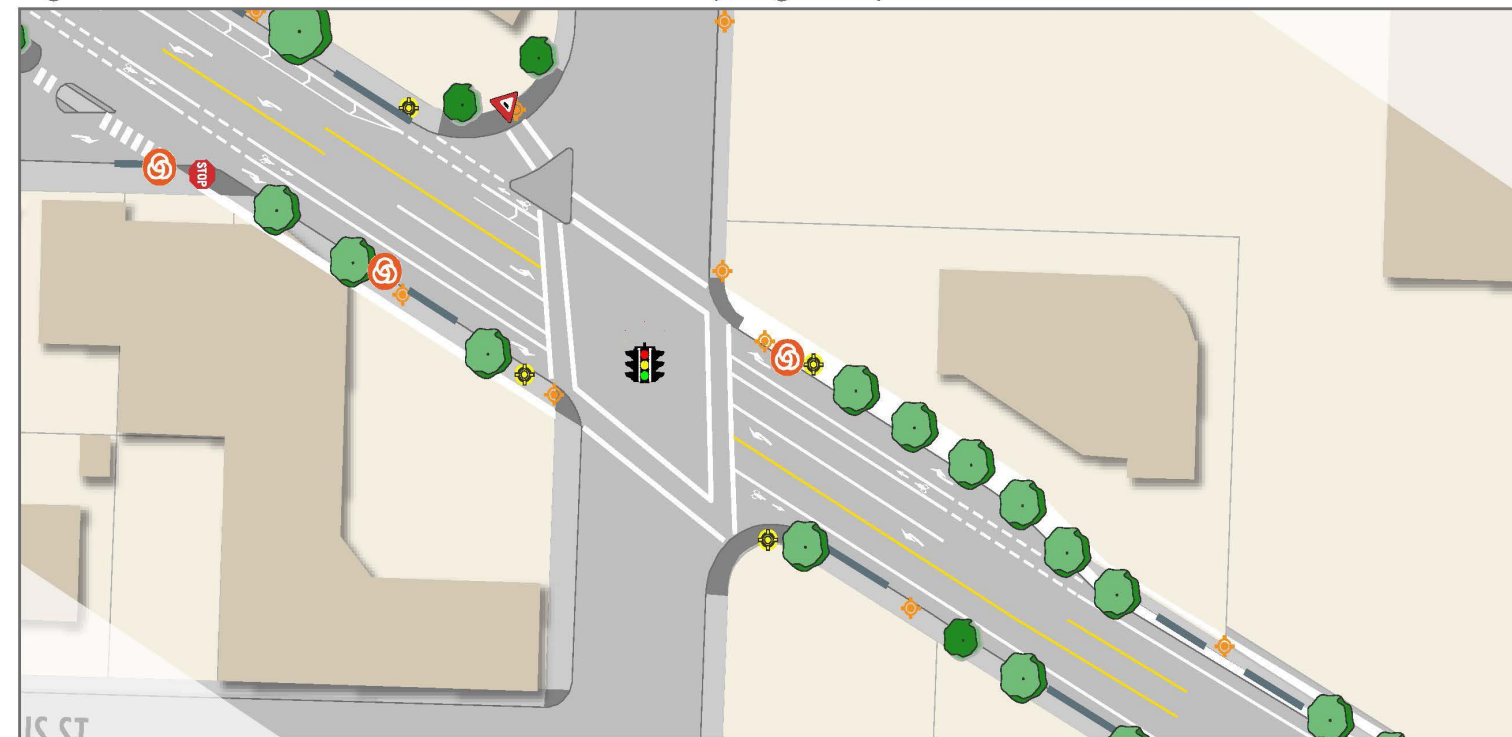
Connecting cyclists through SE 82nd Avenue. At SE 82nd Avenue, additional capacity is needed for vehicles turning right from Foster Road to SE 82nd Avenue. To accommodate that movement, there is both an interim and long term solution. In the short term, there will be a shared bike/right turn lane within the existing right-of-way (Figure 2-9). In the long term, right-of-way will be acquired on the northeast and southwest corners of Foster Road and SE 82nd Avenue to provide a separated bike lane and a dedicated right turn lane (Figure 2-10).

Figure 2-9 SE 82nd Avenue and Foster Road (Short-term)



Source: Nelson\Nygaard

Figure 2-10 SE 82nd Avenue and Foster Road (Long-term)



Source: Nelson\Nygaard



Streetscape Elements

Typically located in the sidewalk area, streetscape elements serve many important functions. This is the area where many utilities, street lights, trees, stormwater features, public art, gateway features, bicycle parking, signs, benches and café seating, transit stops and amenities and a clear pedestrian through zone are located. Below are the plan's streetscape recommendations. Transit recommendations are introduced in the next segment.

Street Trees

Street trees provide many benefits to the street including identity, shade, visual narrowing, and visual amenity. Street trees would be planted within the furnishing zone in compliance with standards set by the City's Division of Urban Forestry and Bureau of Transportation for spacing, sight distance, tree well size, and other pertinent elements. The Plan recommends two different street tree typologies for the project area: one for the districts and one for the corridors.

Street Trees within Districts

Street trees recommended for the districts are flowering varieties with average spacing of approximately 25 feet, depending on the location of driveways, business entries, bus stops, signs and utilities. On the south side of Foster Road, tree height must be limited to 25 feet due to a high voltage electrical transmission line. On the north side of Foster Road, larger trees are recommended, to create greater canopy and to provide more variety within the districts.

Street Trees within the Corridors

Street trees recommended for the corridors are a variety of non-flowering trees, with an average spacing of approximately 30 feet. As in the districts, larger trees are recommended for the north side of Foster Road. Larger trees will provide variation in the canopy as well as more definition to the street edge where consistent building edges are lacking in the corridors.

Street Lighting

Ornamental street lighting is recommended within the districts and at focal points to provide identity and additional light on the sidewalk for pedestrian safety. The recommended ornamental light is the Lumec Z-40 (pictured to the left), which is already in use in Lents Town Center. This will provide a unifying element for the entire Foster Road corridor and will complement the historic building fabric in the Heart of Foster.

The images above convey the potential for adding trees with Foster Road's wide furnishing zone. They also convey the limitations provided by the high voltage line on the south side of Foster Road.

Source: Portland Bureau of Transportation

Sidewalk and Furnishing Zone

The sidewalk provides a safe, unobstructed place for pedestrians to walk (the clear zone) and space for other streetscape features, such as trees and street furniture (the furnishing zone). Treatments for both areas are described in this section .

Recommendations for the Sidewalk

The surface of the sidewalk clear zone or walking area should comply with Portland's Pedestrian Design Guide and is recommended to be a typical scored sidewalk.

Recommendations for the Furnishing Zone

Permeable pavers are recommended for the surface of the furnishing zone within districts. This provides a balance of permeable surface for water while retaining a hard surface appropriate for people getting out of cars, and for the placement of street furniture, bike racks, and other amenities.

Furnishing zones outside the districts should be maintained as they currently exist. Adjacent property owners are encouraged to maintain and/or clean up furnishing zones that are in disrepair or not well maintained.

Street Furniture

Benches, kiosks, planter boxes and other pedestrian amenities are recommended for the furnishing zone. Additional bicycle parking, like bike racks or bike corrals, are encouraged. Street furniture must be maintained to ensure the visual quality of the street and sidewalk is preserved and to provide an attractive streetscape for businesses and residents.

The Portland Pedestrian Design Guide provides the City's guidelines for the size and placement of elements such as signs, planters, benches, drinking fountains, trash receptacles, and other furnishings. Since the Bureau of Transportation does not maintain street furniture, these elements are typically purchased, installed and/or maintained by a private organization, such as a business association, or by individual business and property owners.

Public Art

The City's 2% for Art program stipulates that 2% of local capital construction funding go toward public art in a project area. The Regional Arts and Culture Council oversees this program, and will select appropriate locations and installations via a public process. The Plan recommends gateway features at several locations throughout the corridor: at Powell Boulevard and Foster Road, within the Heart of Foster, and at SE 82nd Avenue and Foster Road. It is also recommended that art be incorporated into other elements throughout the corridor, such as at the new curb extensions, transit shelters, bike racks (art racks), tree grates, and within sidewalk scoring patterns.



Sidewalks should comply with Portland's Pedestrian Design Guide.

Source: Portland Bureau of Transportation



Street furniture is typically purchased, installed, and maintained by private organizations and businesses.

Source: Portland Bureau of Transportation

Stormwater

The project will provide stormwater facilities per the City's Stormwater Manual. The project is expected to provide stormwater facilities as a result of the curb extensions and the new sidewalks east of SE 80th Avenue. PBOT will continue to work with Bureau of Environmental Services during the next phase of design to identify the exact size and location of stormwater facilities.

Figure 2-11 Proposed Transit Improvements



Source: Nelson\Nygaard

Transit Improvements

The plan recommends improvements to transit along the corridor to:

- Provide better amenities such as bus shelters and seating
- Align bus stops with existing and recommended protected pedestrian crossings
- Enhance connections between transit lines
- Improve travel time along the corridor
- Minimize conflicts with cyclists and motor vehicles
- Provide additional on-street parking where possible

Transit Island at Powell Boulevard and Foster Road

PBOT and TriMet will explore lengthening the island at Powell Boulevard and Foster Road to relocate the bus stop for Line 9 (Powell) and allow for a more convenient transfer with the existing bus stop for Line 14 (Hawthorne/Foster).

Stop Reallocation

Stops with low ridership (SE 58th, 65th, and 74th Avenues) will be consolidated to better align with protected crossings such as existing traffic signals, and the proposed marked crosswalks with median islands and rapid flash beacons. Each of these locations will have both an inbound and outbound bus stop. The recommended corridor designs illustrated above represent new stop locations.

Shelters

Bus stop consolidation is expected to, among other things, improve bus travel time through the corridor and also provide a minimum number of riders to warrant adding bus shelters and seating (TriMet generally only provides bus shelters at stops with at least 50 weekday boardings). In the short term, PBOT will work with TriMet on relocating the stops and adding bus shelters where warranted and upgrading existing ones. As bus ridership grows over time, more bus shelters and other amenities can be added. Figure 2-11 illustrates the location and type of proposed transit improvements in the project area.



High ridership bus stops will be furnished with new stop amenities like shelters and benches.

Source: Portland Bureau of Transportation



An existing transit shelter on Foster Road.

Source: Portland Bureau of Transportation

