CITY OF PORTLAND BUREAU OF TRANSPORTATION

PDC PORTLAND DEVELOPMENT COMMISSION
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FOSTER ROAD TRANSPORTATION AND STREETSCAPE PLAN

May 2014
DRAFT

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The Bureau of Transportation is committed to providing equal access to information and hearings. If you need special accommodation, please call 503-823-7700 (TTY 503-823-6868).

To obtain a copy of the Foster Road Transportation and Streetscape Plan Update please visit PBOT's website (http://www.portlandoregon.gov/transportation/57866) or contact:

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1 PROJECT OVERVIEW AND PLANNING PROCESS

1 Project Overview and Planning Process

PROJECT OVERVIEW

This document is an update to the 2003 Foster Road Transportation and Streetscape Plan. The 2003 plan was developed via a public process and outlined improvements for the street and sidewalk on Foster Road to improve safety and appearance of the street and support the people and businesses of the surrounding community, from SE 50th to SE 90th Avenues.

Since 2003, the City of Portland has adopted two transportation plans that directly affect Foster Road: the Portland Streetcar System Concept Plan and the Portland Bicycle Plan for 2030. These plans call for adding both streetcar and bicycle infrastructure (e.g., bicycle lanes) on Foster Road sometime in the future. In addition, in 2011 PBOT identified Foster Road as a High Crash Corridor. High Crash Corridors are defined as areas of roadway that have exceptional concentrations of crash activity.

Summary of Plan Recommendations

This document identifies the following priority safety and streetscape elements to be constructed in 2015-2016 with the available funding:

- Adding curb extensions and crossing improvements at targeted locations
- Reducing the number of travel lanes from four to three to improve safety
- Introducing bicycle lanes along Foster Road
- Widening sidewalks in Lents with street trees and new curb ramps
- Adding street trees, street lighting and transit improvements throughout the corridor.

Several of the 2003 plan recommendations have been implemented, although funding has been slow to materialize. However, as part of the 2012-15 and 2016-18 Regional Flexible Fund Allocation, the City of Portland was awarded $3.25 million, to construct many of the improvements identified in the plan related to safety and streetscape. The Portland Development Commission also set aside $2 million for this effort from the Lents Town Center Urban Renewal Area, bringing the total available construction funding to $5.25 million.

A Focus on Safety

The goals of this project reflect the multi-objective nature of the planning effort. The update to the 2003 Plan was initiated as a response to the lack of safety for all modes along Foster Road, which have resulted in a high number of traffic collisions. In 2012, PBOT finalized the Foster Road High Crash Corridor Safety Plan, which built upon the recommendations from the original 2003 planning effort and included non-engineering solutions such as increased enforcement of traffic laws and targeted education and outreach efforts. This plan update identifies top priority safety and streetscape investments to be constructed with the available $5.25 million. In order to provide the right kind of investments, a planning effort was set up by PBOT to update the original plan to respond to current and future issues along the corridor. While there are identified funds to construct many of the plan elements, this is a 20-year plan that will require continuous investment over the years to fully implement.

A Coordinated Effort to Improve Foster Road and Lents Town Center

The City and regional partners have ambitious goals for transforming the Foster Road corridor and its surrounding neighborhoods into centers of vibrant and unique neighborhoods, resulting in an array of benefits for residents and businesses. Sites adjacent to Foster Road are zoned for medium mixed use density, predominantly commercial and housing development. Forecast numbers by Metro, the regional government, estimate significant redevelopment based on a number of factors, including the amount of land likely to redevelop and allowed land use densities. Up to 3,300 more households, 7,000 more residents, and 2,100 more jobs can be expected within one-quarter mile of Foster Road by 2035.

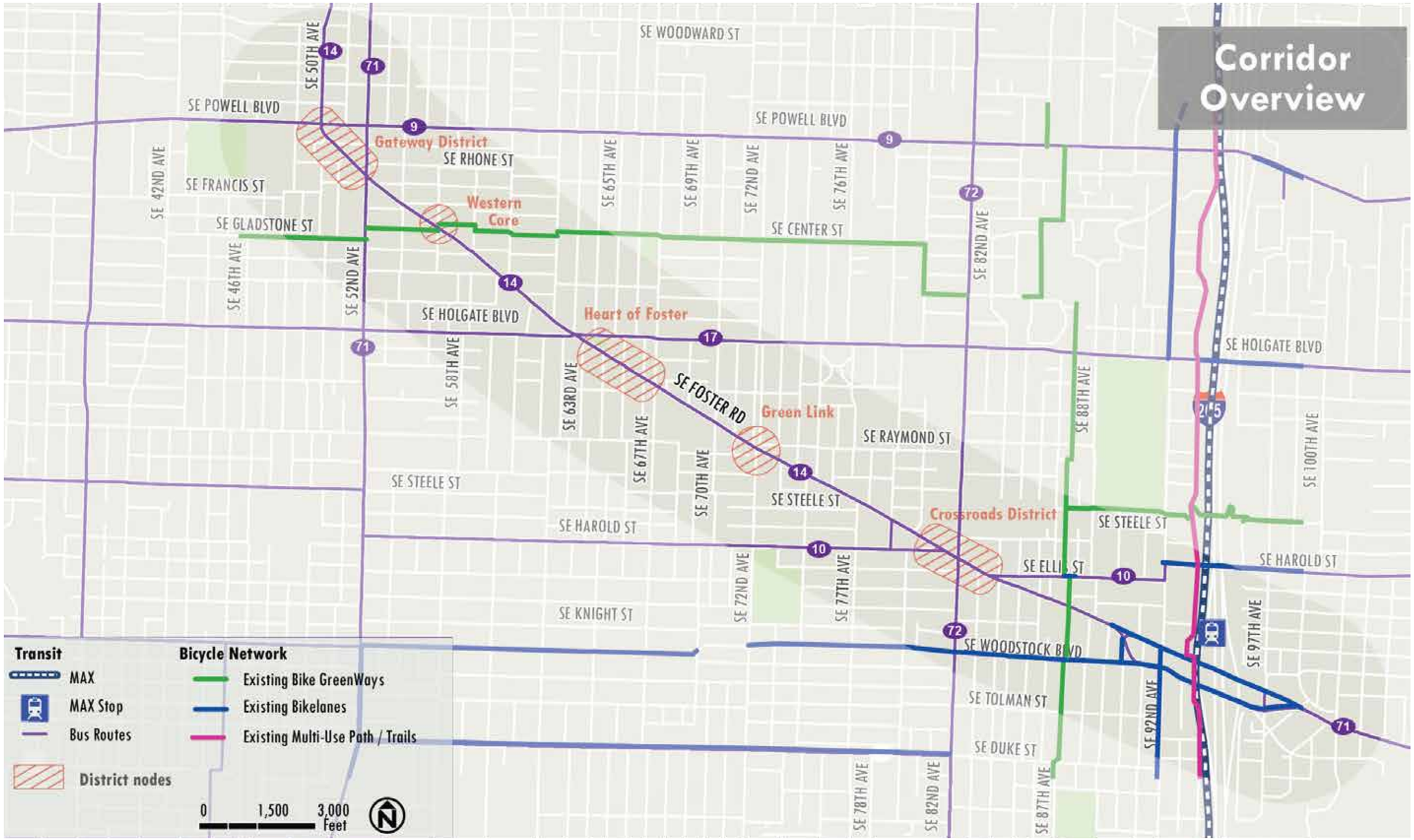
In 2008, Foster Road from the Lents Town Center westward to SE 50th Avenue and Powell Boulevard was added to the Lents Urban Renewal District in an effort to spur redevelopment and positive change. Recent transportation investments in Lents Town Center and PBOT's upcoming 50s Bikeway Project will bookend the recommended elements of this plan. Taken together, Foster Road will become a safer and more accessible corridor to the rest of the City and region.

Over the last two years, the City completed a multi-bureau effort called the Foster Lents Integration Partnership (FLIP), which developed a strategic roadmap for this corridor. The FLIP process resulted in an integrated work program, including short- and long-term actions, for City Bureaus and the local community. Improving the transportation function of Foster Road was identified as a top priority.

New rectangular rapid flashing beacons (RRFB) improve safety and comfort for people crossing Foster Road.

Source: Portland Bureau of Transportation

Figure 1-1 Foster Road Study Area



CORRIDOR OVERVIEW

The recommended plan for Foster Road extends from SE 50th Avenue to the western edge of the Lents Town Center at SE 90th Avenue. Recommended changes to the street and urban design are meant to transform Foster Road from a largely high speed, auto-oriented corridor into a series of interconnected pedestrian-oriented places that are accessible by all transportation modes and support a vibrant mix of businesses and residences.

Below is a corridor overview summary, highlighting transposrtation and landuses policy context as well as existing landuse character and roadway dimensions and unique characteristics. See also appendix B.

Outreach Corridor Policy Overview

Transportation System Plan. The following are the Transportation System Plan (TSP) street classifications for Foster Road. Foster Road is a City Bikeway, Major Emergency Response Street, Truck Access Street, City Walkway, Regional Main Street (in some areas), Major City Traffic Street, and a Major Transit Priority Street.

Future Streetcar. The Portland Streetcar System Concept Plan (PSSCP) calls for Foster Road to be part of the future streetcar network, and potentially run from SE 50th to SE 122nd Avenues.

Bicycle facilities. The Portland Bicycle Plan for 2030 calls for Foster Road from SE 50th Avenue and Powell Boulevard to the eastern city limits to be classified as a "City Bikeway" and is recommended to have "separated in road" (SIR) bicycle facilities.

Foster Road Land Use Character

Corridor character and land use. Between SE 50th Avenue and I-205, Foster Road supports a diverse mix of land uses, including residential neighborhoods and a variety of businesses fronting Foster Road, including a large number of retailers. The Foster Road Corridor contains five district nodes: Gateway District, Western Core, Heart of Foster, Green Link, and Crossroads District. Each node represents the commercial and transportation hubs that support economic activity, regional mobility, and local access.

Zoning and future development. Zoning along the majority of Foster Road is General Commercial (CG), allowing a wide range of commercial activities. The "Heart of Foster" district has a segment zoned as Storefront Commercial (CS), from SE 63rd to 67th Avenues, which is typically designated for Main Streets. The "Crossroads District" at the intersection Foster Road and SE 82nd Avenue is designated as Central Employment (EX), which allows mixed-uses and is intended to collocate industrial, business, service, and limited residential uses.

Foster Road Characteristics

Foster Road dimensions. Right-of-way along the Foster Road corridor changes intermittently. The corridor's right-of-way (lot line to lot line) ranges from 58 feet—on the east end of the corridor—to 94 feet—on the west end of the corridor.

Curb-to-curb roadway width ranges between 45 feet to 60 feet, with a short segment of 5-lane cross section between SE 50th Avenue and SE 52nd Avenue that expands to 65.5 feet. At 50 feet from curb to curb, the narrowest two-way cross section west of SE 82nd Avenue occurs between SE 72nd Avenue and SE 79th Avenue. Although street widths typically remain unchanged for longer stretches of the corridor, sidewalk widths expand and narrow almost on a block-by-block basis. The corridor includes four typical right-of-way cross sections. These include segments west of SE 72nd Avenue, between SE 72nd Avenue and SE 80th Avenue, east of SE 80th Avenue, and in the couplet area. Right-of-way is widest west of SE 72nd Avenue and narrowest in the couplet area.

Lane configurations. Foster Road is typically a four lane cross section with two travel lanes in each direction and an occasional left-turn lane or pedestrian refuge island. The longest stretch containing a 4-foot striped median is located between Powell Boulevard and SE 72nd Avenue. Between Powell Boulevard and SE 52nd Avenue, the roadway becomes a 5-lane configuration with two eastbound lanes and three westbound lanes.

On-street parking. Depending on the curb-to-curb street width, parking is available on one or both sides of Foster Road with certain time restrictions. On-street parking is generally dedicated to the eastbound side of Foster Road, while many segments on the westbound side, especially east of SE 72nd Avenue, allow for weekday AM peak period restricted parking but is almost never being used (i.e. no parking between 7AM-9AM, Monday through Friday).

Prevalence of skewed intersections. Because Foster Road bisects the street grid diagonally from northwest to southeast, nearly all 42 intersections within the project area are skewed. Only SE Rhone Street, SE 60th Avenue and SE 80th Avenue are aligned perpendicular to Foster Road. This presents unique geometric and pedestrian design challenges at each location, and it increases block lengths, sometimes up to almost 500 ft long.

Foster Road has a typical four lane cross section with two travel lanes in each direction, on-street parking and commercial mixed use zoning in the Heart of Foster.

Foster Road has a diverse mix of land uses including residential neighborhoods fronting the street.

Foster Road has many skewed intersections.

A PBOT engineer presents the plan view concept design and addresses committee member questions.

Source: Foster United Blog, John Mulvey

Stakeholder Advisory Committee members review the draft cross sections and plan view concept design.

Source: Foster United Blog, John Mulvey

PUBLIC INVOLVEMENT SUMMARY

A key element of the planning process was to hear from the community. Staff worked with community leaders in helping determine what values, goals and ideas people had to improve both Foster Road and the adjacent areas. As part of this process, the project team participated in a number of events, some of them generated by the FLIP process or the transportation project, and also many involving staff attending community meetings and public events. In addition, the project was highlighted in several local newspapers and blogs as well as in the regional press including the Oregonian and the Portland Tribune.

The project team relied on a variety of ways to provide information and gather input from the community on this plan. Below is a summary.

Stakeholder Advisory Committee

The Stakeholder Advisory Committee (SAC) was established to represent a variety of neighborhood, community and business interests and guide the development of the plan. The SAC met about once a month to review work by staff, listen and provide feedback and direction. SAC members also acted as liaisons to individual's respective organizations and the community at large. The SAC met on:

- September 19, 2012
- October 17, 2012
- November 15, 2012
- December 13, 2012
- February 21, 2013
- March 21, 2013
- April 18, 2013
- July 25, 2013
- September 19, 2013
- October 23, 2013
- December 18, 2013
- April 16, 2014

Community Events

The project team held five open houses as part of FLIP and this project. The first three introduced the transportation project and asked the community for feedback on goals, needs and issues to resolve. The fourth open house asked for feedback on the different crossing, streetscape, cross section and transit ideas developed by staff and the SAC. At the fifth open house PBOT staff presented the plan recommendations to the community.

Open House Dates and Attendees

Open House dates and attendees:

- January 27th, 2012: 70 attendees
- October 10th, 2012: 70 attendees
- February 28, 2013: 75 attendees
- June 4th, 2013: 112 attendees
- December 5th, 2013: 133 attendees

Community members observe plan options and streetscape design elements at a public open house.

Source: Portland Bureau of Transportation

PBOT staff engages the community at the 2013 National Night Out event at Kern Park.

Source: Portland Bureau of Transportation

Briefings, Walks, and Other Outreach

Staff regularly gathered input and updated stakeholder organizations in the area. The list below provides a summary of organizations that received a project update.

Project Updates

Information Table at National Night Out in Kern Park: August 7th, 2012, August 6th, 2013

Walk to distribute project sheet and contact information: August 2012

Corridor Walk with Lents Neighborhood Association Leadership: July 22nd, 2013

Corridor Walk with Commissioner Steve Novick, Foster-Powell Neighborhood Association, Leadership, Mt Scott-Arleta Neighborhood Association Leadership, Creston-Kenilworth Neighborhood Association Leadership, and Foster Area Business Association Leadership: August 3rd, 2013

Foster Area Business Association (FABA): March 12th 2013, September 10 2013, December 4th, 2013

Foster Green EcoDistrict Briefing: November 18th, 2013

Mt Scott Arleta Neighborhood Association: April 3rd 2013, December 4th, 2013

Arleta School Parent Teacher Association: December 10th, 2013

Foster Powell Neighborhood Association: March 11th 2013

ROSE CDC: December 17th, 2013

Portland Mercado: January 6th, 2014

Brentwood-Darlington Neighborhood Association: January 9th, 2014

Lents Neighborhood Association: January 28th, 2014

Creston Kenilworth Association: February 24th, 2014

Foster Powell Neighborhood Association: March 10th 2014

Latino Network's "Lideres" group, March 22nd, 2014

Latino Network's "Conexiones" Madison High School student group, April 14th, 2014

City Appointed Commissions

Bicycle Advisory Committee: June 11th, 2013, November 12th, 2013

Portland Freight Committee: July 11th, 2013

Pedestrian Advisory Committee: November 19th, 2013

Accessibility in the Built Environment Subcommittee of the Portland Commission on Disability: January 13th, 2014

Surveys

Project staff developed and distributed two surveys. The first one, administered in the summer of 2012 and taken by 64 people, asked general questions about Foster Road to get a sense for community's needs and desires and values. A second survey was administered in December 2013 to get input on the plan recommendations. Staff received over 400 responses, which included surveys from December Open House attendees as well as from a subsequent online survey . Appendix C summarizes the results of the two surveys.

Mailers

Two mailers were sent to advertise the last two open houses. Each time, a flyer was sent to over 15,000 households and businesses in the area. The second mailer was sent in November 2013. It included a summary of the recommendations of the plan, including a graphic showing existing and proposed cross section. The flyer also included a brief summary of the recommendations in Spanish, Russian and Vietnamese. The flyers were also posted in several locations in the area, including the Holgate Public Library, and distributed electronically to different stakeholders and mailing lists.

FLIP Efforts

FLIP used a variety of public engagement formats to reach out to the community, including community-driven efforts. FLIP relied on the Foster Green Ecodistrict as a full partner and sounding board. In addition to the four open houses hosted by FLIP, the project team also conducted stakeholder interviews with the diverse group of community-based stakeholders, created a video to use as an outreach tool, relied on community liaisons to engage a diverse spectrum of the community, conducted a web-based participatory budgeting exercise through Peak Democracy, and tabled at a variety of community events. In addition, PDC staff working on business development communicated with businesses along the corridor about the different multi-bureau efforts. In all of these endeavors, transportation issues related to Foster Road were always a dominant topic of discussion in the community.

OVERVIEW OF THE PLANNING PROCESS

The process to develop the plan took approximately a year and six months to complete. It included three phases. Staff interacted with the public during all phases of the project. In addition, the project team held several Technical Advisory Committee (TAC) meetings that included PBOT and City staff as well as staff from TriMet and ODOT.

The first phase included hearing from the community about issues and desires for changes to the street. It also included gathering and synthesizing data and information about existing conditions on the street, and examining potential opportunities and constraints. This phase included the first three open houses as part of FLIP, the set up of the SAC process and the development of the Project Goals.

The second phase included developing a range of alternatives to identify improvements for Foster Road. This phase included selecting the locations and treatments for crossing improvements, transit improvements, streetscape improvements and an extensive analysis of potential cross sections for segments of Foster with different right-of-way widths, culminating in the selection of four corridor-length cross section alternatives. This phase also included presenting these ideas to the public at the June 4th Open House.

The last phase included refining recommendations and selecting the recommended cross section and longer term sub options for the plan. The different plan ideas were incorporated into a common plan view that covers the entire project area. It also included a process for prioritizing the use of the $5.25 million in grant funds and the drafting of the plan.


BUCK'S
OPEN


HAPPY
LIVE

2 PLAN RECOMMENDATIONS

2 Plan Recommendations

PLAN GOALS

During the October 17, 2012 SAC meeting, stakeholders collaboratively developed a set of guiding goals that would be used to evaluate cross section options, corridor design alternatives, and the selection of safety and design elements. The following goals were adopted for the Plan Update process:

Streetscape

Make the street a safe, pleasant, attractive, and comfortable place to live, shop, and linger.

Access

Provide balanced access to and from Foster Road to adjacent businesses and residential neighborhoods for all modes.

Pedestrian Travel

Create a safe walking environment for pedestrians on Foster Road with enhanced safer crossings and shorter crossing distances.

Motor Vehicles

Create a safe corridor for motor vehicle travel with smooth, consistent traffic movement. Provide adequate on-street parking, access opportunities, and encourage the shared use of off-street parking.

Transit

Improve quality of service on Foster Road, maintaining and improving access for local and regional trips, including future high capacity transit service.

Bicycle Travel

Create a safe attractive, and comfortable cycling environment on Foster Road for both local and non-local trips, and provide safe crossings and adequate bicycle parking.

Green Infrastructure

Provide opportunities for additional street tree canopy and stormwater management features on Foster Road.

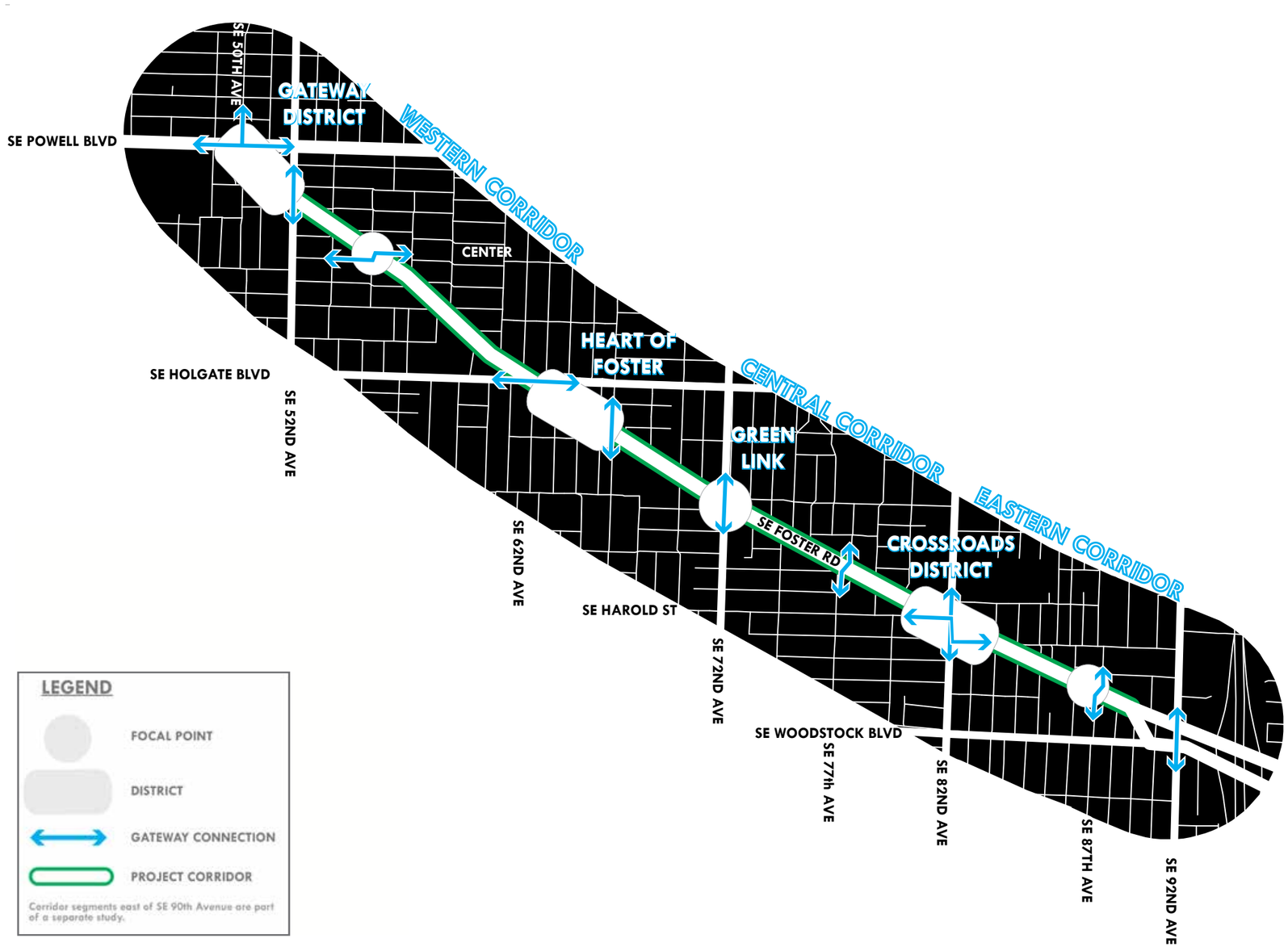
Equity

Strive for an equitable distribution of the benefits and burdens of change among the area's diverse communities.

This plan seeks to address a number of existing conditions and achieve multiple community goals like improving user safety, access to goods and services, and street and neighborhood vitatiliy.

Source: Portland Bureau of Transportation

Figure 2-1 Foster Road Districts, Corridors, and Focal Points



URBAN DESIGN FRAMEWORK

Districts

Gateway District (Powell Boulevard– 52nd Avenue). This District celebrates the western entry to Foster Road as it diverges from Powell Boulevard and SE 50th Avenue. The concentration of businesses and transit activity in this area create a hub of activity and future major destination.

Heart of Foster (Holgate Boulevard – 67th Avenue). The density of businesses and pedestrian activity, along with the older building stock lining the street and a community park, create the pedestrian-oriented hub of activity in the center or "heart" of the Foster Road business corridor. This district focuses pedestrian improvements and urban design features to accentuate the pedestrian-scaled character of the area.

Crossroads District (80th – 84th Avenue). The intersection of Foster Road and SE 82nd Avenue represents the gateway between the Mt. Scott/Foster-Powell and Lents neighborhoods. Improved conditions for pedestrians, bicyclists, and transit riders as well as a more formal identity will enhance connections in this node and make it amenable to business access and development.

Corridors

The three corridors are the linkages that bind and support the districts and focal points. Available right-of-way in the corridors is redistributed to improve safety for all street users and enhance people's ability to access local business through improved pedestrian and bicycle crossings. The Eastern Corridor serves as the portal to Lents Town Center, which is outside of the plan's study area but is highly interconnected to Foster Road.

Focal Points

Green Link. The crossing at SE 72nd Avenue provides the opportunity to create a visual link between the parkway to the north and Mt. Scott Park to the south. The Green Link also provides the opportunity to better connect Foster Road and the business along SE 72nd Avenue and SE Harold Street. Opportunities for simplified intersection operations and crossing improvements for pedestrians and people on bicycles also exist.

Eastern and Western focal points. The focal points at SE 56th and 87th Avenues provide safe crossings and visual interest within the corridors with an opportunity for street and neighborhood identification.

Figure 2-2 Proposed Crossing Improvements

*RRFB Rectangular Rapid Flash Beacon

Source: Nelson\Nygaard

PLAN ELEMENTS

A transportation corridor such as Foster Road contains four general elements:

1. Crossings of Foster Road as well as crossings of cross streets,
2. Cross section (made of sidewalks, on-street parking areas, travel lanes, etc),
3. Streetscape elements (such as trees, swales, street lights, etc.), and
4. Transit elements (such as bus stops and shelters).

Below is a summary of improvements for Foster Road organized in these four categories.

Crossings

Pedestrian improvements include curb extensions, marked crossings with median islands and Rectangular Rapid Flash Beacons (RRFBs) and traffic signal modifications.

Curb Extensions

Due to its diagonal orientation to the street grid, Foster Road creates several complex intersections where it meets north-south and east-west streets. The plan addresses this by adding curb extensions at SE 54th Avenue/SE Francis Street, SE 58th Avenue/SE Gladstone, SE 59th Avenue/SE Boise Street, and SE Cora Street (Figure 2-2). The proposed curb extensions will reduce pedestrian crossing distances and provide a smaller turning radius off of Foster Road while maintaining access for local deliveries .

As a long term action, the plan also includes widening the NE corner of Foster Road at SE 82nd Avenue. This improvement provides a wider sidewalk, moves the stop for TriMet Line 14 back from its temporary location on the NW corner, and adds a transit shelter.

Marked Crossings

A key safety issue on Foster Road is the lack of protected pedestrian crossings. The plan addresses this by adding median islands, RRFBs, and striped crosswalks at SE 70th, 75th, and 84th Avenues. The existing median islands at SE 58th, 65th, and 69th Avenues will be upgraded to include RRFBs. This will reduce the average distance between protected crossings by about 300 feet. Figure 2-3 below compares average protected crossing spacing on four similar eastside arterials .

Figure 2-3 Comparison of crossings on similar corridors in Portland

Street Segment	Length (ft)	Number of protected crossings*	Average Spacing (ft)
Foster 50th - 90th (existing)	12,200	13	940
SE Hawthorne: Grand - 50th	12,950	15	860
NE Sandy: 14th - 50th	11,700	16	730
N/NE Broadway: Vancouver - Chavez	11,450	20	570
Foster 50th - 90th (after planned improvements)	**12,200**	**19**	**640**

*Protected crossings include full traffic signals, half traffic signals, pedestrian hybrid beacons (e.g, HAWK signals), and RRFBs.

A curb extension on Foster Road at SE 92nd Avenue reduces crossing distances and expands the amount of programmable space for street furniture, lighting, and plantings.

Source: Portland Bureau of Transportation

The rectangular rapid flashing beacon at SE 80th Avenue vastly improved user safety and reduced pedestrian delay.

Source: Portland Bureau of Transportation

Close up of the rectangular rapid flashing beacon head and signage.

Source: Portland Bureau of Transportation

Traffic Signal Modifications

New or upgraded signals along Foster Road are planned for installation at Powell Boulevard, SE Holgate Boulevard, and SE 72nd Avenue.

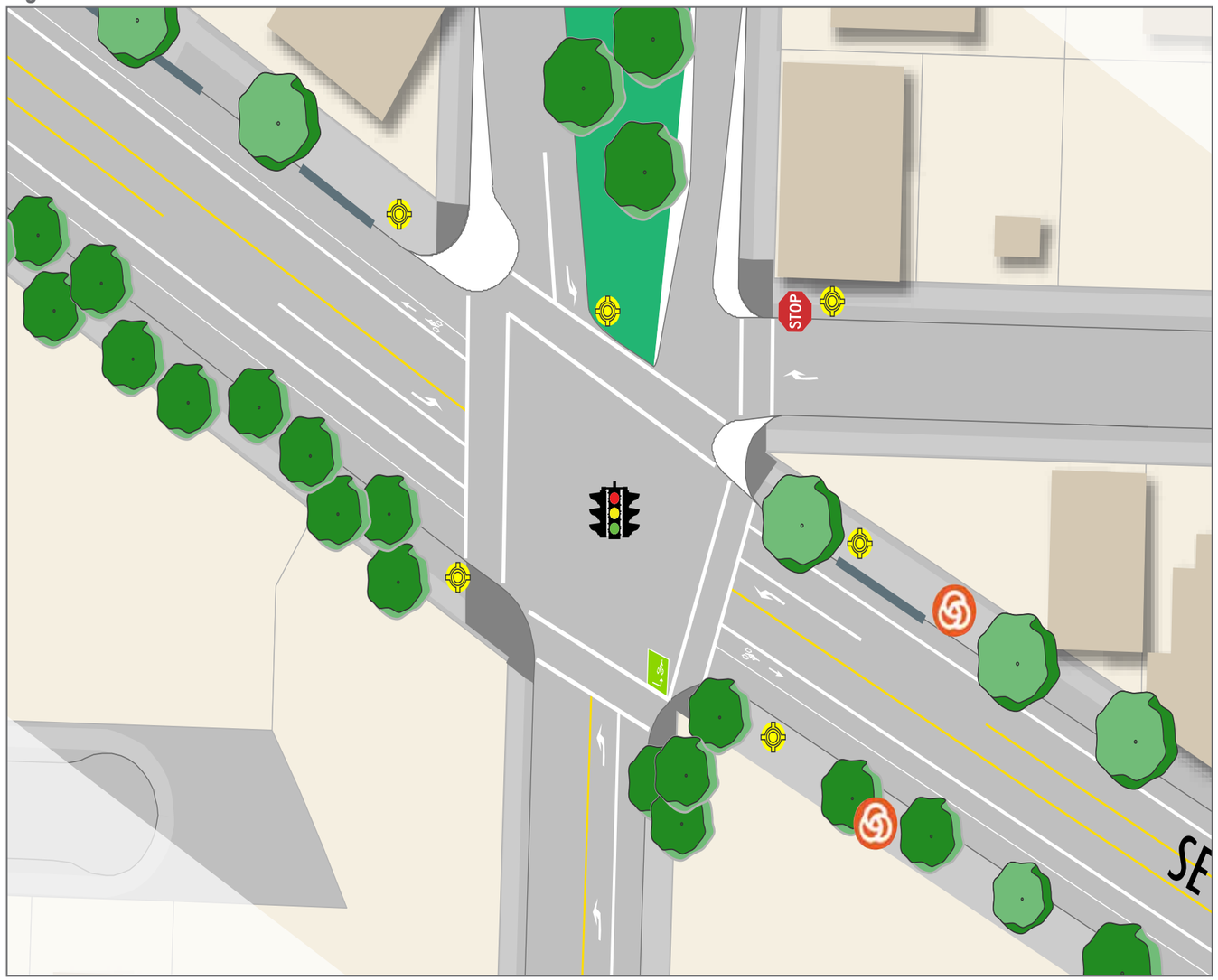
Powell Boulevard: The plan calls for coordination with the Oregon Department of Transportation (ODOT) to install an "active sign" that would alert motorists on Powell Boulevard turning southeast onto Foster Road of the speed they are traveling. The sign would turn on when speeds exceed a safe threshold. This improvement is expected to reduce the number of collisions against the transit island on the southwest corner of Powell Boulevard and Foster Road.

SE Holgate Boulevard: A modified signal is planned for SE Holgate Boulevard, which along with a curb extension on the south side, will enhance the pedestrian crossing of Foster Road. New LED signs will prohibit right turns on red from SE Holgate Boulevard when pedestrians cross Foster Road, and the curb extension will provide a smaller turning radius, requiring vehicles turning right onto Foster Road to do so at a slower speed. In addition, left turns will now be permitted from Foster Road onto Holgate Boulevard. The new signal will include pedestrian countdowns and the latest technologies for the vision-impaired.

SE 72nd Avenue: The intersection at 72nd Avenue and Foster Road will be reconfigured, with a full new signal. This intersection modification will add a left turn lane for the southbound approach. This will allow the left turns onto Foster Road to happen simultaneously, providing more "green" time for Foster Road. Curb extensions will be provided and the west crosswalk of Foster Road will be realigned to directly connect the northwest and southwest corners, instead of the SW corner connecting to the green median of Firland Parkway. This will eliminate the need for pedestrians to cross both SE 72nd Avenue and Foster Road to get from the southwest to the northwest corner . In addition, northbound traffic will be prohibited from making right turns on red to accommodate a green turn queue facility for people on bicycles turning left on SE 72nd Avenue.

The 2003 plan identified for potential configuration for this intersection. The difference among them is the treatment of SE Raymond Street. This plan leaves SE Raymond Street as a two way street. However, as part of a future Raymond Bikeway Project, other designs may be considered. Refer to 2003 plan for more information.

Figure 2-4 SE 72nd Avenue and Foster Road



Improvements to the intersection of SE 72nd Avenue include a new full signal, SB left-turn lane, EB box turn facility for people on bicycles, decorative lighting, street trees, and multiple curb extensions.

Source: Nelson\Nygaard

Cross Section

The recommended cross sections for Foster Road (illustrated in Figure 2-5) reduce the number of general travel lanes from four to three (one in each direction and a center turn lane) and adds bike lanes. In the eastern segment (SE 84th Avenue – SE 89th Avenue), sidewalks will be widened from 5 feet to 9 feet, with street trees and ADA curb ramps added at each corner. A buffer between the bicycle lane and the travel lanes could be provided between SE 54th to SE 72nd Avenues and also on the departing bicycle lanes at the crossing of SE 82nd Avenue. Foster Road retains the wide sidewalks west of SE 80th Avenue. The recommended cross sections best address community goals and meets the objectives of a safe and balanced multimodal street that serves both local and district trips, while supporting the economic vitality of local businesses and the redevelopment of underutilized sites along Foster Road. Proposed improvements would significantly increase safety, convenience in cycling, as well as walking and riding transit along and across Foster Road. Additional detail on the evaluation of cross section options is provided in Appendix A.

This artist rendering shows how the proposed cross section will enhance the Heart of Foster with generous sidewalks, enveloping trees, decorative street lighting, and multimodal connectivity.

Source: Portland Bureau of Transportation. Arnoud van Sisseren

Foster Road Cross section overview.

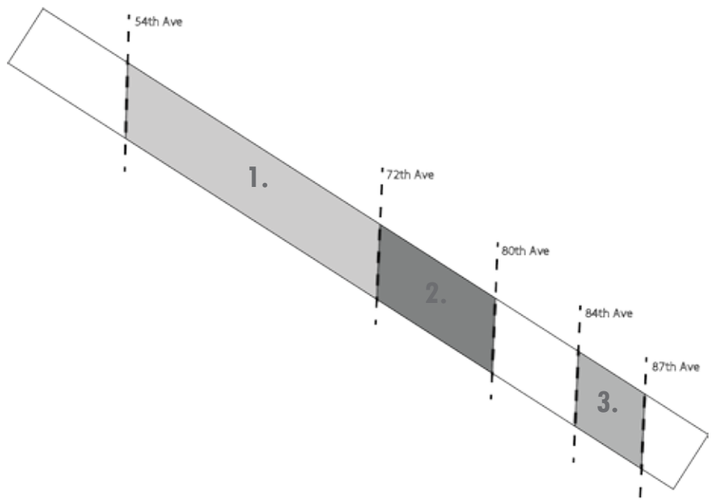


Figure 2-5 Existing and Proposed Cross Sections

SE 54th Avenue to SE 72nd Avenue

Existing

1.

SE 54th Avenue to SE 72nd Avenue

Proposed

SE 72nd Avenue to SE 80th Avenue

Existing

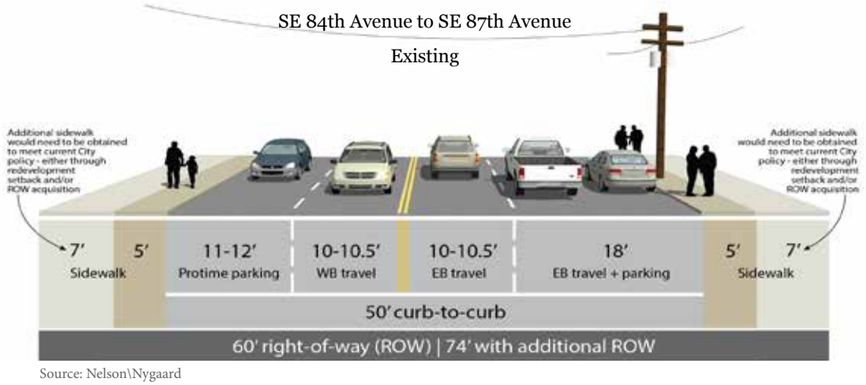
2.

SE 72nd Avenue to SE 80th Avenue

Proposed

SE 84th Avenue to SE 87th Avenue

Existing



3.

SE 84th Avenue to SE 87th Avenue

Proposed

Source: Nelson\Nygaard

Source: Nelson\Nygaard

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

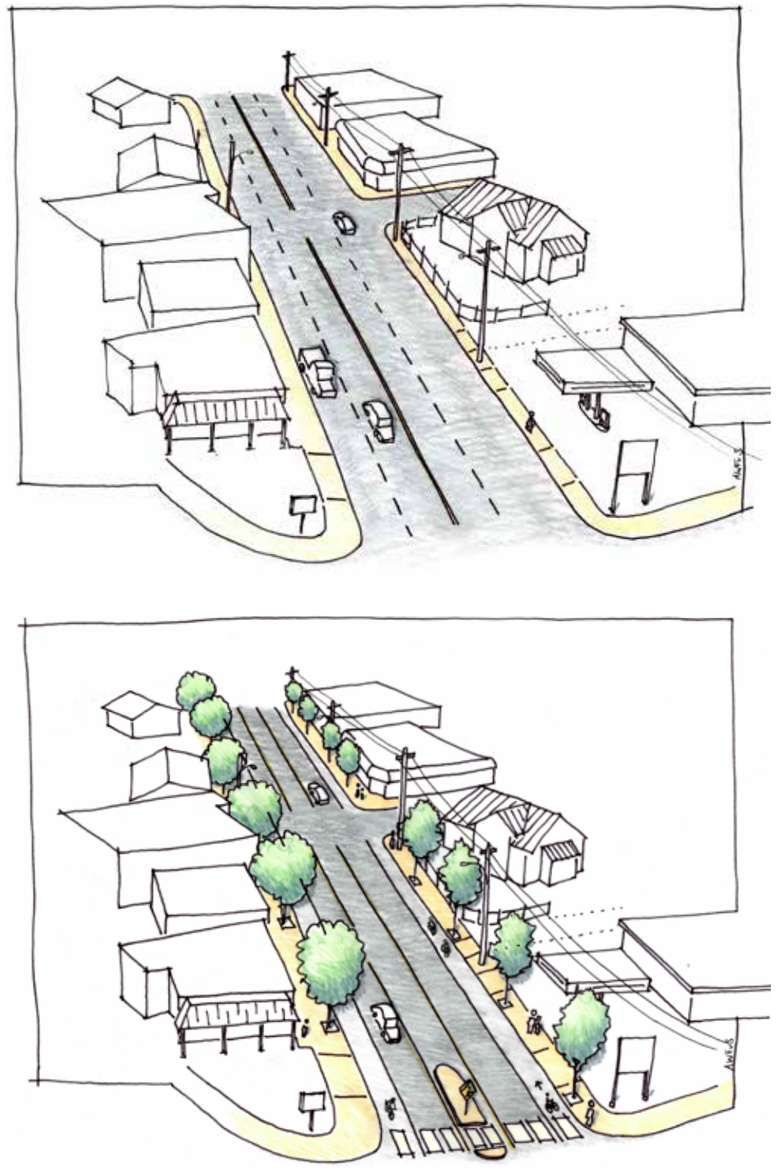
Pedestrian Enhancements

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-feet 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 recomended 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.

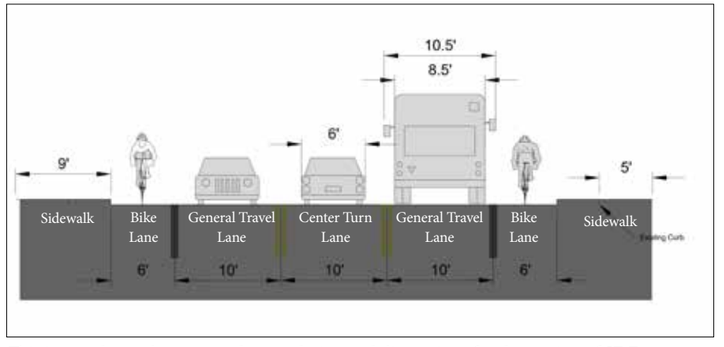
- There would be reduced opportunities for traffic to speed through the corridor since it would be hard to pass slower traffic with the new street configuration.
- A center turn lane would provide a dedicated space to make left turns onto adjacent streets and businesses and is a buffer from opposing 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.
- 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-feet 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.

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



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.

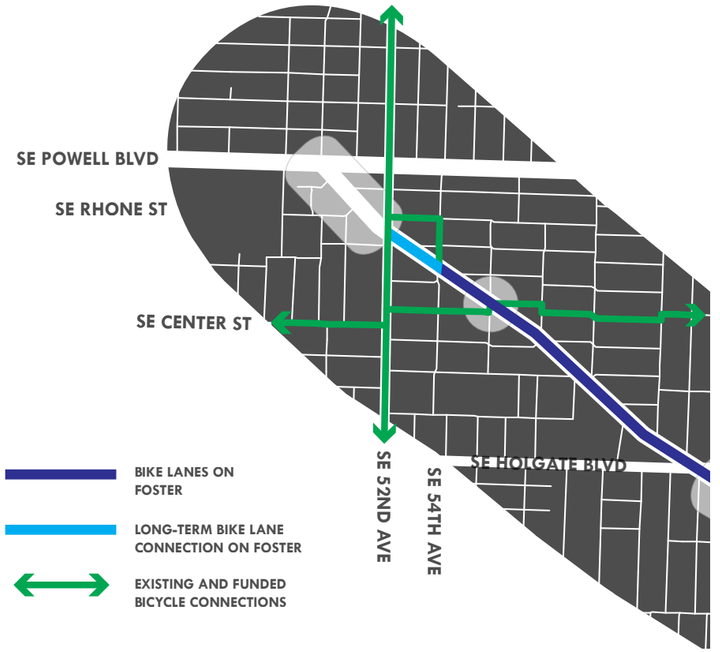
b. Crossroads Transition (SE 80th to SE 84th Avenues). In this segment Foster Road needs additional lanes for traffic. Future suboptions would separate bicyclists from motor vehicles.

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:

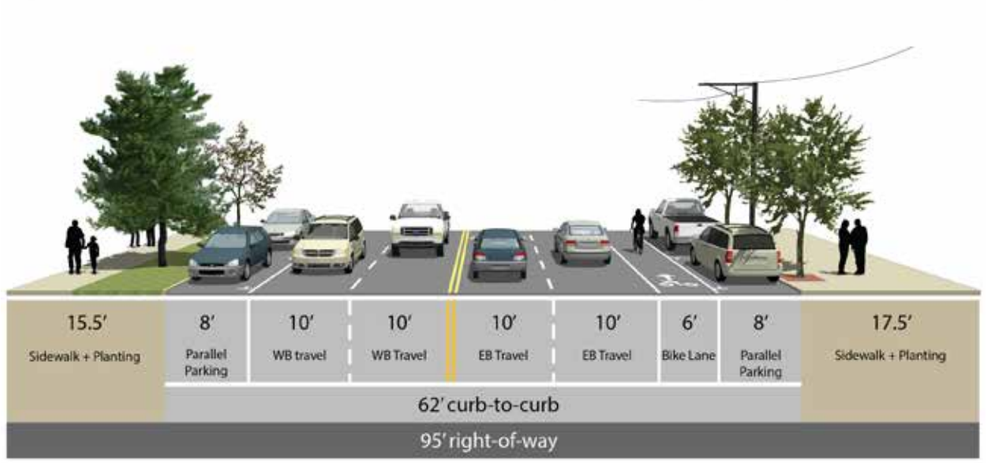
For southbound cyclists on SE 52nd Avenue who wish to head eastbound on Foster Road, a direct connection at SE 52nd Avenue would ideally include a left turn bike box at SE 52nd Avenue and Foster Road. Without a left turn box, cyclists would be required to merge across traffic between Powell Boulevard 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.

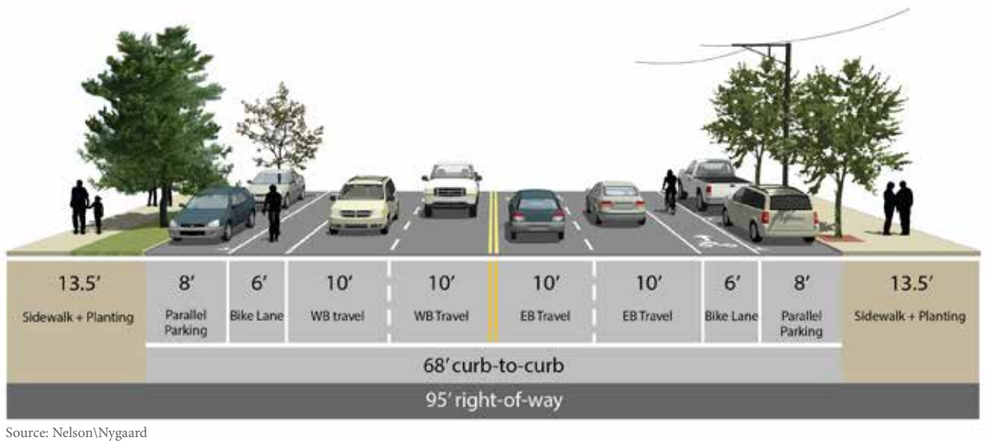
Two future suboptions connect cyclists to SE 52nd Avenue. As a longer-term solution, a westbound bike lane could be provided all the way to 52nd Avenue while retaining on-street parking. This would require narrowing the sidewalk on one side of Foster Road from 17.5 feet to 15.5 feet to provide the additional 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

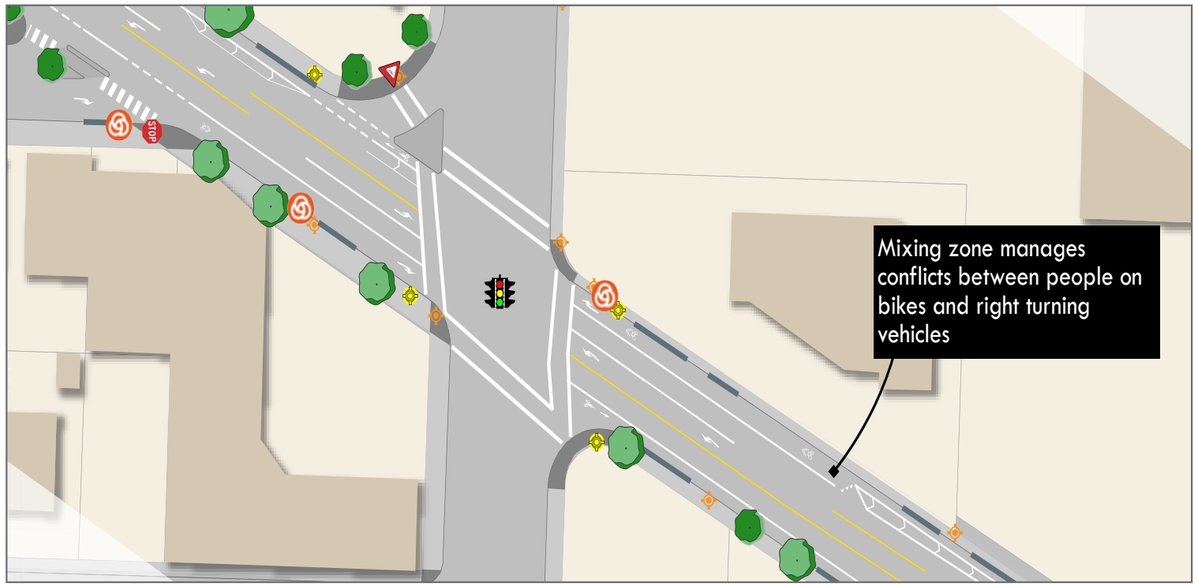
Figure 2-8 SE 52nd Avenue and Foster Road (future suboption B)



Source: Nelson\Nygaard

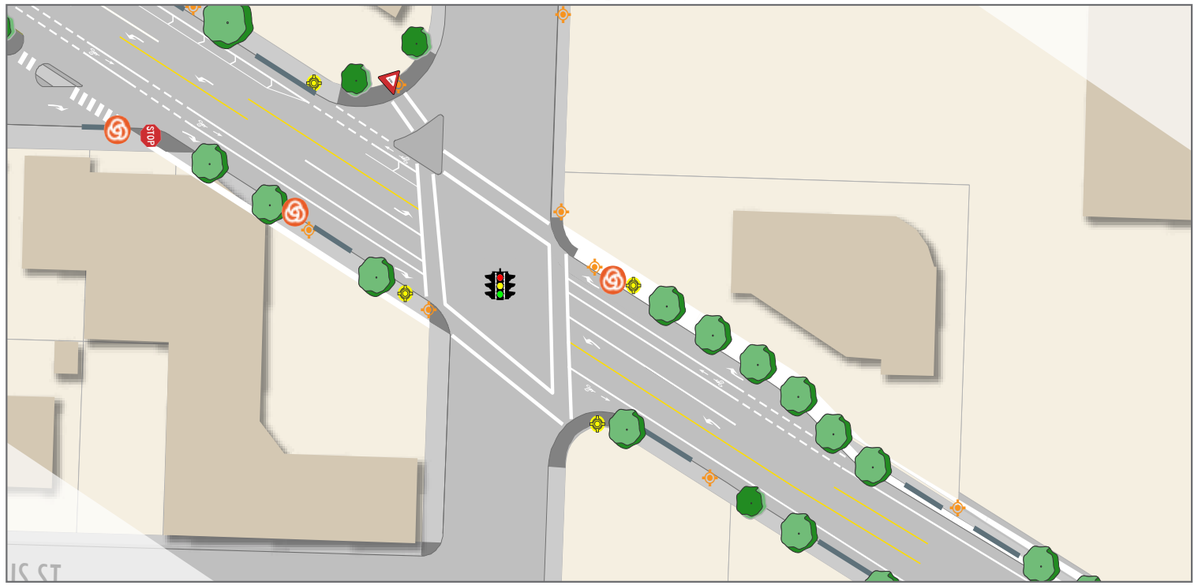
Connecting cyclists through SE 82nd Avenue. At SE 82nd Avenue, additional capacity is needed for vehicles turning right from Foster Road to SE 82nd Avenue. To accommodate that movement, there is both an interim and long term solution. In the short term, there will be a shared bike/right turn lane within 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

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

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.

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 our 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

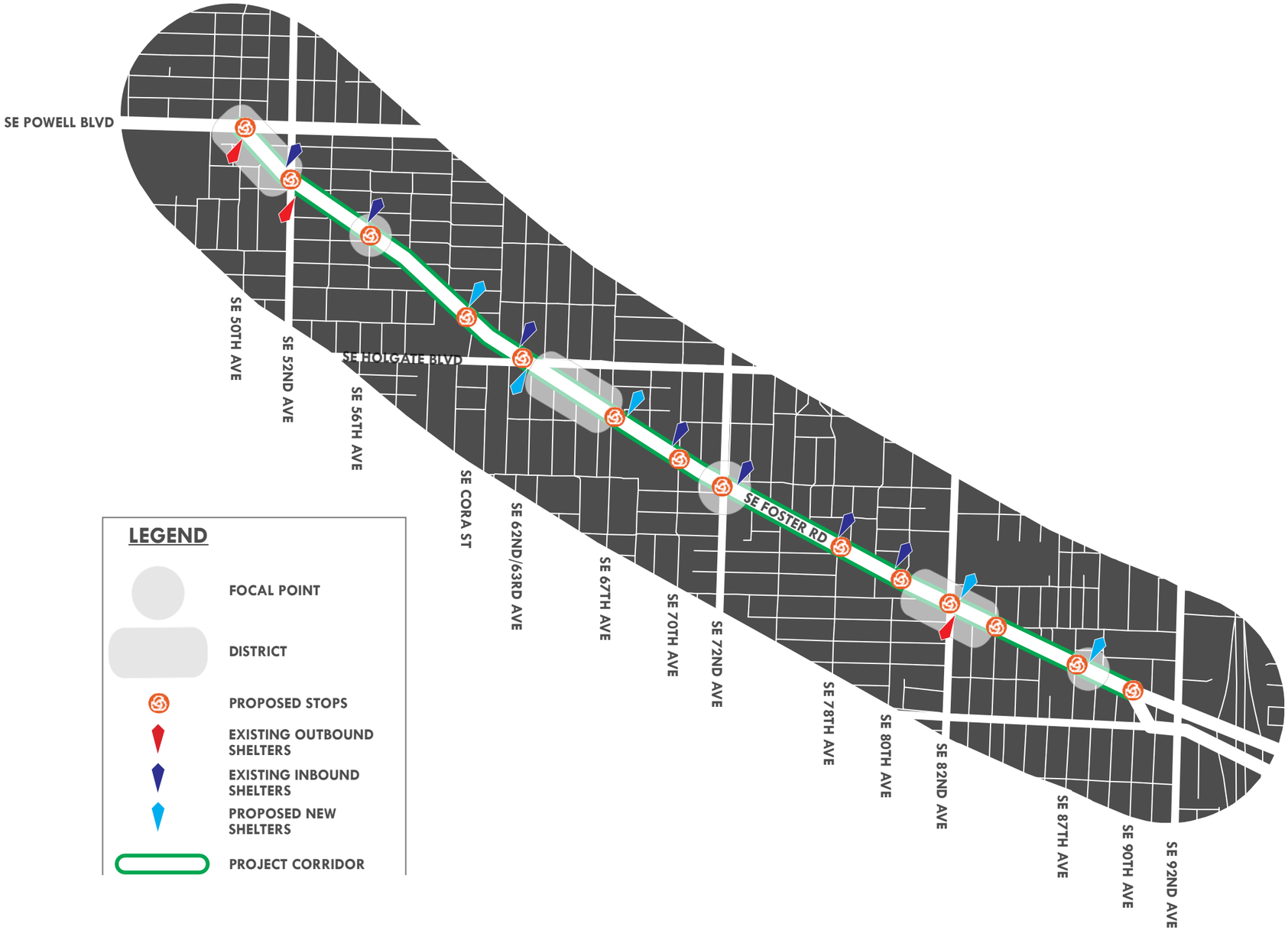
Street furniture is typically purchased, installed, and maintained by private organizations and businesses.

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

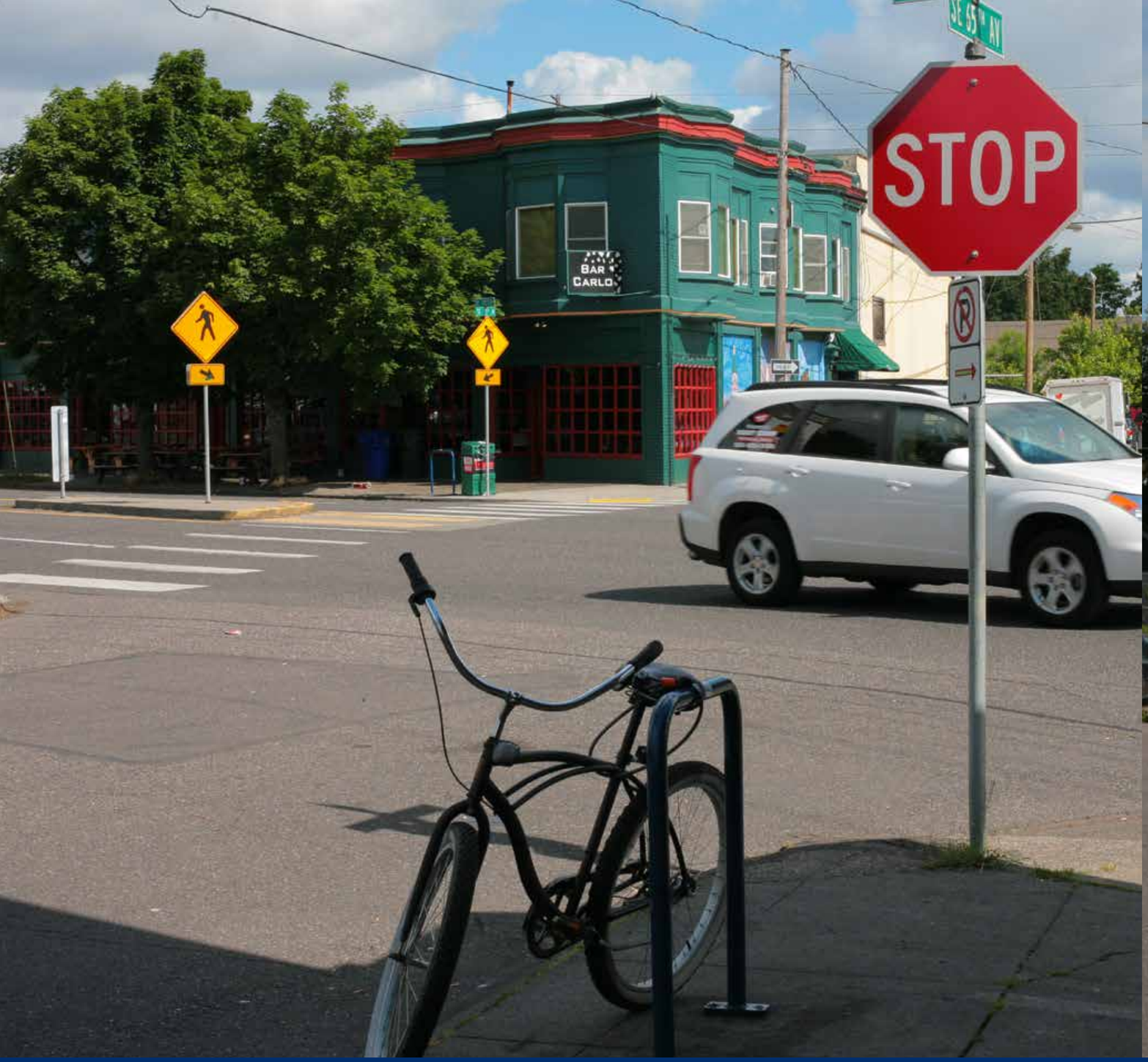
Bus stop consolidation is expected to, among other things, improve bus travel time through the corridor and also provide a minimum number of riders to warrant adding bus shelters and seating (TriMet generally only provides bus shelters at stops with at least 50 weekday boardings). In the short term, 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


STOP
BAR
CARLO


BUYRIGHT
CARPET & VINYL
Congoleum

3 RECOMMENDED CORRIDOR DESIGN

3 Recommended Corridor Design

This section integrates the different elements of the plan and presents it in plan view. It highlights the location of crossings (curb extensions, median islands with rectangular rapid flash beacons, traffic signals), the cross section and transition areas, and streetscape and transit features.

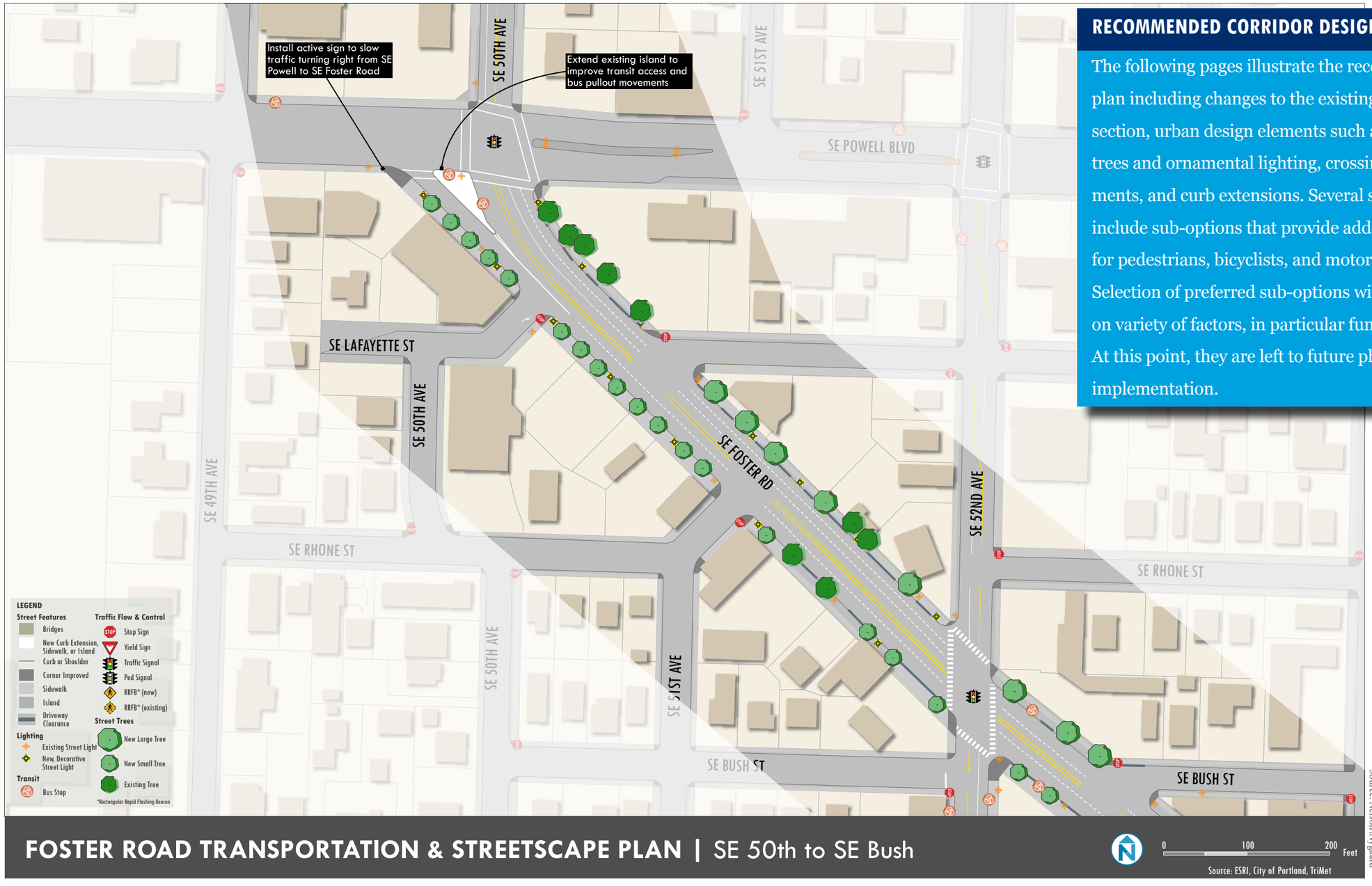
The graphics cover Foster Road from Powell Boulevard/SE 50th Avenue to Lents Town Center area around SE 90th Avenue.

The placement of street trees and street lights is mostly conceptual. While analysis has been conducted, more is needed as part of the next phase of the project to determine exact feasibility and location. Likewise, the plan identifies general location of transit stops. PBOT staff will continue to work with TriMet staff to determine the exact location of bus stops and amenities.

Equitable distribution of improvements. Fulfilling the goal of an equitable distribution of benefits and burdens of change among the area's diverse communities, the following graphics show that all areas of Foster Road benefit from transportation improvements. The safety and access improvements of the conversion of the cross section cover almost the entirety of the corridor. Crossing enhancements and streetscape and transit improvements are also distributed throughout the corridor.

The area of most investment is the eastern segment, from SE 82nd Avenue to SE 90th Avenue in the Lents neighborhood. This is the result of this area being the one with the most substandard transportation network, with very narrow, inaccessible sidewalks and no street trees or bus shelters.

Figure 3-1 SE 50th Avenue to Bush Street

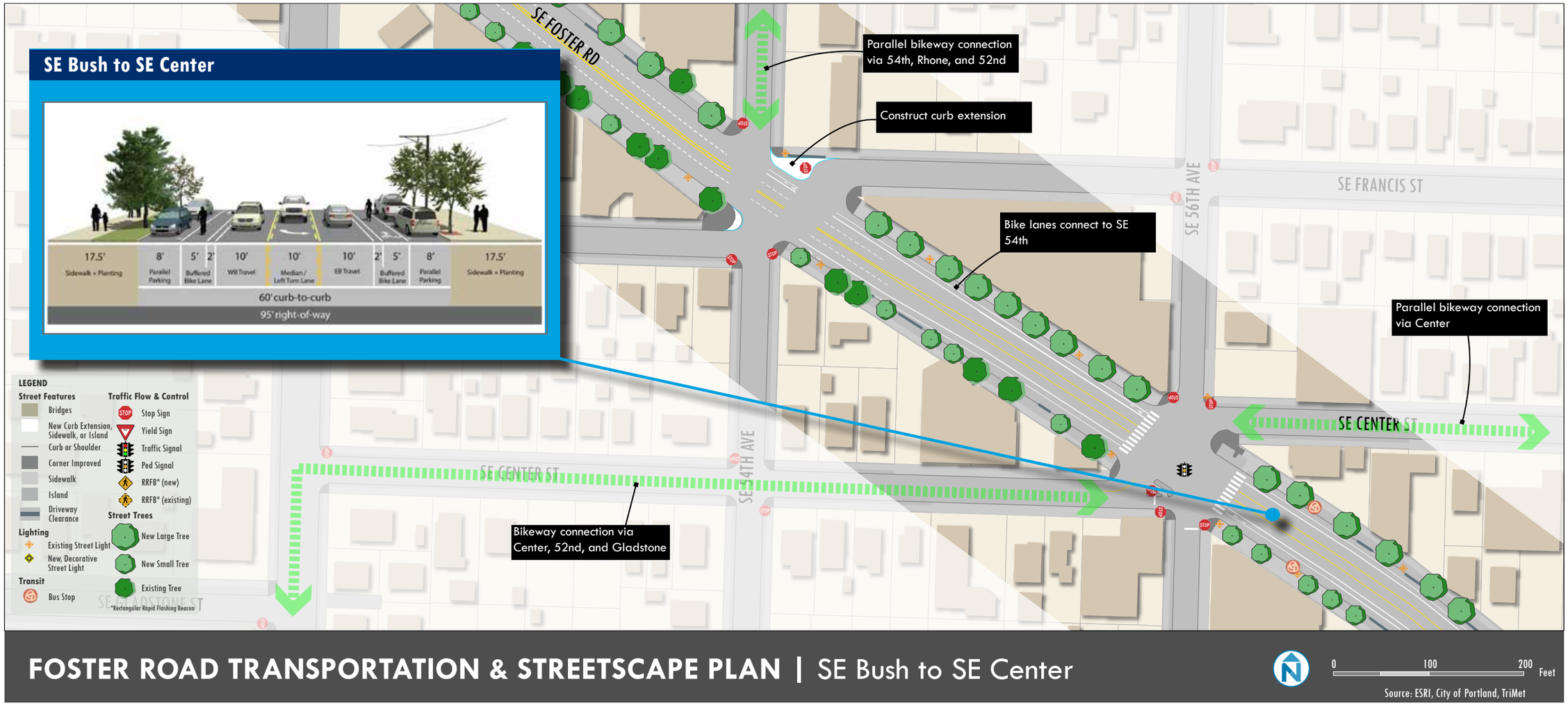


FOSTER ROAD TRANSPORTATION & STREETSCAPE PLAN | SE 50th to SE Bush

RECOMMENDED CORRIDOR DESIGN

The following pages illustrate the recommended plan including changes to the existing cross section, urban design elements such as street trees and ornamental lighting, crossing improvements, and curb extensions. Several segments include sub-options that provide added benefits for pedestrians, bicyclists, and motorists, alike. Selection of preferred sub-options will depend on variety of factors, in particular funding. At this point, they are left to future phases of implementation.

Figure 3-2 SE Bush Street to Center Street



Source: Nelson\Nygaard

Figure 3-3 SE 58th Avenue to 62nd Avenue

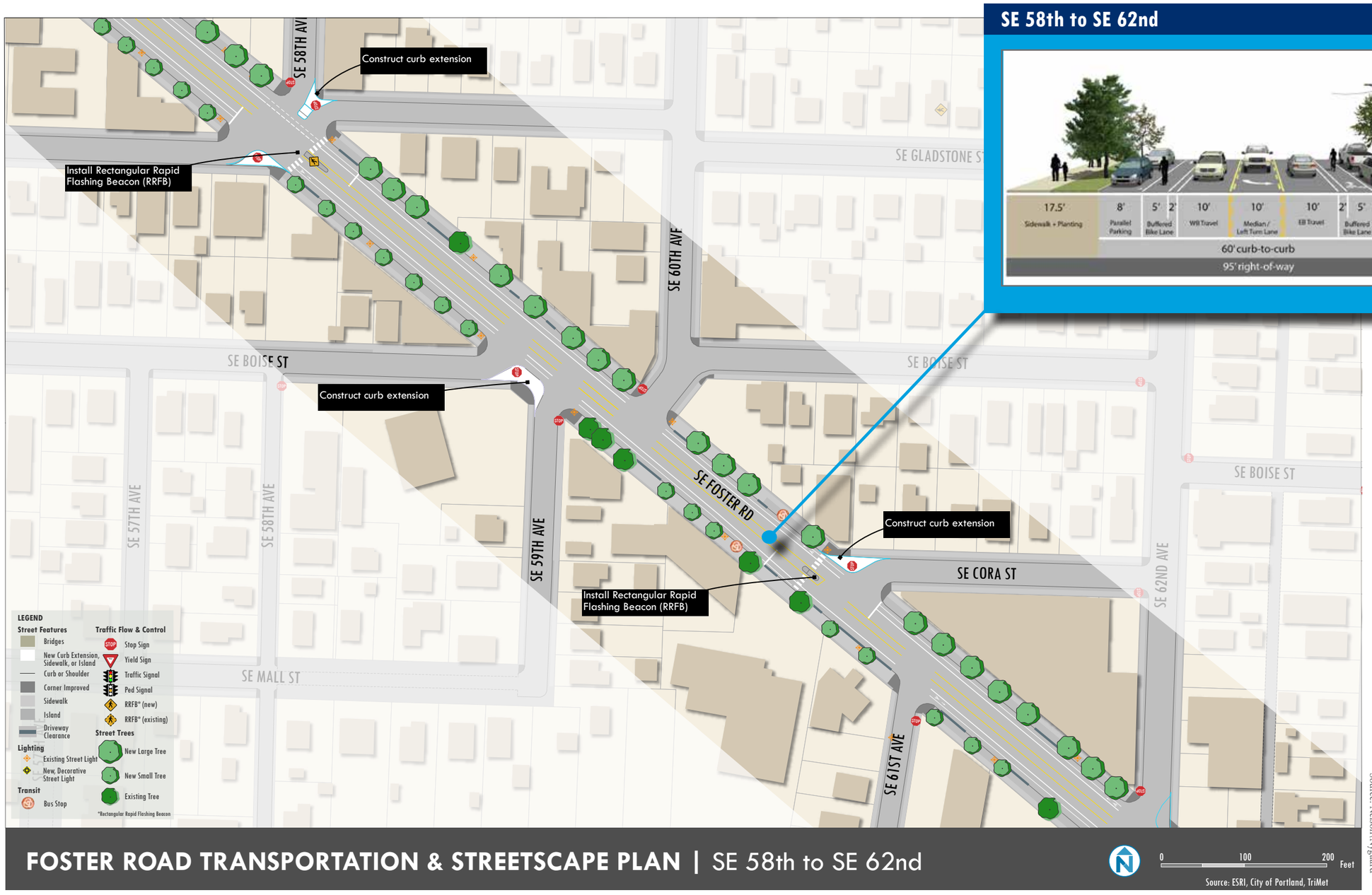
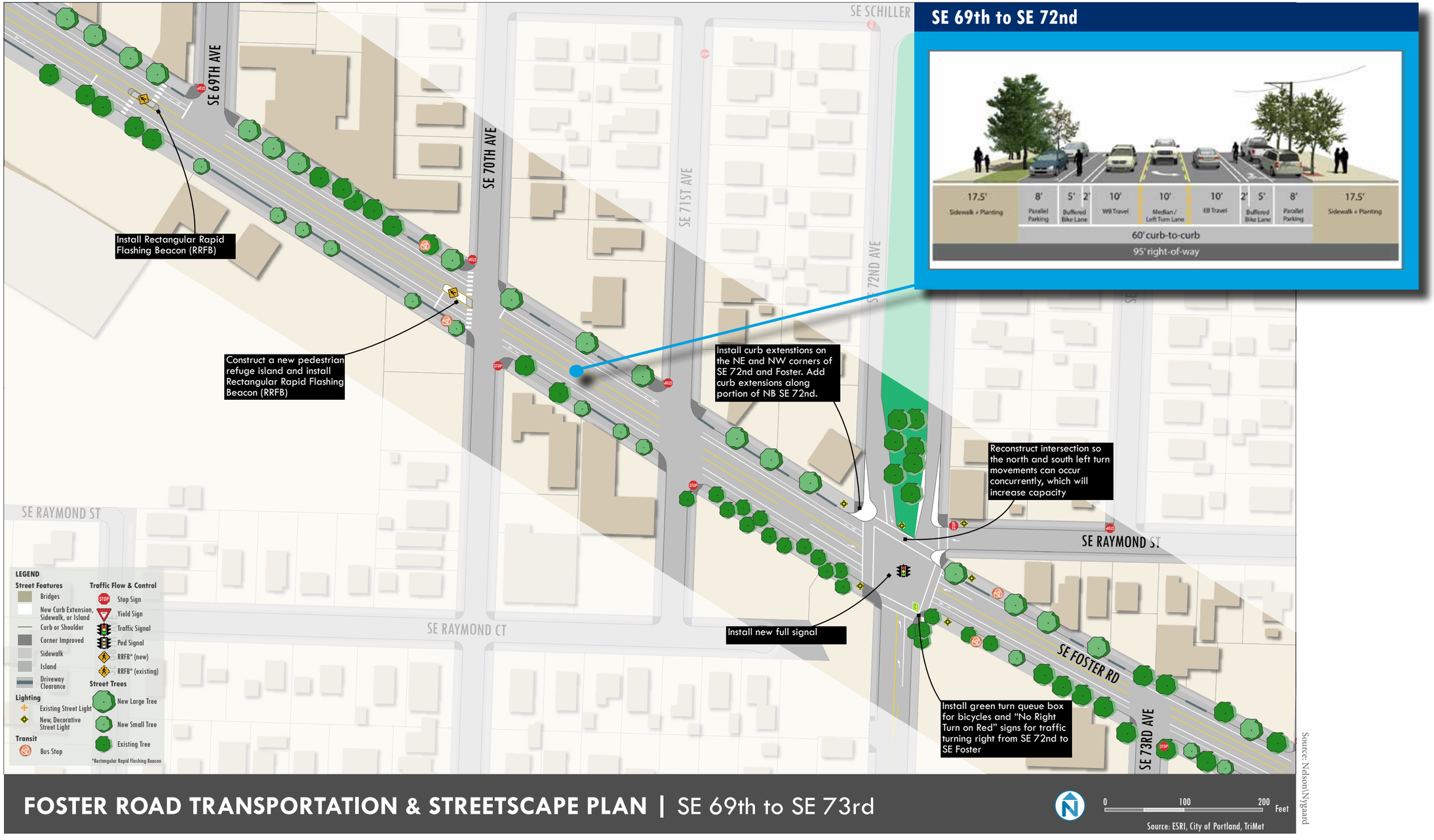


Figure 3-4 SE Holgate Street to 68th Avenue

Figure 3-5 SE 69th Avenue to SE 73rd

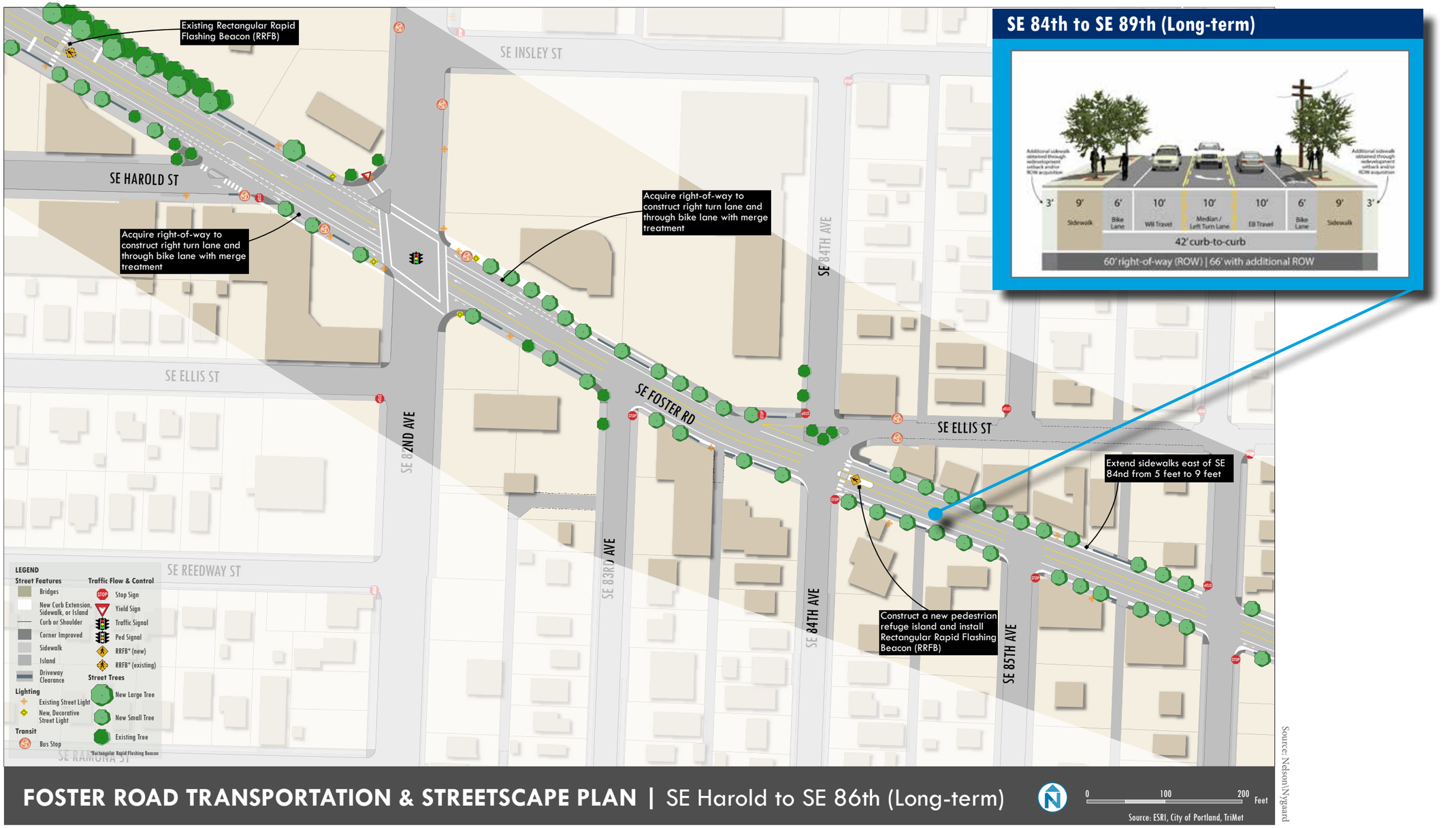


FOSTER ROAD TRANSPORTATION & STREETSCAPE PLAN | SE 69th to SE 73rd

Figure 3-6 SE 74th Avenue to 80th Avenue

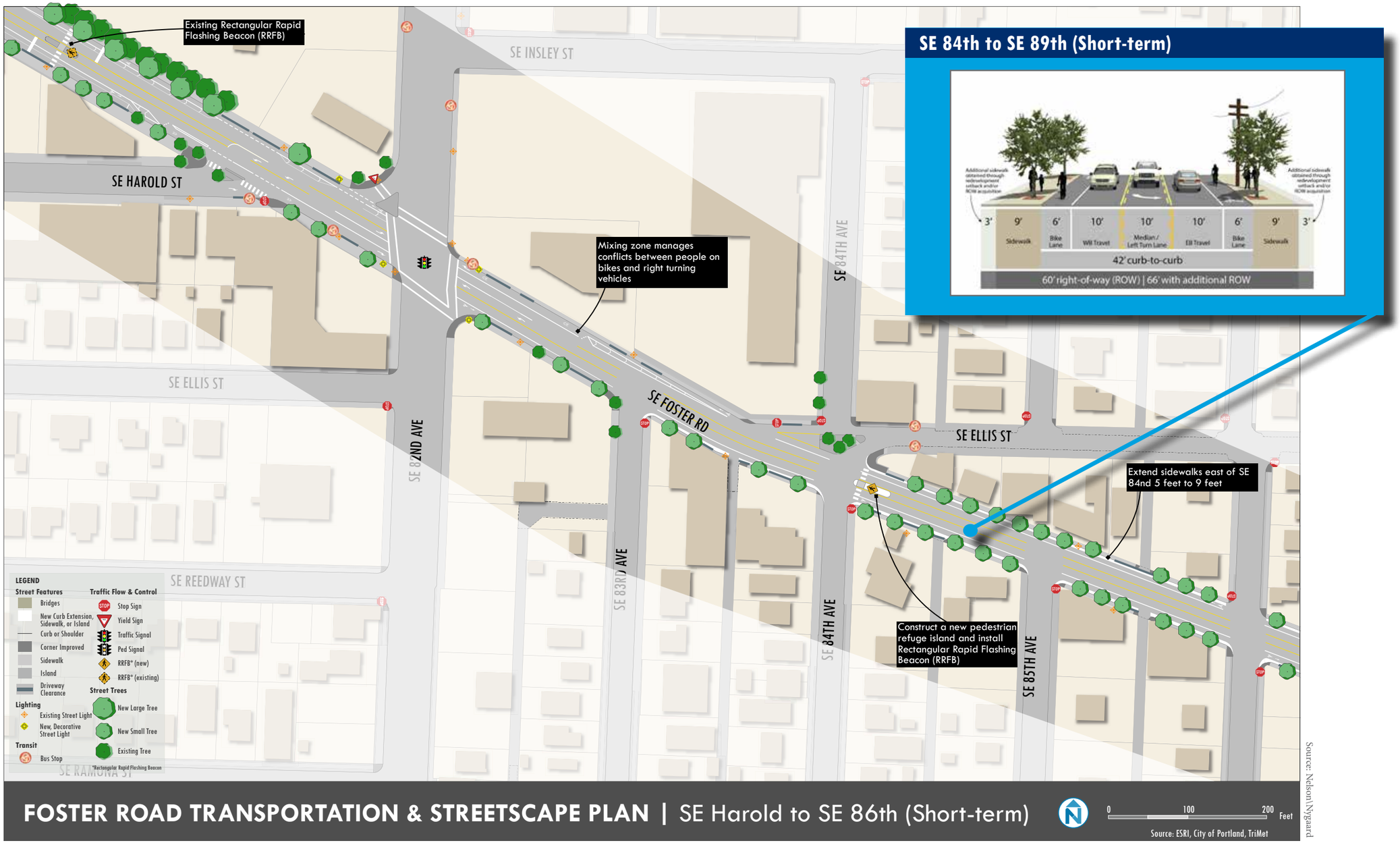
Source: Nelson\Nygaard

Figure 3-7 SE Harold Street to 86th Avenue (Long-term)



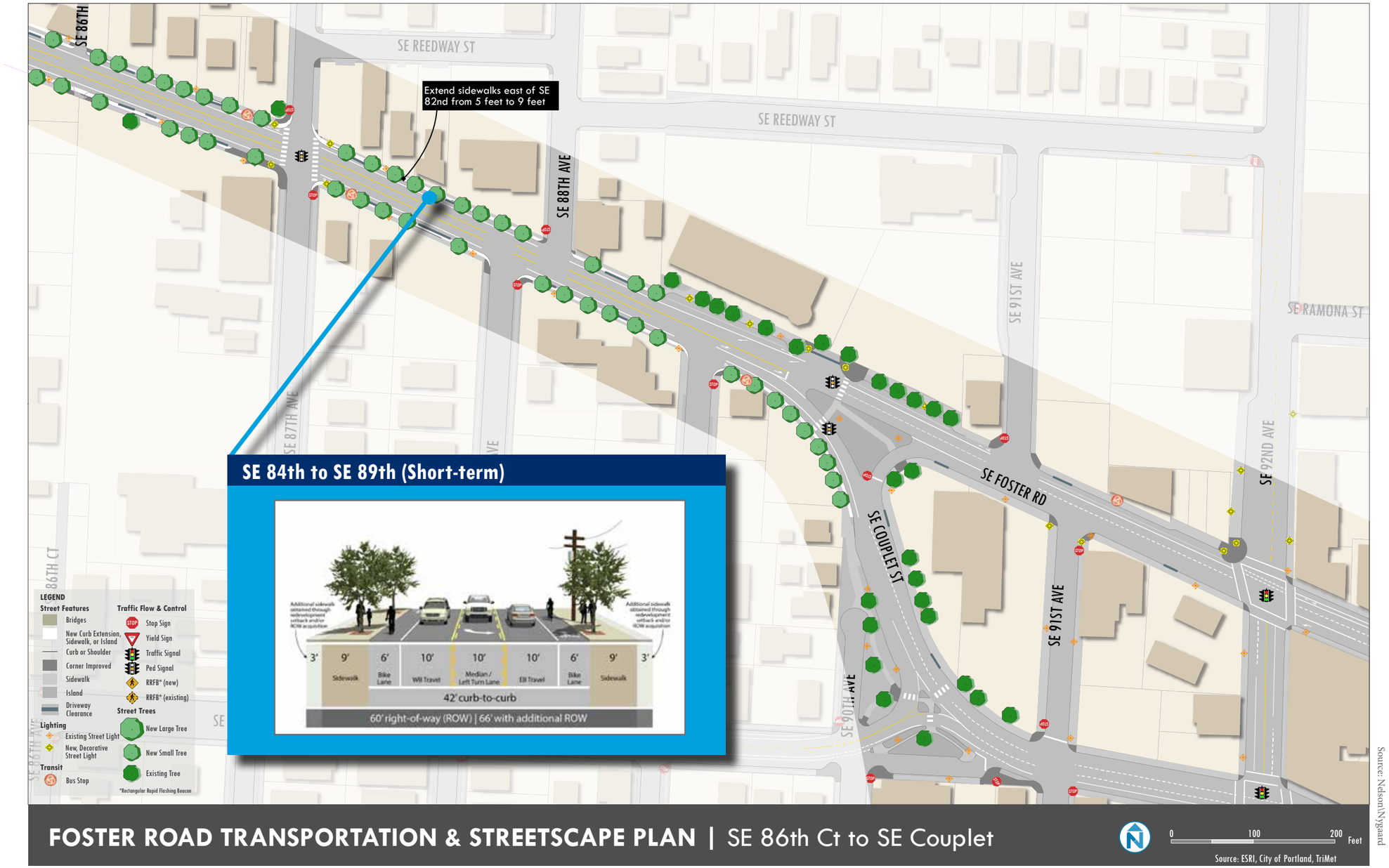
Source: Nelson\Nygaard

Figure 3-8 SE Harold Street to 86th Avenue (Short-term)



Source: Nelson\Nygaard

Figure 3-9 SE 86th Avenue to Couplet

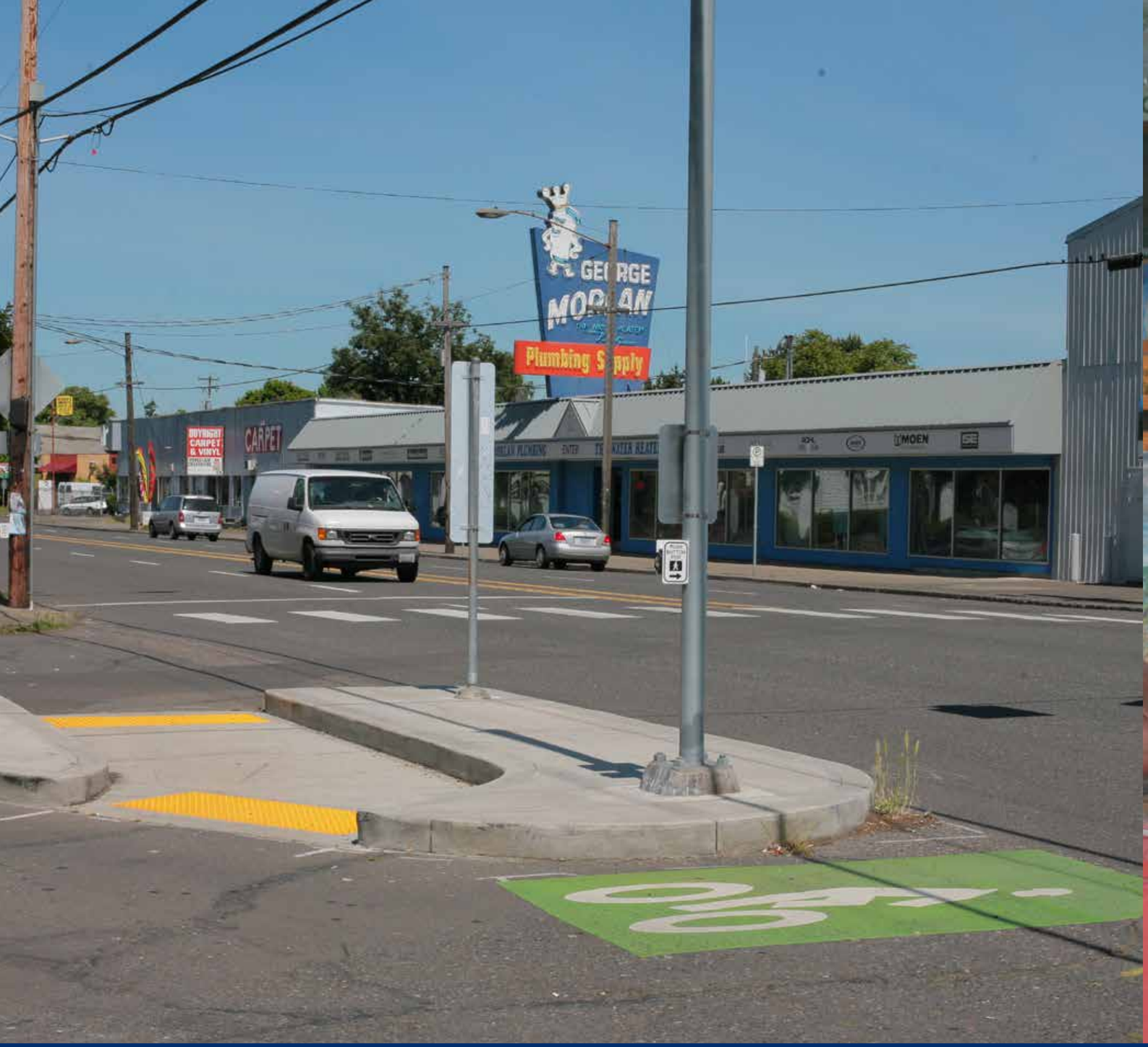


FOSTER ROAD TRANSPORTATION & STREETSCAPE PLAN | SE 86th Ct to SE Couplet

0 100 200 Feet

Source: ESRI, City of Portland, TriMet

Source: Nelson\Nygaard


GEORGE
MORGAN
Plumbing Supply
CARPET
MOEN

4 IMPLEMENTATION

4 Implementation

IMPLEMENTING THE PLAN

As mentioned in the Project Overview, PBOT has secured approximately $5.25million to finance improvements along the corridor starting in 2016. While the available funds go a long way to fund most of the elements in the plan, some elements will have to be implemented at a later phase.

Therefore, staff worked with the SAC to prioritize investments and develop short and long term improvements. The list of improvements include funding for all the different elements of the corridor (cross section, sidewalks, crossings, trees and street lights, transit amenities, public art, etc.) as well as for all segments of the corridor, thus fulfilling the goals of the project, including an equitable distribution of benefits.

Below is information about project costs, prioritization and use of available funds, right-of-way implications for redevelopment in the Lents segment, and a list of next steps in implementation.

PROJECT COSTS AND PRIORITIZATION OF ALLOCATED FUNDS

PBOT developed costs for individual items as part of the planning process. At this time, project staff has not created a comprehensive cost estimation for all the projects designed and constructed in one phase. As such, there is the potential to gain economies of scale as project elements are bundled. On the other hand, the designs were developed largely without detailed surveying; as result, costs may increase to address unforeseen issues. Costs are "low confidence" plan level estimates and include contingency costs. The next phase of the project will provide much more detailed costs.

Figure 3-1 identifies PBOT and the Stakeholder Advisory Committee's priorities for Foster Road, in 2016 dollars. The prioritization effort was guided by two directives: 1) Prioritize safety elements along Foster Road and 2) Bundle project elements that either must go together or benefit from going together. The table to the right provides guidance for how to allocate available funds.

The top priorities are for the crossings of Foster Road, the changes to the curb-to-curb cross section and the widening of the sidewalks in Lents from SE 84th to SE 90th Avenues. A lesser priority is for items less related to safety that, though important, can also be done incrementally. These include street trees, bicycle parking and ornamental lighting.

Figure 4-1 Cost Estimates and Prioritization Improvements

#	Concept Level Cost Estimate	Cost in 2016 dollars
1	6 Rectangular Rapid Flash Beacons (RRFB) locations	$ 300,000
2	Crossings and curb extensions	$ 675,000
*3	3-lanes grinding and striping	$ 1,475,000
**4	Sidewalks east of 84th with 4 (Z-40) lights and trees	$ 1,650,000
5	72nd/Foster Road signal redesign	$ 260,000
6	Holgate/Foster Road signal redesign	$ 260,000
7	Active sign at Powell	$ 15,000
8	Active sign(s) at Holgate/Foster	$ 10,000
9	TriMet station improvements (shelters)	$ 125,000
***10	Improved NE corner of 82nd/Foster for transit shelter	$ 66,000
11	Powell transit island extension	$ 10,000
12	20 ornamental street lights (Z-40) from SE Holgate Boulevard to SE 67th Avenue	$ 224,000
13	150 street trees	$ 120,000
14	Bicycle parking (two bike corrals and 40 staples)	$ 15,000
****15	Potential traffic diversion mitigation	$ 100,000
*****16	2% Public Art/Gateway	$ 40,000
Total		**$ 5,345,000**

#	Additional items	
17	Long term sub option at Foster Road and SE 82nd Avenue	N/A
18	SE 52nd to 54th Avenue sub option to connect bicycle lane to SE 52nd	$250,000-$750,000
19	Additional ornamental street lights	$ 448,000

Note: These numbers are very preliminary and for comparison purposes only. Contingency is included. More analysis is needed to determine actual costs.

* #5 and #6 must be included

** #13 #5 and #6 must be included

*** May require additional costs as part of potential "damages" to private property

**** If needed. Not part of the prioritiztion. Could be spent on other plan items

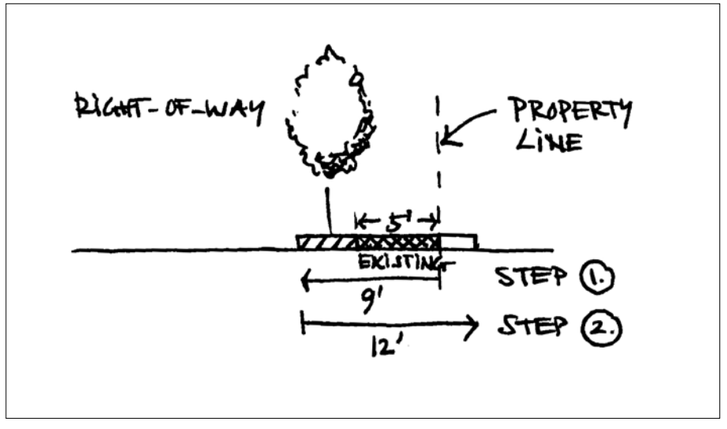
***** Requirement. Not part of prioritization

RIGHT OF WAY IMPROVEMENTS BETWEEN SE 82ND AND SE 90TH AVENUES

Between SE 82nd and SE 90th Avenues, the public right-of-way measures approximately 60 feet wide. With four general travel lanes and parking on the south side of the street, sidewalks are only 5 feet wide, with no buffer or furnishing zone. The Pedestrian Classification for Foster Road is City Walkway. City regulations call for a standard 12-foot wide sidewalk corridor within a 60-foot right-of-way for Foster Road.

To achieve the 12-foot sidewalk corridor is a two step approach. As part of this plan, the new cross section in this portion of the corridor would widen sidewalks to 9 feet (typically) by narrowing the roadway but without widening the right-of-way. This also allows for a furnishing zone with small trees. This will be constructed within the existing right-of-way depending on available funds.

To achieve the 12-foot sidewalk corridor, in accordance with the Pedestrian Design Guide, this plan recommends a second step be a dedication of property (3 feet) as an approval condition from qualifying new development and significant redevelopment. This two step approach provides a balance between what can be achieved with some adjustments in the existing right-of-way and the contribution neccesitated by developing properties.

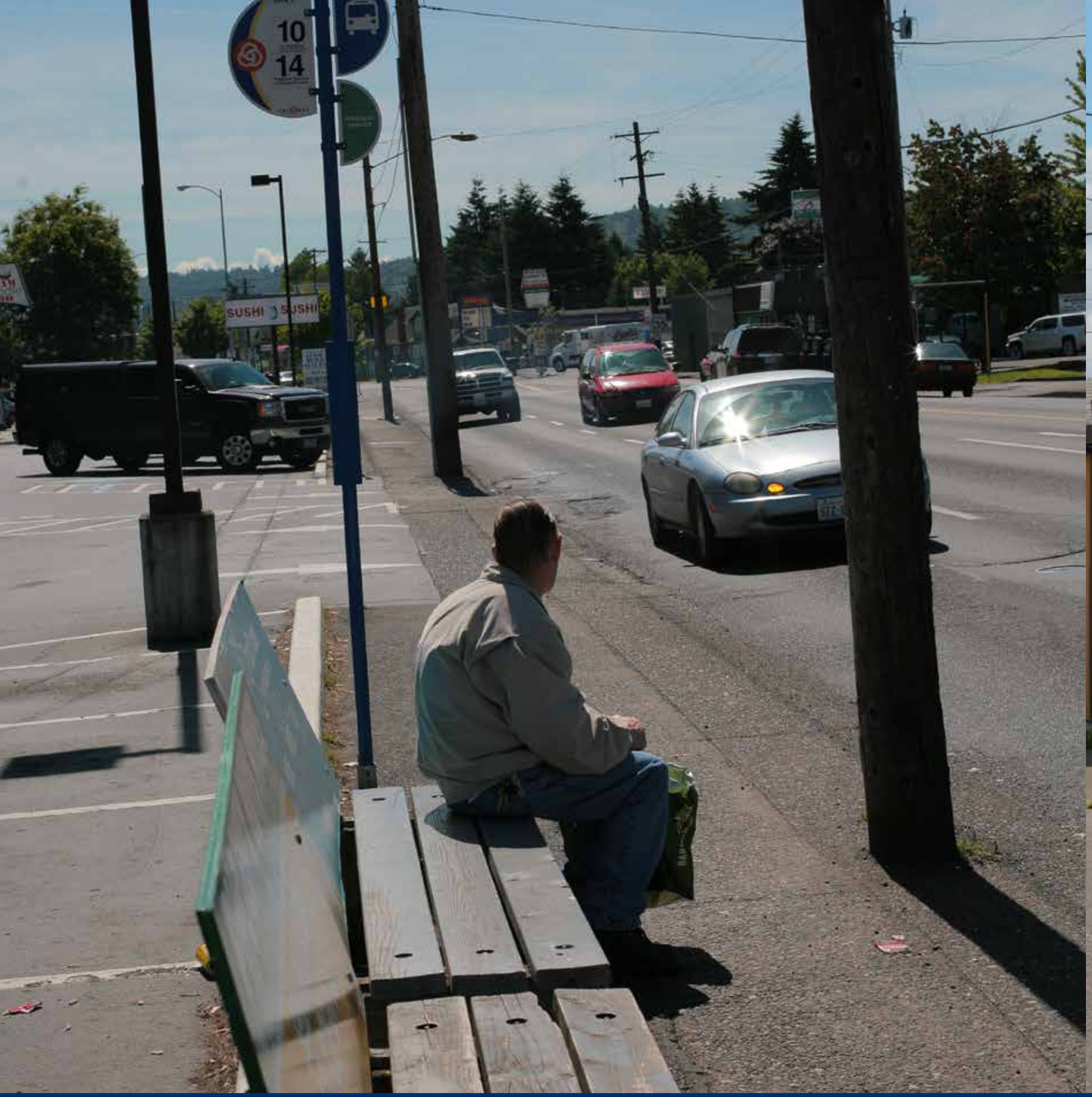


Two step approach to achieve a standard 12-foot wide sidewalk corridor.
Source: Portland Bureau of Transportation

NEXT STEPS

Implementation of the Foster Road Transportation and Streetscape Plan update will include the following:

- Present the plan to Portland City Council, for adoption by resolution, as the guiding document for public right-of-way improvements on Foster Road between SE 50th and 90th Avenues.
- Engineering and construction of priority safety and streetscape improvements identified in Figure 4-1 with $5.25 million in Regional Flexible Fund and Lents Town Center Urban Renewal Area funds.
- Continue implementation of engineering, education, and enforcement actions as detailed in the SE Foster Road High Crash Corridor Safety Plan as well as continue to monitor crash and safety statistics for Foster Road.
- Recommend that the traffic classification on SE Holgate Boulevard between SE 63rd and SE 67th Avenues be changed from Local Service to Neighborhood Collector, and that the stretch of SE 67th avenue between Foster Road and SE Holgate Boulevard be changed from Neighborhood Collector to local service as part of Transportation System Plan (TSP) update in 2014-2015.
- Explore options to install missing ADA curb ramps via this project or other existing programs such as the ADA Curb Ramp Request Program.
- Work with Regional Arts and Culture Council to determine best locations for public art as part of the 2% for Art program.
- Work with TriMet to develop redesign of Powell/Foster/50th transit island, improvements to bus stops at SE 82nd Avenue, and bus stop consolidations/improvements identified in this plan. Consider bus queue jump at SE 82nd Avenue.
- Work with the Bureau of Environmental Services and Portland Parks and Recreation to develop a tree planting program along Foster Road and the size and location for stormwater facilities.
- Work with ODOT to reduce the posted speed limit on Foster Road from 50th to 101st Avenue from 35 mph to 30 mph or less and implement plan improvements at Powell Boulevard and SE 82nd Avenue.
- Re-examine the bike connection to the 50's bikeway including a bikes on sidewalk alternative and enhancing the left turn from SE 52nd Avenue to SE Center Street. Mitigate potential visibility limitations caused by parked cars on SE 54th Avenue bike route on west end to connect to SE 52nd Avenue.
- Consider locating Street Seats and bicycle corrals once speed limits have been reduced.
- Monitor traffic diversion on local streets and implement traffic calming measures, as necessary.
- Continue to seek funding for streetscape and safety improvements on Foster Road not constructed with the currently available funds. Work with FABA, Portland Development Commission and other parties to mitigate the impacts of construction activity along the Foster Road business district.
- Work with Portland Development Commission and private property owners as key sites, such as the Portland Mercado, Mt Scott Fuel, Mt Scott Learning Center and the Phoenix Pharmacy redevelop.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APPENDICES

A Evaluating the Cross Section Options

Project staff, working closely with the SAC, evaluated a wide variety of cross section alternatives and corridor design options (see right). The number of options evaluated responds to the varying transportation and access demands on Foster Road, as well as the envisioned goals for the corridor. First, the inherent tradeoffs of each design option were assessed to better understand each option's benefits and impacts relative to the existing condition (see example to the right).

In order to weigh difficult tradeoffs and conduct a well-rounded assessment of the options, staff employed a multi-criteria evaluation process that compared the benefits and impacts of each cross section alternative. This included developing a series of scoring criteria that respond directly to the Plan's goals and other considerations, such as cost. Cross section alternatives were evaluated using a scoring matrix, which determined each alternative's ability to meet a variety of goal-oriented performance measures. This balanced approach to alternatives evaluation was used to prevent one criterion from impacting the entire decision-making process.

In addition to the cross section and bicycle facility type, the issue of connectivity was analyzed to piece together cross section options across the corridor. Connecting the bike lane on Foster Road to the bike lane on SE 52nd (to be constructed in 2014) was a key element of the alternatives analysis and public outreach. The recommended plan reflects the community's desire for a continuous bike lane on Foster Road.

What were the cross section alternatives?

Over 24 total cross sections were analyzed across the three district nodes—each responding to the unique right-of-way constraints that exist across the corridor. The evaluated cross sections included 2, 3, and 4-lane cross sections with bicycle facilities in varying widths and locations, or no bicycle facilities at all. Ultimately, a 3-lane cross section with a standard 6-foot bike lane was best able to meet the various goals of the plan, and therefore was chosen as the preferred design option. Below is a summary of other alternatives analyzed and the reasons for their elimination.

Figure A-1 Option Types and Reasons for Elimination

Option type	Reason for elimination
2-lane	By providing only one motor vehicle travel lane in each direction (with no center turn lane), the impact on traffic was too great. Congestion and lack of motor vehicular access would reach unacceptable levels, and travel time would increase dramatically .
4-lane	In order to maintain four motor vehicle travel lanes while introducing bicycle facilities, removal of most on-street parking was required along the entire length of the project area. Although not highly utilized in many areas today, on-street parking is a key resource that will be increasingly important as Foster Road redevelops consistent with its commercial zoning. In addition, maintaining four travel lanes will continue to negatively impact bicycle and pedestrian comfort and provides no safety improvement at crossings.
Cycle track options A cycle track describes a bicycle facility with some degree of physical separation from motor vehicle traffic. Within a three motor vehicle lane cross section, two cycle track options were analyzed.	**Sidewalk corridor cycle track or "bikes on the sidewalk"**: West of 80th Avenue, Foster Road has very generous sidewalks (15-17.5 feet, compared to the City standard of 12 feet). In this area, there is enough space to accommodate pedestrian elements, a furnishing zone, and a bicycle corridor. However, this option was rejected for three main reasons: • The wide sidewalks are one of the most valued amenities on Foster Road. Placing bicycles in this area would eliminate the ability for outdoor seating at cafes and restaurants, and would place fast moving bicycles in what would then be a very narrow pedestrian zone; • To eliminate the "right hook" hazard, it is necessary to move cyclists back between the curbs at driveways and intersections. This happens frequently on Foster Road, and would result in a cycle track design that continually winds in and out of the sidewalk zone, which was viewed unfavorably by SAC members; and • A corollary to the "right hook" hazard is that on-street parking would need to be removed at each location where a cyclist shifts to and from the sidewalk, resulting in the loss of about 40% of the on street parking throughout the corridor. **Curb-tight cycle track:** A more traditional design would place bicyclists between the curb and parked cars. Generally eight feet is the minimum required width to do this; otherwise bicyclists are precariously trapped between the door zone and the curb. However, in this instance, there is only six feet available. Moving the curb inward is the only way to create adequate space for this design. This design was rejected primarily due to cost and parking impacts. • The preliminary cost estimate for such a design was $9-12 million. This is more than double the available funding of $5.25 million, and would not fund any other elements in the recommended plan. The winding facility design and parking impacts are presented in this option as well, although less severe. • As in the case of the "bikes on the sidewalk" option, on-street parking would need to be removed at each location where a cyclist shifts to and from the sidewalk, resulting in the loss of about 40% of the on street parking throughout the corridor.
"Protime Options"	Protime describes parking that is prohibited only in the peak direction during peak commute times. For example, on Foster Road east of SE 72nd Avenue, no parking is allowed in the westbound direction on weekdays from 7:00 – 9:00 AM. Several protime options were analyzed that tried to provide multiple functions for the available space, in particular for the use of travel lanes as also parking lanes. Fitting all desired elements within the available space, however, was problematic. Among the fatal flaws were the lack of space for median islands, left turn pockets, how to properly mark the protime lane both for use as parking and as a travel lane, and a door zone buffer for bicyclists.

Note: These numbers are very preliminary and for comparison purposes only.
Contingency is included. More analysis is needed to determine actual costs.

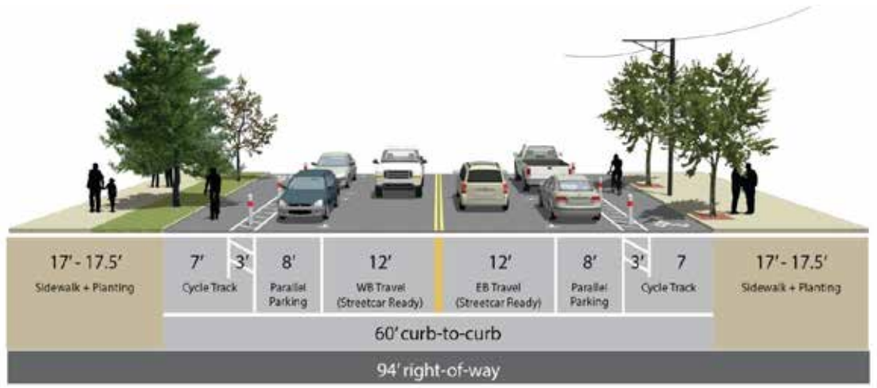
* #5 and #6 must be included
** #13 #5 and #6 must be included
*** May require additional costs as part of potential "damages" to private property
**** If needed. Not part of the prioritiztion. Could be spent on other plan items
***** Requirement. Not part of prioritization

Figure A-2 Evaluation Table

	Criteria	Specific Measure		Key		
				0	1	2
Streetscape, Business	Street furniture, improvements to the business environment	Sb1	Adequate clear space for sidewalk cafes and lingering (8' for 17ft sidewalk, 6' for 12ft sidewalk or less)	Does not comply	Complies only at corners/curb extensions	Complies
On-street parking	Provides adequate on-street parking for commercial patrons and loading uses	Pk1	Amount of parking loss	All parking lost	One third to half parking lost	No parking loss
		Pk2	Effect of parking loss on existing land uses	Parking lost in high/moderate use area	Parking lost in low use area	No parking loss
		Pk3	Effect of parking on future land uses based on current zoning/comp plan designations	Removes parking in high growth area	Removes parking in moderate growth area	No parking loss
Cost	Estimated costs and funding feasibility	C1	Planning-level cost estimate	> $3 million	$1 - $3 million	< $1 million
Safety	Provides safety improvements	S1	Likelihood of type and severity of all types of crashes (from AASHTO report on effect of change from 4 to 3 lanes)	No change	N/A	30% decrease in injuries
		S2	Crossing distance and number of lanes	> 60ft with 4 lanes	50-60ft with 4 lanes	50-60ft with 3 lanes
Pedestrian	Improves the pedestrian environment, including crossings and sidewalk conditions	Pd1	Sidewalk width per Pedestrian Design Guideline	Does not comply (5 ft or less)	Partially complies (between 6 and 11.5ft)	Complies (12ft and over)
		Pd2	Buffers from auto lanes from pedestrian through zone	8ft or less on one or both sides	9-14ft for both sides of the street	More than 14ft on both sides of the street
		Pd3	Opportunities for stormwater management, large trees and other green features	None	Only with curb extensions	In planter strip and curb extensions
		Pd4	Allows median islands	No	Yes, but with parking loss	Yes, using center turn lane and without parking loss
Motor Vehicles	Provides smooth travel for vehicles and access opportunities	MV1	Change in travel speed (MPH, PM peak)	Significant decrease	Moderate decrease	No change/increase
		MV2	Traffic diversion as percentage of total traffic	Moderate to high	Low to moderate	No change
		MV3	Increased/decreased access via left turn	No center lane and two opposing lanes	Center turn lane and one opposing lane	N/A
		MV4	Level of Service for signalized intersections (level of traffic delay)	Does not comply (over acceptable congestion levels)	Marginally complies (close or at limit for acceptable congestion levels)	Complies
Transit	Accommodates present and future transit, including Streetcar per the Portland Streetcar System Concept Plan	T1	Travel lanes accommodate streetcar (11' min)	Does not	Could with some modifications	Does
		T2	Corridor speed effect on transit reliability and scheduling	May require more buses or longer headways	Longer travel time but mitigation may be possible	No change
		T3	Allows for enhanced transit stops via wide sidewalk at bus stops	Narrow sidewalk and no curb extension possible	One side using standard sidewalk/no curb extension, or narrow sidewalk/curb extension	Both sides using wide sidewalks plus potential for curb extension
Bicycle	Implements bicycle facility along the Foster corridor per the Portland Bicycle Plan for 2030	B1	Bicycle facility and degree of separation	Does not comply (no facility)	Complies minimally (5ft bike lane)	Complies (6 ft bike lane or buffered/separated)
		B2	Increased cyclists on Foster Rd at key locations 2010-2035	Up to 1/3 growth	1/3 to 2 times growth	2 times to 8 times growth
		B3	Connections into existing bicycle network	Zero	fewer than 3	3 or more
		B4	Change in bicycle travel distance	No change	< 30% decrease	30% or more decrease
						Max score: 46

Figure A-3 Elements and Trade-offs

WEST SEGMENT **OPTION 5**



Element	Tradeoff
	▪ Reduces number of through travel lanes from four to two for motorized traffic. ▪ No center turn lane is provided.
	▪ Existing sidewalk widths are maintained. ▪ Enough furniture zone to introduce wider range of landscaping, stormwater, and placemaking features. ▪ Cycle track configuration cannot support curb extensions.
	▪ Wide cycle tracks are provided in both directions, each with a marked buffers with separation from parking.
	▪ Wider travel lanes provided for transit (12 feet). ▪ Limited impact on existing transit operation.
	▪ Twelve-foot travel lanes and eight-foot parking is compatible with streetcar, if pursued.
	▪ Parallel parking is provided on both sides.
	▪ Moderate cost alternative including restriping and constructing cycle tracks (Relative cost compared to other alternatives only).

How will a bicycle facility on Foster Road affect ridership?

Foster Road cuts diagonally across the City's street grid, providing for a shorter distance to travel in NW and SE directions. Cyclists using Foster Road would save about 4 minutes of travel time compared to using adjacent facilities.

Figure A-4 Option Type Estimates

Option type	Low estimate	High estimate
Daily riders without bicycle facility	1,200	1,900
Daily riders with bicycle facility	1,900	3,000
Total increase	700	1,100
Percent increase	58%	59%

Numbers are daily, representative of average weekday in May

Bicycle facility is assumed to run from SE 52nd Avenue to the existing bike lane in Lents Town Center

Numbers represent sum of all daily bike trips using at least one segment of Foster Road from 52nd to Lents Town Center

Numbers are rounded

Metro developed a bicycle travel demand model that estimates the impact of new bicycle facilities on ridership. The Foster Road Streetscape Plan update was the first project-level application of that tool. The model estimates that adding a bicycle facility on Foster Road will increase ridership on the street by over 58%, with an additional 1,100 daily cyclists by 2035.

How will a three lane configuration affect traffic on Foster Road?

Significant traffic analysis was conducted to determine the impacts of a three general travel lane configuration for Foster Road compared to the existing four-lane cross section. Below is a summary that compares the differences between the two options as it relates to traffic.

Existing: 4 general travel lanes and no bike lane, substandard sidewalks in Lents

- Traffic Safety: Leaves existing traffic largely unchanged, with fast moving traffic and opportunities for safe crossings limited only to marked crossings.
- Traffic flow: No change.

Recommended: 3 general travel lanes, on street parking, bicycle lanes, 9-foot sidewalks in Lents

- Traffic Safety: Significant safety benefits for all modes, including motor vehicles. Foster Road is a High Crash Corridor with over 1,200 crashes and 8 fatalities in the last 10 years. Crash reduction related to travel lane reallocation is expected to be about 20% or more. See some of the benefits under the Cross Section element of the plan.
- Traffic flow: The following is based on traffic analysis using present volumes and future volumes using the City's travel demand model.
- Slower average speeds: Travel speeds would decrease during the peak in the peak direction (westbound in the AM peak, eastbound in the PM Peak) from 19 mph (existing 4 lane option) to 14 mph (recommended 3 lane option) in the short term.
- Additional travel time: This equates to an estimated 3 additional minutes (from 7 to 10 minutes) to travel the entire corridor during the PM peak in the peak direction (eastbound) and the AM peak in the peak direction (westbound) in the short term. Travel time difference is less the shorter a driver is on Foster Road. About 35% of the PM peak traffic travels the entire length of our study area. The majority of drivers (about 64%) travel shorter distances on Foster Road. Therefore the additional travel time for the average driver on Foster Road would be 2 minutes instead of 3 minutes. Finally, since the average Foster Road driver travels about 20 minutes from place to place, the additional travel time during the peak in the peak direction would equate to an additional 10% increase in travel time.
-

Figure A-5 Alternative Speeds and Travel Times

Eastbound traffic only	4-lane base case		3-lane alternative	
	Existing 2012	Future 2035	Existing 2012	Future 2035
Ave. Speed (mph)	19	16	14	14
Travel time (m)	7	9	10	10

- Travel time difference decreases over time. Foster Road has auto lane capacity to accommodate future traffic. As a result, the existing 4 lane configuration would get more congested over time, resulting in a decrease in travel speed and increase in travel time from today's levels, to the point where by 2035 the difference in travel time between the existing cross section and the recommended cross section would be one minute. Therefore, in 2035 travel speeds during the peaks in the peak direction would be 16 mph with the 4 lane option and 14 mph with the recommended 3 lane option. Travel times through the entire corridor would be 9 minutes for the 4 lane option and 10 minutes for the 3 lane option. See chart.
- Even with traffic diversion in the peak direction in the peak hour(s), queues at some intersections on Foster Road would increase, up to 30% for the eastbound movement during the PM peak hour on Foster Road at SE 82nd Avenue.
- Traffic on SE Holgate Boulevard between Foster Road and SE 82nd Street would double during the PM peak hour in the eastbound direction, adding about 250 additional cars (about four additional cars per minute).
- Intersection delay will significantly increase at the Foster Road/Holgate Boulevard intersection for all approaches.
- Traffic diversion: During peak times 30 percent of eastbound traffic in the peak direction would move to other arterials. Diversion is estimated to take place between SE 52nd and SE 82nd. Main routes where traffic would increase are SE Holgate Boulevard (between SE 63rd and SE 82nd Avenues), Powell Boulevard, SE 82nd and SE 52nd Avenues, SE Woodstock Street and SE Division (in order of magnitude of added vehicles).
- Diverting traffic is local. The diverting traffic is estimated to be made of local trips originating in the adjacent neighborhoods east of 52nd and west of 82nd. Traffic generated east of 82nd is not expected to divert.
- Traffic diversion not on local streets. Traffic diversion is not expected to increase traffic on local streets. A redistribution of locally destined trips is expected as traffic in the area accommodates to new traffic patterns.
- Traffic diversion and congestion is likely to occur to a lesser degree beyond the peak hour.

B Corridor Overview

This Appendix summarizes the key findings from the existing conditions documentation. The full existing conditions report provides greater detail on multimodal travel conditions and safety.

Outreach Corridor Policy Overview

Transportation System Plan. The following are the Transportation System Plan (TSP) street classifications for Foster Road. Foster Road is a City Bikeway, Major Emergency Response Street, Truck Access Street, City Walkway, Regional Main Street (in some areas), Major City Traffic Street, and a Major Transit Priority Street.

Future Streetcar. The Portland Streetcar System Concept Plan (PSSCP) calls for Foster Road to be part of the future streetcar network, and potentially run from SE 50th to SE 122nd Avenues.

Bicycle facilities. The Portland Bicycle Plan for 2030 calls for Foster Road from SE 50th Avenue and Powell Boulevard to the eastern city limits to be classified as a "City Bikeway" and is recommended to have "separated in road" (SIR) bicycle facilities.

Foster Road Land Use Character

Corridor character and land use. Between SE 50th Avenue and I-205, Foster Road supports a diverse mix of land uses, including residential neighborhoods and a variety of businesses fronting Foster Road, including a large number of retailers. The Foster Road Corridor contains five district nodes: Gateway District, Western Core, Heart of Foster, Green Link, and Crossroads District. Each node represents the commercial and transportation hubs that support economic activity, regional mobility, and local access.

Zoning and future development. Zoning along the majority of Foster Road is General Commercial (CG), allowing a wide range of commercial activities. The "Heart of Foster" district has a segment zoned as Storefront Commercial (CS), from SE 63rd to 67th Avenues, which is typically designated for Main Streets. The "Crossroads District" at the intersection Foster Road and SE 82nd Avenue is designated as Central Employment (EX), which allows mixed-uses and is intended to collocate industrial, business, service, and limited residential uses.

Foster Road Characteristics

Foster Road dimensions. Right-of-way along the Foster Road corridor changes intermittently. The corridor's right-of-way (lot line to lot line) ranges from 58 feet—on the east end of the corridor—to 94 feet—on the west end of the corridor.

Curb-to-curb roadway width ranges between 450 feet to 60 feet, with a short segment of 5-lane cross section between SE 50th Avenue and SE 52nd Avenue that expands to 65.5 feet. At 50 feet from curb to curb, the narrowest two-way cross section west of SE 82nd Avenue occurs between SE 72nd Avenue and SE 79th Avenue. Although street widths typically remain unchanged for longer stretches of the corridor, sidewalk widths expand and narrow almost on a block-by-block basis. The corridor includes four typical right-of-way cross sections. These include segments west of SE 72nd Avenue, between SE 72nd Avenue and SE 80th Avenue, east of SE 80th Avenue, and in the couplet area. Right-of-way is widest west of SE 72nd Avenue and narrowest in the couplet area.

Lane configurations. Foster Road is typically a four lane cross section with two travel lanes in each direction and an occasional left-turn lane or pedestrian refuge island. The longest stretch containing a 4-foot striped median is located between Powell Boulevard and SE 72nd Avenue. Between Powell Boulevard and SE 52nd Avenue, the roadway becomes a 5-lane configuration with two eastbound lanes and three westbound lanes.

On-street parking. Depending on the curb-to-curb street width, parking is available on one or both sides of Foster Road with certain time restrictions. On-street parking is generally dedicated to the eastbound side of Foster Road, while many segments on the westbound side, especially east of SE 722nd Avenue, allow for weekday AM peak period restricted parking (i.e. no parking between 7AM-9AM, Monday through Friday).

Prevalence of skewed intersections. Because Foster Road bisects the street grid diagonally from northwest to southeast, nearly all 42 intersections within the project area are skewed. Only SE Rhone Street, SE 60th Avenue and SE 80th Avenue are aligned perpendicular to Foster Road. This presents unique geometric and pedestrian design challenges at each location, and it increases block lengths, sometimes up to almost 500 ft long.

Utilities. Foster Road is an important utility corridor. There are telecommunication and electricity poles lining both sides of the street in the sidewalk furnishing zone. In addition, water and sewer mains are located beneath the roadway.

Crash Corridor. Foster Road is a designated High Crash Safety Corridor—roadways identified as having a higher incidence of fatalities and serious-injury traffic crashes than the citywide average for similar roadways. From 2001 to 2010 there were 1,229 total reported crashes, with seven fatalities.

Traffic speeding. Speeding occurs, but the severity of speeding does not seem as pronounced as perceived. Motorists generally adhere to Foster Road's 35 mph posted speed limit. 85th percentile speeds range between 33 mph at SE 69th Avenue and 39 mph at SE Cora Street.

Traffic volumes. Traffic volumes along the corridor range from moderate to high. Total average daily traffic (ADT) ranges between 19,315 east of SE 80th Avenue and 24,436 east of SE 82nd Avenue.

Distance between signals. On Foster Road west of 94th, the average distance between traffic signals is just under a quarter mile (1,214 feet). This is considerably higher than the average distance on comparable streets, such as Hawthorne, Sandy, and NE Broadway. However, when comparing smaller commercial districts, the Heart of Foster (Holgate – 67th) fares slightly better, with a smaller average distance between signals than the central Hawthorne commercial area (34th – 39th).

Driveways. The number and length of driveways creates conflicts for pedestrians and bicyclists. Between Powell Boulevard and SE 82nd Avenue, there are 147 driveways providing business and residential access. This equates to roughly 77 driveways per mile and accounts for 40% of this corridor segment's length.

Signalized crossings. There are 18 signalized intersections along this stretch of Foster Road: eight pedestrian actuated, five timed (no pedestrian activation), and 3 dedicated pedestrian "half signals." The limited number of signalized crossings increases effective block distances for those only willing or able to cross at signalized intersections.

Sidewalk conditions. Sidewalks are provided on all street segments

between Powell Boulevard and I-205. West of SE 80th Avenue, sidewalks are generous in width, ranging between 13-17 feet. Sidewalks are generally clear of obstructions, but pedestrian zone widths (sidewalk width minus landscaped parkway, utilities, and furniture zone amenities) vary by segment and quality.

East of SE 80th Avenue, the quality of the pedestrian environment degrades precipitously to substandard dimensions. Along this stretch, sidewalk pavement quality erodes, sidewalk widths narrow (roughly 5-8 feet), and obstructions like sign posts, utility poles, and driveway slopes become more prevalent.

Marked crossings. Marked crosswalks are primarily located at signalized intersections, while unsignalized marked crossings at intersections are located at only five locations (including Foster Road at SE Cora Street and SE Couplet Street and SE Woodstock Boulevard).

Sidewalk amenities. Although sidewalks provide ample space for pedestrians west of SE 80th Avenue, limited street trees, poor illumination, high traffic speeds and volumes, automobile-oriented land uses and prevalence of off-street parking lots make the pedestrian environment disengaging and lined with potential conflicts.

Cycling on Foster Road. Bicycle facilities along Foster Road are limited to bicycle lanes in the couplet section that connects into the Green Line light rail station starting at SE 91st Avenue. Between SE Powell Boulevard and SE 91st Avenue, there are no separated bicycle facilities. Subsequently, many cyclists choose to ride on the sidewalk or use indirect neighborhood connections.

Existing bicycle connections. The Center Street Neighborhood Greenway, SE 87th Avenue, and the I-205 multi-use path are the only existing direct bikeway connections across Foster Road.

Bicycle parking. Between Powell Boulevard and I-205, Foster Road offers only 37 publicly-owned and maintained staple or U-racks. This is equal to 8 racks per mile along the corridor. There are no on-street bicycle parking corrals along the corridor.

Transit service. The Foster Road corridor is generally well served by transit. Anchored by Lents Town Center and Downtown Portland, TriMet's Frequent Service line 14 operates 20-hour service on Foster Road daily between 5:00 AM and 1:30 AM. Stops are served every 5-10 minutes in the peak commute periods and 17 minutes in the afternoon.

Transfer hubs. Lines 9, 10, 17, 71, 72, and MAX Green Line each serve the corridor at key transfer locations. The Crossroads District (SE 82nd Avenue), Green Link (SE 72nd Avenue), and Heart of Foster (SE Holgate) nodes serve as key bus transfer hubs.

Mode split. According to American Community Survey data collected by the U.S. Census Bureau, travel behavior in the Foster Road corridor (measured by mode choice –drive alone, carpool, transit, bicycle, walk, other- for commute to work trips) is similar to Citywide averages.

Safety Statistics

Between 2001 and 2010, in the study area there were 1,229 reported crashes, involving seven fatalities.

In the same period, there were 32 reported crashes involving pedestrians, four of which resulted in pedestrian fatalities. In 2012, an additional pedestrian fatality and a serious pedestrian injury occurred near SE 70th Avenue and Foster Road.

The incidence of crashes caused by drivers disregarding traffic signals is about 60% higher than the Citywide average. Signal disregard crashes typically result in more injuries and deaths.

Rear-ends constitute about 40% of all reported crashes, followed by turning at 28%. The following represent the key safety themes that currently impact the project area:

- **Pedestrian Crossings:** The width and orientation of Foster Road (50 to 60 feet between the curbs, at a diagonal) create long crossing distances and longer blocks than are typical in Portland. This generally means fewer crossing opportunities for pedestrians.
- **Bicycle infrastructure:** There is no dedicated bicycle facility on Foster Road. Cyclists who use the street currently must ride in mixed traffic or on the sidewalks.
- **Motor vehicle:** Speeding is an issue on Foster Road, and the diagonal orientation of the street creates wide turning angles. This often results in fast turn movements around corners, potentially endangering pedestrians in the crosswalk.

Transportation Improvements since 2003

Since adoption of the 2003 Plan, several safety enhancements have been built by PBOT. In 2006-2007, median islands, marked crosswalks, and crossing signage were installed at SE Gladstone/58th, SE Cora/61st, 65th, and 69th Avenues. In 2008, a median island, marked crosswalk, and a Rectangular Rapid Flashing Beacon was installed at SE 80th Avenue. Crossing improvements targeted at bicyclists were built in 2010 as part of the Center Avenue Neighborhood Greenway Project. Lastly in 2012, as part of the first phase of this project, PBOT installed a speed reader board at SE 70th Avenue, which subsequently has been relocated to around SE 85th Avenue. As part of phase two of this process, PBOT installed a rapid flash beacon at SE Cora Street and Foster Road.

Figure B-1 Injuries, Collisions, and Fatalities on Foster

Injuries and Fatalities	Collisions by Top Three Location Types
7 Fatalities	759 Intersection collisions (62%)
537 Crashes involving injuries	373 Roadway straight section collisions (30%)
25 Injuries of Type A severity (incapacitating)	95 Alley-related collisions (8%)
131 Injuries of Type B severity (non-incapacitating)	
381 Injuries of Type C severity (pain)	Collisions by top collision types
685 Property damage only crashes	495 Rear-end (40%)
1,229 Total Reported crashes from 2001 - 2010	350 Turning (28%)
	162 Angle (13%)
Collisions involving vulnerable users	125 Sideswipe - Passing (10%)
32 Total collisions involving pedestrians (4 fatalities)*	31 Fixed Object (3%)
22 Total collisions involving bicyclists (0 fatalities)	

* A 2012 pedestrian fatality at 70th and Foster Road is not included in the above total.

C Survey Results

As part of the public outreach part of the Foster Road Transportation and Streetscape Plan Update, an Open House was held on December 5th at SE Works (SE Foster Road and SE 79th Avenue). A flyer was sent to over 15,000 households and businesses in the area. Other targeted outreach was conducted to advertise the event. The flyer contained a summary of the recommendations in several of the most widely spoken languages in the area (according to Portland Public Schools records), including a graphic with a prototypical cross section highlighting existing and recommended changes.

Over 130 people signed up at the event, and 113 filled out a survey asking for comments on the different Stakeholder Advisory Committee recommendations. In addition, a slightly longer online survey was developed and 324 people responded. Below is a summary of the results from both surveys. Please note that some of the numbers may not add up due to rounding.

Demographics

There were more male (about 55%) respondents than female (45%). Most respondents classified themselves as white/Caucasian (between 86-95%). The most prominent age groups were 30-39, 40-49 and 60-69.

Most respondents lived (86% for open house respondents, 76% for online respondents) in the area. About 14% worked or owned businesses in the area.

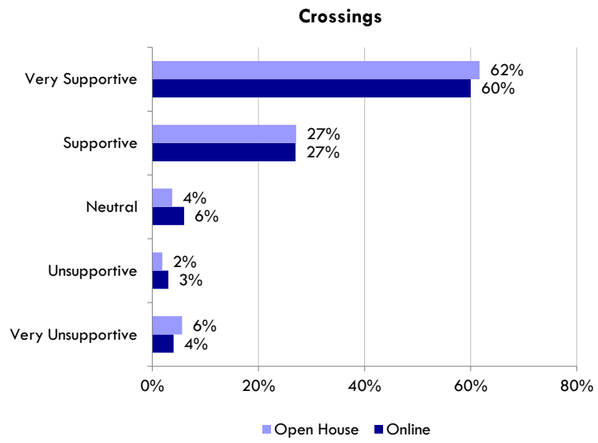
General

In general, survey responses were very supportive (in all categories) of the plan recommendations. Only on the issue of the west end option for cyclists there was less agreement in the overall direction.

Crossings

Regarding the recommended crossings (median islands with rapid flash beacons, signal improvements), 89% of open house respondents (and 87% online respondents) were either very supportive or supportive. About 7 percent were very unsupportive or unsupportive.

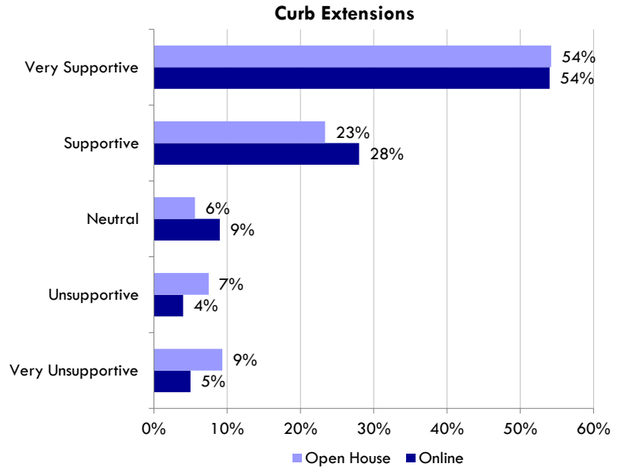
Figure C-1 Crossings



Curb Extensions

Regarding the recommended curb extensions, 78% of open house respondents (82% online) were either very supportive or supportive, while 17% were either unsupportive or very unsupportive (9% online).

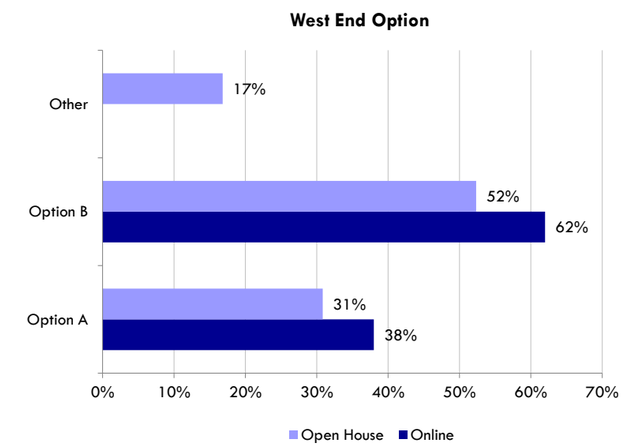
Figure C-2 Curb Extensions



West End Options

When asked for a preference between the to options to connect cyclists to the upcoming bike lanes on SE 52nd, 52% of open house respondents (62% online) chose Option B (continue bicycle lane) while 31% of open house respondents (38% online) chose Option A (route cyclists on local streets). Seventeen percent of open house respondents indicated another preference.

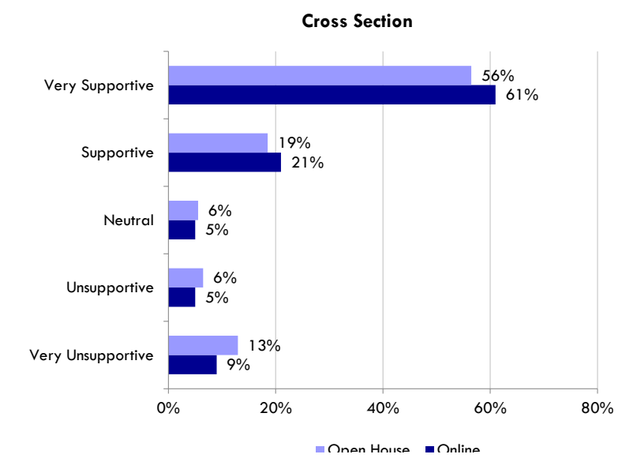
Figure C-3 West End Options



Cross Section

When asked to weigh in on the trade offs of the recommended cross section, 79% of open house respondents (82% online) indicated that they were very supportive or supportive, while 19% of open house respondents (14% online) were either unsupportive or very unsupportive.

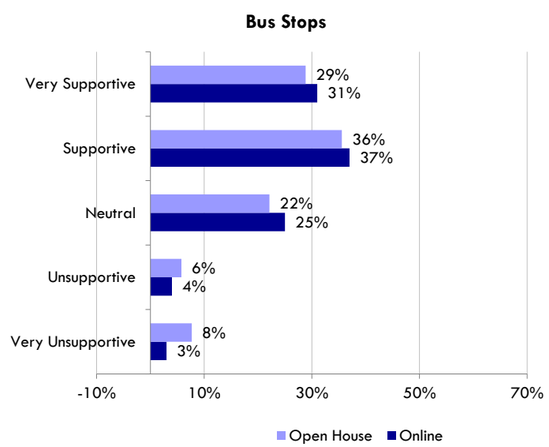
Figure C-4 Cross Section



Bus Stops

Transit recommendations include consolidating some bus stops to in part provide for transit shelters. Sixty-four percent of open house respondents (68% online) either supported or very supported the recommendation, while 13% of respondents (7% online) were unsupportive or very unsupportive.

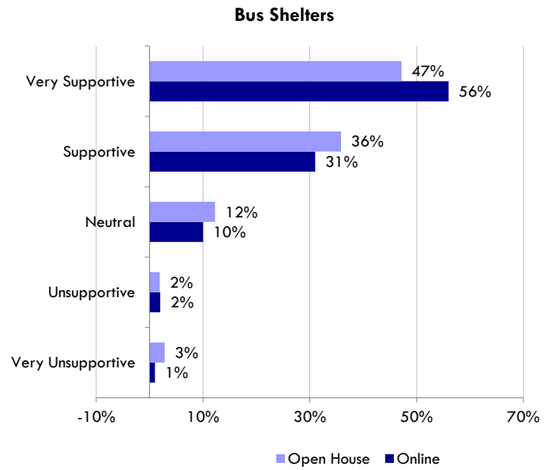
Figure C-5 Bus Stops



Bus Shelters

Regarding adding transit shelters, 83% of open house respondents (87% online) were either very supportive or supportive of the recommendations. About 3-5% were either unsupportive or very unsupportive.

Figure C-6 Bus Shelters

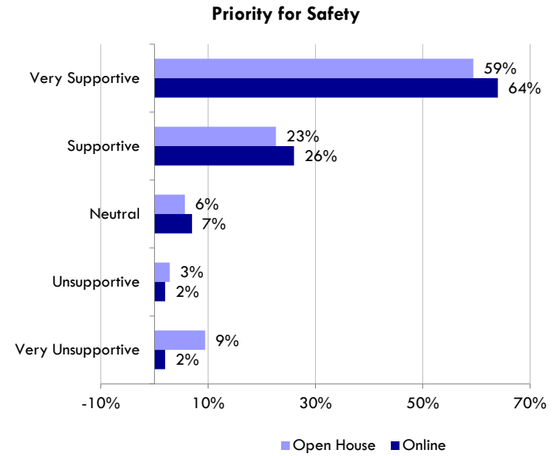


Priority for Safety

In terms of prioritizing the use of the awarded funds for the project, the SAC recommended that safety elements be the first priority. Eighty-two percent of open house respondents (90% online) were either very supportive or supportive of the implementation direction, while 12% (4%) were either unsupportive or very unsupportive.

Three additional questions were asked on the online survey. These were not included in the open house survey due to space limitations. Specific boards addressed the streetscape issues below.

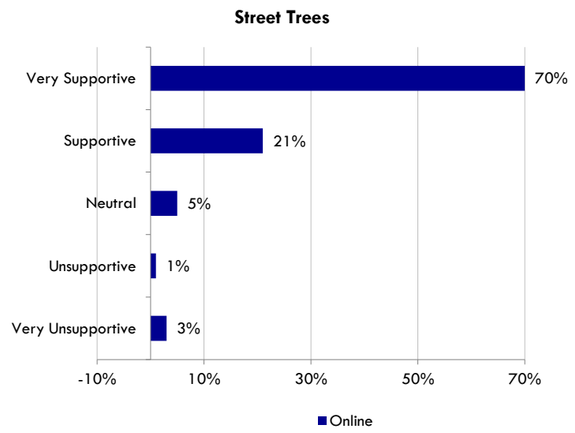
Figure C-7 Priority for Safety



Street Trees

With regards to the street tree recommendations, 91% of online respondents were either very supportive or supportive, while 4% were either unsupportive or very unsupportive.

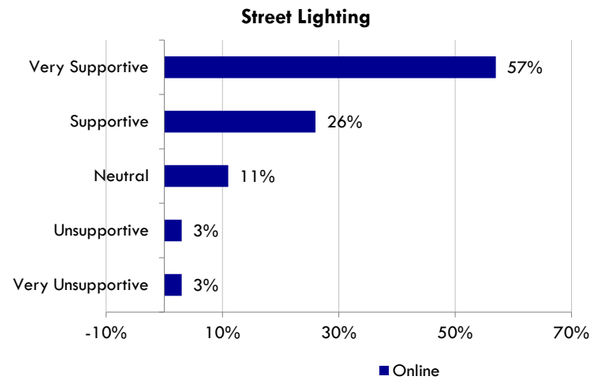
Figure C-8 Street Trees



Street Lighting

Regarding the street lighting plan, 83% of online respondents were either very supportive or supportive of the recommendations, while 6% were either unsupportive or very unsupportive.

Figure C-9 Street Lighting



Priority Ranking

The online survey asked to rank the recommended plan elements in terms of priority, from 1 being the top priority and 6 being the least priority. The lower the number indicated the higher the priority. The number one priority was crossing improvements (e.g. median islands with rapid flash beacons). Number two was the cross section changes, followed by the curb extensions improvements. The concept for street trees was ranked number four, and transit improvements number five. Last in the priority list came ornamental street lights.

Figure C-10 Priority Ranking