



## 4 IMPLEMENTATION

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### 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
<b>Total</b>		<b>\$ 5,345,000</b>

#	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.

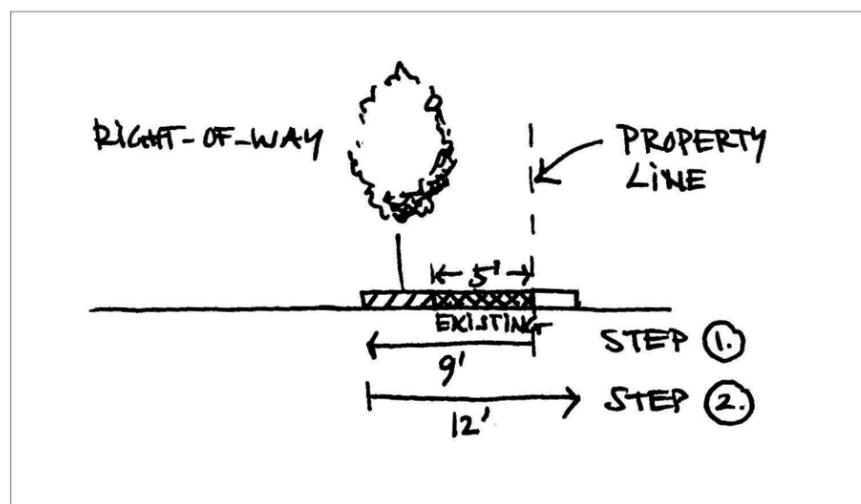
- \* #5 and #6 must be included
- \*\* #13 #5 and #6 must be included
- \*\*\* May require additional costs as part of potential “damages” to private property
- \*\*\*\* If needed. Not part of the prioritization. Could be spent on other plan items
- \*\*\*\*\* Requirement. Not part of prioritization

## 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 necessitated 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.





# 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
<b>2-lane</b>	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 .
<b>4-lane</b>	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.
<b>Cycle track options</b>	<p><b>Sidewalk corridor cycle track or "bikes on the sidewalk":</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• 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</li> <li>• 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.</li> </ul> <p><b>Curb-tight cycle track:</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>"Protime Options"</b>	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.

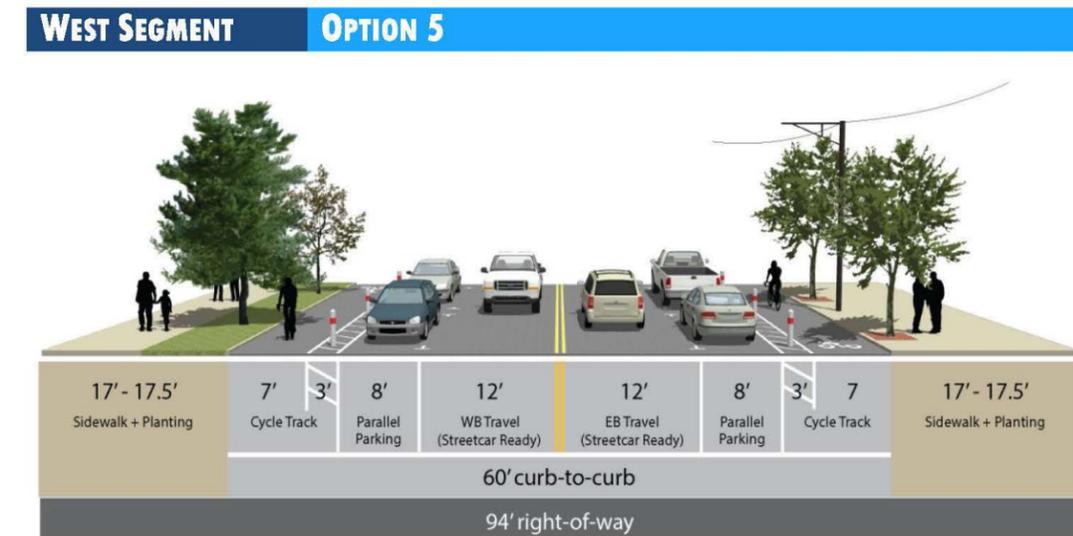
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Figure A-2 Evaluation Table

	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



Element	Tradeoff
	<ul style="list-style-type: none"> <li>Reduces number of through travel lanes from four to two for motorized traffic.</li> <li>No center turn lane is provided.</li> </ul>
	<ul style="list-style-type: none"> <li>Existing sidewalk widths are maintained.</li> <li>Enough furniture zone to introduce wider range of landscaping, stormwater, and placemaking features.</li> <li>Cycle track configuration cannot support curb extensions.</li> </ul>
	<ul style="list-style-type: none"> <li>Wide cycle tracks are provided in both directions, each with a marked buffers with separation from parking.</li> </ul>
	<ul style="list-style-type: none"> <li>Wider travel lanes provided for transit (12 feet).</li> <li>Limited impact on existing transit operation.</li> </ul>
	<ul style="list-style-type: none"> <li>Twelve-foot travel lanes and eight-foot parking is compatible with streetcar, if pursued.</li> </ul>
	<ul style="list-style-type: none"> <li>Parallel parking is provided on both sides.</li> </ul>
	<ul style="list-style-type: none"> <li>Moderate cost alternative including restriping and constructing cycle tracks (Relative cost compared to other alternatives only).</li> </ul>

**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.

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.

**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

## 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 72nd 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%)
	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.

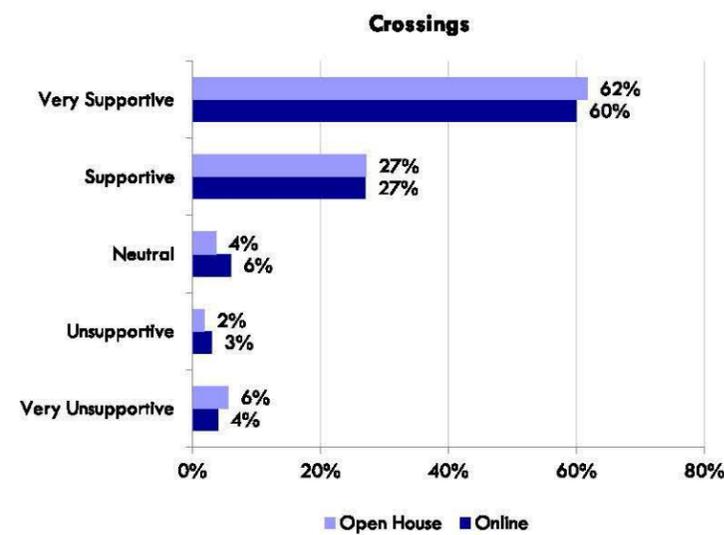
## General

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.

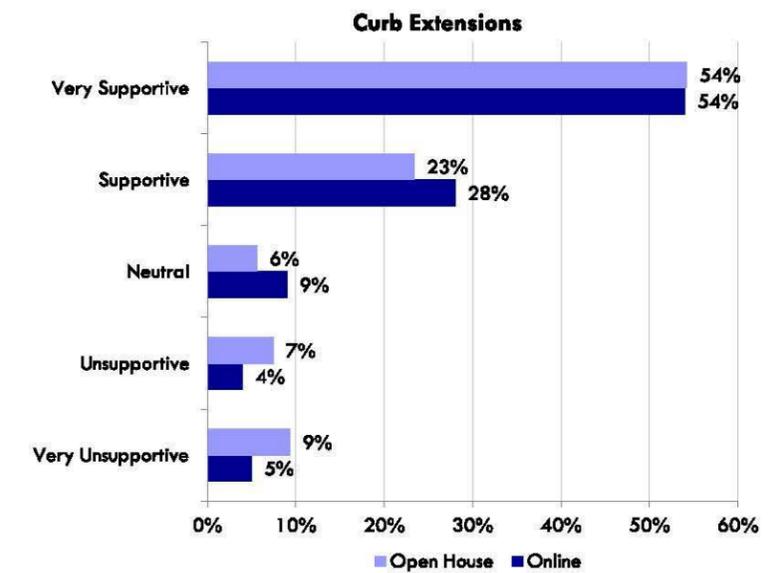
Figure C-1 Crossings



## 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).

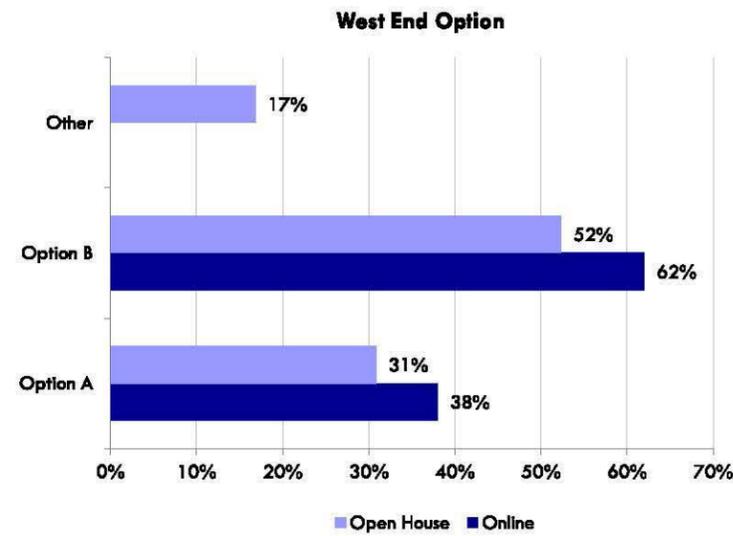
Figure C-2 Curb Extensions



## West End Options

When asked for a preference between the two 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.

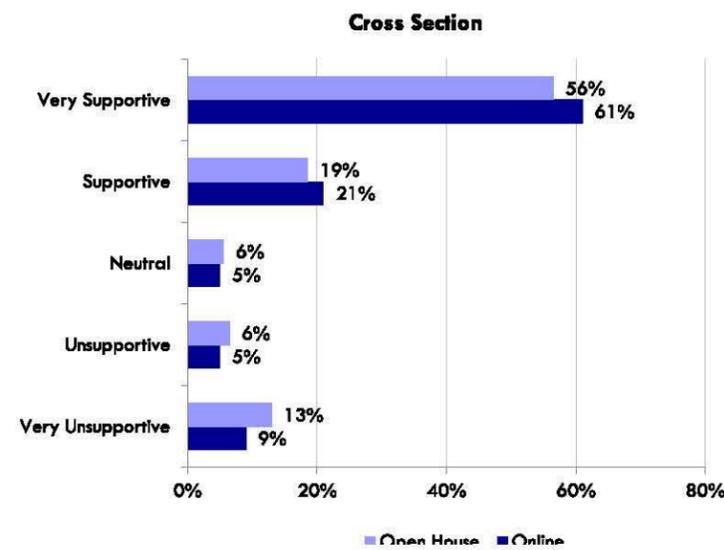
Figure C-3 West End Options



## 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.

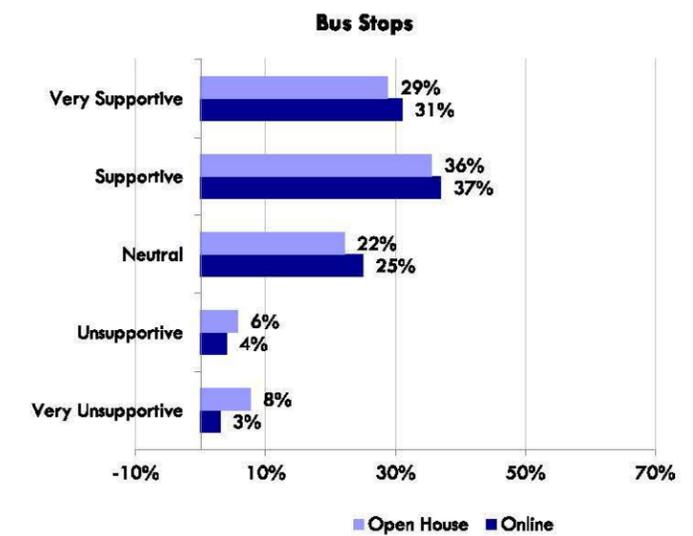
Figure C-4 Cross Section



## 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.

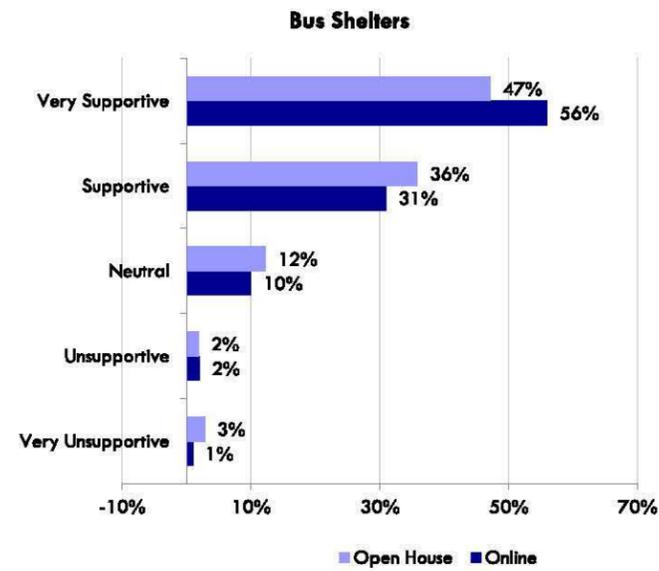
Figure C-5 Bus Stops



## 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

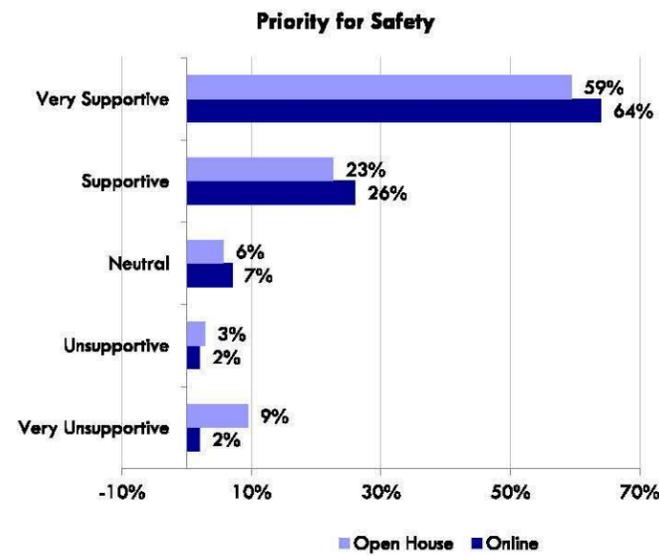


## Priority for Safety

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.

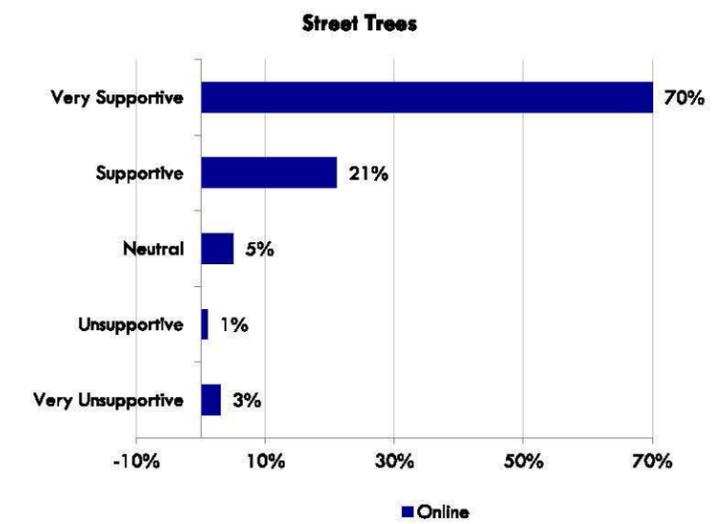
Figure C-7 Priority for Safety



## 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.

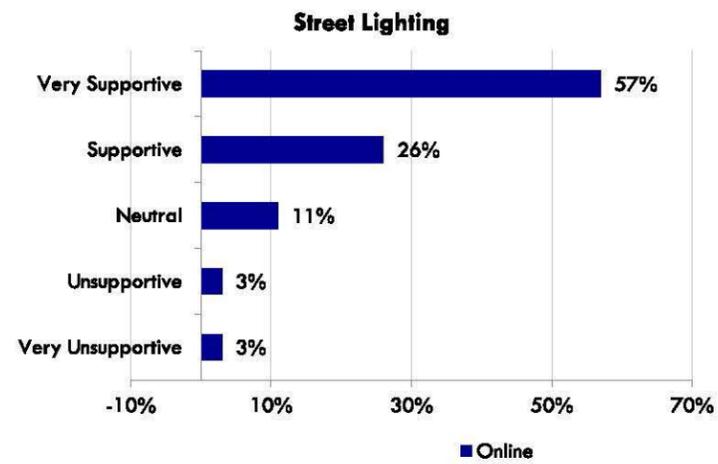
Figure C-8 Street Trees



## 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

