
SEGMENT 2.2 EVALUATION

Several alternative designs have been considered by the project team to provide mobility for drivers, pedestrians and bicyclists while working within the constrained conditions in this segment. Ultimately, the team has identified one proposed approach based on the following objectives:

Provide a dedicated facility for pedestrians on at least one side of the road.

Given that alternate routes through the Nob Hill Nature Park would not meet accessibility requirements for people with disabilities, it is important to have an accessible pedestrian facility on this segment.

Keep costs reasonable.

Extensive blasting or moving wastewater treatment vaults is likely to be very expensive. The proposed section should fit within existing available area where possible.

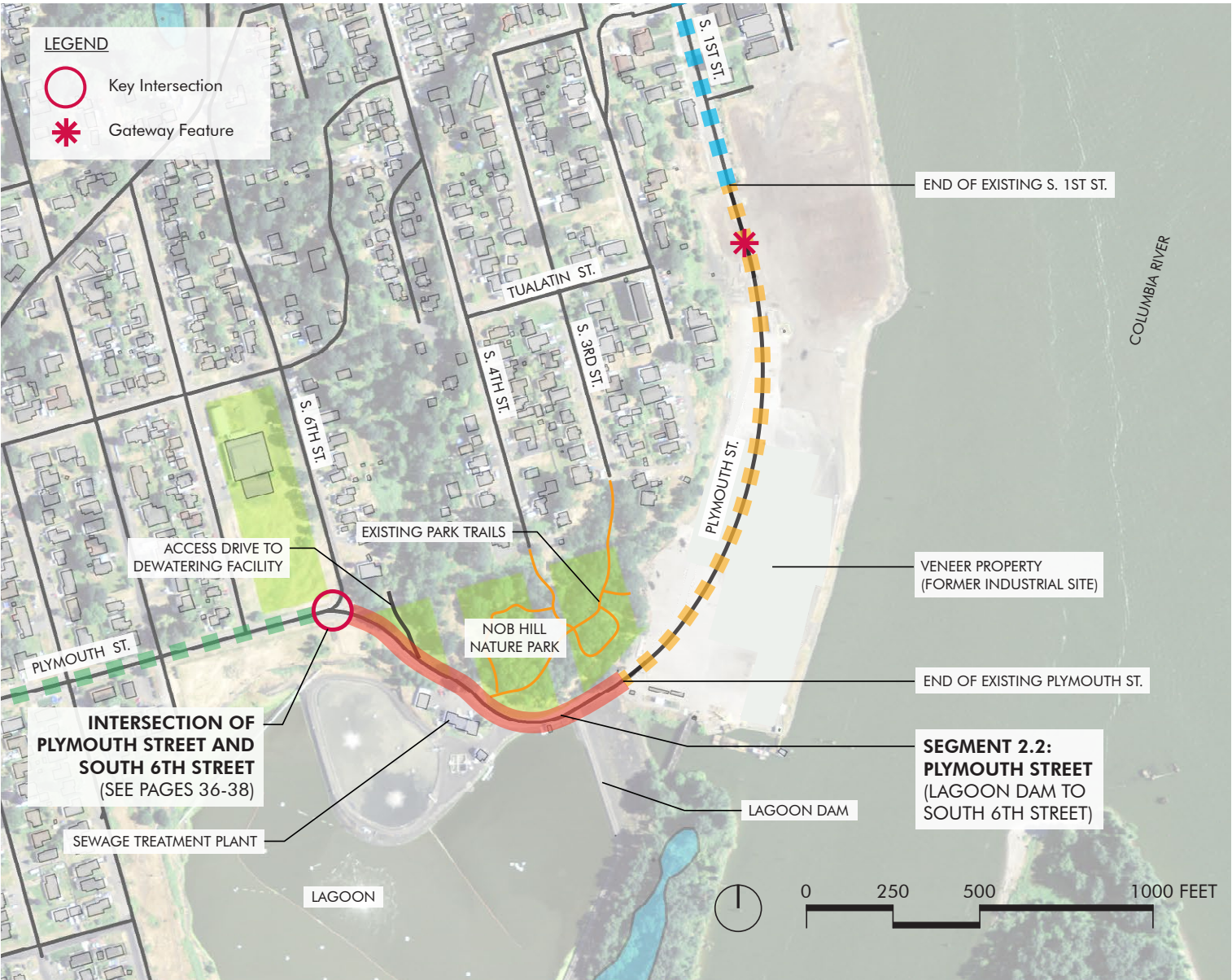
Provide reasonable options for cyclists.

Providing a dedicated facility for cyclists in the form of a multi-use pathway on the north (uphill) side of the road will provide a separated route for cyclists where they are moving more slowly. A shared pathway for bicyclists and pedestrians traveling uphill is safer, compared to doing so in the downhill direction. Providing a shared route with vehicles on the south (downhill) side of the road will make efficient use of limited space and allow bicyclists and vehicles to share the roadway where their speeds are more similar.

Allow flexibility where conditions vary.

A landscaping strip is recommended where space allows on the north side of the road. The width of this area will increase where more area is available. A landscaping strip will enhance the appearance of the road and enhance comfort and safety for pedestrians and bicyclists using the shared pathway.

SEGMENT 2.2: PLYMOUTH STREET

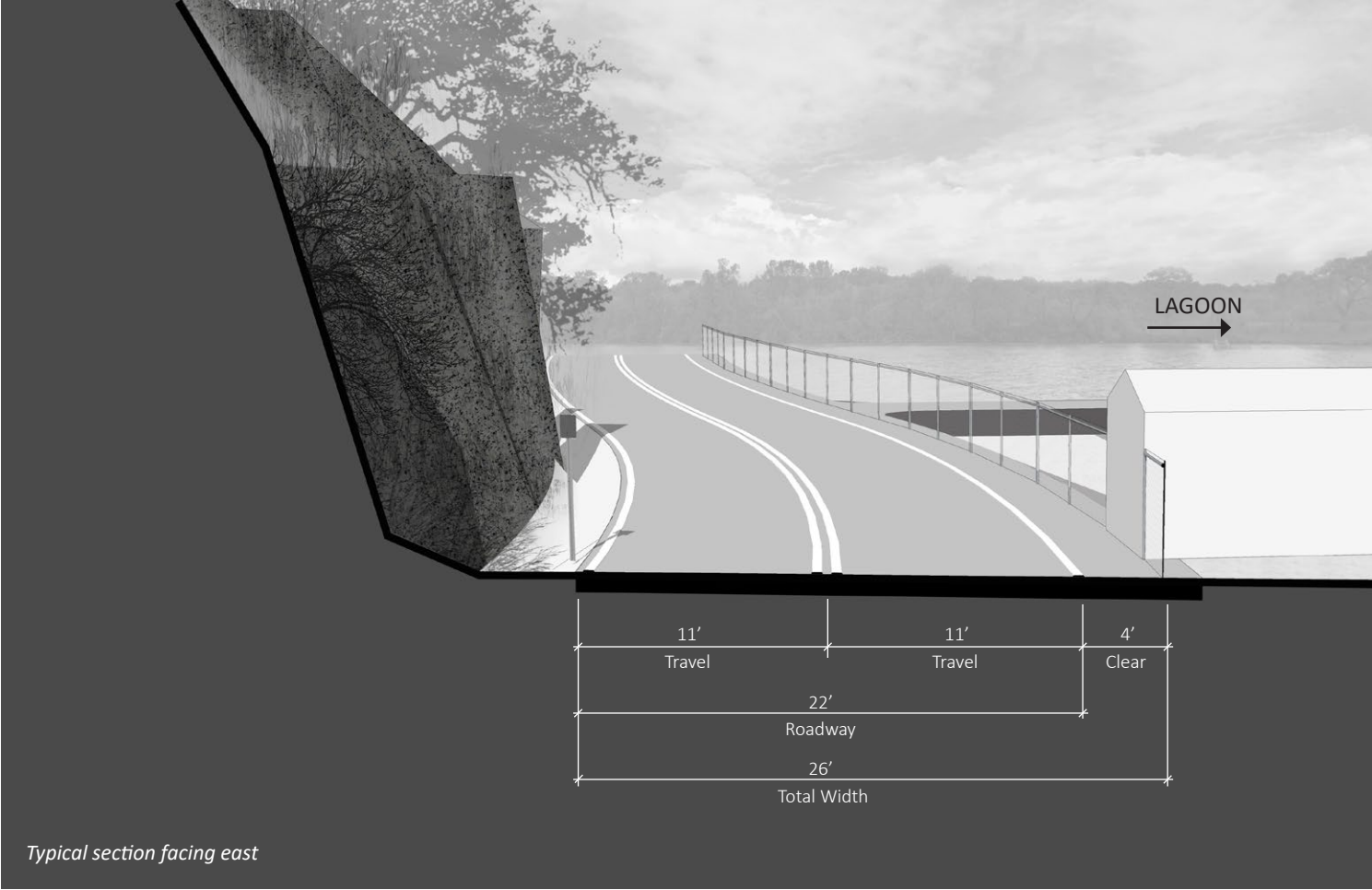


Segment 2.2 project area

Existing Road Section

- TSP Classification: Collector Street
- No existing ROW
- Approximately 1,100 linear feet
- No bike facilities
- No sidewalks

Plymouth Street through Segment 2.2 has a constrained available width of approximately 26' to 34' due to topography, basalt outcrops, improvements at the sewage treatment plant to the south, and the dewatering facility drive to the north. Approximately 40' or more width may be usable with some combination of retaining walls, fill, blasting, and/or moving some treatment plant vaults or other improvements.

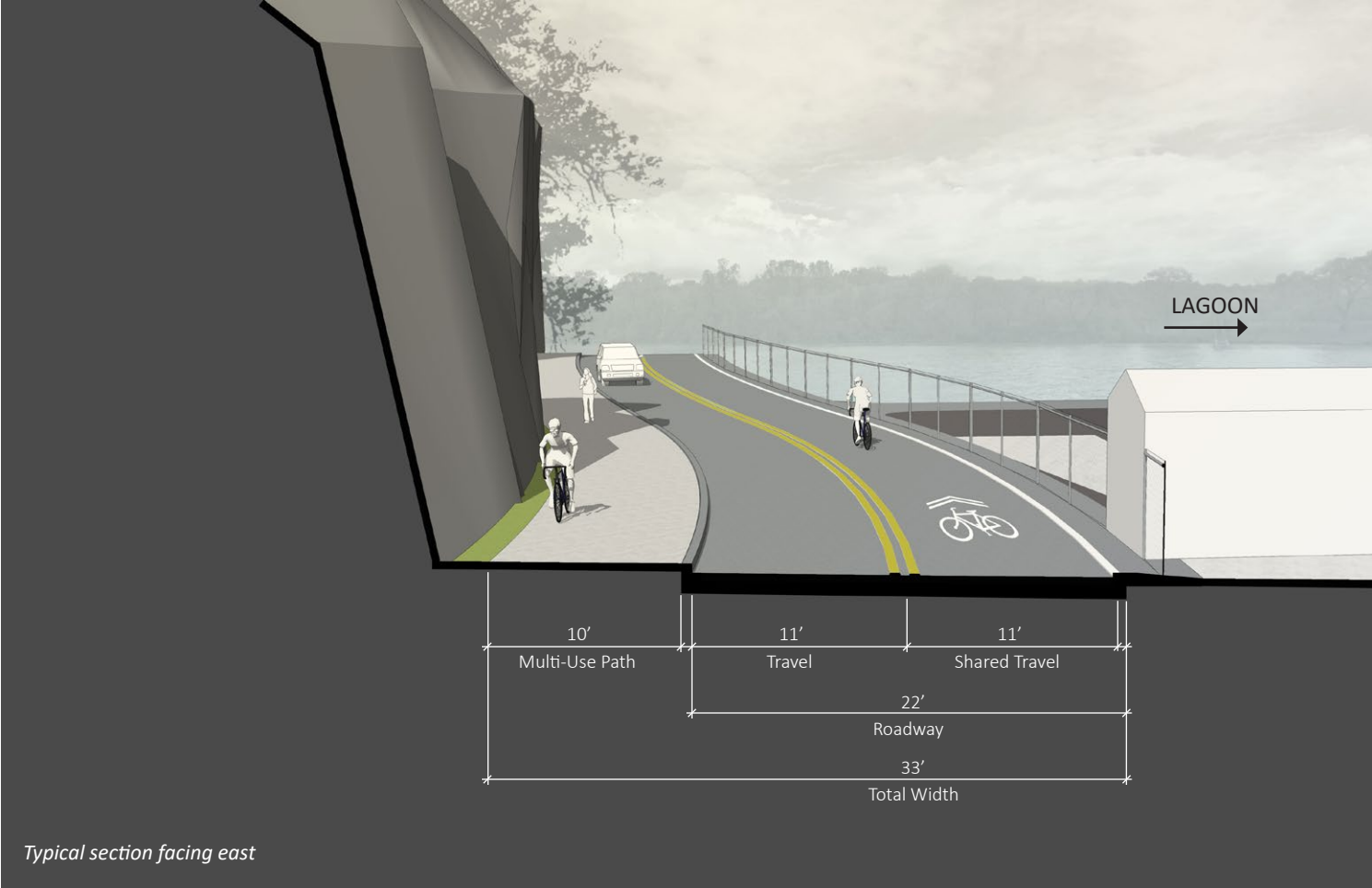


SEGMENT 2.2: PLYMOUTH STREET

Potential Road Section

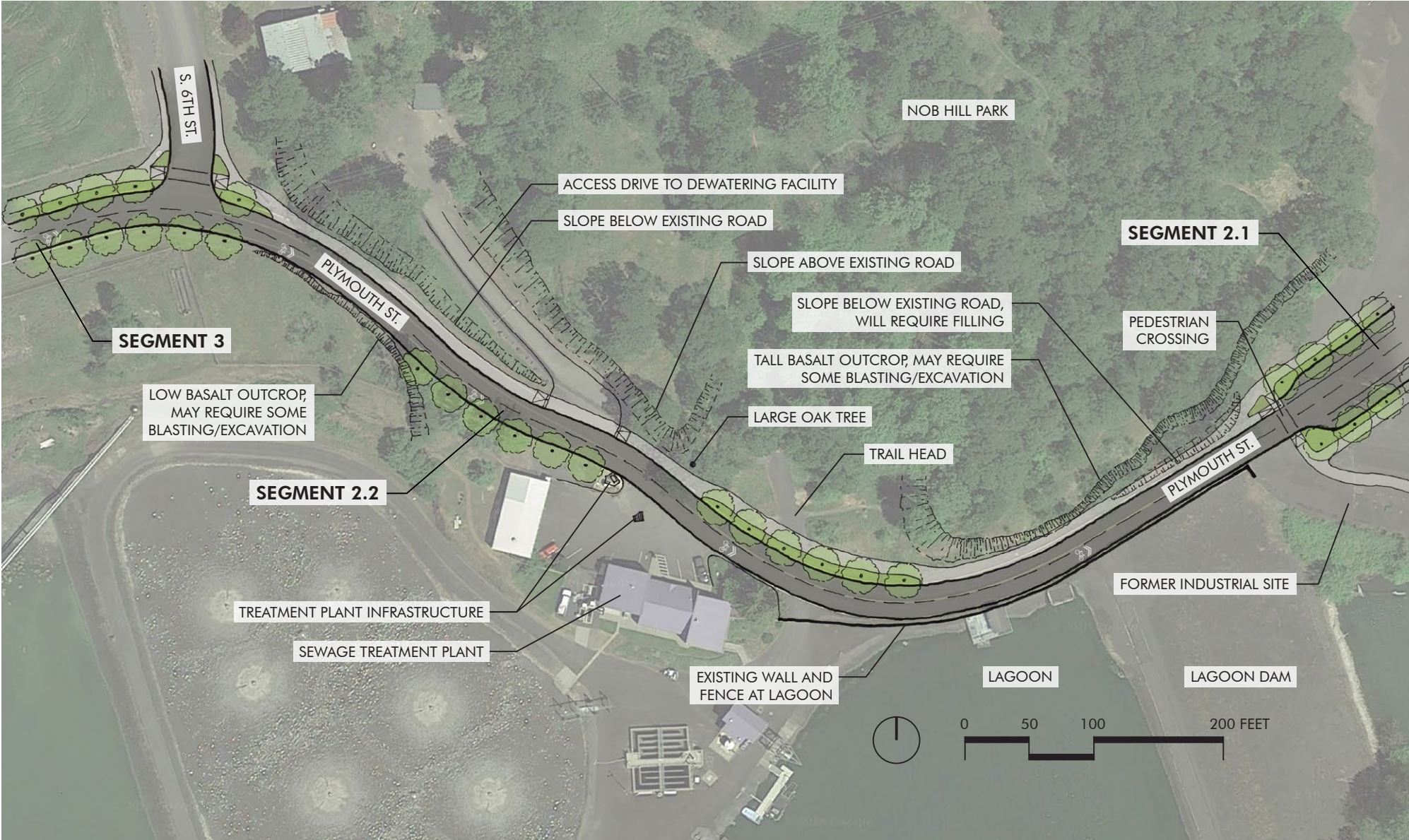
The proposed road section contains two 11' travel lanes, one of which is shared with bicycle travel (the east-bound/southern lane), and a 10' multi-use path on the north side of the road, separated from the travel lanes by a landscape strip where space allows (varying in size depending on available space).

Implementation of the proposed road section will need to consider pedestrian crossings where the south side sidewalk ends at the south end of Segment 2.1, and how bicycle facilities will transition to adjacent segments.



SEGMENT 2.2: PLYMOUTH STREET

Potential Plan



SEGMENT 2.2: PLYMOUTH STREET

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Intersection Evaluation

The Plymouth Street/S. 6th Street intersection is located at the crest of a vertical curve and on the outside of a horizontal curve along Plymouth Street, which together limit sight distance. There is currently no stop sign at the southbound approach to the intersection or warning signs at the eastbound approach to alert motorists of the horizontal/vertical curve. The following design options were developed for further consideration.



Existing conditions (image: Google Earth)

INTERSECTION: PLYMOUTH STREET & SOUTH 6TH STREET

Option A:

Stop Control

- Realigns the southbound approach to create a “T” intersection with Plymouth Street.
- Provides a stop sign at the southbound approach from S. 6th Street to Plymouth Street.
- Provides curve warning signs on Plymouth Street.



INTERSECTION: PLYMOUTH STREET & SOUTH 6TH STREET

Option B: Right in/Right Out

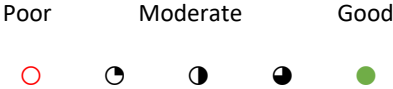
Includes the same improvements as Option A with the addition of a splitter island to limit turn movements to right-in and right-out. Residents can use S. 7th Street to complete eastbound and southbound left-turn movements.



INTERSECTION: PLYMOUTH STREET & SOUTH 6TH STREET

Evaluation Summary Table

Rating System:



		<i>Economy and Business Support</i>				<i>Transportation Safety and Mobility</i>					<i>Connectivity & Streetscape Aesthetics</i>			
		<i>Consistency with Previous Planning</i>	<i>Supports businesses and business districts</i>	<i>Supports customers, employees, and others by providing access</i>	<i>Relative Cost effectiveness</i>	<i>Improved connectivity & access</i>	<i>Improved pedestrian/bicycle safety and accessibility</i>	<i>Through-movement and mobility</i>	<i>Safety</i>	<i>Emergency Vehicle accommodations</i>	<i>Improved street appearance</i>	<i>Improved ped/bike connectivity</i>	<i>Street designs catered to needs of particular segments</i>	<i>Sustainable Design Strategies</i>
Proposed Road Section		●	●	●	●	●	●	●	●	●	●	●	●	
Plymouth Street/ South 6 th Street	Option A	●	●	●	●	●	●	●	●	●	●	●	●	
	Option B	●	●	●	●	●	●	○	●	○	●	●	●	

SEGMENT 2.2: PLYMOUTH STREET

Wayfinding Recommendations



LEGEND

- 3 Wayfinding Sign
- Key Intersection

Wayfinding locations for Segment 2.2

Wayfinding Recommendations: Segment 2.2					(See Appendix 2 for full table including destinations)
ID #	Mode Type	Sign Type	Installation Street	Intersecting Street	Sign Facing
6	Bicycle/Pedestrian	Trailhead Kiosk	Nob Hill Nature Park Trail	N/A	South

SEGMENT 2.2: PLYMOUTH STREET

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SEGMENT 3 EVALUATION

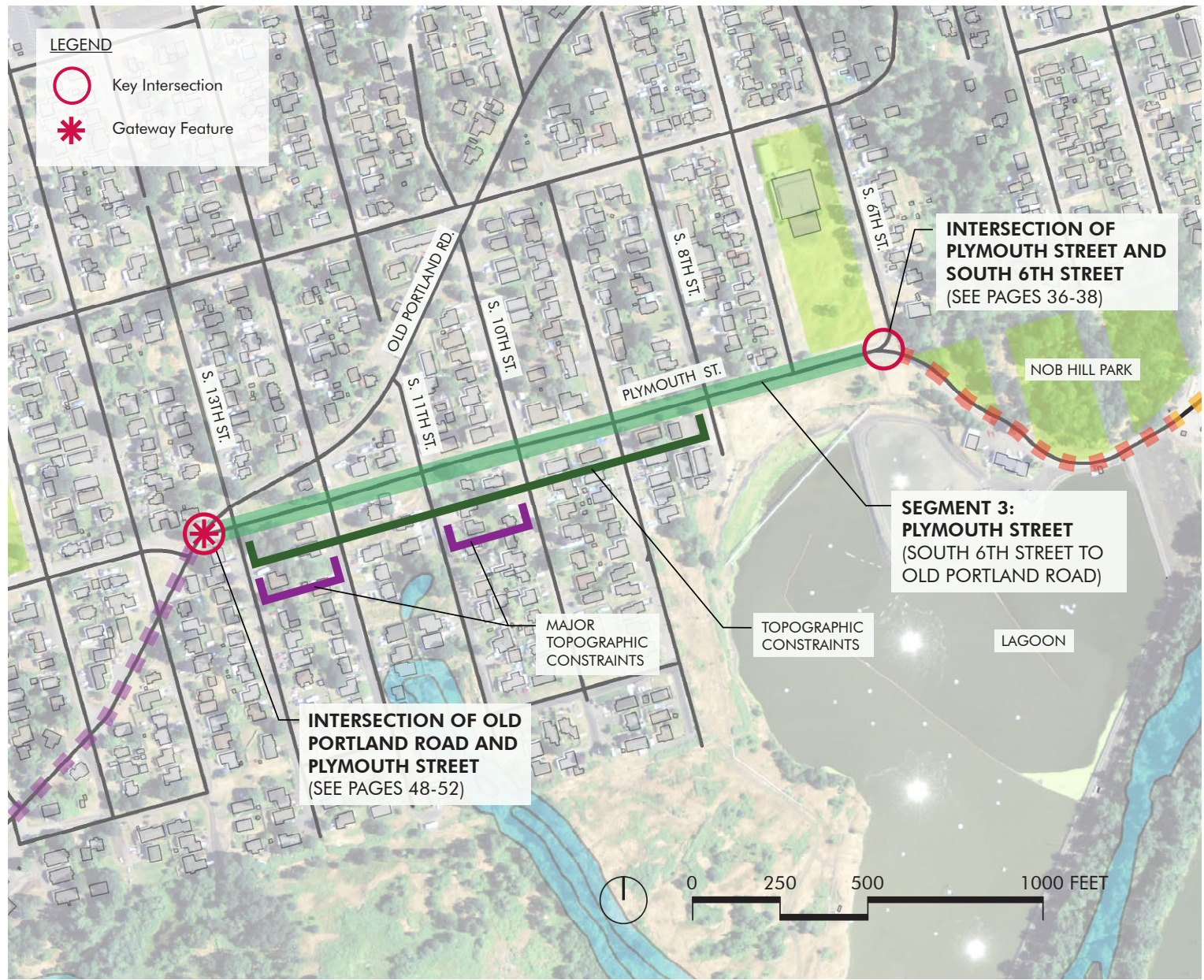
Segment 3 connects Segment 2.2 to Old Portland Road along a straight section of Plymouth Street through a largely developed residential area.

Topographic constraints exist within the ROW on five of the seven blocks in this segment. Approximately 48'-50' of width is available between S. 8th and S. 10th Streets, and between S. 11th and S. 12th Streets, or wider with retaining walls. Approximately 42'-45' of width is available between S. 10th and S. 11th Streets, and between S. 12th and S. 13th Streets, or wider with retaining walls.

Plymouth Street is already off-center near S. 11th St. due to topography. This segment may need a three-lane road section for turn lanes at the west end of Segment 3, depending on the proposed intersection layout for Plymouth Street and Old Portland Road.

The overall approach for this section is to provide continuous pedestrian and bicycle facilities along the north side of Plymouth Street. Two possible options have been identified to implement this approach. Where a sidewalk is provided on the south side of the road, pedestrian crossings will be needed where those sections end. Both options propose to provide a sidewalk on the south side only between S. 8th St. and S. 10th St.

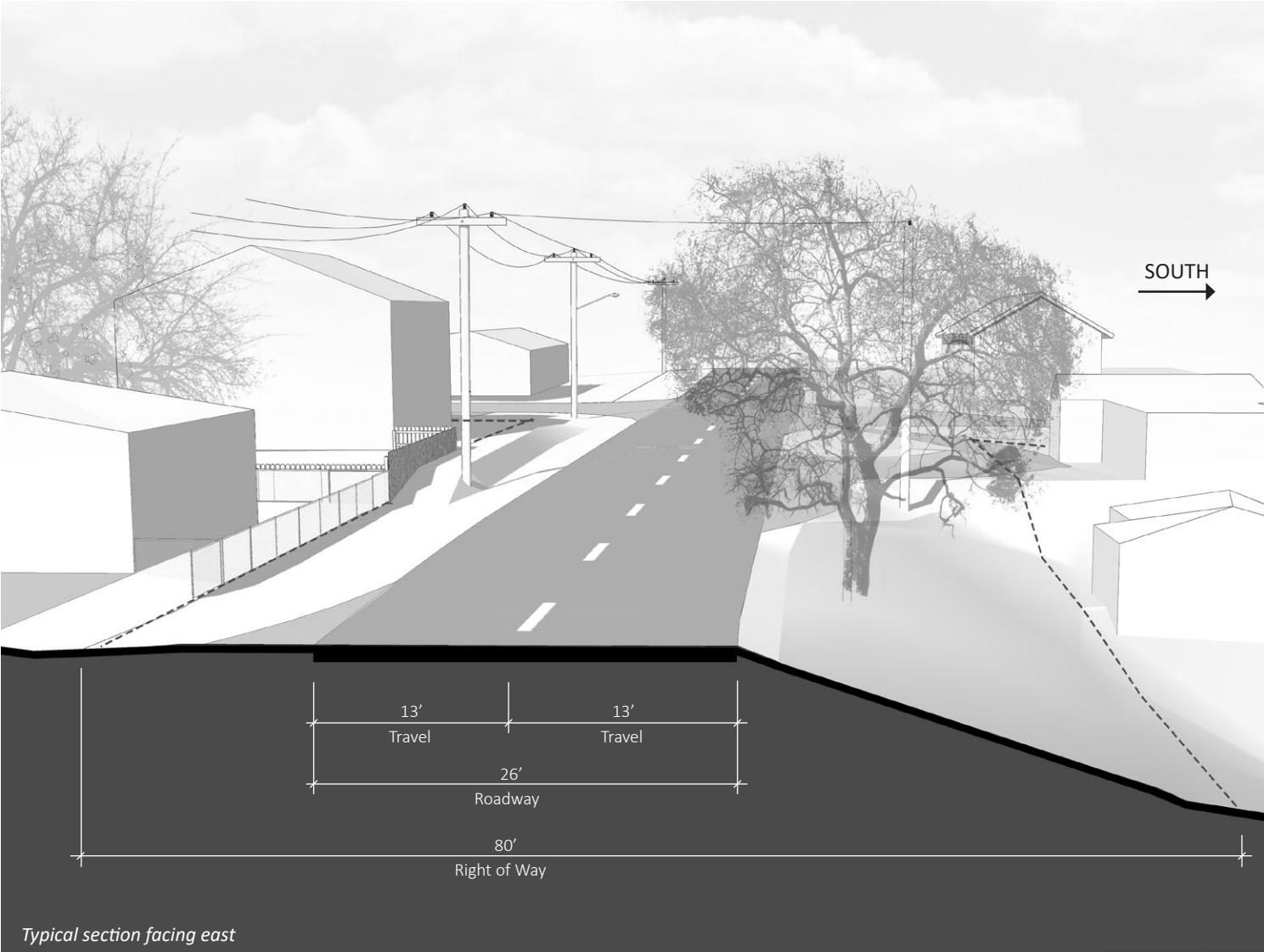
SEGMENT 3: PLYMOUTH STREET



Segment 3 project area

Existing Road Section

- TSP Classification: Collector Street
- 80' wide ROW
- Approximately 1,950 linear feet
- No bike facilities
- No sidewalks



SEGMENT 3: PLYMOUTH STREET

Road Section: Option A

Bicycle Lanes

This option would include bicycle lanes on both sides of the street and a sidewalk along the north side of the street.

The sidewalk on the south side of the street would only occur between S. 8th St. and S. 10th St., where there are residences and where space for a sidewalk is available.

The bicycle lane and sidewalk on the north side would need to transition to the multi-use path in Section 2.2 at S. 6th Street and the bicycle lane on the south side would transition to a shared bicycle and auto travel lane at S. 6th Street.

This road section would displace the existing utility poles, which will need to be moved.



SEGMENT 3: PLYMOUTH STREET

Road Section: Option B Sharrows & Multi-Use Path

This option would continue the multi-use path and landscaping strip from Segment 2.2 along the north side of Plymouth. On the south side of Plymouth, a sidewalk could be provided where available width allows and where residences would make use of it - between S. 8th and S. 10th Streets.

This road section would displace the existing utility poles, which will need to be moved.



SEGMENT 3: PLYMOUTH STREET

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Intersection Evaluation

The intersection of Old Portland Road and Plymouth Street presents many challenges, including visibility issues, steep grades and curves, several closely-spaced intersections, and potential impacts to private property associated with improvements.

Several options for improving this intersection were identified and evaluated. The project team narrowed them down to four options which are illustrated and described in the following pages.

Based on further analysis and discussion with members of the advisory committee, Planning Commission, City Council and other community members, the project team developed a new preferred option shown in the Recommendations section of this report.

This new roundabout design allows for continued direct travel to both Old Portland Road and Plymouth Street. It has a smaller footprint than the other roundabout options evaluated, with less resulting impact on surrounding private properties and a lower cost to build compared to the earlier roundabouts studied.



Existing conditions (image: Google Earth)

INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Option A: Re-Align Plymouth St.

- Realigns Plymouth Street to intersect with Old Portland Road at S. 13th Street (north).
- Old Portland Road is emphasized as the through-route.
- S. 13th Street (south) is realigned to intersect with Plymouth Street.
- Optional component: add a cul-de-sac on S. 14th Street (north) to separate it from Old Portland Road.
- Some impacts to private property but no direct impact to existing homes or other structures.
- This option does not meet mobility standards under future traffic conditions. However, it could be developed as an interim treatment to address existing safety issues.



INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Option B: Re-Align Old Portland Rd.

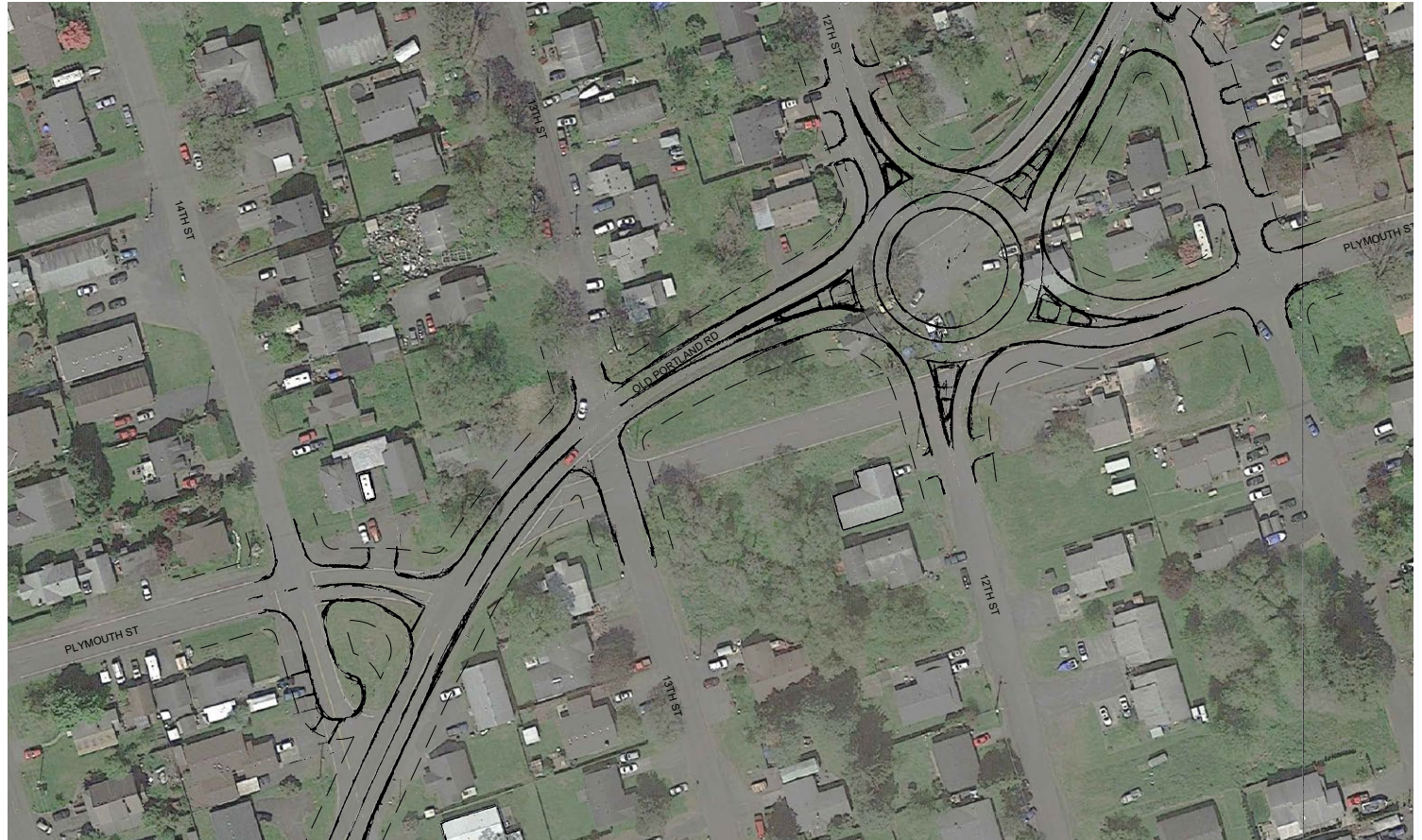
- Realigns Old Portland Road to emphasize Plymouth Street as the through-route.
- The north leg of Old Portland Road is realigned to intersect with Plymouth Street at S. 12th Street, and part of the prior Old Portland Road alignment is vacated.
- S. 12th Street is realigned to intersect with the new Old Portland Road alignment at a 'T'.
- Optional component: disconnect the north leg of S. 14th Street from Old Portland Road, and realign the south leg to intersect Old Portland Road.
- Impacts one property, including an existing dwelling; this property has been purchased by the City.



INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Option C: Five-Leg Roundabout

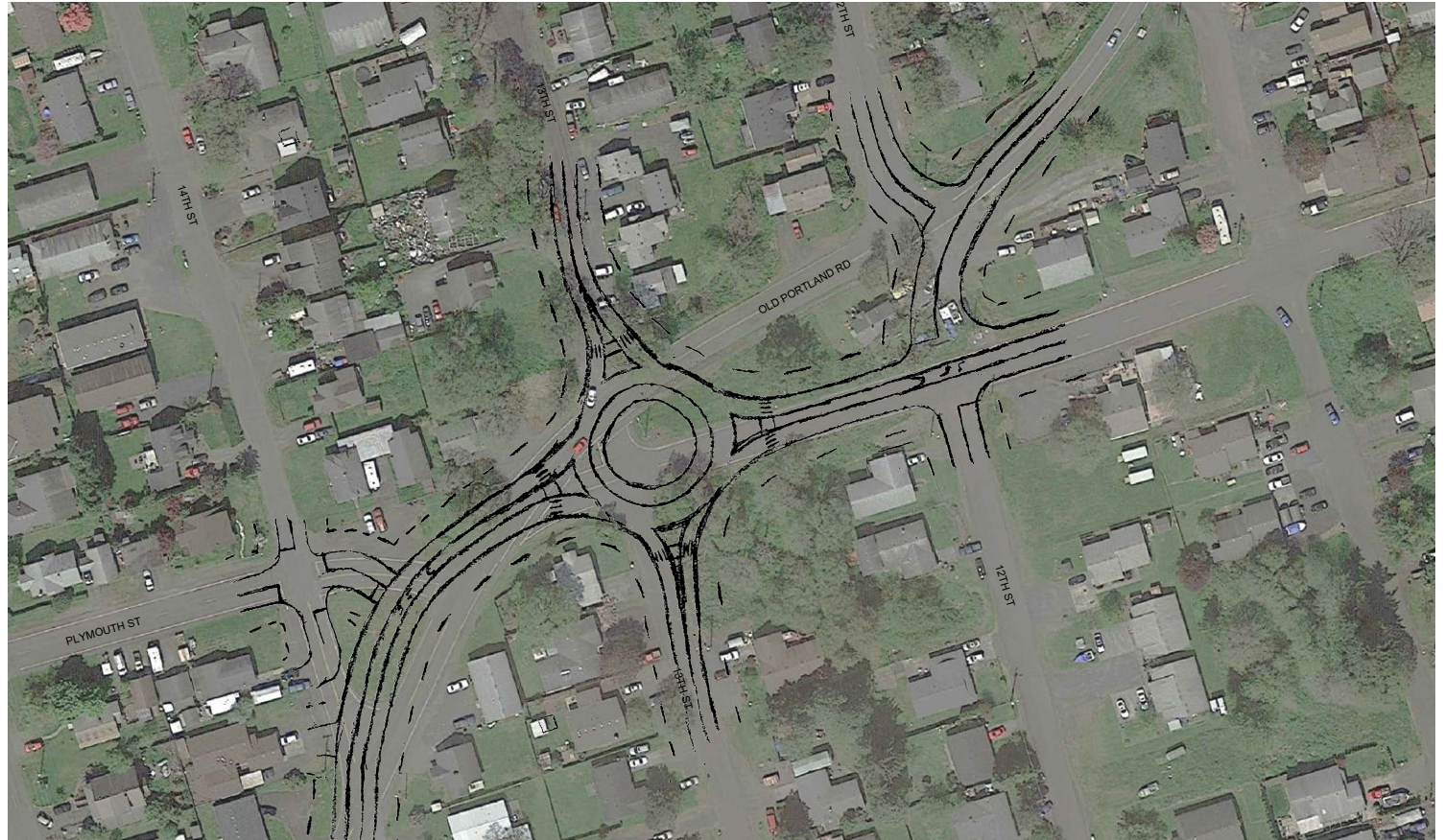
- Adds a five-legged roundabout, with equal emphasis on Old Portland Road and Plymouth Street.
- Part of the prior Plymouth Street alignment is vacated.
- Optional components: Disconnect the north leg of S. 14th Street from Old Portland Road and re-align the south leg to intersect at a 'T'.
- Impacts multiple properties and existing dwellings; one of these properties has been purchased by the City.



INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Option D: Four-Leg Roundabout

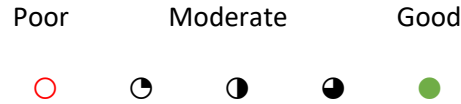
- Adds a four-legged roundabout and emphasizes Plymouth Street.
- The north leg of Old Portland Road is realigned to intersect with Plymouth Street at a 'T'.
- Part of the prior Old Portland Road alignment is vacated.
- Impacts multiple properties and one existing dwelling; one affected property is owned by the City.
- Vertical challenges on the south side of the roundabout would result in additional costs not captured in planning-level analysis and adds potential for property impacts.



INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Evaluation Summary Table

Rating System:



		Economy and Business Support				Transportation Safety and Mobility					Connectivity & Streetscape Aesthetics			
		<i>Consistency with Previous Planning</i>	<i>Supports businesses and business districts</i>	<i>Supports customers, employees, and others by providing access</i>	<i>Relative Cost effectiveness</i>	<i>Improved connectivity & access</i>	<i>Improved pedestrian/bicycle safety and accessibility</i>	<i>Through-movement and mobility</i>	<i>Safety</i>	<i>Emergency Vehicle accommodations</i>	<i>Improved street appearance</i>	<i>Improved ped/bike connectivity</i>	<i>Street designs catered to needs of particular segments</i>	<i>Sustainable Design Strategies</i>
Road Section Options	Option A	●	●	●	●	●	●	●	●	●	●	●	●	○
	Option B	●	●	●	●	●	●	●	●	●	●	●	●	●
Plymouth Street/Old Portland Road	Option A	●	●	●	●	○	●	○	●	●	●	●	●	●
	Option B	●	●	●	●	●	●	●	●	●	●	●	●	●
	Option C	●	●	●	●	○	●	●	●	●	●	●	●	●
	Option D	●	●	●	●	○	●	●	●	●	●	●	●	●

SEGMENT 3: PLYMOUTH STREET

Wayfinding Recommendations



Wayfinding locations for Segment 3

Wayfinding Recommendations: Segment 3					(See Appendix 2 for full table including destinations)
ID #	Mode Type	Sign Type	Installation Street	Intersecting Street	Sign Facing
7	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	Plymouth Street	South

SEGMENT 3: PLYMOUTH STREET

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