
RECOMMENDED DESIGN OPTIONS

The evaluation described in the preceding section of this report has led to the following initial recommendations for preferred roadway and intersection design along the study area corridor. In some cases, more than one option performed well in our evaluation, and further discussion with the City, agency partners, and the broader community likely will be required to identify a recommended design option.

Recommended Street Section

The proposed section for South 1st Street is similar to the existing street and includes sidewalks on both sides of the street, parallel parking on the east side, angled parking on the west side, and two travel lanes. Landscape planters are also proposed on both sides of the street with access across for pedestrians.

Painted sharrows will indicate that bicyclists share the roadway with vehicles on both sides of the street.

Sidewalk bulb-outs will provide a traffic calming effect, and shorten crossing distances for pedestrians. The bulb-outs will not reduce on-street parking, because those areas are already marked to prohibit parking in order to increase visibility for pedestrians and turning vehicles.

Depending on the final streetscape design, the number of on-street parking stalls should be the same or very close to the number of existing stalls.

As noted previously, this segment currently includes angled parking. The City may investigate use of reverse angled parking in this area in the future.



SEGMENT 1: SOUTH 1ST STREET

Recommended Street Section

Only one roadway cross-section was proposed. The proposed design ultimately may be refined as part of future redevelopment processes, depending on available right-of-way. If less than 80 feet of right-of-way is available, some elements of the design may be narrowed or eliminated as shown in the table below.

Element	Width
Travel lanes.....	10-12'
Bike lanes.....	0-6'
Parallel parking.....	8'
Planting strips.....	4-6'
Sidewalks.....	8'
Total.....	60-80'

A traffic calming circle could serve as a gateway feature and a way for drivers to turn around in this area. The design of the traffic circle will depend on whether or not it includes a gateway feature and whether it will need to accommodate large trucks.

No key intersections were evaluated in this segment.

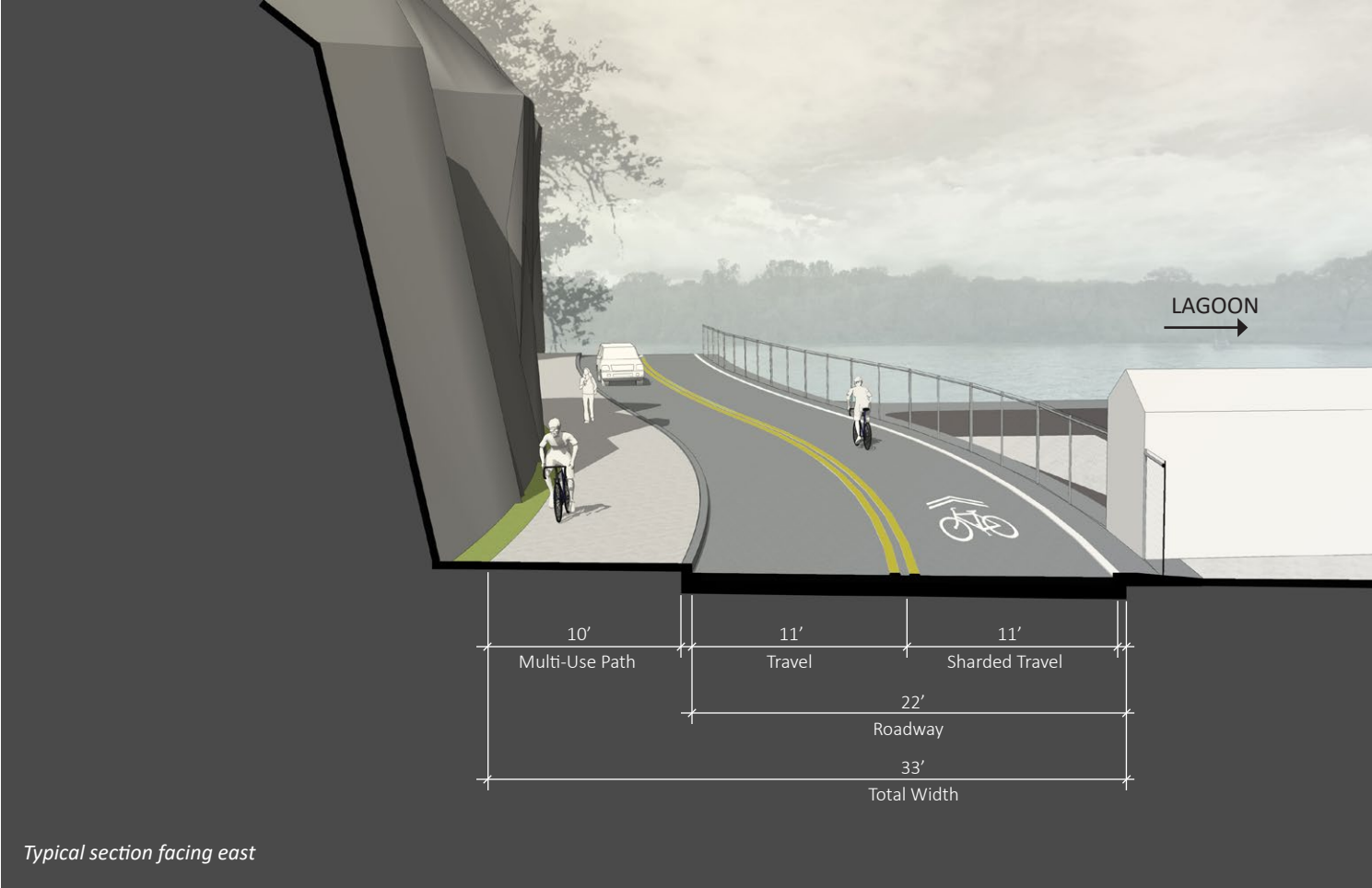


SEGMENT 2.1: VENEER PROPERTY

Recommended Street Section

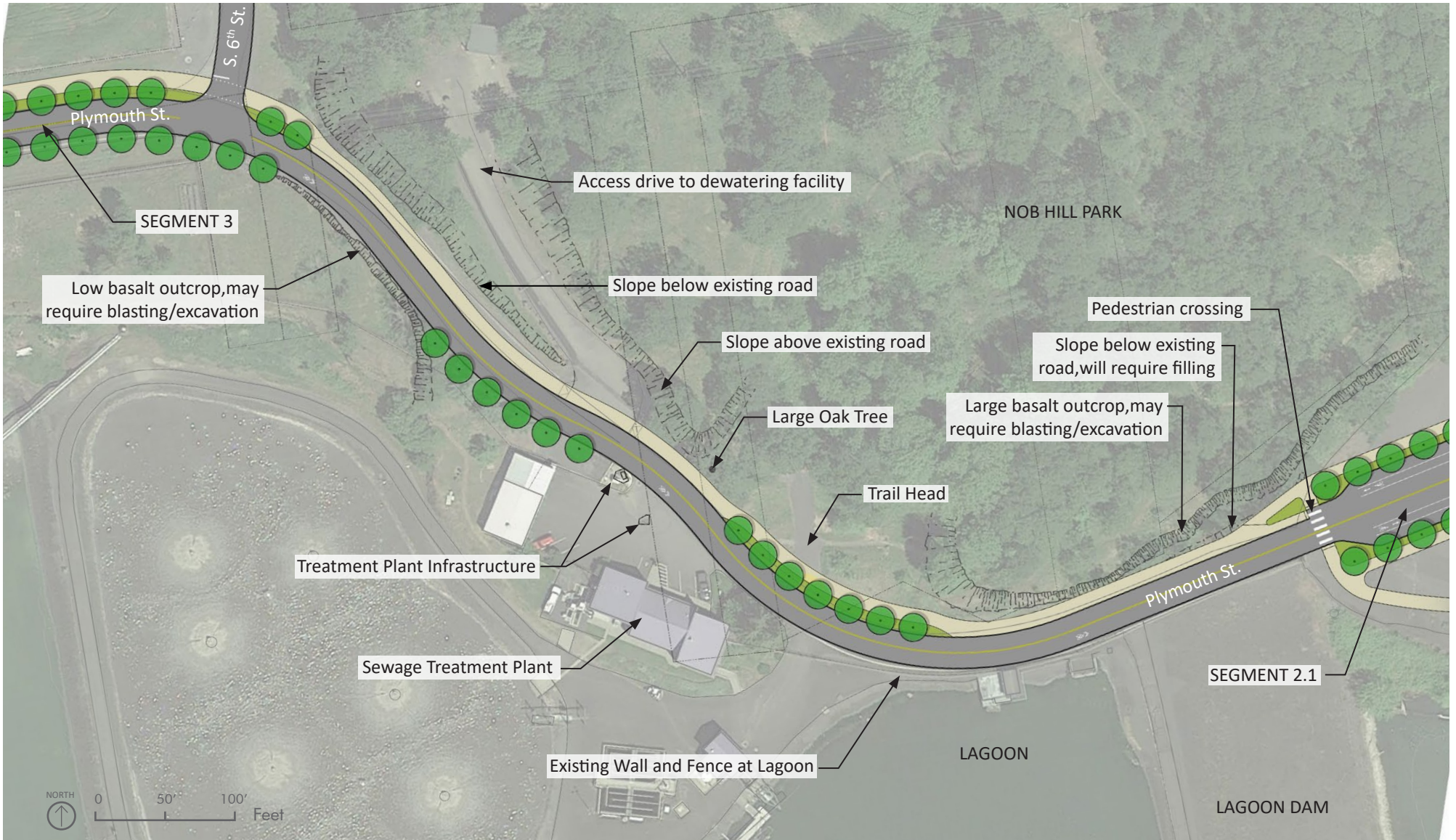
The proposed road section contains two 11' travel lanes, one of which is shared with bicycle travel (the east-bound/southern lane), and a 10' multi-use path on the north side of the road, separated from the travel lanes by a landscape strip where space allows (varying in size depending on available space).

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

Proposed Segment 2.2 Plan

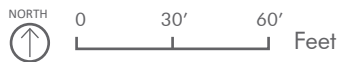


SEGMENT 2.2: PLYMOUTH STREET

Recommended Intersection

For the intersection of Plymouth Street and S. 6th Street, Option A (stop controlled intersection, no splitter island) is recommended based on the evaluation.

This option provides superior through-movement and mobility for those accessing properties on S. 6th Street, and the lack of splitter island provides better emergency vehicle access.



INTERSECTION: PLYMOUTH STREET & SOUTH 6TH STREET

Recommended Street Section

Roadway cross section Option B is the recommended design for this section. This option has superior ratings for improved connectivity and access, improved bicycle and pedestrian safety and accessibility, improved street appearance, and the potential to incorporate sustainable design principles.



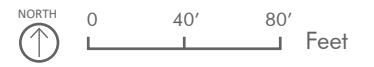
SEGMENT 3: PLYMOUTH STREET

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Proposed Segment 3 Plan



SEGMENT 3: PLYMOUTH STREET



Recommended Intersection

Several options for improving this intersection were identified and evaluated. The project team narrowed them down to four options for evaluation. 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.

This 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.

Truck movements through the Plymouth Street/Old Portland Road intersection have been a key topic of discussion, and the roundabout has been designed to accommodate these vehicles through sufficient size and a mountable apron. The roundabout center is recommended to be non-mountable in order to provide space for a gateway feature.



INTERSECTION: OLD PORTLAND ROAD & PLYMOUTH STREET

Recommended Street Section

A new preferred option was identified for Old Portland Road through further discussion and refinement of the preliminary preferred option with members of the advisory committee, Planning Commission, City Council and other community members.

It includes one-way cycletracks on both sides of the street. The cycletracks are separated from the roadway by a landscaping strip. Each cycletrack will be separated from the adjacent pedestrian walkway by a curb or other means.

The new option has the same safety benefits of the original Option C but can be transitioned from adjacent segments more effectively. Implementation of this option will require careful planning to allow for safe convenient transitions between this design and sections of the roadway that have undergone recent improvements.



SEGMENT 4.1: OLD PORTLAND ROAD

Recommended Intersection

At the intersection of Old Portland Rd. and Kaster Rd. Option B (roundabout) is the preferred design, allowing for through-movement in all directions without queuing at a signal.

The roundabout serves as both a traffic calming function and as a gateway treatment while providing capacity comparable to a signalized intersection with separate left-turn lanes on all approaches.



INTERSECTION: OLD PORTLAND ROAD & KASTER ROAD

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Recommended Intersections

For clarity the recommended intersections of Old Portland Road with Gable Road and Port Avenue are shown together. In the Evaluation section on pages 66 through 72, the options for these two intersections were shown and evaluated separately.

Old Portland Road & Gable Road

Several options for improving this intersection were identified and narrowed to two options for evaluation. Both options performed well in the evaluation; however, Option B performed slightly better. Based on further review and discussion with the project management team, Option B is the preferred near-term alternative.

- Option B provides greater separation from the railroad crossing as well as the Old Portland Road/Railroad Avenue and Old Portland Road/Port Avenue intersections relative to Option A.
- Option B, coupled with the planned improvements along Gable Road, provides a greater improvement in traffic operations (volume/capacity, delay, LOS) at the intersection relative to Option A.
- Option B does not require a traffic signal to achieve acceptable traffic



INTERSECTIONS: OLD PORTLAND ROAD, GABLE ROAD & PORT AVENUE



MATCHLINE: SEE PG. 116

operations in the future and therefore, costs significantly less relative to Option A.

The City should monitor changes in traffic and travel performance after improvements to the US 30/Millard Road intersection are implemented and/or other measures are successful in encouraging more drivers to use Old Portland Road to access the Riverfront area.

At the point that increased potential traffic on Old Portland Road warrants investment in additional improvements to this intersection, Option A may be evaluated further.

Consider incorporating protected intersection treatment options to improve transitions through the intersection and to the shared-use path at Old Portland Road.

Old Portland Road and Port Avenue

At the intersection of Old Portland Road and Port Avenue, Option B (Re-Align with Two-Way Left-Turn Lane) is preferred. Option A is problematic from a transportation safety and mobility standpoint.

Consider incorporating protected intersection treatment options to improve transitions through the intersection.

Recommended Street Section

A new preferred option was identified through further discussion and review with members of the advisory committee, Planning Commission, City Council and other community members. It includes one-way cycletracks on both sides of the street.

The cycletracks are separated from the roadway by a landscaping strip. Each cycletrack will be separated from the adjacent pedestrian walkway by a curb or other means. The new option has the same safety benefits of the original Option C but can be transitioned from adjacent segments more effectively.

Implementation of this option will require careful planning to allow for safe convenient transitions between this design and sections of the roadway that have undergone recent improvements. Typical transitions will be illustrated in the Riverfront Connector Plan.

This cross-section also includes a center lane to accommodate turn lanes needed at key intersections or other access points to maintain traffic mobility. A landscaped median could be used in short portions of this segment but will need to be located to continue to ensure access to local businesses in this part of the corridor.



SEGMENT 4.2: GABLE ROAD

Recommended Intersection

Only one option was proposed for the intersection of Gable Road and McNulty Way.



INTERSECTION: GABLE ROAD & MCNULTY WAY

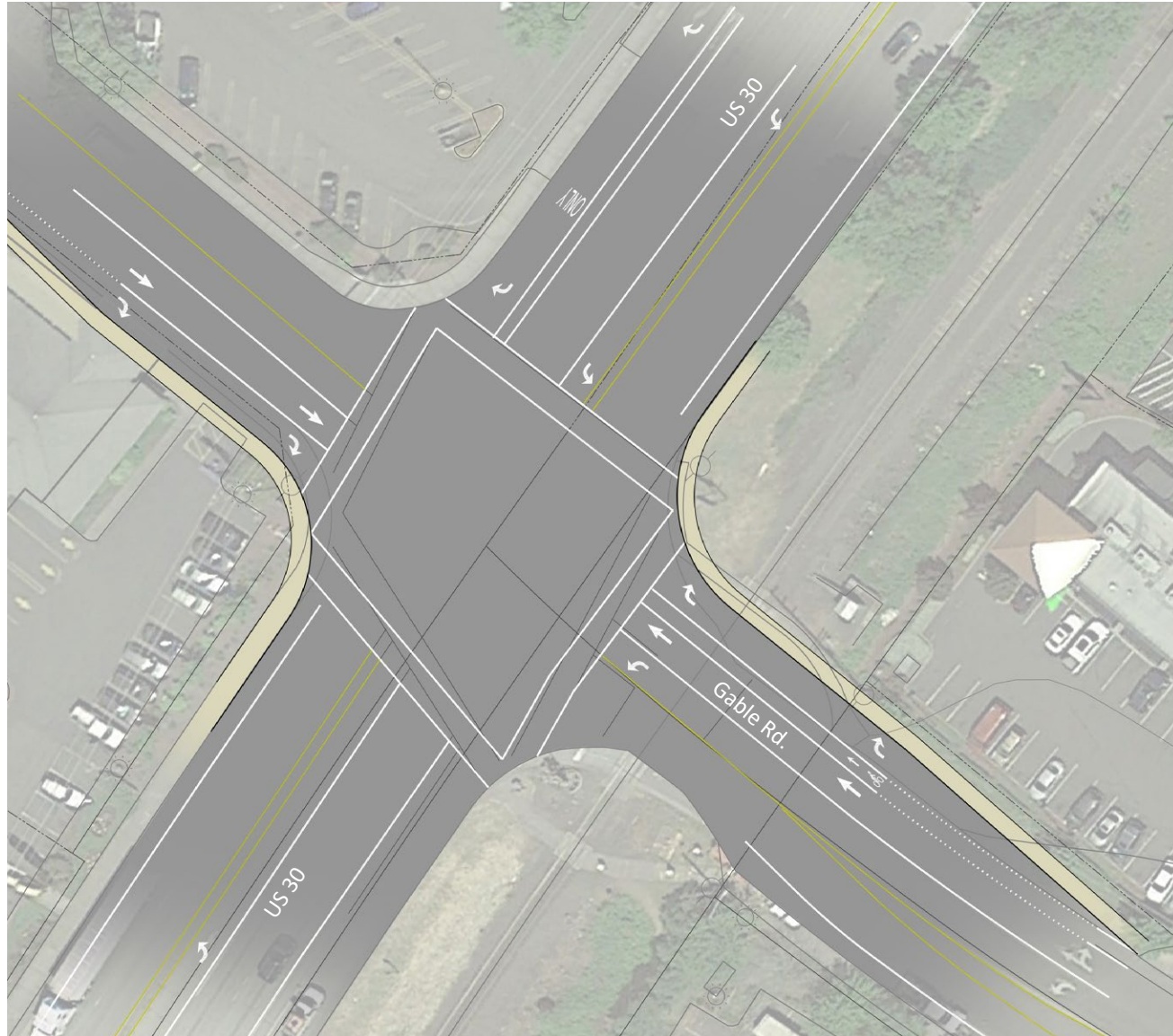
Recommended Intersection

Only one option was proposed for the intersection of Gable Road and US 30.

Adding capacity at Millard Road/US 30 will reduce long-term turn movement demand at Gable Road/US 30.

Provide a separate westbound right-turn lane to separate westbound right-turn movements from through movements at the intersection. This will require reconfiguring the westbound approach to the intersection and potentially widening along Gable Road. The additional lane will also require coordination with ODOT rail, who may not be receptive to the additional lane without significant investment in rail infrastructure.

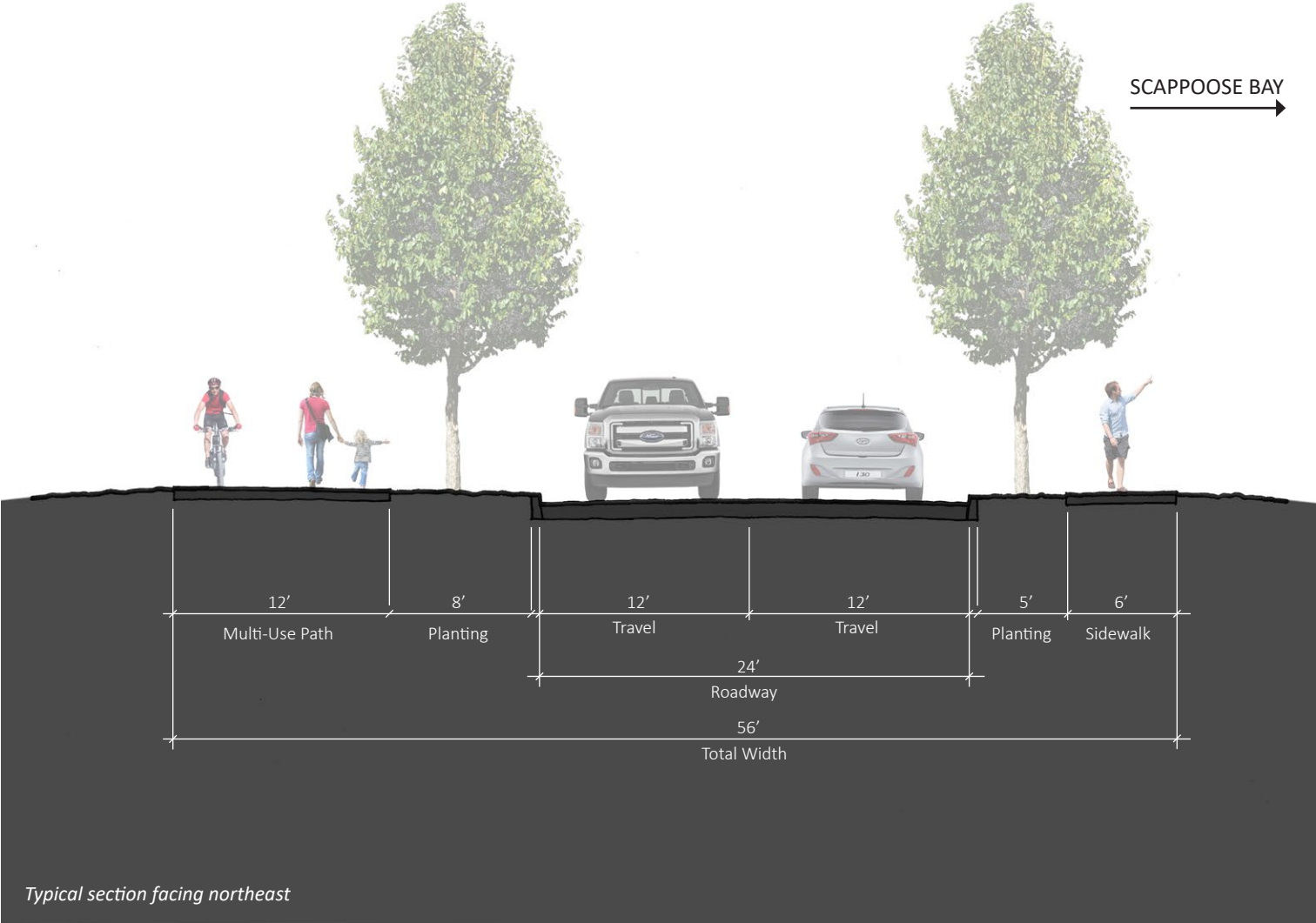
As an alternative, an eastbound right-turn lane could be considered when the bank in the southwest corner of the intersection redevelops. Either improvement will improve traffic operations at the intersection and provide much needed capacity for future growth; however, the additional capacity is not expected to be sufficient to carry the intersection through 2031; therefore, alternative performance measures should also be considered at the intersection.



INTERSECTION: GABLE ROAD & US 30

Recommended Street Section

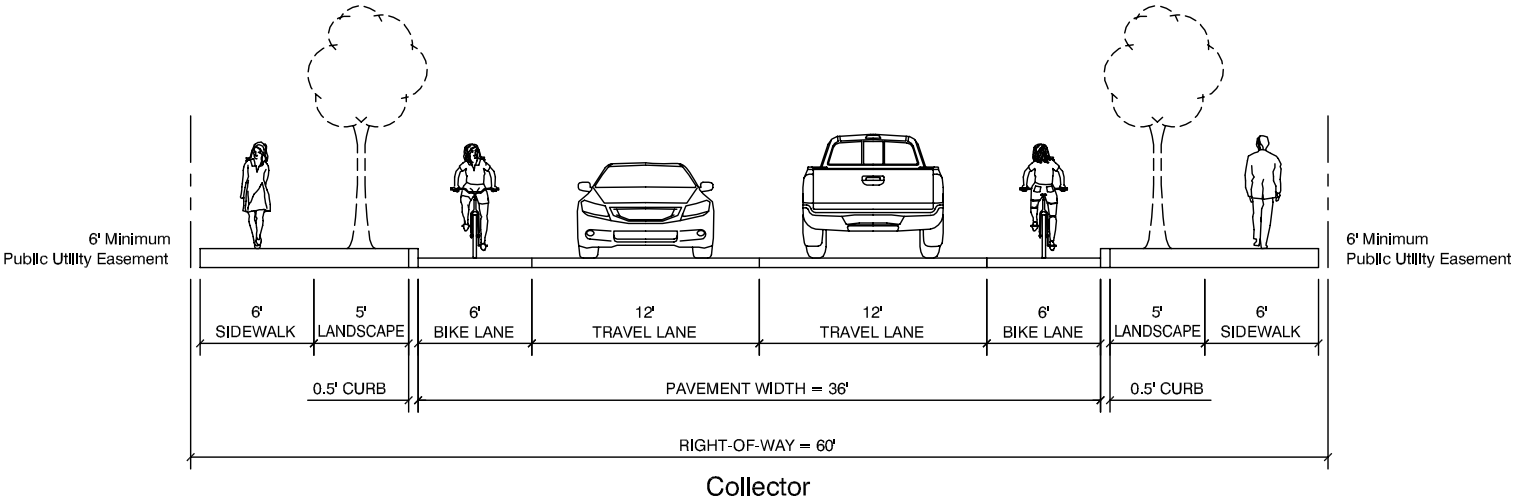
The proposed designs for roadway cross sections and intersections in this area did not include alternatives to evaluate.



SEGMENT 5: OLD PORTLAND ROAD

Recommended Street Section

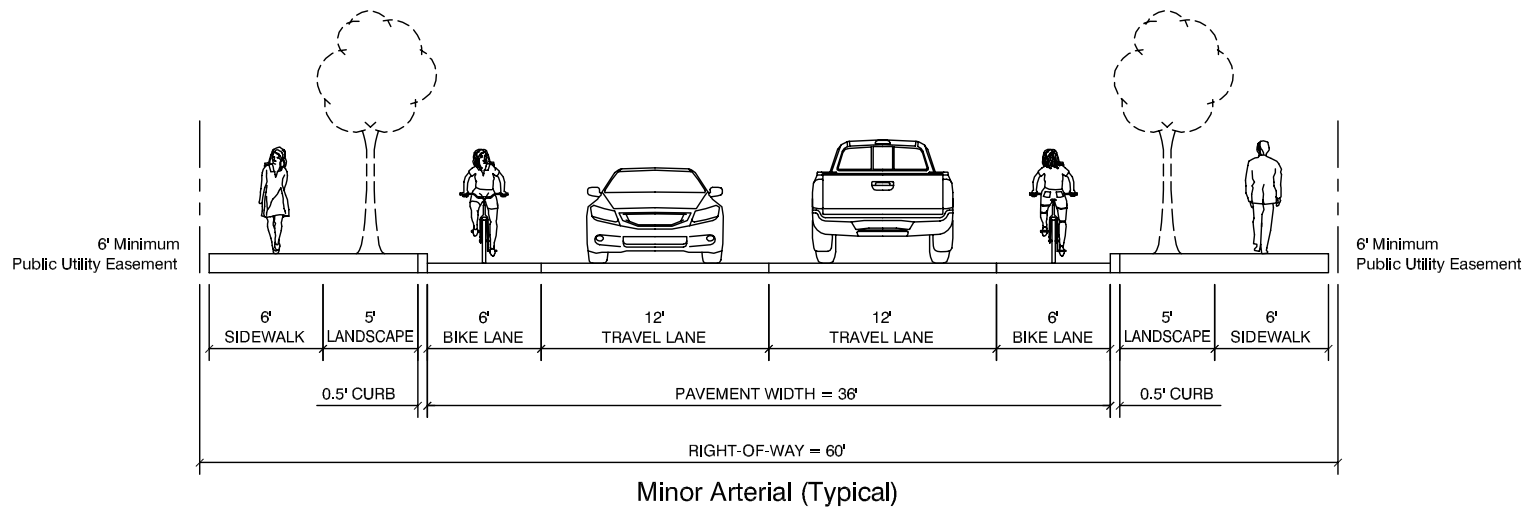
The proposed designs for roadway cross sections and intersections in this area did not include alternatives to evaluate.



Typical section

Recommended Street Section

The proposed designs for roadway cross sections and intersections in this area did not include alternatives to evaluate.

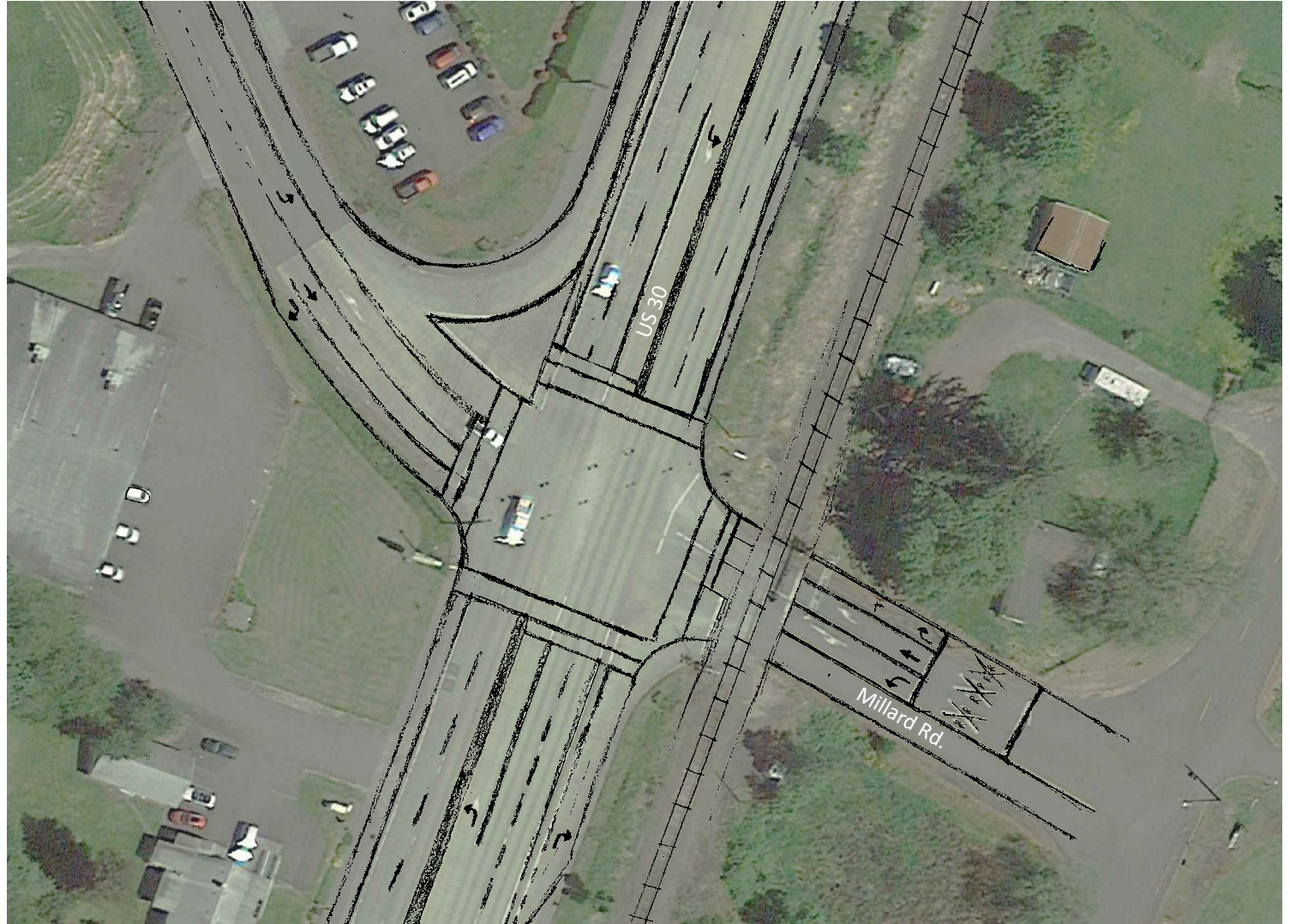


Typical section

SEGMENT 5: MILLARD ROAD

Recommended Intersection

Only one option was proposed for the intersection of Millard Road and US 30.



INTERSECTION: MILLARD ROAD & US 30

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LAND USE AND REGULATORY CHANGES

Following is a preliminary list of policy and regulatory changes that may be necessary to implement the recommended Design Options. This list is high-level and conceptual at this time, and will be refined as the recommended design options are reviewed and discussed by the community.

Land Use and Zoning

No changes to zoning designations for properties along the corridor are recommended in order to achieve these design options. It is expected that land along the corridor will continue to develop consistent with existing zoning.

Roadway Cross Sections

The City should consider updating the cross-sections contained within the Transportation System Plan to incorporate the recommended design options in order to require the appropriate improvements from property development along the corridor. The cross-sections of the recommended design options may also be appropriate for use in other locations within St. Helens.

The development code and Comprehensive Plan should include language that clarifies the relationship between the Riverfront Framework Plan and Riverfront Connector Plan in terms of proposed road cross-section designs. The Riverfront Connector Plan is generally consistent with the Framework Plan but includes more detailed information and alternatives to the designs identified in the Framework Plan. The information in the Riverfront Connector Plan will take precedence over the Framework Plan in this regard.

Street Furniture & Pedestrian Amenity Requirements

The urban design of Segment 1 and 2.1 in the waterfront area should contribute to a cohesive sense of place. Specific design standards aiming to improve the public realm through this area could be achieved through an overlay district or changes to existing zoning regulations.

Landscaping Requirements

Current development code regulations should be reviewed to see if they support the type and amount of landscaping contained in the recommended design options. Landscaping requirements can specify trees that are particularly suited to the soil conditions in the study corridor.

Fee In-Lieu Requirements

The City's fee-in-lieu requirements for transportation improvements should be refined. Currently the required fee-in-lieu only covers the cost of providing new sidewalks associated with new development or redevelopment. The calculation of the fee should be evaluated and potentially refined to cover the full cost of road improvements if they are not installed as part of a development project. Fee-in-lieu and improvement requirements also must address proportionality and nexus requirements, consistent with land use case law decisions.

APPENDIX 1

Due to size, the Design Options Evaluation Notes are provided separately, both as a PDF file and an Excel spreadsheet.

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APPENDIX 2

Wayfinding Recommendations															
Corridor ID #	Segment	Mode Type	Sign Type	Installation Street	Intersecting Street	Sign Facing	Destination #1		Destination #1 Distance	Destination #1 Time	Destination #2		Destination #2 Distance	Destination #2 Time	
							Destination #1 Arrow	Destination #1 Arrow			Destination #2 Arrow	Destination #2 Arrow			
1	1	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	North	Riverfront Dist	Straight	0.1 mi	1 min	Courthouse	Left	0.1 mi	1 min	
2	1	Bicycle/Pedestrian	On-Street Directional	St. Helens Street	South 1st Street	East	Houlton Bus Dist	Right	1.1 mi	7 min	Nob Hill Park	Left	0.7 mi	4 min	
3	1	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	South	Houlton Bus Dist	Straight	1.1 mi	7 min	Boat Launch	Diagonal Right	0.3 mi	2 min	
4	1	Pedestrian	On-Street Directional	South 1st Street	Plaza Square	North	City Hall	Left	0.1 mi	1 min	Columbia View Park	Left	0.1 mi	1 min	
5	1	Pedestrian	Map Kiosk	South 1st Street	Plaza Square	East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6	2.2	Bicycle/Pedestrian	Trailhead Kiosk	Nob Hill Nature Park Trail	N/A	South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7	3	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	Plymouth Street	South	Riverfront Dist	Straight	0.6 mi	3 min	Historic Dist	Slight left (2nd roundabout exit)	0.7 mi	4 min	
8	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 15th Street	North	Houlton Bus Dist	Right	0.4 mi	2 min	McCormick Park	Straight	0.4 mi	2 min	
9	4.1	Bicycle/Pedestrian	On-Street Directional	South 15th Street	Old Portland Road	North	Riverfront Dist	Left	0.7 mi	4 min	Historic Dist	Left	0.8 mi	4 min	
10	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 15th Street	West	Houlton Bus Dist	Left	0.4 mi	2 min	Riverfront Dist	Straight	0.7 mi	3 min	
11	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 18th Street/Kaster Road	East	Houlton Bus Dist	Right	0.5 mi	3 min	McCormick Park	Right	0.1 mi	1 min	
12	4.1	Bicycle/Pedestrian	On-Street Directional	South 18th Street	Old Portland Road	North	Riverfront Dist	Left	0.9 mi	5 min	Historic Dist	Left	1 mi	6 min	
13	4.1	Bicycle/Pedestrian	On-Street Directional	Kaster Road	Old Portland Road	South	Houlton Bus Dist	Straight	0.5 mi	3 min	Riverfront Dist	Right	0.9 mi	5 min	
14	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 18th Street/Kaster Road	West	Houlton Bus Dist	Left	0.5 mi	3 min	Riverfront Dist	Straight	0.9 mi	5 min	
15	4.1	Bicycle/Pedestrian	Trailhead Kiosk	Old Portland Road	N/A	South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
16	4.1	Bicycle	On-Street Confirmation	Old Portland Road	Gable Road	East	Scappoose Bay	Left	N/A	N/A	N/A	N/A	N/A	N/A	
17	4.2	Bicycle	On-Street Confirmation	Gable Road	Old Portland Road	West	Scappoose Bay	Right	N/A	N/A	N/A	N/A	N/A	N/A	
18	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	McNulty Way/Milton Way	East	CC Mental Health	Left	0.1 mi	1 min	State Police	Left	0.2 mi	1 min	
19	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	McNulty Way/Milton Way	West	Houlton Bus Dist	Straight	1.3 mi	7 min	Riverfront Dist	Straight	1.7 mi	9 min	
20	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	Highway 30	East	Houlton Bus Dist	Right	0.9 mi	5 min	Chamber of Com	Right	0.9 mi	5 min	
21	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	Highway 30	West	Houlton Bus Dist	Left	0.9 mi	5 min	Riverfront Dist	Straight	2 mi	9 min	
22	5	Vehicle	Vehicular Directional	Old Portland Road	Gable Road/Old Portland Road	South	Houlton Bus Dist	Right	1 mi	3 min	Riverfront Dist	Right	1.4 mi	4 min	
23	5	Vehicle	Vehicular Directional	McNulty Way	Gable Road	South	Houlton Bus Dist	Right	1.3 mi	3 min	Riverfront Dist	Right	1.7 mi	5 min	
24	5	Vehicle	Vehicular Directional	Millard Road	Old Portland Road	North	Riverfront Dist	Left	2.5 mi	6 min	Historic Dist	Left	2.6 mi	6 min	
25	5	Vehicle	Vehicular Directional	Old Portland Road	Millard Road	South	Houlton Bus Dist	Straight	2.1 mi	4 min	Riverfront Dist	Straight	2.5 mi	6 min	
26	5	Vehicle	Vehicular Directional	Highway 30	Millard Road	South	Riverfront Dist	Right	2.9 mi	7 min.	Historic Dist	Right	3 mi	6 min.	

Complete Wayfinding Matrix

Destination #3	Destination #3 Arrow	Destination #3 Distance	Destination #3 Time	Destination #4	Destination #4 Arrow	Destination #4 Distance	Destination #4 Time	Destination #5	Destination #5 Arrow	Destination #5 Distance	Destination #5 Time	Destination #6	Destination #6 Arrow	Destination #6 Distance	Destination #6 Time
City Hall	Straight	0.1 mi	1 min	Columbia View Park	Left	0.2 mi	1 min	Nob Hill Park	Straight	0.7 mi	6 min	McCormick Park	Right	1.1 mi	6 min
McCormick Park	Straight	1.2 mi	7 min	Library	Straight	1.2 mi	7 min	Chamber of Com	Right	1.4 mi	10 min	N/A	N/A	N/A	N/A
Grey Cliffs Park	Diagonal Right	0.3 mi	2 min	McCormick Park	Left	1.1 mi	6 min	Library	Left	1.1 mi	6 min	Chamber of Com	Straight	1.3 mi	9 min
Public Docks	Left	0.1 mi	1 min	History Museum	Left	0.1 mi	1 min	Nob Hill Park	Straight	0.7 mi	6 min	Armory	Straight	0.8 mi	4 min
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nob Hill Park	Straight	0.5 mi	3 min	Boat Launch	Slight left (2nd roundabout exit)	1.1 mi	6 min	Grey Cliffs Park	Slight left (2nd roundabout exit)	1.2 mi	7 min	Courthouse Plaza	Slight left (2nd roundabout exit)	0.9 mi	4 min
Senior Center	Right	0.1 mi	1 min	Library	Straight	0.4 mi	2 min	Veteran's Memorial	Straight	0.5 mi	2 min	Sheriff's Office	Straight	0.7 mi	4 min
McCormick Park	Right	0.3 mi	2 min	Nob Hill Park	Left	0.6 mi	3 min	Courthouse Plaza	Left	1 mi	5 min	Boat Launch	Left	1.2 mi	6 min
Historic Dist	Straight	0.8 mi	4 min	Senior Center	Left	0.1 mi	1 min	Nob Hill Park	Straight	0.5 mi	3 min	Columbia View Park	Straight	1.1 mi	7 min
Library	Right	0.1 mi	1 min	Veteran's Memorial	Right	0.3 mi	2 min	Sheriff's Office	Straight	0.5 mi	3 min	State Police	Straight	1.1 mi	6 min
Nob Hill Park	Left	0.8 mi	4 min	Boat Launch	Left	1.4 mi	8 min	Sheriff's Office	Right	0.5 mi	3 min	State Police	Right	1.1 mi	6 min
Historic Dist	Right	1 mi	6 min	McCormick Park	Straight	0.1 mi	1 min	Nob Hill Park	Right	0.8 mi	4 min	Boat Launch	Right	1.4 mi	8 min
Historic Dist	Straight	1 mi	6 min	McCormick Park	Left	0.1 mi	1 min	Nob Hill Park	Straight	0.8 mi	4 min	Boat Launch	Straight	1.4 mi	8 min
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Campbell Park	Straight	1.2 mi	7 min	Fairgrounds	Straight	2.4 mi	15 min	High School	Straight	0.4 mi	3 min	Public Health	Straight	0.4 mi	3 min
Historic Dist	Straight	1.8 mi	10 min	McCormick Park	Straight	1 mi	5 min	CC Mental Health	Right	0.1 mi	1 min	State Police	Right	0.2 mi	1 min
Urgent Care	Right	1.2 mi	7 min	Transit Center	Right	1.8 mi	8 min	Fairgrounds	Straight	2.2 mi	13 min	High School	Straight	0.1 mi	1 min
Historic Dist	Straight	2.1 mi	10 min	Urgent Care	Left	1.2 mi	7 min	McCormick Park	Straight	1.2 mi	7 min	Nob Hill Park	Straight	1.9 mi	9 min
Historic Dist	Right	1.5 mi	5 min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Historic Dist	Right	1.8 mi	4 min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scappoose Bay	Right	0.5 mi	1 min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Historic Dist	Straight	2.6 mi	6 min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Houlton Bus Dist	Straight	1.6 mi	3 min	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A