Final Riverfront Connector Plan Design Options & Evaluation Report

ST. HELENS RIVERFRONT CONNECTOR PLAN November 30, 2018











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INTRODUCTION

This document summarizes and illustrates an evaluation of preliminary options for the design of future improvements to streets and intersections within the St. Helens Riverfront Connector Plan Project Area. The project team evaluated and refined these recommendations based on input from City staff, the project advisory committee (COOLPPL) and other community members. Preferred designs and strategies for implementing them will be described in more detail in the Riverfront Connector Plan.

The Riverfront Connector Plan will complete the City's Business loop planning concept included in the US 30 & Columbia Blvd./St. Helens Street Corridor Master Plan, adopted in 2015, and the City's Transportation System Plan ("TSP"), adopted in 2011. The Riverfront Connector Plan will plan for a cohesive, multi-modal, inviting loop through the downtown, along the waterfront, and connecting to US 30. The Project Area for the Riverfront Connector Plan is shown on page 5 and encompasses the Riverfront District, a portion of the Waterfront Redevelopment Project Area, and portions of Plymouth Street, Old Portland Road, Gable Road, McNulty Way, Millard Road, and US 30.

The Project Area is divided into two major sections: the Primary Project Area (corridor segments 1-4.2) and the Secondary Project Area (corridor segment 5). The Primary Project Area is the main focus of this plan, while the Secondary Project Area represents key alternative routes from US 30 to the Waterfront Redevelopment Project Area. The Project Area is further divided into seven segments, which are shown on page 5 and addressed individually in the remainder of this document.

Segment 1 – South 1st **Street** (St. Helens Street to End of Existing South 1st Street)

Segment 2.1 – Veneer Property (End of existing South 1st Street to Lagoon Dam)

Segment 2.2 – Plymouth Street (Lagoon Dam to South 6th Street)

Segment 3 – Plymouth Street (South 6th Street to Old Portland Road)

Segment 4.1 – Old Portland Road

Segment 4.2 – Gable Road

Segment 5 – Secondary Study Area (Millard Road, McNulty Way and Old Portland Road)

PROJECT AREA



SUMMARY OF EVALUATION AND RECOMMENDATIONS

Following is a summary of recommendations for preferred design options based on the analysis described in the remainder of this report. In a small number of cases, more than one option performed well in our evaluation, and further discussion with the city, agency partners, and the broader community was required to identify a recommended design option. These recommendations reflect comments from members of the project advisory committee, the St. Helens Planning Commission and City Council, other community members. They may be refined further as part of preparation of the St. Helens Riverfront Connector Plan.

Segment 1: South 1st Street

(St. Helens St. to End of Existing S. 1st St.)

Only one roadway cross-section was proposed and this option is recommended as the preferred alternative in large part due to the built-out nature of this segment, the character of existing facilities, consistency with other city plans, and feedback from the city. No key intersections were evaluated in this segment. This segment currently includes angled parking. The City may investigate use of reverse angled parking in this area in the future.

Segment 2.1: Waterfront Area

(End of Existing S. 1st St. to Lagoon Dam)

Only one roadway cross-section was proposed and this option is recommended as the preferred alternative. The preferred design was established through an extensive planning and community engagement process as part of the St. Helens Waterfront Framework Plan. The city and project team agreed that this alternative did not need to be revisited as part of the current planning process. No key intersections were evaluated in this segment. The proposed design may be refined, depending on available right-of-way. If less than 80 feet of right-ofway is available, some elements of the design may be narrowed or eliminated. A traffic calming circle also may be located in this segment. This feature could also serve as a way for drivers to turn around. 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. The Riverfront Connector Plan will provide guidance about minimum design dimensions.

Segment 2.2: Plymouth Street

(Lagoon Dam to Plymouth St.)

Only one roadway cross-section was proposed.

For the intersection of Plymouth Street and South 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 South 6th, and the lack of splitter island provides better emergency vehicle access.

Segment 3: Plymouth Street

(South 6th St. to Old Portland Rd.)

Roadway cross section Option B (Sharrows and Multi-Use Path) 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.

Of the four designs presented for the intersection of Old Portland Road and Plymouth Street, Options B, C, and D all scored highly in the evaluation, providing superior safety and mobility compared to Option A. Options C and D provide more potential to improve street appearance and incorporate sustainable design principles.

Based on discussion with members of the project advisory committee and other community members, a modified alternative is proposed as the preferred option. This roundabout 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.

Segment 4.1: Old Portland Road

A modified version of Option C is the recommended design. Option C achieved the highest safety score for all modes, incremental development may be challenging. This option was refined based on feedback from the advisory committee, Planning Commission, City Council and other community members. The refined option places the landscaping strip between the roadway and cycletrack. The cycletrack will be separated from the pedestrian walkway by a curb or other means. 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.

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 queueing at a signal. At the intersection of Old Portland Rd. and Railroad Ave., Option B is preferred. Option A is problematic from a transportation safety and mobility standpoint.

At the intersection of Old Portland Rd. and Gable Rd., Option A is the preferred long-term alternative. The City should monitor changes in 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 the investment in improvements to this intersection, this improvement may be evaluated further.

Segment 4.2: Gable Road

Similar to Segment 4.1, a modified version of Option C is the recommended design. Option C achieved the highest safety score for all modes, though implementing a cycletrack facility through incremental development may be challenging. This option was refined based on feedback from the advisory committee, Planning Commission, City Council and other community members. The refined option places the landscaping strip between the roadway and cycletrack. The cycletrack will be separated from the pedestrian walkway by a curb or other means. 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.

Only one option was proposed for the intersections of Gable Road/McNulty Way and Gable Road/US 30.

Segment 5: Secondary Study Area

(Millard Rd., McNulty Way & Old Portland Rd.)

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

SUMMARY OF WAYFINDING RECOMMENDATIONS

Wayfinding signage was evaluated and identified for the corridor based on guidance from the City of St. Helens Branding and Wayfinding Master Plan, adopted in October 2017. The wayfinding recommendations in this report are intended to comply with the placement and design standards identified in the Branding and Wayfinding Master Plan. For the purpose of this planning process, only wayfinding along the project corridor has been addressed. Future wayfinding efforts should consider existing and planned signage to develop a citywide wayfinding system that is consistent and complete.

The recommended wayfinding sign types along the project corridor include vehicular directional signs, on-street directional and confirmation signs for pedestrians and/or bicycles, trailhead kiosks at key entry points to local trails, and a map kiosk in the heart of the City's downtown Historic District. Signs directing users to one of the City's districts should include color-coded directional arrows per the Branding and Wayfinding Master Plan. On-street directional signs are recommended at key intersections and decision points along the route. Whether on-street directional signs are recommended to be designed for vehicles or for bicycles and/or pedestrians depends on the presence of bicycle or pedestrian infrastructure along the road segment. The majority of on-street directional signs recommended could be designed for either bicycle or pedestrian use. Travel times on the recommended bicycle/pedestrian directional signs have been calculated for bicycle travel but could easily be recalculated for pedestrian travel if desired.

See Appendix 2 for the full table of wayfinding recommendations, including destinations, sign types, estimated distances and travel times, and installation locations.





Sign types identified in the 'City of St. Helens Branding & Wayfinding Master Plan' (2017)

Wayfinding Recommendations Summary			ary	(See Appendix 2 for full table including destinations)		
	Corridor					Sign
ID #	Segment	Mode Type	Sign Type	Installation Street	Intersecting Street	Facing
1	1	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	North
2	1	Bicycle/Pedestrian	On-Street Directional	St. Helens Street	South 1st Street	East
3	1	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	South
4	1	Pedestrian	On-Street Directional	South 1st Street	Plaza Square	North
5	1	Pedestrian	Map Kiosk	South 1st Street	Plaza Square	East
6	2.2	Bicycle/Pedestrian	Trailhead Kiosk	Nob Hill Nature Park Trail	N/A	South
7	3	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	Plymouth Street	South
8	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 15th Street	North
9	4.1	Bicycle/Pedestrian	On-Street Directional	South 15th Street	Old Portland Road	North
10	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 15th Street	West
11	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 18th Street/Kaster Road	East
12	4.1	Bicycle/Pedestrian	On-Street Directional	South 18th Street	Old Portland Road	North
13	4.1	Bicycle/Pedestrian	On-Street Directional	Kaster Road	Old Portland Road	South
14	4.1	Bicycle/Pedestrian	On-Street Directional	Old Portland Road	South 18th Street/Kaster Road	West
15	4.1	Bicycle/Pedestrian	Trailhead Kiosk	Old Portland Road	N/A	South
16	4.1	Bicycle	On-Street Confirmation	Old Portland Road	Gable Road	East
17	4.2	Bicycle	On-Street Confirmation	Gable Road	Old Portland Road	West
18	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	McNulty Way/Milton Way	East
19	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	McNulty Way/Milton Way	West
20	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	Highway 30	East
21	4.2	Bicycle/Pedestrian	On-Street Directional	Gable Road	Highway 30	West
22	5	Vehicle	Vehicular Directional	Old Portland Road	Gable Road/Old Portland Road	South
23	5	Vehicle	Vehicular Directional	McNulty Way	Gable Road	South
24	5	Vehicle	Vehicular Directional	Millard Road	Old Portland Road	North
25	5	Vehicle	Vehicular Directional	Old Portland Road	Millard Road	South
26	5	Vehicle	Vehicular Directional	Highway 30	Millard Road	South

WAYFINDING RECOMMENDATIONS SUMMARY



Wayfinding locations for entire study area (refer to table on previous page)

EVALUATION OF DRAFT DESIGN OPTIONS

For each corridor segment, alternative road crosssection design and intersection options have been evaluated against a set of criteria which are based on the goals and objectives developed at the outset of this project.

The criteria are a mix of quantitative and qualitative measurements or assessments. Consistency with the criteria is described in the following sections of this report and is generally presented on a scale of 1 to 5, where 1 means poor and 5 means good.

Evaluation of each option is in relation to the group of options being evaluated, rather than against an absolute scale. All criteria are weighted equally for the purposes of the evaluation. Following is a list of the project goals and objectives and corresponding evaluation criteria.

Rating System:



Guiding Principle	Specific Criteria	Notes	
Economy and Business Support			
	Consistent with previous planning efforts	Transportation System Plan, Waterfront	
Consistency with	• Improves upon previous planning efforts with context sensitive solutions	Framework Plan, other plans	
Previous Planning	• Consider timing of development related to emphasis of Plymouth vs Old	Qualitativa eritaria	
	Portland routes	Qualitative criteria	
	Improves awareness of business areas through wayfinding, signage, and		
Supports businesses	gateway treatments		
and business districts	Creates walkable and inviting business areas – can compare potential		
	sidewalk widths and pedestrian access		
Supports customers,	 Improves multi-modal access to business areas – provides continuous, 		
employees, and	low stress, pedestrian and bicycle facilities		
others by providing	Change to amount of on-street parking in business areas		
access			
Relative Cost	Relative price for construction and maintenance		
effectiveness	Will improvements have economic benefit in terms of supporting or		
ejjectiveness	encouraging redevelopment?		

Guiding Principle	Specific Criteria	Notes		
Transportation Safety & Mobility				
	• Improves motor vehicle access to business areas – improves traffic flow,			
Improved	increases roadway and/or intersection capacity	Qualitative score		
connectivity & access	Site-specific property impacts			
	Opportunity to incorporate transit service and facilities			
Improved	 Improves pedestrian and bicycle access to business areas – provides 			
pedestrian/bicycle	continuous, low stress pedestrian and bicycle facilities			
safety and	Bicycle Level of Stress; Pedestrian Level of Stress			
accessibility	Ease of transition between segments and intersections			
	Improves multi-modal access to other parts of the city – increased street			
Through-movement	connectivity, increased ped/bike connectivity, increased access to multi-use			
and mobility	paths and trails			
	Volume/Capacity Ratio or similar metric			
	Provides safety improvement at a location with a known safety issue			
Safety	• Reduces potential for future crashes – providing separation between			
	travel modes, other design strategies			
Emergency Vehicle	Provides additional routes for emergency vehicles			
accommodations	Decreases response time for emergency vehicles	Qualitative score		
	• Emergency vehicle accommodation (i.e. size of roadway)			

Guiding Principle	Specific Criteria	Notes			
Connectivity & Streetscape Aesthetics					
Improved street appearance	 Qualitative score, based on amount of added landscaping and street trees, higher quality paving materials, space for added street furnishings, and for a proposed gateway element. 	Poor = very little improvement of street elements. Moderate = moderate improvement of multiple elements, or major improvement of one element. Good = major improvement of multiple elements, or a proposed gateway feature.			
Improved ped/bike connectivity between corridor and adjacent attractions	 Separated (off-street) bike route Separated (not curb-tight) pedestrian route New bike and pedestrian connectivity through the corridor New bike and pedestrian connections to adjacent attractions Improved health – more attractive options for walking and 	Best score for options that create a long separated bike path and connect it to rest of city, and for new bike/pedestrian connections to attractions. (Ease of transition <u>between</u> segments is covered in <i>Improved</i> <i>pedestrian/bicycle safety and accessibility</i> .) Connecting people and places, improved			
Improves/affects quality of life	bikingComposite of related criteria	business/employment opportunity, improved appearance, improved safety, and lower bike/ped level of stress all help improve quality of life.			
Street designs catered to needs of particular segments	 Provides context sensitive solution Consistency with Vision Statement for that segment Is it overkill? (too nice/too much of a "parkway", for example, for a fairly rural area?) 	Safety is part of the Vision Statements for each segment. Some options are a little less safe for bicyclists (in-street bike lanes on streets with higher speeds), otherwise all options seem like an appropriate level of improvement considering expected future development.			
Sustainable Design Strategies	 Potentially incorporates storm water facilities (assuming feasibility based on underlying geology) Reduced impervious surface, or less than typical improvements would have. 	Only road sections with landscape strips and intersections with roundabouts (or which reconfigure roads to create new open space) have opportunity for stormwater facilities.			

SEGMENT 1 EVALUATION

Segment 1 connects the historic Riverfront District and downtown core of St. Helens to the future Waterfront Redevelopment area.

The current roadway configuration, with sidewalks and angled parking, is expected to remain on parts of the segment that are already built, unless redevelopment occurs in those areas. This segment currently includes angled parking. The City may investigate use of reverse angled parking in this area in the future.

Street furniture, ornamental lighting, and other design elements will identify this area as the heart of the Riverfront District.

Bicycle travel will be accommodated by shared-street markings (sharrows) on existing portions of the roadway.



Segment 1 project area.

Existing Road Section

TSP Classification: Collector Street

80' wide ROW

Approximately 1,200 linear feet

On-street parking

No bicycle facilities

Wide sidewalks with few planters



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 bulbouts 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.



Typical section facing north





SEGMENT 1: SOUTH 1ST STREET

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Evaluation Summary Table



Wayfinding Recommendations



Wayfinding locations for Segment 1

Wayfinding Recommendations: Segment 1			(See Appendix 2 for full ta	(See Appendix 2 for full table including destinations)		
					Sign	
ID #	Mode Type	Sign Type	Installation Street	Intersecting Street	Facing	
1	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	North	
2	Bicycle/Pedestrian	On-Street Directional	St. Helens Street	South 1st Street	East	
3	Bicycle/Pedestrian	On-Street Directional	South 1st Street	St. Helens Street	South	
4	Pedestrian	On-Street Directional	South 1st Street	Plaza Square	North	
5	Pedestrian	Map Kiosk	South 1st Street	Plaza Square	East	

SEGMENT 2.1 EVALUATION

Design of this segment was proposed in the Waterfront Framework Plan. It is intended to provide a safe and attractive pedestrian environment, stormwater management, bicycle access, as well as automobile parking and connectivity to future land uses in the waterfront area.

Segment 2.1 is a new connection from the historic downtown and Riverfront District south to Plymouth Street and beyond.



Segment 2.1 project area

Existing Conditions

TSP Classification: Collector Street No existing ROW Approximately 1,500 lineal feet No road improvements

This segment travels through a relatively flat, currently undeveloped area with few to no physical constraints. Future improvements will need to be coordinated with future redevelopment in the Waterfront Redvelopment area.



The proposed section for this segment is generally consistent with previous planning work conducted for the City's Waterfront Framework Plan.

Compared to Segment 1, this section has parallel parking on both sides instead of angle parking, and adds bicycle lanes.

This road is classified by the St. Helens TSP as a Collector, but to be consistent with the Waterfront Framework Plan, the proposed section is very similar to the TSP's "Minor Arterial (Two-Way Downtown)" section.

Sidewalk bulb-outs at crossings will shorten crossing distances for pedestrians and provide a traffic calming effect.

Transitions from bicycle lanes in Segment 2.1 to shared travel lanes in Segment 1 and the multi-use path in Segment 2.2 will need to be considered.

The proposed design ultimately may be refined as part of future redevelopment processes, depending on available rightof-way. If less than 80 feet of right-ofway is available, some elements of the design may be narrowed and/or the dedicated bicycle lane may be replaced with sharrows indicating a shared vehicle/ bicycle lane.

(Continued on page 28)



Typical section facing north

(Continued from page 27)

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

A traffic calming circle also may be located in this segment. This feature could also serve as a way for drivers to turn around. 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. The Riverfront Connector Plan will provide guidance about minimum design dimensions.

At some point within this segment, the street name will change from S. 1st Street to Plymouth Street. This location will be determined as development and/or roadway construction occurs.

Evaluation Summary Table

