MCLOUGHLIN-CANEMAH TRAIL PLAN

Alignment Feasibility & Evaluation Report

Prepared by Alta Planning + Design
with Northwest Geotech, Inc and Pacific Habitat Services, Inc
For the City of Oregon City, Oregon

January, 2018

CONTENTS

ACKNOWLEDGMENTS

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I.

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

OVERVIEW

In 2016, the City of Oregon City, in partnership with the Oregon City Trail Alliance, the McLoughlin Neighborhood Association, and the Clackamas County Historical Society, was granted a Nature in Neighborhoods grant of $25,000 to fund a planning effort for the McLoughlin-Canemah Trail (MCT), a segment of the larger Oregon City Loop Trail. The objective was to determine Permanent and Interim trail alignments and safety upgrades to create a safer pedestrian and bicycle route between two neighborhoods while connecting city amenities along the way.

Goals for this trail were developed based on the results of a survey taken by the project's Community Advisory Group members, and from conversations with group members and City staff.

GOALS: The McLoughlin-Canemah Trail should:

- Provide an attractive route of travel for people walking and biking between the McLoughlin Promenade and Canemah Children's Park that connects residential areas, parks, and businesses.
- Strive to provide facilities that serve all ages and abilities, including people with disabilities or mobility limitations.
- Minimize risk and conflicts between automobile traffic, bicycle traffic, and pedestrians.
- Provide a trail design that is context-sensitive, particularly to the Canemah National Register Historic District, McLoughlin Promenade, and the McLoughlin Conservation District.
- Provide experiences and views of Willamette Falls
- Celebrate experiences of nature while protecting and enhancing native vegetation and habitat within the corridor.
- Discourage criminal activity and provide a secure environment for all users.
- Responsibly utilize public funds to provide a high-quality trail experience both now and into the future.
- Avoid use of private property in the Canemah National Register Historic District.

PROJECT STUDY AREA

The MCT study area includes just over 100 acres bounded by 2nd Street to the north, McLoughlin Blvd/Hwy 99E to the west, S. High St to the east, and the Canemah Neighborhood Children's Park to the south. Alignment alternatives connect and include portions of the McLoughlin Conservation District with the Canemah National Register Historic District between the McLoughlin Promenade and Canemah Neighborhood Children's Park.

PARTNERS, STAKEHOLDERS & PUBLIC ENGAGEMENT

The project team engaged with a number of partners, stakeholders, and members of the community throughout all phases of this project. Partners included Portland General Electric and the Oregon Department of Transportation.

A Community Advisory Group was assembled with representative from several stakeholders who helped to define project goals, evaluate alignment alternatives, and select the Interim and Permanent alignments.

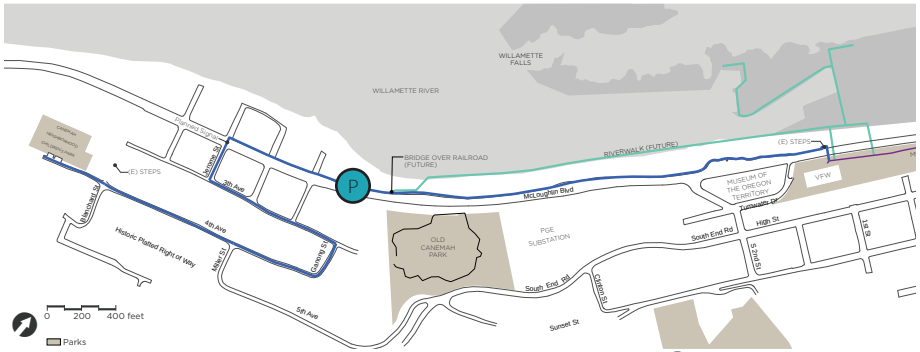
The local community was engaged in the project primary through a Greenway for Day event, which attracted 70-80 participants during a four hour event that included walking a portion of the alignment and responding to a series of Design Toolkit poster boards showing traffic calming strategies.

The project team also received 56 survey responses from the community emphasizing the value of Old Canemah Park, views of Willamette Falls, and the challenges associated with 99E, steep grades, traffic calming, and wayfinding.

TABLE 1. ALIGNMENT ALTERNATIVES - EVALUATION MATRIX

○ Not Advisable ◔ Major Constraint ◑ Moderate Constraints ◕ Minor Constraints ● Optimal

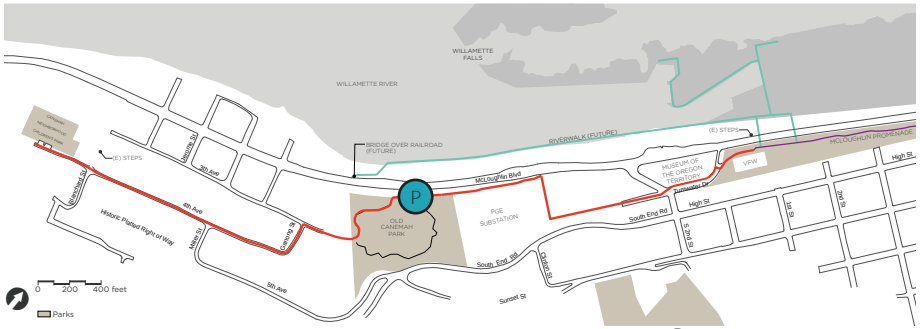
	QUALITY			SAFETY		PROPERTY			CONSTRAINTS		OVERALL EVALUATION		RECOMMENDATIONS	
	QUALITY OF EXPERIENCE	WILLAMETTE FALLS VIEWS	ALL AGES & ABILITIES	VEHICLE CONFLICT RISK	CRIME RISK	HISTORIC DISTRICT	CANEMAH IMPACTS	PROPERTY IMPACTS	GEOTECH CONSTRAINTS	ENVIRONMENTAL IMPACTS	OVERALL SCORE	ORDER OF MAGNITUDE COST	INTERIM RECOMMENDATION	PERMANENT RECOMMENDATION
ALIGNMENT ALTERNATIVE - A	◔	●	○	◔	●	☑	●	●	◑	●	◑	$6.0 - $6.5 M	Not Recommended	Not Recommended
ALIGNMENT ALTERNATIVE - B	◕	●	◑	◕	◕	☑	●	◕	◕	◕	◕	$2.1 - $2.6 M	☑	☑
ALIGNMENT ALTERNATIVE - C	◑	○	◑	◑	◑	☑	◕	◑	◑	◑	◑	$2.6 - $3.0 M	Not Recommended	Not Recommended



Alignment Alternative A

Photo Location

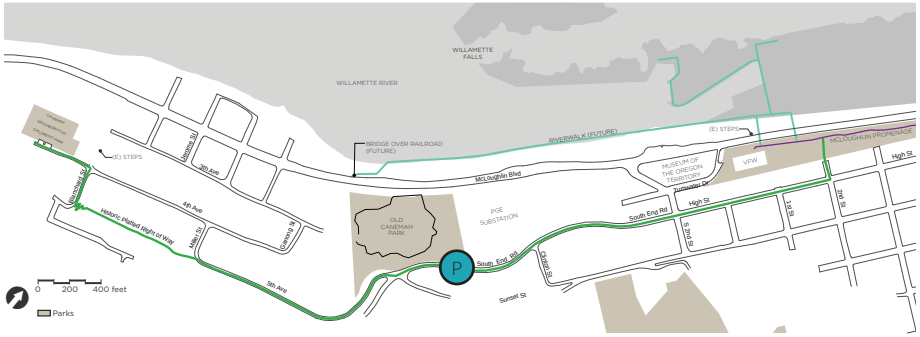
McLoughlin Blvd boardwalk, looking north



Alignment Alternative B

Photo Location

Old Canemah Park Trail, looking north



Alignment Alternative C

Photo Location

S. High Street, existing shoulder, looking south

ALIGNMENT ALTERNATIVES EVALUATION

The three Alignment Alternatives were evaluated and compared based on criteria derived from the Project Goals: Quality of Experience, Willamette Falls Views, Access for All Ages and Abilities, Vehicle Conflict Risk, Crime Risk, Impacts to Canemah National Register District, General Property Impacts, Geotechnical Constraints, Environmental Constraints, and Cost Estimates (Table 1).

The evaluations were based on findings from field reconnaissance, terrain analysis, geotechnical evaluation, environmental evaluation, and ongoing dialogue throughout the project between the project team, key partners, the Community Advisory Group, and the general public. Summaries of opportunities and constraints associated with each alignment alternative are listed below:

ALIGNMENT A - OPPORTUNITIES

- Boardwalk offers an intimate connection with Willamette Falls
- Alignment along roadway is highly visible

ALIGNMENT A - CONSTRAINTS

- The experience along McLoughlin traffic can be uncomfortable
- Would require widening sidewalk and boardwalk within constrained ODOT right of way

ALIGNMENT B - OPPORTUNITIES:

- Offers direct connections between neighborhoods and parks
- High quality views of Willamette Falls

ALIGNMENT B - CONSTRAINTS:

- Segment along McLoughlin Blvd has significant roadway width constraint
- Alignment using the existing VFW driveway assumes a modified automobile entrance to the VFW to/from S 1st St.

ALIGNMENT C - OPPORTUNITIES

- Most slopes are comfortable for people walking and biking
- Provides access on South End Rd for people walking and biking

ALIGNMENT C - CONSTRAINTS

- Doesn't connect neighborhoods to Old Canemah Park
- Width constraints along S. High Street could be cost-prohibitive

INTERIM ALIGNMENT RECOMMENDATION

The Interim trail alignment recommendation begins at the McLoughlin Promenade and connects via 2nd Street to High Street. From there, the trail turns onto S. 2nd Street and continues west to McLoughlin Blvd/Hwy 99E. Using the existing traffic signal crossing, the trail continues on the east side of McLoughlin Blvd/Hwy 99E until reaching the Portland General Electric (PGE) substation entrance.

From the PGE entrance, the Interim and Permanent trail recommended alignments are identical. The trail connects between the PGE substation and McLoughlin Blvd/Hwy 99E, enters Old Canemah Park, and connects to the Canemah National Register District neighborhood. The route through the neighborhood follows Marshall Street and 3rd Avenue west/southwest , turns onto Ganong Street, and follows 4th Avenue until reaching the Canemah Neighborhood Children's Park.

DESIGN ASSUMPTIONS - INTERIM

- Wayfinding and shared use signage and pavement markings between 2nd Street and McLoughlin Blvd
- New multi-use path along edge of PGE substation property
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 3rd Ave, Ganong St, and 4th Ave.
- Reinforcement at top of basalt cliff along McLoughlin Blvd

PERMANENT ALIGNMENT RECOMMENDATION

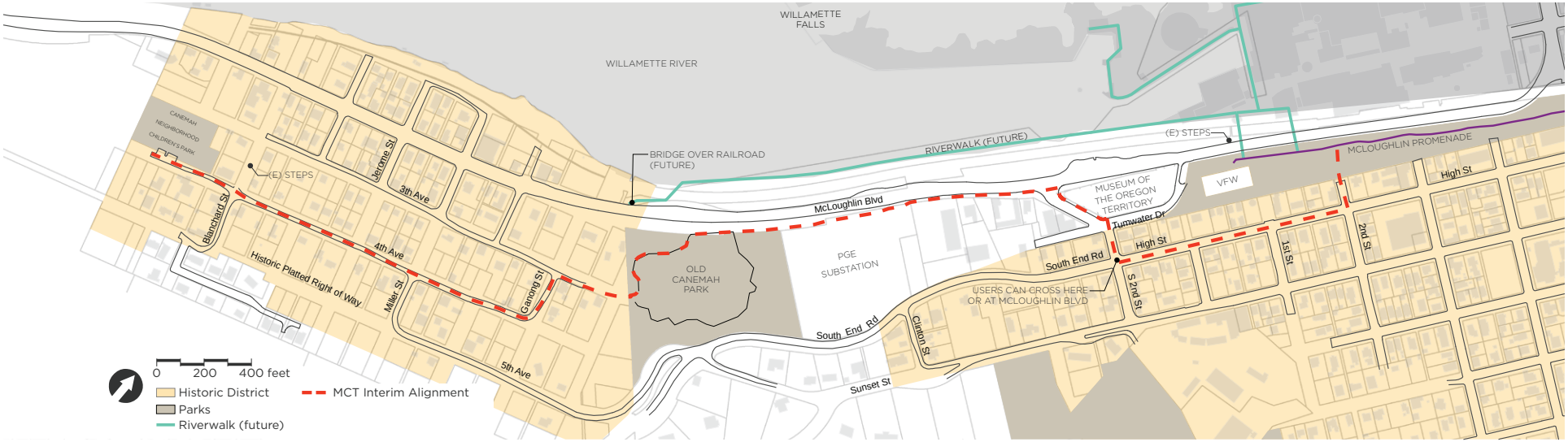
The Permanent trail alignment recommendation begins at the McLoughlin Promenade and connects to Tumwater Drive via the Three Rivers VFW Post 1324 parking lot and a dedicated non-motorized path down the existing driveway. From there, the trail follows Tumwater Drive, crosses at S. 2nd Street, and continues south/southwest either along McLoughlin Blvd/ Hwy 99E or along the back edge of private property until reaching Portland General Electric (PGE) substation property.

From the PGE entrance, the Interim and Permanent trail recommended alignments are identical. The trail connects between the PGE substation and McLoughlin Blvd/Hwy 99E, enters Old Canemah Park, and connects to the Canemah National Register District neighborhood. The route through the neighborhood follows 3rd Avenue, turns onto Ganong Street, and follows 4th Avenue until reaching the Canemah Neighborhood Children's Park.

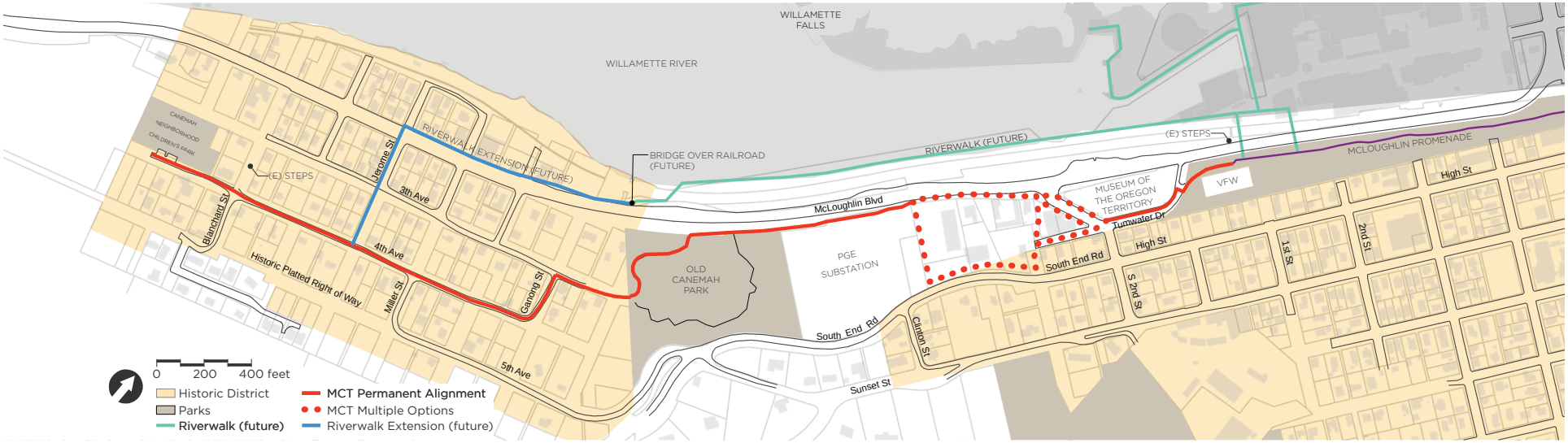
DESIGN ASSUMPTIONS - PERMANENT

- Modification of existing VFW driveway allows dedicated ped-bike connection to Tumwater Dr. Left turn from McLoughlin Blvd onto Tumwater Dr to be closed.
- Widen sidewalk to shared use path width along Tumwater Dr
- Intersection crossing of S 2nd Ave at Tumwater Drive or 99E re-designed for safety
- Trail can be installed along with future/expected development
- License agreement for use of PGE substation property
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 3rd Ave, Ganong St, and 4th Ave. Speed limit reduced to 20 MPH.
- Cost estimate includes reinforcement at top of basalt cliff.

Interim Trail Alignment Recommendation



Permanent Trail Alignment Recommendation



II.

INTRODUCTION

Project Goals and Objectives

For many years, Oregon City has envisioned safer connections between the Canemah and McLoughlin neighborhoods, the Willamette River and Willamette Falls, and celebrated parks that attract residents and visitors of all ages and abilities.

Currently, there are no safe and viable pedestrian or bicycle connections between the Canemah Neighborhood and the McLoughlin Promenade including to points north such as Jon Storm Park, Clackamette Park, and Downtown Oregon City. The McLoughlin-Canemah Trail (MCT) will provide these much needed pedestrian and bicycle connections for the community.

In 2016, the City of Oregon City, in partnership with the Oregon City Trail Alliance, the McLoughlin Neighborhood Association, and the Clackamas County Historical Society, was granted a Nature in Neighborhoods grant of $25,000 to fund a planning effort for the MCT, a segment of the larger Oregon City Loop Trail. The City provided a local match through funding significant staff time and volunteer hours. The objective of the grant-funded trail plan project was to determine an alignment for a permanent trail, and to identify an Interim trail alignment and safety upgrades. While each entity in the partnership had priorities and reasons for supporting the project, the overall objectives were to create a safer pedestrian and bicycle route between two neighborhoods while connecting city amenities along the way.

Goals for this trail were developed based on the results of a survey taken by the project's Community Advisory Group members, and from conversations with group members and City staff. The Community Advisory Group approved the goals after its first meeting in July 2017. These goals were used to develop the trail alternatives and to evaluate the alternatives against each other. Goals are listed to the right.

Site Setting

Located in Oregon City approximately 15 miles southeast of downtown Portland, the McLoughlin-Canemah Trail study area northern trail-head is located approximately half a mile south of Downtown Oregon City.

Oregon City was established on the east bank of the Willamette River at Willamette Falls, the furthest upstream extent for tidal influence on the river, a historic fishing location for native peoples, and a major terminus for water-based navigability.

The local MCT study area includes just over 100 acres bounded by 2nd Street to the north, McLoughlin Blvd/Hwy 99E to the west, S. High St to the east, and the Canemah Neighborhood Children's Park to the south. Alignment alternatives connect and include portions of the McLoughlin Conservation District with the Canemah National Register Historic District between the McLoughlin Promenade and Canemah Neighborhood Children's Park.

Much of the study area is characterized by steep topography including basalt bluffs that line McLoughlin Blvd/Hwy 99E to the south. Willamette Falls lies to the northwest and offers high quality views to local residents and visitors, soon to become more accessible with the Willamette Falls Legacy Project.

There are several notable destinations nearby. Near the center of the study area, between the two historic districts, are located Three Rivers VFW Post 1324, the Museum of the Oregon Territory, and a Portland General Electric (PGE) substation. Old Canemah Park is also near the center of the study area and includes viewpoints of Willamette Falls, a rich forested area, interesting and variable topography, and opportunities for small gatherings.

Project Goals

The McLoughlin-Canemah Trail should...

- Provide an attractive route of travel for people walking and biking between the McLoughlin Promenade and Canemah Children's Park that connects residential areas, parks, and businesses.
- Strive to provide facilities that serve all ages and abilities, including people with disabilities or mobility limitations.
- Minimize risk and conflicts between automobile traffic, bicycle traffic, and pedestrians.
- Provide a trail design that is context-sensitive, particularly to the Canemah National Register Historic District, McLoughlin Promenade, and the McLoughlin Conservation District.
- Provide experiences and views of Willamette Falls.
- Celebrate experiences of nature while protecting and enhancing native vegetation and habitat within the corridor.
- Discourage criminal activity and provide a secure environment for all users.
- Responsibly utilize public funds to provide a high-quality trail experience both now and into the future.
- Avoid use of private property in the Canemah National Register Historic District.

Regional Context

By providing a safe and attractive connection to the McLoughlin Promenade, the MCT will also connect to the Willamette River Greenway Trail, McLoughlin Historic District Trail, Trolley Trail, Willamette Terrace walkway, and other destinations and points of interest in Oregon City.

Another connection that will be made possible as a result of the MCT is with the Willamette Falls Legacy Project and Riverwalk trail, which connects Oregon City to Willamette Falls.

Together, these trails will provide rich transportation and recreational opportunities for residents and visitors alike. In addition, just south of the Canemah Neighborhood Children's Park is Metro's 332 acre Canemah Bluff Natural Area. This natural area includes trails, overlooks, and captivating views of the Willamette River and Willamette Falls.

Environmental and Geotechnical Considerations

Approximately 40% of the study area is included in Oregon City's Natural Resources Overlay District (NROD), which is intended to protect habitats and associated functions of streams, riparian corridors, wetlands and the regulated wildlife found in the City. NROD provides a framework for the protection of Metro Titles 3 and 13 lands and addresses Stateside Planning Goal 5 within the City. Wetlands are the most notable element within the study area.

Nearly 85% of the study area is mapped by the Oregon Department of Geology and Mineral Industries (DOGAMI) as having potential geological hazards because of past landslides or steep slopes. These potential hazards are not a grave concern for many of the alternative alignment segments which follow existing paved roads. However, geotechnical and slope stability concerns are highest where new path construction would require fill on the downhill side of slopes over historic landslide deposits.

Relevant Projects and Plans

The City of Oregon City adopted a Trails Master Plan in 2004. That plan identified dozens of planned and proposed trails to create a trail network throughout the City. The Oregon City Loop Trail was identified as a regional trail within the Master Plan. As a regional trail, the Oregon City Loop Trail was envisioned as a wide shared use path to serve people walking and bicycling, people using mobility devices, and in some cases, equestrians. In the Master Plan, the McLoughlin-Canemah Trail (MCT) was also identified as a shared use path and links the Loop Trail to trails in the downtown area. The adoption process for this plan will update the Loop Trail concept to officially include the MCT and other connections.

In 2014, the City conducted an analysis identifying gaps in the sidewalk and trail network between the Promenade and the Canemah Children's Park. This internal work set the stage for the public planning process for the MCT.

The concept plan for the Willamette Falls Riverwalk, which will provide public access to Willamette Falls from downtown Oregon City, was finalized in June 2017. The Riverwalk includes a pedestrian bridge from the old Blue Heron Mill site up to the McLoughlin Promenade. While the concept plan presents several options for the exact location of that pedestrian bridge, all of them are located near the VFW building on the bluff. Adopted plans show the MCT connecting to the Promenade and the pedestrian bridge.

The Oregon City Transportation System Plan, adopted in 2013, includes two shared use paths and family friendly routes within the MCT corridor, along with crossing improvements that could be part of the trail. The following TSP Projects are within the vicinity of the MCT.

Table 1. Oregon City 2013 TSP Projects within MCT Project Area

PROJECT NUMBER	PROJECT NAME	PROJECT EXTENT	DESCRIPTION	PRIORITY
S36	Tumwater-4th Shared-Use Path	Tumwater Dr to 4th Ave	Add a shared-use path through Old Canemah Park connecting 4th Ave to the Tumwater/South 2nd intersection	Long-term
S37	OR 99E (south of Railroad Avenue) Shared-Use Path	Railroad Ave to UGB	Add a shared-use path along the north side of the street. Rehabilitate existing boardwalk between South 2nd Street and Hedges Street	Long-term Phase 2
C36	Pedestrian Crossing at Jerome St & 99E	OR 99E at Jerome St	Install crosswalk and pedestrian activated flasher on OR 99E in Canemah	Long-term Phase 2
FF21	Canemah Family Friendly Route	Old Canemah Park to Cemetery Rd	This site is located within the Canemah National Register District. Add wayfinding and shared lane markings. Add a walking path on one side of the street, if approved by the Historic Review Board. Route via 5th Avenue, Blanchard Street, 4th Avenue, Ganong Street and 3rd Avenue	Long-term Phase 4
FF22	Tumwater-South 2nd Family Friendly Route	Waterboard Park to Tumwater and 4th St Shared Use Path to McLoughlin Promenade	Add sidewalks on both sides of the street. Add wayfinding and shared lane markings. Route via Tumwater Drive, South 2nd Street and Waterboard Park Road	Long-term Phase 4

Regional plans that include the MCT and/or the Oregon City Loop Trail include the Metro Regional Transportation Plan and Regional Trails Plan.

Important Agencies and Partners

Metro, the region's elected government agency, provides trails grants through its Parks and Nature department. Grants are funded through the bond measure that voters approved to create better access to nature and protect healthy habitat in and near the region.

Portland General Electric (PGE) operates a substation on its property within the trail corridor. The substation is located next to Old Canemah Park and there are existing pedestrian desire paths that cross through the PGE property to connect into the park .

The Oregon Department of Transportation (ODOT) owns and maintains McLoughlin Blvd/99E, which runs parallel to part of the trail corridor.

Clackamas County maintains much of the area's infrastructure including South End Road within the project area. Oregon City is the county seat.

Stakeholder and Public Engagement Summary

The McLoughlin-Canemah Trail will pass through an urban area with many neighbors and stakeholders. These include:

- The Three Rivers Veterans of Foreign Wars Post 1324 (VFW) building is located on the bluff at the junction with the McLoughlin Promenade, Willamette Falls Riverwalk, and McLoughlin-Canemah Trail.
- Clackamas County Historical Society (CCHS) operates the Museum of the Oregon Territory, which sits at the end of the Promenade next to the VFW and is an important destination along the future trail.
- The McLoughlin and Canemah neighborhoods both boast active neighborhood associations. McLoughlin encompasses the historic Promenade and includes some of Oregon City's oldest homes. Canemah encompasses the Canemah National Register Historic District, Old Canemah Park, Canemah Children's Park, and the Canemah Bluff Natural Area.
- Oregon City Trail Alliance (OCTA) is a nonprofit advocacy organization whose purpose is to support a strong network of walking and biking trails to expand options for walking, running, and cycling.
- The Oregon City Parks Foundation is a nonprofit formed to support maintenance and enhancement of Oregon City's parks and trails.
- Local businesses in the trail corridor are located along 99E near S. 2nd Street and include The Highland Stillhouse, Falls View Tavern, Bud's Towing, and Gerber Collision & Glass.
- Local residents in the area are potential future trail users and will be affected by the trail alignment and design.
- The City's standing committees for Historic Review, Natural Resources, Parks and Recreation, Transportation, and Citizen Involvement all have an interest in various facets of the trail plan.
- Downtown Oregon City Association (DOCA) is the stakeholder-steward of Downtown Oregon City, and aims to stimulate economic vitality and investment in the downtown and in Oregon City. DOCA sees trails and nature as an important part of the economic vitality of Oregon City.

Neighborhood and Committee Presentations

Project staff presented trail information and gathered input at meetings of the McLoughlin Neighborhood Association, Canemah Neighborhood Association, Parks and Recreation Advisory Committee, Transportation Advisory Committee, and the Historic Review Board.

Public Engagement Process

Table 2. Public Engagement Summary

PUBLIC EVENT OR MEETING	DATE	APPROXIMATE NUMBER OF ATTENDEES
Site Walk	06/27/2017	18
PGE Meeting	06/27/2017	8
ODOT Meeting	06/27/2017	6
Advisory Group Meeting #1	07/11/2017	18
Greenway for a Day	07/29/2017	80
Online Survey	07/29 – 08/07	56
Advisory Group Meeting #2	08/15/2017	18
Advisory Group Meeting #3	09/21/2017	15
McLoughlin Neighborhood Assoc.	09/07/2017	25
Canemah Neighborhood Assoc.	09/14/2017	15
Parks & Rec Advisory Committee	09/28/2017	10
Transportation Advisory Committee	10/17/2017	10
Historic Review Board	10/24/2017	10
Advisory Group Meeting #4	12/14/2017	25

Community Advisory Group

The City brought together a Community Advisory Group for the trail planning process that included many of the stakeholders and partners listed above. The 18-member Community Advisory Group's purpose was to guide the process to establish project goals, evaluate alternatives, and provide a recommendation to the City Commission for the final trail alignment.

The Community Advisory Group began its work with a site walk on June 27, 2017. The group began at the VFW and crossed S 2nd St, walked along 99E, behind the PGE substation, and into Old Canemah Park, taking 4th Avenue to the Canemah Children's Park. They returned to the VFW using the Canemah staircase, 3rd Avenue, crossing 99E, and walking on the 99E boardwalk to the traffic light at S 2nd St. Along the way, the group stopped to discuss the opportunities and challenges of the various trail alignment options.

Advisory Group Meetings

Over the course of three meetings, the Community Advisory Group crafted project goals, reviewed community input, evaluated various trail alignments, and arrived at consensus for a preferred trail alignment recommendation. Meeting notes are included in the Appendix.

Greenway for a Day

To gather input from residents and other future trail users, the project team organized a temporary trail event called Greenway for a Day on Saturday, July 29. The event invited citizens to experience existing conditions within the McLoughlin-Canemah Trail project corridor, to walk one of the trail alignment alternatives, and to provide comments about their experience and preferences.

Participants traveled from the Museum of the Oregon Territory to Canemah Children's Park, following the one-mile temporarily marked trail alignment. The event attracted approximately 70-80 participants over the four-hour event.

Stations were set up at the Museum of the Oregon Territory and Canemah Children's Park with surveys, games, refreshments, maps of the alignment alternatives, and design toolbox boards showing a range of design strategies that could be employed within the trail corridor.

The project team received 56 survey responses which included the following highlights.

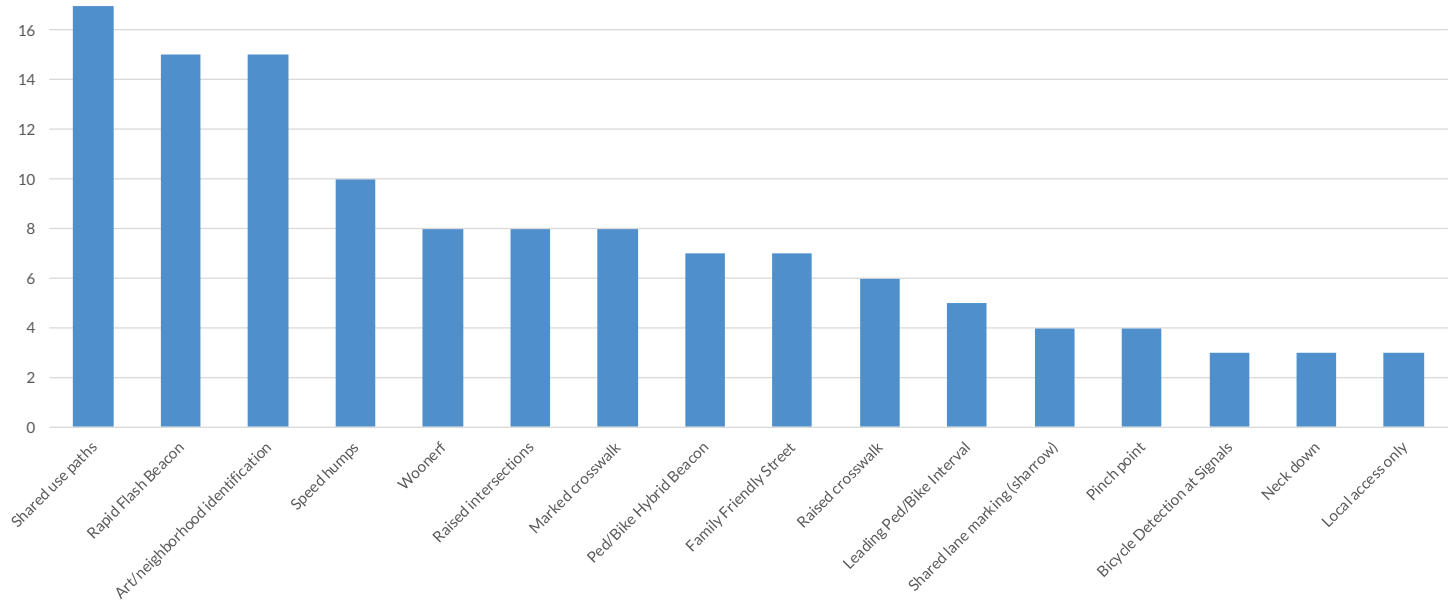
- Most participants reported that the best part of the trail experience was Old Canemah Park.
- People liked the access to nature and the view of Willamette Falls from the heavily wooded park.
- Many people identified the least favorite part of the experience as being the portion along 99E. Some comments mentioned the existing gravel path, others mentioned the traffic, and others mentioned concern for safety of that segment.
- Participants pointed out that there is currently not a safe and reasonable route for riding a bicycle between the Canemah Historic District/Children's Park and the Museum of the Oregon Territory area. This is a critical need especially as more families who want to commute to downtown Oregon City move to the neighborhood. The steep grades on Ganong Street between 3rd and 4th are challenging for cyclists and McLoughlin Blvd is unsafe in its current condition. South End Road potentially offers the best route for cyclists but only if width could be increased, traffic calmed, and travel speeds significantly decreased to provide safe facilities for cycling.
- Many participants mentioned a need for traffic calming on sections where people walking and biking would share the roadway with vehicles. Many felt uncomfortable walking adjacent to McLoughlin Blvd without any kind of protection or buffer.
- Participants mentioned that there is a general need for trail and park wayfinding in Oregon City and that wayfinding for this project (with its many alignment jogs) will need special consideration. Specifically, people noted that a sign would be needed at Ganong Street to direct users to 4th Street to avoid the stairway on 3rd Street. The stairway entrance should also be better defined, if it is to be part of the trail alignment.

The graph below summarizes participants support for safety toolkit options presented at Greenway for a Day (Figure 1). Full survey results from the Greenway for a Day can be found in the Appendices of this report.

Advisory Group Roster

- Canemah Neighborhood Association
- McLoughlin Neighborhood Association
- Portland General Electric
- Oregon Dept. Of Transportation
- Metro
- Veterans of Foreign Wars (VFW)
- Citizen Involvement Committee
- Natural Resources Committee
- Transportation Advisory Committee
- Parks and Rec Advisory Committee
- Oregon City Trail Alliance or local trail advocate
- Area Property Owners/Residents (multiple)

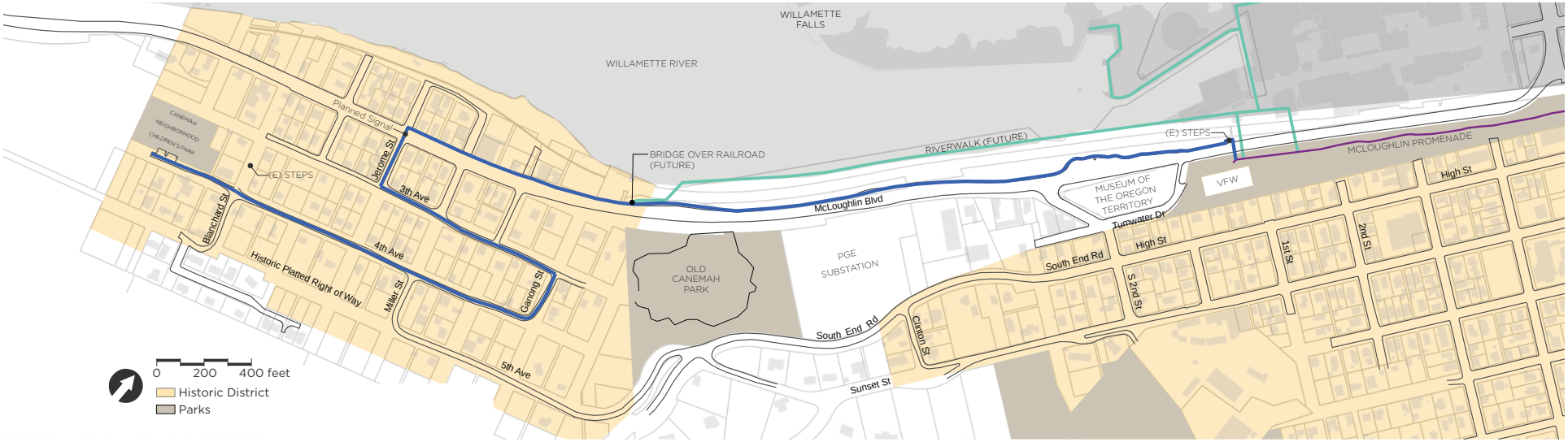
Figure 1. Public Support for Selected Traffic Calming Strategies



III.

ALIGNMENT ALTERNATIVES EVALUATION

ALIGNMENT ALTERNATIVES EVALUATION - DESCRIPTION - "A"



SUMMARY DESCRIPTION

Alignment - A (1.25 miles) begins at the McLoughlin Promenade, crosses the pedestrian bridge from the VFW over McLoughlin Blvd, and follows the McLoughlin Blvd sidewalks and boardwalk southwest to Jerome St. After crossing Jerome St, the trail continues into the Canemah Neighborhood via 3rd and 4th avenues.

DESIGN ASSUMPTIONS

- Requires expanding the existing sidewalk and boardwalk on the west side of McLoughlin Blvd from Jerome St to South 2nd St
- Traffic calming, signs, and pavement markings for Family Friendly Street on Jerome St, 3rd Ave, Ganong St, and 4th Ave
- Cost estimates do not include ROW acquisition or McLoughlin pedestrian bridge improvements at the VFW

OPPORTUNITIES

- Boardwalk offers an intimate connection with Willamette Falls
- Alignment along roadway is highly visible
- Minimizes environmental impacts

CONSTRAINTS

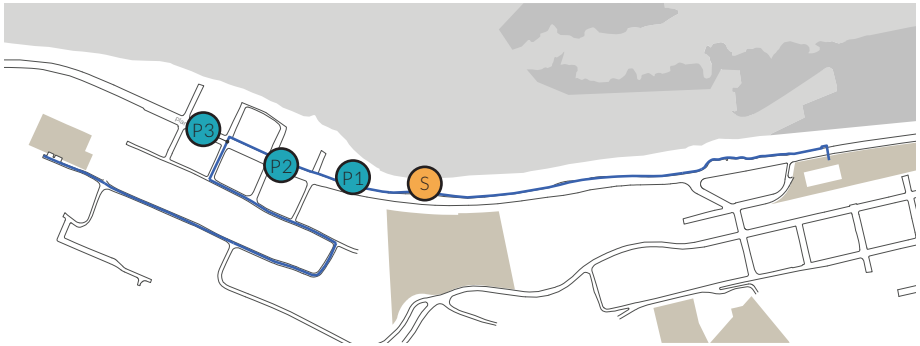
- Lacks a direct connection to Old Canemah Park
- Existing boardwalk is in disrepair, expensive to re-construct
- The experience along McLoughlin traffic can be uncomfortable
- Would require widening sidewalk within constrained ODOT right of way
- Out of direction travel

EVALUATION MATRIX

○ Not Advisable ◔ Major Constraint ◑ Moderate Constraints ◕ Minor Constraints ● Optimal

QUALITY			SAFETY		PROPERTY			CONSTRAINTS		OVERALL EVALUATION		RECOMMENDATIONS	
QUALITY OF EXPERIENCE	WILLAMETTE FALLS VIEWS	ALL AGES & ABILITIES	VEHICLE CONFLICT RISK	CRIME RISK	HISTORIC DISTRICT	CANEMAH IMPACTS	PROPERTY IMPACTS	GEOTECH CONSTRAINTS	ENVIRONMENTAL IMPACTS	OVERALL SCORE	ORDER OF MAGNITUDE COST	INTERIM RECOMMENDATION	PERMANENT RECOMMENDATION
◔	●	○	◔	●	☑	●	●	◑	●	◑	$4.0 - $4.5 M	Not Recommended	Not Recommended

ALIGNMENT ALTERNATIVES EVALUATION - EXISTING CONDITIONS - "A"



Key Map

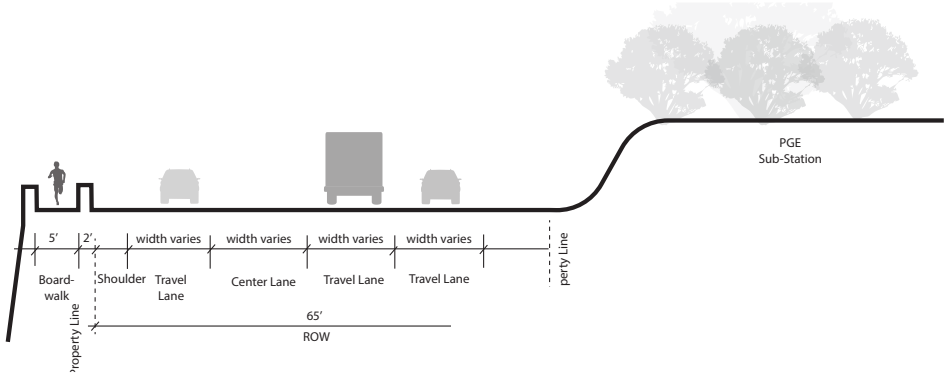
P *Photo Location*

S *Cross Section*

P-1 | McLoughlin Blvd boardwalk, looking north

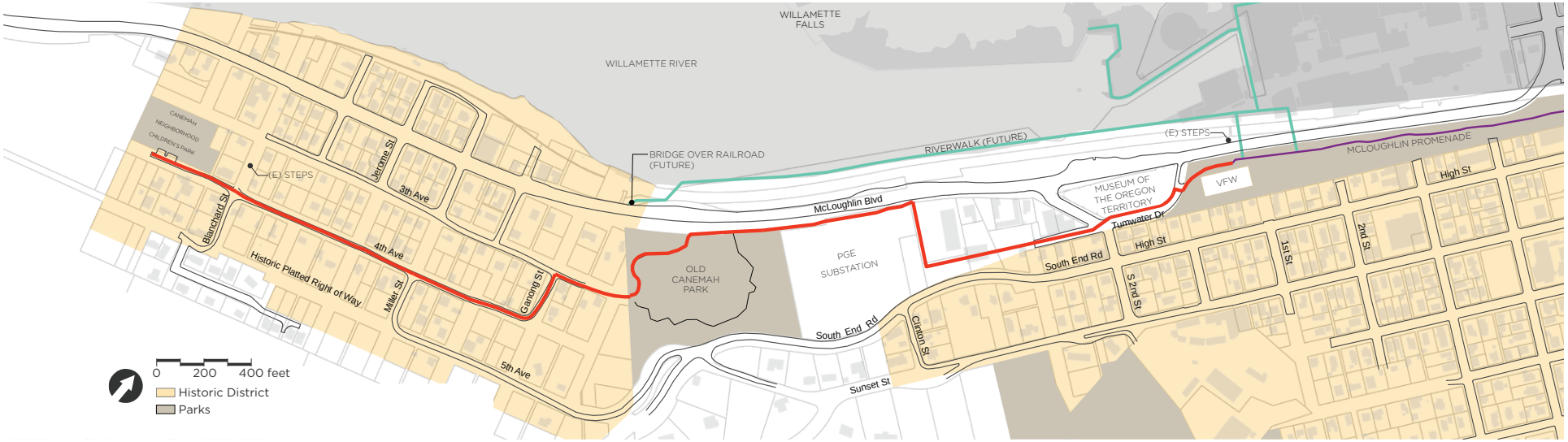
P-2 | McLoughlin Blvd sidepath, looking north

P-3 | McLoughlin Blvd crossing at Jerome St, looking south



Existing Cross Section

ALIGNMENT ALTERNATIVES EVALUATION - DESCRIPTION - "B"



SUMMARY DESCRIPTION

Alignment - B (0.95 miles) begins at the McLoughlin Promenade and connects to Tumwater Drive via the Three Rivers VFW Post 1324 parking lot and a dedicated non-motorized path down the existing driveway. From there, the trail follows Tumwater Drive, crosses at S. 2nd Street, and continues south/southwest either along McLoughlin Blvd or along the back edge of private property until reaching Portland General Electric (PGE) substation property. From PGE, the trail connects to Old Canemah Park and into the Canemah National Register District neighborhood. The route follows 3rd Avenue, turns onto Ganong Street, and follows 4th Avenue until reaching the Canemah Neighborhood Children's Park.

DESIGN ASSUMPTIONS

- Widen sidewalk to shared use path width along Tumwater Dr
- Intersection crossing at S 2nd Ave and Tumwater Drive re-designed for safety
- New multi-use path along edge of PGE substation property
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 3rd Ave, Ganong St, and 4th Ave
- Cost estimate includes reinforcement at top of basalt cliff

OPPORTUNITIES:

- Offers direct connections between neighborhoods and parks
- High quality views of Willamette Falls
- Few environmental impacts

CONSTRAINTS:

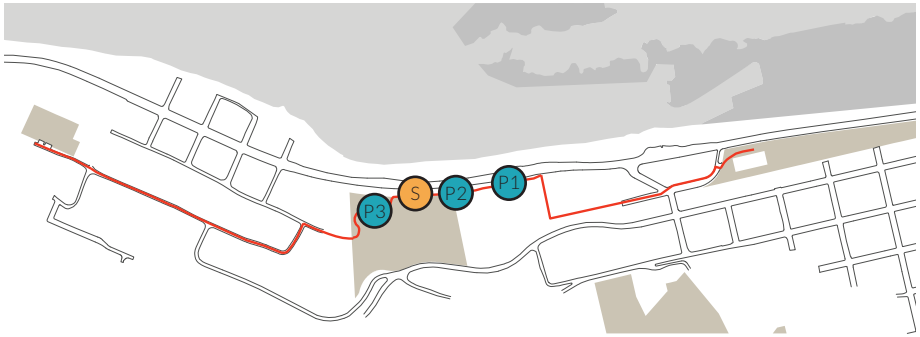
- Segment along McLoughlin Blvd has significant roadway width constraint
- Alignment using the existing VFW driveway assumes a modified automobile entrance to the VFW to/from S 1st St

EVALUATION MATRIX

○ Not Advisable ◔ Major Constraint ◑ Moderate Constraints ◕ Minor Constraints ● Optimal

QUALITY			SAFETY		PROPERTY			CONSTRAINTS		OVERALL EVALUATION		RECOMMENDATIONS	
QUALITY OF EXPERIENCE	WILLAMETTE FALLS VIEWS	ALL AGES & ABILITIES	VEHICLE CONFLICT RISK	CRIME RISK	HISTORIC DISTRICT	CANEMAH IMPACTS	PROPERTY IMPACTS	GEOTECH CONSTRAINTS	ENVIRONMENTAL IMPACTS	OVERALL SCORE	ORDER OF MAGNITUDE COST	INTERIM RECOMMENDATION	PERMANENT RECOMMENDATION
◕	●	◑	◕	◕	☑	●	◕	◕	◕	◕	$2.1 - $2.6 M	☑	☑

ALIGNMENT ALTERNATIVES EVALUATION - EXISTING CONDITIONS - "B"



Key Map

P *Photo Location*

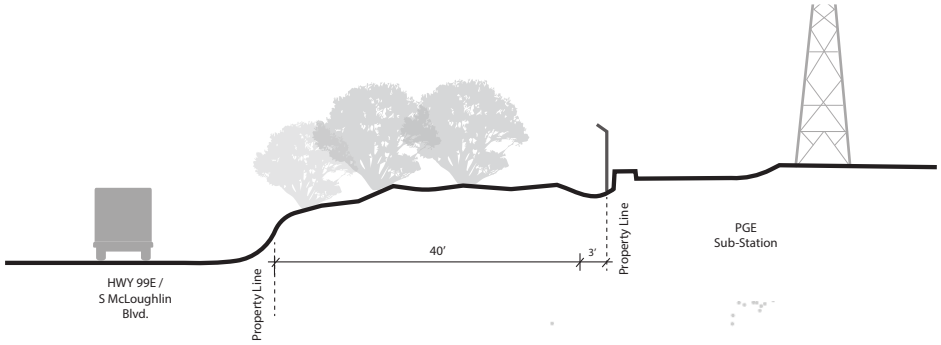
S *Cross Section*

P-1 | McLoughlin Blvd, between S. 2nd and PGE Substation

P-2 | Willamette Falls view from Old Canemah Park

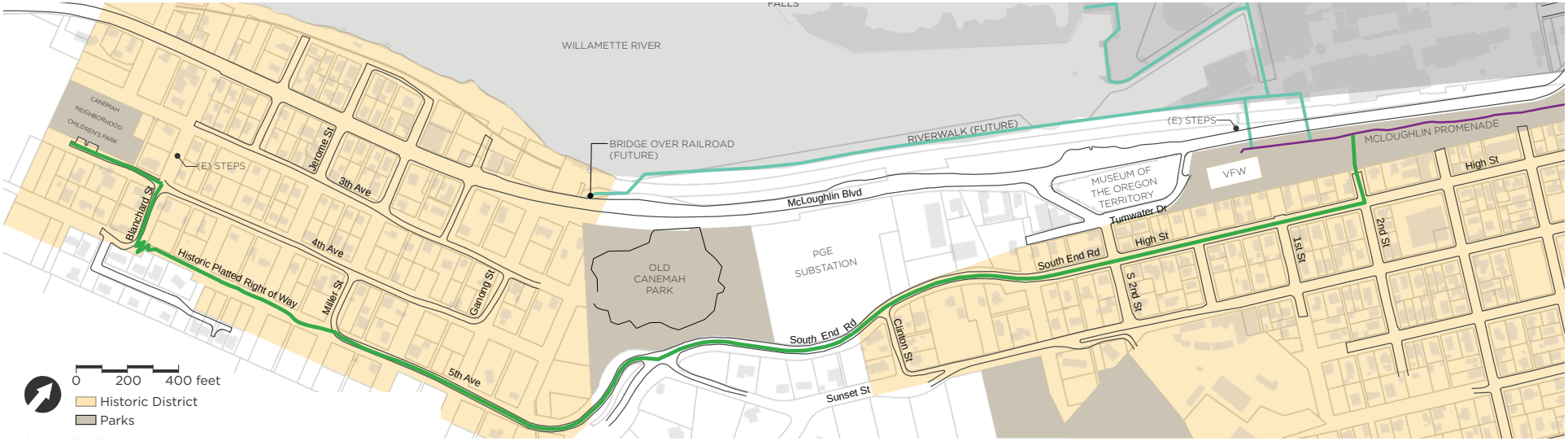
P-3 | Old Canemah Park trail

Existing Cross Section



West Edge of PGE Property
Existing Conditions
Looking North

ALIGNMENT ALTERNATIVES EVALUATION - DESCRIPTION - "C"



SUMMARY DESCRIPTION

Alignment - C (1.1 miles) begins at the McLoughlin Promenade at 2nd St and follows S High St to the southwest as High Street transitions to South End Road. It continues on 5th Ave, includes a historic Right of Way extension between Miller St and Blanchard St, and connects to Canemah Neighborhood Children's Park via 4th Ave.

DESIGN ASSUMPTIONS

- Shared roadway for cyclists on High St between 2nd St and S 2nd St
- Widens High St (S 2nd to Sunset St) to provide minimum side path width
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 5th Ave to Miller St and from Blanchard St to Canemah Neighborhood Children's Park
- Shared use path on City right of way between Miller St and Blanchard St
- Cost estimates include retaining wall and minor basalt excavation; does not include traffic signal at S 2nd St

OPPORTUNITIES

- Most slopes are comfortable for people walking and biking
- Provides access on South End Rd for people walking and biking

CONSTRAINTS

- Doesn't connect neighborhoods to Old Canemah Park
- Few or no views of Willamette Falls
- Width constraints along S. High Street could be cost-prohibitive
- Segment between Miller St and Blanchard St to be built on former land slide area with geotechnical concerns

EVALUATION MATRIX

○ Not Advisable ◔ Major Constraint ◑ Moderate Constraints ◕ Minor Constraints ● Optimal

QUALITY			SAFETY		PROPERTY			CONSTRAINTS		OVERALL EVALUATION		RECOMMENDATIONS	
QUALITY OF EXPERIENCE	WILLAMETTE FALLS VIEWS	ALL AGES & ABILITIES	VEHICLE CONFLICT RISK	CRIME RISK	HISTORIC DISTRICT	CANEMAH IMPACTS	PROPERTY IMPACTS	GEOTECH CONSTRAINTS	ENVIRONMENTAL IMPACTS	OVERALL SCORE	ORDER OF MAGNITUDE COST	INTERIM RECOMMENDATION	PERMANENT RECOMMENDATION
◑	○	◑	◑	◑	☑	◕	◑	◑	◑	◑	$2.6 - $3.0 M	Not Recommended	Not Recommended

ALIGNMENT ALTERNATIVES EVALUATION - EXISTING CONDITIONS - "C"

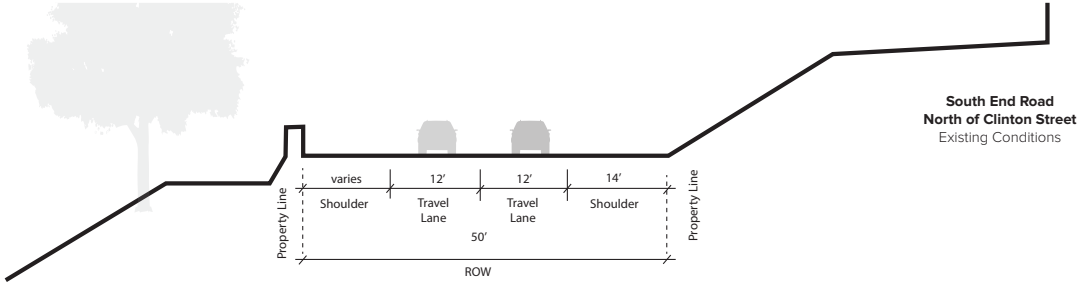
Key Map

P *Photo Location* S *Cross Section*

P-1 | 2nd Ave connection from McLoughlin Promenade

P-2 | S High Street, south of 2nd Ave

P-3 | S. High Street, existing shoulder



South End Road
North of Clinton Street
Existing Conditions

Existing Cross Section

IV.

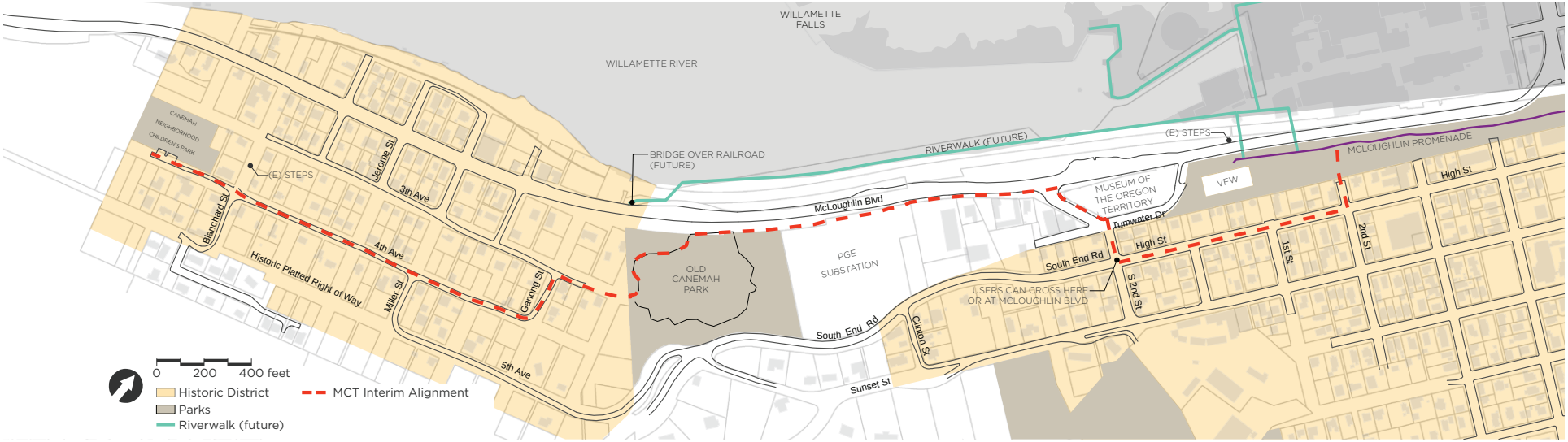
PREFERRED TRAIL ALIGNMENT

THE PREFERRED ALIGNMENT FOR THE MCLOUGHLIN-CANEMAH TRAIL

INCLUDES BOTH AN INTERIM ALIGNMENT AND A PERMANENT ALIGNMENT,

SHOWN ON THE FOLLOWING PAGES

Interim Trail Alignment Recommendation



SUMMARY DESCRIPTION

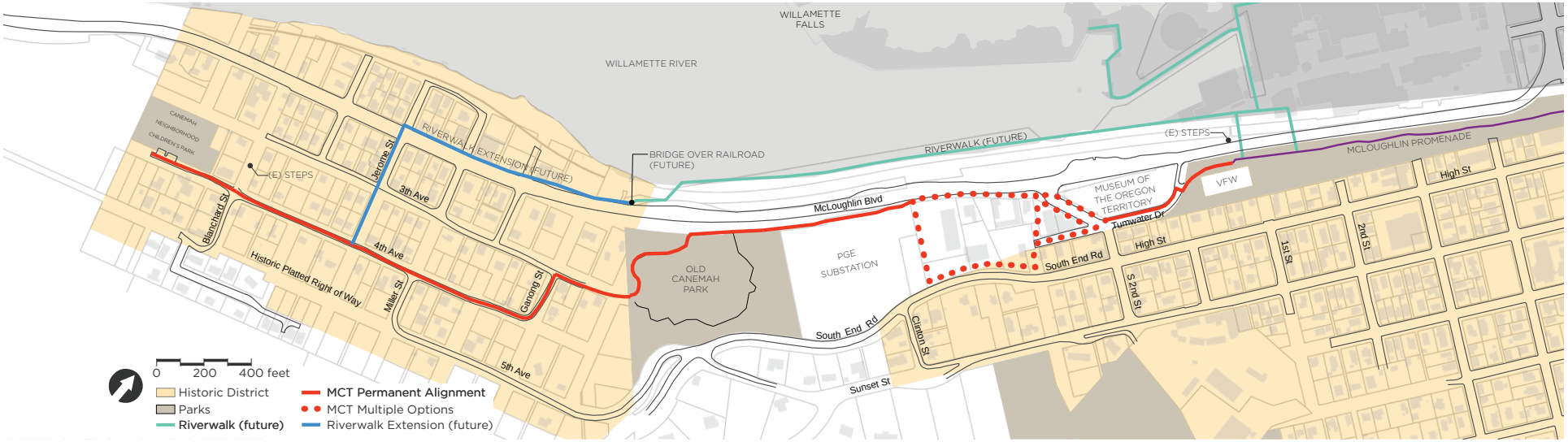
The Interim trail alignment recommendation begins at the McLoughlin Promenade and connects via 2nd St to High St. From there, the trail turns onto S. 2nd St and continues west to McLoughlin Blvd/Hwy 99E. Using the exiting traffic signal crossing, the trail continues on the east side of McLoughlin Blvd/Hwy 99E until reaching the Portland General Electric (PGE) substation entrance.

From the PGE entrance, the Interim and Permanent trail recommended alignments are identical. The trail connects between the PGE substation and McLoughlin Blvd/Hwy 99E, enters Old Canemah Park, and connects to the Canemah National Register District neighborhood. The route through the neighborhood follows 3rd Ave west/southwest , turns onto Ganong St, and follows 4th Ave until reaching the Canemah Neighborhood Children's Park.

DESIGN ASSUMPTIONS

- Wayfinding, shared use signage and pavement markings on High St
- Widen sidewalk on South 2nd St from High St to McLoughlin Blvd, and on McLoughlin Blvd between the PGE substation and South 2nd St
- New multi-use path along edge of PGE substation property
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 3rd Ave, Ganong St, and 4th Ave.
- Reinforcement at top of basalt cliff along McLoughlin Blvd
- Add connection between McLoughlin Promenade and High St

Permanent Trail Alignment Recommendation



SUMMARY DESCRIPTION

The Permanent trail alignment recommendation begins at the McLoughlin Promenade and connects to Tumwater Drive via the Three Rivers VFW Post 1324 parking lot and a dedicated non-motorized path down the existing driveway. From there, the trail follows Tumwater Drive, crosses at S. 2nd Street, and continues south/southwest either along McLoughlin Blvd or along the back edge of private property until reaching Portland General Electric (PGE) substation property. A standard Geotechnical Investigation should be completed to support the design phase of the project with focused attention where the trail follows the base of slope between S. 2nd Street and the PGE substation.

From the PGE entrance, the recommended Interim and Permanent trail alignments are identical. The trail connects between the PGE substation and McLoughlin Blvd/Hwy 99E, enters Old Canemah Park, and connects to the Canemah National Register District neighborhood. The route through the neighborhood follows Marshall Street and 3rd Avenue west/southwest , turns onto Ganong Street, and follows 4th Avenue until reaching the Canemah Neighborhood Children's Park.

In the long term, when the Riverwalk is extended to Canemah, an additional trail segment should be considered to link the Riverwalk to Canemah and complete a loop. This segment would include a Jerome Street crossing. Speed control along McLoughlin Blvd/Hwy 99E is recommended as well.

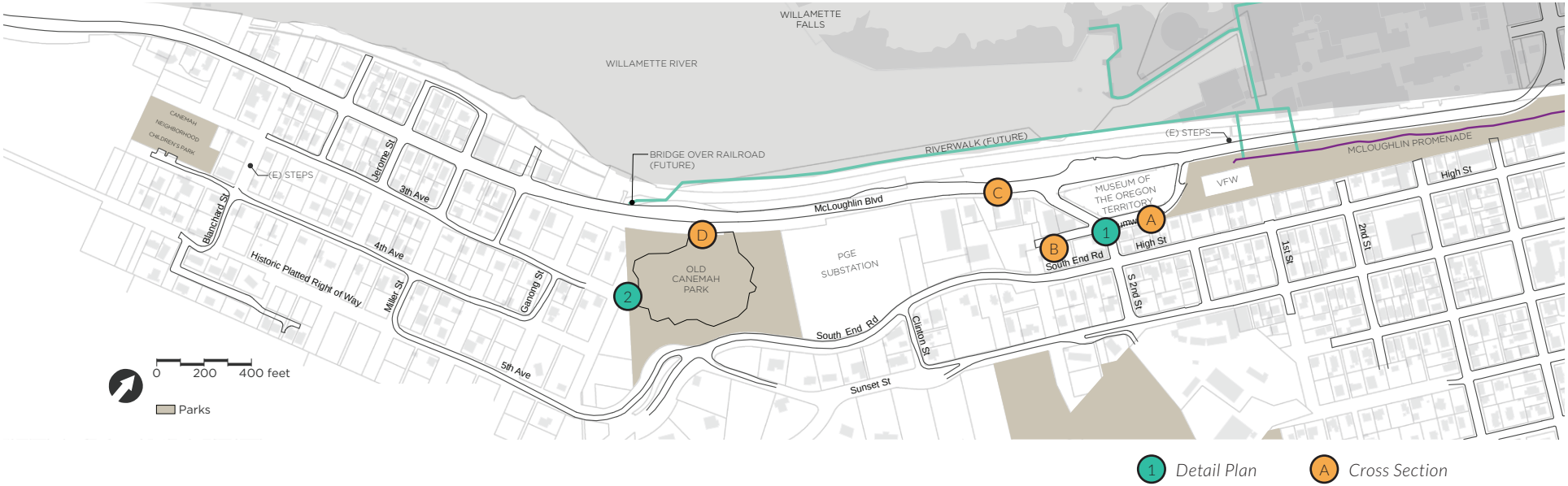
DESIGN ASSUMPTIONS

- Modification of existing VFW driveway allows dedicated ped-bike connection to Tumwater Dr. Left turn from McLoughlin Blvd onto Tumwater Dr to be closed.
- Widen sidewalk to shared use path width along Tumwater Dr
- Intersection crossing of S 2nd Ave at Tumwater Drive or 99E re-designed for safety
- Trail can be installed along with future/expected development
- License agreement for use of PGE substation property
- Traffic calming, signs, and pavement markings for shared Family Friendly Street on 3rd Ave, Ganong St, and 4th Ave. Speed limit reduced to 20 MPH.
- Cost estimate includes reinforcement at top of basalt cliff.

V.

TYPICAL CROSS SECTIONS & DESIGN FEATURES

KEY MAP: Typical Cross Sections & Design Features



TYPICAL CROSS SECTIONS & DESIGN FEATURES

The McLoughlin-Canemah Trail passes through several unique areas with diverse existing conditions that each require specific trail design treatments and approaches. In the following pages, typical cross sections are shown for several of these locations as well as Design Intent level plans showing recommended on and off street intersection or crossing improvements.

Typical Cross Sections

- A Tumwater Drive (north of S. 2nd Street) - Typical Section
- B Tumwater Drive (south of S. 2nd Street) - Typical Section
- C McLoughlin Blvd/99E - Typical Section
- D Old Canemah Park Trail - Typical Section

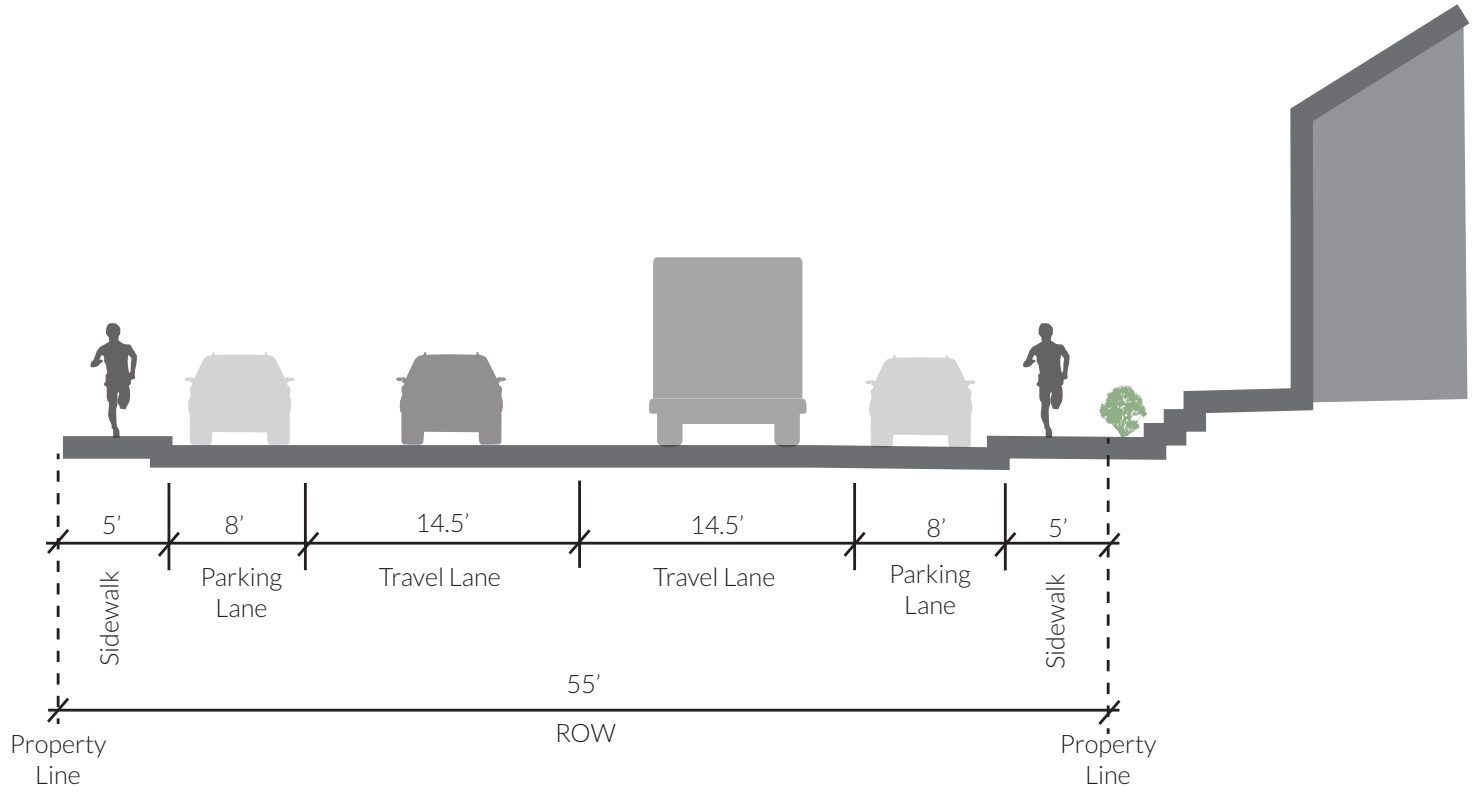
Detail Plans - Intersection/Crossing Improvements

- 1 S. 2nd Street & Tumwater Intersection Treatment - Plan
- 2 Old Canemah Park West Entrance Crossing - Plan

A

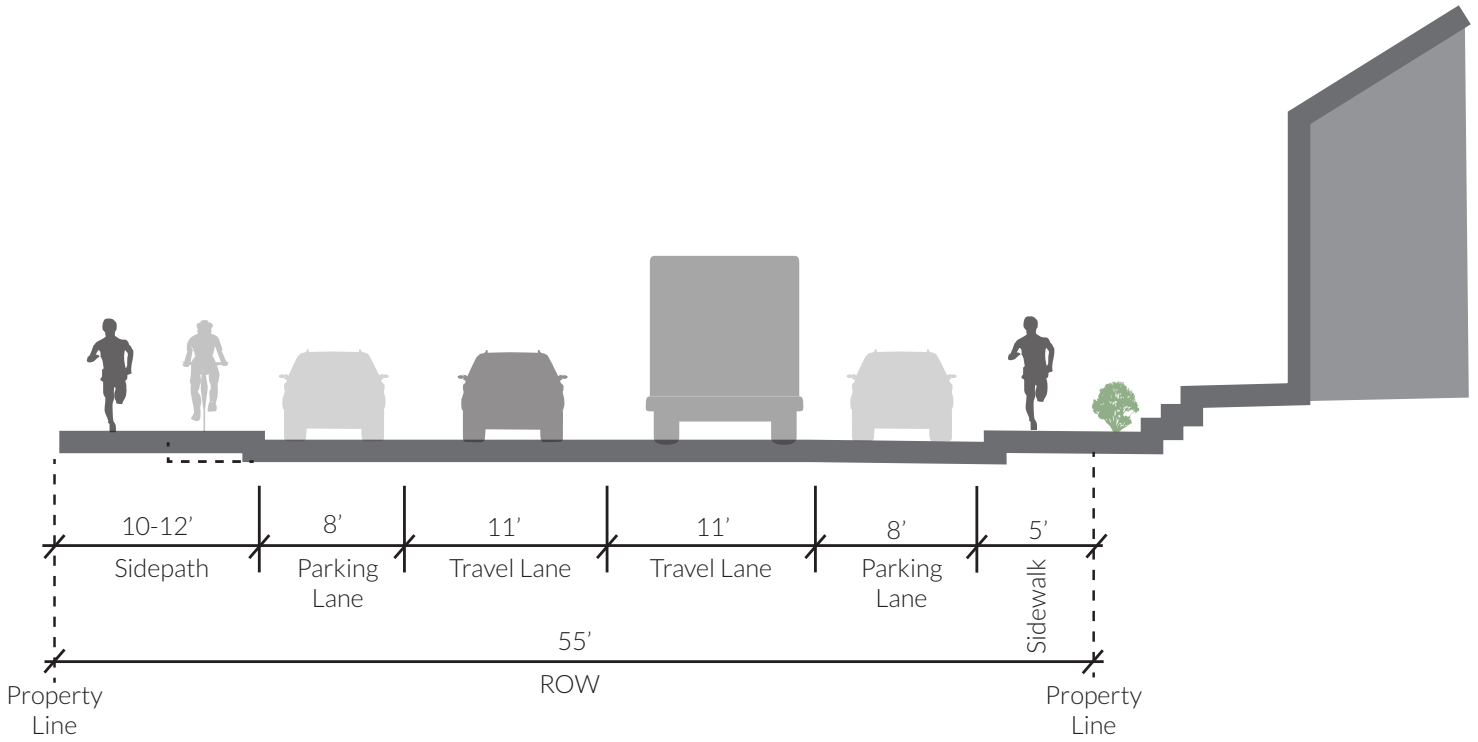
Tumwater Drive (north of S. 2nd Street), Existing Conditions

Tumwater Drive consists of a 55' right-of-way with substantial (14.5') travel lanes, two parking lanes, and two 5' sidewalks. There is a commercial property to the west side of the street and residential to the east.



Tumwater Drive (north of S. 2nd Street), Proposed Design

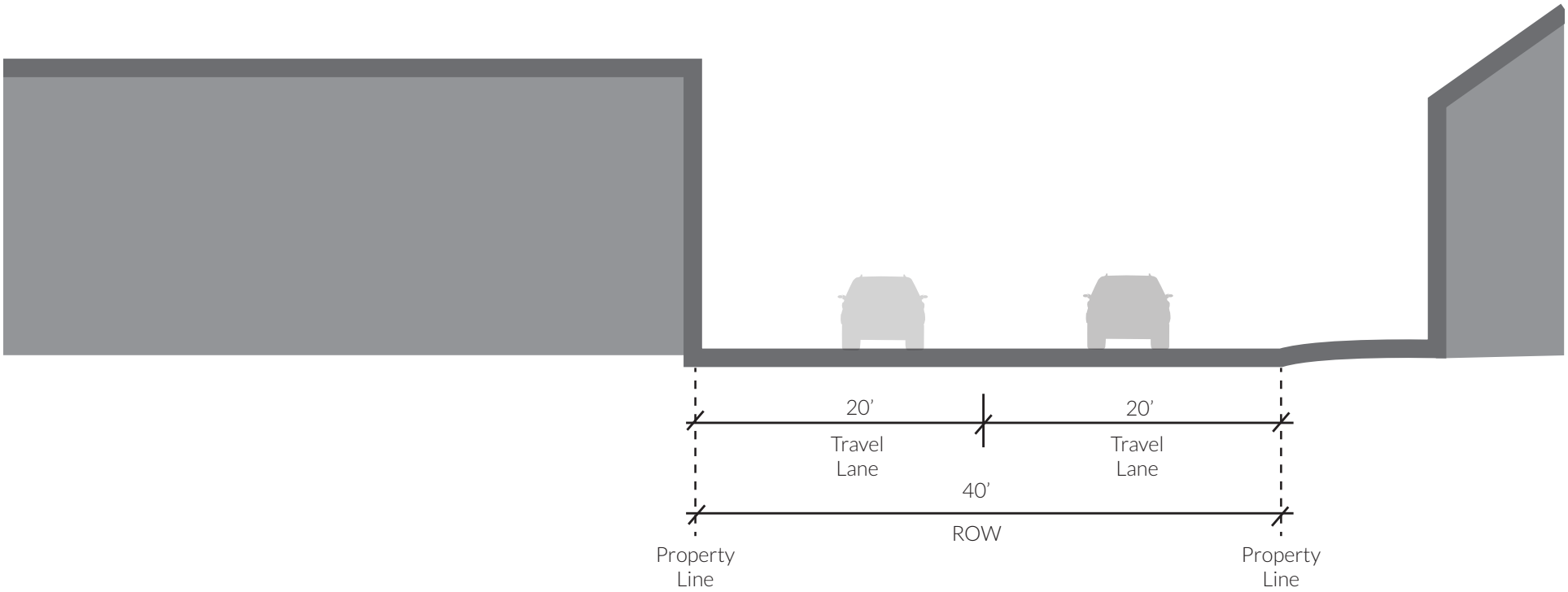
The proposed design for Tumwater Drive narrows the travel lanes to 11' to provide space for a 12' elevated side-path on the west side of the street. This new multi-use side-path allows space for both pedestrians and bicyclists.



B

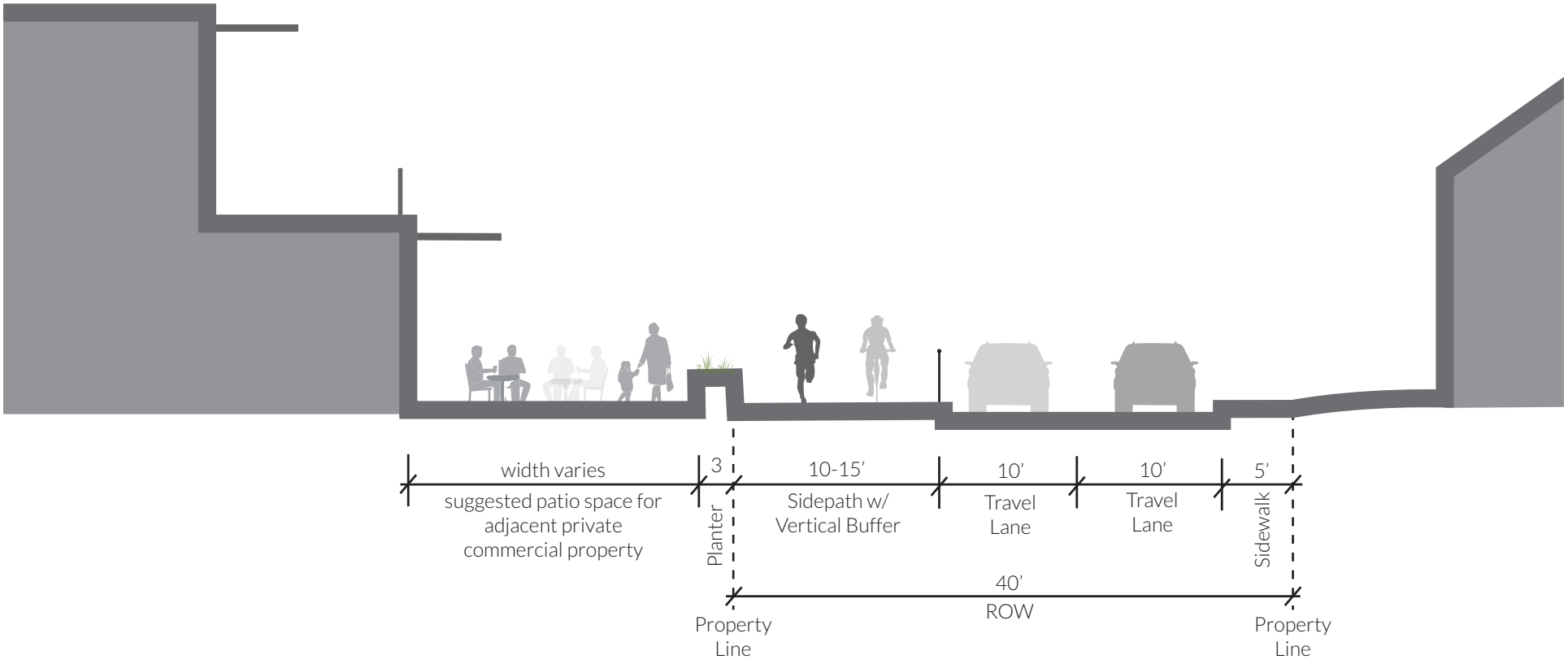
Tumwater Drive (south of S. 2nd Street), Existing Conditions

The southern end of Tumwater Drive consists of a 40' right-of-way with two substantial (20') travel lanes. There is an industrial property on the west side of the street and residential lots to the east.



Tumwater Drive (south of S. 2nd Street), Proposed Design

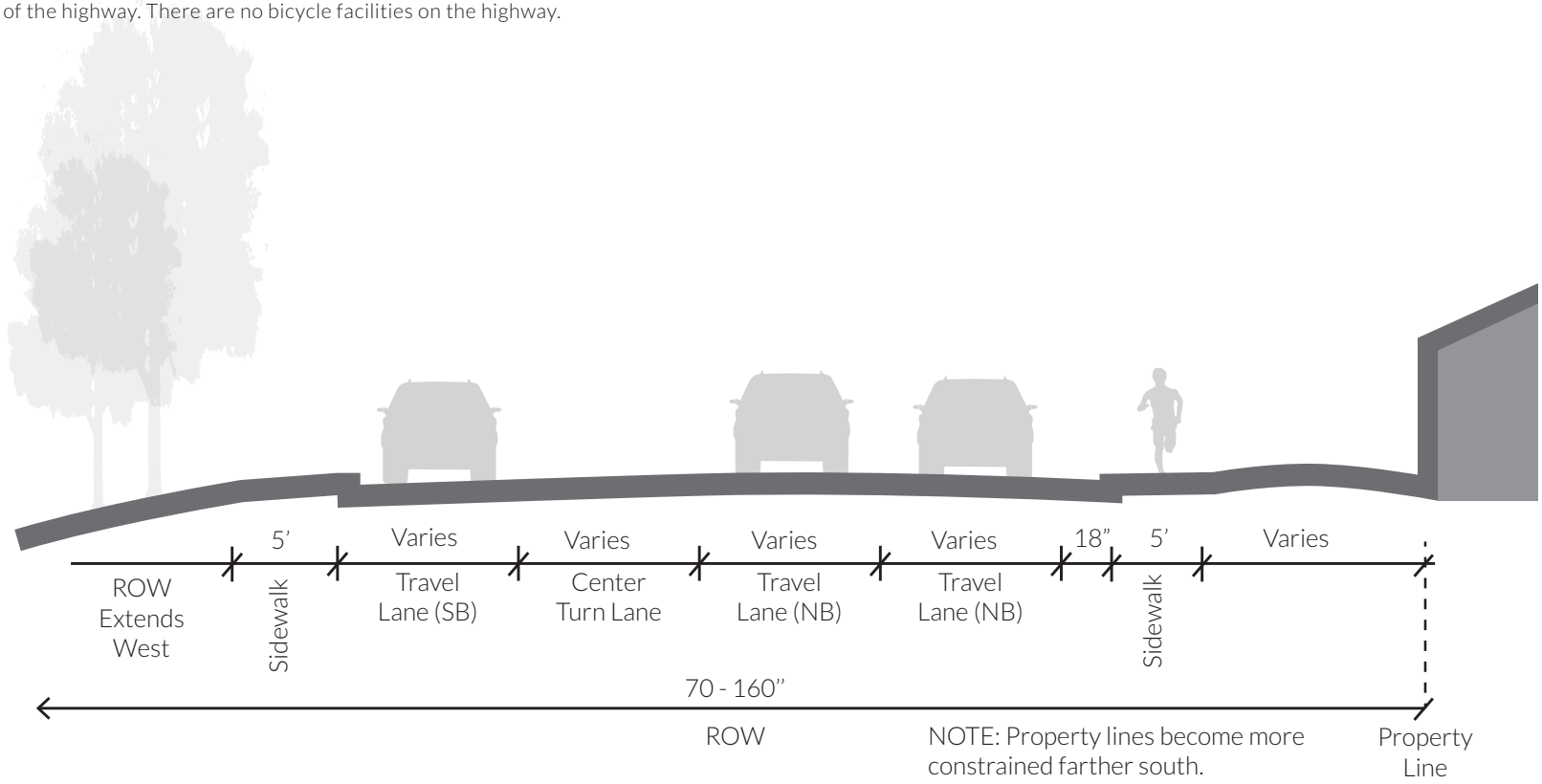
If there is future redevelopment of parcels between McLoughlin Blvd and Tumwater Drive, south of S. 2nd Street, travel lanes could be narrowed to 10' in both directions with a 5' sidewalk on the east side of the street. The MCT is shown here as a 15" side-path with a vertical buffer. Commercial land uses would ideally "face"Tumwater Drive by orienting entrances, windows, and seating space toward the trail and roadway.



C

McLoughlin Blvd/99E, Existing Conditions

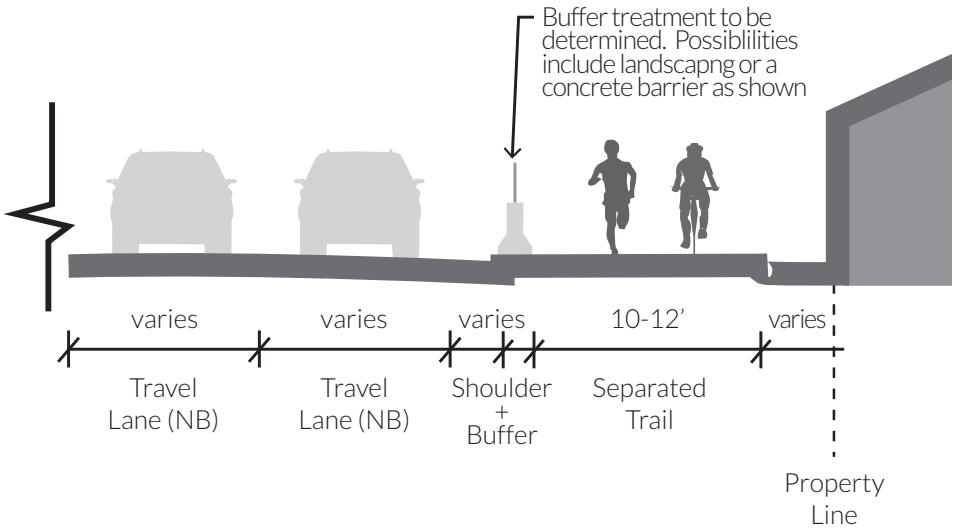
McLoughlin Blvd/99E consists of a 140' right-of-way with a landscaped buffer to the west and commercial property to the east. There are two 5' sidewalks, one south-bound travel lane, a center turn lane, and two north-bound travel lanes. Distance varies between the sidewalk and the property line on the east side of the street. The sidewalk ends at 102 S McLoughlin Blvd and there are no pedestrian facilities continuing south along the upland side of the highway. There are no bicycle facilities on the highway.



McLoughlin Blvd/99E, Proposed Design

The proposed design for McLoughlin Blvd/99E protects MCT users by providing a buffer of landscaping or potentially a vertical barrier, such as a concrete jersey barrier, between the travel lanes and the trail. The 10-12' trail replaces the existing sidewalk (depending on location). The design will require further refinement and a design exception(s) from ODOT standards.

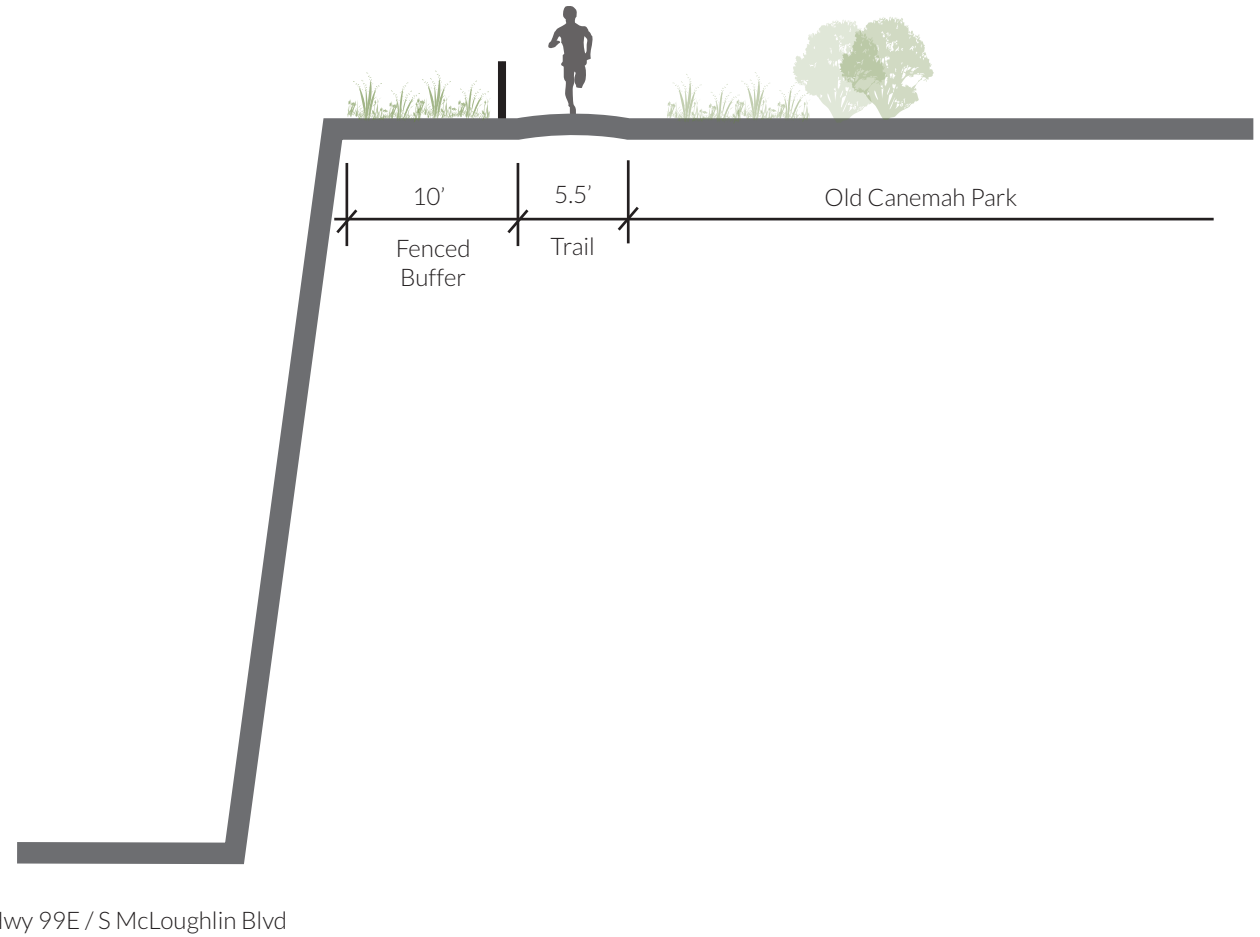
ODOT facility near Portland Expo Center showing protected sidepath w/ shoulder and concrete barrier. A similar facility could potentially be provided along McLoughlin Blvd.



D

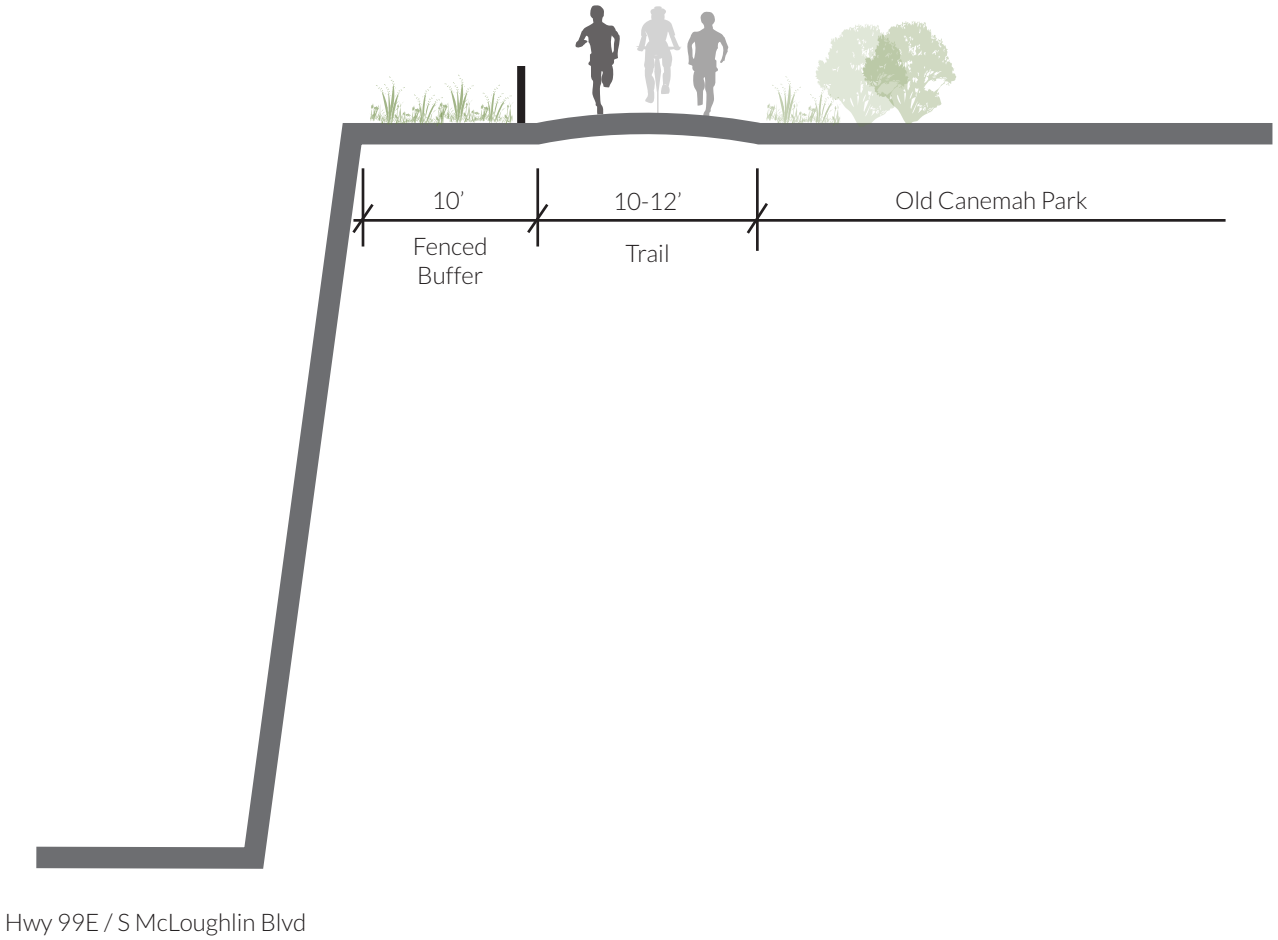
Old Canemah Park Trail, Existing Conditions

Old Canemah Park currently has a 5'-6" paved trail that weaves through the park. Along the basalt cliffs above McLoughlin Blvd/99E, the trail is buffered by a fence and vegetation.



Old Canemah Park Trail, Proposed Design

The McLoughlin-Canemah Trail would expand the existing path to the southeast to provide a 10-12' multi-use trail. The existing fence and vegetated buffer are maintained.



1

S. 2nd & Tumwater Intersection Treatment

To provided an adequate trail facility for the **Interim Alignment** that connects between Tumwater Dr and McLoughlin Blvd, it is recommended that the right turn lane on S. 2nd St be reduced (re-striped) from 15' to 11'. This would allow the 6' sidewalk on the north side of S. 2nd St to be widened to 10'.

Because S. 2nd St is a bus route, it is important that any design changes made to accommodate the McLoughlin-Canemah Trail not interfere with bus operations.

Analysis using AutoTurn within an AutoCAD Civil 3D environment suggests that reducing the right turn lane width to 11' would not prevent buses from making the right turn from S. 2nd Street onto McLoughlin Blvd. However, Trimet should be engaged as a project stakeholder early in the MCT implementation process to test any proposed design in the field using an actual bus.

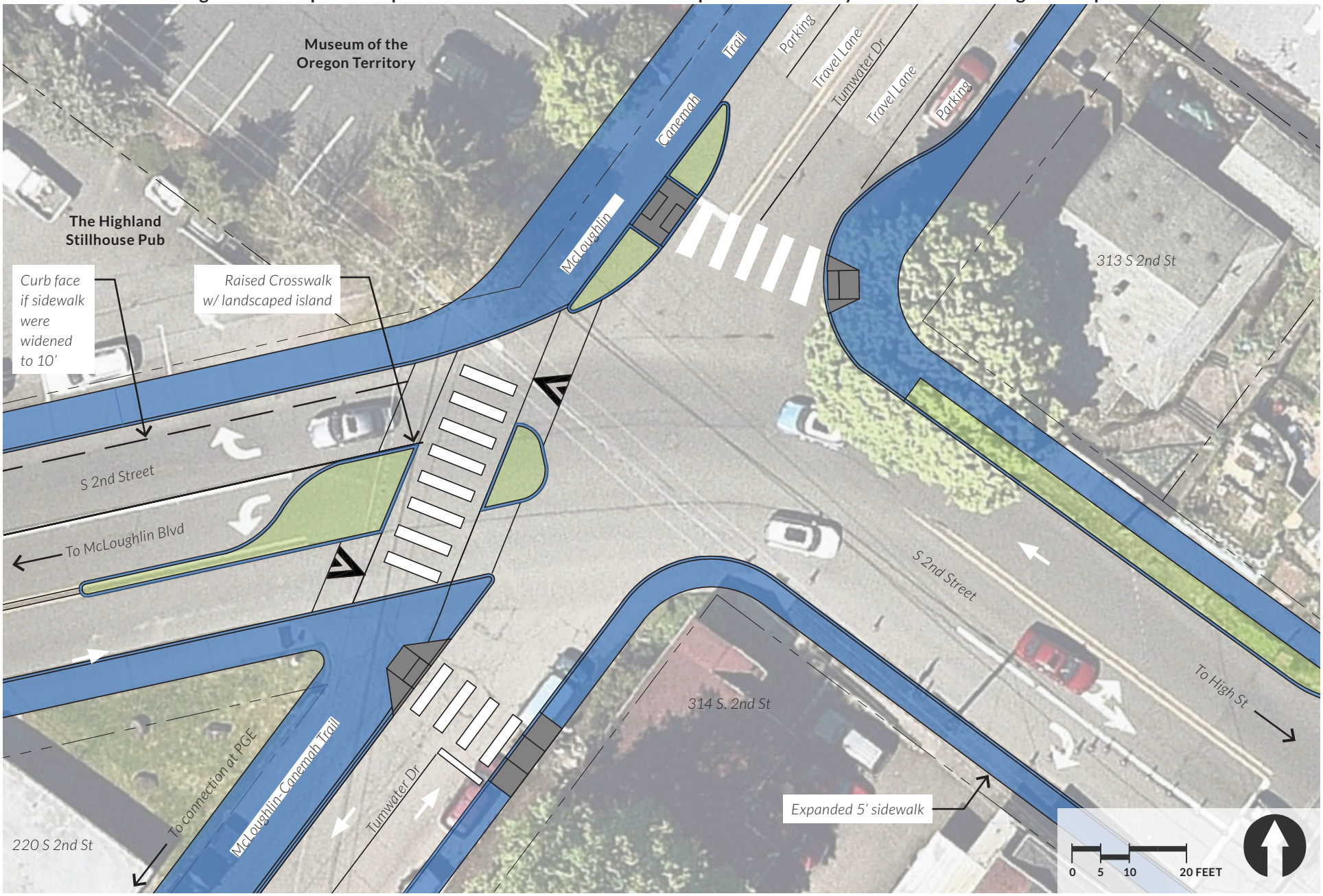
As part of the **Permanent Alignment** implementation, the intersection at S. 2nd Street and Tumwater Drive requires safety improvements.

Assuming a single paved path on the west/north side of Tumwater Drive along the Museum of the Oregon Territory parking lot, the following intersection design treatments are recommended:

- Raised crosswalk with a landscaped island on S. 2nd Street. This will calm traffic, serve as a gateway threshold for traffic calming into the city from McLoughlin Blvd/Hwy 99E, and will shorten the crossing distance for trail users.
- Curb ramps with a marked crosswalk on the south segment of Tumwater Drive.

TYPICAL CROSS SECTIONS & DESIGN FEATURES

Diagrammatic depiction of potential intersection treatments. Requires further analysis and detailed design development.



2

Old Canemah Park Trail, West Entrance and Canemah Neighborhood

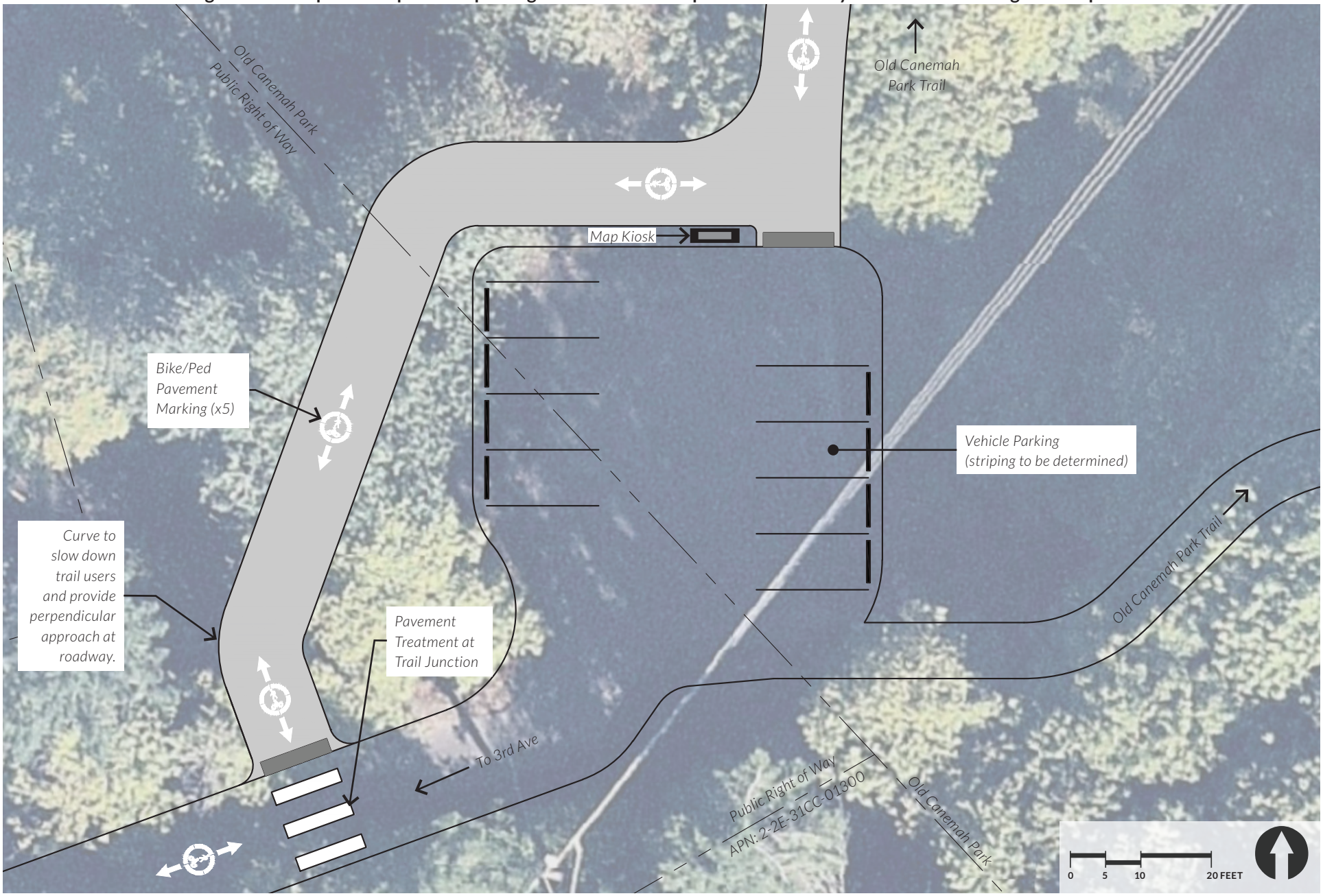
The following treatments are recommended to increase comfort, safety, and accessibility for trail users as they pass through the parking lot of Old Canemah Park:

- Design the 10-12' path offset from the western edge of the parking lot to connect the park trail segment with 3rd Ave while avoiding vehicle conflicts.
- While a conceptual path is shown here, future detailed design should respond to the approximate 20% cross slopes, NROD overlays, and geotechnical constraints present in this area.
- Pedestrian/bicycle pavement markings placed at decision points communicate intended use of the space to both trail users and motorists. Dashed white lines delineate shared space for trail users and motorists on the roadway.
- A wayfinding map kiosk located close to the trail will serve to inform visitors about the larger trail network and its connections, help guide trail users along the correct route, and highlight potential destinations that trail users might be interested in.

As the MCT continues through the Canemah Neighborhood along 3rd Ave, Ganong St, and 4th Ave, similar approaches are recommended to delineate space including shared-use pavement markings, shared-use signage, and wayfinding signage.

TYPICAL CROSS SECTIONS & DESIGN FEATURES

Diagrammatic depiction of potential parking lot treatments. Requires further analysis and detailed design development.



Next Steps and Implementation

The adoption of the McLoughlin-Canemah Trail Plan will amend the City's Parks Master Plan, Trails Master Plan, and Transportation System Plan to reflect the trail plan and add and refine capital project lists. The adoption process includes meetings with the Transportation Advisory Committee (TAC), Parks and Recreation Advisory Committee (PRAC), and hearings before the planning Commission and City Commission.

City staff, with the help of stakeholders, will identify internal resources and apply for additional grant funds to implement the trail. Potential funding sources include Parks System Development Charges, Transportation System Development Charges, and state grants such as Connect Oregon and ODOT Enhance. Next steps are described in the table below.

The MCT Advisory Group also recommends that the PRAC review and update the overall Trails Master Plan, which was originally adopted in 2004.

Table 3. Implementation Priorities

NO.	TASK	PRIORITY / TIMEFRAME	RESPONSIBILITY
1	Pursue 20 MPH speed limit in Canemah neighborhood	1	Planning, Public Works
2	Design/implement Tumwater Drive closure	1	Planning, Public Works, ODOT
3	Explore interim improvements to 99E	1	Planning, Public Works, ODOT
4	Outreach to Canemah neighbors, add street markings within Canemah	1	Planning, Public Works, Historic Review Board
5	High Street bike route striping	1 (with 2018 resurfacing)	Planning, Public Works
6	Obtain a survey of the trail alignment area	2	Parks and Rec with coordination from PGE
7	Conduct study of S. 2nd Street pedestrian crossing options	2	Public Works, Planning, ODOT
8	Develop a trail signage plan	2	Parks and Rec, Public Works
9	Apply for grants for trail construction	2	All stakeholders, especially groups with nonprofit status
10	Construct interim trail improvements	2	Parks and Rec, Public Works, stakeholder volunteers, with coordination from PGE and ODOT
10	Explore and design VFW driveway changes	2	Parks and Rec, VFW
11	Construct permanent trail improvements	3	Parks and Rec, Public Works, with coordination from PGE and private development

VI.

APPENDIX 1 - GEOTECHNICAL REPORT

Northwest Geotech, Inc.
9120 SW Pioneer Court, Suite B, Wilsonville, Oregon 97070 | ph: 503.682.1880 fax: 503.682.2753 | www.nwgeotech.com

TECHNICAL MEMORANDUM

Expiration Date: 12-31-17

To: Mary Stewart / Alta Planning and Design

From: Alan P. Bean / Northwest Geotech, Inc.

Date: October 17, 2017

Subject: Geotechnical Reconnaissance Level Study

Project: McLoughlin – Canemah Trail Alignment Alternatives
NGI Project No. 3214.1.1

The purpose of this memorandum is to provide a reconnaissance level geotechnical assessment of potential alignment alternatives. Our scope of work was limited to geologic research, a brief reconnaissance of the proposed alignments and review of preliminary cross section sketches. This memorandum focusses on portions of the alignment where either economic risk due to challenging construction conditions may be present and/or land and rock slope stability risks are interpreted to be present.

General

The attached Figure 1 provides a reference for alignments discussed herein and was provided to NGI on August 16th, 2017. Previously we had assisted Alta with acquiring mapped historic landslides which have been overlain on the attached drawing. While we are not aware of any recent activity/movement of the large ancient landslides, the steep slopes formed by the scarps are marginally stable and smaller localized slumps/slides are common, especially where grading has been performed. The most notable examples are the series of slides along South End Road between 5th Avenue and the top of the plateau, where presumably historic road fill construction techniques were insufficient to maintain long term stability. While this area of South End Road is outside of the proposed trail alignment alternatives, it is representative of challenges posed when constructing alignments along these ancient landslide scarps.

Alignment A

Alignment A for the most part is along existing developed right of way but has a relatively long section (A-02) of boardwalk that is constructed as a bridge and/or viaduct for much of its length. In order to expand the width to dual use trail standards we would anticipate that all of the deck and outer rail would require reconstruction. We estimate at least 50% of the foundations and possibly all would need to be reconstructed and some retrofitted with rock anchors in a difficult cliff side construction environment above the active rail line. Further, and to provide for a longer-term design life, complete reconstruction of the boardwalk with materials other than wood should be anticipated. In general, the boardwalk appears to be near the end of its intended design life. This section of the basalt cliff appeared to be relatively stable other than periodic rockfall.

At the southern end of the boardwalk (Section A-03), widening via a retaining wall or even extension of the boardwalk may also be necessary. The remainder of Alignment A has few constraints and from a geotechnical prospective the primary focus where it connects to shared alignments would be evaluating and controlling surface water collection to move water off the potentially sensitive slopes.

Alignment B

This alignment is relatively flat prior to Section B-02 which will require widening/infilling of the highway ditch adjacent to the PGE substation where at highway grade. Near the southern end of the PGE substation the trail would ramp upward requiring a retaining wall. At this location which can also be described as the northern terminus of the old Canemah Park basalt face, the trail should be aligned such that it is directed away from the cliff and with a setback of roughly 20 feet. This portion of the cliff that is approximately 180 feet long is considered less stable than most of the remainder of the face to the south. Heading southward, the existing fence barrier at the top of slope represents an acceptable setback for a view point somewhere along this section. We recommend reviewing the rock face in more detail such that less stable portions can be identified and avoided when selecting the location of a viewpoint. Currently the protective wire netting is anchored approximately 10 feet from the face and therefore represents the minimum setback distance for an overlook/view point. We understand that ODOT may be making some improvements to the netting and anchorage in the summer of 2018 which may provide an opportunity to install three to six rock bolts through the upper basalt block to help protect a viewpoint long term. At a minimum, the ODOT project may allow a window and equipment/lane closure to map and evaluate the rock face below potential viewpoints.

In heavily treed areas, budgeting for trail sections should provide for construction of 5 inches of reinforced concrete over 8 inches of aggregate base. Open meadow areas of the trail could be constructed of 2.5 inches of Asphaltic Concrete (AC) over 8 inches of aggregate base that extends 12 inches beyond the edge of the AC.

If paving improvements and nominal widenings are included in the shared portions of the alignment, some drainage control improvements may be prudent such as small AC berms to direct flows away from homes and driveways to catch basins or natural drainage ways.

Alignment C

Within Section C-1, between 2nd Street and 5th Avenue, there are just a couple of pinch points along South High Street that would require cutting the soil or rock face on the uphill side back to the ROW line. The most obvious one is on South High Street approximately 500 feet south of S. 2nd Avenue, which would presumably take the form of a near vertical rock cut. Rock excavation can be performed using drilling and jacking methods that are typically more expensive than conventional blasting which is not an option in the urban environment. Residential stairways may be impacted in this area. The second location is approximately 300 to 400 feet north of the intersection with Sunset Street and depending on conditions may require a retaining wall if sound rock is not present on the uphill side. Widening on the downhill side is generally not feasible with the exception of the relatively short mound of bedrock located just south of Clinton Street which should be cut back even if only to improve site distance.

Section C-02 would represent a new trail alignment and we see no major geotechnical related issues with this alignment other than the first section that loops around the bedrock mound. The steep side slope in this location would require that the trail section be primarily constructed by cutting into the presumed rock mound, i.e., constructing fill wedges in steep terrain are not advised.

Section C-03 pavements are in very poor condition and an overlay should be assumed for the full width of the road.

Section C-05 represents a new overland alignment roughly 850 feet long and located within the undeveloped 5th Street ROW. The cross slope in the area increases to the South. As a result, when constructing trails along slopes exceeding 3H:1V the trail construction process would likely require two benches, one on the cut (uphill side) of the trail, and one for the downhill side. After removing the cut soils from the alignment, the lower bench would then be filled with imported granular material to create a stable pathway section. The downhill bench cut may be in the range of 2 to 4 feet in depth to create a necessary width and limit the uphill cut slope to just a few feet to avoid uphill slope instability. Some form of retention of this uphill cut (such as a 3'x3' gabion block) may be assumed where cross slopes approach 2H:1V. This appears to be the case in roughly the last 300 feet of the alignment and thus earthwork costs per foot of trail for this last portion of this Section would be relatively high, and the downhill side of the trail may also need retention and/or have a relatively steep edge fall off. The last 85' of the alignment would require relatively tight turns and switchbacks, with short walls on both downhill and uphill sides.

Limitations

The opinions and discussions herein are intended for alignment alternatives planning studies and should not be construed as geotechnical design recommendations. Once an alignment is selected we recommend a standard Geotechnical Investigation be conducted to support the project design phase.

If you have any questions please feel free to contact our office.

Attachments: Figure 1 – Vicinity Map

VII.

APPENDIX 2 - ENVIRONMENTAL REPORT

PACIFIC HABITAT SERVICES, INC.
9450 SW Commerce Circle, Suite 180
Wilsonville, OR 97070
(800) 871-9333 ● (503) 570-0800 ● Fax (503) 570-0855

Date: **October 25, 2017**

To: **Mary Stewart, ALTA Planning and Design**

From: **John van Staveren**

Re: **Natural Resource Considerations for the McLoughlin-Canemah Trail Plan**
PHS #6243

Pacific Habitat Services (PHS) reviewed habitat conditions along the proposed trail alignments for the McLoughlin-Canemah Trail Plan. The project area is bordered by the Three Rivers Veterans of Foreign Wars (VFW) Post 1324 in the east and the Canemah Neighborhood Children's Park in the west. Between these two areas, Alta Planning + Design has proposed several trail alignment options. The purpose of this memorandum is to review potential natural resource impacts along the proposed trail alignments.

Overview

As stated above, the study area extends from Three Rivers VFW Post 1324 in the east and the Canemah Neighborhood Children's Park in the west. To the north, the study area extends along the bluff overlooking the Willamette River. At this location there is an existing wooden boardwalk maintained by ODOT between the edge of the bluff and Highway 99E. To the south, the study area is defined by S. High Street to the east and 5th Avenue to the west.

One factor that may play a role in the alignment of trails is the City of Oregon City's Natural Resource Overlay District (NROD) (Chapter 17.49). The purpose of the NROD is to protect habitats and associated functions of streams, riparian corridors, wetlands and the regulated wildlife habitat found in the City. It provides a framework for protection of Metro Titles 3 and 13 lands, and Statewide Planning Goal 5 resources within the City.

Figures 1 through 3 show the extent of NROD within the study area. Approximately 3,463 feet of Alignment A is within an area mapped as NROD (2,680 feet if paved roads are excluded). Approximately 2,403 feet (519 feet if paved roads are excluded) and approximately 1,685 feet of Alignment C is within the NROD (197 feet if paved roads are excluded).

It is possible that trail construction could be exempt if the criteria described in Section 17.49.80F are met. The following uses are allowed within the NROD and do not require the issuance of an NROD permit if all of the following criteria are met:

1. Construction shall take place between May 1 and October 30 with hand held equipment;

2. Widths shall not exceed forty-eight inches and trail grade shall not exceed twenty percent;
3. Construction shall leave no scars greater than three inches in diameter on live parts of native plants;
4. Located no closer than twenty-five feet to a wetland or the top of banks of a perennial stream or ten feet of an intermittent stream;
5 No impervious surfaces; and
6. No native trees greater than one-inch in diameter may be removed or cut, unless replaced with an equal number of native trees of at least two-inch diameter and planted within ten feet of the trail.

If these criteria cannot be met, the minimization of impacts and mitigation will be required.

Natural Resource Review

The natural resource review conducted by PHS was divided into three main areas: Area 1 - Three Rivers VFW Post 1324 to PGE Substation; Area 2 – PGE Substation to Miller Street; and Area 3 – Miller Street to Canemah Neighborhood Children's Park.

Area 1 - Three Rivers VFW Post 1324 to PGE Substation

Natural resources are generally not an important factor in siting the trail within Area 1 (the eastern portion of the study area). Options for trail alignments between the VFW Post and the PGE Substation are generally restricted to existing paved surfaces. The only area of NROD in this area is along the banks of the Willamette River, which extends across Highway 99E.

The area immediately to the southeast of the PGE Substation was found to have an excavated ditch along the base of a steep slope (see photograph to the right). The slope is contributing groundwater and surface runoff into the ditch, which has formed hydric (i.e. wetland) soils in its bed and which is dominated by a variety of wetland plants, such as such as cattail, American speedwell, small-fruited bulrush, and manna grass.

Although probably manmade and excavated to capture runoff from the slope, the ditch will likely be regulated by both the Oregon Department of State Lands (DSL) and the US Army Corps of Engineers (Corps). Siting the trail in this area will likely impact the ditch. If greater than 50 cubic yards of fill material is used, a permit from DSL will be required. Any amount of fill in the ditch (which would be classified as a wetland) will require a permit from the Corps. Unavoidable impacts

to the ditch will require mitigation, which will likely be the purchase of wetland mitigation credits from the Mud Slough Wetland Mitigation Bank.

A wetland is also located to the west of the PGE Substation. This wetland has no trees or shrubs and is dominated by reed canarygrass and tall fescue (both non-native grasses). Like the ditch, the wetland will likely be regulated by DSL and the Corps and permits will likely be required if impacts cannot be avoided. The wetland is likely supported by a shallow seasonal groundwater table. During an investigation in August, 2017, the wetland was dry, with no shallow groundwater table visible to at least 16 inches below the ground surface; however, indicators of wetland hydrology in the soil were present.

The PGE Substation and the approximate location of the ditch and the wetland are shown in the aerial photograph below.

If the trail is to be located near these features, a wetland delineation using the required criteria and methodologies of the Corps of Engineers *Wetland Delineation Manual Technical Report Y-87-1* (Environmental Laboratory, 1987) and the *Western Mountains, Valleys and Coast Region* regional supplement to the 1987 Manual should be conducted. These manuals provide the guidelines and methodology for defining the limits of any wetlands.

Area 2 – PGE Substation to Miller Street

As one moves farther west away from the PGE Substation, natural resource issues become more important. The area to the west of the substation includes Old Canemah Park, which is a forested area dominated by big leaf maple and with an understory of sword fern, hazelnut, snowberry, Cascara, vine maple and Indian plum. Oak trees are present, but they are growing closer to the bluff where there appears to be shallower soils, more light, and less competition from other tree species. Very little of the park is overlaid with an NROD designation. A trail through this area should be sited to minimize impacts to native vegetation and trees. The proposed 12-foot wide path would require a combination of 1) removal of some trees and understory vegetation and 2) careful site work around other existing trees. In those cases, the removal of lower tree limbs and the pruning of roots should be conducted under the supervision of a qualified arborist to minimize impacts. It is further recommended that mature and native trees be surveyed prior to design the path alignment and that path widening occur opposite of such trees whenever possible.

To the west of Old Canemah Park is the historic district of Canemah. Within this area, trail alignments generally run along existing roads and little impact to natural resources is likely. Portions of this area are mapped with an NROD overlay based on the presence of mapped drainages. These drainages, which were not observed, should be delineated prior to final siting.

Area 3 – Miller Street to Canemah Neighborhood Children's Park

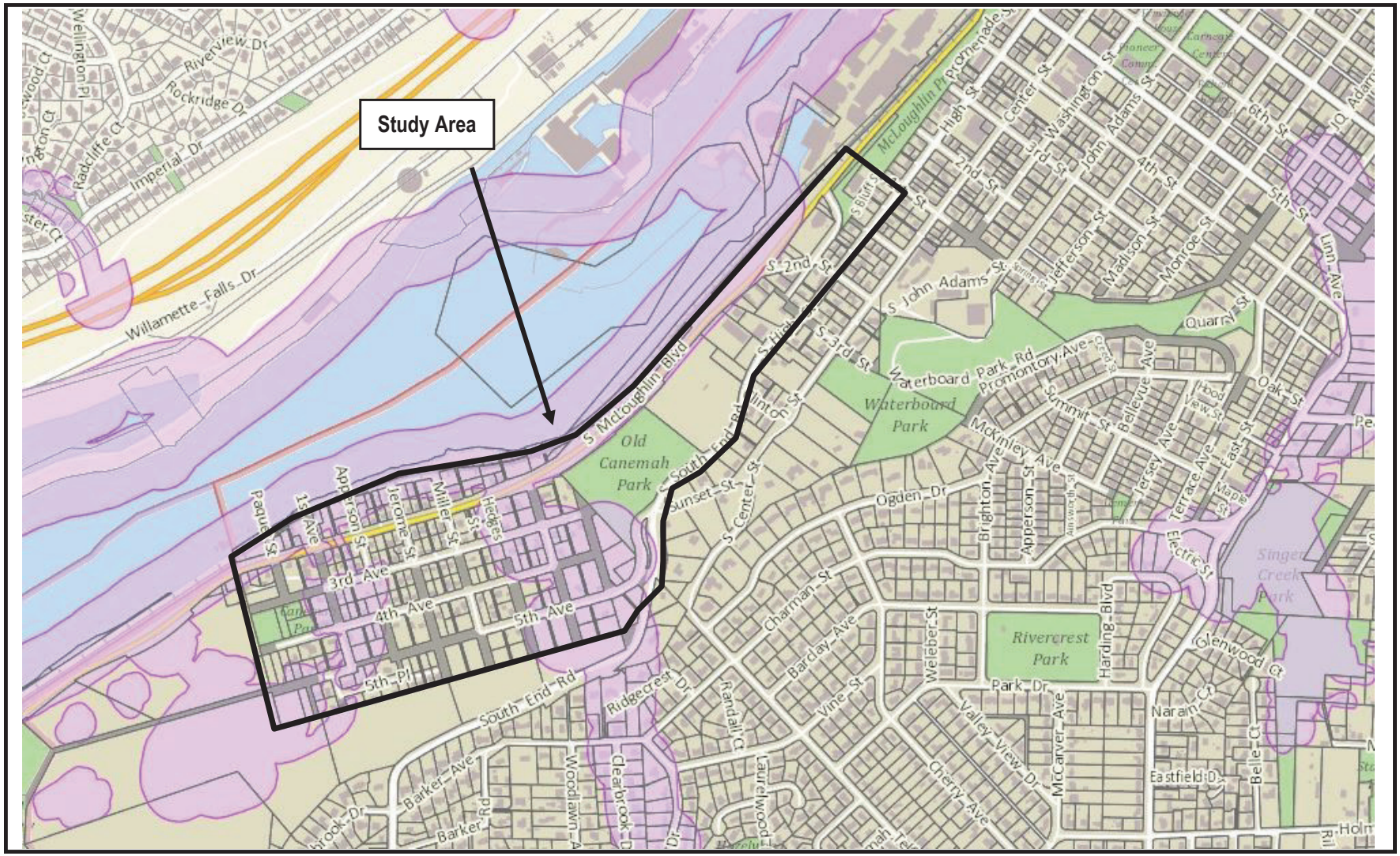
Between Miller Street and Blanchard Street is an undeveloped area dominated by big leaf maple and with an understory that contains non-natives such as Himalayan blackberry and Scot's broom, but also native species such as hazelnut and willow. In 2016, a wetland delineation identified a wetland north of the 5th Avenue right-of-way and west of Miller Street. It is recommended that a wetland delineation be conducted within the eastern portion of the alignment (west of Miller Street) to ensure that the location of any wetlands in this area is understood. As stated previously, 197 feet of this alignment (if paved roads are excluded) is within an area mapped as NROD. Construction of the trail would require extensive retaining walls and switchbacks to traverse the steep hillside. As with the other forested areas, care should be taken to site the trail, so that trees are not impacted.

Plants observed within the entire study area:

Common Name	**Botanical Name**
Trees	
Big leaf maple	*Acer macrophyllum*
Douglas fir	*Pseudotsuga menziesii*
Oregon white oak	*Quercus garryana*
Red alder	*Alnus rubra*
Willow sp.	*Salix sp.*
Shrubs	
Beaked hazelnut	*Corylus cornuta*

Common Name	Botanical Name
Cascara	*Rhamnus purshiana*
Himalayan blackberry	*Rubus armeniacus***
Indian plum	*Oemleria cerasiformis*
Madrone	*Arbutus menziesii*
Multi-flora rose	*Rosa multiflora***
Scot's broom	*Cytisus scoparius***
Snowberry	*Symphoricarpos albus*
Vine maple	*Acer circinatum*
Western serviceberry	*Amelanchier alnifolia*
Woody Vines	
English ivy	*Hedera helix***
Ground Cover	
American speedwell	*Veronica americana*
Catchweed bedstraw	*Galium aparine*
Cattail	*Typha latifolia*
Common tansy	*Tanacetum vulgare***
Common vetch	*Vicia sativa***
Few-seed bittercress	*Cardamine oligosperma*
Manna grass	*Glyceria elata*
Oxeye daisy	*Leucanthemum vulgare***
Red clover	*Trifolium pratense*
Red-tinge bulrush	*Scirpus microcarpus*
Reed canarygrass	*Phalaris arundinacea***
Robert's geranium	*Geranium robertianum***
Spotted cat's ear	*Hypochaeris radicata***
Sword fern	*Polystichum munitum*
Sweetclover	*Melilotus alba***
Tall fescue	*Schedonorus arundinaceus***
Teasel	*Dipsacus fullonum***
Thistle	*Cirsium sp.***
Velvet grass	*Holcus lanatus***
Watson's Willow Herb	*Epilobium watsonii*

** Oregon City Nuisance Plant List:
https://www.orcity.org/sites/default/files/fileattachments/planning/page/3266/nuisanceplantlist.pdf



#6243
9/11/2017

Pacific Habitat Services, Inc.
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Wilsonville, OR 97070

Natural Resource Overlay District
Canemah Trail - Oregon City, Oregon
https://maps.orcity.org/Html5Viewer_2_9_0/index.html?viewer=OCWebMaps.OCWebMaps

FIGURE
1

#6243
9/11/2017

PHS

Pacific Habitat Services, Inc.
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Natural Resource Overlay District
Canemah Trail - Oregon City, Oregon
https://maps.orcity.org/Html5Viewer_2_9_0/index.html?viewer=OCWebMaps.OCWebMaps

FIGURE
2

#6243
9/11/2017

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Natural Resource Overlay District
Canemah Trail - Oregon City, Oregon
https://maps.orcity.org/Html5Viewer_2_9_0/index.html?viewer=OCWebMaps.OCWebMaps

FIGURE
3

#6243
9/11/2017

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Natural Resource Overlay District
Canemah Trail - Oregon City, Oregon
https://maps.orcity.org/Html5Viewer_2_9_0/index.html?viewer=OCWebMaps.OCWebMaps

FIGURE
4

VIII.

APPENDIX 3 - GREENWAY FOR A DAY PUBLIC EVENT SUMMARY

GREENWAY FOR A DAY PUBLIC EVENT SUMMARY

The Greenway for a Day event attracted approximately 70-80 participants over the four-hour event. Participants traveled from the Museum of the Oregon Territory to Canemah Children's Park, following the one-mile temporarily marked trail.

Many people began at the museum, but others began elsewhere along the path. Most people were walking, but a few people biked the trail, and one family pulled their kids in a bike trailer.

Participants were invited to take a survey after they completed the trail and to review the draft trail alignment options and Safety Toolkit ideas. Over 40 surveys were filled out at the event and dozens of people completed the green dot activity to give feedback on the Safety Toolkit options. The online survey gained an additional 16 responses. Detailed survey and green-dot activity results are included in this Appendix.

What was your favorite part of the walk?

- Access to downtown area made known. Enjoyed the field area with river views.
- ALL OF IT!!!
- All of it. I didn't know this area was here and I have lived in OC 38 years
- Old Canemah Park
- Discovering new parts of Oregon City and separate bike and walking tail in Canemah Park
- Discovering the picnic tables overlooking the river - what a great lunch spot!
- Going up and down hills
- Grassy area overlooking the river
- Having a destination for the kids (park). Shaded areas were awesome to have
- Path through Canemah Park
- Portions west of the substation
- Riding in the bike trailer
- Riding through Old Canemah Park
- River views
- Seeing the river and meeting other neighbors
- Stairs (Canemah neighborhood)
- The off road
- The organization
- The park and the view
- The part around the Power Lines to make it more useful
- The scenery is great.
- The scenic walk through Old Canemah, as well as the exercise.
- The stairs and walking through the treed areas and the views
- The stairs, good exercise and good walkway
- The swings
- The view of the river and falls
- The views from the ridge above 99e
- The walk through Old Canemah Park
- Trails above children's park
- Walking through the Old Canemah Park. It was quiet and rather peaceful and the views of the falls were great.
- Well marked and scenic

What was your least favorite part?

- 99E by collision/body shop
- Along 99E - I wouldn't use this route you've done, too narrow there old Canemah they the neighborhood wouldn't appreciate the invasion of their peace and quiet.
- Beginning going by collision repair shop & PGE sub station. Need to go out on boardwalk
- Cars were kinda scary, but I was OK
- Dogs
- End St too hilly for biking
- Getting bit breaking up a dog fight due to another's dog off leash and ran up to my dog):
- Going home
- Gravel surface
- I enjoyed the whole walk
- It's hot
- Liked it all
- Lots of cars
- Mcloughlin Stretch
- Need landscaping at 2nd St.
- No complaints - beautiful day, nice stroll, helpful people & I saw a dragonfly
- Non
- Path along 99E
- Path along PGE fence
- PGE/McLoughlin walk
- Poison oak along trails at the children's park
- Portions east of the substation
- Power plant area
- Stairs
- Steep terrain
- The amount of traffic worries me as a cyclist with kids.
- The commercial area by 99
- The potential for poison oak.
- The small area on the highway
- The stairs
- The stairs, poison ivy.
- The street
- The walk across 99
- The walk through Canemah streets and up a hill (but really no big)
- Traffic on highway 99
- Walking along 99
- Walking along the power station
- Walking along the south side of McLoughlin/99E. Without a barrier of some type it seems risky!
- Walking through the grass at the power plant

Survey Results: Comments on Alignments

- #7 & 8 are where it feels unsafe
- #27 a crossing here would be wonderful!!
- #28 & 29 sidewalk improvements would be great, it feels unsafe with traffic so close
- #33 we have tried this path and it seems unsafe with the traffic that goes by so fast and the path gets so narrow
- 5th St seems like a bad option
- -A1/A2 preferred
- -Flat biking trails preferred
- Clearly mark where to go for stairs or path for baby's strollers & no stairs
- Family friendly streets.
- Good idea for the community, marked pedestrian paths are preferred
- I don't like to take trails which share traffic areas.
- I really like the County trail that circles Stonecreek Golf Course. This type would draw me to the city.
- I would just drive to Canemah Park with kids - they enjoy the hike to the cemetery
- I would like to preserve parking but want a trail to downtown OC. I bike from our neighborhood all week
- Include 3rd Ave alternative with lighting on the stairs :)
- Just do it!
- Leave out walking/biking between Old Canemah Park to children's park
- Like the idea of developing the walk along 99 - the boardwalk
- Looks good
- McLoughlin on riverside seems easier, but A1 alignment through Old Canemah would be nice as well.
- Need a couple of ped crossings across Mcloughlin
- No, Great job!
- Really love cycle across as neither 99E or South End save for peds/cycles to travel Canemah -> downtown
- Try to keep off McLoughlin
- You're doing GREAT

Other comments and safety suggestions

- A crossing at Jerome would improve safety and any traffic calming in the Canemah neighborhood would be helpful. As it is now, people tend to drive too fast in the neighborhood
- A safe crossing at 99E, a bike parking, Traffic calming
- Add crossings on 99E; Master plan for Oregon City Loop Trail
- All of the above and slower traffic signs for S High St. Keep drivers from using gravel road from Tumwater up to S High
- Bike improvements are my priority
- If you want me to visit the city to walk / bike then I need a public parking area and a map of the trails for the entire city.
- Just keep it near the falls, and trim some of those maples!
- Lighting and police patrol
- Lower speed limits. Could even be 30 MPH for a portion of 99E if a portion of the trail must be on that highway.
- More shade
- Ped Crossings! Yes
- Safe crossing at 99E is a great idea
- These sound great! Making easy access to Main Street area is welcome and wanted! We are residents of Canemah and REALLY want access directly to downtown/main area. We were disappointed the railway connection was removed from Phase I, but hopeful access will come.
- Would love bike lane on South End
- Yes to a safe crossing of 99E and yes to traffic calming measures... Traffic going too fast in neighborhood. Bike path on streets please!

IX.

APPENDIX 4 - STAKEHOLDER EVALUATION MATERIALS

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report

STAKEHOLDER EVALUATION MATERIALS

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report

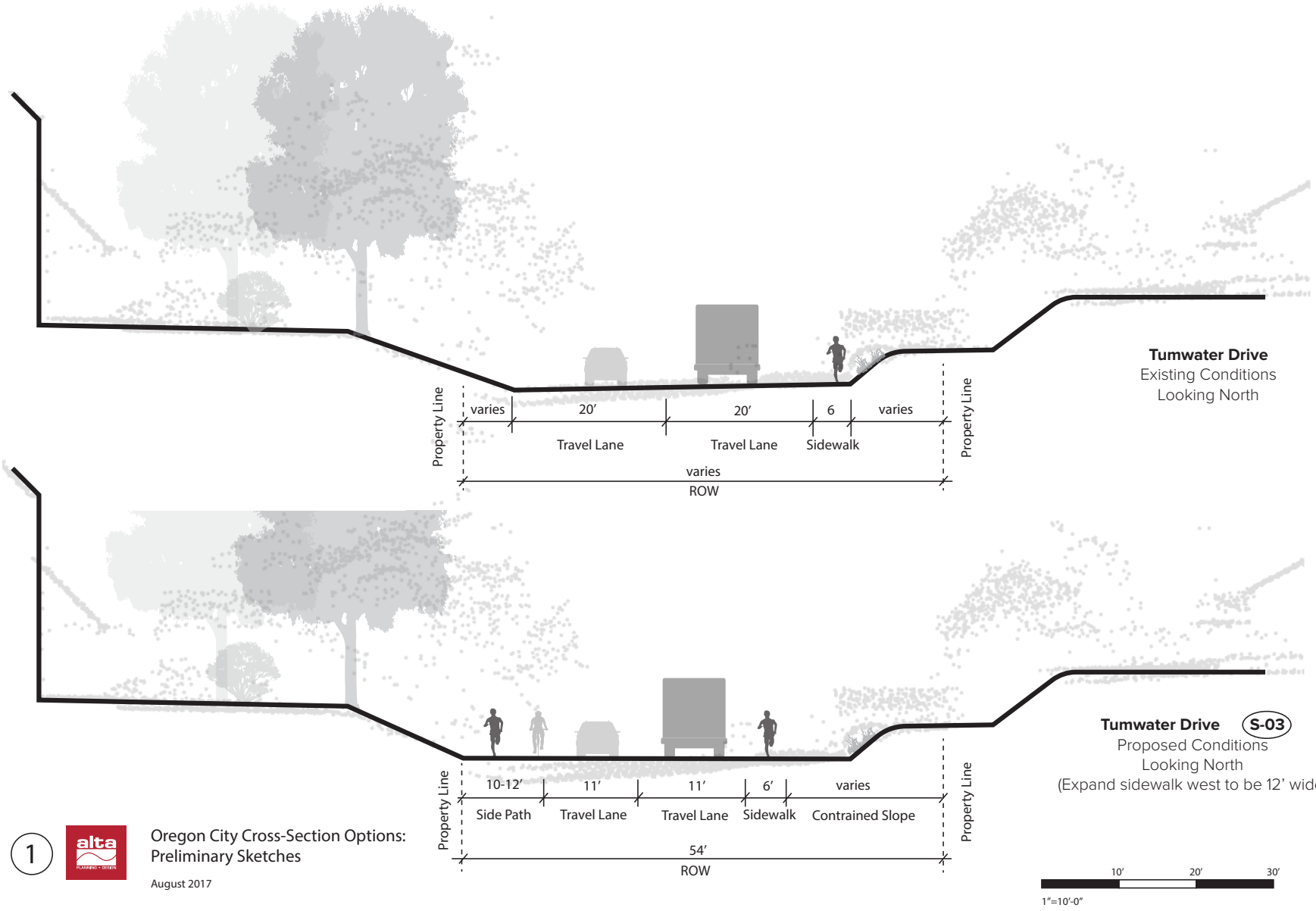
McLoughlin-Canemah Trail - Alternative Trail Alignments Evaluation Matrix DRAFT

	GOAL: Provide an attractive route of travel for people walking & biking between the McLoughlin Promenade & Canemah Children's Park that connects residential areas, parks, & businesses.		GOAL: Strive to provide facilities that serve all ages and abilities, including people with disabilities or mobility limitations		GOAL: Minimize risk and conflicts with between automobile traffic, bicycle traffic, and pedestrians.		GOAL: Provide a trail design that is context-sensitive, particularly to the Canemah NRHD, McLoughlin Promenade, and the McLoughlin Conservation District.		GOAL: Provide experiences and views of Willamette Falls.	GOAL: Celebrate experiences of nature while protecting and enhancing native vegetation and habitat within the corridor		GOAL: Discourage criminal activity and provide a secure environment for all users		GOAL: Responsibly utilize public funds to provide a high-quality trail experience both now and into the future		GOAL: Avoid use of private property in the Canemah National Register Historic District.		Geotechnical Constraints		Recommended Interim Alignment	Recommended Permanent Alignment
SEG ID	METRIC: Quality of experience		METRIC: Limitations for all ages and abilities facility		METRIC: Vehicle conflict risk		METRIC: Historic District		METRIC: Views of Willamette Falls	METRIC: Environmental impacts		METRIC: Environmental crime risk		METRIC: Cost		METRIC: Canemah NRHD property impacts	METRIC: Other Property Impacts		METRIC: Geotechnical constraints		Recommendation for interim trail alignment	Recommended for permanent trail alignment
S-1	◑	Pleasant residential street	●		◑	Shared use, low speed/volume	☑	McLoughlin Cons Dist.		●	No impact	●	High visibility/low risk	$	Signage and pavement marking w/ minimal construction, new paved connection to promenade	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-2	◔	Parking lot and driveway, residential/museum frontage street	◑	Steep slope on VFW driveway	◔	Shared driveway and low visibility	☑	McLoughlin Cons Dist.		●	No impact	●	High visibility/low risk	$	Signage and pavement marking w/ minimal construction	●	●	None	●	No impacts		TBD
S-3	◔	Curb-tight sidewalk, no street trees	●		◑	Cross at 99E				●	No impact	●	High visibility/low risk	$$	Widen sidewalk	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-4	◔	Curb-tight sidewalk, no street trees	●		◑	Cross at 99E				●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts		TBD
S-5	◔	Curb-tight sidewalk, no street trees	◑	Moderate slope (S 2nd)	◑	Cross at 99E or High St.	☑	McLoughlin Cons Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
A-1	◑	Close to river and highway	○	Stairs	◕	Full Separation			●	●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	PGE and ODOT ROW	●	No impacts		TBD
A-2	◑	Close to river and highway	●		◑	Moderate	☑	Canemah Hist Dist.	●	●	No impact	●	High visibility/low risk	$$	New Boardwalk	●	◕	PGE and ODOT ROW	◑	Boardwalk modification may require stabilization		TBD
A-3	◑	Close to river and highway	◑	Moderate slope + pinch point	◑	Moderate. Assume RFB at Jerome	☑	Canemah Hist Dist.	●	●	No impact	●	High visibility/low risk	$$$	New Boardwalk and Hwy 99 crossing	●	◕	PGE and ODOT ROW	◑	Boardwalk modification may require stabilization		TBD
B-1	◑	Views but close to highway	●		◑	Adjacent to 99E with + driveway crossings.			●	●	Medium impact	◕	Moderate	$$	New sidewalk/trail construction	●	◕	PGE and ODOT ROW	◕	Requires cut/fill w/min impacts	☑	TBD
B-2	●	Access to nature	●		●	No vehicle interaction			●	◕	Medium impact	◑	Moderate	$$	New trail construction	●	●	Close proximity to residence	◕	May require cliff face stabilization	☑	TBD
B-3	◕	Semi attractive pending development	●		●	Potential for no vehicle interaction	☑	McLoughlin Cons Dist.		●	No impact	●	No impact	$	Improvements packaged into re-development	●	◕	Commercial Parcels	●	No impacts		TBD
C-1	◕	Close to nature, views	◑	low-moderate slope + pinch point	◑	Assumes curb separation	☑	McLoughlin Cons Dist.	●	●	No impact	●	High visibility/low risk	$$	Extend pavement, signage and pavement marking. May need blasting	●	●	Close proximity to residence	●	No impacts		TBD
C-2	●	Access to nature	◔	very steep slope	●	No vehicle interaction				◕	Medium impact	◑	Isolated	$$	Extend pavement, signage and pavement marking	●	◑	PGE	◕	Requires cut/fill w/min impacts		TBD
C-3	◑	Close to nature	◑	low-moderate slope	◑	Assumes curb separation	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$$	Extend pavement, signage and pavement marking	●	◕	Close proximity to residence	●	No impacts		TBD
C-4	◑	Pleasant residential street	◑	moderate slope	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signage and pavement marking w/ minimal construction	●	◕	Close proximity to residence	●	No impacts		TBD
C-5	●	Access to nature	◔	very steep slope	◕	Unimproved ROW; driveways	☑	Canemah Hist Dist.		◑	NROD impact	◕	Isolated	$$	New trail construction	●	◕	Close proximity to residence	◔	Landslide potential		TBD
S-6	◑	Pleasant residential street	◔	moderate slope (3rd Ave)	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-7	◑	Pleasant residential street	◑	moderate slope (3rd Ave)	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-8	◑	Pleasant residential street	○	Stairs	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-9	◑	Pleasant residential street	◔	steep slope (Ganong)	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-10	◑	Pleasant residential street	●		◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
S-11	◑	Pleasant residential street	◑	low-moderate slope	◕	Low speed/volume	☑	Canemah Hist Dist.		●	No impact	●	High visibility/low risk	$	Signs & pvmt markings w/min const	●	◕	Close proximity to residence	●	No impacts	☑	TBD
	Assumptions: Value given to access to nature, street trees, buffers from traffic, and neighborhood character.		**Assumptions:** All ages and all abilities requires slopes at or below 5%. 5-15% is less comfortable for bicyclists and other users.		**Assumptions:** Designs minimize risk associated with traffic speeds and volume. Optimal scoring assumes no interaction with vehicular traffic.		**Assumptions:** Designs will not violate any provisions of historic or conservation districts.		**Assumptions:** There is an existing view of the falls.	**Assumptions:** To be provided by environmental consultant.		**Assumptions:** Moderate risk areas are those that are isolated from both roadways and occupied structures.		**Assumptions:** As indicated above		**Assumptions**: No direct impacts within CNRHD	**Assumptions:** Direct impacts passes through private property. Indirect impacts imply close proximity.		**Assumptions**: To be provided by geotechnical consultant		**Assumptions:** Preliminary City Staff recommendation	**Assumptions:** TBD following stakeholder meetings

LEGEND

● Optimal	◕ Minor Constraints	◑ Moderate Constraints	◔ Major Constraints	○ Not advisable or feasible

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



1

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

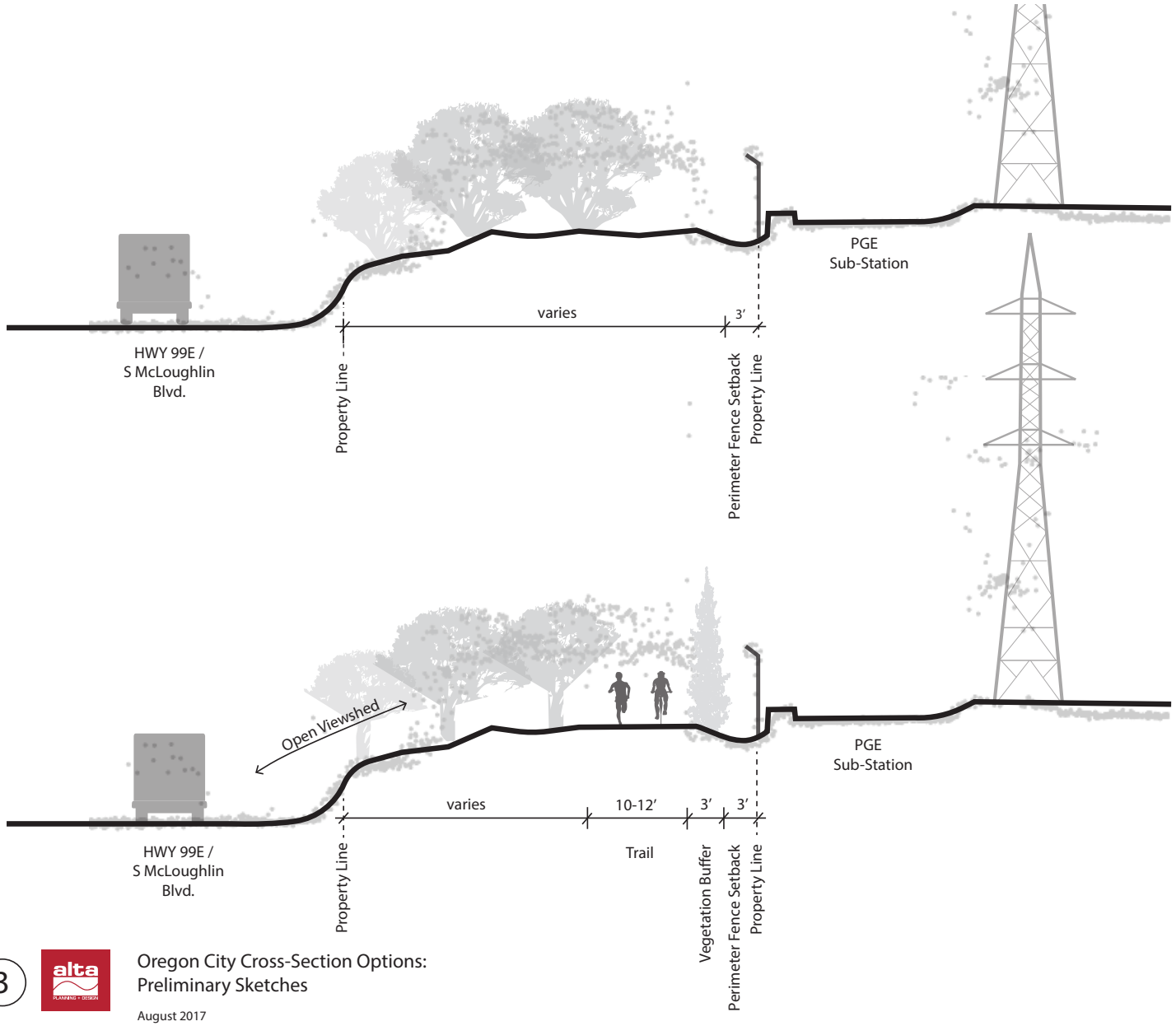
Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report

2

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



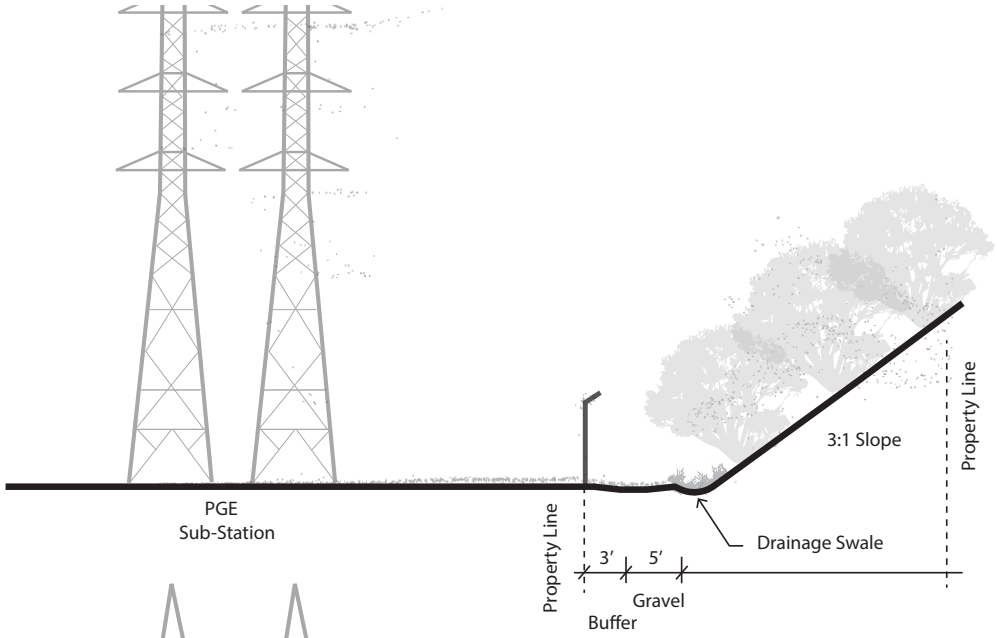
West Edge of PGE Property
Existing Conditions
Looking North

West Edge of PGE Property **B-01**
Proposed Conditions
Looking North
(In constrained condition, trail is
6′ from HWY 99 shoulder)

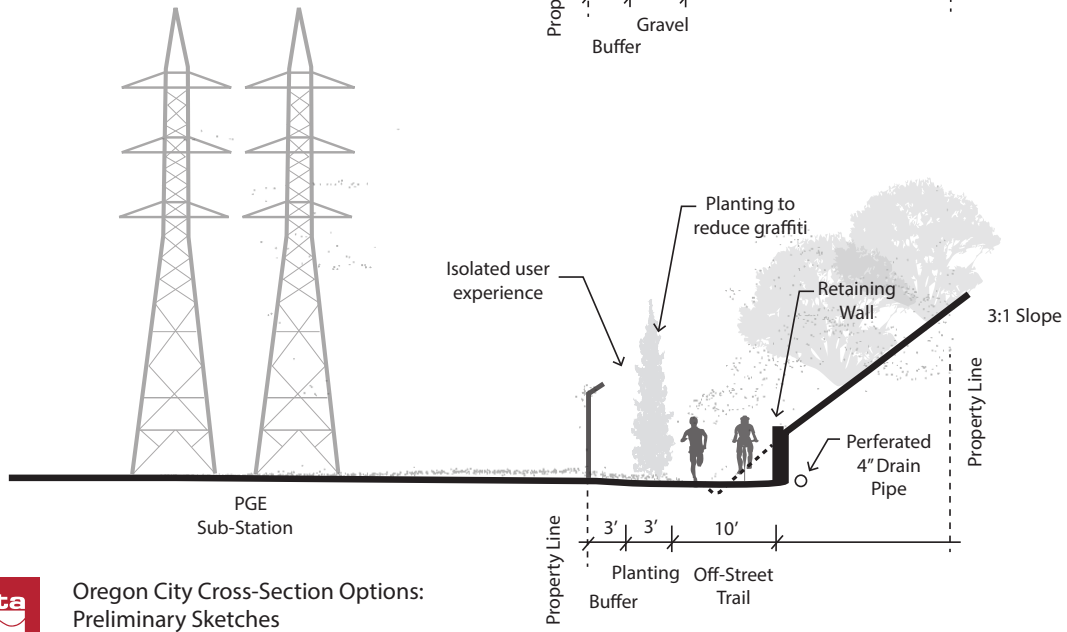
3 Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



SE Corner of PGE Property
Existing Conditions
Looking North



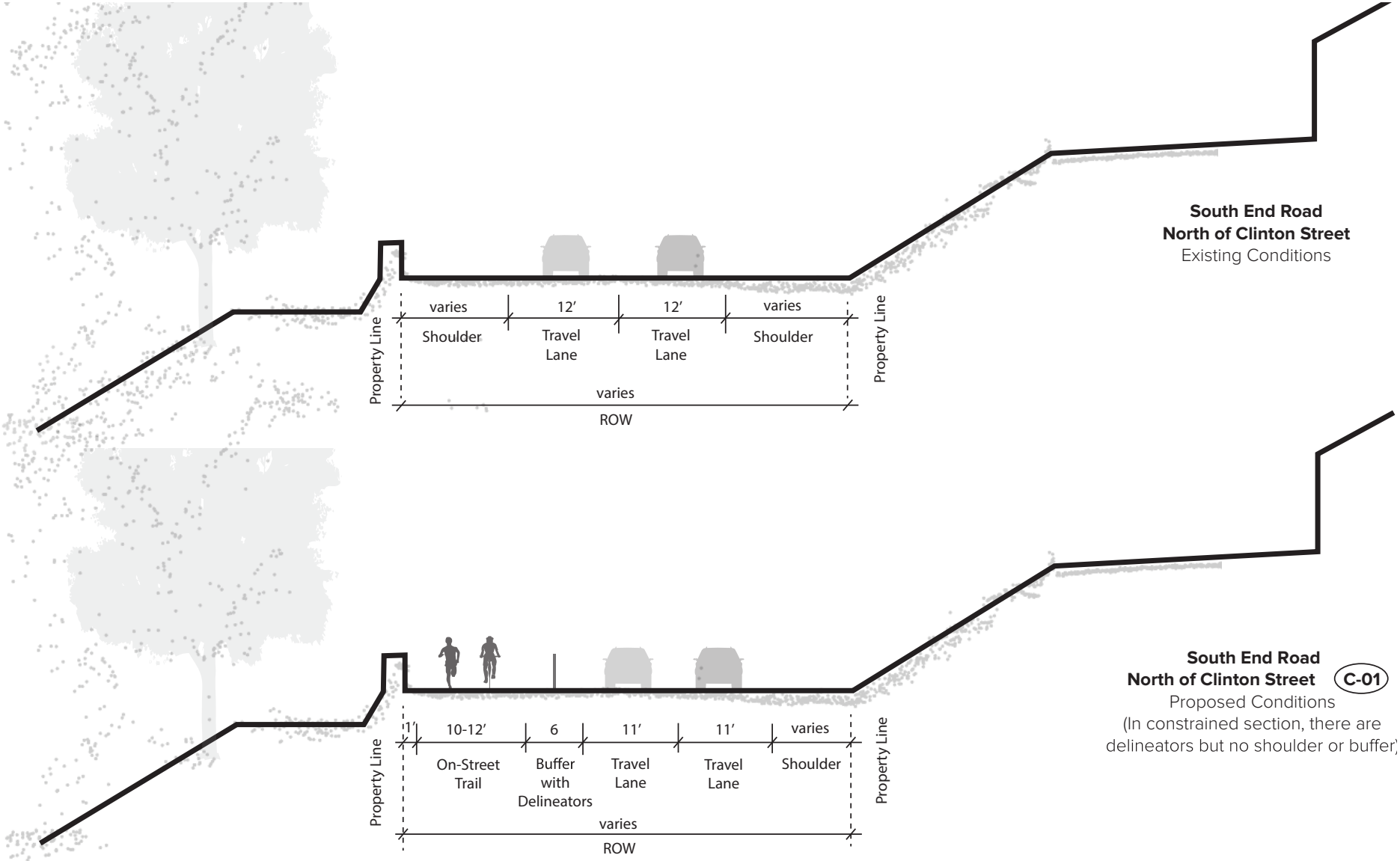
SE Corner of PGE Property **B-03**
Proposed Conditions
Looking North

10′ 20′ 30′
1″=10′-0″

4 Oregon City Cross-Section Options: Preliminary Sketches

August 2017

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



South End Road
North of Clinton Street
Existing Conditions

South End Road
North of Clinton Street **C-01**
Proposed Conditions
(In constrained section, there are delineators but no shoulder or buffer)

10′ 20′ 30′
1″=10′-0″

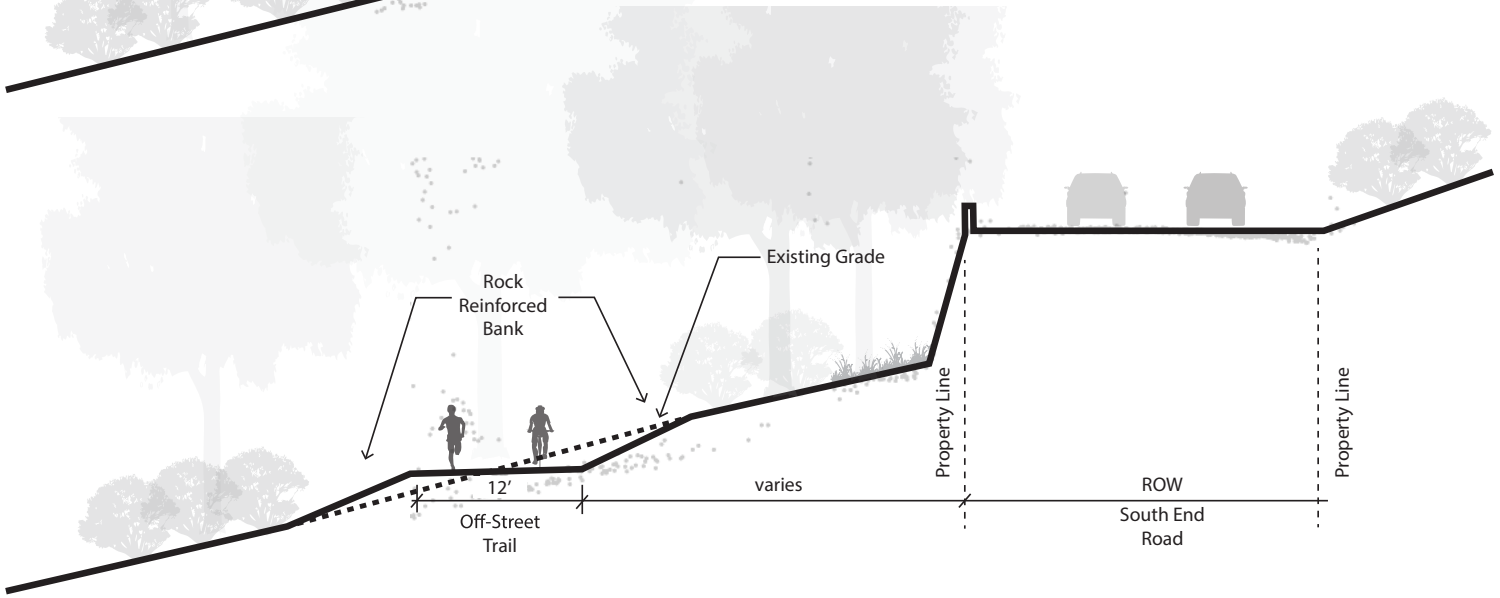
5

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report

South End Road
Existing Conditions
Looking North



South End Road **C-02**
Proposed Conditions
Looking North

6

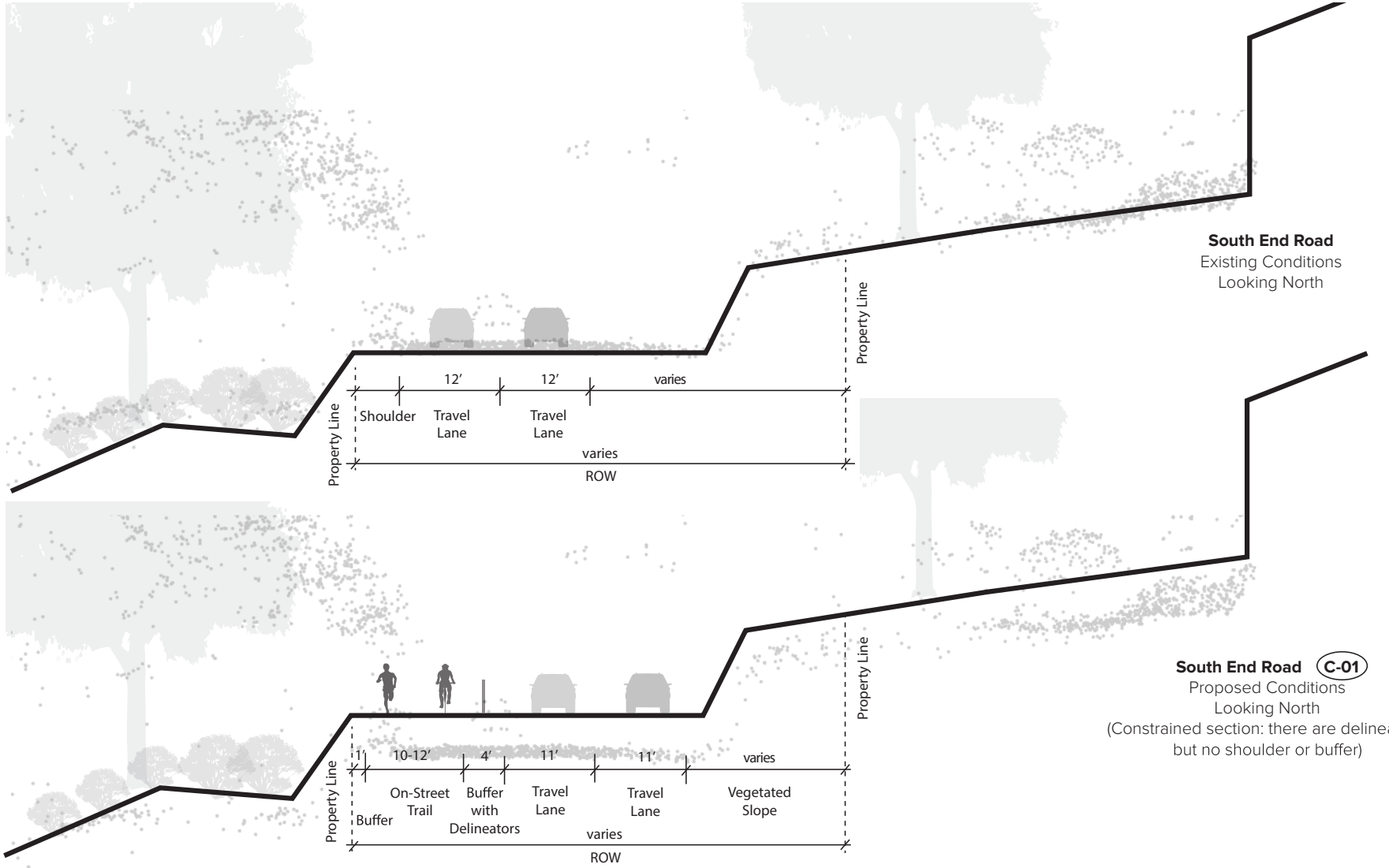
Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

10′ 20′ 30′

1″=10′-0″

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



7

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

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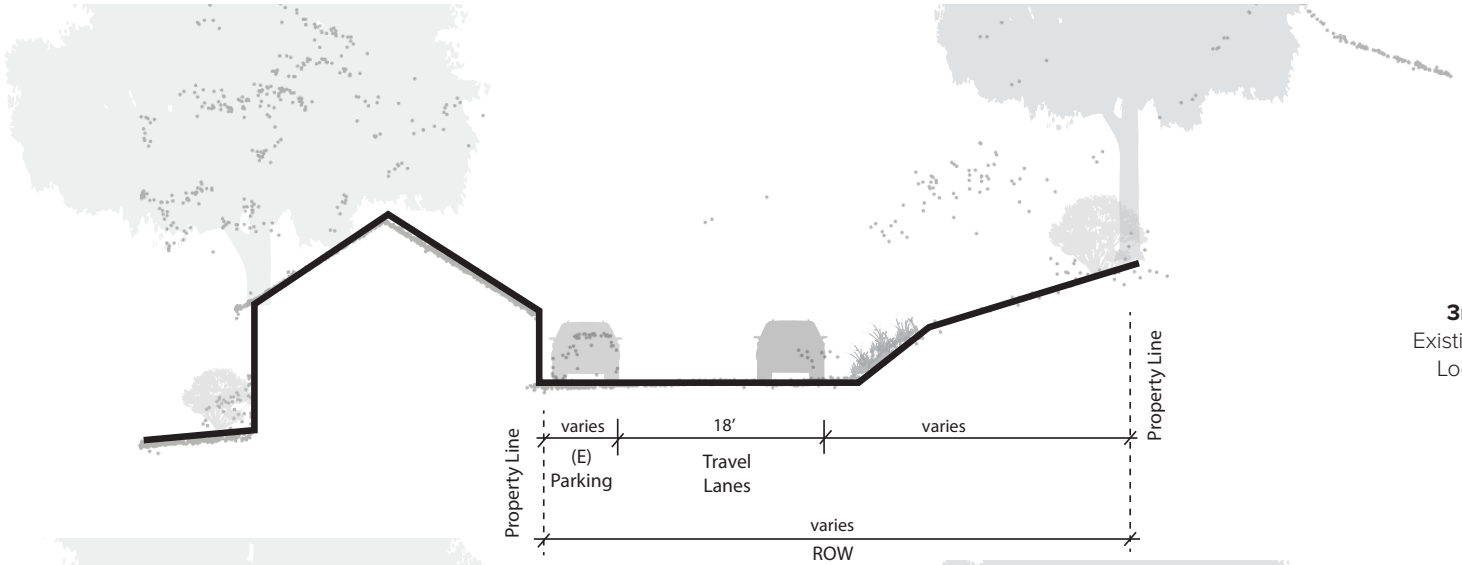
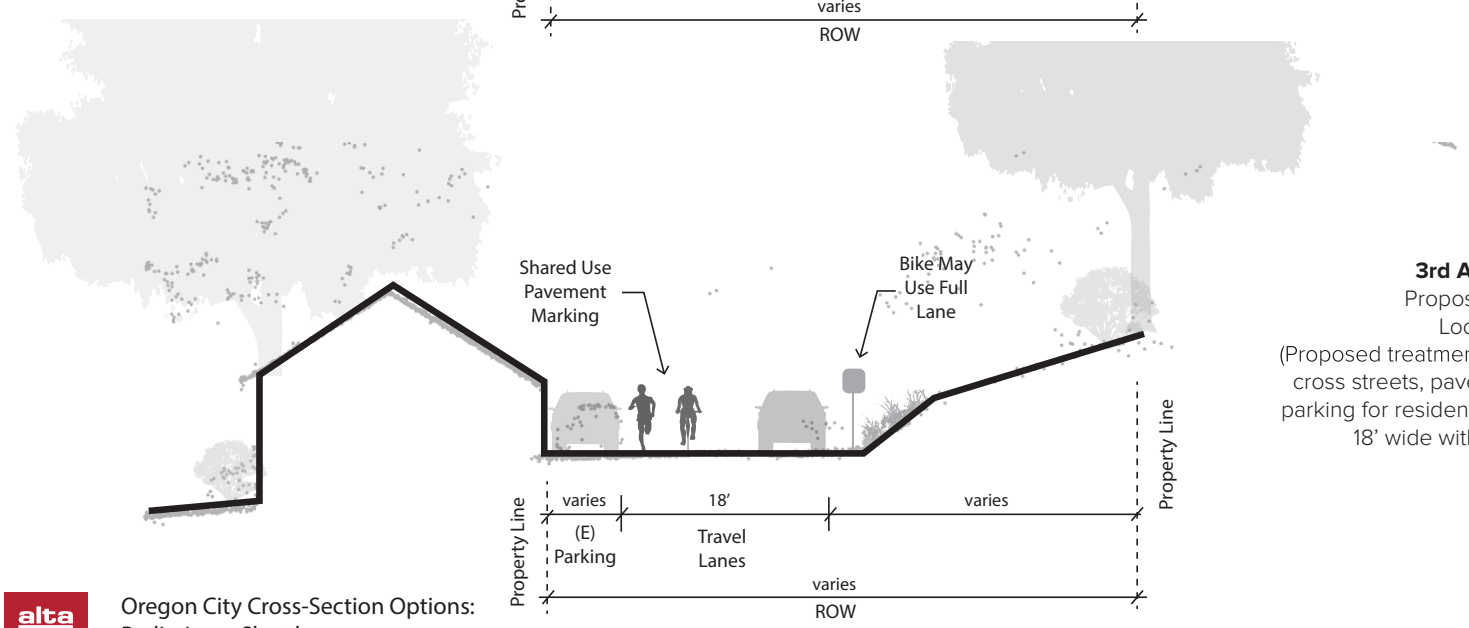


3rd Avenue
Existing Conditions
Looking North



3rd Avenue **S-09**
Proposed Conditions
Looking North
(Proposed treatment includes traffic calming at cross streets, pavement markings, & striped parking for residents. Constrained condition is 18' wide with on-street parking.)

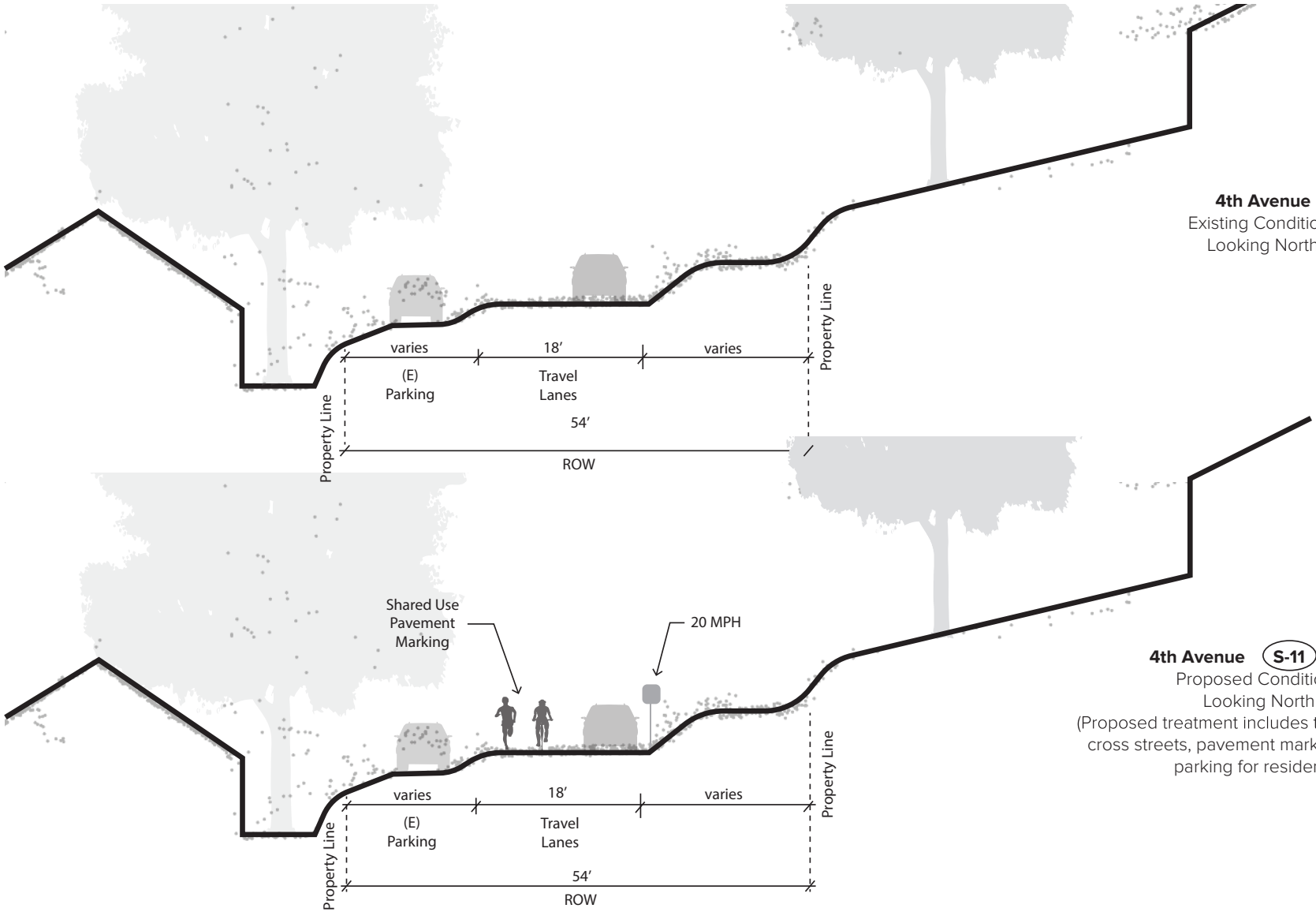
10' 20' 30'
1"=10'-0"

8

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

Note: Information shown in these early evaluation materials may be different from the finalized information shown in the body of this report



4th Avenue
Existing Conditions
Looking North

4th Avenue S-11 S-12
Proposed Conditions
Looking North
(Proposed treatment includes traffic calming at cross streets, pavement markings, & striped parking for residents.)

10′ 20′ 30′
1″=10′-0″

9

Oregon City Cross-Section Options:
Preliminary Sketches

August 2017

X.

APPENDIX 5 - PLANNING LEVEL COST ESTIMATES

PLANNING-LEVEL COST ESTIMATES

Note: These planning-level costs were prepared for alignment alternative evaluation and comparison only.

Segment Name	Notes	Fully Burdened Cost
ALIGNMENT - A		
BOARDWALK	Replace existing	$2,500,000
ON STREET	Canemah and access points to 99E, includes signal at Jerome	$371,175
PED BRIDGE	No improvement to existing bridge	$0
WIDEN SIDEWALK	99E	$3,169,110
TOTAL		**$6,040,285**
ALIGNMENT - B		
ON STREET	Canemah	$36,435
SEPARATED TRAIL	2nd and Tumwater to Old Canemah Park Trail (includes crossing at 2nd)	$1,687,999
WIDEN EXISTING TRAIL	Old Canemah Park Trail	$245,490
WIDEN SIDEWALK TO TRAIL WIDTH	Tumwater	$119,700
TOTAL		**$2,089,624**
ALIGNMENT - C		
ON STREET	Canemah and access point at 5th, does not include signal at S 2nd	$45,465
SEPARATED TRAIL	Includes switchback ramp to Blanchard	$450,198
WIDEN ROADWAY FOR SIDE PATH	Includes retaining wall, and minor excavation of basalt	$2,110,023
TOTAL		**$2,605,686**

Note: These planning-level costs were prepared for alignment alternative evaluation and comparison only.

On-Street Improvements - Canemah neighborhood					
Item Description	**Unit**	**Quantity per mile**	**Unit Price**	**Total**	**Notes**
Wayfinding Signs	EA	6	$600.00	$3,600.00	
Regulatory Signs	EA	4	$350.00	$1,400.00	Every 400' each direction
Pavement markings	EA	12	$750.00	$9,000.00	Every 200' each direction, thermoplastic bike with chevron
Stop signs	EA	4	$150.00	$600.00	
New speed limit signs	EA	5	$150.00	$750.00	
Median refuge island	EA		$12,000.00	$0.00	1 per mile
Painted curb extensions	LS	4	$500.00	$2,000.00	
Speed humps	EA		$2,000.00	$0.00	Every 800'
Curb Ramp Improvements	EA		$2,500.00	$0.00	Curb ramp upgrades at on 25% of intersections
Diverter	EA		$8,000.00	$0.00	Every 2 miles
Estimated Direct Cost				$17,350.00	
Contingency	40%			$6,940.00	
Engineering / Design	30%			$5,205.00	
Construction / Overhead / Mobilization	25%			$4,337.50	
Project Administration	15%			$2,602.50	
Estimated Construction Costs (70% burden)				**$36,435.00**	

Note: These planning-level costs were prepared for alignment alternative evaluation and comparison only.

Shared Use Path - 2nd to the Old Canemah Trail segment					
Item Description	**Unit**	**Qty**	**Unit Cost**	**Total**	**Notes**
Clearing and Grubbing	SF	24026	$0.35	$8,409.00	shoulders + ac trail + conc trail
Excavation	CY	890	$24.00	$21,360.00	shoulders + ac trail + conc trail
Erosion Controls	LF	4600	$2.50	$11,500.00	both sides, length of project
Sedimentation Controls	LF	2300	$7.15	$16,445.00	hay bales, assume one side for planning
Grading	SY	2670	$15.00	$40,050.00	shoulders + ac trail + conc trail
Reinforcement at top of cliff	LF	200	$166.50	$33,300.00	
Crusher fine shoulders	CY	38	$100.00	$3,800.00	2) 2' wide
Concrete curb and gutter	LF	1015	$35.00	$35,525.00	
Asphalt path over aggregate base	SF	7775	$9.00	$69,975.00	10' wide, PGE to OCT
Concrete path over aggregate base	SF	15225	$12.00	$182,700.00	15' wide, no shoulders, 2nd to PGE
Protected trail crossing of 2nd	LS	1	$110,000.00	$110,000.00	
Mile markers	EA	0	$350.00	$0.00	
Landscape screening	SF	810	$4.50	$3,645.00	
Pole or guy wire relocation	LS	1	$250,000.00	$250,000.00	PGE said 20k - 500k
Tree planting	EA	32	$350.00	$11,200.00	assume 4 new trees for every 1 removed
Tree removal	EA	8	$350.00	$2,800.00	assume 16 per 1/4 mile
Bollards	EA	0	$1,100.00	$0.00	assume none
Wayfinding Signs	EA	4	$600.00	$2,400.00	
Regulatory and Warning Signs	EA	2	$350.00	$700.00	
Mechanical Seeding	SF	0	$0.20	$0.00	
Estimated Direct Cost				$803,809.00	
Contingency	40%			$321,523.60	
Engineering / Design	30%			$241,142.70	
Construction / Overhead / Mobilization	25%			$200,952.25	
Project Administration	15%			$120,571.35	
Estimated Construction Costs (70% burden)				**$1,687,998.90**	

Note: These planning-level costs were prepared for alignment alternative evaluation and comparison only.

Widen Shared Use Path - Old Canemah Park					
Item Description	**Unit**	**Qty**	**Unit Cost**	**Total**	**Notes**
Clearing and Grubbing	SF	11790	$0.35	$4,127.00	shoulders + 5'ac
Excavation	CY	435	$24.00	$10,440.00	shoulders + 5'ac
Erosion Controls	LF	1310	$2.50	$3,275.00	both sides, length of project
Sedimentation Controls	LF	655	$7.15	$4,683.00	hay bales, assume one side for planning
Grading	SY	875	$15.00	$13,125.00	1 shoulder + 5' trail
Crusher fine shoulders	CY	64	$100.00	$6,400.00	2) 2' wide
Asphalt path over aggregate base	SF	6550	$9.00	$58,950.00	
Mile markers	EA	0	$350.00	$0.00	
Tree planting	EA	32	$350.00	$11,200.00	assume 4 new trees for every 1 removed
Tree removal	EA	8	$350.00	$2,800.00	assume 16 per 1/4 mile
Bollards	EA	0	$1,100.00	$0.00	assume none
Wayfinding Signs	EA	2	$600.00	$1,200.00	
Regulatory and Warning Signs	EA	2	$350.00	$700.00	
Mechanical Seeding	SF	0	$0.20	$0.00	
Estimated Direct Cost				$116,900.00	
Contingency	40%			$46,760.00	
Engineering / Design	30%			$35,070.00	
Construction / Overhead / Mobilization	25%			$29,225.00	
Project Administration	15%			$17,535.00	
Estimated Construction Costs (70% burden)				**$245,490.00**	

Note: These planning-level costs were prepared for alignment alternative evaluation and comparison only.

Widen Sidewalks to 12' - Tumwater (VFW-2nd)					
Item Description	**Unit**	**Qty**	**Unit Cost**	**Total**	**Notes**
Saw cut and remove asphalt (8' width)	LF	375	$15.00	$5,625.00	(cost assumes widen path by 6' and 2' to form curb and gutter)
Remove concrete curb	LF	375	$6.00	$2,250.00	
Standard concrete curb (6")	LF	375	$35.00	$13,125.00	
Guard rail/barrier along curbline	LF		$95.00	$0.00	
Tumwater closure	LS	1	$5,000.00	$5,000.00	Striping and removable bollards
Restripe travel lanes	LF	375	$3.00	$1,125.00	
Striping removal	LF	375	$1.00	$375.00	
Concrete Path	SF	2250	$12.00	$27,000.00	6' widening Tumwater
Concrete Path	SF		$12.00	$0.00	7' widening, 2nd, 99E
Wayfinding Signs	EA	3	$600.00	$1,800.00	
Warning Signs	EA	2	$350.00	$700.00	(assume 2 warning signs per block)
Estimated Direct Cost				$57,000.00	
Contingency	40%			$22,800.00	
Engineering / Design	30%			$17,100.00	
Construction / Overhead / Mobilization	25%			$14,250.00	
Project Administration	15%			$8,550.00	
Estimated Construction Costs (70% burden)				**$119,700.00**	

XI.

ADVISORY GROUP MEETING NOTES & LETTER

McLoughlin-Canemah Trail Advisory Group

December 14, 2017

Dear Oregon City Planning and City Commissioners,

The McLoughlin-Canemah Trail Advisory Group held four meetings along with site visits during the trail planning process. The group's goal was to reach consensus for a trail alignment and design elements for the McLoughlin-Canemah Trail. Many ideas were considered and compromises were made. Each of the alignment alternatives had positive and negative aspects, making for a challenging decision. The Advisory Group strove to meet the goals set at the beginning of the process and to balance the various desires of the community.

By signing this letter, the members of the advisory group acknowledge and accept the decisions that were made at the Advisory Group meetings and urge the Planning and City Commissions to trust that there was a robust public process that led to the recommendations.

Sincerely,

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

Meeting: McLoughlin-Canemah Trail Plan Community Advisory Group Meeting #1
Date: July 11, 2017
Time: 6PM – 8PM
Place: First City Central Bistro – 1757 Washington Street (Amtrak Station)

Meeting Attendance: See attached attendance sheet.

Meeting Notes:

1. Introductions – Members introduced themselves, and project staff discussed the Project Purpose, Advisory Committee Purpose, and Group member expectations. All group members present signed the Member agreement with ground rules and expectations.

2. Project Goals: The group reviewed the draft goals and survey results. Discussion and comments included:

   - Most trail users will probably be walking, not biking.
   - Biking is difficult due to slopes and poor visibility.
   - Speeds downhill (like on Ganong) need to be controlled better.
   - Cars turning into Canemah from 99E can't see left or right down 3rd Ave.
   - Bikes are not currently permitted in Canemah Bluff natural area.
   - The MCT is a shared use path, meant to be for walking and biking. City standard is 10-12 feet wide and paved, but with the constraints of this area we might not be able to meet that standard for the full trail.
   - South End Rd and 99E are not safe for bikes, so eventually the Oregon City Loop trail will be the preferred bike route to go south, once it is built. At that time, we might see more use of this trail by people biking.
   - Highest crime concern is substance abuse.
   - People sleep in cars at Old Canemah Park parking lot sometimes
   - Where will trail users from outside the area park? Fear use of neighborhood for parking.
   - Can parking be expanded at Children's park or on 99E? People could walk to park from 99E.
   - Metro owns a lot south of the City limits on 99E – could that be an access alternative rather than parking in Canemah neighborhood?
     Note: Metro does not have a Master Plan for the Canemah Bluff Natural Area yet. Parking areas and additional trailheads would be determined through a Master Planning process. Parking for Canemah Bluff natural area and Canemah Children's Park will not be a topic or goal of this trail project, but the project team will strive to craft some recommendations for parking in general that could address multiple sites.
   - Parking at VFW could even generate revenue, but timing is an issue. VFW needs the lot during certain times.
   - Tumwater Rd is dangerous, drivers try to beat the light and come in very quickly. Could it be closed off to cars? Additional parking for museum might be possible if it is closed.

The group amended a few of the goals, but did not get through the entire list. They decided to move on to the next agenda topic and revisit goals later. Staff will send out the amended version to the group asking for further review over email in the weeks following the meeting.

3. Trail Alignment Alternatives: The group reviewed the draft alignments. Discussion and comments included:

   VFW/Museum/S 2nd Area:
   - Would like to see trail next to museum
   - The City owns two homes between Tumwater and High Street. Could these properties be useful to ensure alignment is close enough to the museum?
   - VFW driveway is steep and dangerous – poor visibility. Could you take 2nd ave from the Promenade to High Street instead?
   - 4-way stop at High street is safer than Tumwater crossing.
   - Is it possible to get a signal at High and S 2nd?
   - Crossing S 2nd at 99E is possible but not comfortable.
   - Could we consider the whole Promenade as part of the MCT and show the existing alignment on maps and signs?

   Highway 99E:
   - Air quality issues along 99E
   - Traffic safety is a concern on 99E; fast speeds, no separation.
   - People don't want to walk along 99E, but along the water is desirable. Could we make it more comfortable to walk along 99E?
   - In ODOT right of way, if something is changed it has to be fully upgraded to ADA standards, which can be very expensive.
   - If you want to put the trail behind buildings on 99E, future redevelopment would need to not turn its back on the trail.

   Canemah Area:
   - 5th avenue and South End Rd is a school bus stop
   - From South End Rd, could you drop into Old Canemah Park upper trail?
   - Property next to Coffee creek and Old Canemah park is for sale.

   Alignment C was amended to come off the promenade from 2nd street to High Street, rather than on 1st Street, to avoid use of the stairs at 1st Street. An alignment alternative was added coming off South End Road and into the upper trail section of Old Canemah Park.

4. Next Steps
   - Project staff will send link to alignment map, survey results, and amended draft goals out to group
   - Next meeting is August 15 at the Library, same time.
   - Greenway for a Day event is July 29. Members signed up to volunteer. Project staff will advertise event and send ample notice to neighbors along the greenway route. Project staff will send information to the group as soon as possible. The event also includes an Ivy Pull at Old Canemah Park, in partnership with the Parks Department and the Oregon City Parks Foundation.

OREGON CITY

Community Development – Planning

221 Molalla Ave. Suite 200 | Oregon City OR 97045
Ph (503) 722-3789 | Fax (503) 722-3880

Meeting: McLoughlin-Canemah Trail Plan Community Advisory Group Meeting #2
Date: August 15, 2017
Time: 6PM – 8PM
Place: Oregon City Library Community Room – 606 John Adams St, Oregon City, OR

Meeting Attendance: See attached attendance sheet.

MEETING NOTES

6:00 to 6:10PM Introductions and Goals for the Meeting

Kelly Reid, the City's project manager, described the goal for the meeting to reach consensus on a trail alignment.

6:10 to 6:25PM Status Update and Greenway for a Day Recap

The group discussed survey results and anecdotes from the Greenway Event. Approximately 75 people participated in the event. A summary of the event and results of the survey is attached to the meeting notes.

Kelly gave a brief explanation of the riverwalk project, including the pedestrian bridge and the Canemah connection. She said that due to the cost and challenges of building a bridge over the railroad, the Canemah Connection is a long term phase and would not likely be built in the near future.

6:20 to 7:45 PM Trail Alignment Alternative Evaluation

Christo Brehm from ALTA Planning + Design led a discussion about the alignment map, evaluation matrix, and cross sections. A summary of the discussion is below:

The group began with the S-01 through S-06 segments near the Museum, VFW, and S 2nd.

Kelly shared that the City's Transportation System Plan (TSP) includes a future project to add a signal at the current 4-way stop at High Street and S 2nd. The group agreed that High Street is currently the safest place to cross S 2nd, and will be even safer once a signal is installed. One member thought the 4-way stop is dangerous and perhaps the 99E crossing would be safer.

The intersection at Tumwater is seen as problematic. The group discussed a traffic circle and a Rapid Flash Beacon, but were concerned that those treatments would not be safe enough for a crossing.

The group discussed the VFW alignment (S-02) versus the High Street alignment (S-01) and were concerned that the High Street option does not offer direct access to the Museum.
If S-01 is chosen, the group agreed that good signage could direct people toward the Museum. One member thought there was a speeding problem on High Street that should be addressed.

Some thought that the S-02 option was more attractive because of the direct access to the museum and more direct route, in addition to the better connection to the future riverwalk pedestrian bridge. The challenges with this option are the VFW driveway and the crossing at Tumwater.

The group then talked about the A segments. One member mentioned that A-01, the pedestrian bridge and stairs over 99E, is slippery when wet. The Boardwalk (A-02) would need a lot of repair. It is not currently wide enough and its structural condition is questionable. Many thought it was not family friendly.

The group reached consensus that the A alignment is not the preferred alignment.
Some members wished to keep the A alignment as a loop option – not the main path, but a secondary path to create a walking loop. The group discussed that it could be upgraded at the time of future construction of the riverwalk Canemah connection, which will occur in the distant future.

The group then began discussing the B versus the C alignments.

Some members thought the options along 99E were unattractive. Even so, because the B alignment also passes through Old Canemah Park, the B option was seen as the most attractive path by some members. Old Canemah Park is considered the highlight of the trail for many. The survey results reflect this sentiment as well.

The group discussed the C options, noting that blasting would be required along South End Road to create enough width to add a pathway. The C-02 alignment into PGE property and upper Old Canemah Park was described as having very steep slopes. The group was more interested in the connection to 5th Avenue (C-04) and the unimproved right of way (C-05).

The constraints of C-05 were discussed, including the severe geotechnical hazards and landslide risk, and the current use of the area as extensions of neighbors' backyards, because it is unimproved and does not appear to be right of way. Christo said the project geotechnical engineer recommended against the C-05 alignment due to safety concerns. One member mentioned that a study was recently done for a new home in that area, and found little hazard risk. Christo and Kelly said they could investigate the slopes and landslide risks further, including asking the project geotechnical engineer for more input. Unfortunately, the C-5 alignment is probably inaccessible due to the steep slope and overgrown vegetation.

The group took a straw poll on B versus C alignments, and found almost equal support, with slightly more people in support of the B alignment.

The group agreed to come back to the third meeting with more information to determine the final alignment.

Kelly agreed to set up a time for a site visit to evaluate the C alignment, because the first site walk only included the A, B, and shared (S) alignments.

7:45 to 8:00PM ***Next Steps***

The next meeting is tentatively scheduled for September 12. Kelly will be in touch with the group to schedule the site visit and confirm the next meeting date.

UPCOMING EVENTS / IMPORTANT DATES

September 7	McLoughlin Neighborhood Association meeting
September 12	Meeting #3
September 14	Canemah Neighborhood Association meeting
September 26	Historic Review Board Meeting
October TBD	City Commission review of plan

OREGON CITY

Community Development – Planning

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Meeting: McLoughlin-Canemah Trail Plan Community Advisory Group Meeting #3
Date: September 21, 2017
Time: 5:30PM – 8PM
Place: Oregon City Library Community Room – 606 John Adams St, Oregon City, OR

MEETING NOTES

5:30 to 5:40 PM Introductions and Goals for the Meeting

Kelly Reid described the purpose of the meeting was to reach consensus on a trail alignment recommendation, and, if there is time, to identify other safety recommendations to make to the City Commission.

5:40 to 6:45 PM Trail Alignment Alternative Evaluation

Kelly Reid summarized the last meeting and gave a short summary of the Canemah and McLoughlin neighborhood association meetings she attended.

Mary Stewart from ALTA Planning and Design reviewed alignment alternatives B and C with the group. The group made comments on the alignments through a roundtable discussion. Comments included:

- The B alignment is more direct and includes Old Canemah Park, which is the highlight of the area
- PGE transmission poles and/or guy wires may need to be relocated in alignment B. There is greater impact to PGE property with alignment B.
- There are lots of large curb cuts on 99E – it would be nice to define and limit driveway width
- Jersey barriers on 99E would be ideal
- Stop signs at 3rd and Ganong would be nice, and we may want to consider 4th and Ganong as well due to visibility issues
- Stop signs and speed humps within Canemah will calm traffic and make the trail safer. However, stop signs and speed humps might be frustrating for neighbors who are used to not having to stop.
- Canemah could be signed as local access only from 99E
- Changing the location of the VFW driveway to 1st Street would be ideal and allow for two-way access. However, neighbors may oppose new traffic patterns on their street.
- The option going behind the development on 99E is great but it is long term and dependent on private redevelopment
- Crossing of S 2nd Street is concerning no matter where it happens, but especially at Tumwater

- Closing Tumwater Drive is desired
- There is too much noise from 99E traffic. Alignment C on South End Rd. seems like a more pleasant walk. However, walking on South End is not peaceful. Traffic is fast.
- Alignment C seems safer although it doesn't provide views and access to nature.
- A suggestion to use High Street to the B alignment to avoid the VFW driveway and Tumwater Drive (combining B and C alignments).
- The driveway to the Old Canemah Park parking lot is steep with low visibility and should be improved
- Both options would include tree removal – B in Old Canemah Park and C in 5th Ave right of way behind people's homes
- A suggestion to peel the trail off of South End road and connect with the upper tail in Old Canemah Park. However, slopes on the upper trail are near 30%.

During the discussion, more positive comments were made about alignment B, and more members expressed that they favored alignment B over alignment C. In light of that, Kelly asked the group to raise their hands if they could live with a recommendation of alignment B. All but one of the group members said they could do so, with the following caveats or improvements made along the alignment:

- Closure of Tumwater left turn from 99E
- Investigate moving VFW Driveway to 1st Street (one member opposed unless it is entrance or exit only)
- Safer crossing of S 2nd
- Safety barrier along 99E segment
- Safer Old Canemah Park driveway solution
- Traffic calming in Canemah*
- Wayfinding signage with minimal sign clutter

*Priorities for traffic calming in Canemah include reducing the speed limit to 20 MPH, using sharrows or other on-street markings, and using visual narrowing through on street markings. Traffic calming options that are lower priority, or which should be utilized if initial efforts do not suffice, include adding stop signs, speed humps, and delineating the on-street parking spaces with potential residential permit parking.

Mary shared a mockup sketch of an idea for a safe crossing of S 2nd at Tumwater that could be part of an option that included aligning the trail behind development on 99E. The short and medium term B alignment is along the frontage of 99E, but the long term alignment could be behind the development, as long as the future development does not 'turn its back' to the trail, creating security issues. A sketch of the crossing solution for S 2nd can be included in the trail plan as an appendix.

Kelly thanked the group for their time and effort and invited them to attend future City Commission meetings when the trail plan is up for adoption. Kelly will send a summary of the recommendation to the group in the next week, and will continue to provide updates to the group as the plan progresses.

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Meeting: McLoughlin-Canemah Trail Plan Community Advisory Group Meeting #4
Date: December 14th, 2017
Time: 5:30PM – 7:30PM
Place: Oregon City Library Community Room – 606 John Adams St, Oregon City, OR

MEETING NOTES

Introductions and Goals for the Meeting

Review of Draft Report and What We've Heard

Mary reviewed the three alignments considered and the current interim and long term alignments.

Discussion of additional recommendations and clarifications. Decisions/votes are underlined.

- VFW feedback: A new driveway from High Street is not necessarily desired. VFW representatives would rather see the existing driveway widened to accommodate the trail. Some members of the group thought the new driveway from High Street could be a good "plan B."
  The Group agreed to keep the long term alignment on the existing VFW driveway and abandon the idea of relocating the vehicular access. Instead, the existing driveway should be widened.

- Tumwater area neighbors, including owners of Bud's Towing, Gerber Collision, Highland Stillhouse, and Falls View Tavern discussed issues with the long term alignment. They pointed out that there is an old road that is fairly flat at the base of the wall between their properties and High Street/South End Road. While the owners of Bud's Towing are not in favor of the trail shown as is, they would be supportive of a trail that was aligned along the very back of the property at the base of the wall. Adjoining property owners agreed. All the property owners also expressed support for the trail along 99E. Some members of the Advisory group felt strongly that the trail on 99E would not be ideal due to traffic conflicts and perceptions of safety from fast moving vehicles on 99E. Others felt that the plan should include the same interim and long term alignments on 99E and not consider the back edge of the property. A trail along 99E would provide less disturbance to the PGE and Gerber Collision properties, where a trail would otherwise be needed along the shared property line.
  The Advisory Group voted (7-5) to recommend that the long term trail route remain flexible and be located either along 99E or along the back edge of the private properties. The 5 "no" votes were for instead considering an alignment on 99E only. Further study is required to determine an appropriate route and design to reach the back edge of the properties.
  The group talked about where it is best to cross South 2nd. If the long term trail ends up at 99E, does a crossing at Tumwater still make sense? Joe Marek, a transportation engineer with Clackamas County, suggested that a study is needed to better understand the feasibility of a crossing, and suggested that the group remain flexible regarding the South 2nd crossing location and recommend an engineering analysis to determine the best solution. The group agreed on this recommendation.

- Paul Edgar raised the issue of the interim trail crossing, pointing out that it could be safer to cross at High Street rather than 99E. In the long term, the TSP includes a signal at that intersection. The advisory group voted (5-3) to keep the interim alignment as shown on the current plan.

- The group agreed to include a recommendation for a long term connection to the riverwalk via the sidewalk on 99E and Jerome Street crossing in Canemah. The group also agreed that better speed control is needed on 99E, with some calling for reduced speed limits.
- The group agreed to recommend a parallel path next to Old Canemah Park driveway. Phil Lewis explained that a pathway could be routed through an existing public area without disturbing many trees, and allow people walking to avoid the narrow driveway into the parking lot.
- The group declined to recommend any additional trail connections, but recommends that the Parks and Recreation Advisory Committee review and update the trails master plan, which dates back to 2004. The PRAC can consider additional nature trails or connections in the area.
- Mel Huie from Metro pointed out that the MCT plan does not include Metro's property at Canemah Bluff and that pedestrians are welcome in the park, but bicycles and dogs are not permitted.
- Advisory Group members passed around and signed a letter acknowledging the public process and decisions made at Advisory Group meetings.

Next Steps and Implementation

- The group kept open the option of continuing to meet through future design and construction phases of the trail.
- Staff and consultants will update the report to reflect the decisions made at this meeting and will distribute to the group in January.
- Kelly Reid mentioned the upcoming meetings of the PRAC, TAC, and Planning Commission and encouraged members to write or testify at the Planning Commission meeting in February. Doug Neeley requested that staff give a presentation to the Natural Resources Committee as well.

UPCOMING EVENTS / IMPORTANT DATES

January 10th	Natural Resources Committee
January 16th	Transportation Advisory Committee
January 25th	Parks and Rec Advisory Committee
February 12th	Planning Commission
February 21st	City Commission