

MEMORANDUM

Date: February 4, 2021 Project #: 23021.19
To: Sandra Hikari
ODOT Region 1 – Major Projects

From: Nick Gross, Amy Griffiths, EIT; Marc Butorac, PE, PTOE, PMP
Project: Oregon City-West Linn Pedestrian and Bicycle Bridge Concept Plan
Subject: Purpose and Needs

This memorandum describes the purpose and needs for the Oregon City-West Linn Pedestrian and Bicycle Bridge Concept Plan (Concept Plan). This memorandum also includes a community profile of the study area, documentation of project needs identified in regional planning documents, and a commitment to an equitable outreach process and equitable project outcomes.

PROJECT BACKGROUND

Oregon Department of Transportation (ODOT), City of Oregon City, City of West Linn, Clackamas County, and Metro are partnering to investigate the feasibility of a pedestrian and bicycle bridge across the Willamette River connecting Oregon City and West Linn. People walking and biking between the two communities currently use the historic Arch Bridge (OR 43), which provides the only existing local and regional multimodal crossing in the area. The nearest upstream and downstream pedestrian and bicycle crossings are provided via the Canby Ferry¹ (approximately 6 miles south) and the Sellwood Bridge (approximately 8 miles north), respectively. Agency partners are interested in identifying a safe and reliable option to connect the two cities and the regional active transportation network in this area.

In 2016, as part of the I-205 Improvements: Stafford Road to OR 213 Project, ODOT assessed potential facility connections for people walking and biking between the existing I-205 multiuse path in Gladstone and Stafford Road in West Linn². The 2016 pedestrian and bicycle assessment provided high-level engineering considerations for crossing opportunities over the Willamette River. The Concept Plan will build on this earlier work.

¹The Canby Ferry requires a fee for pedestrians and bicyclists. Ferry service is often closed due to weather impacts and calendar scheduling.

² Appendix “A” includes the I-205: Stafford Road to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment.

BRIDGING COMMUNITIES

Project staff will work to intentionally to integrate equity at every step of the planning and engagement process for the Concept Plan. This will establish a new standard of practice to operationalize equity based on unique project needs and allow the public to participate in this process to reimagine this pedestrian and bicycle crossing alignment. The focus of this planning process is to identify a preferred bridge alignment that:

- Is informed by the area's historical significance and complex geography,
- Completes the area's active transportation network,
- Provides opportunities for future public and private investments along the banks of the Willamette,
- Does not displace or negatively impact historically marginalized communities and uplifts individuals and businesses equitably.

The concept planning effort will work to create a realistic and constructable concept alignment that is supported by the communities on both sides of the river, addresses regional active transportation connectivity, and establishes a clear path forward to local adoption and implementation. ***The Concept Plan will not identify the aesthetic, type, or size of the ultimate bridge alignment.***

PURPOSE AND NEEDS STATEMENT

The purpose of the Concept Plan is to identify and select a preferred bridge alignment for people walking, biking, and rolling across the Willamette River to connect the communities of Oregon City and West Linn, enhance safety, and improve regional connectivity. The Concept Plan will explore potential bridge alignments south of the I-205 Abernethy Bridge and within the vicinity of the existing historic Arch Bridge. Within the Concept Plan, the need for a new bridge is to:

- **Address Historic Arch Bridge deficiencies for people walking, biking, and rolling** – The existing historic Arch Bridge (OR 43) connects the two communities and has served the region for almost 100 years. The historic Arch Bridge lacks dedicated facilities for people biking and presents issues related to the Americans with Disabilities Act (ADA) of 1990 due to the existing grade (approximately 6 percent) and substandard sidewalk widths.
- **Identify a new low-stress, comfortable, and designated connection across the Willamette River to increase experience for people walking, biking, and rolling** – A new low-stress connection between Oregon City and West Linn will provide a key linkage within the southeastern portion of the Portland metropolitan area and will be accessible for all ages and abilities.
- **Connect existing and planned walking, biking, and rolling networks** – A new connection for people walking, biking, and rolling across the Willamette River will connect the existing and planned regionally significant active transportation routes on the east (I-205 multiuse path, Willamette Terrace, Riverwalk) and west (Willamette Falls Drive and OR 43 cycle tracks) sides of the Willamette River. A new connection will increase access to existing destinations and the future Willamette Falls Legacy Project Riverwalk.

- **Enhance accessibility and cultural experience of historic resources** – A new connection for people walking, biking, and rolling will provide access and the opportunity to experience and visually imagine the historic significance of the river, falls, and adjacent lands. Special attention will be given to the indigenous connections to the land, honoring active approaches to transportation across the river, and acknowledging traditional ways of movement across waterways.
- **Create opportunities for economic and community development** – A new connection for people walking, biking, and rolling will provide certainty and may facilitate investment opportunities in the Old City Hall District, Industrial Heritage District, Willamette Falls Legacy Project, and downtown Oregon City.
- **Minimize environmental impacts** – A new connection designated for people walking, biking, and rolling will serve an opportunity for transportation mode shifts, lowering local and regional carbon footprints. The physical design of the bridge will adhere strictly to standards that negate localized environmental impacts and do not inflict harm on the river or nearby communities.

PROJECT STUDY AREA

There is a complex system of existing and planned active transportation facilities running parallel to the Willamette River between Gladstone, Oregon City, West Linn, and Tualatin. Today, people walking, and biking use the Arch Bridge as their primary connection between these communities. This historic structure requires cyclists to share the narrow travel lanes (about 10 feet) with vehicles and people who are walking across the bridge to use the non-ADA compliant sidewalk.

Based on the findings from ODOT's 2016 pedestrian and bicycle assessment, the study area for the Concept Plan will focus on the segment of the Willamette River between Willamette Falls and the I-205 Abernethy Bridge. Figure 1 illustrates the Concept Plan study area.



H:\23\33021 - Transportation and Land Use Planning\019 - Willamette River Ped-Bike Crossing\GIS\Task 3\01 - Study Area\mxd Date: 12/23/2020





-  Focus Study Area
-  Urban Growth Boundary
-  Oregon City
-  West Linn



Figure 1

COMMUNITY PROFILE

The 2018 American Community Survey (ACS)³ data at the block group level was analyzed to identify areas with high numbers of residents who historically face transportation barriers and environmental justice communities that have been traditionally underserved. The analysis includes (as categorized by ACS):

- People of color
- Hispanic populations
- Elderly populations (over age 64) and youth populations (under 18)
- Individuals experiencing low-income situations (income under 200% of the federal poverty line)
- Crowded households (households with more than one person per room)

There is a significant portion of individuals over the age of 64 and under the age of 18 living in the study area. These populations rely on separated, comfortable, and low-stress infrastructure to access essential destinations and locations of daily needs. Table 1 summarizes demographics data for Clackamas County, Oregon City, and West Linn.

Table 1: Demographics by Jurisdiction

People of color	12.0%	9.9%	12.6%
Hispanic populations	8.5%	6.8%	5.0%
Elderly populations	17.0%	15.6%	15.2%
Youth populations	21.9%	23.0%	24.7%
Individuals experiencing low-income situations	20.9%	20.6%	12.3%
Crowded households	2.5%	3.7%	2.5%

¹ACS block group data was conglomerated based on boundaries to estimate percentages for cities. "People of color" includes "Black or African American," "American Indian and Alaska Native," "Asian," "Native Hawaiian and Other Pacific Islander," "Some Other Race Alone," and "Two or More Races."

Appendix "B" includes maps of residents who historically face more transportation barriers.

The maps and supporting data will be used as part of the active transportation network analysis and contribute to the evaluation of potential bridge alignment alternatives.

³The 2018 ACS is the most recent dataset available and includes 2014, 2015, 2016, 2017, and 2018.

EQUITY

The consultant will analyze potential bridge alignments to determine the benefits and burdens that this development will accrue, including but not limited to current and historic cultural significance, health outcomes, right-of-way access, connections to existing pedestrian and bicycle infrastructure, traffic, safety, and cost. The preferred alignment will support people of all ages and abilities access across the Willamette River and help conserve viewsheds of the historically and culturally significant Willamette Falls.

Equity will be at the forefront of determining the ideal bridge alignment. Human-centered design will be used in an effort to make the bridge accessible to diverse users. Consultants will engage directly with communities of color and low-income individuals who are impacted and excluded by previous inequitable development to identify how infrastructure projects can respond to the needs of the most vulnerable community members. Through identifying the needs of likely bridge users at the outset, it will be possible to minimize the burdens felt by currently underrepresented stakeholders and work toward an equitable distribution of benefits.

The Public Involvement and Communications Plan (PICP) outlines a process that elevates the voices of indigenous people who have ancestral connections to the Willamette Falls and adjacent lands as well as other communities of color and low-income individuals through their participation in the Project Advisory Committee (PAC). It will also provide engagement opportunities to gather input from local seniors and youth who may be more dependent on low-stress transportation infrastructure.

NEXT STEPS

The Purpose and Needs Statement will inform the evaluation criteria and concept development for a low-stress connection across the Willamette River between the cities of West Linn and Oregon City.

The contents of this document have been reviewed by the Project Management Team (PMT), (PAC), Project Leadership Team (PLT), ODOT, West Linn, Oregon City, Clackamas County, and Metro technical staff⁴ and interested government parties including the Confederated Tribes of Grand Ronde, Siletz Indians, Umatilla, Warm Springs Reservation, Bands of the Yakama Nation, and Nez Perce to produce the Final Purpose and Needs.

⁴ Technical workshop #1 was held on January 11, 2021.

Appendix A
I-205: Stafford Road to OR 99E
Bicycle/Pedestrian Assessment



Memo

Date: Tuesday, October 25, 2016

Project: I-205: Stafford Road to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment

To: Megan Channell

From: Andrew Johnson

Subject: Concept Alternatives Evaluation Memo

Introduction

Oregon Department of Transportation (ODOT) is developing a project to increase the seismic resiliency and performance of the I-205 Abernethy Bridge, including widening the deck to accommodate an additional travel lane in each direction. The project may also include an additional travel lane in each direction on I-205 from OR 43 to Stafford Road.

The I-205: Stafford to OR 99E (Abernethy Bridge) Bicycle/Pedestrian Assessment Project includes research of the planning context for potential facility improvements, an evaluation of the feasibility of different bridge options, estimates of potential costs at an order of magnitude level, and documentation of the information developed. The study area is shown in Figure 1.

Currently, a multi-use path (MUP) runs continuously within the vicinity of I-205 from the Glenn Jackson Bridge over the Columbia River to the 82nd Drive interchange near Oregon City, with a few minor connections on local streets.

This memo summarizes the planning context for potential bicycle/pedestrian facilities from the end of the existing I-205 MUP to Stafford Road. The analysis provides an assessment of bridge options crossing the Willamette River, as well as a connection from the potential bridge to Stafford Road in the I-205 vicinity.

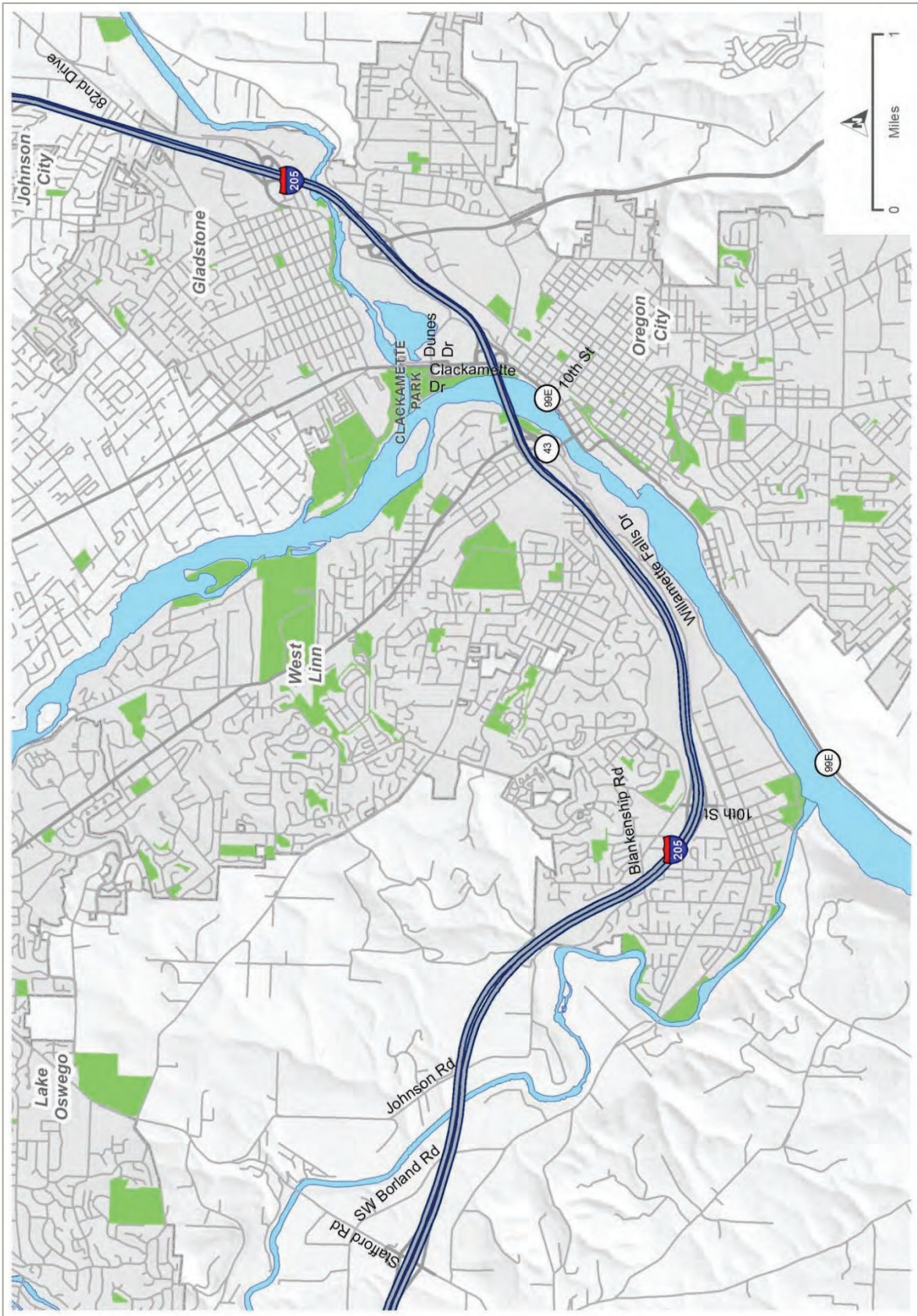
Existing Plans in Project Area

Existing I-205 MUP

Stretching through 5 cities and 15 neighborhoods, the existing I-205 MUP extends 16.5 miles and parallels I-205 from Vancouver, Washington near SR 14 to SE 82nd Drive in Gladstone, Oregon. This portion of the I-205 corridor, which includes TriMet's MAX Green and Red Lines, transports thousands of people daily via public transit, motor vehicle, bicycle, and foot. The MUP is used by bicyclists, pedestrians, and transit users, with an average of 1,180 daily users, or approximately 430,000 users per year.¹ ODOT has worked with regional and local stakeholders to improve the MUP into a more user-friendly facility, including tree plantings and lighting installments.

¹ Intertwine Trail Use Snapshot. Metro. 2008-2012. (Page C-71) Available at: http://www.oregonmetro.gov/sites/default/files/intertwine_trail_use_snapshot_2008-12.pdf

Figure 1. Study Area





Regional and Local Plans

For the purpose of establishing context for potential improvements, the following plans were reviewed. Brief summaries are as follows:

Metro Regional Active Transportation Plan (2014), Regional Transportation Plan (RTP) (July 2014) and Bicycle Network Map Book (2014)

Metro's *Regional Active Transportation Plan* shows bicycle parkways and regional parkways from the existing I-205 MUP at 82nd Avenue to the OR 43 Oregon City Arch Bridge, as well as an on-street bicycle parkway across the Arch Bridge to OR 43 in West Linn. Metro's Plan also shows a combination of regional bikeways and regional parkways running along the north side of I-205 and tying into the Nyberg Creek Trail near I-5, including an off-street bicycle parkway from West A Street to Stafford Road. Willamette Falls Drive/SW Borland Road is shown as a planned regional parkway from 5th Street to Stafford Road. No new facility is shown on or near the I-205 Abernethy Bridge.^{2, 3}

Clackamas County TSP (December 2013)

The Clackamas County TSP shows a planned MUP connecting to the OR 43 Oregon City Arch Bridge, running north of I-205 between OR 43 and Sunset Avenue and then connecting to Willamette Falls Drive through West Linn to the west City limits and Urban Growth Boundary. A planned bikeway is shown on SW Borland Road to Stafford Road. No existing or planned MUP is shown running along the north side of I-205 west of Sunset Avenue.

The County TSP also shows a planned bikeway on OR 99E south of the OR 43 Oregon City Arch Bridge. No new facility is shown on or near the I-205 Abernethy Bridge.⁴

Oregon City Transportation System Plan (June 2013)

The Oregon City TSP shows a planned shared-use path from 10th Street to the south along OR 99E. This planned shared-use path is shown to connect with the existing bicycle/pedestrian facilities north of the I-205 Abernethy Bridge (along Clackamette Park and through the Clackamette Cove area) and the OR 43 Oregon City Arch Bridge. No new facility is shown on or near the I-205 Abernethy Bridge.⁵

West Linn Transportation System Plan (March 2016)

The West Linn TSP identifies several streets within the vicinity of I-205 as having high or medium priority for bicycle system improvements, including Willamette Falls Drive, Sunset Avenue, and Salamo Road. The City's TSP identifies a high priority for cycle tracks on Willamette Falls Drive and Salamo Road, a high priority for bike lanes on Sunset Avenue.⁶

2 Regional Active Transportation Plan, Bicycle Network Map Book. 2014. Maps 15 and 16). Available at: http://www.oregonmetro.gov/sites/default/files/atp_2_bikemapbook.pdf

3 Regional Active Transportation Plan, Pedestrian Network Map Book. 2014. Maps 15 and 16). Available at: http://www.oregonmetro.gov/sites/default/files/atp_1_pedmapbook.pdf

4 Clackamas County Transportation System Plan. December 2013. Map 5-2a). Available at: http://www.clackamas.us/planning/documents/compplan/Map%205-2b_BikewaysRural.pdf

5 Oregon City Transportation System Plan. June 2013. (Figures 19, 20, and 21) Available at: http://www.orcity.org/sites/default/files/fileattachments/public_works/page/4283/volume_1_version_4.pdf

6 West Linn Transportation System Plan. October 2016. (Figure 10) Available at: http://westlinnoregon.gov/sites/default/files/fileattachments/public_works/page/5402/ord_1646_2016_transportation_system_plan.pdf

The City's TSP also identifies Willamette Falls Drive as a high priority for pedestrian system improvements, including new sidewalks between West A Street and the west City limits.⁷ The West Linn Trails Master Plan map also shows a proposed on-street trail connection along Willamette Falls Drive from OR 43 to the western City boundary, as well as a proposed off street trail along a portion of the north side of I-205 within West Linn.⁸

No new facility is shown on or near the I-205 Abernethy Bridge.

West Linn OR 43 2016 Conceptual Design Plan, City of West Linn (October 2016)

The *Conceptual Design Plan* calls for a cycle track design (raised bikeway), if feasible and subject to approval by ODOT, and continuous sidewalks along 3.3 miles of OR 43 through West Linn.⁹ The proposed cycle track design transitions to the existing condition south of Holly Street and north of the I-205 interchange. A future interchange area management plan will development the design for the OR 43 and I-205 interchange area.

West Linn Comprehensive Trails Master Plan: A 50-year Vision for the Future (2013)

The Comprehensive Trails Master Plan was accepted by City Council on December 9, 2013. The next step in the Trails Master Plan process is for the Parks & Recreation Advisory Board to determine the criteria for trail development. The West Linn Trails Master Plan map also shows a proposed on-street trail connection along Willamette Falls Drive from OR 43 to the western City boundary, as well as a proposed off street trail along a portion of the north side of I-205 within West Linn.¹⁰

West Linn Trail Alignment Study and Design 2016)

West Linn received approximately \$2.7 million in Regional Flexible Funds Allocation (RFFA) funding through Metro to refine the alignment of 1.2 miles of a bicycle/pedestrian path. The purpose of the project is to provide safe bicycle and pedestrian connections between the Willamette neighborhood and commercial area to the Barrington Heights, Sunset, and Bolton neighborhoods. The alignment will connect Imperial Drive to 10th Street/Salamo Road.¹¹

Figure 2 shows the bicycle facilities in the study area, and Table 1 summarizes the classifications of various facilities.

7 West Linn Transportation System Plan. October 2016. (Figure 7) Available at: http://westlinnoregon.gov/sites/default/files/fileattachments/public_works/page/5402/ord_1646_2016_transportation_system_plan.pdf
 8 West Linn Transportation System Plan. October 2016. (Figure 6) Available at: http://westlinnoregon.gov/sites/default/files/fileattachments/public_works/page/5402/ord_1646_2016_transportation_system_plan.pdf
 9 West Linn OR 43 2016 Conceptual Design Plan. October 2016. Available at: http://westlinnoregon.gov/sites/default/files/fileattachments/planning/page/5828/west_linn_hwy_43_concept_plan_-_adopted_2016.pdf
 10 West Linn Trails Plan. December 2013. Available at: https://westlinnoregon.gov/sites/default/files/fileattachments/parks_and_recreation/page/7697/westlinntrails_plan_12302013.pdf
 11 West Linn Trail Bike/Pedestrian Path Plan Set. December 2013.



Table 1. Summary of Facility Classifications in Applicable Planning Documents

Facility	From - To	Metro ATP Classification	Clackamas County TSP	TSP (West Linn and Oregon City)
Clackamas River Path	Agnes Drive to Clackamette Drive	Bicycle Parkway (Off-Street)	Existing MUP	Existing Shared-Use Path (OC)
Clackamette Drive	OR 99E to I-205 Bridge/Boat Landing	Bicycle Parkway (Off-Street)	Existing Bikeway	Existing Bike Lanes (OC), Existing Shared-Use Path (OC)
Stafford Road	SW Mountain Rd to SW Borland Rd	Regional Bikeway (Off-Street)	Planned Bikeway	N/A
Borland Road	Willamette Falls Drive to Stafford Road	Regional Bikeway (On- and Off-Street)	Planned Bikeway	N/A
Willamette Falls Drive	OR 43 to 15th Street	Regional Bikeway (On-Street) Regional and Local Pedestrian Corridor (On-Street)	Planned Bikeway	High Priority Bicycle Project (WL) Continuous Sidewalks 10th to 15th St), High Priority Pedestrian Project (WL)
Willamette Falls Drive	15th Street to SW Borland Road (Tualatin River)	Regional Bikeway (On-Street) Regional Pedestrian Corridor (On-Street)	Planned Bikeway	High Priority Bicycle Project (WL) Continuous/Partial Sidewalks (15th St to Snidow Dr), High Priority Pedestrian Project (WL)
OR 43	I-205 to Hidden Springs Road	Bicycle and Pedestrian Parkway (On-Street)	Existing Bikeway	On-Street Bike Lane (WL) Continuous Sidewalk WL)
OR 99E	Clackamas River to I-205	Regional Bikeway (On-Street) Pedestrian Parkway (On-Street)	Existing Bikeway	Existing Shared Use Path (OC)
OR 99E	I-205 to OR 43 Oregon City Arch Bridge	Bicycle and Pedestrian Parkway (On- and Off-Street)	Existing MUP	Existing Shared-Use Path (I-205 to 10th), Planned Shared-Use Path (7th to 10th) (OC)
I-205	82nd Drive to Stafford Road	Bicycle Parkway (MUP)	N/A, Planned or Existing MUP	N/A
OR 43 Oregon City Arch Bridge	N/A	Bicycle and Pedestrian Parkway (On-Street)	Existing MUP	Existing Shared-Use Path (OC) Continuous Sidewalk WL



Context Summary

Willamette River Crossing

Per Oregon Administrative Rule (OAR) 734-020-0045, bicycles and pedestrians are prohibited on the I-205 Abernethy Bridge.¹²

Bicycles and pedestrians currently use the OR 43 Oregon City Arch Bridge to cross the Willamette River:

- Pedestrians use sidewalks on each side of the bridge
- Bicyclists use the travel lane marked with sharrows (shared lane with motor vehicles)

No existing plans call for construction of a new bicycle/pedestrian crossing of the Willamette River. All plans use the OR 43 Oregon City Arch Bridge as the crossing.

Based on the information summarized in Table 1, if it were feasible, a connection between Clackamette Park and the Arch Bridge in Oregon City to West Linn in the vicinity of the OR 43 / I-205 Interchange could provide an effective link to existing or planned facilities east and west of the existing I-205 Abernethy Bridge. An additional crossing over the Willamette River may draw ridership from regional facilities, such as OR 43 and OR 99E, as well as the core of Oregon City and West Linn (Figure 2). While there are anticipated improvements in local and regional plans, these planned improvements will have little effect on the need for this facility.

I-205, West of River

As I-205 is a facility aimed at longer trips, the I-205 bicycle/pedestrian facility may serve longer active transportation trips. A segment of a bicycle/pedestrian trail alignment west of the Willamette River and north west) of I-205 in West Linn is currently being developed for the section from Imperial Drive to 10th Street to provide a lower grade, more direct connection than current city streets provide.

If the facility were placed along Willamette Falls Drive and SW Borland Road, south east of I-205, it would serve trips of all lengths due to the adjacent land use and anticipated demand, and the improvement would be consistent with local and regional plans.

¹² OAR 734-020-0045(1)(a)(D) , Prohibition of Non-Motorized Vehicles on Freeways. Non-motorized vehicles are prohibited upon the following segments of freeway within the State of Oregon: Interstate 205 (Hwy. No. 64 northerly of the Overcrossing of the Oswego Highway No. 3, M.P. 8.82.

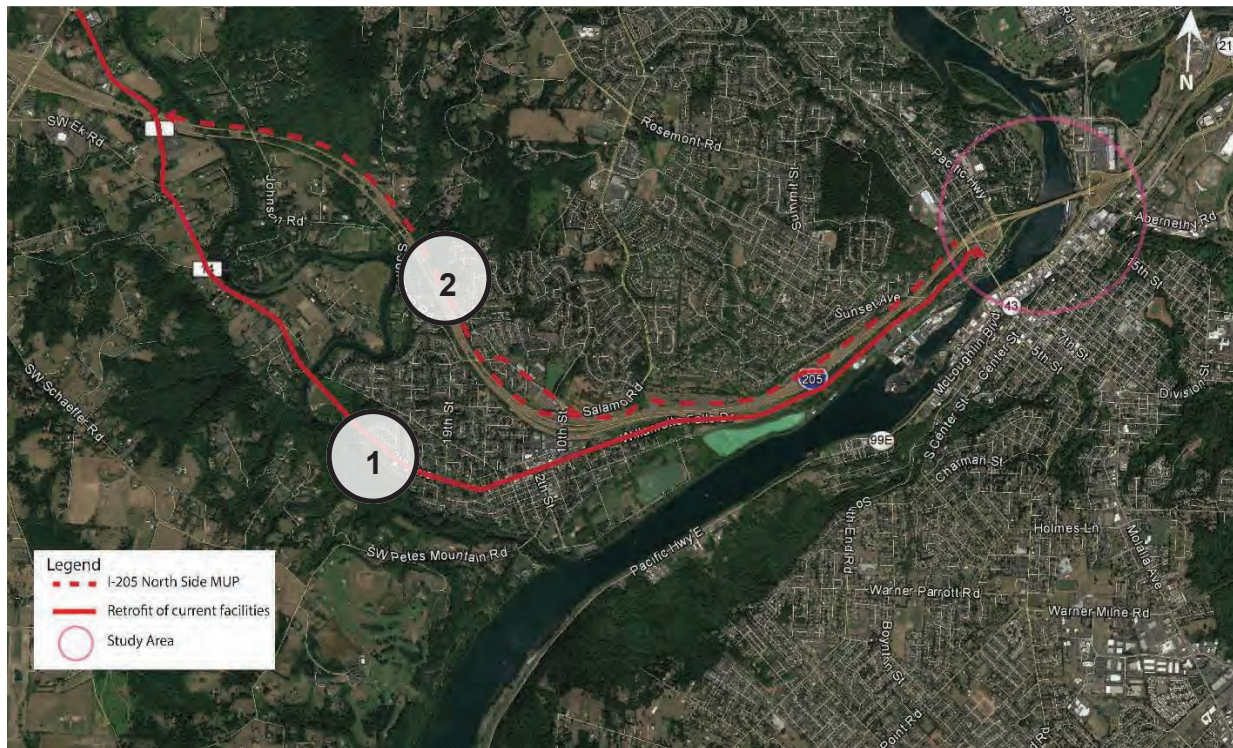
Existing Conditions in Project Area

Project area existing conditions are divided in two sections: Willamette River Crossing and I-205, West of River. Context is important in regards to the eight alternatives presented in the memo, as different alternatives have different implications to facility effectiveness.

I-205, West of River

There are two general alternatives described below and illustrated in Figure 3 that provide a connection to the OR 43 Oregon City Arch Bridge or a potential bike and pedestrian bridge facility on the west side of the Willamette River: 1 a retrofit of improved bicycle/pedestrian facilities along Willamette Falls Drive and Borland Road (solid red line) and (2 a combination of using or retrofitting existing streets and some new bicycle/pedestrian trail or shared use path on the north side of I-205 (dashed red line). The Willamette River Crossing study area is indicated by a solid pink line.

Figure 3. I-205, West of River Alternative Options



Alignment Option 1: I-205 South Side - Willamette Falls Drive and SW Borland Road

The Willamette Falls Drive and SW Borland Road on-street option would begin approximately where Willamette Falls Drive intersects OR 43 and extend to the SW Borland Road/Stafford Road intersection. There are no existing bike lanes along Willamette Falls Drive within the City of West Linn from A Street to the west City limits. Existing sidewalks are limited to the commercial area of West Linn from approximately 10th Street to Dollar Street.

This alignment offers connectivity to other uses in West Linn near 10th Street, residences along the corridor, and other area county facilities. However, this alignment generally lacks shoulders, stormwater treatment, and adequate width to easily widen or retrofit existing roads by restriping (Figure 4 .

Figure 4. Existing Willamette Falls Drive Roadway Conditions



Alignment Option 2: I-205 North Side - Combination of Streets, Bicycle/Pedestrian Trail and Shared Use Path

The I-205 North Side option would parallel I-205 from OR 43 to Stafford Road, as designated conceptually in Metro’s RTP. This alignment option represents West Linn’s current facility planning combined with the conceptual alignment in Metro’s plan. It has not been developed in detail or studied for feasibility.

The city plan includes developing a bicycle and pedestrian facility that would connect to Willamette Falls Drive, over I-205 using Sunset Avenue and parallel I-205 on the north side using city streets and I-205 right-of-way for a bicycle/pedestrian trail / path that would reconnect

at 10th Street and follow city streets to the city limit and then in the I-205 right-of-way with a path to Stafford Road. The I-205 right-of-way has limited space and features historic rockfall/landslide hazards, large stands of trees, and substantial slopes.

Potential Willamette River Crossing Options

The Willamette River Crossing study area has been separated into four quadrants to describe the existing conditions Figure 5 : NW Quadrant (Section A), SW Quadrant (Section B , NE Quadrant (Section C , and SE Quadrant Section D . There are four primary facility options considered for this project, and the existing conditions section will focus only on those areas possibly affected by the potential new facility.

1. New bicycle/pedestrian bridge north of I-205 Abernethy Bridge
2. New bicycle/pedestrian bridge south of I-205 Abernethy Bridge
3. Suspended bicycle/pedestrian facility under I-205 Abernethy Bridge
4. Cantilevered bicycle/pedestrian facility off one side of I-205 Abernethy Bridge either to the north or south

Two additional options were discussed but not fully evaluated. These are listed for the purpose of identifying all potential options and include:

1. New bicycle/pedestrian bridge south of the OR 43 Oregon City Arch Bridge
2. Restricting OR 43 Oregon City Arch Bridge to only active transportation use and building a new OR 43 bridge to the south.

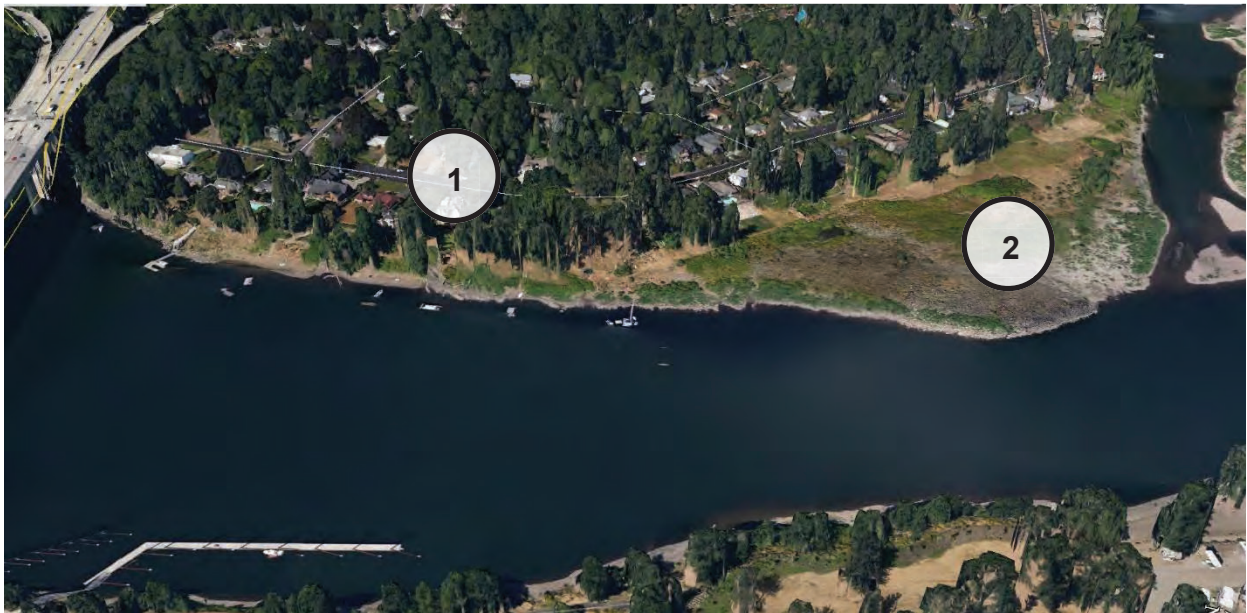
Figure 5. Four Existing Condition Quadrants



Section A (NW Quadrant)

Section A consists primarily of single family residential housing (1), with some commercial properties near OR 43 (Figure 6). Existing Lonesome Bottom neighborhood streets are narrow (20-22 feet) and have on-street parking. The grades from the river to OR 43 are, at times, steep and not conducive to bike travel. The flat and undeveloped area near the Willamette River (2) has potential risks or limitations that may include flood plain, Section 4 f) resources, hazardous materials, archeological resources. Further, a Willamette River Greenway permit may also be required. The nearby Goat Island (north of the Lonesome Bottom neighborhood) is a park owned by West Linn and also may have potential risks or limitations, including Section 4(f) .

Figure 6. Section A Bird's-Eye View (NW Quadrant)



Any potential bridge connection in Section A would require more research of potential limitations and a connection back to OR 43, with crossing treatments at OR 43, depending on the exact connection. The connection through the neighborhood would require utilizing narrow roads with on-street parking, likely resulting in a sharrow design.

Section B (SW Quadrant)

Section B (Figure 7) consists of the current I-205 NB entrance ramp (3), some forested slopes, approximately 12 single family homes (4), and a set of power lines supported by steel truss structures (5) running along the OR 43 Oregon City Arch Bridge north side, which was listed on the National Register of Historic Places in 2005. Adding facilities to these forested slopes may require a Willamette River Greenway permit or result in Section 4(f) issues, if the forest slopes are defined as a park.

Figure 7. Section B Bird's-Eye View (SW Quadrant)



Any potential bridge connection landing in Section B would likely have to avoid the southern half due to potential property impacts and/or conflicts with the power line. A feasible landing would likely occur in the vicinity of the current I-205 NB entrance ramp.

Section C (NE Quadrant)

Section C (Figure 8) consists primarily of Clackamette Park's shoreline (6), which offers walking/biking trails and a boat launch. Dunes Drive connects Clackamette Drive to OR 99E, and the space between Clackamette Drive and OR 99E consists of a Best Western (7) and McDonald's (8). Jon Storm Park (9) is immediately north of the I-205 bridge.

Figure 8. Section C Bird's-Eye View (NE Quadrant)



This quadrant provides connections back to 82nd Drive the terminus of the existing I-205 MUP via the existing on-street facilities on Clackamette Drive. However, there would likely be Section 4(f) / 6(f) issues for any bridge landing in this area due to the proximity of Clackamette Park and Jon Storm Park.

Section D SE Quadrant

Section D (Figure 9) consists of the Oregon City Esplanade (10) and access to additional docks and a boat launch (11), along with a few floating homes and park space. The Oregon City Esplanade ends (12) just south of the boat docks. The area is accessed through Dunes Drive and Clackamette Drive from OR 99E to the north.

This area poses challenges for landing locations due to potential impacts to the boat facilities and floating homes, as well as the inability for a wide landing on a wall or cantilever structure (13) along OR 99E, which is on a partial viaduct. The orange dashed line is an area with tall retaining walls along OR 99E, while the orange solid line represents the extent of the partial viaduct.

Figure 9. Section D Bird's Eye View (SE Quadrant)





Concept Evaluation and Cost Estimates

I-205, West of River Evaluation

Two general alternatives were evaluated to provide a connection to the potential bike and pedestrian bridge facility on the west side of the Willamette River: (1) a retrofit of current facilities along Willamette Falls Drive and Borland Road and (2) new I-205 North Side bicycle/pedestrian facilities. These two alignments could both be considered for implementation as each offers different opportunities to active transportation users. Cost estimates for these alternatives are in Attachment D.

Alignment Option 1: Willamette Falls Drive and SW Borland Road

The Willamette Falls Drive/Borland Drive option has good connections to the surrounding community, but the available roadway width often lacks the space needed to provide a bicycle facility. As a result, retrofitting the existing roads would likely be costly and involve future refinement of the option to develop a more accurate cost estimate. Facilities on this alignment are in existing plans but will require additional evaluation prior to implementation. The cost range for bicycle/pedestrian facilities on Willamette Falls Drive and SW Borland Road from OR 43 to Stafford Road is approximately \$50 million to \$55 million.

Alignment Option 2: I-205 North Side Bicycle/Pedestrian Facility

This I-205 North Side bicycle/pedestrian facility would combine city streets with the planned West Linn Trail alignment, with a future extension to Stafford Road. This alignment may require overcrossings over Woodbine Road and Johnson Road, potentially reconnecting to SW Borland Road. The bicycle/pedestrian facility could use city streets for the connection from 10th Street to Blankenship Road and regain the separated bicycle/pedestrian facility on the north side of I-205. This alignment would have limited connectivity to the existing network but would offer a mostly dedicated connection for long trips. The environment, however, would vary, as cyclists would be periodically routed along the shoulder of I-205 due to physical constraints. Facilities on this alignment are on existing plans but will require additional evaluation prior to implementation. The cost range for I-205 North Side facilities from OR 43 to Stafford Road is approximately \$40 to \$45 million.

Willamette River Crossing

To understand the potential costs, impacts, and effectiveness of an I-205 bicycle/pedestrian facility crossing of the Willamette River in the project area, the following alternatives (Figure 10) were considered:

- Alternative A – New bicycle/pedestrian bridge south of I-205 Abernethy Bridge
- Alternative B – New bicycle/pedestrian bridge north of I-205 Abernethy Bridge
- Alternative C1 – Bicycle/pedestrian facility cantilevered from the north side of I-205 Abernethy Bridge
- Alternative C2 – Bicycle/pedestrian facility cantilevered from the south side of I-205 Abernethy Bridge
- Alternative D – Bicycle/pedestrian suspended beneath I-205 Abernethy Bridge
- Alternative E – New bicycle/pedestrian bridge south of OR 43 Oregon City Arch Bridge
- Alternative F – Convert OR 43 Oregon City Arch Bridge to active transportation only (restrict automobiles)

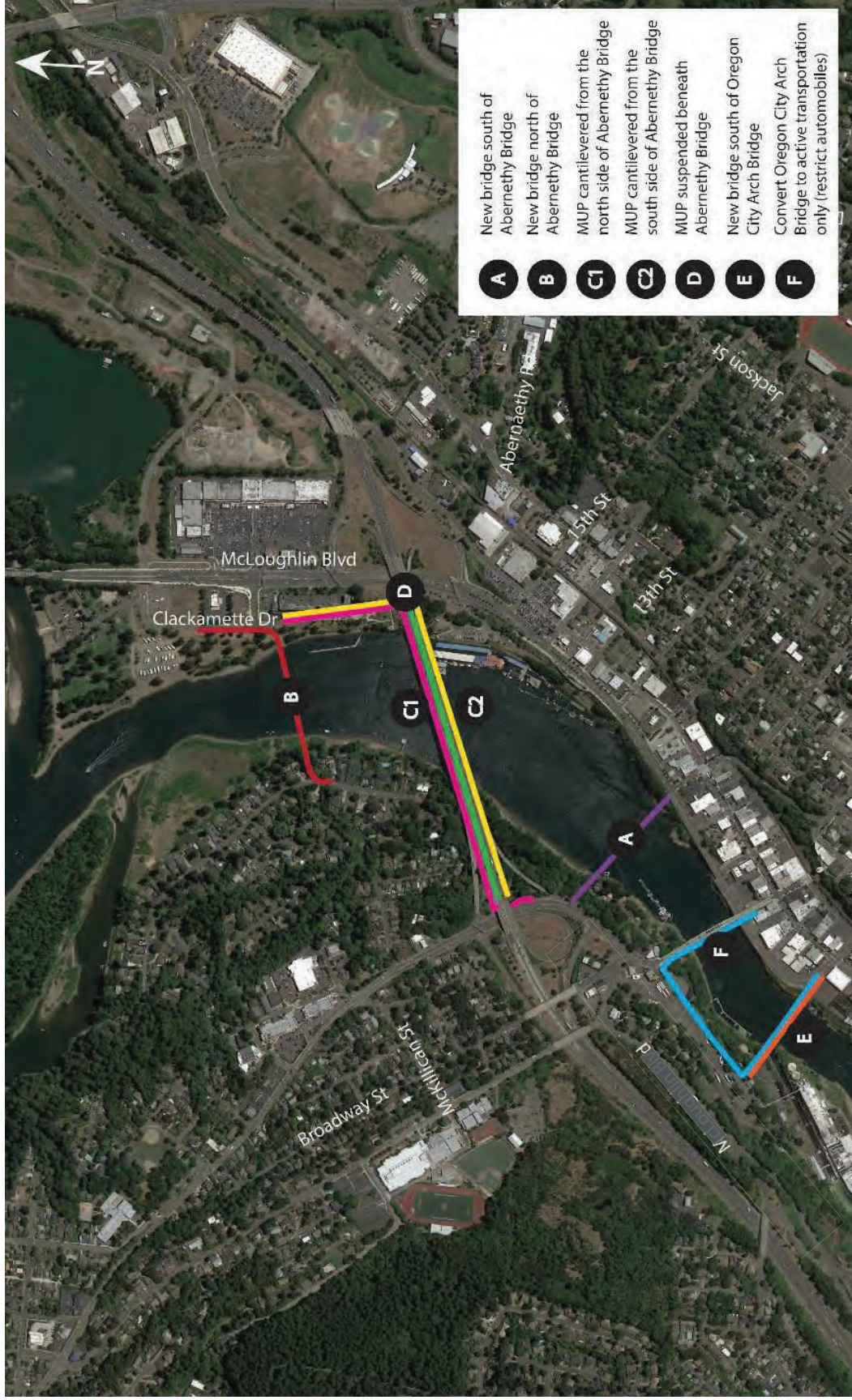
A short project description and summary of the evaluation matrix (Attachment A), which summarizes the design, construction and maintenance complexity, cost, permitting complexity, impact and facility effectiveness, follows for each alternative considered. Exhibits showing the layout for Alternatives A through D can be found in Attachment B, and cost estimates for Alternatives A through C can be found in Attachment C.

Willamette River Crossing Assumptions

- Horizontal and vertical navigational clearances used in the development of new bridge alternatives are based on the clearances of the adjacent I-205 Abernethy Bridge (325 feet horizontal, 76 feet vertical), OR 43 Oregon City Arch Bridge (181 feet horizontal, 74 feet vertical) and channel width downstream shown in NOAA Chart 18528. Horizontal clearance requirements were interpolated at the new bridge locations. All new Willamette River crossings will require United States Coast Guard (USCG) approval.¹³
- A total structure width of 20 feet was used for new bridges and approach ramps to accommodate railing width, lighting, etc. A widening of 18 feet was assumed for the cantilever alternatives since the two-foot railing between the roadway and bicycle/pedestrian facility is already accounted for in the design.
- A maximum grade of five percent was used to determine the approach ramp lengths required to touch down at existing grade.
- The last six feet of elevation change of the approach ramp/pedestrian improvements will be supported by retaining walls rather than bridge structure.
- Development of the cantilever and suspended alternatives assumed concurrent design and construction of a 12-foot roadway widening to each side of the I-205 Abernethy Bridge using additional girders, along with a phase 2 seismic retrofit.

¹³ No consultation with the USCG was performed for this study.

Figure 10. Map of Willamette River Crossing Concepts



Alternative A - New Bridge South

Project Description

Alternative A consists of constructing a new bicycle/pedestrian bridge across the river south of the existing I-205 Abernethy Bridge. The structure extends from OR 43 on the west side near the existing I-205 NB on-ramp to OR 99E on the east side near the 10th Street intersection in Oregon City. A cast-in-place post-tensioned (CIP PT) box girder bridge is assumed to provide similar navigational clearances to the existing adjacent Willamette River bridges with a vertical clearance of approximately 76 feet. Pedestrian improvements, including a short approach structure, will be required along OR 99E extending north to approximately 12th Street, where it will connect to the Oregon City Esplanade. An approach structure will be required on the west side to connect the main spans with OR 43.

The estimated cost range to design and construct this alternative, including the pedestrian improvements along OR 99E to access the new bridge, is approximately \$20 million to \$25 million. The burdened square foot (SF) cost for this alternative is approximately \$575/SF. See Cost Estimates (Attachment C) for more detail. No right-of-way costs for connections to OR 43 are included.

Evaluation Matrix Summary

- The topography at this location allows for short approach structures on the west and east sides.
- Pedestrian improvements will be needed along OR 99E to connect with the Oregon City Esplanade will require tall retaining walls or continuation/widening of the existing half-viaduct.
- A new bridge in this location may have potential impacts to historic resources including viewsheds of and from the OR 43 Oregon City Arch Bridge.
- A new bridge may have potential impacts to a Section 4(f) resource.
- A new bridge crossing will require in-water work and new foundations in the river, as well as the associated environmental permitting and USCG approval.

The bridge crossing will connect the Oregon City Esplanade to West Linn.

See Evaluation Matrix (Attachment A) for more detail.

Alternative B - New Bridge North

Project Description

Alternative B consists of constructing a new bicycle/pedestrian bridge across the river north of the existing I-205 Abernethy Bridge. The structure extends from River Street on the west side to Clackamette Drive on the east side. A CIP PT box girder bridge is also assumed at this location with a vertical clearance over the Willamette River of approximately 76 feet. Long approach structures will be required adjacent to the river to achieve the bridge deck elevations necessary to provide navigational clearances similar to the adjacent I-205 Abernethy Bridge.

The estimated cost range to design and construct this alternative is approximately \$20 million to \$25 million. The burdened square foot cost for this alternative is approximately \$520/SF. See



Cost Estimates (Attachment C) for more detail. Right-of-way costs for connections to OR 43 or improving (widening existing street connections to OR 43 are not included in the cost estimate.

Evaluation Matrix Summary

- The topography requires long approach structures on both sides of the river.
- A new bicycle/pedestrian bridge crossing will require in-water work and new foundations in the river, as well as the associated environmental permitting and USCG approval.
- The west landing will likely have right-of-way impacts to residences in the Lonesome Bottom neighborhood.
- There is limited or challenging connectivity from the likely bicycle/pedestrian bridge landing to the potential future I-205 bicycle/pedestrian facilities west of the river and to major destinations in downtown Oregon City and West Linn.

See Evaluation Matrix (Attachment A) for more detail.

Alternative C1 - Cantilever North

Project Description

Alternative C consists of constructing a bicycle/pedestrian structure on the north side of the existing I-205 Abernethy Bridge main spans in conjunction with the planned bridge widening and seismic improvements. A large portion of the bicycle/pedestrian structure would be supported by cantilevering from the new steel girder for the planned roadway widening. Any widening of the I-205 Abernethy Bridge approach spans would require additional columns at the piers. An assumed CIP PT box girder approach ramp structure on the west side of the river would extend below the new I-205 SB off-ramp and connect to OR 43 beneath the I-205 Abernethy Bridge. An approach ramp structure on the east side of the river would extend from the bridge deck above Jon Storm Park north along Clackamette Drive.

The estimated cost range to design and construct this alternative is approximately \$30 million to \$35 million. The burdened square foot cost for this alternative is approximately \$461/SF. See Cost Estimates (Attachment C) for more detail. This cost only applies if addressed during the widening of I-205; costs would be considerably higher if completed as a stand-alone project.

Evaluation Matrix Summary

- It will maintain the existing navigational clearances of the I-205 Abernethy Bridge but will require retrofit of the existing box girders and, potentially, the existing bridge substructure.
- Path connection will end directly at OR 43 ramp intersection, resulting in connectivity and safety challenges.
- Construction of the west approach ramp will be complex due to curvature around and under roadway ramps.
- It will require a long approach structure on the east side to touch down from the existing I-205 Abernethy Bridge deck elevation.
- There may be permanent and temporary construction impacts due to the east approach structure in Jon Storm Park, including potential impacts to Section 4(f) /6(f) resources.
- The ramp approach structures will require environmental permitting, in addition to that needed for the roadway widening and seismic improvements associated with the I-205 mainline widening.

- It will provide a poor user experience due to proximity to I-205 freeway traffic and related noise. It also will result in challenging conditions at approach ramps due to poor connections.

See Evaluation Matrix (Attachment A) for more detail.

Alternative C2 – Cantilever South

Project Description

Alternative C2 consists of constructing a bicycle/pedestrian structure on the south side of the existing I-205 Abernethy Bridge main spans in conjunction with the planned bridge widening and seismic improvements. A large portion of the bicycle/pedestrian structure would be supported by cantilevering off the new steel girder for the planned roadway widening. Any widening of the I-205 Abernethy Bridge approach spans would require additional columns at the piers. An assumed CIP PT box girder approach ramp structure on the west side of the river would connect to OR 43 beneath the I-205 Abernethy Bridge. If the NB on-ramp to I-205 remains in the I-205 widened mainline configuration, this approach ramp would be added underneath it. An approach ramp structure on the east side of the river would extend from the bridge deck south along Clackamette Drive. The east side connection could also be carried over OR 99E, using the ramp grade to bring users back down to OR 99E or extending over to Main Street.

The estimated cost range to design and construct this alternative is approximately \$25 million to \$30 million. The burdened square foot cost for this alternative is approximately \$457/SF. See Cost Estimates (Attachment C) for more detail. This cost only applies if addressed during the widening of I-205; costs would be considerably higher if completed as a stand-alone project.

Evaluation Matrix Summary

- It will maintain the existing navigational clearances of the I-205 Abernethy Bridge but will require retrofit of the existing box girders and potentially the existing bridge substructure.
- Construction of the west approach ramp may be complex due to curvature around and under roadway ramps.
- It will require a long approach structure, though shorter than Alternative C1, on the east side to touch down from the existing I-205 Abernethy Bridge deck elevation.

It will provide a poor user experience due to proximity to I-205 freeway traffic and related noise. It also will result in challenging conditions at approach ramps due to poor connections.

See Evaluation Matrix (Attachment A) for more detail.

Alternative D – Suspended Under

Project Description

Alternative D consists of suspending a bicycle/pedestrian structure beneath the existing I-205 Abernethy Bridge between the existing pier columns or to the exterior of the pier columns. The suspended bicycle/pedestrian structure would touch down beneath the existing I-205 Abernethy Bridge near Clackamette Drive on the east and OR 43 on the west side of the river.

There are numerous design and permitting risks associated with this alternative including the proximity of approach connections to highway intersections and the lack of vertical clearance for



river navigation, which is considered to be a fatal flaw. As such, development of this alternative was limited; further discussions with ODOT revealed design and permitting risks would be too great.

Evaluation Matrix Summary

- It reduces the I-205 Abernethy Bridge vertical clearance by approximately 36 feet, for a vertical clearance of 40 feet. This reduced vertical clearance will reduce navigation clearances and is presumed to be infeasible for USCG permitting.
- There are potential security or safety concerns for facility users due to limited visibility.

See Evaluation Matrix (Attachment A for more detail.

Alternative E – New Bridge South of OR 43 Oregon City Arch Bridge

Project Description

Alternative E consists of constructing a new bicycle/pedestrian bridge across the Willamette River south of the OR 43 Oregon City Arch Bridge. Pedestrian improvements along OR 99E extending north to 12th Street including the widening of existing bridges and half viaducts would be required.

Development of this alternative was limited; further discussions with ODOT revealed the cost and impacts primarily related to approach structures and connections to existing pedestrian facilities would be greater than Alternative A.

Evaluation Matrix Summary

- The location creates potentially shorter river crossing main span lengths than other alternatives.
- A new bridge in this location has potential impacts to historic resources, including viewsheds of and from the OR 43 Oregon City Arch Bridge.
- The pedestrian improvement length along OR 99E is more challenging and longer than Alternative A. Widening of existing viaducts and half-viaducts carrying OR 99E will be needed, along with a structure around the OR 43 Oregon City Arch Bridge abutment.
- The cost of all improvements associated with connecting to the new bridge would likely raise costs over that of Alternative A.

See Evaluation Matrix (Attachment A for more detail.

Alternative F – OR 43 Active Transportation Only

Project Description

Alternative F consists of realigning OR 43 and constructing a new roadway bridge and intersection with OR 99E near Main Street. The existing OR 43 Oregon City Arch Bridge would become an active transportation bridge only, with restrictions for automobiles.

Development of this alternative was limited; further discussions with ODOT revealed the design challenges, uncertainty, and cost of this alternative would exceed the other alternatives and require a more significant study to address many considerations related to traffic, roadway



design, future development patterns, and long-term transportation plans for the region. Major challenges include interchange/structural connections at both ends, especially connecting to OR 99E on the east side.

Evaluation Matrix Summary

- Major reconstruction of OR 43 and OR 99E intersection will have numerous impacts, including the need for new ROW for the new interchange design, requiring extensive permitting.
- Requires substantial additional analysis to determine feasibility of traffic operations.

See Evaluation Matrix (Attachment A for more detail.



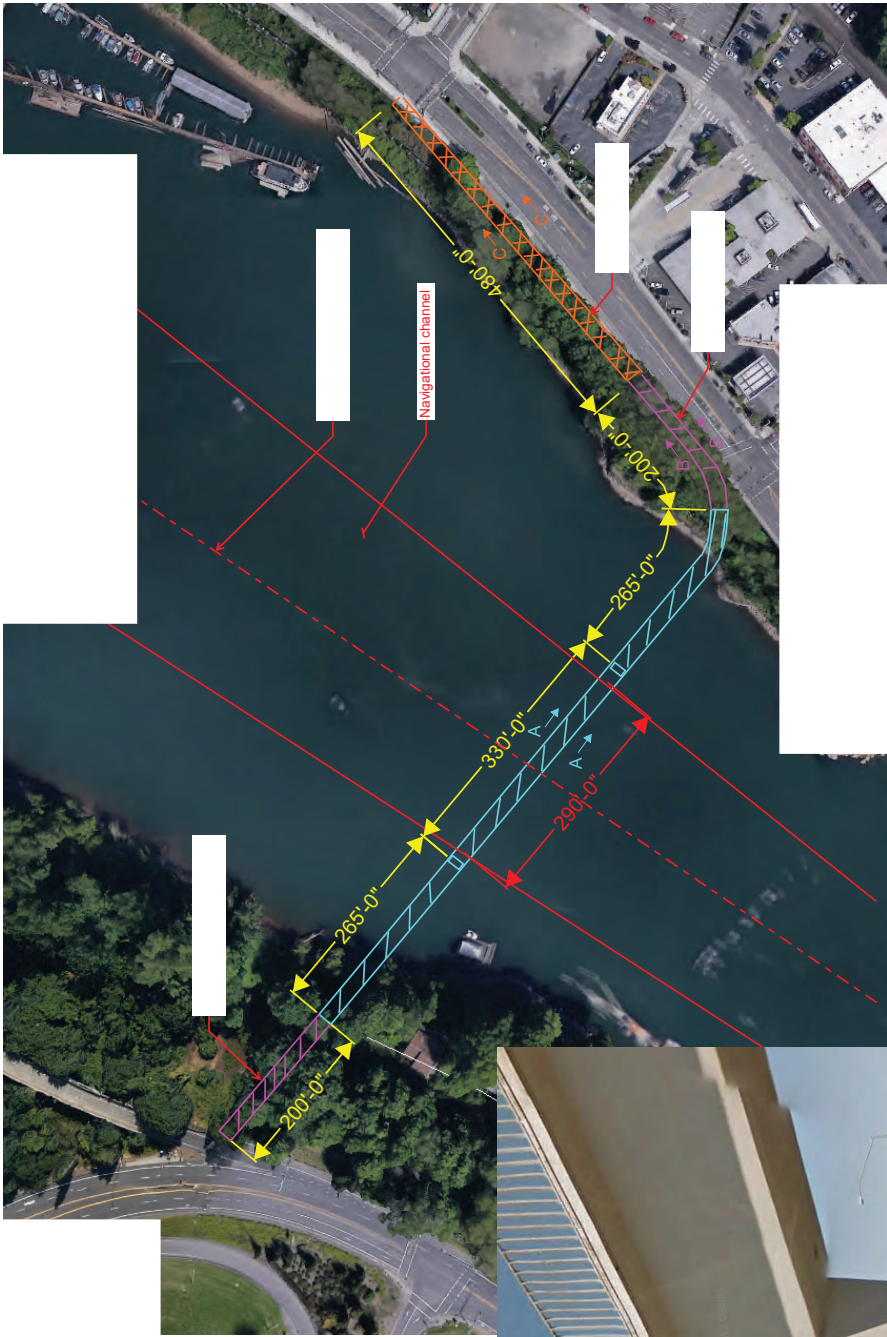
Attachment A. Evaluation Matrix

I-205 MUP Summary Evaluation Matrix

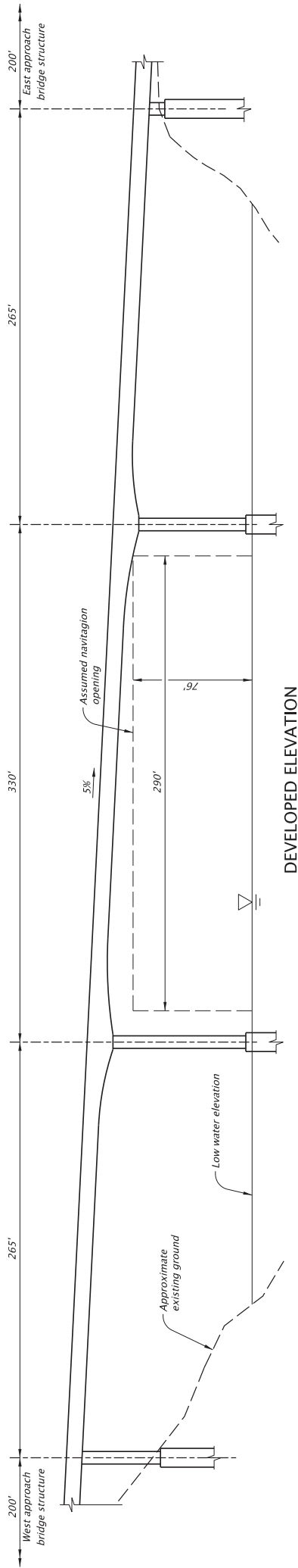
		Design, Construction and Maintenance Complexity and Cost					Facility Effectiveness		
Option	Description	Design, Construction and Maintenance Complexity / Uncertainty	Estimated Cost	Potential Environmental Impacts	Permitting Complexity	Facility User Experience	Facility Security and Safety	System Connectivity	
Each option was ranked relative to one another based on the 8 factors described in this matrix	Best	B - Low complexity / uncertainty	B - \$25M or less	B - Limited or no impacts	B - Limited or known typical permitting issues	B - provides good user experience for all users	B - Provides good visibility	B - Aligns to desired routes	
	Moderate	M - Moderate complexity / uncertainty	M - \$25-30M	M - Moderate impacts	M - Mostly known or typical permitting issues	M - provides good experience for some users	M - Neutral	M - Aligns to desired routes with connections	
	Worst	W - High complexity / uncertainty	W - \$30M or more	W - Likely major impacts	W - Likely major permitting issues with challenging or no mitigation	W - provides undesirable experience	W - Doesn't provide good visibility	W - Doesn't match desire lines	
A	New Bridge South	<ul style="list-style-type: none"> - Pedestrian facilities on OR 99E requires improvement as part of east approach requiring combination of retaining walls and widening of existing half-viaduct - Topography at this location results in relatively short approach ramps. - Lack of convenient construction staging area on east side of the river. - Construction requires in-water work. 	\$20-25 Million	<ul style="list-style-type: none"> - Permanent and temporary construction impacts at bridge landing in West Bridge Park. - Traffic impacts on OR 99E such as long-term lane closures required during construction. - Typical environmental and floodplain impacts associated with construction in the Willamette River. - Potential impacts to historic resources including viewsheds of and from the Oregon City Arch Bridge. 	<ul style="list-style-type: none"> - New bridge layout assumes providing similar navigational clearances (76 feet vertical) as the adjacent Abernethy Bridge and Arch Bridge for USCG permitting. - New structure in park has 4(f) permit implications. - Typical environmental permitting requirements for new bridge crossing with in-water work, including need for Section 404 and 401 permits (Clean Water Act). - Potential impacts to Section 4(f) resources. 	<ul style="list-style-type: none"> - Connects downtown Oregon City and the Esplanade to good landing for connection to a future potential I-205 MUP west of the river. 	<ul style="list-style-type: none"> - Relatively regular use to be expected, good lines of sight to boat docks, OR 99E the Esplanade and Arch Bridge. 	<ul style="list-style-type: none"> - Provides connection to current I-205 MUP to the north (via on-street facilities) and to a future potential I-205 MUP alignment west of the river. - Connects OR 99E and Downtown Oregon City to West Linn. 	
B	New Bridge North	<ul style="list-style-type: none"> - Requires long approach ramp structures on both sides of the river. - Complex approach ramp connection on the west side due to the residential community (limited space) and topography (need to ramp down and then go back up slopes). - Construction staging areas are available near shore on both sides of the river. - Construction requires in-water work. 	\$20-25 Million	<ul style="list-style-type: none"> - Permanent and temporary construction ROW impacts at bridge landing in neighborhood on west side of river and property along east side of river. - Typical environmental and floodplain impacts associated with construction in the Willamette River. 	<ul style="list-style-type: none"> - New bridge layout assumes providing similar navigational clearances as the adjacent Abernethy Bridge for USCG permitting. - Typical environmental permitting requirements for new bridge crossing with in-water work, including need for Section 404 and 401 permits (Clean Water Act). - Local permits needed for bridge landing in the Lonesome Bottom neighborhood of West Linn. - Likely impacts to potential Section 4(f) resources. 	<ul style="list-style-type: none"> - Long ramp on east side required to meet ADA involves out of direction travel for users coming from Downtown Oregon City. - Narrow residential roads in Lonesome Bottom neighborhood would slow riders on west side and involve steep grades to connect to OR 43. 	<ul style="list-style-type: none"> - Relatively regular use to be expected, good lines of sight to West Western, Clackamette Park and the Lonesome Bottom neighborhood. 	<ul style="list-style-type: none"> - Could provide good connection to Clackamette Drive on east side - Challenging connectivity on the west side, with no clear connection to OR 43 nor future potential I-205 bicycle/pedestrian facilities west of the river. 	
C1	Cantilever North	<ul style="list-style-type: none"> - Requires long approach ramp structure on east side of the river. West approach structure requires coordination around existing structure and rebuilt I-205 SB exit ramp. - Requires retrofit of existing box girders and potentially bridge substructure. - Increases difficulty and expense of inspection and maintenance of I-205 Abernethy Bridge. 	\$30-35 Million, if done at the same time as I-205 mainline widening and seismic retrofit.	<ul style="list-style-type: none"> - Minimal construction and traffic impacts in addition to those already occurring due to the roadway widening and seismic improvements. - Permanent and temporary construction impacts at bridge landing in Jon Storm Park, including potential impacts to Section 4(f)(B) resources. - Cantilever structure changes visual appearance of existing I-205 Abernethy Bridge. - Ramp approach structure along river likely to have visual impacts. 	<ul style="list-style-type: none"> - Maintains existing navigation clearances for USCG permitting. - New structure in park has 4(f)(6) permit implications. - Ramp approach structure requires environmental permitting in addition to that needed for roadway widening and seismic improvements associated with the I-205 mainline widening. 	<ul style="list-style-type: none"> - Facility is exposed and next to a busy freeway and is expected to provide a generally uncomfortable experience. - Most challenging connections for users on either end (west and east of river) to connect to existing and potential future bicycle/pedestrian facilities. 	<ul style="list-style-type: none"> - Offers open sight lines from I-205 drivers. 	<ul style="list-style-type: none"> - Could provide good connection on east side, however likely to offer challenging connection on the west side. 	
C2	Cantilever South	<ul style="list-style-type: none"> - Requires long approach ramp structure on east side of the river. West approach structure requires coordination around existing I-205 NB entrance ramp and bridge structure. - Requires retrofit of existing box girders and potentially bridge substructure. - Increases difficulty and expense of inspection and maintenance of Abernethy Bridge. 	\$25-30 Million, if done at the same time as I-205 mainline widening and seismic retrofit.	<ul style="list-style-type: none"> - Minimal construction and traffic impacts in addition to those already occurring due to the roadway widening and seismic improvements. - Ramp approach structure along river has visual impacts. - Cantilever structure changes visual appearance of existing I-205 Abernethy Bridge. - Ramp approach structure along river likely to have visual impacts. 	<ul style="list-style-type: none"> - Maintains existing navigation clearances for USCG permitting. - Ramp approach structure requires environmental permitting in addition to that needed for roadway widening and seismic improvements. 	<ul style="list-style-type: none"> - Facility is exposed and next to a busy freeway and is expected to provide a generally uncomfortable experience. - Most challenging connections for users on either end (west and east of river) to connect to existing and potential future bicycle/pedestrian facilities. 	<ul style="list-style-type: none"> - Offers open sight lines from I-205 drivers. 	<ul style="list-style-type: none"> - Could provide good connection on east side, however likely to offer challenging connection on the west side. 	
D	Suspended Under	<ul style="list-style-type: none"> - Requires retrofit of existing box girders and potentially bridge substructure. - Greatly increases difficulty and expense of inspection and maintenance of I-205 Abernethy Bridge. - Challenging approach connections due to the proximity of highway intersections, particularly on the west side. 	N/A	<ul style="list-style-type: none"> - Minimal construction and traffic impacts in addition to those already occurring due to the roadway widening and seismic improvements. - Suspended structure changes visual appearance of existing I-205 Abernethy Bridge. 	<ul style="list-style-type: none"> - Major reduction in navigation vertical clearances (from 75 feet to approximately 40 feet) for USCG permitting, which is considered a fatal flaw. - Minimal environmental permitting in addition to that needed for roadway widening and seismic improvements. 	<ul style="list-style-type: none"> - Facility is relatively protected, and the area under I-205 is unexpectedly quiet. - Provides good potential connection on east side. Hangs low - potentially uncomfortable to some users. 	<ul style="list-style-type: none"> - Difficult lines of sight result in several security challenges for facility users and enforcement. 	<ul style="list-style-type: none"> - Could provide good connection on east side, however likely to offer challenging connection on the west side. 	
E	New Bridge South Arch	<ul style="list-style-type: none"> - Pedestrian improvements along OR 99E require widening of existing bridge and half-viaduct structures and new connection around Arch Bridge abutment. - Construction requires in-water work. 	N/A	<ul style="list-style-type: none"> - Traffic impacts on OR 99E such as long-term lane closures required during construction of pedestrian improvements. - Typical environmental impacts associated with construction in the Willamette River. - Potential impacts to historic resources including viewsheds of and from the Oregon City Arch Bridge. 	<ul style="list-style-type: none"> - New bridge layout assumes providing similar navigational clearances as the adjacent Arch Bridge for USCG permitting. - Typical environmental permitting requirements for new bridge crossing with in-water work, including need for Section 404 and 401 permits (Clean Water Act). - Widening along OR 99E may require impacts to historical structures. 	<ul style="list-style-type: none"> - Requires out of direction travel from current I-205 MUP and on-street bicycle/pedestrian facilities to new development at Blue Heron site, OR 99E and Arch Bridge. - Good connection to future redevelopment site (Blue Heron site) and downtown Oregon City. - Challenging connection to OR 99E on east side. 	<ul style="list-style-type: none"> - Relatively regular use to be expected, good lines of sight to new development at Blue Heron site, OR 99E and Arch Bridge. 	<ul style="list-style-type: none"> - Provide good use and lines of sight from east side after Willamette Falls Legacy project is complete (on Blue Heron site). Potential limited visibility on west side. 	
F	OR 43 Active Only	<ul style="list-style-type: none"> - New bridge construction requires in-water work. - Roadway/traffic design challenges at OR 43 and OR 99E intersection. 	N/A	<ul style="list-style-type: none"> - Major traffic and construction impacts at OR 43 and OR 99E intersection. - Likely permanent ROW impacts required for new intersection design. - Potential impacts to historic resources including viewsheds of and from the Oregon City Arch Bridge. 	<ul style="list-style-type: none"> - Major reconstruction of area requiring extensive permitting. 	<ul style="list-style-type: none"> - Provides unique user experience and good connections on both sides of river. 	<ul style="list-style-type: none"> - Relatively regular use to be expected, good lines of sight to boat docks, OR 99E the esplanade and Arch Bridge. 	<ul style="list-style-type: none"> - Provide good use and lines of sight from Willamette Falls Legacy project is complete. - West side would have new OR 43 connection running nearby offering some security. 	



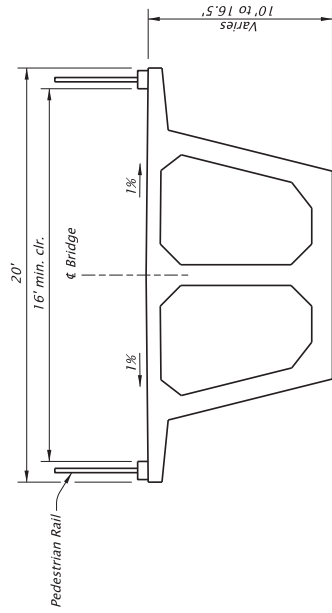
Attachment B. Exhibits



ABERNETHY BRIDGE PED/BIKE ASSESSMENT		
ALTERNATIVE A	10/20/2016	



DEVELOPED ELEVATION
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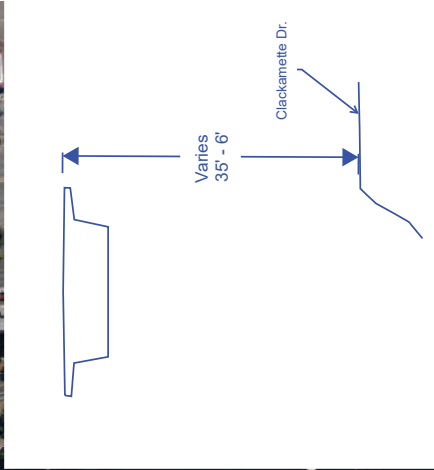
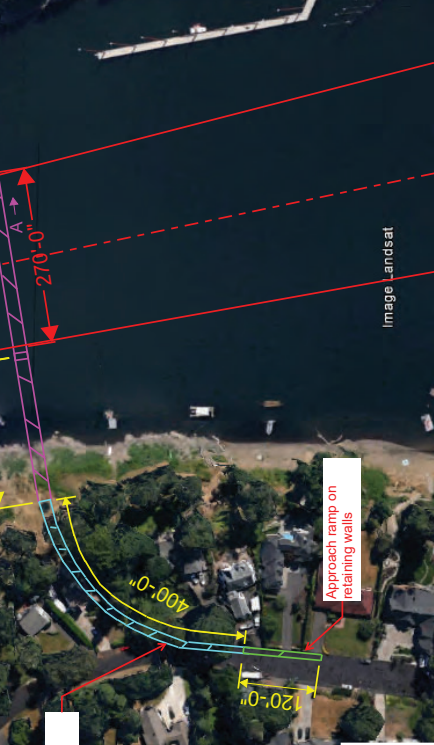
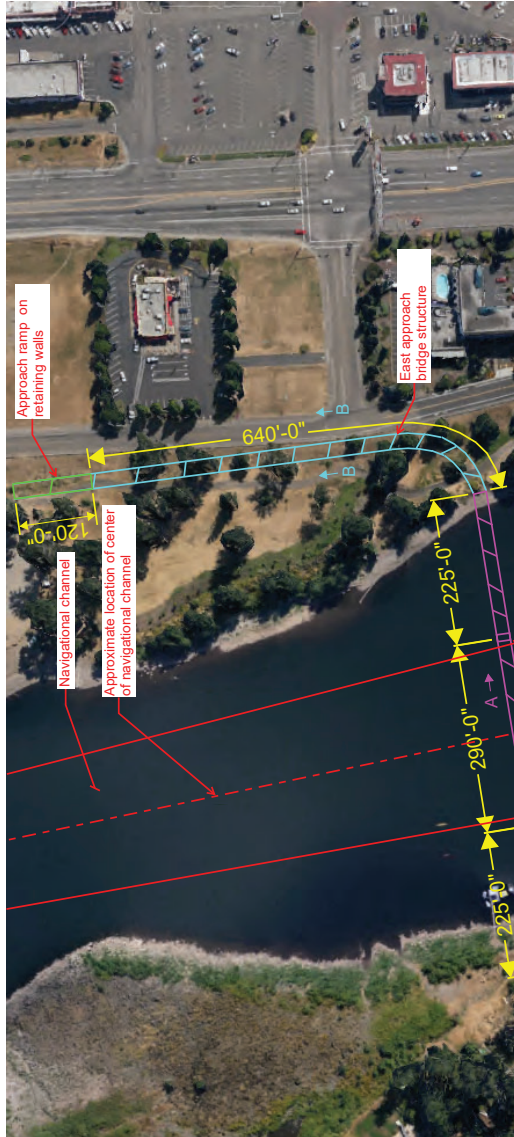
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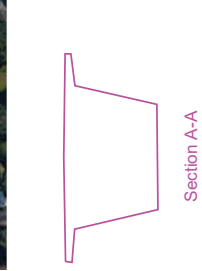
ABERNETHY BRIDGE PED/BIKE ASSESSMENT

ALTERNATIVE A 10/20/2016





Section B-B

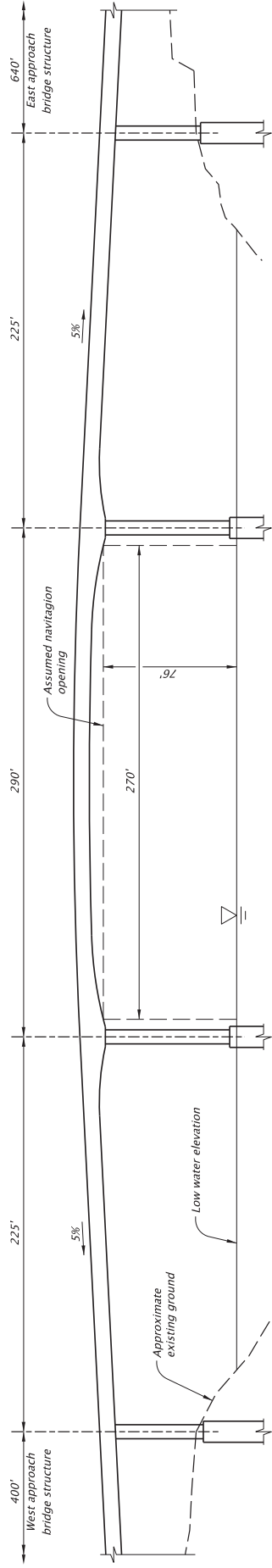


Section A-A

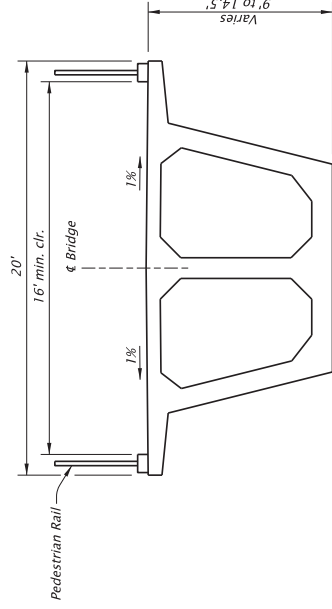


ABERNETHY BRIDGE PED/BIKE ASSESSMENT

ALTERNATIVE B	10/20/2016	FOR
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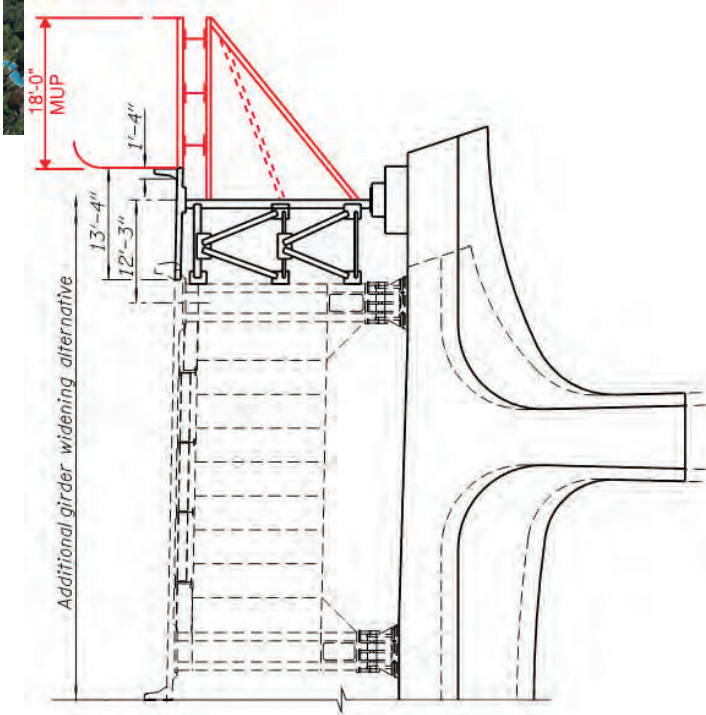
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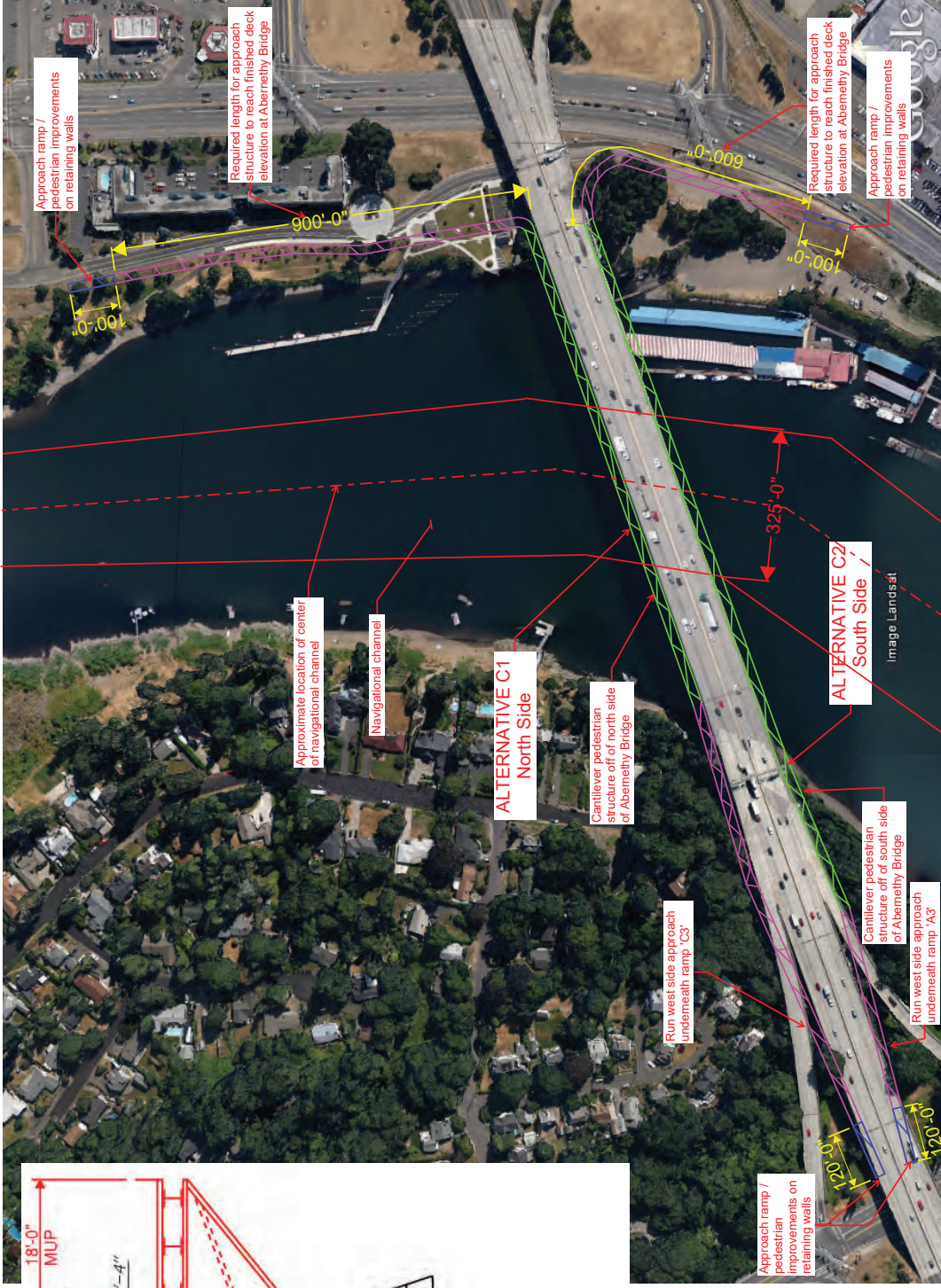
TYPICAL SECTION
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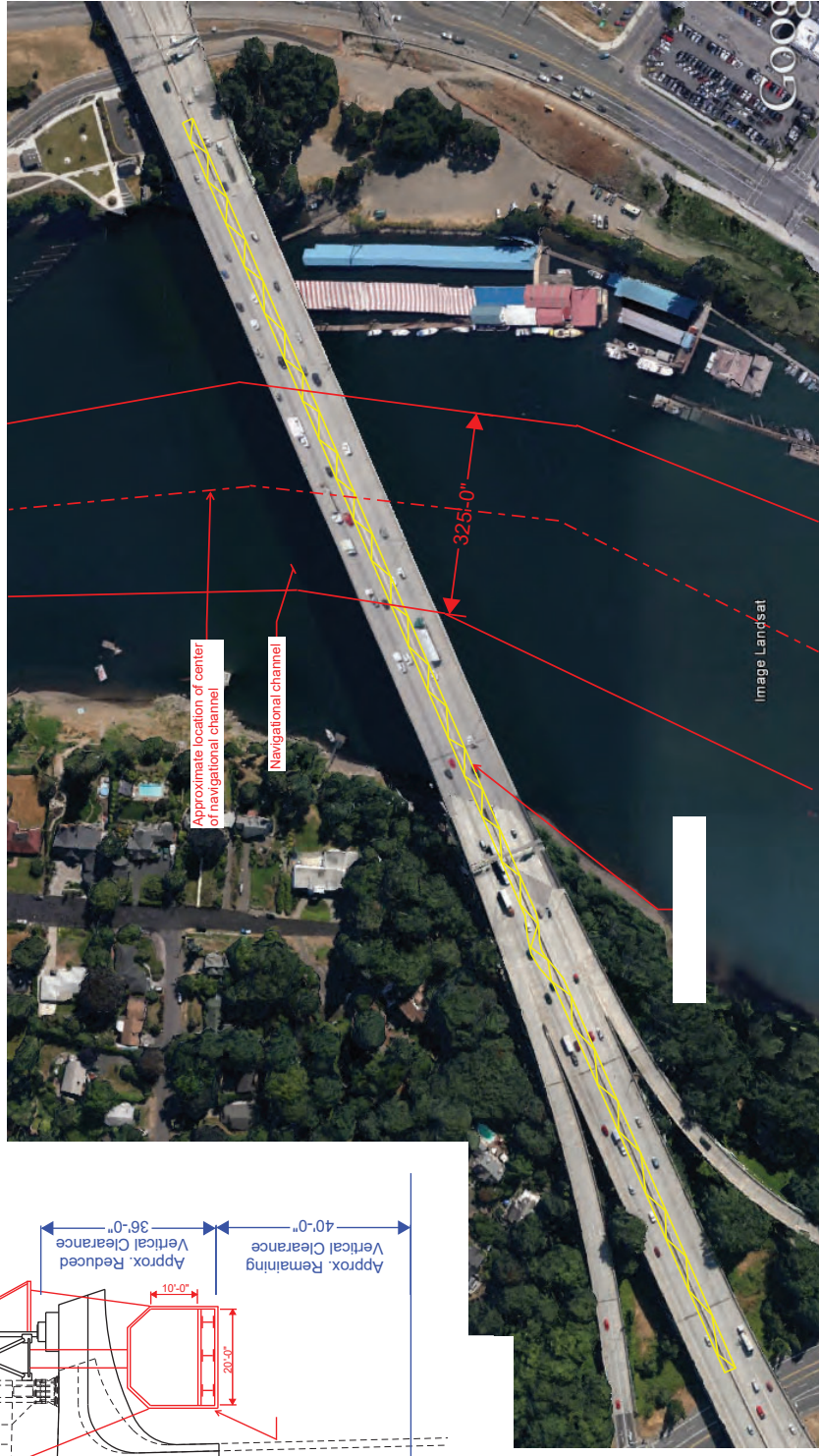
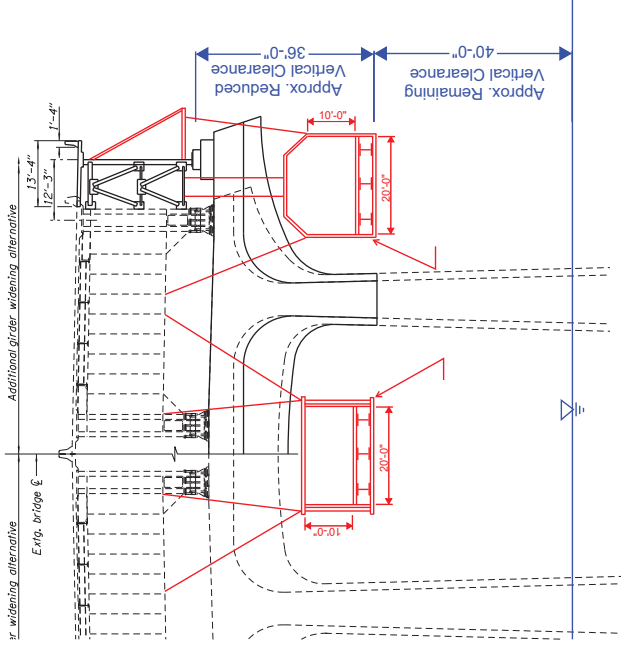


ABERNETHY BRIDGE PED/BIKE ASSESSMENT	
ALTERNATIVE B	10/20/2016
HR	



Section view of proposed Alternative C (North, South, SIM)





ABERNETHY BRIDGE PED/BIKE ASSESSMENT		
ALTERNATIVE D	10/20/2016	FOR



Attachment C. Willamette River Crossing Alternatives, Cost Estimates



Cost Estimate Assumptions

General

The following cost estimate assumptions apply to all alignment alternatives:

- Bridge unit costs account for illumination, traffic signals, paving, bridge rail/fencing, work bridges, shoring, cribbing, cofferdams, and geotechnical hazard mitigation as required.
- Unless otherwise noted, the following applies:
 - Mobilization – 10%
 - Traffic Control – 1%
 - Erosion Control – 2%
 - Contingencies – 40%
 - Construction Engineering – 15%
 - PE – 20%
 - Utilities and ROW – 1%

Alternative Specific Assumptions

Several cost estimate assumptions are specific to a particular alignment alternative as follows:

Alternative A – New Bridge South

- East Approach – Due to likelihood that the approach structure will be a combination of very tall retaining walls or a half-viaduct structure parallel to OR99E, use “New Approach Ramp” unit cost.
- Traffic Control – Due to the impacts required to construct the East Approach along OR99E, use a 2% multiplier.

Alternative B – New Bridge North

- Approaches – Assume that each approach has 120' of path supported by retaining walls at the approach ramp touch down location.
- Right of Way – To capture costs of proximity to the residential neighborhood on the West River bank, assume Utilities & ROW costs at 5% of the project costs.

Alternative C1/C2 – Cantilever North/Cantilever South

- Main Span - Assume that the I-205 mainline widening and cantilever path construction would occur simultaneously. The majority of substructure construction cost needed for these alternatives is assumed to be included in the I-205 mainline widening and a minor substructure construction cost has been included in for the MUP widening.
- West Approach – Assume last 120 of path is supported on retaining walls.
- East Approach – Assume last 100 of path is supported on retaining walls.

ODOT SCOPING COST ESTIMATE WORKSHEET



Rev 7/13

Alternative A - New Bridge South

BRIDGE NUMBER		09403		COUNTY		Clackamas	
BRIDGE NAME		STATE HIGHWAY NUMBER		ROUTE NUMBER			
Willamette R & Hwys 1E & 3, Hwy 64 (Geo Abernethy)		I-205 (HWY 064)		I-205 (HWY 064)			
Mile Post	SCOPE	REFERENCE NAME/PHONE		BY: M Triska	BY:KFS		
9.03	Bike and Pedestrian Assessment	Steve Drahota (503) 423-3712		Date Entered:	Date Checked:		
				10/3/2016	10/4/2016		

NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 1,280,600
	Mobilization	10% LS	1	\$ 922,400	\$ 922,400	
	Temp. Protection and Direction of Traffic	2% LS	1	\$ 180,900	\$ 180,900	
	Erosion Control	2% LS	1	\$ 177,300	\$ 177,300	
	Roadwork					\$ -
	Bridge No. 09403					\$ 8,866,000
	New CIP PT Box Girder Bridge Main Span	SF	17,200	\$ 275	\$ 4,730,000	
	West Approach Bridge Structure	SF	4,000	\$ 235	\$ 940,000	
	East Approach Bridge Structure / Sidewalk Widening	SF	13,600	\$ 235	\$ 3,196,000	
	Wearing Surface					\$ -
	Permanent Traffic Control Guidance Devices					\$ -
	Construction Subtotal:				\$ 10,146,600	
	40% - Contingencies:				\$ 4,058,600	
	15% - Construction Engineering:				\$ 2,130,800	
	Construction Total before Inflation:				\$ 16,336,000	
	Cumulative Inflation (annual rate)	years		0.0%	\$ -	
	Construction Total with Inflation:				\$ 16,336,000	

Summary Items (Before Inflation)	
TP DT:	\$ 180,900
Erosion Control:	\$ 177,300
Roadwork:	\$ -
Wearing Surface:	\$ -
Perm. Traffic Control:	\$ -
Roadway:	\$ 177,300
STIP Costs without Inflation)	
PE:	\$ 2,841,000
Utilities & ROW:	\$ 142,100
Roadway:	\$ 177,300
Structures:	\$ 8,866,000
Illumination****:	\$ -
Traffic Signal****:	\$ -
Geotechnical Hazards****:	\$ -
TP DT:	\$ 180,900
Mobilization:	\$ 922,400
Subtotal:	\$ 10,146,600
Contingencies:	\$ 4,058,600
Const. Eng:	\$ 2,130,800
Total Construction:	\$ 16,336,000

	Unit	%
PE (Incl. Design Oversight, Public Involvement, and ROW Acquisition)	L.S.	20%
Utilities & ROW	L.S.	1%
Total		21.0%

Total Project Programmatic Cost: \$ 19,319,100
(Based on 2015 Dollars)

Total Project Programmatic Cost: \$ 20,000,000

Burdened Cost Per SF of Structure/Walls: \$ 575

Use \$20M-\$25M for planning purposes

Denotes Items that are calculated on the item's respective worksheet.
This cost sheet does not include roadway improvement costs.
These costs are either included in the Contingency allocation or bridge SF costs.

ODOT SCOPING COST ESTIMATE WORKSHEET



Rev 7/13

Alternative B - New Bridge North

BRIDGE NUMBER		09403		COUNTY		Clackamas	
BRIDGE NAME		STATE HIGHWAY NUMBER		ROUTE NUMBER			
Willamette R & Hwys 1E & 3, Hwy 64 (Geo Abernethy)		I-205 (HWY 064)		I-205 (HWY 064)			
Mile Post	SCOPE	REFERENCE NAME/PHONE		BY: M Triska	BY:KFS		
9.03	Bike and Pedestrian Assessment	Steve Drahota (503) 423-3712		Date Entered:	Date Checked:		
				10/3/2016	10/4/2016		

NO.	ITEM	UNIT	QUANTITY	UNIT COST	TOTAL	Section Totals
	Mobilization and Traffic Control					\$ 1,225,400
	Mobilization	10% LS	1	\$ 947,600	\$ 947,600	
	Temp. Protection and Direction of Traffic	1% LS	1	\$ 93,800	\$ 93,800	
	Erosion Control	2% LS	1	\$ 184,000	\$ 184,000	
	Roadwork					\$ -
	Bridge No. 09403					\$ 9,198,000
	New CIP PT Box Girder Bridge Main Span	SF	14,800	\$ 275	\$ 4,070,000	
	West Approach Bridge Structure	SF	8,000	\$ 235	\$ 1,880,000	
	West Approach Ramp on Retaining Walls	SF	2,400	\$ 50	\$ 120,000	
	East Approach Bridge Structure	SF	12,800	\$ 235	\$ 3,008,000	
	East Approach Ramp on Retaining Walls	SF	2,400	\$ 50	\$ 120,000	
	Wearing Surface					\$ -
	Permanent Traffic Control Guidance Devices					\$ -
	Construction Subtotal:				\$ 10,423,400	
	- Contingencies:				\$ 4,169,400	
	- Construction Engineering:				\$ 2,188,900	
	Construction Total before Inflation:				\$ 16,781,700	
	Cumulative Inflation (annual rate)	years		0.0%	\$ -	
	Construction Total with Inflation:				\$ 16,781,700	

Summary Items (Before Inflation)	
TP DT:	\$ 93,800
Erosion Control:	\$ 184,000
Roadwork:	\$ -
Wearing Surface:	\$ -
Perm. Traffic Control:	\$ -
Roadway:	\$ 184,000
STIP Costs without Inflation)	
PE:	\$ 2,918,600
Utilities & ROW:	\$ 729,600
Roadway:	\$ 184,000
Structures:	\$ 9,198,000
Illumination****:	\$ -
Traffic Signal****:	\$ -
Geotechnical Hazards****:	\$ -
TP DT:	\$ 93,800
Mobilization:	\$ 947,600
Subtotal:	\$ 10,423,400
Contingencies:	\$ 4,169,400
Const. Eng:	\$ 2,188,900
Total Construction:	\$ 16,781,700

	Unit	%
PE (Incl. Design Oversight, Public Involvement, and ROW Acquisition)	L.S.	20%
Utilities & ROW	L.S.	5%
Total		25.0%

Total Project Programmatic Cost: \$ 20,429,900
(Based on 2015 Dollars)

Total Project Programmatic Cost: \$ 21,000,000

Burdened Cost Per SF of Structure/Walls: \$ 520

Use \$20M-\$25M for planning purposes

Denotes Items that are calculated on the item's respective worksheet.
This cost sheet does not include roadway improvement costs.
These costs are either included in the Contingency allocation or bridge SF costs.



Attachment D: I-205, West of River Alternatives, Cost Estimates

PROJECT DATA	Project Name	I-205 Widening - Multi-use estimate	Highway Number	
	Description	Multi-Use Path along northwest side of I-205 from OR43 to Stafford Rd. Intch.	Posted Number	
	County/City	Clackamas	Maint. District	
	Type of Project	Rural Non Freeway	Key No	
	Cost Complexity	Medium	Estimated By	MDJ

		Unit	Quantity	Unit Cost	Cost
SQUARE FOOT COSTS FROM STUDY PROJECTS (Costs Inflated to January 2007 Dollars)	Pavement				
	New Work	sf	205800	\$ 15.00	\$ 3,087,000.00
	New Work (Roadway Widening)	sf	21000	\$ 23.00	\$ 483,000.00
	2" Overlay (With Mod)	sf		\$ 1.00	\$ -
	2" Overlay (Pres Only)	sf		\$ 4.00	\$ -
	Structures				
	Lid	sf		\$ 400.00	\$ -
	New Bridges Post Tensioned	sf	13160	\$ 300.00	\$ 3,948,000.00
	New Bridges Prestressed	sf	7140	\$ 220.00	\$ 1,570,800.00
	New Rigid Frame Structures	sf	0	\$ 300.00	\$ -
	Bridge Widening	sf	0	\$ 250.00	\$ -
	Retaining Walls - CIP	sf	14700	\$ 125.00	\$ 1,837,500.00
	Retaining Walls - MSE	sf	41160	\$ 85.00	\$ 3,498,600.00
	Retaining Walls - Seg.	sf	0	\$ 35.00	\$ -
	Sound Walls - Precast	sf	0	\$ 35.00	\$ -
	Miscellaneous				
	Illumination	ea	108	\$ 10,000.00	\$ 1,080,000.00
Traffic Signals	Intersection	0	\$ 270,000.00	\$ -	
Streetscape Peripherals	lf off roadway		Low - \$400/lf	\$ -	

		Unit	Quantity	Unit Cost	Cost
COSTS FROM PUBLISHED BID ITEM AVERAGES (Region 1 Weighted Averages - 2006)	Miscellaneous				
	Concrete SWs, DWs, & Islands	sf		\$ 4.80	\$ -
	Concrete DWs, Reinforced	sf	0	\$ 6.66	\$ -
	Durable Striping	lf	0	\$ 2.06	\$ -
	Water Quality	ls	2000	\$ 100.00	\$ 200,000
	Drainage (culverts, etc.)	lf	20000	\$ 15.00	\$ 257,250
	Mobilization	%	1	10%	\$ 1,596,215.00
	Temporary Traffic Control	%	1	8%	\$ 1,276,972.00

Miscellaneous Items - At the Estimator's Discretion				
Structure removal	sf		\$ 55.00	\$ -
Detour Structure	sf		\$ 285.00	\$ -
				\$ -

<i>Project Subtotal</i>				\$ 18,835,337.00
<i>Project Scope Contingencies</i>				\$ 9,417,668.50

CONSTRUCTION ESTIMATE TOTAL				\$ 28,253,005.50
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Other Costs	Preliminary Engineering	%	1	20%	\$ 5,650,601.10
	Construction Engineering	%	1	15%	\$ 4,237,950.83
	Environmental Studies	LS	All	EA Typical	\$ -
	Separate Path (City Est.)	LS	1	\$ 2,000,000.00	\$ 2,000,000.00
	Right of Way	LS	All	\$ 250,000	\$ 250,000.00

TOTAL PROJECT ESTIMATE				\$ 40,391,557
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ROW Info	XXXX	\$ 250,000.00
		\$ -
		\$ -

PROJECT DATA	Project Name	I-205 Widening - Misc Sidewalks and Shoulder Bike Lanes estimate	Highway Number	
	Description	Sidewalks and Shoulder Bike Lns through West Linn - Bike Lns in Rural Areas, Willamette Falls Dr. and Borland between OR43 and Stafford	Posted Number	
	County/City	Clackamas	Maint. District	
	Type of Project	Freeway	Key No	
	Cost Complexity	High	Estimated By	MDJ

	Unit	Quantity	Unit Cost	Cost
SQUARE FOOT COSTS FROM STUDY PROJECTS (Costs inflated to January 2007 Dollars)	Pavement			
	New Work	sf	162720	\$ 3,742,560.00
	New Work 10th to OR43	sf	85160	\$ 1,958,680.00
	2" Overlay (With Mod)	sf		\$ -
	2" Overlay (Pres Only)	sf		\$ -
	Structures			
	Lid	sf		\$ 400.00
	New Bridges Post Tensioned	sf	0	\$ 300.00
	New Bridges Prestressed	sf	0	\$ 220.00
	New Rigid Frame Structures	sf	0	\$ 300.00
	Bridge Widening	sf	0	\$ 250.00
	Retaining Walls - CIP	sf	23980	\$ 2,997,500.00
	Retaining Walls - MSE	sf	67044	\$ 5,698,740.00
	Retaining Walls - Seg.	sf	0	\$ 35.00
	Sound Walls - Precast	sf	0	\$ 35.00
	Miscellaneous			
	Illumination	ea	120	\$ 1,200,000.00
Traffic Signals	Intersection	0	\$ 330,000.00	
Streetscape Peripherals	If off roadway		Low - \$400/lf	

	Unit	Quantity	Unit Cost	Cost
COSTS FROM PUBLISHED BID ITEM AVERAGES (Region 1 Weighted Averages - 2006)	Miscellaneous			
	Concrete SWs, DWs, & Islands	sf	52800	\$ 253,440
	Concrete DWs, Reinforced	sf	0	\$ 6.66
	Durable Striping	lf	0	\$ 2.06
	Water Quality	lf	29380	\$ 2,938,000
	Drainage (urban and rural)	lf	12000	\$ 3,000,000
	Mobilization	%	1	10%
	Temporary Traffic Control	%	1	8%

Miscellaneous Items - At the Estimator's Discretion			
Structure removal	sf		\$ 55.00
Detour Structure	sf		\$ 285.00
			\$ -

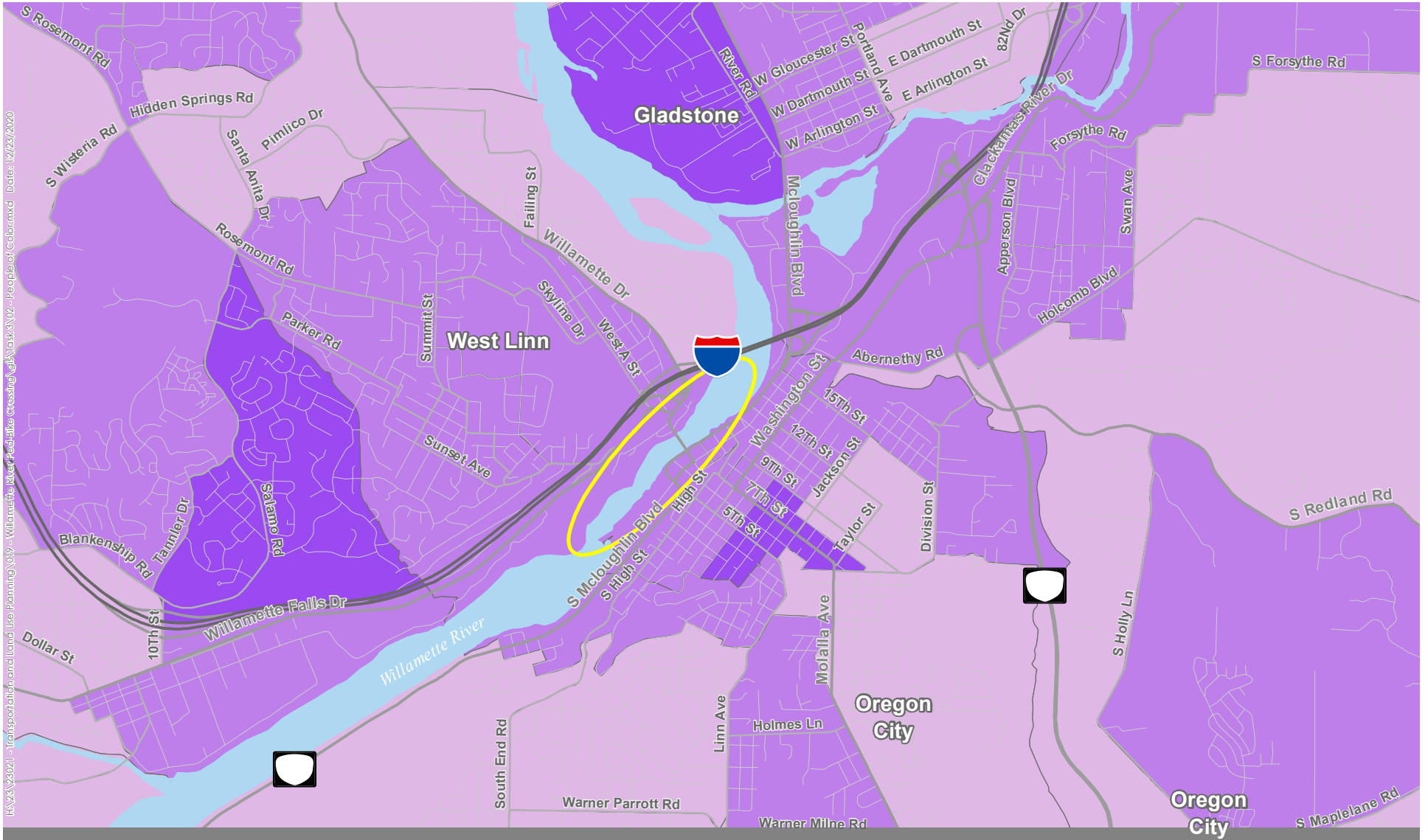
<i>Project Subtotal</i>				\$ 25,710,925.60
<i>Project Scope Contingencies</i>				\$ 12,855,462.80
CONSTRUCTION ESTIMATE TOTAL				\$ 38,566,388.40

Other Costs	Preliminary Engineering	%	1	20%	\$ 7,713,277.68
	Construction Engineering	%	1	15%	\$ 5,784,958.26
	Environmental Studies	LS	All	EA Typical	\$ -
	Misc.	LS	0	\$ 4,000,000.00	\$ -
	Right of Way	LS	All	\$ 1,000,000	\$ 1,000,000.00

TOTAL PROJECT ESTIMATE				\$ 53,064,624
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ROW Info	XXXX	\$ 1,000,000.00
		\$ -
		\$ -

Appendix B
Community Profile Maps



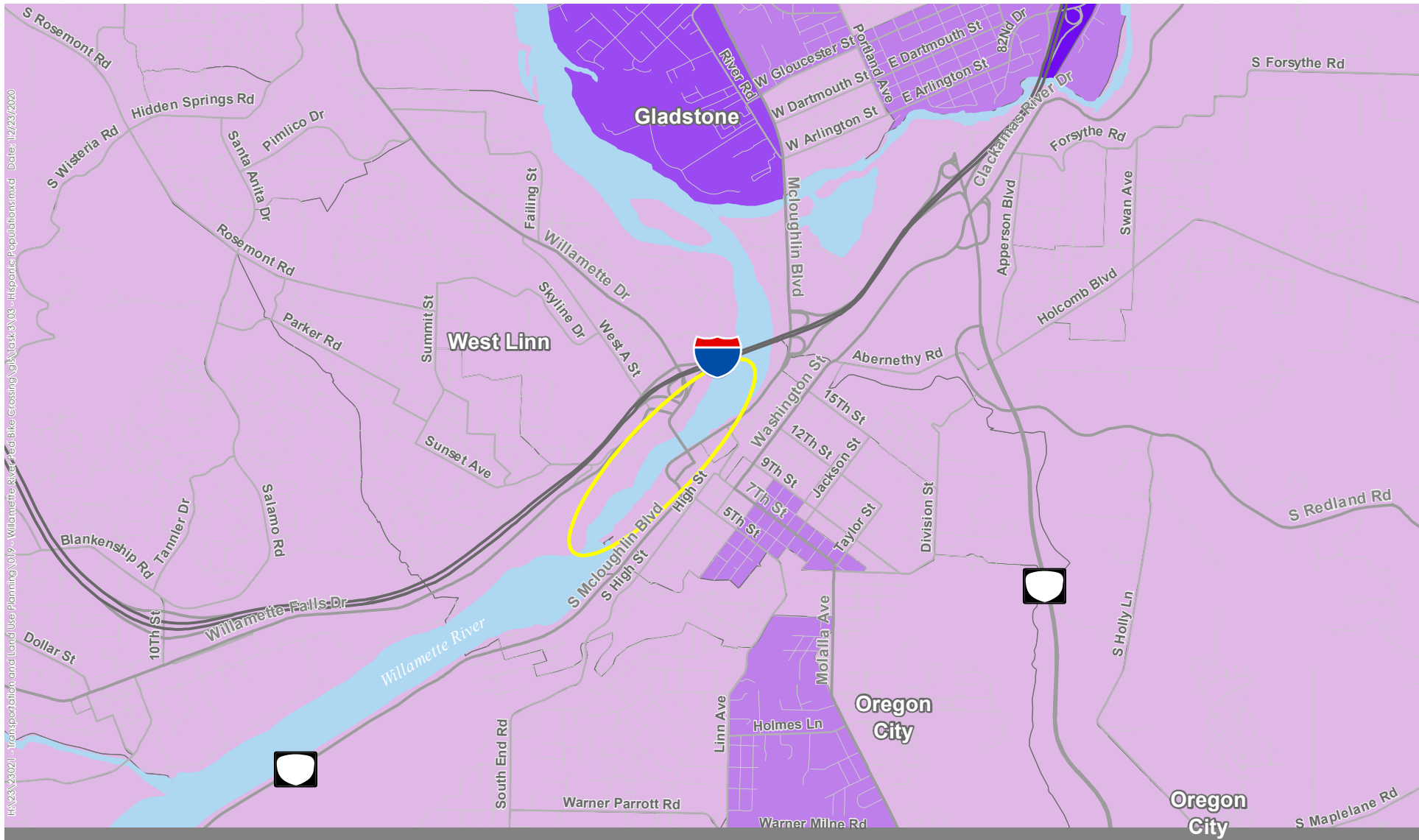
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People of Color

- Less than 10%
- 20 - 30%
- Water
- 10 - 20%
- Focus Study Area



Figure 2



H:\23\23021 - Transportation and Land Use Planning\019 - Willamette River Ped Lake Crossing\GIS\Task3\03 - Hispanic Populations.mxd Date: 12/23/2020

Hispanic Population

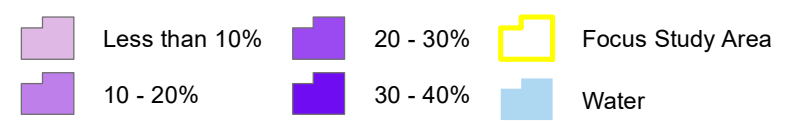
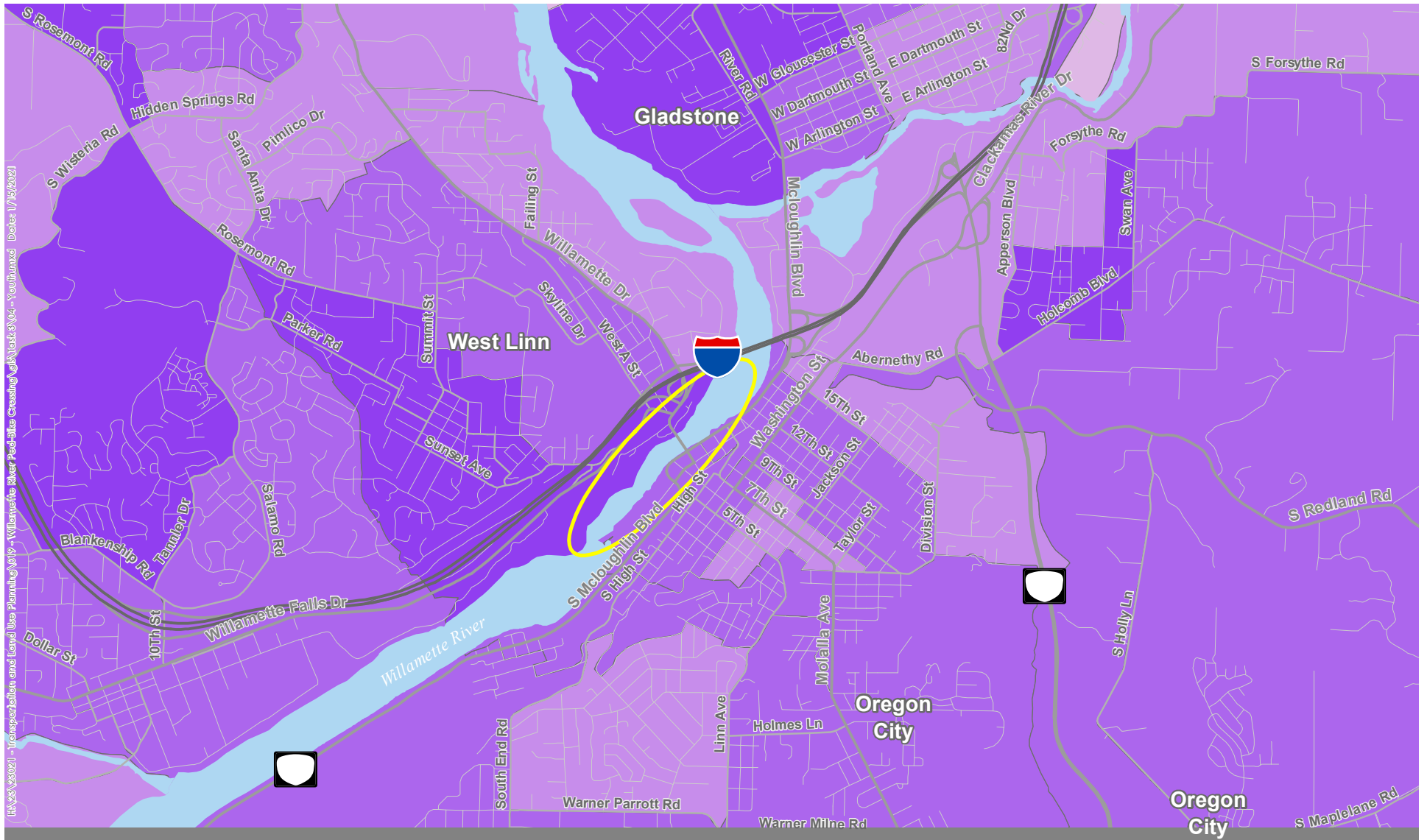


Figure 3



Population Younger than 18

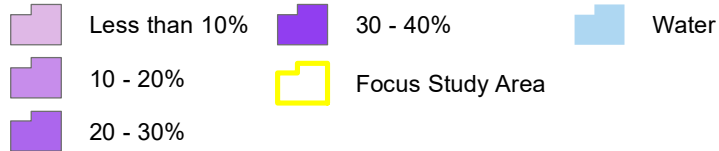
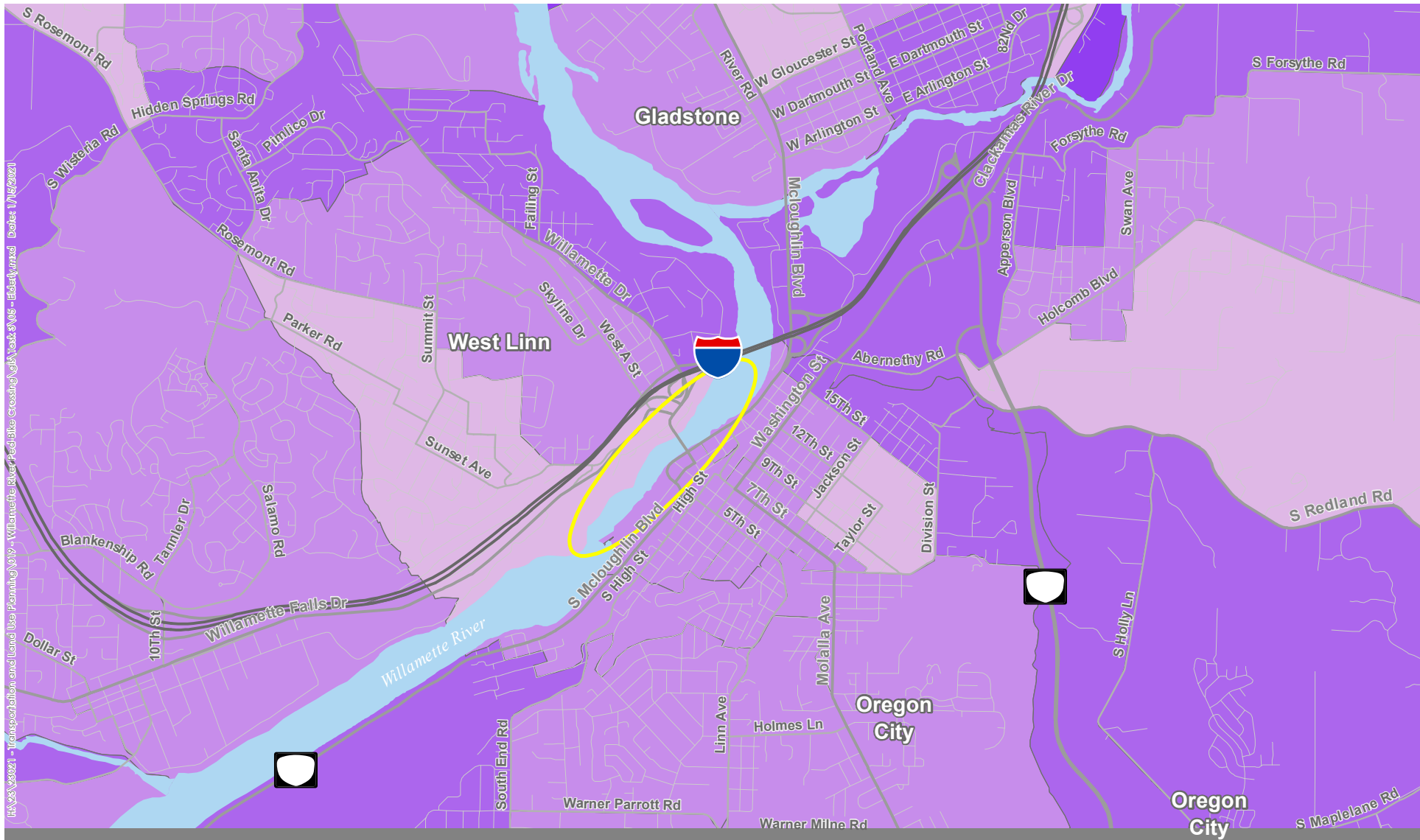


Figure 4



Population Older than 64

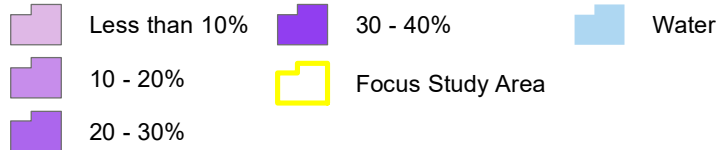
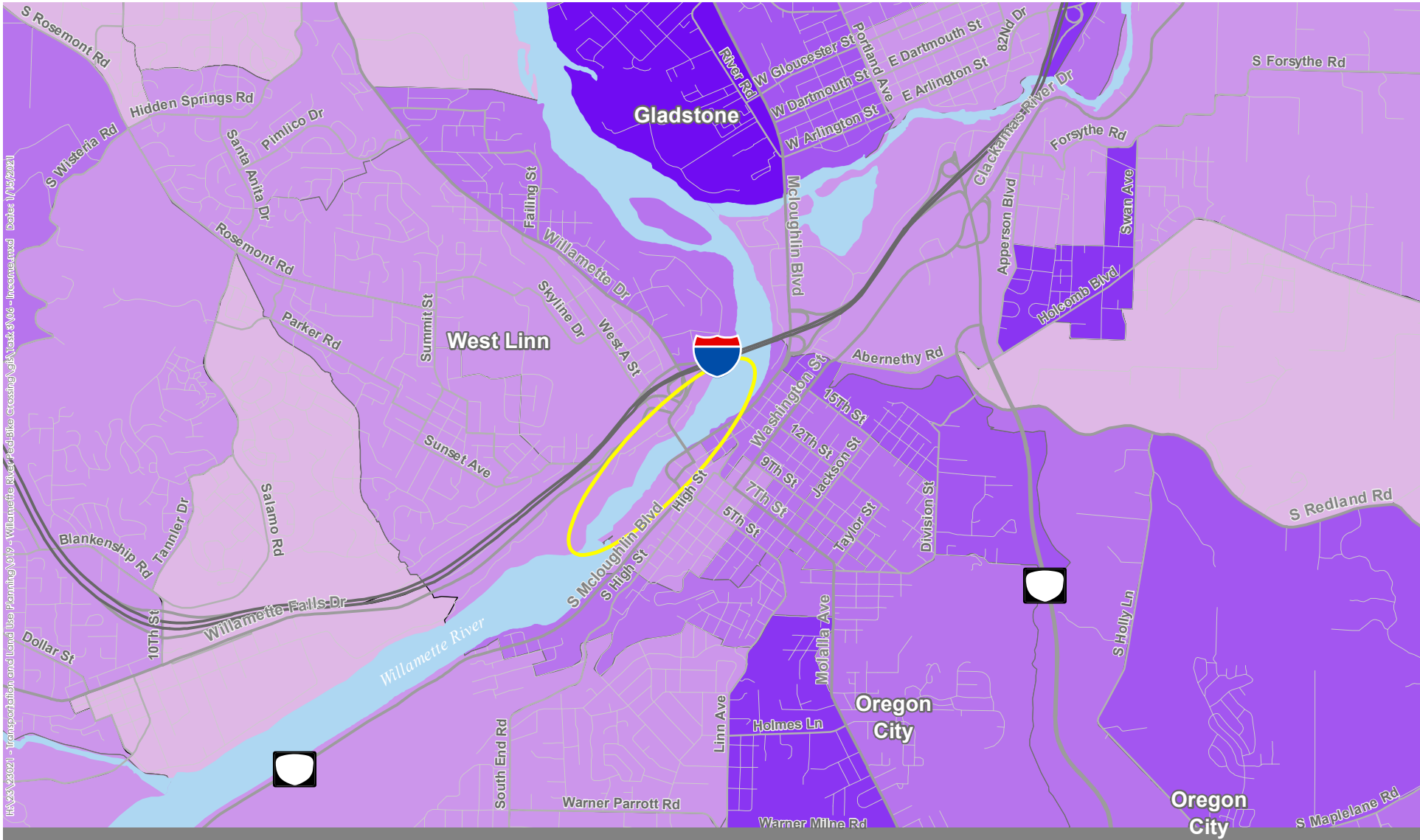


Figure 5



Individuals Experiencing Income Under 200% of Federal Poverty Line

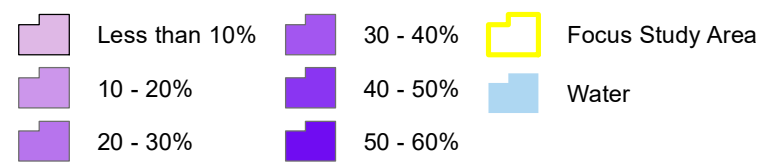
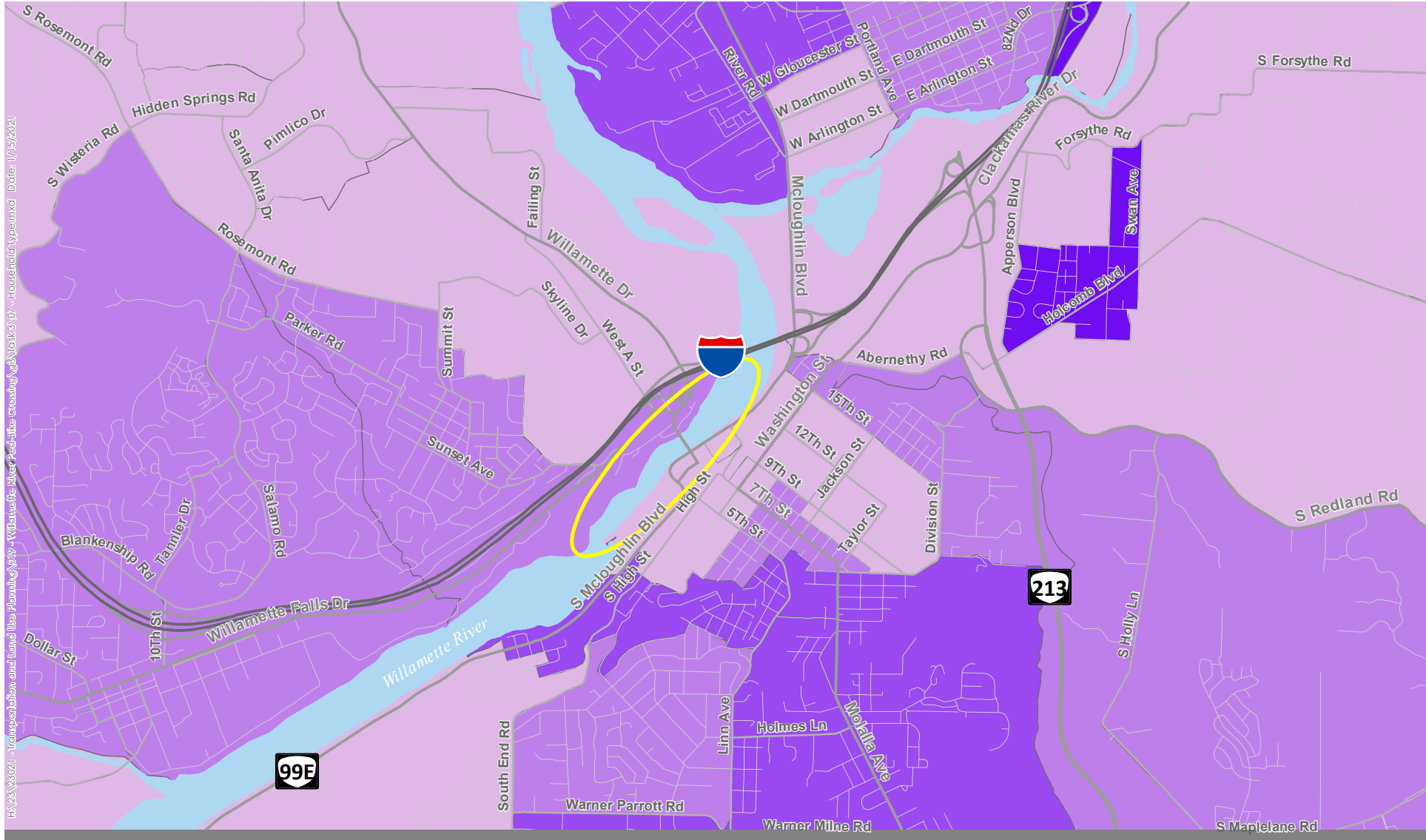


Figure 6



Crowded Households

- 0%
- 5 - 10%
- Focus Study Area
- 0 - 5%
- 10 - 15%
- Water



Figure 7