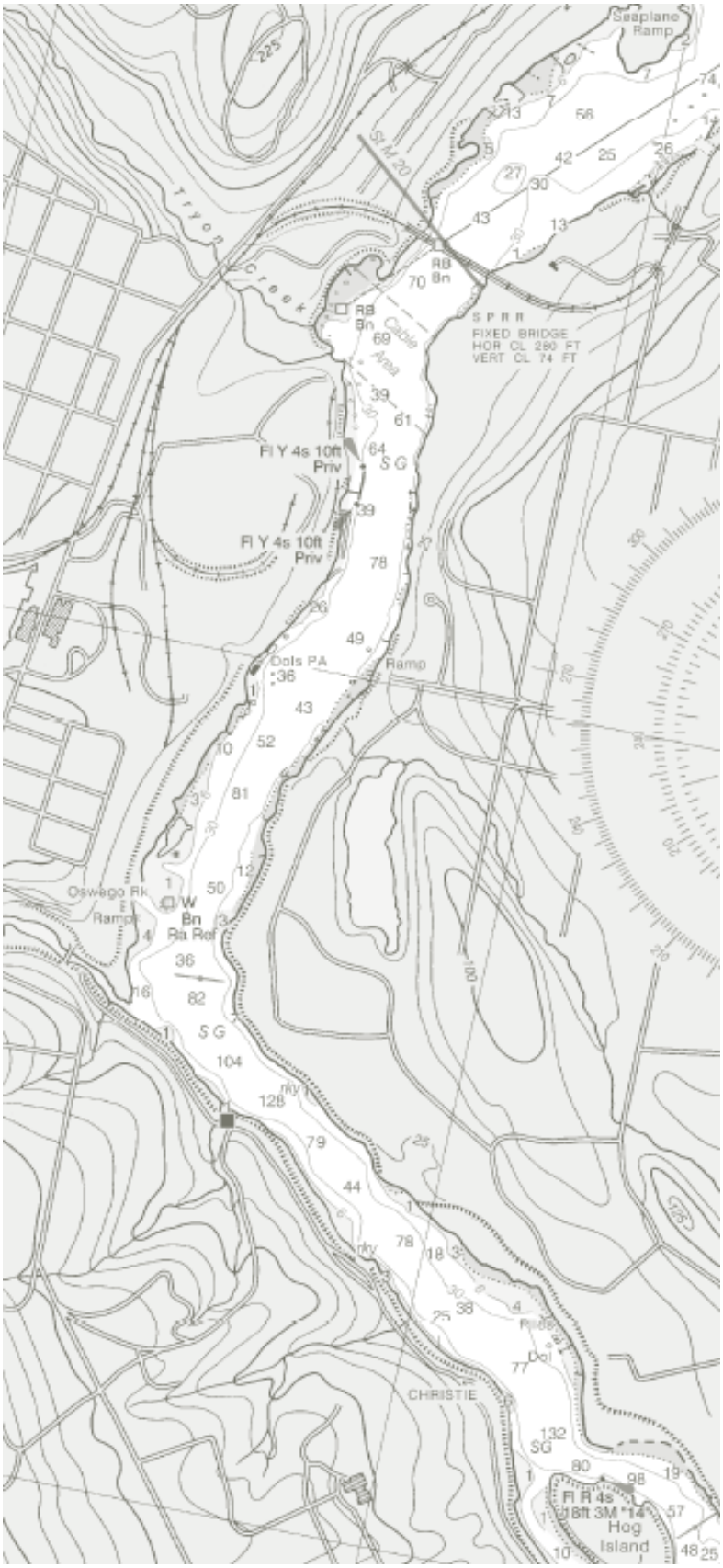

Oak Grove–Lake Oswego Pedestrian/Bicycle Bridge Feasibility Study

DRAFT FINAL REPORT

January 21, 2020

CLACKAMAS COUNTY

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1 Executive Summary:

Background

The idea of a pedestrian/bicycle bridge crossing the Willamette River has been raised in various forums over the years. A bicycle/pedestrian bridge project was included in the project list for the Clackamas County Transportation System Plan (TSP) when it was last updated in 2013 as well as in the Lake Oswego Transportation System Plan. In addition this concept has also been raised in other conversations with regional and local pedestrian, bicycle and transportation committees. The reason for the attention focused on this idea is self-evident: between Sellwood and Oregon City the Willamette River creates a break in bicycle and pedestrian connectivity of over 9 miles, one of the largest in the Portland region. The purpose of this project is to analyze the feasibility of a bicycle/pedestrian bridge across the Willamette River to improve active transportation connective within the Portland region south of Portland.

To determine the feasibility of implementing a pedestrian/bicycle bridge project Clackamas County Department of Transportation and Development (DTD) obtained $306,000 in Active Transportation Development funds from Metro for this feasibility study and included it in the DTD Long-Range Planning Work Program for FY2018/2019. To determine if a pedestrian/bicycle bridge is feasible, this study examines potential bridge alignments and bridge type alternatives, identifies probable environmental and permitting requirements, and develops construction and operations cost estimates for a new pedestrian/bicycle bridge over the Willamette River.

The study area includes both sides of the Willamette River from Terwilliger Boulevard/Tryon Cove Park and Rivervilla Park south to a line extending from Oak Grove Boulevard to Roehr Park in Lake Oswego (see Map ES-1 on the following page). The study area was selected based on its location approximately mid-way between the north and south end of the area identified for the proposed bridge in the Clackamas County TSP. Due to the focus of this study on the Oak Grove – Lake Oswego area, throughout the study the project is referred to as the **OGLO Bridge** (**O**ak **G**rove – **L**ake **O**swego)

Feasibility

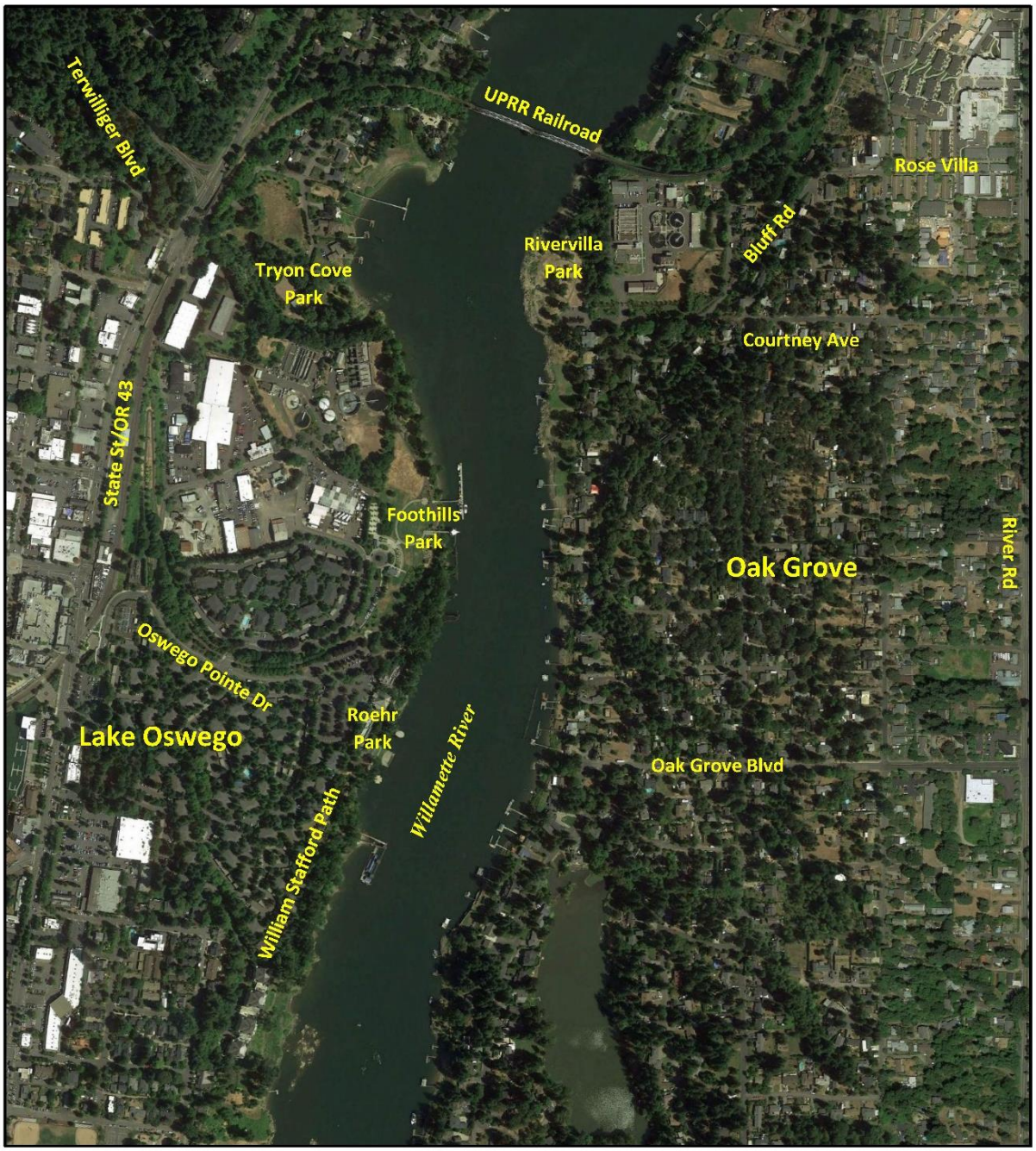
Technical Feasibility

The following are the findings for the technical criteria that were used to determine the feasibility of the bridge:

Feasible Landing Sites - Feasible landing sites were identified as being on publically owned property that would not require taking of private property. There were two landing sites meeting this criteria on the west side of the river and one on the east side of the river. These landing sites are:

1. Terwilliger Blvd right-of-way (west)
2. Portland Bureau of Environmental Services/Foothills Park (west)
3. Right-of-way of Intersection of Courtney Avenue/Fairoaks Ave

Map ES-1: Study Area



Feasible Alignments – Feasible alignments are those that connect 2 feasible landing sites and do not require impacting any private property. Two feasible alignments were identified:

1. Terwilliger Blvd to Courtney Ave
2. BES/Foothills Park to Courtney Ave

Feasibly Addresses Design Criteria – Two design criteria were identified: 1) The bridge concepts must clear the navigable envelope identified by the Coast Guard (74 feet

above ordinary high water) for the entire distance across the river; 2) The bridge must have a slope of no more than 5% at any point to meet ADA criteria. The two proposed bridge alignments meet both criteria.

Environmental Feasibility – The proposed bridge alignments must not have any environmental impacts that cannot be mitigated.

Permitting Feasibility – As proposed the bridge alternatives must meet the criteria of the three main permitting agencies (Coast Guard, Lake Oswego and Clackamas County) that would allow the project to secure necessary permits. Based on the general design concepts developed for this study, that is possible.

Cost Feasibility – The estimated cost for the bridge should be within the current cost range of similar pedestrian/bicycleestrian bridges – between $400 and $800 per square foot of deck. All the bridge alternatives studied fell into that cost range.

Funding Feasibility – Sufficient funds should be available from federal, state and local sources that it reasonable to expect that funding can be secured.

Based on the engineering analysis conducted in this study, that the OGLO bridge project is technically feasible.

Community Feasibility

Technical feasibility is only one aspect of project feasibility, community feasibility must also be considered. Community feasibility can be thought of as the extent to which a project is viewed as needed and important by the communities impacted by the project and those that are likely users. Community feasibility of the OGLO project within the two affected communities, Oak Grove and Lake Oswego was identified as an important aspect of the project. Several input methods were included in the project to help better understand community attitudes and concerns about the project. Specific input opportunities included an online questionnaire, public open house events, public input opportunities at project committee meetings, comments submitted via email, as well as a random, scientific survey. The following briefly describes the results of the input opportunities that were available during the project.

1. Online Questionnaire – An online questionnaire was made available in May/June 2019 to determine the amount people expected to use the proposed bridge. Responses to that questionnaire indicated that use would average 1,598 trips per day. In the responses to the questionnaire 174 respondents stated that they would use the project and 98 indicated that they would not use it.
2. Public Open House Events – 215 people attended public open house events that were conducted in August 2019 as part of this project and provided comments on 10 possible bridge alignments that were under consideration as part of the project, with 3 alternatives being selected by a majority of those that attended the open house events as the best alternatives.
3. Comments at Project Committee Meetings – There were many comments received during public input opportunities at the meetings of the project Community Advisory Committee and the project Policy Committee meeting. An overview of those comments is included in this report starting on page 27.

4. Comments Submitted Via Email – The project managers email address was included on all project materials and community members were invited to submit comments via email. Over 400 email comments were received. In some cases duplicate emails were received from the same commenter. In such cases, the project staff where the same email was sent from the same email address to more than one individual on the project team. Overall 282 unique emails were received with 93 (32.9%) opposed to the project, 33 (11.7%) that were not in support or opposition but were seeking information, and 156 (55.3%) in support of the project. Further analysis of the emails showed that emails in opposition to the project came from 30 individuals, 17 individual sent emails seeking information and 145 individuals sent emails in support of the project.
5. Scientific Survey - The scientific survey was conducted by a survey research firm to determine community support or opposition to the project. The survey was conducted a random sample of 200 registered voters from Lake Oswego and 200 from Oak Grove. The total sample size of 400, is sufficient to provide results with 95% accuracy. The survey was conducted in September 2019 and showed 63% support for the OGLO Bridge, with 28% opposed and the remaining 9% neutral. There was some difference in the responses between the east and west sides of the river with 71% of those on the east side stating they supported the bridge, with 55% in support on the west side.

Although there are those opposed to the project, based on data collected during the project between 55% and 63% of residents of the project area support the OGLO Bridge project, between 28% and 33% are opposed, and between 9% and 11% were neutral. The input process also showed that there is a somewhat higher rate of support for the project in Oak Grove than in Lake Oswego.

Near the end of this feasibility study, the City of Lake Oswego City Council passed a motion at a City Council meeting stating: "The City of Lake Oswego will contribute no funds for construction or maintenance of a bridge from Oak Grove to Lake Oswego, The City of Lake Oswego will not support or approve infrastructure for ramps, bridge support structures or other facilities related to an OGLO bridge in Foothills or Tryon Cove Parks."

Based on support for the project by over 55% of those providing input, the OGLO Bridge project appears to be potentially feasible if it can be done in a way that does not impact the City of Lake Oswego.

Further information on Community Input and Intergovernmental Coordintation can be found in Appendix D.

Study Findings

A. There are technically feasible alternative landing points for the OGLO Bridge within the project study area, two on the west side of the river and one on the east.

B. Public land and/or right-of-way is available for and can accommodate bridge landings and approaches.

C. Bridge specifications over the Willamette River will be driven by required U.S. Coast Guard (USCG) navigation clearances (74 feet above ordinary high-water mark) and Americans with Disabilities Act (ADA) slope guidelines for pedestrian/bicycle facilities (maximum 5 percent).

D. Different bridge main span and bridge approach design treatments/types are possible – steel, concrete, cable-stayed, and extradosed.

E. Two feasible bridge locations and alignments were identified:

   1. SW Terwilliger Blvd on the west side to SE Courtney Avenue on the east side (Alternative A-3)

   2. Foothills Park on the west side to SE Courtney Avenue (Alternative D-3).

F. The two preferred bridge alternatives would both accommodate light-weight emergency vehicles, e.g., police cars and ambulances.

G. In response to a request from Metro, it was determined that the inclusion of a single transit lane would be feasible for use of vehicles of less than 20,000 pounds gross vehicle weight as an addition to the Foothills Park to Courtney alternative. It was determined that the addition of the transit lane was only feasible for the Foothills Park-Courtney Ave alternative and that the addition of a lane to serve small shuttle bus type transit vehicles would increase the cost of that bridge by 44% to 48%. In addition the roadway connections to the Courtney Ave landing site on the east side are not conducive to bus traffic. After consideration of the proposal to include a bus lane on the bridge, both the Clackamas County Board of Commissioners and the project Policy Committee chose not to support the bus lane and that option was eliminated from further consideration.

   Further information on the Bridge Alternatives Analysis can be found in Appendix A.

H. Costs for the two preferred alignment alternatives were estimated using different bridge types/treatments and percentage factors for engineering, permitting, etc. The range of cost estimates resulting from using different bridge/bridge approach types/materials are:

   - Terwilliger to Courtney (Alternative A-3) - $44.5 million to $52 million
   - Foothills Park to Courtney (Alternative D-3) - $30.3 million to $36.4 million

I. The addition of transit would increase costs for Alternative D-3 to a range of $43.6 million to $54.2 million.

J. A wide range of potential funding options were researched for the project..See Appendix C for more information.

   1. Metro has committed $500,000 to be used for engineering and environmental studies for the development of OGLO Bridge.

   2. The Metro Parks and Open Space bond approved by voters in November 2019 identified the OGLO Bridge project as an example of a project of regional significance that could receive funding.

   3. 2020 Regional Transportation Bond Measure – A Metro regional transportation funding measure is under consideration for referral to the November 2020 ballot. At present the OGLO Bridge has not been identified as a Tier 1 priority project. If the proposed funding measure goes forward and the OGLO Bridge project is included and the measure is approved by the voters, this funding would likely be the best funding source for potential OGLO construction because these funds would be locally controlled and available within a short timeframe.

4. Regional Flexible Funds (RFFA) – RFFA is administered by Metro using pass-through funds from federal transportation agencies. The federal funds that make up RFFA have several limitations including design requirements and provision of matching funds. Although an OGLO Bridge would be eligible for such funds, typically these funds are used for projects between $5 million and $8 million. The limited amount of funds available (less than $45 million for FY2022-24) and competitive nature of the program would likely prevent this source from being used for more than a small percentage of the total funding that would be needed to design and construct an OGLO Bridge.
5. Federal Funds Administered by Oregon DOT – Oregon Department of Transportation administers several federal pass-through programs that could supply some funding for the OGLO Bridge. These funds include: Surface Transportation Block Grant Program (STBG); Transportation Alternatives Program (TAP), which is now incorporated into STBG; and Congestion Mitigation and Air Quality (CMAQ). All federal funds have the same limitations for use on this project that are described above for the Regional Flexible Funds.
6. Direct Federal Funding – It is also possible to secure federal funds directly through national grant programs administered by USDOT. The largest such program is Better Utilizing Investments to Leverage Development (BUILD). Although the OGLO Bridge is eligible for BUILD funds, those funds are awarded through a very competitive national process.

K. Potential Bridge Operators: The feasibility study did not identify an organizational model for bridge construction/operations/maintenance. However, due to the cost and complexity of the project it seems likely that it would be undertaken by a consortium of governments and organizations with assistance by regional or state agencies.

   Further information can be found in Appendix B on Funding Opportunities.

L. The OGLO Bridge would be subject to local permitting requirements by Clackamas County and the City of Lake Oswego if it extends into the city.

M. The National Environmental Policy Act (NEPA) would apply to this project because the Willamette River is a regulated navigable waterway. Use of federal funds for the bridge construction would also trigger a NEPA analysis. The OGLO Bridge project would be subject to United States Coast Guard (USCG) permitting. USCG would be the lead federal agency for the project for the NEPA assessment of the project.

N. Other federal and state agencies that might have a permitting roles include: United States Fish & Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), Oregon Department of State Lands (ODSL), Oregon Department of Environmental Quality (ODEQ), Oregon State Historic Preservation Office (SHPO) and Oregon Department of Fish & Wildlife (ODFW).The City of Lake Oswego municipal code also has requirements for structure heights that may apply depending on the bridge landing site on the west side of the Willamette River.

   Further information on Agency Permitting and Approval Requirements can be found in Appendix C.

2 Background

The idea of a pedestrian/bicycle bridge crossing the Willamette River between the unincorporated community of Oak Grove and the City of Lake Oswego has been raised in various forums over the years. The proposed bridge project was put forward and included in the project list for the Clackamas County Transportation System Plan (TSP) when it was last updated in 2013. In that plan it is project #2022 and is identified as the "Lake Oswego to Milwaukie Bridge" to be located between Sellwood and Oregon City, and described as follows: "Construct pedestrian/bicycleestrian crossing over the Willamette River in accordance with the Active Transportation Plan." The concept has also been raised in other conversations with regional and local pedestrian, bicycle, and transportation committees.

To begin the process of implementing this project, the Clackamas County Department of Transportation and Development (DTD) secured $306,000 in Active Transportation Development funds from Metro for a feasibility study and included the project in the DTD Long-Range Planning Work Program for FY2018/2019.

This Oak Grove-Lake Oswego (OGLO) Pedestrian/Bicycle Bridge Feasibility Study examines potential bridge alignments and bridge type alternatives, identifies probable environmental and permitting requirements, and develops construction and operations cost estimates for a possible new bridge over the Willamette River.

The study area for this project was selected because it was located approximately mid-way between the north and south end of the area identified for the proposed bridge in the Clackamas County TSP. The study area includes both sides of the Willamette River. On the north end, the study extends from the vicinity of SW Terwilliger Blvd/Tryon Cove Park on the west side and Rivervilla Park on the east side. The south end of the study area is bounded by William Stafford Pathway on the west side and SE Oak Grove Blvd on the east side. Due to the expense and difficulty in securing private property, the bridge landing sites considered were limited to those in public ownership and/or public road right-of-way.

The following sections describe the feasibility study in greater depth and are organized around the following main issues studied in the Feasibility Study:

- Analysis of Alternative Locations for the Bridge
- Plan-level Costs and Funding
- Scoping for NEPA and Permitting
- Intergovernmental Coordination
- Public Involvement

3 Analysis of Alternative Alignments for the Bridge

A critical step in the feasibility study was to determine if there were technically feasible locations for bridge landings on both the east and west sides of the Willamette River. Before the feasibility study was begun, a lack of landing sites was considered the most likely finding that could result in the bridge being determined to be infeasible.

The analysis of alternative locations was conducted in several steps. Criteria were identified to use to evaluate possible bridge landing sites. These criteria focused on data to identify the potential benefits and impacts for each landing site. Benefits and impacts identified and analyzed included, but were not limited to, right-of-way, access, safety, utilities, permitting, and environmental issues. See the materials in Appendix A for further detail. See Figure 2 for a summary of the landing locations and alternative alignments that were analyzed. The following describes the landing site selection process in further detail.

Landing Site Criteria

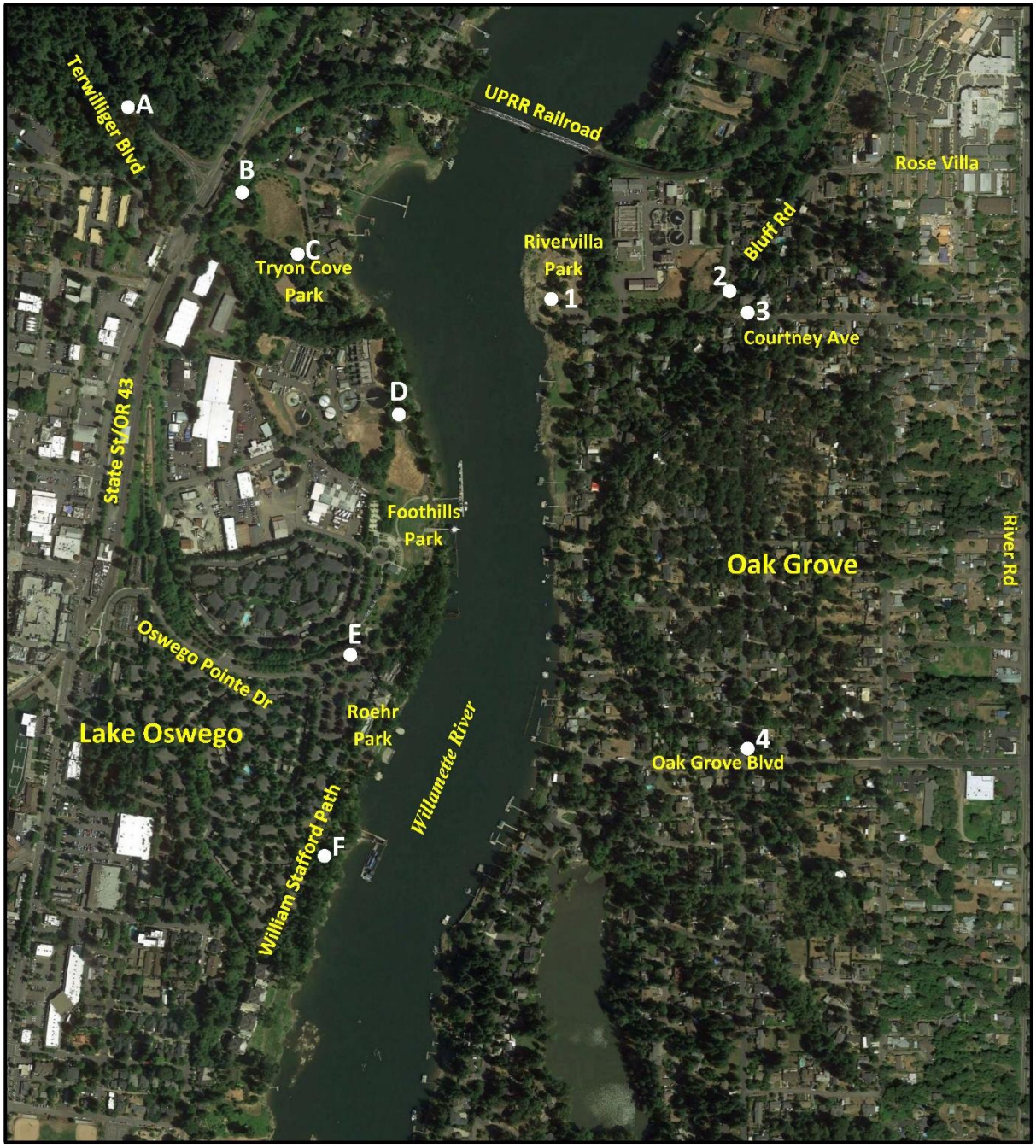
Landing site evaluation criteria and an evaluation matrix were developed to rank potential bridge landing sites. The process to identify the landing site criteria included staff from all the participating governments, the Technical Advisory Committee, the Community Advisory Committee and the Policy Committee. The following criteria were identified as the most important to form the basis of the landing site evaluation and scoring process, and to guide selection of the most optimal pairs of bridge landing sites:

- Connectivity and Safety
- Environmental Impacts
- Compatibility with Recreational Goals
- Compatibility with Existing Developments and Neighborhoods
- Cost and Economic Impact
- Compatibility with Land Use Planning

Property Inventory/Assessment of Bridge Landing Site Locations

Only sites in public ownership and/or public right-of-way were considered for potential landing site locations. Such properties adjacent to the Willamette River were investigated, and those with sufficient size to serve as bridge landing points were identified. Ten such sites were found suitable to serve as bridge landings: four on the east side of the river and six on the west side. These 10 landing sites were assessed according to the landing site evaluation criteria and ranked according to the evaluation matrix developed for the project. The landing sites that were considered are shown in Figure #1 on the following page. Landing sites identified on the west side of the Willamette River are as follows:

Figure 1: Potential Landing Sites



A. Terwilliger Boulevard
B. Tryon Cove Upper
C. Tryon Cove Lower
D. Foothills Park (owned by Lake Oswego)
E. Roehr Park (owned by Lake Oswego)
F. William Stafford Path

Landing sites identified on the east side of the Willamette River are as follows:

1. Rivervilla Park (owned by North Clackamas Parks and Recreation District)
2. Bluff Road

3. Courtney Avenue
4. Oak Grove Boulevard

Based on analysis with the landing site criteria, 5 of the landing sites were eliminated as unsuitable:

- Foothills Rd – eliminated due to the small radius turns that would be required to extend the bridge to the landing site without taking private property.
- Tryon Cove Park Lower – eliminated due to difficulty of clearing navigational envelope and lack of access.
- William Stafford Path – eliminated due to environmental impacts.
- Rivervilla Park – eliminated because a bridge landing in Rivervilla Park would require a lengthy approach ramp which would use almost the entire park to achieve the elevation needed to clear the navigational envelope.
- Oak Grove Boulevard near Fairoaks Ave – eliminated due to difficulty of extending the bridge to the location without taking private property.

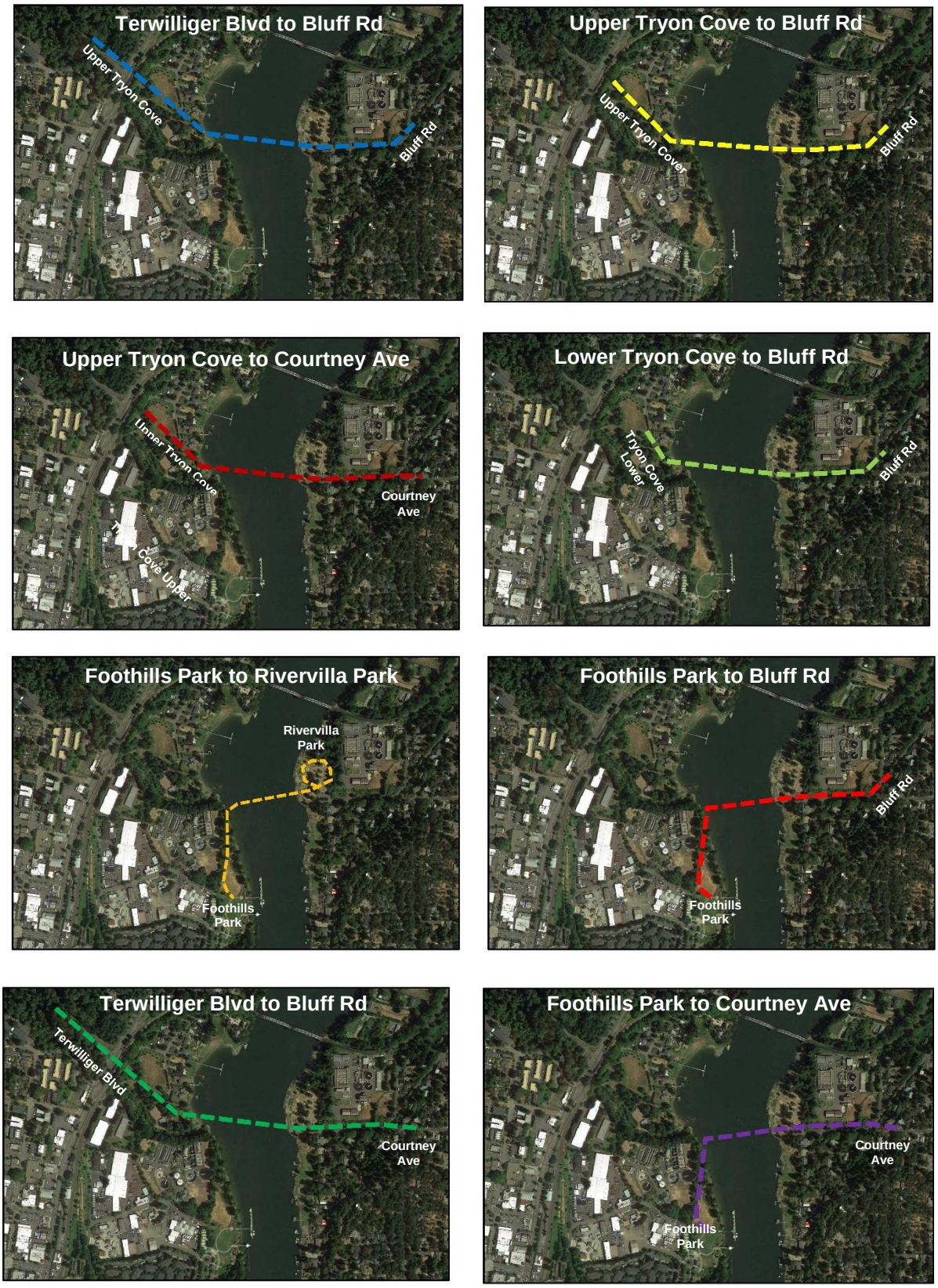
Alternative Bridge Alignments

Ten alternative bridge alignment options connecting the five remaining landing sites were developed, reviewed and discussed by the CAC and the TAC, and were also the subject of public open houses conducted in Lake Oswego and Oak Grove as well as an online open house. The bridge alignment alternatives that were identified are as follows (see maps on the following pages):

- SW Terwilliger to Bluff Road – Eliminated due to difficulty of landing on Bluff Road, which is very narrow.
- Tryon Cove Park Upper to Bluff Road – Eliminated due to impacts to Tryon Cove Park and difficulty of landing on Bluff Road.
- Tryon Cove Park Upper to Courtney Avenue – Eliminated due to impacts to Tryon Cove Park.
- Tryon Cove Park Lower to Bluff Road – Eliminated due to the difficulty of clearing the navigational envelope, impacts to Tryon Cove Park and difficulty of landing on Bluff Road.
- Foothills Park to Rivervilla Park – Eliminated due to major impact to Rivervilla Park.
- Foothills Park to Bluff Road - Eliminated due to difficulty of landing on Bluff Road.
- Roehr Park to Oak Grove Boulevard – Eliminated because the Oak Grove Boulevard landing site would require taking private property
- William Stafford Path to Oak Grove Boulevard – Eliminated because the Oak Grove Boulevard landing site would require taking private property, and also the environmental impacts at William Stafford Path.
- **SW Terwilliger to Courtney Avenue – selected for further study.**
- **Foothills Park to Courtney Avenue – selected for further study**

Following the analysis of the alternative bridge alignments, the two best alternatives were SW Terwilliger Boulevard to Courtney Avenue and Foothills Park to Courtney Avenue.

Figure 2: Potential Bridge Alignments



These two alignments were further analyzed with the following opportunities and challenges identified for each:

SW Terwilliger Blvd to SE Courtney Ave (Alternative A-3):

1. Minimal impact to Rivervilla Park
2. Minor impact to Tryon Cove Park
3. Lack of parking at either end of the bridge alignment
4. Provides a crossing of OR 43 and a connection to the Terwilliger Trail
5. Connection to Foothills Park when the City of Lake Oswego builds the proposed Tryon Cove Bridge
6. The longest and most expensive bridge alternative studied
7. Could be used for small emergency response vehicles such as ambulances and police cars

Foothills Park to SE Courtney Ave (Alternative D-3):

1. Minimal impact to Rivervilla Park
2. Minor impacts to Foothills Park
3. Potential availability for parking at Foothills Park
4. Direct connection to Foothills Park
5. Surface street connection to Trolley Trail
6. The shortest and lowest cost bridge alternative studied
7. Could be used for small emergency response vehicles such as ambulances and police cars

Engineering Design Criteria

Key engineering design criteria were established for the identification, evaluation, and determination of feasible structural bridge configurations. Criteria included environmental and sustainability considerations, civil design, bridge architecture and aesthetic treatments, landscaping design, structural engineering design, lighting design, ADA accessibility, and bridge service life. The most important engineering design criteria were identified as:

- A vertical profile clearing the navigational envelopes for the Willamette River. Based on bridges up and downstream, it was anticipated that the minimum clearance would be 74 feet over ordinary high water mark (OHWM).
- The bridge would be required to comply with Americans with Disabilities Act (ADA) requirements which would limit the bridge slope to no more than 5%.
- The bridge would include two 6-foot pedestrian/bicycle lanes with a one-foot shoulder on the outside of each lane and a railing. As a result, the bridge would be between 16 feet and 18 feet wide.
- Horizontal alignments that minimized the main span lengths over the Willamette River.
- Radii for any turns on the bridge main span or approaches sufficient for access by a small emergency response vehicle such as an ambulance or police car.
- Approach spans that would avoid conflicts with existing and planned land uses.

The bridge types presented a variety of solutions in material type, span lengths, aesthetics, and construction methods. Additional consideration was given to the estimated costs, construction challenges and duration, expected bridge service life,

environmental impacts, maintenance requirements, estimated permittability, and potential for USCG acceptance of the bridge alignments.

Approach span bridge type alternatives considered included the following:

- Precast, prestressed concrete girders
- Steel plate girders

Main span bridge type alternatives included the following:

- Segmental haunched concrete box girder
- Haunched steel box girder
- Extradosed (a bridge structure that combines the main elements of a prestressed box girder bridge and a cable stayed bridge, requiring shorter stay towers)
- Cable-stayed

Based on the above engineering considerations the following bridge types were identified as suitable for each of the bridge alignments:

- SW Terwilliger Blvd to SE Courtney Ave (Alternative A-3): Concrete, steel, and extradosed main span options (See conceptual plan on page 15).
- Foothills Park to SE Courtney Ave (Alternative D-3): Steel and cable-stay main span options (See conceptual plan on page 16).

Final selection of bridge type would occur following further engineering study in the design process if the project moves forward.

Inclusion of a Transit Lane

During the study process Metro requested that the inclusion of an exclusive transit lane on the bridge be studied. Analysis by the consultant team showed that inclusion of the transit lane would significantly change the design criteria, cost and impacts of the bridge. Identified changes included the following:

- The addition of a 10-foot wide transit lane with 2-foot wide shoulders on the outside and also between the transit lane and the pedestrian/bicycle lanes.
- The addition of a barrier approximately 2 feet wide between the transit lane and the pedestrian/bicycle lanes.

Figure 3: Terwilliger Blvd to Courtney Ave

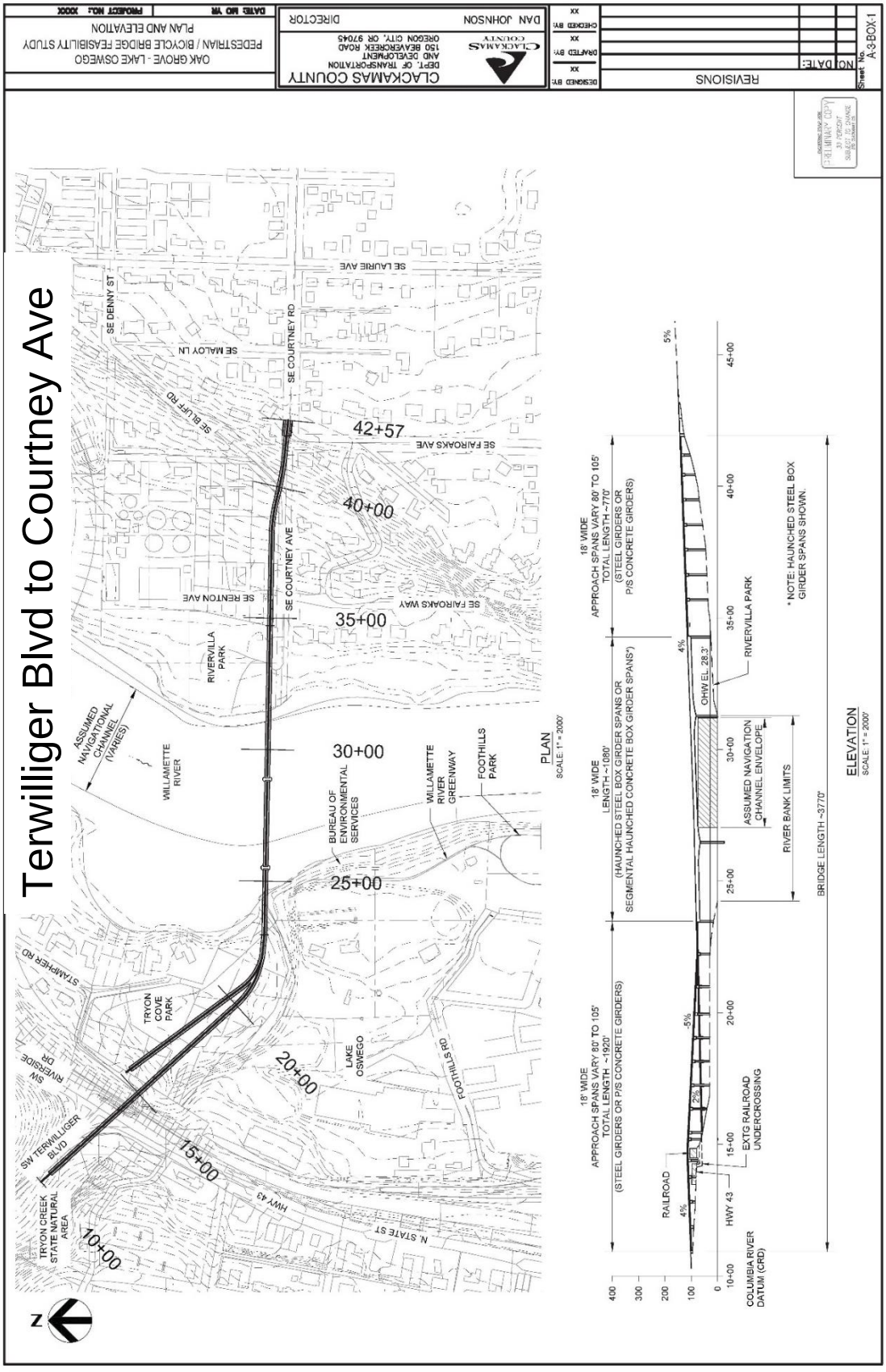
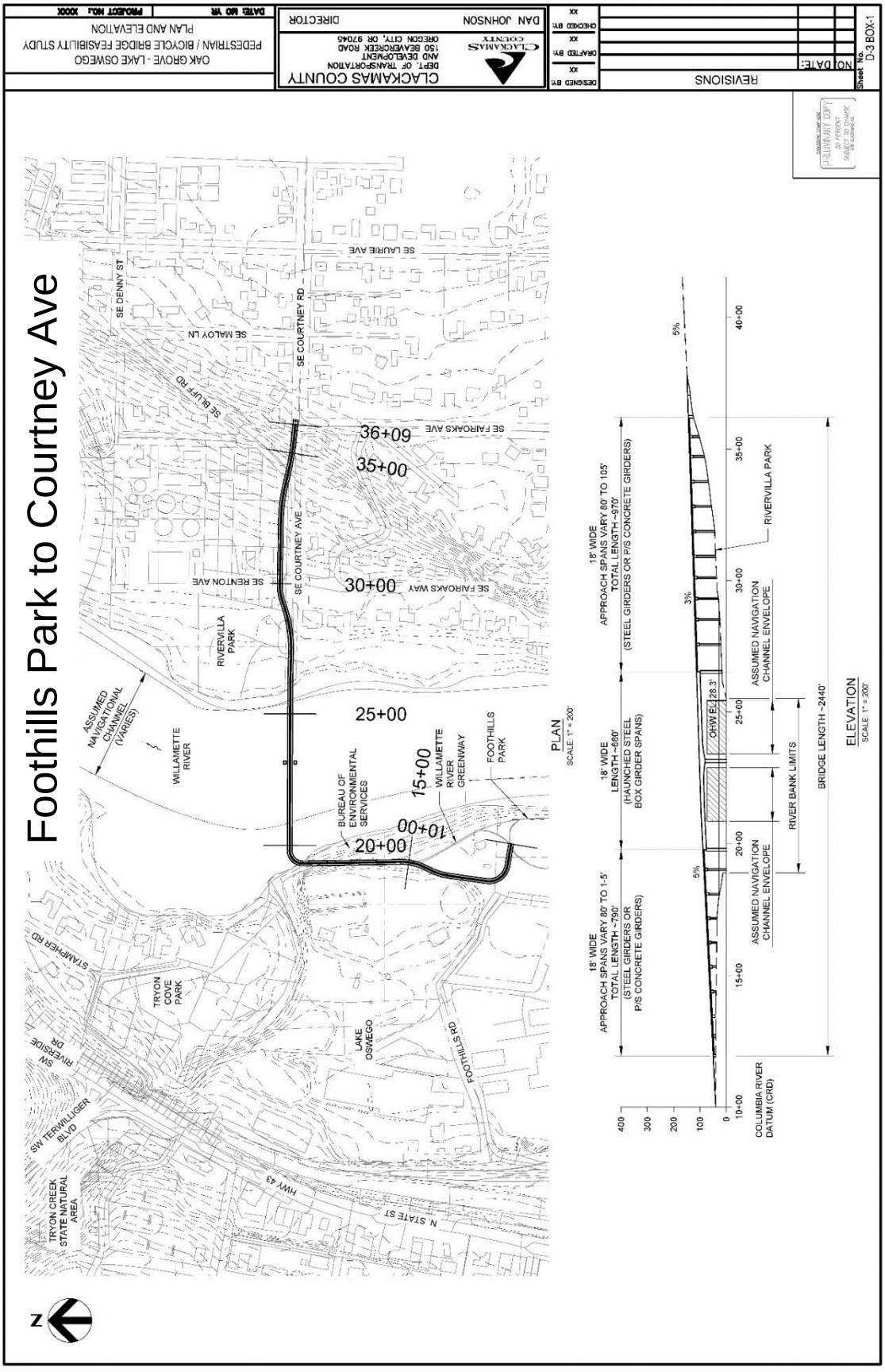


Figure 4: Foothills Park to Courtney Ave



- Sufficient carrying capacity for a 20,000-pound gross vehicle weight vehicle. A small shuttle bus would meet the weight criteria, but larger transit vehicles would require increasing the carrying capacity of the bridge.
- Gates or barriers at each end of the bridge that would prevent use of the transit lane by bicyclists or pedestrians.
- A control system that would prevent use of the bridge by more than one transit vehicle at a time.
- Improvements to provide access from the bridge to surrounding roads for use by the transit vehicle.
- A design that provided sufficient width and turning radius for access by a small transit vehicle. If a transit lane were included the SW Terwilliger Boulevard to SE Courtney Ave alternative would be infeasible due to the narrow width of SW Terwilliger Boulevard, leaving Foothills Park to SE Courtney Ave as the only feasible alternative.
- Although a small transit shuttle vehicle could use the OGLO bridge, strong concerns were expressed by members of the public of the impacts on surrounding land uses of transit on SE Courtney Ave between the bridge and SE River Road.
- Addition of a transit lane and related systems would increase the cost of the Foothills Park to SE Courtney Ave alternative by 44% to 48% or $14 million and $18 million.

After consideration of the impacts that would result from the addition of a transit lane, both the Clackamas County Board of Commissioners and the study Policy Committee determined that the OGLO Bridge would not be feasible if a transit lane were included.

4 Plan-Level Cost Estimates and Funding

Both one-time and ongoing costs are an important consideration for the governments studying a possible OGLO Bridge. Cost estimates at a plan level of detail were developed for bridge engineering and construction, as well as for operation and maintenance (O&M). Potential sources of OGLO construction funding and potential OGLO Bridge operators were also identified. The following is a summary of the findings on cost and sources of funding. The full report on these issues is in Appendix C.

Cost Estimates

Construction cost estimates were developed for the following:

- Three bridge main span options for Terwilliger to Courtney (steel, concrete and extradosed).
- Two bridge main span options for the Foothills to Courtney location (steel and cable stay), plus variations that incorporate a one-way shuttle bus lane.

See the table on the following page for details of the cost estimates.

To account for unknown costs at this very early feasibility level of design, a 40% construction contingency was added to the final construction cost. Other discipline-specific (engineering, right-of-way, permitting, etc.) percentages were uniformly applied to the total construction cost estimates. The following estimated costs were determined for each bridge alternative and type:

SW Terwilliger Blvd to SE Courtney Ave (Alternative A-3)

- Steel main span $44,500,000
- Concrete main span $45,300,000
- Extradosed main span $52,000,000

Foothills Park to SE Courtney Ave (Alternative D-3)

- Steel main span $30,300,000
- Cable-stay main span $36,400,000

Foothills Park to SE Courtney Ave with transit lane

- Steel main span $43,600,000
- Cable-stay main span $54,200,000

The construction cost estimates do not take into account any soil mitigation or substructure strengthening to reduce the effects of liquefaction or lateral spreading due to a seismic event. The preliminary geotechnical report indicated that there are zones within the project area that may be susceptible to ground movement during a seismic event. The full extent of the resulting hazard cannot be determined without site-specific subsurface investigation. Additionally, the cost of mitigation cannot be determined without finalized structure design criteria. Both would be investigated and determined during the next phase of design.

Oak Grove-Lake Oswego - Pedestrian/Bicycle Bridge Construction Contingency 40%	Terwilliger to Courtney: Steel Main Span A-3	Terwilliger to Courtney: Concrete Main Span A-3	Terwilliger to Courtney: Extradosed Main Span A-3	Foothills to Courtney: Steel Main Span D-3	Foothills to Courtney: Cable Stay Main Span D-3
Main Span Sub-Total/Unit Cost	$ 778 / SF $ 16,800,000	$ 801 / SF $ 17,300,000	$ 962 / SF $ 22,600,000	$ 838 / SF $ 11,400,000	$ 1169 / SF $ 15,900,000
Approach Span Steel Girders Sub-Total/Unit Cost	$ 423 / SF $ 20,500,000	$ 423 / SF $ 20,500,000	$ 429 / SF $ 20,100,000	$ 436 / SF $ 13,800,000	$ 432 / SF $ 13,700,000
Approach Span Concrete Girders Sub-Total/Unit Cost	$ 339 / SF $ 16,400,000	$ 339 / SF $ 16,400,000	$ 346 / SF $ 16,200,000	$ 350 / SF $ 11,100,000	$ 350 / SF $ 11,100,000
Total Bridge Only Cost using Steel Approaches	$ 533 / SF $ 37,300,000	$ 540 / SF $ 37,800,000	$ 607 / SF $ 42,700,000	$ 557 / SF $ 25,200,000	$ 654 / SF $ 29,600,000
Total Bridge Only Cost using Concrete Approaches	$ 474 / SF $ 33,200,000	$ 481 / SF $ 33,700,000	$ 552 / SF $ 38,800,000	$ 497 / SF $ 22,500,000	$ 596 / SF $ 27,000,000
Engineering 10.5%	$ 3,500,000	$ 3,600,000	$ 4,100,000	$ 2,400,000	$ 2,900,000
Civil and Geotechnical 3.5%	$ 1,200,000	$ 1,200,000	$ 1,400,000	$ 800,000	$ 1,000,000
Architectural and Landscape Architecture 3.0%	$ 1,000,000	$ 1,100,000	$ 1,200,000	$ 700,000	$ 900,000
Environmental Permitting 1.5%	$ 500,000	$ 600,000	$ 600,000	$ 400,000	$ 500,000
Right of Way 10.0%	$ 3,400,000	$ 3,400,000	$ 3,900,000	$ 2,300,000	$ 2,700,000
Construction Engineering 5.0%	$ 1,700,000	$ 1,700,000	$ 2,000,000	$ 1,200,000	$ 1,400,000
Subtotal of ROW, Design, & Construction Engineering costs	$ 11,300,000	$ 11,600,000	$ 13,200,000	$ 7,800,000	$ 9,400,000
Total Bridge Cost using Concrete Approaches	$ 44,500,000	$ 45,300,000	$ 52,000,000	$ 30,300,000	$ 36,400,000

Oak Grove-Lake Oswego - Pedestrian/Bicycle Bridge Construction Contingency 40% Transit Alternative	Foothills to Courtney: Steel Main Span D-3 Transit	Foothills to Courtney: Cable Stay Main Span D-3 Transit
Main Span Sub-Total/Unit Cost	$ 774 / SF $ 17,900,000	$ 1021 / SF $ 25,700,000
Approach Span Steel Girders Sub-Total/Unit Cost	$ 366 / SF $ 21,900,000	$ 366 / SF $ 21,900,000
Approach Span Concrete Girders Sub-Total/Unit Cost	$ 242 / SF $ 14,500,000	$ 242 / SF $ 14,500,000
Total Bridge Only Cost using Steel Approaches	$ 480 / SF $ 39,800,000	$ 560 / SF $ 47,600,000
Total Bridge Only Cost using Concrete Approaches	$ 391 / SF $ 32,400,000	$ 473 / SF $ 40,200,000
Engineering 10.5%	$ 3,500,000	$ 4,300,000
Civil and Geotechnical 3.5%	$ 1,200,000	$ 1,500,000
Architectural and Landscape Architecture 3.0%	$ 1,000,000	$ 1,300,000
Environmental Permitting 1.5%	$ 500,000	$ 700,000
Right of Way 10.0%	$ 3,300,000	$ 4,100,000
Construction Engineering 5.0%	$ 1,700,000	$ 2,100,000
Subtotal of ROW, Design, & Construction Engineering costs	$ 11,200,000	$ 14,000,000
Total Bridge Cost using Concrete Approaches	$ 43,600,000	$ 54,200,000

Operation and Maintenance (O&M) Costs

The same six bridge locations/type alternatives for which construction cost estimates were calculated were also assessed for estimated O&M costs. The total O&M costs over a 75-year life for each of the bridge types studied are shown in the table below.

Table #1. Estimated 75-Year Cost for Operation and Maintenance Costs for the Range of Bridge Alternatives (Total Year-of-Expenditure Costs with Escalation for 75-Year Design Life)

Alignment	Main Span Type	Estimated 75-year Cost		Average Annual O&M Cost per year
		Concrete	Steel	
Terwilliger Blvd to Courtney Ave (A-3)	Haunched Concrete Box	$9,950,000	$18,900,000	$133,000 to $252,000
Foothills Park to Courtney Ave (D-3)	Extradosed	$11,900,000	$19,810,000	$159,000 to $264,000
	Haunched Steel Box	$17,140,000	$23,830,000	$229,000 to $318,000
	Cable-Stayed	$10,710,000	$16,600,000	$143,000 to $221,000
	Haunched Steel Box (Transit)	$20,190,000	$26,020,000	$269,000 to $347,000
	Cable-Stayed (Transit)	$13,110,000	$18,990,000	$175,000 to $253,000

Potential Funding Sources

A wide range of potential OGLO construction funding options were researched and are reported in Appendix C. The most applicable and feasible sources for bridge construction would include the programs listed below. These programs might not, however, be sufficient to fund the entire bridge project. See Appendix C for more information.

A. 2020 Regional Transportation Bond Measure – A Metro regional transportation funding measure is under consideration for referral to the November 2020 ballot. At present the OGLO Bridge has not been identified as a Tier 1 priority project. If the proposed funding measure goes forward, includes the OGLO Bridge and is approved by the voters, this funding source would likely be the best source for potential OGLO construction because these funds would be locally controlled and available within a short timeframe.

B. Regional Flexible Funds (RFFA) – RFFA is administered by Metro using pass-through funds from federal transportation agencies. The federal funds that make up RFFA have several limitations including design requirements and provision of matching funds. Although an OGLO Bridge would be eligible for such funds, the limited amount of funds available (less than $45 million for FY2022-24) and competitive nature of the program would likely prevent this source from being used for more than a small percentage of the total funding that would be needed to design and construct an OGLO bridge.

C. Federal Funds Administered by Oregon DOT – Oregon Department of Transportation administers several federal pass-through programs that could supply some funding

for the OGLO Bridge. These funds include: Surface Transportation Block Grant Program (STBG); Transportation Alternatives Program (TAP), which is now incorporated into STBG; and the Congestion Mitigation and Air Quality (CMAQ). All federal funds have the same limitations for use on this project that are described above for the Regional Flexible Funds.

D. Direct Federal Funding – It is also possible to secure federal funds directly through national grant programs administered by USDOT. The largest such program is Better Utilizing Investments to Leverage Development (BUILD). Although the OGLO Bridge is eligible for BUILD funds, those funds are awarded through a very competitive national process.

Potential Bridge Owner/Operators

Owning and operating the OGLO Bridge would be a large and complex task due to annual O&M requirements, reducing the number of agencies with the necessary expertise and funding. Several owner/operators could be considered:

A. Oregon Department of Transportation (ODOT) – Although ODOT is the owner/operator for numerous highway bridges across the Willamette River, it is highly unlikely that ODOT would be the owner/operator for an OGLO Bridge. The Willamette River bridges operated by ODOT are all part of the state highway system and provide connectivity across the Willamette River for vehicular traffic on that system. While the OGLO Bridge would be a major bridge across the Willamette River, it would not serve vehicle traffic or provide a parallel bike and pedestrian connection for an existing state highway. As a result, the bridge would fall outside ODOT's typical jurisdiction.

B. Clackamas County – Clackamas County has expertise in bridge maintenance. However, the annual O&M cost is significant enough to reduce the funding available for other county responsibilities to unacceptably low levels.

C. Intergovernmental Partnership – The most likely owner/operator of an OGLO bridge would likely be a coalition of local governments and agencies with a shared interest in supporting bicycle and pedestrian transportation, and reducing dependence on motor vehicles for local trips. Such coalitions are the owner/operators of many major bicycle and pedestrian bridges in other parts of Oregon and across the country. Such coalitions allow the administrative responsibilities and costs for owning and operating a major bridge to be shared with each member making a contribution. Organizations that could participate in such a coalition might include Clackamas County, neighboring cities, the North Clackamas Parks & Recreation District (NCPRD), and Metro.

5 Scoping for NEPA and Permitting

The OGLO Bridge would be subject to the requirements of the National Environmental Policy Act (NEPA). NEPA ensures that a federal action considers impacts on the human and natural environment. The NEPA process would be required on this project because the Willamette River is a navigable waterway regulated by the USCG, which would trigger the requirement for a federal permit. Use of federal funds for construction would also trigger the requirement for a NEPA environmental assessment.

To determine environmental issues and permitting requirements that would need to be addressed for the proposed OGLO Bridge, information was gathered from permitting agencies that would potentially be involved during engineering and construction phases. It was determined that the best way to ensure an efficient permitting process would be to present the proposed project and relevant permitting information to representatives from state and federal resource agencies including United States Fish & Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), Oregon Department of State Lands (DSL), Oregon Department of Environmental Quality (ODEQ), Oregon State Historic Preservation Office (SHPO) and Oregon Department of Fish & Wildlife (ODFW).

Key permitting issues that could impact bridge design/engineering and project timelines, are:

A. United States Coast Guard (USCG) – The proposed project would be subject to USCG permit approval under the provisions of Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. Pursuant to these Acts, the USCG would be the federal lead agency for the proposed project. Per the USCG, a minimum navigation clearance of 74 feet above the ordinary high-water mark (OHWM) would be required for OGLO bridge.

B. Oregon Department of Fish and Wildlife (ODFW) – Depending on the timing of construction, a cumulative impact analysis of sediment loading based on the level of ongoing Portland Harbor clean-up work at that time could be required.

C. Oregon State Historic Preservation Office (SHPO) – There is potential that archaeological and historic resources could be found along the shores of the Willamette River in and around possible bridge landings. SHPO did not respond to requests to provide information. In the environmental assessment process a Section 106 consultation with SHPO would be required based on federal permitting requirements.

D. Local Government Permitting – The bridge would be subject to the provisions of local permitting and adopted zoning requirements. This would include Clackamas County and Lake Oswego if the bridge extended into the city.

Further information on NEPA assessment and permitting requirements can be found in Appendix B. A Summary of Anticipated Agency Permit and Approval Requirements, and a log of meetings with potential permitting agencies is also in Appendix B.

6 Intergovernmental Coordination

The OGLO Bridge project is an intergovernmental project with participation by several governments and organizations including Clackamas County, the cities of Lake Oswego and Milwaukie, Metro, and the North Clackamas Parks & Recreation District. All of these partners were engaged in the feasibility study. As part of the engagement process, all partners had roles in all project committees and all aspects of the study.

Several intergovernmental advisory committees were formed to advise on project analysis and recommendations. The list of committee members and affiliations are included in the acknowledgements of this report.

Policy Committee (PC)

The Policy Committee, the decision-making body for this feasibility study, was formed to make recommendations to the partner governments at key decision points. The PC included one elected official each from Clackamas County, the cities of Lake Oswego and Milwaukie, and Metro. The PC met four times over the course of the project. Meeting records are in Appendix D.

Community Advisory Committee (CAC)

The 28-member Community Advisory Committee was made up of study area residents and business owners, as well as representatives of community groups with an interest in the project. The CAC made recommendations to the PC and the TAC on key decisions in the feasibility study. Clackamas County appointed 10 members to the CAC, Lake Oswego appointed 10 members, Milwaukie appointed 4 members and Metro appointed 4 members. The CAC met three times. CAC activities and outcomes are summarized in Appendix D: Public Involvement.

Technical Advisory Committee (TAC)

The TAC included staff representatives from Clackamas County, North Clackamas Parks & Recreation District, the cities of Lake Oswego and Milwaukie, and Metro. The TAC met nine times over the course of the project. The TAC made recommendations to the PC and CAC on key decisions during the feasibility study.

7 Public Involvement

An active public involvement process took place as part of this project that provided a number of ways for the public to engage with the project during the study process. Two of the committees formed for the project became primary points for public involvement in the project.

A. The Policy Committee (PC), made up of elected officials from each of the partner jurisdictions, accepted public comments at each of its meetings.

B. The Community Advisory Committee (CAC) was made of up of a variety of community members with an equal number from each side of the river. In addition to providing a public forum for discussion at key decision points for the project, the CAC was informed by public input opportunities included in its meeting agenda.

Other public involvement activities and opportunities included:

A. A website with an introductory community questionnaire (through online survey software) that received responses from 580 users.

B. Two in-person open houses (one held in Lake Oswego and one held in Oak Grove) that were coordinated with online open houses conducted through the project website. The sign-in sheets for the in-person open houses showed that 215 people attended. In addition, there were 640 responses to the online open houses.

C. A statistically significant, scientific telephone survey conducted by a survey research firm.

D. Postcard mailings to all addresses in the project area; community presentations; website updates; social media; press releases, and emails to interested parties to provide broader public information and invitations to meetings.

Clackamas County used the following forms of notification to share project information and invite people to the public meetings:

A. Website – A webpage was set up on the Clackamas County website in spring 2019 and regular project updates were posted before and after CAC and PC meetings and in advance of open houses and online input opportunities. Agendas, committee meeting summaries, meeting presentations, survey results, factsheets, maps including bridge alignments, contact information, etc. were posted.

B. Social media – Information was posted on Facebook, Twitter, and Nextdoor social platforms in and outside of the project area beginning in June 2019.

C. Newsletter articles – Articles were published in newsletters for the partner jurisdictions, including the June and August 2019 *Hello LO*, August 2019 *Milwaukie Pilot* and August 2019 *ClackCo Quarterly*.

D. Postcards – Postcards informing recipients about the project and upcoming open houses were mailed to 4,346 Lake Oswego and Oak Grove residents in July 2019.

E. Emails – The county sent project updates, notices of upcoming meetings and information about website changes to people on an email list established at the beginning of the project. That list grew throughout the study as more people expressed an interest in the project. Emails were also distributed through existing email networks.

F. Media – Various news media reported on the study between June 2019 and January 2020 and helped generate interest in the project in advance of meetings. Reports were made by The Oregonian, LO Review, BikePortland.org, KGW and OPB.

The following sections describe in detail the input received during the study through the online survey conducted in May/June 2019, the public open house meetings, public comments received at committee meetings, and through the scientific survey.

Online Questionnaire

An online questionnaire was conducted from May 16 to June 17, 2019 to provide an opportunity for people to share their opinions of the OGLO Bridge. A total of 546 people provided input using the online questionnaire. Of those, 280 stated that they lived in Lake Oswego or on the west side of the river, while 170 stated they lived in Oak Grove or on the east side of the study area and 83 stated they lived elsewhere in the Portland region.

Of those that lived or worked in Lake Oswego

- *103 were neutral (neither support nor oppose) on whether there should be a bridge*
- *83 were supportive of a bridge*
- *77 were opposed to a bridge*

Of those that lived or worked in Oak Grove:

- *49 were neutral*
- *72 were supportive*
- *10 were opposed*

Of those that lived elsewhere in the region:

- *24 were neutral*
- *19 were supportive*
- *11 were opposed*

Those responding were also asked how often they thought they would use the bridge:

- *Daily – 19*
- *A few times a week – 81*
- *A few times a month – 151*
- *Once a year or less – 61*
- *Every few years – 78*
- *Never – 154*

Those responding were also asked how they would use the new bridge:

- *Recreation or exercise – 287*
- *Ride a bike – 280*
- *Enjoy views of river – 275*
- *Walk/jog/run – 269*
- *Connect with the Willamette River – 178*
- *Reach destination in Lake Oswego – 170*
- *Reach regional destinations – 117*
- *Reach destination in Oak Grove – 88*
- *Commute to work – 52*
- *Use a mobility device - 11*

Of those that provided input 134 expressed general support for the proposed bridge and 98 expressed general opposition. The concerns that were mentioned most often were:

- *Funding/cost (97)*
- *Safety (62)*

- *Concerns related to the homeless (53)*
- *Increase in crime (32)*
- *Neighborhood impacts (28)*
- *Traffic (20)*
- *Parking (15 responses)*
- *Environmental Impacts (14)*
- *Money should be spent for road improvements (8)*
- *Concern about the location of the bridge (7)*
- *Concern about appearance of the bridge (5)*

Benefits that were most often mentioned were:

- *Connection across the river reducing the length of commutes (71)*
- *Active transportation opportunities (60)*
- *Trail Connections across the river (15)*
- *Reduction in single occupant vehicle use (14)*
- *Economic benefits (11)*
- *Recreation opportunities (8)*
- *Health benefits (5)*

Analysis of the responses on their support or opposition to the bridge the data shows that in Lake Oswego 32% of those with an opinion supported the bridge, 29% opposed it and 39% have no opinion. In Oak Grove 55% of those with an opinion support the bridge, 37% oppose the bridge and 8% have no opinion.

Analysis of the responses from the online questionnaire suggests several important pieces of information related to the use of the bridge:

- Analysis of the data on how often people expected to use the bridge shows that on average there will be 1,459 trips per week per 1,000 population. Analysis of the census tract data from the American Community Survey (Census) shows that there are 7,660 people living within ½ mile of the bridge in Oak Grove and Lake Oswego. As a result, an average of 1,598 trip per day can be expected on the bridge.
- Metro estimated daily trips on the bridge using the agencies travel demand model. Their estimate was 1,400 trips per day.
- Using the average of those two estimates it can be expected that there will be 1,499 trips per day on the bridge.
- Based on responses on the purpose for people's use of the bridge 48.7% said they would use the bridge for exercise, 26.4% said they would use the bridge to view the river, and 24.9% said that they would use the bridge to reach a destination on the opposite side of the river.
- Using those rates for each trip purpose and the estimate of 1,499 trips per day, results in an estimate of 730 uses of the bridge for exercise, 396 to view the river and 373 to reach a destination.

Public Open Houses

In August 2019, two public open houses were held, one in Lake Oswego and one in Oak Grove. A combined total of 215 people attended the open houses, 47 in Lake Oswego and 165 in Oak Grove. Overall, there was support and opposition expressed at both public open house meetings. Those who supported the project supported the connection

across the river, improved active transportation facilities, increased path/trail connections, and thought that the project would reduce single occupant vehicle use. Those who opposed the project were concerned about funding and cost, crime and the homeless, neighborhood impacts, traffic, parking and environmental impacts.

At both open houses those in attendance had the opportunity to identify the bridge location/alignment they thought would be best. Those that were most selected were:

- *Alignment A-3: SW Terwilliger Blvd to SE Courtney (upper)*
- *Alignment B-3: Tryon Cover Park (upper) to SE Courtney (upper)*
- *Alignment D-3: Foothills Park to SE Courtney (upper)*

In the same time period, an online open house was conducted that provided the same materials and opportunities to provide comments and identify the best alignment. There were 640 responses to the online open house, with 27% from Lake Oswego, 37% from Oak Grove and 34% from elsewhere in the region. Those who participated in the online open house identified the same three alignments as the best.

Further information on the public open houses and the online open house can be found in Appendix D.

Public Input at Committee Meetings

Two committees were formed for the project that conducted public meetings and accepted public input at the committee meetings. The Policy Committee was composed of one elected official each from Clackamas County Board of Commissioners, the Lake Oswego City Council, the Milwaukie and Metro. The Policy Committee met four times during the course of the study and was responsible to represent their government and also make decisions regarding the direction of the project. Comments received at the Policy Committee meetings included the following:

- There has been a need for an additional bridge and Metro should use the information from this study to help identify issues for a traffic bridge.
- This bridge should be designed to allow use by vehicles.
- This project will hurt Rivervilla Park.
- This is a foolish project that would benefit few people but not alleviate traffic congestion.
- This project should post more information and public comment on line.
- I am concerned about the northern Lake Oswego landing sites but could live with the southern one.
- At a time when society needs to reduce its carbon footprint, this bridge is a necessity.
- Spend money to expand light rail instead.
- I am from Lake Oswego and I support the bridge.
- I am an 80 year old bicyclist and I am in favor of the bridge.
- I want to know more about property taxes, wildlife, neighborhood impacts and air quality.
- Connectivity is important to encourage bike use.
- It is short-sighted not to study the possibility of including transit.
- Homelessness and litter would be a problem in my neighborhood from this bridge.
- This should not be a bridge that only benefits a minority of people.

- This is a good public process, and there should be more.
- This is an overreach by Metro.
- I represent the Portland Audubon Society. We would like you to move forward.
- I am from Oak Grove and am surprised at all the opposition. People in my neighborhood like the idea of using the bridge to walk to Lake Oswego.
- I represent the Lake Oswego Sustainability Committee. This project is sustainable for the area and I support it.
- Improvements on Courtney from the river to Fairoaks as part of the project.
- Establish a dedicated force to patrol the bike paths so the police don't have to.
- Parking will be a problem at Foothills Park.
- This bridge is a crucial link in the regional trails system
- This bridge must be built for people who want a more walkable Portland region.
- This bridge will create a crucial connection across the river and would be very important in the case of earthquake.
- This would reduce my bike commute from 53 minutes to 24 minutes and the distance from 10 miles to 2.4 miles.
- Bike sales in the area are up 65% and electric bikes are growing 73% year after year. Biking is becoming more viable and bikes are better than cars and better for the environment. Let's look to the future.

A Community Advisory Committee was also formed to provide a forum for discussion by community members regarding the project. The committee was made up of 10 members from the Oak Grove area, 10 members from the Lake Oswego area, 4 members from Milwaukie and 4 members appointed by Metro. Comments received at the Community Advisory Committee included:

- This bridge would impact fish in Tryon Creek and the environment.
- Can we get word to Metro that transit on the bridge is a bad idea? It complicates the whole project and TriMet is not interested.
- Stampher Road is a dangerous place because it is narrow and steep with two hairpin turns.
- You should use the railroad bridge.
- The intersection of Courtney and Fairoaks is a narrow and dangerous intersection.
- This bridge will deteriorate Lake Oswego and open it up to crime.

Email Comments

Throughout the course of the study members of the public submitted emails to the Board of County Commissioners, members of the Policy Committee and project staff. Once duplicates were eliminated 282 unique emails were received. Overall, the comments received in the emails were very similar to those received from the public at the open houses, the online open house, and at meetings of the Community Advisory Committee and the Policy Committee.

Staff analyzed the emails to identify the number of people submitting emails that were against the OGLO Bridge project, neutral (expressing neither opposition or support), or in favor of the OGLO Bridge project. Of the emails received:

- 93 (32.9%) were opposed to the project,
- 33 (11.7%) were neutral and seeking further information,

- 156 (55.3%) were in favor.

Staff also analyzed the number of individuals who submitted email comments.

- 93 emails submitted that were opposed to the project came from 30 people for a rate of 3.1 emails per person.
- 33 emails submitted that were neutral on the project came from 17 individuals for a rate of 1.9 emails per person.
- 156 emails submitted in support of the project came from 145 individuals for a rate of 1.1 emails per person.

Scientific Survey

The public outreach process for this study resulted in a great deal of input from interested local and regional community members and organizations, a lot of which was either strongly “for” or “against” the proposed bridge. This input helped the study team understand points of support or concern for the project, but provided little insight into the actual share of those in the study area that were in support of or opposed to the proposed bridge.

Given the strength of the views expressed by interested parties, the Technical Advisory Committee felt that it was necessary to conduct a scientific survey, based on a randomly selected sample to determine actual levels of support or opposition to the project within the communities on both the east and west sides of the Willamette River.

To gauge support or opposition to the project, Riley Research Associates (RRA) was retained to conduct a scientific random sample telephone survey in September 2019 of 400 voters (200 on the west side of the Willamette River in Lake Oswego and 200 on the east side of the river in Oak Grove and Milwaukie). A voter sample was used to ensure that participants were from the specific geographic areas of interest. The sample of 400 produces information accurate to within a margin of error of +/-5%, or a 95% level of confidence. The sample was monitored to ensure that it was proportionally representative of the geographic areas of Oak Grove, Lake Oswego, and Milwaukie, Oregon.

The questionnaire included eight questions about the issues, as well as demographics. The full report on the survey findings can be found in Appendix D. The following are the key findings from the survey:

- Overall, residents on both sides of the river supported having Clackamas County continue to explore the viability of the pedestrian-bike bridge, with 63% in favor of the idea, 9% unsure and 28% opposing the idea. The highest support was on the east side of the river, with 71% support compared to 55% support on the west side.

- The proposal to add a lane for transit shuttle vehicles to the project dropped the overall support from 63% to 52%. Those unsure increased from 9% to 16% and those opposed increased from 28% to 32%. Support among west-siders decreased from 55% to 46%.

- Survey respondents were given an open-ended opportunity to express their thoughts about concerns or benefits related to the bridge. Those who supported the bridge exceeded those who opposed it by 35%, but those who opposed the bridge expressed more comments and concerns. Overall comments were 55%

negative, 33% positive, and 26% neutral, with the largest single issues being the cost (19%) and tax implications (13%), followed by traffic/parking/noise (17%), and security/safety issues (12%). Security was cited by 18% of those on the west side, but only 7% of east-siders. Among the positive responses, those most frequently mentioned were connectivity (15%) and transit connections (6%), encouraging low-impact transportation (8%), and encouraging exercise (6%).

- Survey respondents were asked how they or their family members would most likely access the bridge. Seventy percent (70%) stated that they would walk, bike or use transit to access the bridge and 50% stated that they would drive to one side of the bridge or the other.

8 Equitable Development Analysis

A concern that was identified and included in the scope of work for this study was the impact of this new amenity on housing costs within the project area. The addition of bicycle and pedestrian facilities in other metropolitan regions such as Indianapolis, Dallas, Atlanta, Minneapolis and also across the country have shown that improved walkability/bikeability is viewed a valuable amenity that attracts new residents to the area. This increase in amenity will result in an increase of value of housing units in the surrounding area. In areas with potential for new development, the market responds to this increased value by providing more housing units in the area. The availability of these new rental and ownership housing units allows those who are attracted by new walk/bike amenities to locate in the area without a large impact on rental rates or the cost of units for sale. However, in areas that are largely developed, the increased demand that results from the additional amenity cannot spur additional development and instead leads to increased rents or values of homes for sale. Due to the fact that areas of Oak Grove and Lake Oswego in the project area are already largely developed that the possibility exists for increases in rents or sale prices for homes. If the OGLO bridge is built Clackamas County and Lake Oswego might consider changes to local development policies in the immediate area around that bridge that will allow for additional units to be created and maintain the balance between housing supply and demand. Since the area is already largely developed, policies that facilitate redevelopment could be the best approach. Further information on the equitable development analysis can be found in Appendix E.

9 Final Action

At a meeting on January 28, 2020, the project Policy Committee received the final report and considered four options for next steps on the project:

Option #1: Accept the final report and move forward into the next steps in the project development process for the two alternatives, which would include:

A. Additional public engagement

B. Preliminary engineering design

C. Preparation of a NEPA assessment of the environmental impacts of the proposed project

Option #2: Accept the final report, declare this feasibility study to be completed and move forward with to study a pedestrian/bicycle crossing of the Willamette River at additional locations north and south of the City of Lake Oswego, which would include:

A. Additional public engagement

B. Analysis of alternative bridge locations

C. Analysis of cost of construction, operations and maintenance for the alternatives

D. Analysis of environmental issues and permitting requirements

Option #3: Accept the final report and authorize a study of a boat/ferry/water taxi crossing of the Willamette River between Sellwood Bridge to the north and Oregon City to the south with the study to include:

A. Additional public engagement

B. Identification of possible landing sites on both shores of the river

C. Forecast ridership/demand for the boat/ferry/water taxi service

D. Analysis of operations of boat, ferry, and water taxi alternatives including daily trips and schedule,

E. Determine the shore facilities necessary for each service including landing facilities, parking, and storage

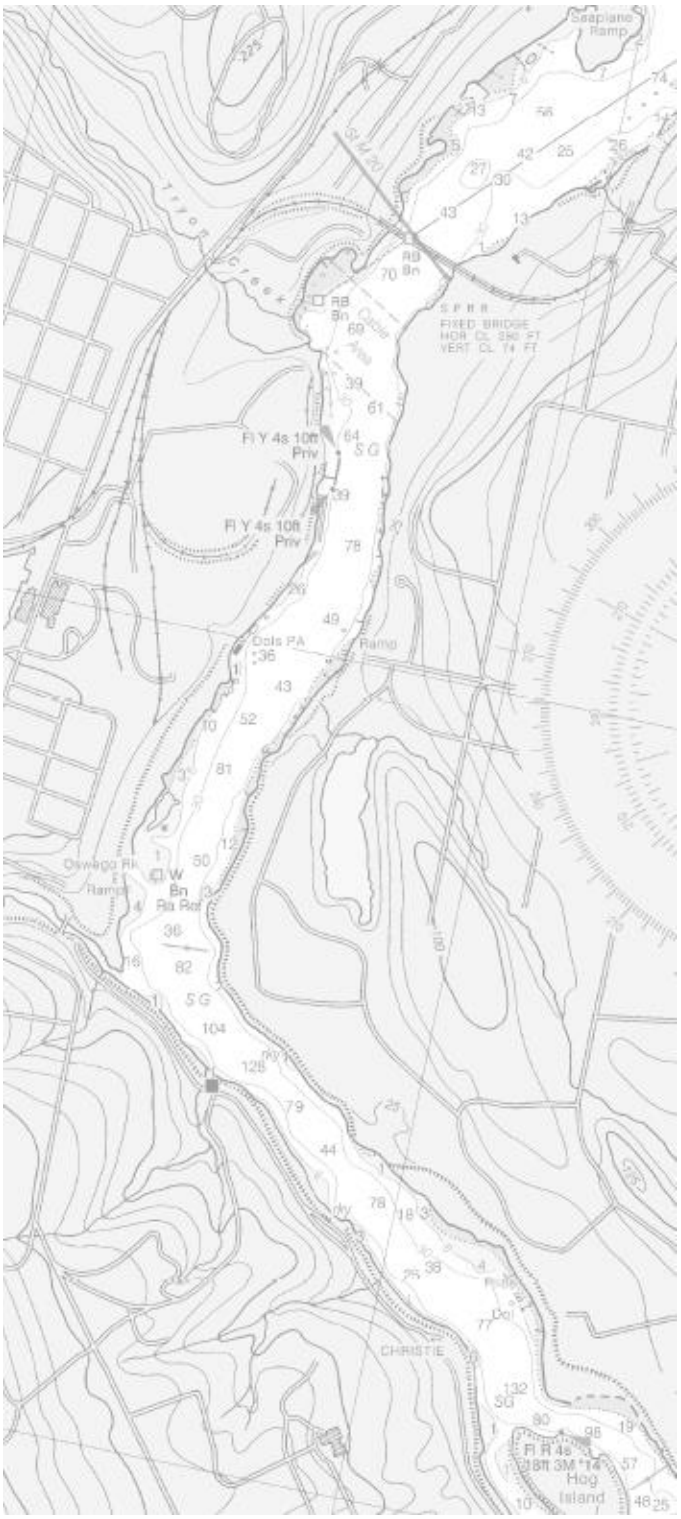
F. Analyze the costs for each of the service alternatives including costs for shore facilities and also annual operating costs

G. Project fares for each service and anticipated annual operating subsidies

H. Identify organizational models for each type of service with consideration of potential public private partnership opportunities.

Option #4: Accept the final report, and based on the recent withdrawal of the City of Lake Oswego from the process, identify the bridge across the Willamette River with landing points in Oak Grove and Lake Oswego infeasible at this time.

Once the Policy Committee has identified the next steps for the project discussions should be initiated with Metro in regard to the manner in which those steps will be funded and carried out.



Appendix A:

Bridge Alternatives Analysis

Oak Grove-Lake Oswego Pedestrian/Bicycle Bridge Feasibility Study

Contents

Introduction

This study by Clackamas County considered the feasibility of a new bicycle and pedestrian bridge crossing of the Willamette River in the Oak Grove-Lake Oswego (OGLO) area, south of Portland, Oregon.

As a part of this study an analysis was completed to identify alternative bridge alignments. This work has been completed, and individual memos/reports have been developed to report the findings in each task. The purpose of this report is to briefly summarize the findings of each task and to analyze each alternative and determine the potential benefits and impacts associated with construction of the proposed alternatives.

Landing Site Ranking Criteria

Introduction

Many important factors must be considered to identify feasible landing site alternatives on both sides of the river and the appropriate bridge alignments that connect the landing sites. The purpose of this section is to provide ***landing site evaluation criteria*** that will help establish and support a subjective and quantitative approach for assessing various landing sites. This section identifies and describes the landing site criteria that were developed for application in this project, describes the process for applying the criteria to evaluate landing sites, and presents a landing site evaluation matrix that was used to evaluate landing sites considered in this project. Application of the evaluation criteria, matrix, and scoring process resulted in a ranking of all considered landing points and identification of the most optimal pairs of bridge landing sites to be used in this feasibility study.

Landing Site Ranking Criteria

The connectivity of a proposed new bridge over the Willamette River requires consideration of many qualitative and quantitative factors ranging from right-of-way (ROW) availability to effects on the local community and environment. With input from the Technical Advisory Committee (TAC), Community Advisory Committee (CAC), open houses, and other sources, the following criteria and sub-elements were identified as the most important factors to form the basis of the landing site evaluation and scoring process, and to guide selection of the best pairs of bridge landing sites:

Criterion A – Connectivity and Safety

This criterion is intended to connect to existing or planned bike/pedestrian routes directly or to streets with sidewalks and bike lanes that meet minimum safety and design standards for bicycle and pedestrian users. Alternative bridge alignments and landings were considered along with differing connections to existing and planned local and regional bike/pedestrian routes. In

addition, alternatives will differ in their ability to meet or exceed design standards for bikes and pedestrian facilities. Considerations for this project:

- Bike/pedestrian connections to existing east/west infrastructure.
    - Topography.
    - Width, to fit a trail or bike lane/sidewalk connection.
    - Connection to the east Trolley Trail.
    - Connection to the west Willamette River Greenway, Terwilliger Trail.
- Slope/grade of site (ADA restrictions / Metro standards).
- Directness of connection to other existing or planned pathways.
- Safety/comfort of connection.

Criterion B – Environmental Impacts

This criterion is to avoid adverse impacts on environmental resources. Impacts may vary depending on alternative bridge alignments and landing locations. Considerations for this criterion included:

- Avoid or minimize adverse impacts on wildlife habitat and trees.
- Avoid or minimize adverse impacts on waters and wetlands.
- Avoid or minimize adverse impacts on cultural and historic resources.
- Avoid or minimize light pollution emitting from aesthetic lighting.
- Avoid or minimize noise pollution resulting from the construction phase.
- Maximize project eligibility for programmatic environmental permitting.

Criterion C – Compatibility with Recreational Goals

This criterion is intended to maximize the recreational benefits the bridge would provide and enhance the current recreational activities in the area (biking, walking, boating, picnicking, etc.). There are several opportunities to improve or enhance recreational opportunities. The opportunities vary among the alternative bridge alignments and landing locations. Considerations for this criterion included:

- Maintain/improve river access.
- Preserve/maximize future use of public waterfront property.
- Maximize connections of local neighborhoods to the area to increase community opportunity to access the recreational areas.

Criterion D – Compatibility with Existing Developments and Neighborhoods

This criterion is intended to avoid displacement of and incompatibility with residences, businesses, parks and planned infrastructure improvements, and to minimize adverse effects of locating and accessing the bridge. Impacts may vary among the alternative bridge alignments and landing locations. Considerations for this criteria included:

- Avoid private property acquisition.

- Minimize size of bridge landings to reduce impacts to public property.
- Integrate with surroundings to enhance existing neighborhoods and green spaces.
- Ensure bridge appearance and aesthetics for visual integration.

Criterion E – Cost and Economic Impact

This criterion is intended to minimize the cost and adverse economic impacts of the project. There could be temporary and permanent economic impacts which could improve or hinder local and regional economics. Cost and economic impacts could differ not only among the alternative bridge alignment and landing locations, but also among the bridge types (signature vs. traditional) used to support the alignments. Considerations for this criterion included:

- Minimize up-front bridge costs and future maintenance costs.
- Avoid impacts to underwater cable and other area utilities.
- Maintain air access (float planes).
- Provide potential increase in tourism.
- Provide increases in local jobs and opportunities during construction.
- Minimize land acquisitions and/or easement required for construction of the structure.

Criterion F – Compatibility with Land Use Planning

This criterion is intended to review local and regional development plans for areas surrounding potential bridge landing locations and to minimize impacts to future development plans. Considerations for this criterion included:

- Compatibility with local and regional adopted plans.
- Avoid negative impacts to long-term plans.
- Minimize impacts to existing public view points.

Landing Site Criteria Scoring & Ranking

The criteria presented above was utilized to subjectively and quantitatively evaluate each landing site and develop a relative comparison of all landing sites considered in the evaluation. The *OGLO Landing Site Evaluation Matrix* (below) was developed to summarize results and calculate ranking scores based on input from evaluators. The following summarizes use of the evaluation matrix and how relative rankings were determined for the evaluated landing sites:

- Each criterion is worth one point, reflecting that all criteria are considered equally important in the evaluation. Six criteria were developed, so each site evaluation involves assigning six total points.
- For each landing site, evaluators assign an “X” in the column that reflects the level that the landing site meets the objectives of the criterion. Selection options include:
    - Does not meet objective
    - Meets objective

- Meets and exceeds objective

- The summary section of the spreadsheet reports individual category scores, the rank score, and overall rank determined for each landing site.
  - $\text{Individual Category Score (\%)} = \frac{\sum Criterion\ Assignments}{6}$
  - $\text{Rank Score (\%)} = \frac{\sum Criterion\ Assignments\ in\ \text{"Meets Objective"}\ and\ \text{"}Meets\ and\ Exceeds\ Objective\text{"})}{6}$

- Rank score is used to complete the overall ranking of landing sites being compared in the evaluation. The rank score is a reflection of the percentage of criterion objectives that were met or exceeded, so higher Rank Scores result in higher ranks.

- If two or more landing sites receive the same rank score, the individual category score for "Meets and exceeds objective" is used to distinguish between the equal rank scores; higher "Meets and exceeds objective" category scores result in higher rankings. Using this individual category score to distinguish between tied Rank scores rewards landing sites that exceed objectives in the criteria.

To illustrate this evaluation process and determination of individual category scores and rank scores, The below is an example of a completed evaluation matrix for two landing sites being evaluated:

Example Completed Evaluation Matrix

		Criterion A Connectivity and Safety			Criterion B Environmental Impacts			Criterion C Compatibility with Recreational Goals		
		Does not meet Objective	Meets Objective	Meets and Exceeds Objective	Does not meet Objective	Meets Objective	Meets and Exceeds Objective	Does not meet Objective	Meets Objective	Meets and Exceeds Objective
West Landing Sites										
A	Landing Site 1		X			X			X	
B	Landing Site 2			X			X			X
C										
D										
E										
F										

		Criterion D Compatibility with Developments & Neighborhoods			Criterion E Cost and Economic Impact			Criterion F Compatibility with Land Use Planning		
		Does not meet Objective	Meets Objective	Meets and Exceeds Objective	Does not meet Objective	Meets Objective	Meets and Exceeds Objective	Does not meet Objective	Meets Objective	Meets and Exceeds Objective
West Landing Sites										
A	Landing Site 1		X			X			X	
B	Landing Site 2			X			X		X	
C										
D										
E										
F										

The evaluation matrix determined the following individual category scores, rank scores, and sanks in the summary as shown in Figure 2:

Figure 2: Summary Results for Example Completed Evaluation Matrix

Summary				Rank
Does not meet Objective	Meets Objective	Meets and Exceeds Objective	Rank Score	
0%	100%	0%	100%	2
0%	17%	83%	100%	1

The following are example calculations for Landing Site 1:

- "Does not meet objective" category score: 0/6 = **0%**
- "Meets objective" category score: 6/6 = **100%**
- "Meets and exceeds objective" category score: 0/6 = **0%**
- Rank score: (6+0)/6 = **100%**

The following are example calculations for Landing Site 2:

- "Does not meet objective category score: 0/6 = **0%**
- "Meets objective category score: 1/6 = **17%**
- "Meets and exceeds objective category Score: 5/6 = **83%**
- Rank score: (1+5)/6 = **100%**

Primary ranking resulted in a tie between the two landing sites because the evaluation resulted in the same rank score for both sites. As a result, the "Meets and exceeds objective" category score was the secondary score used to establish a ranking between these two landing sites. Landing Site 2 achieved a higher rank because its "Meets and exceeds objective category score was higher than that of Landing Site 1.

Results from the assessment of the bridge locations and the completed matrix are presented in the Assessment of Bridge Locations.

Identifying Publicly-Owned Land

Publicly-available tax lot and property parcel data current to 2019 accessed by direct download from **Metro's Regional Land Information System (RLIS)** forms the primary basis of land ownership determination in this report for the stipulated geographic limits.

Publicly-Owned Land

The property data sets were filtered down to encompass only riverbank accessible ownership on the Willamette River and within the project limits. The tax-lot data was evaluated, and publicly-owned property was determined to consist primarily of the following:

1. North Clackamas Parks & Recreation District
2. Metro Parks and Recreation
3. Oregon Parks and Recreation
4. City of Lake Oswego
5. City of Portland
6. Oak Lodge Sanitary District

Railroad Property Consideration

In addition to the above specific owners, public right-of-way parcels consisting of roads and rail were identified based upon their parcel ownership. In many cases, these properties were listed without any owner and identified as infrastructure (i.e. “Road”, “Rail”) in the data sets.

Property ownership of the right of way for the rail bridge was generally identified as Union Pacific Railroad in the property data sets except for parcels of railroad property located to the north and west of Tryon Cove Park (west of the River), which seemed to indicate public ownership. Further investigation of property revealed that the branch that heads east over the river is likely still owned by the railroad, and the north/south line portion is owned by a consortium consisting of:

- City of Portland
- Oregon Department of Transportation (ODOT)
- TriMet
- Metro

The right-of-way agent for this consortium-held railroad right of way parcel is TriMet, which currently addresses all requests including permitting. For the purposes of this report and for mapping, these parcels were shown as publicly-owned property. However, the special ownership conditions should be recognized and may be an important factor in the selection of landing sites and tie-in points as it may affect both temporary and permanent access beyond the project limits in bridge connectivity.

Easement Consideration

Located between the east edge of the Portland Bureau of Environmental Services (BES) sanitary sewer facility and the west bank of the Willamette River, a Lake Oswego easement exists which currently allows access for trail users from Foothills Park to the southern edge of Tryon Cove.

Landing Site Selection for Assessment

The identified publicly-owned lands suitable to serve as landing sites for alignment connectivity options for the proposed bridge consist of the following

Eastern Bank Landing Sites and Associated Publicly-owned Parcels:

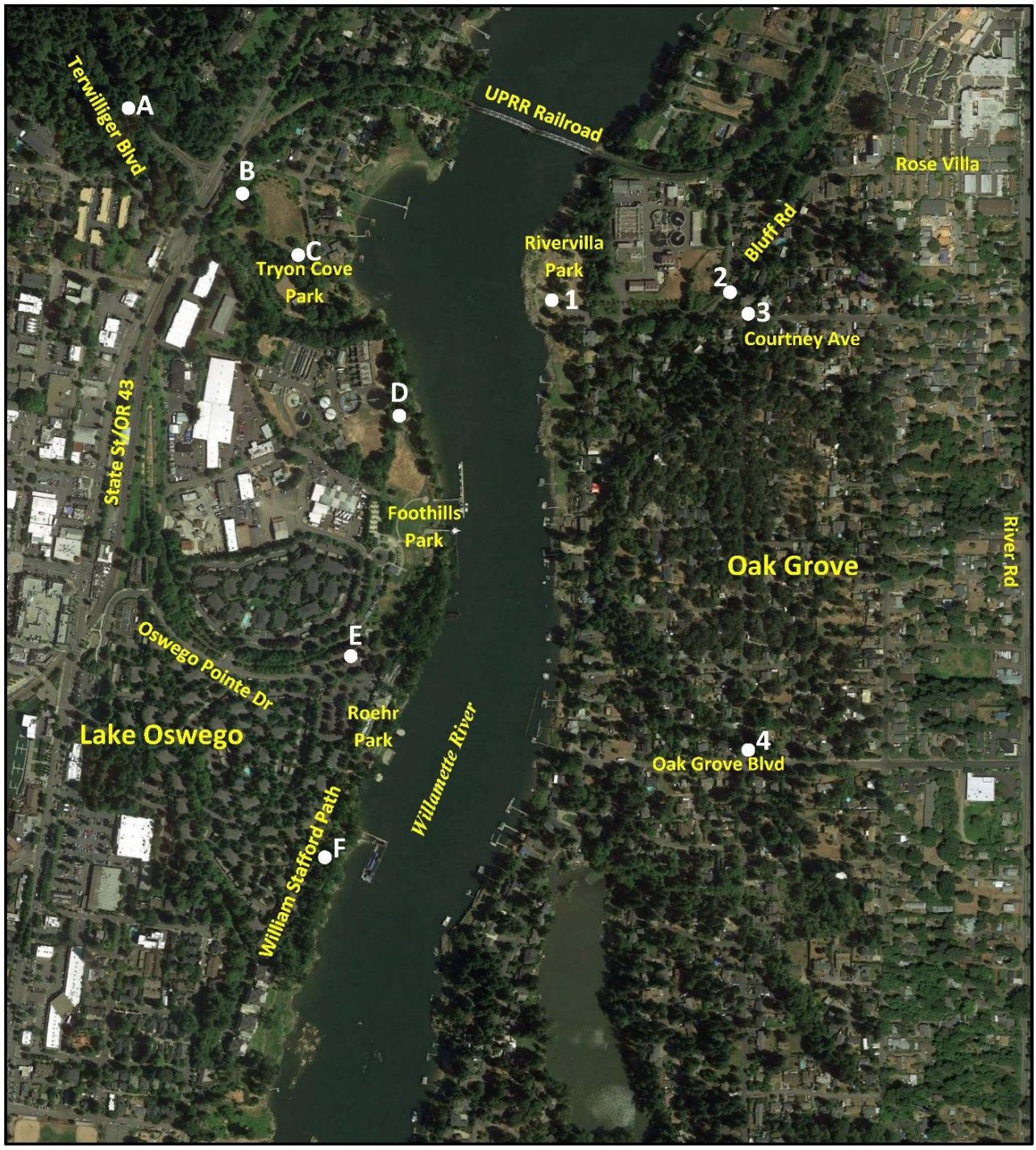
1. Rivervilla Park: North Clackamas Parks and Recreation District
2. SE Bluff Road: Public Road right of way
3. SE Courtney Ave: Public Road right of way
4. Oak Grove Blvd: Public Road right of way

Western Bank Landing Sites and Associated Publicly-owned Parcels:

A. Terwilliger Blvd:
    a. Oregon Parks and Recreation
    b. Public Road right of way
B. Tryon Cove Upper:
    a. City of Lake Oswego
    b. Public Road right of way
C. Tryon Cove Lower:
    a. Metro
    b. Public Road right of way
    c. City of Lake Oswego
D. Foothills Park: City of Lake Oswego
E. Roehr Park: City of Lake Oswego
F. William Stafford Pathway: City of Lake Oswego

A visual summary of the identified landing sites in relation to publicly-owned parcels are provided on a map image (below) and will be subject to assessment using the criteria outlined above.

Possible Bridge Landing Sites



Engineering Design Criteria

This section of the report is intended to establish and document key engineering design criteria applicable for the identification, evaluation, and determination of feasible structural bridge configurations.

Design Criteria

The technical feasibility of a new bridge over the Willamette River at the proposed project site, as well as its design in any future project phases, requires consideration of structural configurations which are directly influenced by a wide range of quantitative engineering and non-engineering-based disciplines that are identified in this memorandum.

The design criteria is anticipated to be a '*living document'* to support initial feasibility decision-making, while establishing the design-basis for any subsequent project phases. The design criteria will require future modifications due to revised or changed project objectives and design goals resulting from client or stakeholder input. Thus, revisions to the design criteria would be anticipated in any future project phases.

Environmental Design and Sustainability

This section is intended to define necessary design requirements to achieve environmental compliance and permitting. Therefore, it is expected that this section would be further developed in NEPA phase of the project. Section components would be anticipated to include:

- Permitting requirements
- NEPA compliance requirements
- Wetlands requirements and restrictions
- River requirements and restrictions
- Requirements for protecting endangered species
- Requirements envisioned as a measure of project sustainability

These components would likely influence the design process, pier placement, bridge geometry, and other key bridge layout decisions, so development of this section in any subsequent project phases would be important.

Civil Design

Requirements for vertical alignment, horizontal alignment, drainage, etc. defined in this section would guide civil design aspects of the project. Contents in this section greatly influence the bridge geometrics (vertical and horizontal) and design requirements to ensure that a new bridge and its connections would be readily accessible and usable by persons with and without disabilities.

If transit were included in any future designs, bridge layouts for transit options would have to be according to the latest edition of the TriMet Design Criteria.

Applicable Design Standards

- AASHTO *A Policy on Geometric Design of Highways and Streets*, 7th Edition, 2018.
- AASHTO *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, 1st Edition.

- Oregon Department of Transportation (ODOT) Bicycle and Pedestrian Design Guide.
- Oregon Department of Transportation (ODOT) Highway Design Manual (HDM)
- *International Building Code* (IBC), 2018.

Horizontal Alignments

Criteria should be in accordance with applicable design standards for bicycle and pedestrian multi-use paths based upon influencing factors such as speed and sight distance.

Vertical Alignments

Criteria should be in accordance with applicable design standards for bicycle and pedestrian multi-use paths based upon influencing factors such as speed, sight distance, and grade. The maximum allowable grade on the approach and main-span structure should be limited to 5%. This maximum allowable grade, combined with necessary clearance envelopes for navigation, rail, and roadway, would greatly influence the vertical alignment.

Bridge Deck Drainage

All bridge deck surfaces should provide positive drainage to shed water away from the centerline of the bridge and be directed to allowable retention areas or removed from the site by a deck drainage system meeting design and environmental standards.

Bridge deck drainage should be designed to be managed in accordance with Clackamas County Stormwater Management Plan (CCSMP).

Bridge Architecture and Aesthetic Treatments

The proposed bridge would provide bicycle and pedestrian access between Lake Oswego and Oak Grove as a grade-separated structure for users. In addition to direct user interaction and interfacing with structural elements, the proposed bridge would be a visible structure that should enhance and complement the site. Attention to details such as railings, overlook/belvedere areas, bridge lighting, and overall fit within the community would require consideration of aesthetics and architectural treatments.

Bridge architecture design criteria include the following:

A. Design a bridge structure with the least impactful span configuration and the greatest vertical clearance possible to comply with minimum vertical and horizontal clearance requirements over the Willamette River and all traversed right of way.

B. Specifiy materials that require minimal maintenance, with the exception of periodic power washing.

C. Detail all walking surfaces for slip resistance and usability during rainy weather.

D. Coordinate and integrate bridge electrical and drainage components to have the least visual impact on the overall bridge architecture.

E. Select colors and materials to complement the landscape architecture and overall fit with landing sites and surrounding community.

Landscape Design

This section is intended to define necessary design requirements that would be needed to achieve the desired level and type of permanent landscaping design at the project site. It is expected that this section would be further developed in any future design phases of the project.

Structural Engineering Design

Requirements for structural materials, design loadings, and performance requirements (vibration and user comfort) defined in this section would be used to guide the structural design.

Applicable Design Standards

Structural engineering design of the proposed bridge would be in accordance with the following specifications, codes, and guidelines:

- AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges*, 2nd Edition with 2015 Interim (AASHTO Pedestrian).
- AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals, First Edition, 2015 with current interims through 2019 (AASHTO Signs).
- AASHTO *LRFD Bridge Design Specifications*, 8th edition, 2017 (AASHTO), or latest version adopted by bridge owner.
- AASHTO LRFD Bridge Construction Specifications, 4th Edition, with 2020 Interim Revisions.
- AASHTO *Guide Specifications for LRFD Seismic Bridge Design*, 2nd edition, 2011 with 2014 and 2015 Interims (AASHTO Seismic).
- ODOT Bridge *Design Manual* (latest version).
- ODOT Standard Specifications (latest version).
- FIB Bulletin 32 Guidelines for the Design of Footbridges, November 2005.
- American Institute of Steel Construction (AISC) *Steel Construction Manual*, 15th edition.
- AISC 360-16, *Specifications for Structural Steel Buildings*, 2016.
- AISC 341-16, *Seismic Provisions for Structural Steel Buildings*, 2016 (AISC Seismic).
- American Concrete Institute (ACI) 318-19 *Building Code Requirements for Structural Concrete and Commentary*, 2019.
- American Society of Civil Engineers (ASCE) 7-16, *Minimum Design Loads for Building and Other Structures*, 2016 (ASCE 7).
- American Welding Society (AWS) D1.1, *Structural Welding Code*, 2015 Edition.
- American Welding Society (AWS) D1.5, *Bridge Welding Code*, 2015
- Oregon Structural Specialty Code, 2019 (OSSC).

- Service d'Etudes techniques des routes et auto routes (SETRA), *Footbridges, Assessment of vibrational behavior of footbridges under pedestrian loading*, 2006.
- FHWA National Bridge Inspection Standards, 2004 with 2009 revisions.

Materials

The following materials should be used unless otherwise permitted by applicable design standards.

Cast-In-Place/Precast Concrete (minimum compressive strength):

- Columns, and crossbeams: f'_c = 4,000 psi
- Drilled shafts: f'_c=5,000 psi
- Deck slab: f'_c = 4,000 psi
- Concrete box girders: f'_c = 5,000 psi

Reinforcing Steel:

- Drilled shafts, columns, cross beams, and box girder: ASTM A706 Grade 60, f_y = 60 ksi
- All other reinforcing steel: ASTM A706, Grade 60, f_y = 60 ksi
- Prestressing strands: 7-wire low-relaxation, ASTM A416, Grade 270, f_{pu} = 270 ksi

Prestressing/Tendons:

- In accordance with the latest version of the Post-Tensioning Institute DC-45.1, Recommendations for Cable Design, Testing, and Installation manual.

Structural Steel:

- Wide flange shapes: ASTM A992, Grade 50, unless otherwise noted
- Tees, channels, angles, plates, and bars: ASTM A36, unless otherwise noted
- Hollow Structural Section (HSS) rectangular or square: ASTM A500, Grade B, f_y = 46 ksi
- HSS round: ASTM A500, Grade B, f_y = 42 ksi
- Pipes: ASTM A53, Grade B, f_y = 33 ksi
- Anchor bolts: ASTM A307, Grade A or ASTM F1554, Grade 105, as applicable
- Steel deck: ASTM A653, Grade 33 (Galvanized)
- High strength bolts: ASTM F3125
- Welding: 70XX electrodes (SMAW)

Design Loadings

Dead Loading

- Cast-in-place concrete: 155 pcf
- Steel: 490 pcf

- Soil: 125 pcf (unless prescribed otherwise by project-specific geotechnical reports)
- Additional dead loads of materials as necessary if identified in design progression

Live Loading

- Pedestrian: 90 psf in accordance with the AASHTO Pedestrian Bridge Design Specification.
- Guardrail Loading: 50 plf or 200 lbs in any direction in accordance with Oregon Specialty Structural Code
- Handrail loading: 50 plf in any direction in accordance with Oregon Specialty Structural Code
- AASHTO H10 Maintenance Vehicle in accordance with the AASHTO Pedestrian Bridge Design Specification
- OPTIONAL: Transit vehicle loading and associated barrier impact loading to be determined as applicable in any future phases of the project.

Wind Loading

Wind loads should be based upon ODOT TM 671 and AASHTO Signs specification, with load combinations in according to the AASHTO Pedestrian bridge specification.

- Ultimate Wind Speed – 130 mph MRI-1700 (Mean Recurrence Interval = 1700 years)
- Serviceability Wind Speed – 82 mph MRI-10 (Mean Recurrence Interval = 10 years)

Depending upon the bridge type and span lengths that might be selected, it might be necessary to conduct an aerodynamic analysis as part of any future design.

Vessel Collision Loading

Engineering design of proposed bridge structures should meet AASHTO LRFD and provide structural stability and life safety after an extreme event. The proposed bridge would be classified as “Typical” and a vessel collision analysis would have to be conducted to support AASHTO LRFD requirements.

Vehicular Impact Loading

Structural design of bents or barriers would have to be in accordance with AASHTO LRFD to accommodate vehicular impact as an extreme event.

Bollards would have to be installed at the ends of the bridge to prevent non-emergency vehicles from entering the pedestrian portion of the bridge.

Seismic Design

Seismic design would have to be in accordance with AASHTO Guide Specifications for LRFD Seismic Bridge Design (AASHTO Seismic) satisfying:

- Life Safety Criteria at the Extreme Event Level (1000-yr Event)

- No lower level operational criteria exists for pedestrian bridges if transit alternatives are not included in the project. Additional criteria would likely be required if transit alternatives were added to the project.
- Bridge Classification: Typical.

Seismic design parameters and response spectra would have to be in accordance with future project-specific geotechnical reports based on subsurface investigations, laboratory testing, and analysis. See Appendix A for a Preliminary Geotechnical Assessment of the project site by Shannon & Wilson Geotechnical and Environmental Consultants.

Structure Vibration and User Comfort

Pedestrian- and wind-induced vibrations would have to be considered and the bridge designed to enhance the user experience. Minimum fundamental frequency of the structure in a vertical mode without live load would have to be 3.0 hertz (Hz). Minimum fundamental frequency of the structure in a lateral mode without live load would have to be 1.3 Hz. If the fundamental frequency were not able to satisfy these limitations, an evaluation of the dynamic performance would have to be made in accordance with SETRA. The structure would be considered a "Class I" structure, and the comfort level would be defined as "Average Comfort" for such an evaluation.

Foundation Design

Design of foundations for land-based and in-water bents, abutments and deep foundations would need to consider structural and geotechnical behavior and interaction. Structural loads and analysis results would have to be in accordance with the listed structural design codes. Geotechnical information would be obtained from any future project-specific geotechnical reports based on subsurface investigations, laboratory testing, and analysis. See Appendix A for a Preliminary Geotechnical Assessment of the project site by Shannon & Wilson Geotechnical and Environmental Consultants.

Foundation selection would be completed following geotechnical investigation, analysis, and recommendations provided by the geotechnical engineer and would consider the local and global aspects of the proposed bridge's alignment.

All foundation design would have to be in accordance with the service, strength, and extreme event loading combinations as identified in the applicable design codes.

Lighting Design

The functional and aesthetic lighting elements for a proposed structure would have to conform to the requirements of the Model Lighting Ordinance which aims to address integrated lighting design goals in conjunction with county and community criteria. In particular, the proposed bridge's illumination would be aimed at creating a comfortable and safe structure while also improving and enhancing the adjacent neighborhood area by encouraging pedestrian activity throughout the day.

Bridge illumination enhances safety, security, and aesthetics. Lighting equipment would have to be durable to withstand the rigors of the waterfront environment and be easy to maintain so the light levels could be sustained during the life cycle of the bridge structure. Lighting design would

need to consider and evaluate the effects to the local area in order to mitigate or eliminate light pollution and adhere to applicable local lighting standards.

Specific lighting levels for outdoor pedestrian ways and outdoor stairs are not provided in CPTED. However, its guidelines note that pedestrians require a clear path of refuge from criminal threats and vertical illumination for ease of facial recognition. These would be provided on the proposed bridge and stair landings (if included) within the project boundary.

The IESNA's Lighting Handbook does not provide specific guidance on light-levels for pedestrian walkways and bridge. However, in general, the overall bridge should achieve a 3 to 5 fc-level illumination for an extra sense of safety and security at night.

Lighting for the proposed bridge would use energy-saving LED technology whenever possible. A layered approach including railing-integrated and bridge structure up-lighting would be used throughout the project. All sources would be 3,000 degrees Kelvin or less unless noted otherwise, with a minimum 80 color rendering index (CRI).

Applicable Design Standards

Recommended practices and guidelines that would drive the lighting design should include:

- National Electrical Code
- Oregon Structural Specialty Code

Recommended practices should also be included from the following:

- Crime Prevention through Environmental Design (CPTED) guidelines
- Illuminating Engineering Society of North America (IESNA) *Lighting Handbook*, 10th edition
- Illuminating Engineering Society of North America (IESMLO) *Model Lighting Ordinance, 2011*
- Other Local Guidelines

ADA Accessibility

The ADA (42 USC. 12101 et seq.) is a federal civil rights law that prohibits discrimination against individuals with disabilities. Title II of the ADA covers state and local governments. The US Department of Transportation (USDOT) is responsible for issuing regulations to implement the public transportation parts of Title II of the ADA. The regulations issued by the USDOT include accessibility standards for the design, construction, and alteration of facilities used in the provision of public transportation.

The US Department of Justice is responsible for overall enforcement of Title II of the ADA. The Department of Justice has designated the USDOT as the federal agency responsible for investigating complaints and conducting compliance reviews "relating to programs, services, and regulatory activities relating to transportation, including highways" (28 CFR 35.190 (b)).

The design and details of the proposed bridge would have to comply with the 1991 and 2010 Federal ADA Standards. Specifically, Section 504 of the Rehabilitation Act and the ADA of 1990 require pedestrian facilities to be designed and constructed so they are readily accessible to, and

usable by, persons with disabilities. These requirements would also cover the allowable slopes on the pedestrian bridge's walking surface.

Walking Surface Slopes and Grades

The proposed bridge would have to comply with ADA requirements and meet the accessibility criteria for a pedestrian circulation path with a maximum grade of 5% as a general goal.

Cross slopes on sidewalks and walkways should not exceed 2%, but would have to be of sufficient grade to facilitate positive drainage and avoid water accumulating on the surface.

ADA Design References

- *ADA – 28 Code of Federal Regulations (CFR) Part 35*, as revised September 15, 2010 and 23 CFR Part 652, Pedestrians and Bicycle Accommodations and Projects.
- ODOT *Bridge Design Manual,* 2019.
- *ADA Standards for Transportation Facilities*, USDOT, 2006; consists of 49 CFR Parts 37 & 38 and the ADA and ABA Accessibility Guidelines for Buildings and Facilities (ADA-ABAAG; also referred to as the 2004 ADAAG), July 23, 2004, U.S. Access Board as modified by USDOT. (For transit, light rail, and similar public transportation facilities).
- *Revised Draft Guidelines for Accessible Public Rights-of-Way* (PROWAG), November 23, 2005, U.S. Access Board. This is the current best practices for evaluation and design of pedestrian facilities in the public right of way per FHWA guidelines.
- *Standard Plans for Road, Bridge, and Municipal Construction* (Standard Plans), ODOT.
- *A Policy on Geometric Design of Highways and Streets* (Green Book), AASHTO, 7th edition, 2018
- *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, AASHTO, 2004. Provides guidance on the planning, design, and operation of pedestrian facilities along streets and highways. Specifically, the guide focuses on identifying effective measures for accommodating pedestrians on public rights of way.
- *Pedestrian Facilities Users Guide – Providing Safety and Mobility*, FHWA, 2002. Provides useful information regarding walkable environments, pedestrian crashes and their countermeasures, and engineering improvements for pedestrians.
- *Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way*, July 26, 2011, U.S. Access Board. Federal Notice of Proposed Rule Making that gives a preview of potential future revisions to the PROWAG.
- NFPA 101: *Life Safety Code,* 2015.

Elevators and Stairs

Stairs could be utilized to provide a secondary route to primary ADA accessible routes. Elevators should not be utilized in the project without permission from the bridge owner.

Pedestrian Railings

Requirements for the pedestrian railings would have to be compliant with applicable AASHTO codes and ADA requirements. The pedestrian railings on the bridge would have to have a minimum height of 42 inches and a 54-inch tall railing adjacent to bicyclists.

A pedestrian handrail at a height of between 34 inches and 38 inches for pedestrian comfort would have to be provided to comply with the OSSC and IBC requirements. Handrail gripping surfaces would need to have rounded edges, and handrail gripping surfaces with a circular cross-section would have to have an outside diameter of 1.25 inches to 2 inches. Handrail gripping surfaces with a non-circular cross-section would be required to have a perimeter dimension of 4 inches to 6.25 inches and a cross-section dimension of 2.25 inches maximum.

Handrail gripping surfaces would have to be continuous and not be interrupted by newel posts, other construction elements, or obstructions along the entire length of the bridge. The bottoms of handrail gripping surfaces would not be allowed to be obstructed for more than 20% of their length. Where provided, horizontal projections would have to occur at least 1.5 inches below the bottom of the handrail gripping surface. An exception would permit the distance between the horizontal projections and the bottom of the gripping surface to be reduced by 1/8 inch for each 1/2 inch of additional handrail perimeter dimension that exceeds 4 inches.

Handrails at the bottom of stairs would have to continue to slope for a distance of the width of one tread beyond the bottom riser nosing and to further extend horizontally at least 12 inches.

The bridge's pedestrian railings would be required to prevent the passing of a 4-inch sphere in any direction, and meet OSCS and IBC. This requirement is also consistent with the *Life Safety Code* (NFPA 101).

Transit Separation Barriers/Railings

Section reserved for transit considerations if any future phases of the project were to include transit alternatives on the bridge. Barrier-separated transit lanes would have to be designed in accordance with national and local criteria, including the latest edition of the TriMet Design Criteria.

Project Design Lifecycle

The bridge would be designed to provide a service life of 75 years. Components of the bridge (main span and approach spans), as well as civil components of the design, would be selected to minimize operational and maintenance costs required throughout the life of the bridge.

Replaceable components such as bearing devices, expansion joints and stay cables (if used) would be designed to provide a specific service life prior to replacement and would be detailed to accommodate future replacement without the need for an extended closure of the bridge.

The bridge would be designed to accommodate maintenance inspection at regular intervals, including the installation of access details, such as fall-protection devices and anchor points, where necessary. Bridges that carry only pedestrian and bicycle traffic are not required to satisfy the FHWA National Bridge Inspection Standards (NBIS) required inspection interval of two years. However, this practice is strongly recommended.

Bridge Concepts

The purpose of this section is to present plan, elevation, and typical section information for feasible bridge alternatives on selected alignments **A-3** and **D-3** to communicate conceptual information pertaining to span arrangement, height above surrounding ground and water, and structure grades between publicly-owned landing sites. In addition to illustrating feasible bridge alternatives connecting the Oak Grove and Lake Oswego communities, information contained in this report could also be utilized to estimate project development costs, along with operations and maintenance costs.

Main Span & Approach Span Considerations

The main span portion of the alignment is considered to be the section of bridge crossing the Willamette River; the approach spans are the portions of the alignment which are not over the river, connecting the main span to the landing sites. All bridge alternatives presented in this report are considered capable of satisfying requirements defined in the last section that could be implemented in any later design phases of the project.

The approach span and main span options presented in this report illustrate a range of bridge type, structural materials, and span layouts to traverse the required clearance windows, and provide the desired aesthetic appeal. The following summarizes the main span and approach spans considered in the bridge alternatives:

- **Approach Spans**
    - Precast, Prestressed Concrete Girders
    - Steel Plate Girders
- **Main Span**
    - Segmental Haunched Concrete Box Girder
    - Haunched Steel Box Girder
    - Extradosed
    - Cable-Stayed

Each bridge alternative features a bridge deck with finished grades limited to 5% to meet ADA requirements while providing the necessary clearance envelopes for navigation, rail, and roadway. In addition, low chords for each alternative easily clear the 100-year floodplain elevation of approximately 37.6 feet, which was verified from other another nearby project (Tryon Creek Wastewater Treatment Plant).

Bicycle/pedestrian-only alternatives generally utilize a 16’-0” multi-use path (clear width) that is composed of 2’-0” shoulders and a 12’-0” bi-directional bicycle and pedestrian path; cable-supported main span alternatives generally provide the same clear width, but separated into two paths to allow for cable anchorages along the centerline of the structure. Transit alternatives accommodate a single 14’-0” bi-directional bus lane (clear width) in combination with a bicycle/pedestrian multi-use path. Transit alternatives were only investigated on

alignment D-3, which was slightly modified to accommodate the 50'-0" minimum turning radius for buses.

Bridge Types

Bridge plan sheets illustrating conceptual details of feasible bridge alternatives developed in this project were presented in the last section. The plan sheets illustrate feasible bridge alignments and conceptual bridge layouts associated with those alignments. The purpose of this section is to provide additional narrative describing the bridge alternatives, estimated costs, construction challenges and duration, expected bridge lifetime, environmental impacts, maintenance requirements, estimated permittability, and potential for US Coast Guard (USCG) acceptance of the bridge alignments and types.

Bridge Type Alternatives

Bridge type alternatives previously presented included different types for approach spans and main spans. Approach span concepts utilized conventional/economical span lengths and girder types including precast, prestressed concrete girders and steel plate girders. Main span alternatives utilized long-span bridge types including segmental haunched concrete box girder, haunched steel box girder, extradosed, and cable-stayed concepts. The bridge alternatives presented provide for variety in material type, span lengths, aesthetics, and construction methods.

Construction Challenges

Based on assumptions for construction means and methods for the bridge alternatives in this work, the largest construction challenges are estimated to be the following for each alternative:

- **A-3 Haunched Concrete or Steel Box Bridge Main Span Alternatives:** The largest construction challenge for these alternatives would likely be the construction of the tall cast-in-place pier table for the main span. In addition, working on a number of independent headings for the long approaches to ensure that the main span activities remain on the critical path, rather than the approach spans, is anticipated to be another challenge. Headings are independent construction crews that work simultaneously on a construction site so multiple components of the bridge can be constructed at the same time. Given the length of the approach spans, multiple headings would be required to keep the construction pace of the approach spans equal to or faster than that of the main spans so they are completed at approximately the same time in order to minimize the construction duration. Finally, to overcome transportation challenges, delivery of large steel box girder sections could potentially be made using barges rather than over-the-road trucks.
- **A-3 Extradosed Main Span Alternative:** The largest construction challenge for this alternative would likely be simultaneously supporting two sets of form travelers and installing stay cables. In this case, one tower would be close to the shore while the other would be out in the water and would be serviced from a temporary work trestle. Similar to the A-3 box girder options, working on a number of independent headings for the

long approaches to ensure that the main span activities remain on the critical path, rather than the approach spans, would be anticipated to be another challenge.

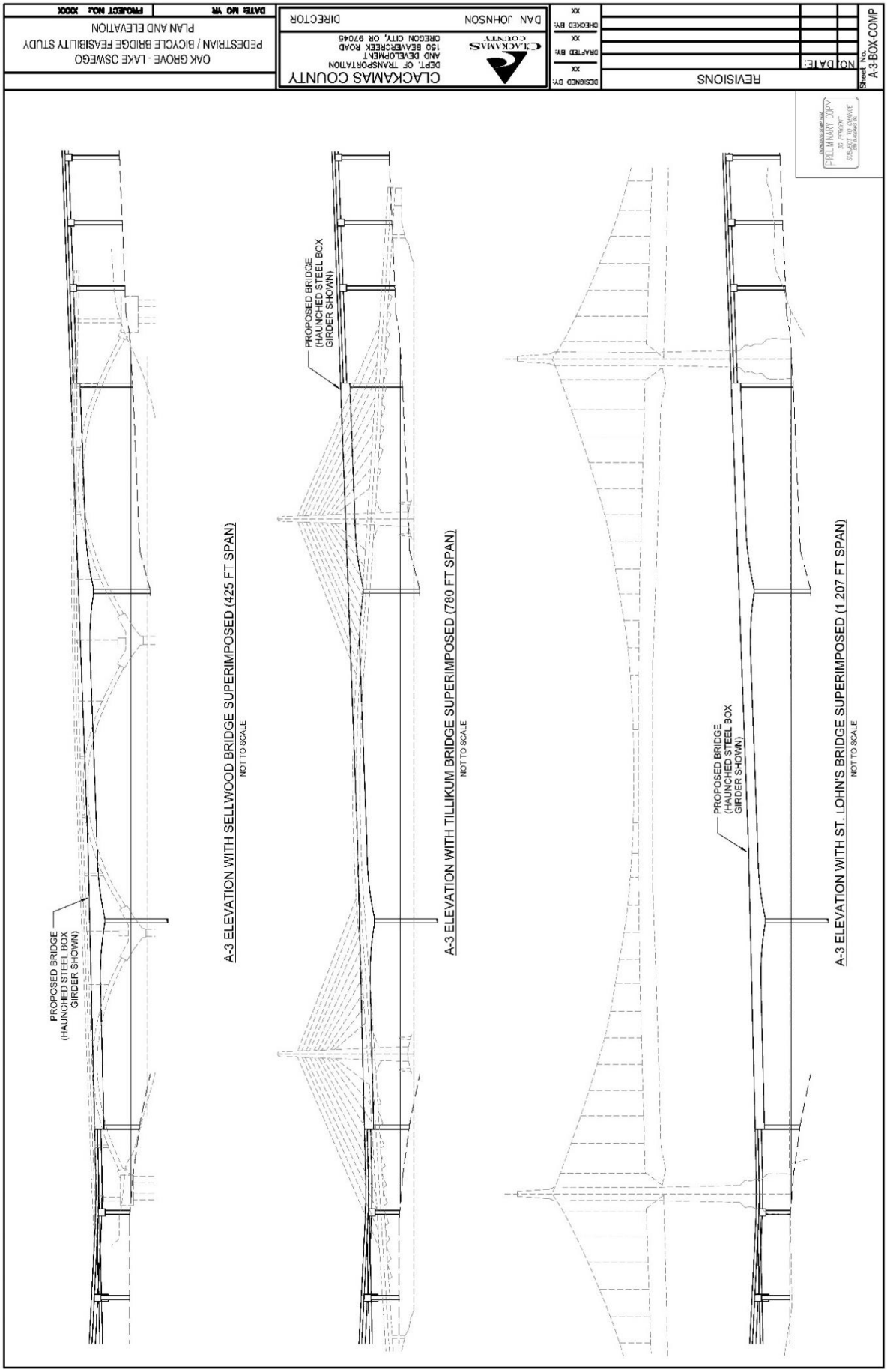
- **D-3 Haunched Steel Box Main Span Alternative:** The largest construction challenge would be anticipated to be the erection of the main span steel and the installation and removal of the temporary shoring towers that would be required for erection of the main span haunched beams.
- **D-3 Cable-Stayed Main Span Alternative:** The most challenging part of this alternative would be the installation of the stay cables and the diaphragm that encases the anchorages.
- **D-3 Haunched Steel Box (Transit) Main Span Alternative:** Similar to the no-transit option, the largest construction challenge would likely be the erection of the main span steel girders and the installation and removal of the temporary shoring towers that would be required for erection of the main span haunched beams.
- **D-3 Cable-Stayed (Transit) Main Span Alternative:** The largest challenge of this alternative would be construction of the large perched footing and the cast-in-place pier table.

Note that due to limitations on the local roads near the project, delivery of equipment and material to the project site would likely utilize a combination of land and water transportation. Land transportation would be expected to be used for delivery of smaller items, while water transportation could be beneficial for larger items not suitable for transport on local roads.

Comparisons to Local Bridges

To illustrate the size and scale of the proposed bridge concepts, a plan sheet is included on the next page that presents three elevations of a proposed steel box girder bridge overlaid with other well-recognized local bridges for comparison.

The following plan sheets present conceptual details of feasible bridge alternatives that were considered in this phase of work. Permutations of these bridge types could be investigated in any future phases of this project, but these alternatives illustrate a variety of bridge alternatives capable of providing a bicycle/pedestrian crossing in this corridor.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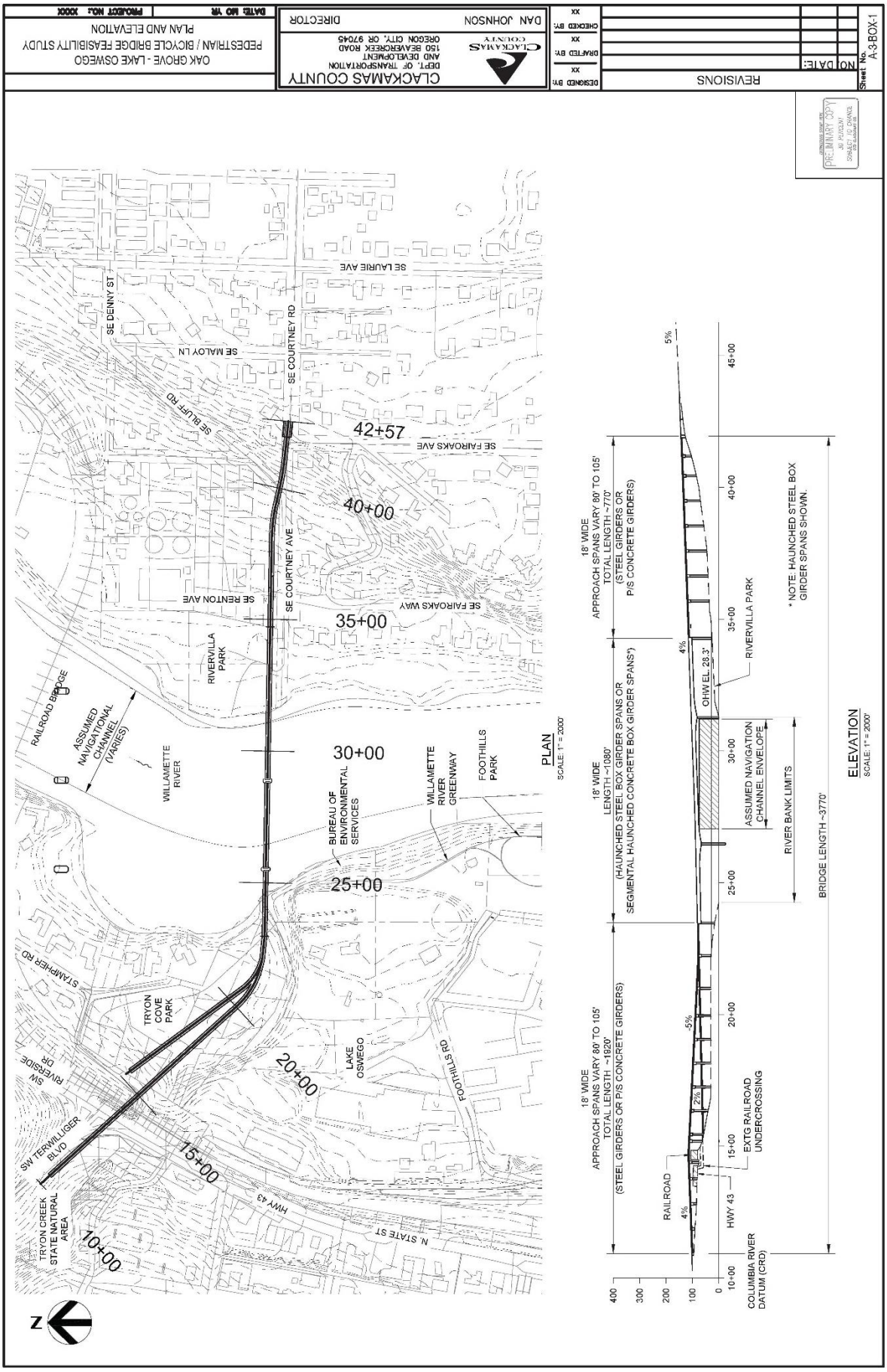
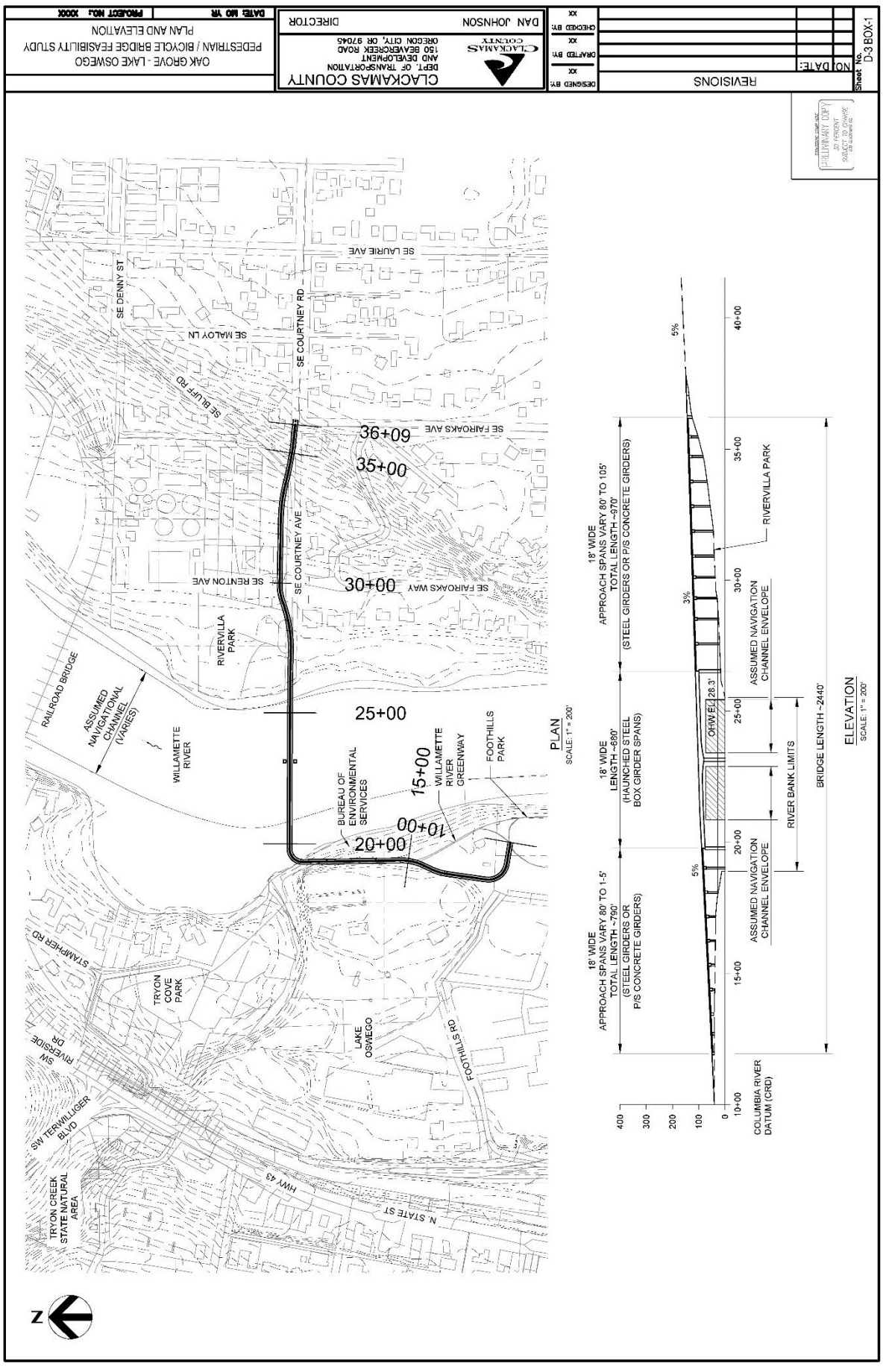
DRAFTED BY: XX
CHECKED BY: XX
CLACKAMAS COUNTY
DEPT. OF TRANSPORTATION AND DEVELOPMENT
150 BEAVERCREEK ROAD
OREGON CITY, OR 97045
DAN JOHNSON
DIRECTOR
OAK GROVE - LAKE OSWEGO
PEDESTRIAN / BICYCLE BRIDGE FEASIBILITY STUDY
PLAN AND ELEVATION
DATE: MO YR
PROJECT NO.: XXXX
PRELIMINARY COPY
NOT FOR CONSTRUCTION
PROPOSED BRIDGE (HAUNCHED STEEL BOX GIRDER SHOWN)
A-3 ELEVATION WITH SELLWOOD BRIDGE SUPERIMPOSED (425 FT SPAN)
NOT TO SCALE
PROPOSED BRIDGE (HAUNCHED STEEL BOX GIRDER SHOWN)
A-3 ELEVATION WITH TILLIKUM BRIDGE SUPERIMPOSED (780 FT SPAN)
NOT TO SCALE
PROPOSED BRIDGE (HAUNCHED STEEL BOX GIRDER SHOWN)
A-3 ELEVATION WITH ST. JOHN'S BRIDGE SUPERIMPOSED (1,207 FT SPAN)
NOT TO SCALE
DRAFT


CLACKAMAS COUNTY
DEPT. OF TRANSPORTATION AND DEVELOPMENT
150 BEAVERCREEK ROAD
OREGON CITY, OR 97045
DIRECTOR
DAN JOHNSON
OAK GROVE - LAKE OSWEGO
PEDESTRIAN / BICYCLE BRIDGE FEASIBILITY STUDY
PLAN AND ELEVATION
REVISIONS
PRELIMINARY COPY
Sheet No. A-3-BOX-1
PLAN
SCALE: 1" = 2000'
ELEVATION
SCALE: 1" = 2000'
SE DENNY ST
SE LAURIE AVE
SE MALOV LN
SE BLUFF RD
SE COURTNEY RD
SE FAIROAKS AVE
SE RENTON AVE
SE FAIROAKS WAY
RIVERVILLA PARK
RAILROAD BRIDGE
ASSUMED NAVIGATIONAL CHANNEL (VARIES)
WILLAMETTE RIVER
BUREAU OF ENVIRONMENTAL SERVICES
WILLAMETTE RIVER GREENWAY
FOOTHILLS PARK
STAMPHER RD
TRYON COVE PARK
SW RIVERSIDE DR
LAKE OSWEGO
FOOTHILLS RD
SW TERWILLIGER BLVD
TRYON CREEK STATE NATURAL AREA
HWY 43
N. STATE ST
42+57
40+00
35+00
30+00
25+00
20+00
15+00
10+00
18' WIDE APPROACH SPANS VARY 80' TO 105' TOTAL LENGTH ~770' (STEEL GIRDERS OR P/S CONCRETE GIRDERS)
18' WIDE LENGTH ~1080' (HAUNCHED STEEL BOX GIRDER SPANS OR SEGMENTAL HAUNCHED CONCRETE BOX GIRDER SPANS*)
18' WIDE APPROACH SPANS VARY 80' TO 105' TOTAL LENGTH ~1920' (STEEL GIRDERS OR P/S CONCRETE GIRDERS)
OHW EL 28.3'
RIVERVILLA PARK
* NOTE: HAUNCHED STEEL BOX GIRDER SPANS SHOWN.
ASSUMED NAVIGATION CHANNEL ENVELOPE
RIVER BANK LIMITS
BRIDGE LENGTH ~3770'
EXTG RAILROAD UNDERCROSSING
RAILROAD
HWY 43
5%
4%
-5%
2%
4%
45+00
40+00
35+00
30+00
25+00
20+00
15+00
10+00
400
300
200
100
0
COLUMBIA RIVER DATUM (CRD)


CLACKAMAS COUNTY
DEPT. OF TRANSPORTATION AND DEVELOPMENT
150 BEAVERCREEK ROAD
OREGON CITY, OR 97045
DIRECTOR
DAN JOHNSON
OAK GROVE - LAKE OSWEGO
PEDESTRIAN / BICYCLE BRIDGE FEASIBILITY STUDY
PLAN AND ELEVATION
REVISIONS
DESIGNED BY:
DRAFTED BY:
CHECKED BY:
NO. DATE:
Sheet No. D-3 BOX-1
PRELIMINARY COPY
30 PERCENT
SUBJECT TO CHANGE
PLAN
SCALE: 1" = 200'
ELEVATION
SCALE: 1" = 200'
SE DENNY ST
SE MALOY LN
SE BLUFF RD
SE COURTNEY RD
SE LAURIE AVE
SE FAIROAKS AVE
SE RENTON AVE
SE FAIROAKS WAY
SE COURTNEY AVE
RIVERVILLA PARK
RAILROAD BRIDGE
ASSUMED NAVIGATIONAL CHANNEL (VARIES)
WILLAMETTE RIVER
BUREAU OF ENVIRONMENTAL SERVICES
WILLAMETTE RIVER GREENWAY
FOOTHILLS PARK
STAMPHER RD
TRYON COVE PARK
LAKE OSWEGO
FOOTHILLS RD
SW RIVERSIDE DR
SW TERWILLIGER BLVD
TRYON CREEK STATE NATURAL AREA
HWY 43
N. STATE ST
36+09
35+00
30+00
25+00
20+00
15+00
10+00
18' WIDE APPROACH SPANS VARY 80' TO 1-5' TOTAL LENGTH ~790' (STEEL GIRDERS OR P/S CONCRETE GIRDERS)
18' WIDE LENGTH ~680' (HAUNCHED STEEL BOX GIRDER SPANS)
18' WIDE APPROACH SPANS VARY 80' TO 105' TOTAL LENGTH ~970' (STEEL GIRDERS OR P/S CONCRETE GIRDERS)
OHW EL 28.3'
5%
3%
5%
ASSUMED NAVIGATION CHANNEL ENVELOPE
ASSUMED NAVIGATION CHANNEL ENVELOPE
RIVERVILLA PARK
RIVER BANK LIMITS
BRIDGE LENGTH ~2440'
COLUMBIA RIVER DATUM (CRD)
400
300
200
100
0
10+00
15+00
20+00
25+00
30+00
35+00
40+00

Construction Duration

This project would be estimated to be alternative delivery (CMGC or Design-Build), and the estimated construction duration would be estimated at 30-37 months for the bridge alternatives that have been developed in this study. The range in construction duration accounts for variability in bridge types and lengths among the alternatives, and it also assumes two foundation and substructure headings (independent working crews and equipment) for each bridge alternative. A contractor could elect to add a third foundation and substructure heading for the bridge alternatives on the A-3 alignments due to the length of bridge in those alternatives, which could help to reduce the construction duration by a few months. It should also be noted that the estimated construction duration range does not account for considerations of in-water work windows, which could extend the construction duration depending on the bridge foundation types and timing of construction.

Using alternative delivery could reduce the construction duration by a small amount since it usually has the impact of reducing the overall project schedule (combined schedule for design and construction). This is usually achieved by releasing foundation designs to begin construction at the site, and the remaining design of the bridge is completed during construction of the foundations. The simultaneous design and construction activities can result in reduced overall project schedule.

Bridge Lifetime

Bridges are typically designed for a service life of 75 years, which is consistent with the project design lifecycle applicability stated above and also with the estimated inspection operational maintenance costs presented in this project work. Achieving the intended bridge service life would require proper attention to design details in the design phase of the project, achieving quality construction, and keeping up with the required inspections and maintenance recommended following construction.

Environmental Impacts

The bridge would have impacts upon both terrestrial and aquatic environments. Impacts common to all alignments would include the following:

- All work on the main span foundations and any work on the approach structures that is below the Ordinary High Water Mark (OHWM) would have the potential to impact listed fish species and their critical habitat, as well as water quality within the Willamette River and adjacent waterways. However, these elements would be designed to minimize their footprint in the water and would utilize best management practices to limit ground disturbance and in-water impacts. Construction operations would satisfy regulatory requirements for in-water work and construction windows.
- The project could impact historic or archaeological resources in the area due to its location along the Willamette River.
- Encroachment on the Willamette River Greenway Management District.
- Encroachment on a Resource Protection Overlay District.

- Temporary construction impacts and permanent bridge substructure supports within adjacent parks.

The current alignments would not be expected to impact any heritage trees or historic landmarks designated by the City of Lake Oswego.

Please see Environmental Permitting Summary Report in Appendix B for a complete list of the potential impacts. Please see below for related permits and approvals.

Maintenance Requirements

Regular bridge inspections and maintenance would be required to keep the bridge in optimal condition to achieve its intended service life. Estimated inspections and maintenance items, as well as planning-level costs, are in Appendix C of this report.

Permittability

Because the project would require federal permits and approvals, and could require federal funding to construct, it would be subject to the requirements of the National Environmental Policy Act (NEPA). The NEPA process would be initiated because the Willamette River is a navigable waterway regulated by the US Coast Guard (USCG), which would require a federal bridge permit. The USCG would be the lead agency ensuring that all federal permits were acquired prior to issuing a bridge permit, and would coordinate with other federal agencies for permits and approvals, including any agencies providing federal funding. See Appendix C for a complete list of the potential impacts.

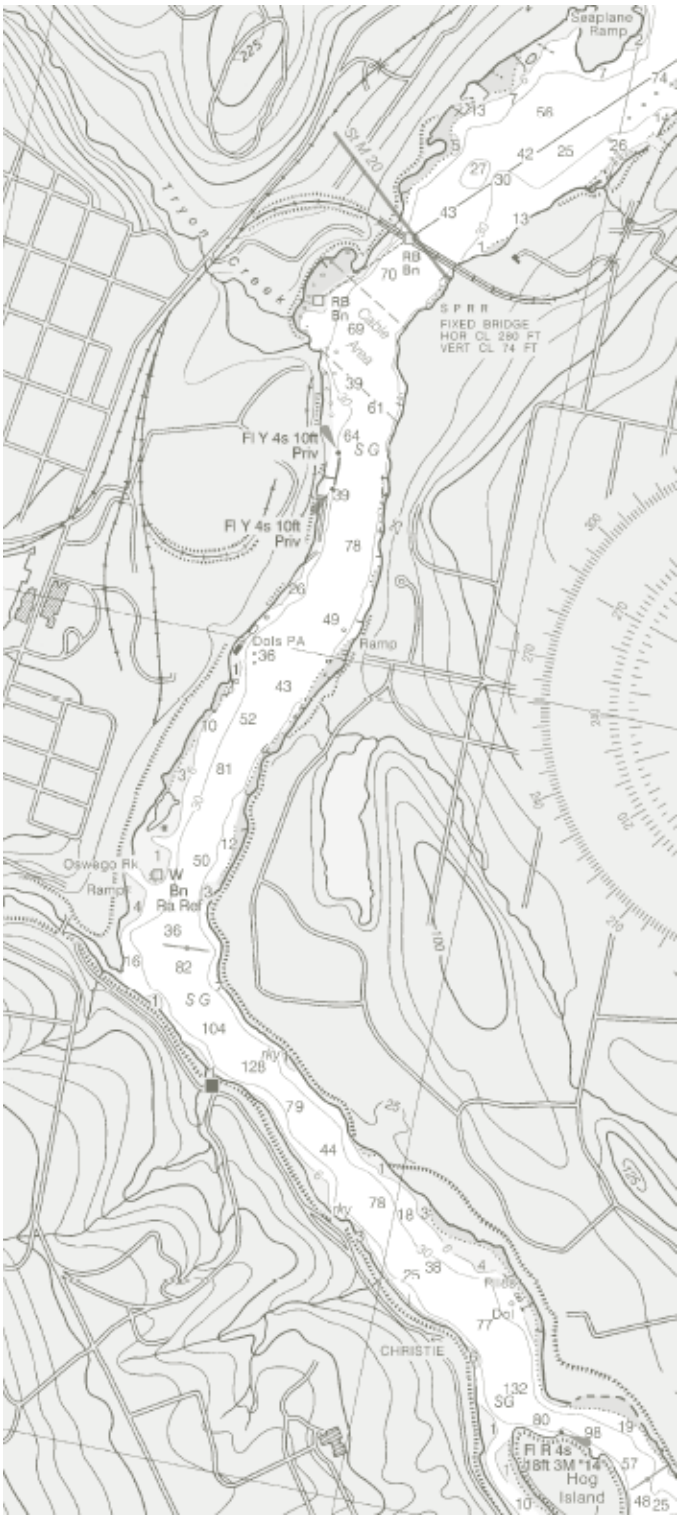
Permits and approvals would be required to construct the project as outlined below:

- Section 9 Bridge Permit from the USCG, which includes preparing a Navigation Impact Report and completing a Bridge Permit Application.
- Work below the OHWM of the Willamette River or within other regulated waters would require:
    - A Joint Permit Application (JPA) and approval from the US Army Corps of Engineers (USACE), Oregon Department of State Lands (DSL), and Oregon Department of Environmental Quality (DEQ).
    - A biological assessment (BA) to assess impacts to listed species and critical habitat under the jurisdictions of the National Marine Fisheries Service and the US Fish and Wildlife Service
- Comply with Section 106 of the National Historic Preservation Act, which would require preparation of an archaeological and historic resources report and consultation with the Oregon State Historic Preservation Office, as well as any interested Tribes.
- If the project received federal funding or required federal approval from US Department of Transportation agencies such as the Federal Highway Administration or the Federal Transit Administration, Section 4(f) would be applicable, and a 4(f) determination would have to be completed for potential impacts to park and recreation areas and historical sites.

- Section 6(f) would not apply since none of the parks adjacent to the proposed project site are known to have received Land and Water Conservation Funds; however, this would have to be confirmed if the project alignment is finalized.
- The maximum height of a "major public facility" under the City of Lake Oswego Municipal Code could conflict with the USCG's minimum requirement. A hardship variance from the City might be required depending on the bridge location.
- Within certain overlay districts in Lake Oswego and Clackamas County, impacts to trees and vegetation would require land use permits and mitigation.

Coast Guard Acceptance

The controlling navigational clearance envelopes are believed to be established by the existing Lake Oswego Railroad Bridge. According to the National Oceanic and Atmospheric Administration nautical charts, this fixed span railroad bridge has a vertical clearance of 74 feet, and other existing information on this bridge references horizontal clear span lengths of approximately 280 feet. The main span bridge alternatives that have been developed for a possible OGLO bridge provide for variation in span lengths and bent placement in the Willamette River, and are believed to be capable of achieving the vertical and horizontal clearance envelopes that will be acceptable for the United States Coast Guard.



Appendix B

Costs and Funding Opportunities

Oak Grove-Lake Oswego Pedestrian/Bicycle Bridge Feasibility Study

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Contents

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1 Project Development Costs

Technical Report 3g: Alternative Bridge Location Report summarizes the information in Reports 3a through 3f. Six landing sites on the west side of the Willamette River (Lake Oswego) and four landing sites on the east side (Oak Grove) are combined to yield a suite of potential crossing solutions. Technical Reports 3a through 3f describe, analyze, rate, and map these alternatives. The crossing location "pairs" that best met design and other criteria are SW Terwilliger Blvd to SE Courtney Avenue (Alternative A-3) and Foothills Park to SE Courtney Road (Alternative D-3).

See Technical Report 5a (see Appendix A) for details on plan-level cost estimates for these two crossing location alternatives. Mapping for these two selected location alternatives is in Technical Report 3e (see Appendix A of the OGLO Final Report).

Construction costs for the selected bridge/approach locations and types were created by developing concrete and steel quantities for large substructure and superstructure items such as river piers, columns, bridge decks, and cable support towers. Unit costs were based on as-constructed costs for similar bridge and project types. Construction methodology and cost for both the main river spans and the approach spans were also incorporated into the unit costs for each quantity. Further details on option dimensions and elements, unit costs, and other factors used for arriving at plan-level construction cost estimates are provided. Costing details for all options can be found in Technical Report 5a, Appendix A.

Bridge Span Options

Construction cost estimates were developed for the following:

- Three bridge main span type options are costed for Terwilliger to Courtney (steel, concrete, extradosed).
- Two main span options are costed for the Foothills to Courtney location (steel, cable stay), plus variations to these two main span options that incorporate a one-way bus-only transit lane.

Additional Costs

To account for unknown costs at this feasibility level of design, a 40% construction contingency was added to the final construction cost. The following percentages were also uniformly applied to the total construction cost for each alternative to develop discipline-specific costs for permitting, design, and construction.

- Engineering 10.5%
- Civil and Geotechnical 3.5%
- Architecture and Landscape Architecture 3.0%
- Environmental Permitting 1.5%
- Right-of-way 10.0%

- Construction Engineering 5%

2 Estimated Project Costs

SW Terwilliger Blvd to SE Courtney Road (Crossing Alternative A-3)

Total length of this alternative is 3,770 linear feet. Estimates assume 20-foot wide main decks and 18-foot-wide concrete approach decks for all three bridge type options below. Each main span option is costed for steel and concrete approaches (see Technical Report 5a, Appendix A), but total costs (see below) are based on the less expensive concrete approach treatment.

- Steel Main Span $44,500,000
- Concrete Main Span $45,300,000
- Extradosed Main Span $52,000,000

Foothills Park to SE Courtney Road (Crossing Alternative D-3)

Total length of this alternative is 2,440 linear feet. Estimates assume 20-foot-wide main decks and 18-foot-wide concrete approach decks for the two bridge type options below. Each main span option is costed for steel and concrete approaches (see Technical Report 5a, Appendix A), but total costs (see below) are based on the less expensive concrete approach treatment.

- Steel Main Span $30,300,000
- Cable Stay Main Span $36,400,000

Alternative D-3 with Transit Lane

Total length of this alternative is 2,440 linear feet. Estimates assume 34- to 37-foot-wide main decks and 34-foot-wide concrete approach decks for the two bridge type options below. Each main span option is costed for steel and concrete approaches (see Technical Report 5a, Appendix A), but total costs (see below) are based on the less expensive concrete approach treatment.

- Steel Main Span $43,600,000
- Cable Stay Main Span $54,200,000

The tables on the following page provide additional detail regarding the estimated project costs.

Oak Grove-Lake Oswego - Pedestrian/Bicycle Bridge Construction Contingency 40%	Terwilliger to Courtney: Steel Main Span A-3	Terwilliger to Courtney: Concrete Main Span A-3	Terwilliger to Courtney: Extradosed Main Span A-3	Foothills to Courtney: Steel Main Span D-3	Foothills to Courtney: Cable Stay Main Span D-3
Main Span Sub-Total/Unit Cost	$ 778 / SF $ 16,800,000	$ 801 / SF $ 17,300,000	$ 962 / SF $ 22,600,000	$ 838 / SF $ 11,400,000	$ 1169 / SF $ 15,900,000
Approach Span Steel Girders Sub-Total/Unit Cost	$ 423 / SF $ 20,500,000	$ 423 / SF $ 20,500,000	$ 429 / SF $ 20,100,000	$ 436 / SF $ 13,800,000	$ 432 / SF $ 13,700,000
Approach Span Concrete Girders Sub-Total/Unit Cost	$ 339 / SF $ 16,400,000	$ 339 / SF $ 16,400,000	$ 346 / SF $ 16,200,000	$ 350 / SF $ 11,100,000	$ 350 / SF $ 11,100,000
Total Bridge Only Cost using Steel Approaches	$ 533 / SF $ 37,300,000	$ 540 / SF $ 37,800,000	$ 607 / SF $ 42,700,000	$ 557 / SF $ 25,200,000	$ 654 / SF $ 29,600,000
Total Bridge Only Cost using Concrete Approaches	$ 474 / SF $ 33,200,000	$ 481 / SF $ 33,700,000	$ 552 / SF $ 38,800,000	$ 497 / SF $ 22,500,000	$ 596 / SF $ 27,000,000
Engineering 10.5%	$ 3,500,000	$ 3,600,000	$ 4,100,000	$ 2,400,000	$ 2,900,000
Civil and Geotechnical 3.5%	$ 1,200,000	$ 1,200,000	$ 1,400,000	$ 800,000	$ 1,000,000
Architectural and Landscape Architecture 3.0%	$ 1,000,000	$ 1,100,000	$ 1,200,000	$ 700,000	$ 900,000
Environmental Permitting 1.5%	$ 500,000	$ 600,000	$ 600,000	$ 400,000	$ 500,000
Right of Way 10.0%	$ 3,400,000	$ 3,400,000	$ 3,900,000	$ 2,300,000	$ 2,700,000
Construction Engineering 5.0%	$ 1,700,000	$ 1,700,000	$ 2,000,000	$ 1,200,000	$ 1,400,000
Subtotal of ROW, Design, & Construction Engineering costs	$ 11,300,000	$ 11,600,000	$ 13,200,000	$ 7,800,000	$ 9,400,000
Total Bridge Cost using Concrete Approaches	$ 44,500,000	$ 45,300,000	$ 52,000,000	$ 30,300,000	$ 36,400,000

Oak Grove-Lake Oswego - Pedestrian/Bicycle Bridge Construction Contingency 40% Transit Alternative	Foothills to Courtney: Steel Main Span D-3 Transit	Foothills to Courtney: Cable Stay Main Span D-3 Transit
Main Span Sub-Total/Unit Cost	$ 774 / SF $ 17,900,000	$ 1021 / SF $ 25,700,000
Approach Span Steel Girders Sub-Total/Unit Cost	$ 366 / SF $ 21,900,000	$ 366 / SF $ 21,900,000
Approach Span Concrete Girders Sub-Total/Unit Cost	$ 242 / SF $ 14,500,000	$ 242 / SF $ 14,500,000
Total Bridge Only Cost using Steel Approaches	$ 480 / SF $ 39,800,000	$ 560 / SF $ 47,600,000
Total Bridge Only Cost using Concrete Approaches	$ 391 / SF $ 32,400,000	$ 473 / SF $ 40,200,000
Engineering 10.5%	$ 3,500,000	$ 4,300,000
Civil and Geotechnical 3.5%	$ 1,200,000	$ 1,500,000
Architectural and Landscape Architecture 3.0%	$ 1,000,000	$ 1,300,000
Environmental Permitting 1.5%	$ 500,000	$ 700,000
Right of Way 10.0%	$ 3,300,000	$ 4,100,000
Construction Engineering 5.0%	$ 1,700,000	$ 2,100,000
Subtotal of ROW, Design, & Construction Engineering costs	$ 11,200,000	$ 14,000,000
Total Bridge Cost using Concrete Approaches	$ 43,600,000	$ 54,200,000

3 Project Funding

Based on the foregoing caveats, and the individual funding sources analyzed in this memorandum, the following would be recommended as the most feasible funding sources for designing *and* building OGLO.

Municipal

Municipal funding sources can be used for a bicycle/pedestrian infrastructure project such as the OGLO Bridge. However, municipal funds are limited and available only in small amounts. The best use of municipal funds is for limited improvements that are needed to connect the bridge to the existing active transportation system, or for maintenance/operations once the project has been constructed.

Metro

2019 Parks and Nature Bond – This measure went before the region's voters in November 2019. It sets aside $40 million for "walking and biking" trails, and trail funding could also come from other bond allocation (local share, complex community projects). The OGLO Bridge project was specifically identified in materials for the 2019 Parks and Nature Bond as a likely candidate for project development funding.

2020 Transportation Bond – The transportation bond is still a work in progress. The list of projects to be included for specific allocations from the bond funds has not yet received final approval, but inclusion of OGLO Bridge on that list seems unlikely. It appears there will be program funding for active transportation infrastructure and that is the most likely manner in which bond funds could be used for the OGLO Bridge project.

Regional Flex Funds (RFF) – RFF includes federally sourced funds derived from three programs under the Federal FAST Act. In the current 2022–2024 cycle, just under $30 million is available for "active transportation and complete streets." However, applications under this cycle were due June 2019, so funding for OGLO would have to wait until 2025.

State

The Oregon Department of Transportation (ODOT) administers several funds that can be used for bicycle and pedestrian facilities. All of the programs have different funds sources and different criteria for project selection. The following brief describes the available programs that could be applied to the OGLO Bridge project. None of these funds are sufficient to fully fund the project, but could be used along with funds from other sources to create a funding package sufficient to fully fund the project. State administered funds which seem to be the best fit for the OGLO Bridge project include:

- **Congestion Mitigation Air Quality Improvement Program** – The Congestion Mitigation Air Quality Improvement Program is a federally-funded program for surface transportation improvements designed to improve air quality and mitigate congestion. Reduction in vehicle emissions is usually an important criteria for funding award under this program. Eligible project types include pedestrian and

bicycle infrastructure. The OGLO Bridge project would likely be very competitive for CMAQ funds due to the high amount of emissions that would be reduced. Generally, CMAQ funds are only used for a portion of project costs and a cash match of between 20% and 50% of project cost is required. .

- ConnectOregon – ConnectOregon is a state funded, competitive grant program that invests in all types of surface transportation improvements including bicycle/pedestrian infrastructure. ConnectOregon grants can pay for up to 70% of project costs with a required match of at least 30%.

Federal

Most federal funding that would be appropriate for OGLO Bridge is a pass-through that is administered by Oregon Department of Transportation and Metro. No direct federal funding programs are recommended for OGLO.

Municipal

City of Lake Oswego Parks Bond

The Lake Oswego Parks Bond approved by local voters in May 2019 is estimated to generate $30 million in revenue. Funds can be applied to eligible projects within the city limits as well nearby unincorporated areas. Nonetheless, the Lake Oswego bond would *not* be available for funding OGLO.

System Development Charges and Similar Fees

SDCs are assessed at the time of private development. Transportation and parks SDCs could nominally be applied to an OGLO bridge. Under state law, an SDC (also called an impact fee) may be a reimbursement fee to reimburse for existing excess system capacity benefiting the development, or an improvement fee to pay for new system capital improvements to meet new demand generated by the development. The two types may be combined. State law dictates the methodology for calculating these charges.

The key provision is that the calculation (and expenditures) must be for capital improvements included in local plans adopted under state land use law (e.g., comprehensive, parks, transportation, associated capital improvement programs, and similar plans). This “duly adopted plan provision” could pose a limitation to use of SDCs for OGLO. As noted earlier, OGLO only appears in in the County’s 2013 Transportation System Plan and 2015 Active Transportation Plan. OGLO or similar is not specifically listed in Lake Oswego’s CIP associated with SDC funds, but there is a general allocation for “pathways and trail development.’” Secondly, as a regional facility crossing multiple jurisdictions, OGLO might be hard to justify for local SDC eligibility. Lastly, irrespective of eligibility and as a practical reality, total SDC funds available at any given point may fall well short of what would be needed for OGLO.

- The **City of Lake Oswego** has enacted transportation and parks SDCs. Pathways and trail development fall under the City’s SDC CIP (current as of 2018).

- **Clackamas County** also has a transportation SDC, but not one for parks. The County's current 20-year CIP list (version 1/18/17) and the 2013 Transportation System Plan include a reference to a Willamette River "bike/pedestrian crossing." The crossing is referred to as the Lake Oswego to Milwaukie Bridge, and the location is described being as between Sellwood and Oregon City (Project ID: 2022, Map: 5-11c).
- The **North Clackamas Parks and Recreation District, a special service district of Clackamas County,** has a parks SDC, and is a partner in this project.

Connecting Multiuse Trails

Existing or planned regional multiuse trails (paved 10-12 foot wide minimum) might need to be extended to connect to the OGLO bridgeheads. The locations and lengths of these connecting trails would depend on the location of the preferred OGLO bridge. Conceptual alignments in the OGLO feasibility study primarily rely on on-street connections (Oak Grove) or direct bridge ramp connections (Lake Oswego/Terwilliger) to nearby trails.

In addition, existing or planned regional trails shown on the 2018 Regional Trails System Plan might need to be improved. Connecting multiuse trails could be funded and completed separately, but the best approach would be to embed engineering and construction within the larger OGLO project budget.

Note – To secure funding, the preferred OGLO and connecting trail alignments would likely need to be added to the 2018 Regional Trails System Plan and to applicable local plans.

Additional Funding Opportunities

This OGLO assessment is scoped to identify the feasibility of a variety of bridge locations, types, and supporting infrastructure such as bridgehead improvements and connecting trails. Depending on the outcomes of this feasibility assessment, there could be the need for additional planning analysis, public outreach, or other project activities before beginning any construction engineering and permitting. There could also be opportunities to identify some physical features of OGLO for standalone funding and construction.

There are numerous grant programs that could partially fund the OGLO bridge or at least some select elements of the bridge. The relatively lower levels of funding available, narrower eligibility requirements, and award timing might make use of the following grant opportunities challenging for developing an all-at-once funding package.

Land and Water Conservation Fund

This long-established national program expired in 2018, but after some debate was subsequently reauthorized in 2019. Although primarily conceived as a tool to acquire and preserve important land and water resources, the fund could be used for trails. Under the revised reauthorization, at least 40 percent of LWCF appropriations must go to states.

The Oregon Parks and Recreation Department (OPRD) administers this matching grant program in Oregon. The next grant cycle opens January 2020. The program has historically been used to build recreational facilities as part of park development. These include active facilities such as sports fields and trails.

OPRD Local Government Grants

This program awards approximately $4 million in grants annually for public outdoor park and recreation areas and facilities, including trails, trail bridges, and trailhead facilities. The source of the funds is the Oregon Lottery. $11,772,239 was awarded in 2018. The largest possible grant is $750,000, and a match is required. The program also includes an allocation for planning grants. The 2019 grant cycle closed on May 15, 2019. Cities, counties, metropolitan service districts, parks and recreation districts, and ports are eligible.

Note: OPRD also has a County Opportunity grant program, but it is limited to campground property acquisition and development by counties.

OPRD Recreation Trails Program

These are federal pass-through funds available through FHWA supporting recreational trail development. Funds available are based on annual Congressional appropriations. Cities, counties, non-profits, state and federal agencies, tribes, and other government entities are eligible. $2.4 million was awarded in 2018. The 2019 application deadline was June 15, 2019.

Metro Nature in Neighborhoods Grants

This program is underwritten by Metro Parks Bond proceeds and has been primarily applied to land acquisition, habitat restoration, and natural area development. Facilities such as trails, boardwalks, and trail bridges have been included in program-funded developments. As of this writing, this grant program is slated to receive a $40 million capital grant allocation from the proposed 2019 Metro Parks Bond renewal (see earlier discussion in this report). Planning-level projects can also be supported by Nature in Neighborhoods

Travel Oregon

The Travel Oregon (TO) Competitive Grants Program awards eligible applicants funding for projects that contribute to Oregon's tourism economy in communities throughout the state that support Travel Oregon's vision of "a better life for Oregonians through strong, sustainable local economies."

This TO program is allocated at three funding levels: small, medium and large. Funds can apply to capital and planning projects. The medium level is $20,000 to $100,000, and the next cycle is Spring 2020. In the most recent funding cycle, medium projects included projects such as the new West Burnside footbridge and the Oregon Coast Trail. The large program funds projects that are greater than $100,000 and is opened under the direction of the Oregon Tourism Commission.

Cycle Oregon

The Cycle Oregon Fund awarded $95,000 in grants to 14 projects in 2018, mostly for improvements and programs supporting bike riding. Cycle Oregon also has committed to supporting the planning and development of the Salmonberry Trail, donating $225,000 between 2014 and 2018, and committing to raising another $1 million.

4 Operation and Maintenance Costs

Main Span Considerations

This memo compares the operations and maintenance costs for a range of main span alternatives, including box girders, extradosed and cable-stayed. A number of assumptions were made to define the comparison of alternatives. These assumptions include the following:

- All structural steel components are painted and do not include the consideration of weathering steel.
- Bearings: approach spans utilize laminated neoprene bearings while the main span utilize disk bearings.
- Epoxy deck overlay is installed as part of new construction and then replaced after 35 years.
- Transit vehicles (where applicable) consist of buses only, not rail.
- Minor differences in approach span length for transit alternatives are not evaluated separately.
- Lump sum inspection costs include labor and equipment to perform inspections. Unit costs for maintenance items only includes construction work (does not include consultant fees).

In addition, a number of assumptions were made to define the inspection interval and the level of inspection required for the various bridge types. Pedestrian bridges are not included in the FHWA-mandated National Bridge Inventory (NBI) and thus are not governed by National Bridge Inspection Standards (NBIS), which requires a routine inspection of all vehicular bridges on a two-year cycle. That being said, many pedestrian bridge owners are inspecting their inventory in accordance with these standards, and we recommend biennial inspections to help ensure public safety and to minimize overall life-cycle costs by planning for needed repair and component replacements well in advance.

Furthermore, for the cable-supported bridge alternatives, we assumed a specialty inspection of the cables and anchorages on 10-year intervals. This work will require a climbing inspection using safe rope access techniques to facilitate the inspection of the cables and the upper anchorages.

Bridge access equipment, including an underdeck inspection vehicle, often called a “snooper truck”, and aerial lift equipment would need to be considered during the design of the bridge. These inspection vehicles apply a much heavier concentrated load in

comparison to a normal maintenance truck, so it may be necessary to designate specific areas of the deck which are available for use during inspections.

Bridge alternatives which utilize steel trapezoidal box girders to carry exclusively pedestrian loads are assumed to be designed with consideration of structural steel fatigue details and adequately low stress ranges so that a specialty inspection is not warranted. However, trapezoidal box girders which carry vehicular loads are considered a "fracture critical structure" which requires that these spans undergo an arms-length inspection on a bienneal basis. This fracture critical designation does not imply that these structures are not appropriate for use, only that additional inspection is required.

Time Value of Money

The cost of conducting the assumed inspections, and performing the recommended maintainance resulting from these inspections was projected over the design life of the project. Two assumptions were used to prepare a comparison of the various bridge alternatives on an equivalent basis, including:

- 75 year design life for all bridge alternatives.
- 3% annual rate of construction/engineering cost inflation.

The estimated costs for the necessary services are based on current dollars and then projected forward to the appropriate point on the in-service timeline using the assumed rate of cost inflation. For example, the first in-depth inspection of a cable-supported span will not occur until year 10 and then will recur in year 20, 30 and so forth throughout the life of the bridge. All of these future costs were then pulled back to current day costs to form a uniform basis of comparison between alternatives. The assumed initial year of service and the recurrence interval for the most likely inspections and operational maintenance work are presented in Table 1.

Table 1: Assumed Start Year and Recurrence Interval for Inspection and Maintenance Types

Start Year	Inspection or Maintenance Type	Recurrence (# of years)
1	Initial in-depth inspection	0
1	Routine operational maintenance	1
2	Biennial maintenance inspection	2
10	In-depth inspection (main span)	10
2	Remove graffiti and repair vandalism	2
10	Painting structural steel (touchup 5%)	5
35	Painting structural steel (full repainting)	35
20	Superstructure repairs	20
25	Substructure concrete repairs	25
30	Replace expansion joints	30
25	Replace bridge deck overlay	30
10	Specialized inspection of stay cables & anchorages	10
20	Repairs to stay cables & anchorages	20

50	Replacement of stay cable	50
40	Replace approach span bearings (25%)	40
50	Replace main span bearings (25%)	50

Estimated Operation and Maintenance Costs

Estimated unit costs for inspection, operation and maintenance were developed from recent experience on similar bridge projects across the US and compared to average unit costs published by state DOT bridge owners and are presented in Table 2. These estimates were also verified by an independent consulting engineer (Armeni Consulting Services, LLC) who specializes in constructability reviews and bottom-up cost estimates for complex bridge projects. However, these estimated costs should be utilized with caution simply because the fluctuation of material and labor costs over the service life of these bridge alternatives cannot be predicted with complete certainty.

Based on the assumptions and estimated inspections and maintenance intervals described above, estimated operation and maintenance cost for each bridge alternative have been calculated and are presented in Table 3. Given the level of uncertainty in these future costs, as well as their optimal recurrence interval, it is prudent to consider a reasonable range of costs rather than a single value to represent each bridge alternative. These costs are intended as a basis of comparison between alternatives, but does not represent anything more than planning-level estimated costs at this stage of project development.

Table 2: Assumed Units Costs for Inspection and Maintenance Types

Inspection or Maintenance Type	Estimated Cost (Current Year)
Initial in-depth inspection	$ 5,000 LS
Routine operational maintenance	$12,000 LS
Biennial maintenance inspection	$5,000 LS
In-depth inspection (main span)	$30,000 LS
Remove graffiti and repair vandalism	$6,000 LS
Painting structural steel (touchup 5%)	$10 / sq. ft.
Painting structural steel (full repainting)	$6 / sq. ft.
Superstructure repairs	$25,000 LS
Substructure concrete repairs	$50,000 LS
Replace expansion joints	$120 / lin. ft.
Replace bridge deck overlay	$7.50 / sq. ft.
Specialized inspection of stay cables & anchorages	$20,000 LS
Repairs to stay cables & anchorages	$10,000 LS
Replacement of stay cable	$100,000 LS
Replace approach span bearings (25%)	$3,000 each
Replace main span bearings (25%)	$10,000 each

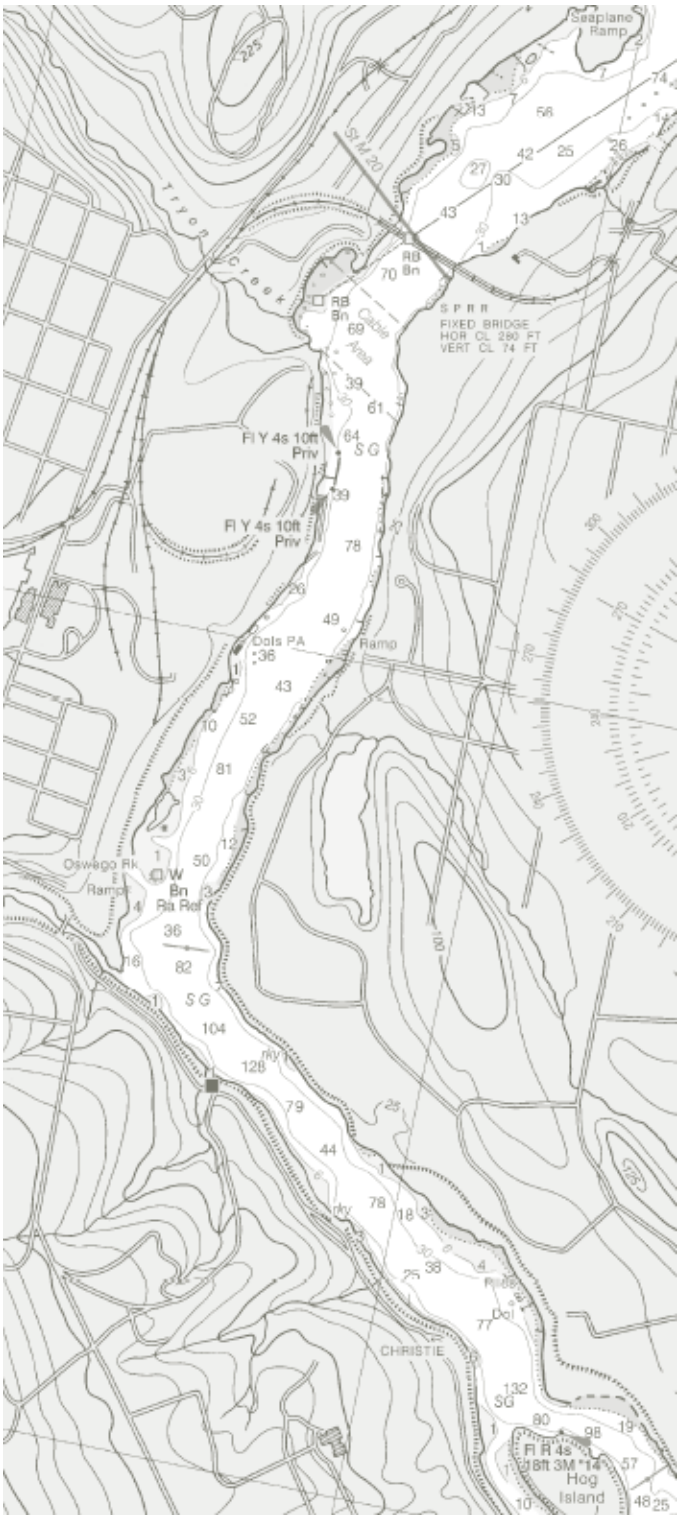
Table 3: Estimated Planning-Level Operation and Maintenance Costs for the Range of Bridge Alternatives (Total Year-of-Expenditure Costs with Escalation for 75-Year Design Life)

Alignment	Main Span Type	Approach Span Type	
		Concrete	Steel
A-3	Haunched Concrete Box	$9,950,000	$18,900,000
A-3	Extradosed	$11,900,000	$19,810,000
D-3	Haunched Steel Box	$17,140,000	$23,830,000
D-3	Cable-Stayed	$10,710,000	$16,600,000
D-3	Haunched Steel Box (Transit)	$20,190,000	$26,020,000
D-3	Cable-Stayed (Transit)	$13,110,000	$18,990,000

Based on the findings of this task, high-level recommendations to minimize operational and maintenance costs include the following:

- Painting on structural steel is a substantial life cycle cost. Limit the quantity of painting in the structure, either by selecting concrete elements or by utilizing weathering steel for structural components.
- Mobilization costs by a contractor can increase greatly if operational and maintenance items are performed in independent projects. If possible, group multiple maintenance items into each future maintenance project in order to maximize the amount of construction work completed per mobilization.

Implementation of these recommendations could likely help to reduce life cycle operational and maintenance costs for the bridge owner, and it could also potentially reduce the difference in life cycle costs between concrete and steel alternatives.



Appendix C:

Agency Permitting and Approval Requirements Summary

Oak Grove-Lake Oswego Pedestrian/Bicycle Bridge Feasibility Study

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Contents

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1 NEPA Summary

Because the project would require federal permits and approvals, and would be expected to require federal funding to construct, it would be subject to the requirements of the National Environmental Policy Act (NEPA). NEPA is a law that seeks to ensure that a federal action considers impacts on the human and natural environment. The NEPA process would be initiated on this project because the Willamette River is a navigable waterway regulated by the US Coast Guard which would require a federal permit. Issues considered in NEPA include:

- Right-of-Way Impacts
- Traffic
- Water Quality
- Threatened or Endangered Species
- Parks and Public Lands
- Hazardous Materials
- Floodplain
- Public Safety
- Land Use/Socioeconomic Impacts
- Wetlands/Waterways
- Wildlife/Fish/Birds
- Archaeology and Historical Impacts
- Air Quality
- Noise Impacts
- Stormwater
- Public Concerns

2 Environmental Impacts of the Proposed Alternatives

Potential environmental impacts were reviewed as Task 4a, Environmental Checklist (see Appendix A). Alternative-specific impacts are listed below.

- A-2: SW Terwilliger Boulevard to SE Bluff Road
    - Major impacts to Tryon Cove Park (City of Lake Oswego: Park and Natural Area (PNA) zone)
    - Minimal impacts to Rivervilla Park (Clackamas County: Open Space Management (OSM) District)
    - Impacts to Tryon Creek and its buffer
    - City of Lake Oswego
        - Willamette River Greenway Management District
        - Potentially within a Resource Protection (RP) Overlay District
        - No heritage trees or historic landmarks
- A-3: SW Terwilliger Boulevard to SE Courtney Road
    - Major impacts to Tryon Cove Park (City of Lake Oswego: PNA zone)

  - Minimal impacts to Rivervilla Park (Clackamas County: OSM District)
  - Potential impacts to Tryon Creek and its buffer
  - City of Lake Oswego
    - Willamette River Greenway Management District
    - Potentially within a RP Overlay District
  - No heritage trees or historic landmarks
- B-2: Tryon Cover Park (Upper) to SE Bluff Road
  - Minor impacts to Tryon Cove Park (City of Lake Oswego: PNA zone)
  - Minimal impacts to Rivervilla Park (Clackamas County: OSM District)
  - Potential impacts to Tryon Creek and its buffer
  - City of Lake Oswego
    - Willamette River Greenway Management District
    - Potentially within a RP Overlay District
    - No heritage trees or historic landmarks
- B-3: Tryon Cove Park (Upper) to SE Courtney Road
  - Minor impacts to Tryon Cove Park (City of Lake Oswego: PNA zone)
  - Minimal impacts to Rivervilla Park (Clackamas County: OSM District)
  - Potential impacts to Tryon Creek and its buffer
  - City of Lake Oswego
    - Willamette River Greenway Management District
    - Potentially within a RP Overlay District
    - No heritage trees or historic landmarks
- C-2: Tryon Cove Park (Lower) to SE Bluff Road
  - Significant impacts to Tryon Cove Park (City of Lake Oswego: PNA zone)
  - Minimal impact to Rivervilla Park (Clackamas County: OSM District)
  - Potential impacts to Tryon Creek and its buffer
  - City of Lake Oswego
    - Willamette River Greenway Management District
    - Potentially within a RP Overlay District
    - No heritage trees or historic landmarks
- D-1: Foothills Park to Rivervilla Park
  - Significant impacts to Rivervilla Park (Clackamas County: OSM District)
  - Minor Impacts to Foothills Park (City of Lake Oswego: PNA zone)

    - City of Lake Oswego
        - Willamette River Greenway Management District
        - Potentially within a RP Overlay District
        - No heritage trees or historic landmarks
- D-2: Foothills Park to SE Bluff Road
    - Minor impacts to Foothills Park (City of Lake Oswego: PNA zone)
    - Potential impacts to Tryon Creek and its buffer
    - City of Lake Oswego
        - Willamette River Greenway Management District
        - Potentially within a RP Overlay District
        - No heritage trees or historic landmarks
- D3: Foothills Park to SE Courtney (Upper)
    - Minor impacts to Foothills Park (City of Lake Oswego: PNA zone)
    - Minimal impact to Rivervilla Park (Clackamas County: OSM District)
    - Potential impacts to Tryon Creek and its buffer
    - City of Lake Oswego
        - Willamette River Greenway Management District
        - Potentially within a RP Overlay District
        - No heritage trees or historic landmarks
- E-4: Roehr Park to Oak Grove Boulevard
    - Minor impacts to Roehr Park (City of Lake Oswego: PNA zone)
    - City of Lake Oswego
        - Willamette River Greenway Management District
        - No heritage trees or historic landmarks
- F-4: William Stafford to Oak Grove Boulevard
    - Minor impacts to Roehr Park (City of Lake Oswego: PNA zone)
    - City of Lake Oswego
        - Willamette River Greenway Management District
        - No heritage trees or historic landmarks

3 Permitting

To determine environmental issues and permitting requirements that would need to be addressed for the proposed Oak Grove-Lake Oswego Pedestrian/Bicycle Bridge Project,

Parametrix was initially tasked with conducting a scoping workshop with applicable federal, state, and local agencies. Due to the inability to coordinate a workshop including all appropriate agencies, individual phone conversations were conducted instead. This memorandum summarizes the information gathered during these conversations so potential project partners may understand the permitting requirements, as well as how those requirements would impact project schedule and costs. Key takeaways from the conversations that could have significant impacts to engineering design and project timelines are listed below.

- The proposed project would be subject to permit approval by the U.S. Coast Guard (USCG) under the provisions of Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946. Pursuant to these Acts, the USCG would be the federal lead agency for the proposed project. The bridge would not be exempt from USCG jurisdiction since the Willamette River is a designated Navigable Water of the U.S. Per the USCG, a minimum navigation clearance of 74 feet above the ordinary high-water mark (OHWM) is required for the proposed OGLO bridge. The USCG has a very defined framework for its permitting process and will need to be consulted at project inception for coordination on both engineering design and permitting.
- The proposed bridge would be considered a “major public facility” under City of Lake Oswego Municipal Code. Per Chapter 50.02.003.2/.3, the maximum height of any portion of a structure shall not exceed “a height as determined by the ratio of one foot in height for every 3.5 feet of distance from the portion of the structure to the lot line of the nearest residentially zoned property, to a maximum of 75 feet,” except as otherwise permitted by LOC 50.04.003.4. In addition, City Charter Section 46A also has overarching restrictions for maximum height in a residential zone of 50 feet. Depending on where the bridge is constructed this could conflict with the USCG’s height requirement noted above and may require a hardship variance from the City, along with proof that the project’s height requirements are unavoidable. Currently, it is not clear if the variance would apply to the City Charter imposed height in residential zones.
- Oregon Department of Fish and Wildlife (ODFW) says that depending on the timing of the potential bridge construction, it could bear a greater need for cumulative impact analysis depending on the level of ongoing Portland Harbor clean-up work at that time.
- The best way to ensure an efficient permitting process would be to present the proposed project and relevant permitting information to representatives from NMFS, USFWS, USACE, DSL, DEQ, and ODFW. Given the USCG’s ultimate approval of the project, they would be a key attendee for this meeting.
- Oregon SHPO did not respond to requests to provide information. Section 106 Consultation with SHPO would be required due to federal permitting, and there would be potential for encountering archaeological artifacts due to bridge landings along the shores of the Willamette River.

Table 1 below provides a list of key permitting agencies and a summary of their respective requirements for the proposed project as identified during their conversations with Parametrix. A log of the scoping conversations with the agencies is attached.

Table 1 – Summary of Anticipated Agency Permit and Approval Requirements

Permitting Agency	Required Permits/ Actions	Estimated Timeframe	Notes
US Coast Guard (USCG)*	• Bridge Permit Application	• 10 months	• A minimum navigation clearance of 74 feet above the OHWM • Permit would not be issued until all federal funding and permitting approvals are complete • Early coordination with USCG is necessary due defined to guidelines in the USCG's Bridge Permit Application Guide for engineering design and permitting timeframes
US Army Corps of Engineers (USACE)	• Nationwide Permit 14	• 3 to 6 months	• Impacts must be less than 0.5 acre or an Individual 404 Permit would be required
National Marine Fisheries Service (NMFS)	• Formal Section 7 consultation • Biological Assessment/Biological Opinion	• 6 to 9 months	• Primary contact for fish • Focus on impacts to steelhead and Lower Columbia River chinook (*Oncorhynchus* spp.)
US Fish and Wildlife Service (USFWS)	• Biological survey	• 6 to 9 months	• Prominent eagle nesting presence • Recommended "may affect, not likely to adversely affect" or "no effect" determination for bull trout (*Salvelinus confluentus*), yellow-billed cuckoo (*Coccyzus americanus*), and streaked-horned lark (*Eremophila alpestris strigata*) • Clearing and grubbing on either side of the Willamette River should be conducted during late fall or winter; unique and large trees should be avoided
Oregon Department of State Lands (DSL)	• Impacts 5 piles or less – General Authorization form • Impacts greater than 5 piles – Individual Permit Authorization; Joint Application Form • Easements require Land Use Compatibility Statement (LUCS); 30-day public review period	• Temporary easement – 60 days • Permanent easement – up to 6 months	• LUCS must be approved by Lake Oswego and Clackamas County • Permanent easements require review by the State Land Board • Short-term access could be granted while permanent easements are being processed if construction delays are anticipated. This usually takes about a week to process.

Permitting Agency	Required Permits/ Actions	Estimated Timeframe	Notes
Oregon Department of Fish and Wildlife (ODFW)	• Standard best management practices		• In-water construction schedule would be dictated by in-water work window • Consider construction sequencing for upland species (e.g. bald eagle) versus in-water work • Depending on construction schedule and context of activity in the project area, consider cumulative effects to fish • Discuss fish passage considerations with Greg Apke at ODFW once permitting and preliminary design begins • Dependent upon project start up, more defined rules for lamprey may be in place and require greater analysis
Oregon Department of Environmental Quality (DEQ)	• 401 Water Quality Certification	• 3 months	• DEQ would need a copy of the LUCS • DEQ receives notification from USACE once a decision to use an NWP or IP for the Section 404 process is made
State Historic Preservation Office (SHPO)	• Section 106 consultation if using federal funds • Cultural and historic resources survey and report • Consultation with potentially interested Tribal groups and other public stakeholders	• 6 to 18 months	• Attempts to coordinate with SHPO were not successful • Since federal permits are necessary, Section 106 consultation will be required. Given landing locations for bridge are on the shoreline of the Willamette River, potential risk for encountering archaeological artifacts is present.

Permitting Agency	Required Permits/ Actions	Estimated Timeframe	Notes
Clackamas County	• Willamette River Greenway Permit	• Up to 8 weeks	• Could be exempt from permitting requirements if construed as an exception under Subsection 705.03(G)
	• Floodplain Development Permit (FDP) • Hydraulic analysis • If a rise determination is made, a certified letter of map revision (CLOMR)		• Ideally, the proposed bridge would be elevated above base flood elevation (BFE) and all applicable standards of Section 703 would apply: ➢ Subsection 703.07(D); ➢ Applicable elements of Subsection 703.10(A); ➢ Subsection 703.10(F) if fill is proposed; ➢ Subsection 703.10(G). • FEMA approval would be needed prior to obtaining FDP from the County • Coordinate with Oak Lodge Water Services for input on erosion control • A geotech review may be needed due to the steep slopes in the project area
	• Habitat Conservation Area District (HCAD) Construction Management Plan (CMP) • HCA Map Verification • HCA Development Permit with mitigation for disturbance of the HCA		• An HCAD CMP would not be required if a Water Quality Resource Area (WQRA) CMP is completed. • Map verification does not require in-situ identification
	• WQRA CMP • WQRA Boundary Verification • WQRA Development Permit		• A WQRA CMP would not be required if an HCAD CMP is completed. • Boundary Verification requires an in-situ identification
	• Application for Open Space Review		
City of Lake Oswego	• Conditional Use Permit	• 4 to 6 months	
	• Floodplain and Floodways		• No-rise analysis • Impacts to floodplain would require cut and fill balance
	• Development Review		• Willamette River Greenway

Permitting Agency	Required Permits/ Actions	Estimated Timeframe	Notes
			• Floodplains
	• Zoning and Height Restrictions		• Proposed bridge is considered a “major public facility” under City of Lake Oswego Municipal Code • Maximum height of any portion of a structure is 75 feet • Maximum height in a residential zone is 50 feet • City Charter conflicts with USCG’s minimum navigation clearance of 74 feet above the OHWM • A variance may be required, but it is currently not clear if the variance would apply to the City Charter imposed height in residential zones
	• Resource Protection (RP) Overlay Districts		• Mitigation would be required for tree and vegetation impact or removal that ranges from 1:1 to 2:1 and up to a 3-year monitoring period (depending on the impact). • Lake Oswego Parks also has use policies for the Willamette Pathway.

*Lead Federal agency without FHWA or other federal funding.

Environmental Checklist

1. Provide a brief description of the Project

   A new bicycle and pedestrian bridge crossing of the Willamette River is being considered in the Oak Grove-Lake Oswego (OGLO) area, South of Portland, Oregon, and is currently the subject of a feasibility study by Clackamas County. The potential area is located between RM 20 and 21, south of the existing Lake Oswego Railroad Bridge.

2. Estimated Right-of-Way Impacts (Including Easements, Number of Parcels, Acreage, and Improvements)

   The current project alternatives do not require any permanent ROW. Temporary easements would be required for construction. If the alternatives advance into preliminary design it is possible that further refinements would require private ROW acquisition.

3. Estimated Traffic Volume, Flow Pattern and Safety Impacts (Including Construction Impacts, Detours, etc.)

   Depending on the alternative chosen, there could be temporary construction impacts to some local roads such as SE Courtney Avenue, SW Riverside Dr or SW Terwilliger Boulevard. The project would add safe pedestrian and bike travel that will benefit all users.

4. Estimated Land Use and Socioeconomic Impact (Including Consistency with Comprehensive Plan)

   The project would need to be permitted in accordance with City of Lake Oswego and Clackamas County land use regulations. Hydraulic analysis would be required for potential floodplain impacts, as well, and could require cut and fill balance to ensure no net-rise in base flood elevations. Additionally, the bridge would require a waterway crossing easement from the Oregon Department of State Lands (DSL).

   The project would not divide or disrupt established community, or negatively affect neighborhood character or stability. The project would have no negative effect upon minority, elderly, handicapped, low income, transit-dependent, or other specific interest group.

5. Estimated Wetlands, Waterways and Water Quality Impact

   The project would cross the Willamette River and require placement of piers/footings below the river's ordinary high-water mark (OHWM). Wetland delineation activities have not yet occurred in the project area, but some wetlands could be present within the project area. Work below the OHWM of the river or within other regulated waters such as wetlands would require permits and approvals from the US Army Corps of Engineers (Corps), DSL, and Oregon Department of Environmental Quality (DEQ). Additionally, the project would require a Section 9 Bridge Permit from the US Coast Guard (USCG); if no federal funding is involved in the project, the USCG would likely be the federal lead agency.

6. Estimated Biological & Threatened & Endangered Species Impacts

   The Willamette River contains listed threatened and endangered fish species. While no listed terrestrial species are known to occur in the area, a biological survey would be needed to assess potential presence and habitat for those species, as well as other non-listed but federally protected species such as bald eagle. A Biological Assessment would be required and would need to be submitted through the lead federal agency to the US Fish and Wildlife Service and to National Marine Fisheries Service.

   The project would also require coordination with the Oregon Department of Fish and Wildlife for fish passage requirements and other related fish protection measures.

   Where applicable within certain overlay districts in Lake Oswego and Clackamas County, impacts to trees and vegetation would require mitigation.

7. Estimated Archaeology and Historical Impacts

   The project would require an archaeological and historic investigation and report and consultation with the Oregon State Historic Preservation Office.

8. Estimated Park, Visual Impacts and 4(f) Potential

   The project would likely need a visual impact report since it would place a new bridge within the Willamette River Greenway.

   The project could occur within or adjacent to parks such as Rivervilla, Foothills and Tryon Cove. Based on desktop research, none of the parks adjacent to the project site are known to have received Land and Water Conservation Funds (6(f) funds). However, if and when the project alignment were fully determined, this should be confirmed to ensure that the project would have no 6(f) impacts.

   Unless the project receives US DOT funds or requires a US DOT approval, Section 4(f) would not be applicable. If Section 4(f) is applicable, a 4(f) determination would need to be completed for potential impacts to park and recreation areas and historical sites.

9. Estimated Air, Noise and Energy Impacts

   No air quality analysis would be required for this project. The project would be located within maintenance areas for ozone and carbon monoxide but would meet the exemption of 40 CFR 93.126 – Exempt Projects, Table 2 – Exempt Projects, Air Quality, bicycle and pedestrian facilities.

   The project would have temporary noise impacts during construction and would need to conform to County and City of Lake Oswego noise regulations.

   The project would utilize some energy for lighting, but no significant impacts to energy would be anticipated.

10. Estimated Hazardous Materials Impacts

    A hazardous materials corridor study and/or Phase I Environmental Site Assessment would need to be completed to assess potential for hazardous materials within the project area.

11. Preliminary Identification of Potential Areas of Critical Concern and Controversial Issues

The proposed bridge would be considered a "major public facility" under City of Lake Oswego Municipal Code. Per Chapter 50.02.003.2/.3, the maximum height of any portion of a structure shall not exceed "a height as determined by the ratio of one foot in height for every 3.5 feet of distance from the portion of the structure to the lot line of the nearest residentially zoned property, to a maximum of 75 feet," except as otherwise permitted by LOC 50.04.003.4. In addition, City Charter Section 46A also has overarching restrictions for maximum height in a residential zone of 50 feet.

Depending on where the bridge was constructed, it could conflict with the USCG's minimum requirement of 74 feet of vertical clearance above the OHWM in this area and could require a hardship variance from the City, along with proof that the project's height requirements were unavoidable. Currently, it is not clear if a variance would apply to the City Charter imposed height in residential zones.

12. Documentation Requirements

Biological Assessment

Wetland Delineation Report

Historic and archaeological resources report

Joint Aquatic Permit Application for Corps, DSL and DEQ

DSL General Authorization (five piles or fewer)

NPDES Stormwater Construction General Permit (if greater than 1 acre of disturbance)

Hazardous Materials Corridor Study/Phase 1 Environmental Site Assessment

Clackamas County and City of Lake Oswego Land Use Permit Applications

Land Use Compatibility Statement – DEQ and DSL

Floodplain No-Rise Analysis

Visual Analysis Report

USCG Bridge Permit Application including Navigation Impact Report

Stormwater Pollution Prevention Plan

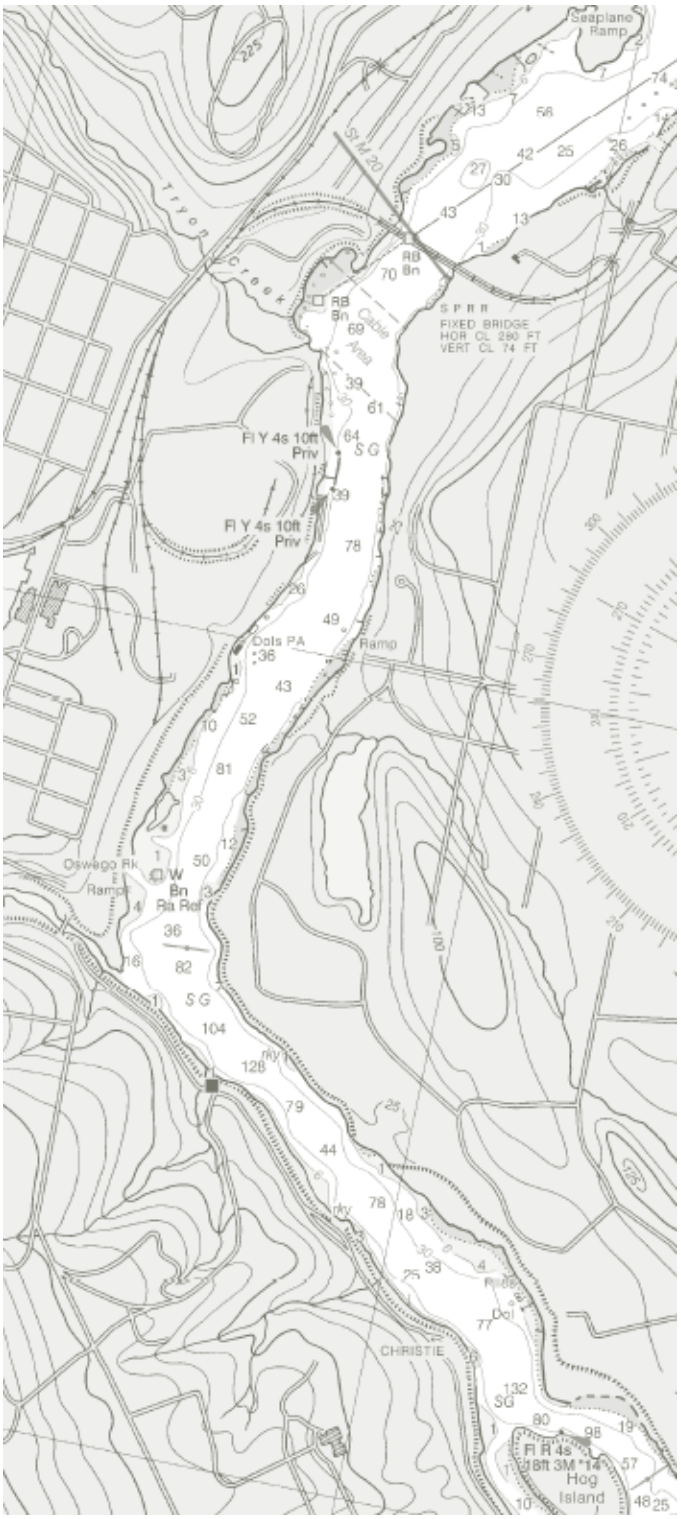
13. Estimated Pre-Construction Activity Impacts (drilling, survey work, etc.)

The project would require survey work and geotechnical testing. Geotechnical boring locations might require archaeological clearance through SHPO.

14. Preliminary Identification of Public/Stakeholder Concerns

Public concerns related to potential neighborhood impacts from the project include the following:

- *Vandalism and unsafe user conditions from transient or houseless people congregating on the bridge and within the immediate neighborhood.*
- *Visual impacts on the river and within adjacent parks.*
- *Reduction in property values.*
- *Increased neighborhood traffic.*
- *Lack of parking for bridge users who drive to the bridge.*
- *Impact on native fish and wildlife.*



Appendix D

Public Involvment Summary

Oak Grove-Lake Oswego Pedestrian/Bicycle Bridge Feasibility Study

Public Involvement Summary Spring-Fall 2019

Drafted by JLA Public Involvement for Clackamas County, December 2019

Overview of Public Involvement and Outreach

The purpose of this study was to analyze the feasibility of a pedestrian and bicycle bridge over the Willamette River between Oak Grove and Lake Oswego by looking at three issues: 1) The engineering and environmental feasibility of developing the bridge and providing connections to the existing and planned pedestrian-bicycle network; 2) The level of support for the bridge in the project area; 3) The manner in which the city, county and regional governments could work together to build and maintain a bridge.

A Policy Committee (PC) made up of elected officials from each of the partner jurisdictions and a Community Advisory Committee (CAC) made of up of a variety of stakeholders from both sides of the river provided public forums for discussion about potential bridge landings and alignments. The committees were also informed by public feedback collected through online input, two in-person open houses, and corresponding online information and input opportunities, and community presentations.

The idea of a bridge between Oak Grove and Lake Oswego has been raised in various forums over the years, including during the Clackamas County Transportation System Plan update, approved in 2013, and various other conversations with regional and local pedestrian, bicycle, and transportation committees. The feasibility study allowed for an intense period of public outreach and public comment on the deep investigation into the potential of a bridge with specific alignments that landed on public property on either side of the river within the study area.

Public involvement activities and opportunities between spring and fall 2019 included:

- A website with an introductory community questionnaire (through online survey software);
- Two in-person open houses (one held in Lake Oswego and one held in Oak Grove) with complementary online open houses (through online survey software);
- Three Community Advisory Committee meetings;
- Three Policy Committee meetings;
- One statistically significant survey;
- Postcard mailings, articles in the *Hello LO*, *Milwaukie Pilot* and ClackCo Quarterly newsletters, presentations, website updates, social media, press releases, and emails to provide broader public information and invitations to meetings;
- Presentations to the Board of County Commissioners, Lake Oswego City Council and Milwaukie City Council.

Notifications

The County used the following forms of notification to share project information and invite people to the public meetings:

- **Website –** A website was set up on the Clackamas County website in spring and regular project updates were made before and after CAC and PC meetings and in advance of open houses and the online input opportunities. Agendas, committee meeting summaries, meeting presentations, survey results, factsheets, maps including bridge alignments, etc. were posted.
- **Social media** – Facebook, Twitter, Nextdoor, local jurisdiction e-newsletters were used beginning in June.
- **Newsletter Articles –** Articles were published in the June and August *Hello LO*, August *Milwaukie Pilot*, and August *ClackCo Quarterly*
- **Postcards** – 4,346 postcards were mailed to Lake Oswego and Oak Grove residents in July 2019
- **Emails –** sent from the County to an interested parties list in advance of committee meetings and open houses; the list grew to 600 addresses as the study progressed. Emails were also distributed through existing email networks.
- **Media –** Various media reported on the study between June and November and helped generate interest in the project in advance of meetings. Reports were made by The Oregonian, LO Review, BikePortland.org, KGW, and OPB.

Community Advisory Committee (CAC)

Members of the Community Advisory Committee (CAC) were charged with making recommendations to the Policy Committee on:

- criteria to be used in the evaluation of project alternatives;
- the preferred bridge landing points to study;
- the preferred connections between the bridge and the pedestrian and bicycle network; and
- the selection of up to three bridge concepts to be advanced into the next stage of the project to be considered in detail.

The CAC's membership provided a balanced representation of a wide range of local and regional stakeholder values and interests. Committee members represented affected neighborhoods and businesses, walking/cycling enthusiasts, environmental and resource protection groups, business associations and/or groups that are under-represented in transportation decision-making. The breakdown of the representatives was set as: City of Lake Oswego - 10 representatives, Clackamas County - 10 representatives, City of Milwaukie - 4 representatives and Metro - 4 representatives. The City of Lake Oswego only filled 7 of its seats on the committee and Metro filled 3. See appendices for complete meeting summaries, for the recruitment postcard the County sent to unincorporated areas to seek representatives and for the CAC Charter.

CAC #1 Meeting - May 29, 2019
Rose Villa Performing Arts Center, Oak Grove
Attendance: 21 CAC members; 9 members of the public
The purpose of the meeting was to build an understanding of what the feasibility study is and is not about, review the charge document, and gather feedback on community values.

The CAC discussed the landing site evaluation criteria (See appendices) and community values. In small groups they identified issues and values in the following categories: Connectivity and Safety; Environmental Impacts; Compatibility with Recreational Goals; Compatibility with Existing Developments and Neighborhoods; Cost and Economic Impact; Compatibility with Adopted Plans. These values guided the process going forward. A full meeting summary can be found in the appendices. Members of the public were included in a separate small group discussion.

CAC #2 Meeting - July 22, 2019
City of Lake Oswego Maintenance Center
Attendance: 15 CAC members; 6 members of the public
The purpose of the meeting was to share, discuss, and gather committee input on potential landing locations and alignments across the river; with input to be shared with Policy Committee. The CAC first learned about the potential landing locations/alignments and then met in small groups to discuss the pros and cons of each. Members of the public were included in a separate small group discussion.

CAC #3 Meeting - September 19, 2019
Robinwood Station in West Linn
Attendance: 11 CAC members; 27 members of the public
The purpose of the meeting was to present and gather feedback to forward to the Policy Committee for consideration in the final recommendations on preferred connections between the bridge and the pedestrian and bicycle network, and on transit. The CAC learned about the public feedback received from the two in-person open houses and online questionnaire, and was provided with more information about general bridge types and costs, landing locations, and parking options. In small groups the CAC had in-depth discussions on landing location access to ped/bike and business connections. Members of the public had small group discussions, as well.

Policy Committee (PC) Meetings

The Policy Committee, the decision-making body for this feasibility study, was tasked with making recommendations to the partner governments on key decisions:

- bridge alternatives. including bridge concepts, alignments, landing points, and plans for connection to the pedestrian and bicycle network;
- bridge conceptual costs;
- preliminary environmental screening;
- organizational plan for the development and maintenance of the bridge; and
- bridge feasibility.

The PC met four times over the course of this study. See appendices for complete meeting summaries.

PC #1 meeting - June 6, 2019
Lake Oswego City Hall Council Chambers
Attendance: 4 PC members; 7 members of the public
The purpose of this meeting was to build a foundation for decisions the PC would be tasked with for the study. The PC reviewed the context for bridge landing locations, provided direction to the project team on project evaluation criteria, and discussed the formation of a potential future governance agreement. Two people gave public testimony during this meeting.

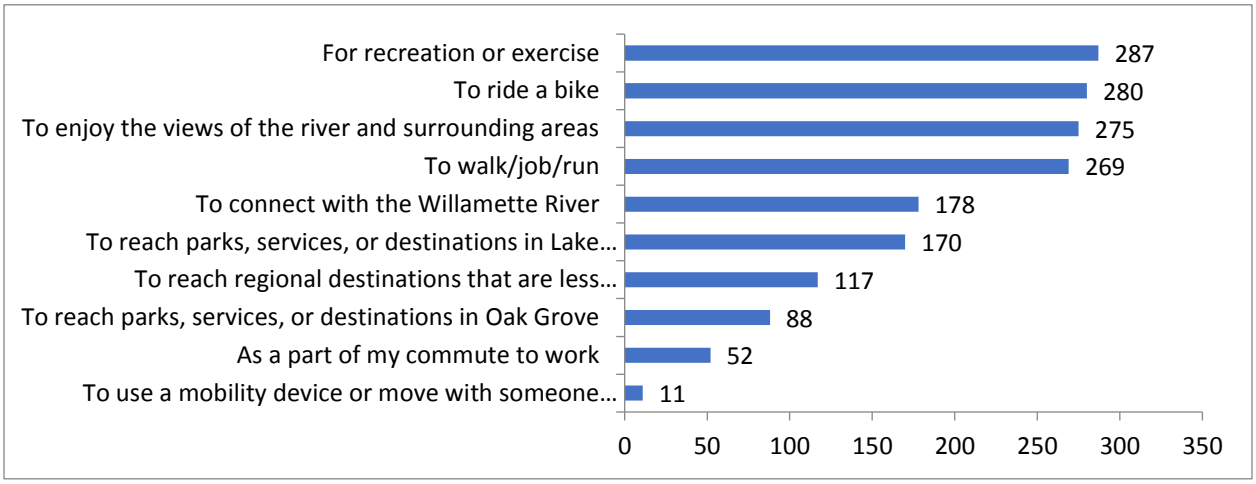
PC #2 meeting - September 6, 2019
Milwaukie City Hall Council Chambers
Attendance: 4 PC members; 27 members of the public
The purpose of the meeting was for the project team to present the 10 alignment options and share the three top choices recommended by the Community Advisory Committee and the Technical Advisory Committee, and to determine the PC's top three alignment recommendations. The PC selected the final three alignment alternatives for further study, discussed the analysis of transit on the bridge, and reviewed the next steps in recommending project feasibility to local governments and Metro. Fourteen people gave public testimony during this meeting.

PC #3 meeting - October 25, 2019
Clackamas County Development Services Building
Attendance: 4 PC members, 100 members of the public
The purpose of the meeting was to decide whether the project was feasible and whether it should move forward for further study. The PC decided it was not yet prepared to declare whether the project was feasible or whether they were willing to move it forward for further study. The project team would present to the Lake Oswego City Council. The PC would meet again by late January 2020 to decide the feasibility question. Thirty people gave public testimony during this meeting.

Note: On November 5, the Lake Oswego City Council approved a motion to withdraw the city from any further involvement in the Oak Grove-Lake Oswego Ped/Bike Bridge Feasibility Study. The three-member Policy Committee may still meet in early 2020 to discuss the study.

Project Introduction via web and online questionnaire/survey

As the committees were preparing to have their initial meetings, the County introduced the study to the public in late spring 2019 with a webpage and community questionnaire. This helped the project team collect email addresses to build a large interested parties email list that continued to grow throughout the study. A total of 546 people responded to the initial online web questionnaire between mid-May and mid-June. A little more than half of the responses came from Lake Oswego and others on the west side of the river, and about a third were from the Oak Grove/Milwaukie area. The remainder were from across the region. Of the 546 responses, 471 people indicated how they would use a new bridge.



Another question asked about frequency of use. About a quarter of respondents said they would never use the bridge, while another quarter indicated they would use it monthly. The remaining responses were distributed between daily to annually.

At the onset of the study, there was much interest in the concept of the bridge with many people expressing positive interest, many expressing negative interest, and many asking questions about topics that were still to be studied. All of the open-ended responses received in May-June were reviewed and coded for positive, negative, and neutral comments.

GENERAL RESPONSES BY AREA	Live in LO or west side	Live in OG or east side	Work/own business in LO or west side	Work/own business in OG or east side	Live elsewhere
Neutral (questions, concerns, but no direct opposition, or stated direct support)	92	43	11	6	24
Positive (explicitly stated support or express desires/hopes that indicate support)	70	64	13	8	19
Negative (explicitly stated opposition or raised concerns that strongly indicated opposition)	65	7	12	3	11

From the Online Questionnaire Survey Results. See Appendices for complete summary.

Open Houses

Clackamas County held two identical open houses in August on both sides of the Willamette River in the following locations:

- **Lake Oswego - August 5, 2019**
  Lake Oswego Maintenance Center – 17601 Pilkington Road, Lake Oswego
- **Oak Grove - August 7, 2019**
  Rose Villa Performing Arts Center – 13505 SE River Road, Oak Grove

Purpose and Format

The purpose of the open houses was to provide the public with project background information and to learn their questions, concerns, and preferences regarding each of the 10 alignment options that the Community Advisory Committee and Policy Committee had previewed. The meetings were in a drop-in style format with display board stations, an interactive dot exercise to show alignment option preferences, members of the project team available to discuss the project and answer questions, and the opportunity to give written feedback.

Attendees received an informational FAQ, 10 dots, and a comment card. They were encouraged to review the display boards and place one dot on each alignment option to indicate which alignments they thought were feasible to consider further. For each alignment, attendees were asked to indicate, "Yes, this alignment is worth further consideration," "No, remove from consideration," or "Not sure." They were also invited to talk to project team staff who were stationed around the room.

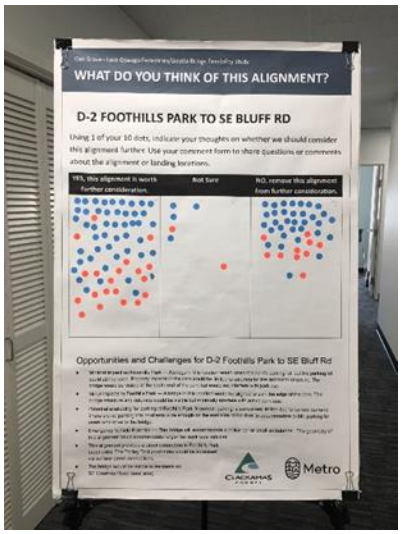
Participation

Of the 212 people who attended the open houses-- including some people who attended both meetings—116 provided input using comment cards and nearly everyone provided input using the dot exercise. Attendance at each event was as follows:

- **Lake Oswego location**: 47 attendees, 29 comment forms (22 comment forms indicated they live in Lake Oswego)
- **Oak Grove location**: 165 attendees, 87 comment forms (73 comment forms indicated they live in/near Oak Grove)

The dot exercise and comment card submissions showed that the top-three alternatives for further study were:

- A-3: SW Terwilliger Blvd to SE Courtney (upper)
- B-3: Tryon Cove (Upper) to SE Courtney (upper)
- D-3: Foothills Park to SE Courtney (upper)



Sample of "dot exercise" at public open houses.

Dot Feedback from Open House in Lake Oswego August 5th			
Alignment	**Yes**	**No**	**Not Sure**
A-2	18	28	0
A-3	**26**	19	1
B-2	7	22	0
B-3	**22**	17	0
C-2	7	26	0
D-1	18	29	2
D-2	18	24	1
D-3	**19**	22*	0
E-4	17	29	0
F-4	4	32	1

Dot Feedback from Open House in Oak Grove August 7th			
Alignment	**Yes**	**No**	**Not Sure**
A-2	25	60	15
A-3	73	60	10
B-2	51	54	11
B-3	**76**	53	6
C-2	17	75	11
D-1	39	91	8
D-2	68	43	6
D-3	**85**	49	7
E-4	**79**	102*	7
F-4	34	95	10

**More "no" than "yes"*

Common comment themes that were heard at both open houses included:

- Both support and opposition for a bridge (from people from both sides of the river)
- Funding/cost concerns
- Support for connecting across the river
- Support for active transportation
- Support for bike trail connections, paths and infrastructure
- Homeless concerns
- Concern about crime
- Concern about neighborhood/property impacts
- Ease of access to the bridge (grade)
- General traffic concerns
- Neighborhood traffic
- Increased congestion
- Minimal reduction of existing congestion
- Support for trail connections
- Parking concerns
- Environmental, wildlife, habitat impact concerns
- Support for reduction of use of single-occupancy vehicles

L.O. open house comment card preferences			
Alignment	**Yes**	**No**	**Not sure**
A-2	5	14	1
A-3	**6**	13*	1
B-2	3	15	2
B-3	**8**	11*	1
C-2	1	15	4
D-1	3	12	6
D-2	4	13	4
D-3	**6**	13*	2
E-4	3	14	4
F-4	1	16	3

Oak Grove comment card preferences			
Alignment	**Yes**	**No**	**Not sure**
A-2	15	47	9
A-3	**35**	35	6
B-2	19	42	8
B-3	**34**	31	7
C-2	13	52	4
D-1	12	53	8
D-2	28	37	7
D-3	**44**	25	10
E-4	21	41	15
F-4	15	48	10

**More "no" than "yes"*

Online Open House

An online open house hosted on Clackamas County's website was open from July 29 through August 9, 2019 to provide the broader public with project background information, details about each of the 10 alignment options and landing locations, and provide the opportunity for public comment. The information was generally the same as what was displayed during the in-person open houses. The online open house had 10 virtual stations, one for each alignment alternative, which outlined each alignment, displayed a map, listed opportunities and challenges, bridge length, and whether the bridge could carry emergency vehicles.

Participation

A total of 602 people visited the online open house. Some of these participants also attended one or both of the in-person open houses in August. Of the online respondents, 27% were from Lake Oswego, 37% were from or near Oak Grove, and 34% were from elsewhere.

Responses showed the top-three most popular alternatives for further study were:

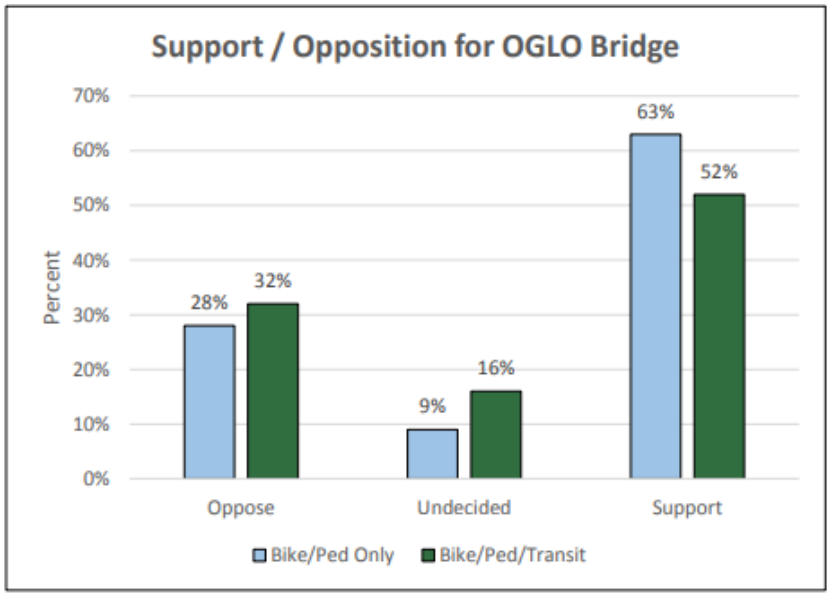
- A-3/A-2: SW Terwilliger Blvd to SE Courtney or Bluff
- B-3/B-2: Tryon Cove (upper) to SE Courtney or Bluff
- D-3/D-2: Foothills Park to SE Courtney or Bluff

This was consistent with the feedback from the in-person open houses. However, the online commenters had no interactive conversations with project team members or other community members while responding. The many open-ended comments collected through the online open houses are available in the appendix.

Scientific Survey/Poll

Riley Research Associates (RRA) conducted a scientific survey of 400 randomly selected individuals evenly split between the east and west sides of the Willamette River in September 2019. Survey respondents were asked 10 questions on their support or opposition to the proposed bridge and support or opposition to transit on the bridge.

When asked if they support the idea of a bridge in this location, 63% said yes, 28% said no, and 9% were unsure. There was stronger support on east side, with 71% in support from the Oak Grove/Milwaukie area and 55% in support from Lake Oswego.



From RRA's scientific survey results

The full report can be found in the appendices.

Emails / Letters / Phone Calls

This project inspired hundreds of emails/letters/phone calls from members of the public to project leadership and elected officials. Various project events – open houses, CAC meetings, PC meetings and social media notifications about meetings – sparked upswings in the number of people who contacted project staff to ask questions or express their feelings about the project. The "interested parties" list currently includes 600 separate contacts, with additional contacts made through phone calls and emails to elected officials and others associated with the project.

Public Involvement Summary Appendix

The following can be found in the separate appendix.

- Feasibility FAQ
- Project Fact Sheet, July 2019
- Postcard Mailer to County area
- CAC Charter
- CAC 1 Meeting Summary
- CAC 2 Meeting Summary
- CAC 3 Meeting Summary
- PC Charter
- PC 1 Meeting Summary
- PC 2 Meeting Summary
- PC 3 Meeting Summary
- Online Introduction Questionnaire/Survey Summary
- Landing Site Evaluation Criteria (drafted by Technical Advisory Committee with Community Advisory Committee and Policy Committee discussion)
- Postcard Mailer to Lake Oswego/County area
- Open House Summary Comments, including online
- RRA Scientific Survey Summary
- Project Fact Sheet, October 2019
- Equitable Development Analysis Memo, prepared by Bridge Economic Development, which documents project area demographics to establish current and recent demographic trends in the past 10-years. This information provides a baseline to evaluate the potential for new private investment within the project area and would be useful for discussion of future anti-displacement programs in areas that may be likely for potential redevelopment.

In addition to information provided through this process, the public was informed through various news sources (including letters to the editor), public conversations online and comments submitted directly to local elected bodies, and flyers distributed by community organizations of neighbors, cycling advocates, and other networks outside of the County or partner agencies.

Community Advisory Committee (CAC) Meeting #1 Summary

May 29, 2019
6 PM – 9 PM
Performing Arts Center at Rose Villa

Meeting purpose: To build an understanding of what the feasibility study is and is not about, review the charge document, and get feedback on community values.

Attendees

CAC Members: Gwenn Alvarez, Cynthia Curran, Ben Rousseau, Yvonne Tyler, Tina Moullet, Bruce Parker, Lynn Fisher, Tom Civiletti, Charles (Skip) Ormsby, Julie Budeau, Joseph Edge, Pixie Adams, Tieneke Pavesic, Anatta Blackmarr, Gerald Fox, Nita Chabala, Jeff Gudman, Kathleen Wiens, Travis Williams, Ted Labbe, Andy Schmidt

Staff: Clackamas County: Steve Williams, Cameron Ruen, Scott Hoelscher, Karen Buehrig; City of Lake Oswego: Mike Ward; North Clackamas Parks & Recreation District: Heather Koch; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson, Kristen Kibler, Tracie Heidt

Guests: Skeeter Kenshaw, Kay Kenshaw, Chips Janger, Jan Lindstrom, Jane Civiletti, Thelma Haggenmiller, Arthur Emlen, Marilyn Gottschall, Paul Savas

Welcome and Opening

Steve Williams welcomed the committee and introduced himself as a Senior Planner at Clackamas County and the Project Manager. Tina Moullet, a CAC member and the Rose Villa Senior Managing Director, welcomed everyone to Rose Villa.

Agenda Review/Introductions

Steve reviewed the agenda and explained that the purpose of the study is to analyze the feasibility of a pedestrian and bicycle bridge over the Willamette River to connect Lake Oswego and Oak Grove. This project will address engineering and environmental feasibility, study the level of support that is needed, and examine how the city, county, and regional governments would cooperate for construction and maintenance of the bridge.

The project team, staff, and CAC members introduced themselves.

The Charge and Charter

Jeanne Lawson, the meeting facilitator, noted that the purpose of the CAC is not to make decisions, but to forward recommendations to the Policy Committee (PC). CAC members are experts on community values, and these values are needed to evaluate future bridge options.

The main elements of the CAC charter are:

- No alternates permitted; if a member cannot attend a meeting, he/she may give written feedback instead.

- This is a consensus-based group. Consensus is the point at which everyone can accept the recommendation, even if it is not their personal favorite. If consensus cannot be reached, there should be at least a super-majority to ensure the decision-makers know the recommendations are balanced.

The CAC will provide recommendations to the PC on three topics:

1) The landing criteria
2) The preferred connection
3) Bridge concepts

CAC Role

For this project the Project Management Team (PMT) provides information to the CAC and Technical Advisory Committee (TAC), the CAC and TAC give each other feedback, and then the CAC and TAC give their respective recommendations to the Policy Committee.

Background

Five partner agencies are participating in the project: Clackamas County (the lead agency), Metro, the City of Milwaukie, the City of Lake Oswego, and North Clackamas Parks and Recreation District. The consultant team is led by Parametrix. The project is funded by Metro.

The schedule is as follows:

- May-June 2019: CAC and PAC discuss values and criteria.
- July: Public open house and second CAC meeting to review landing locations and bridge types.
- August: Second PC meeting to discuss governance.
- September: Third CAC and PC meetings on the final recommended landing location and next steps, and a second public open house.
- October: Complete the study.

The next project phases, which will depend on the study outcome and future funding, would include environmental work, the preferred alternative, design and construction.

Context for Locating a Bridge (Mike Pyszka)

Connecting regional trails is a Metro priority, and this bridge could connect to the Trolley Trail, Willamette River Trail and the conceptual Bridgeport-to-Milwaukie Trail.

The bridge would fill an important gap on the Willamette River, as the nearest crossings from the proposed project site are the Sellwood Bridge, four downstream miles, and the Oregon City Arch Bridge five miles upstream.

The Railroad Bridge is not an option because Union Pacific, which owns it, is not interested in expanding the bridge. Furthermore, creating access to that bridge on the Oak Grove side would be difficult and dangerous.

A bike/ped bridge is less expensive to build, has fewer impacts and a much smaller footprint than a bridge built for cars or transit.

It is important to locate the bridge landings in the public right of way because it is costly and difficult to acquire private property.

- Public right of way options on the east side include Rivervilla Park, Courtney/Bluff Road and Oak Grove Boulevard. Courtney Road has a high enough elevation that we wouldn't need to go down a grade to make the connection there.
- Public right of way options on the west side include Tryon Cove Park, Foothills Park and Roehr City Park. The Bureau of Environmental Services sewer treatment plant is in Foothills Park.

US Coast Guard clearance regulations will dictate the bridge height and the channel width between piers. The bridge must have an ADA (Americans with Disabilities Act) grade of 5% or landings every 30 feet with an 8% grade.

Mike showed photos of bridges with a longer span and taller structure; long ramps to meet ADA grade; circular ramps to meet ADA grade; and elevator and stairs to meet ADA grade.

Discussion

- If one landing is near the BES treatment facility in Foothills Park, could a bridge be built high enough to span the river to land on the east side on the Oak Lodge site? [We must build the bridge on publicly-owned land, but we could possibly build the bridge over the park.]
- What would the wildlife impacts be if a bridge were built? [We are looking at environmental impact as part of this study. The bridge would have to meet Oregon Department of Fish and Wildlife regulations.]
- What is the cost comparison for the different landing options? [We don't know yet, but we will explore that at a high level.]
- How long will it take to build the bridge? [We don't know yet.]
- There is no bike/ped connection yet from Tryon Creek Cove Park to Foothills Park.
- This area is subtly complex. I have four concerns: the box envelope for the river, the trough, flight operations over the river and Highway 43. I would like a flat bridge with a 4% grade.
- Would a landing at the BES plant in L.O. work? Also, there has been discussion of moving the plant. [During the recent Tryon Creek Cove project, we worked with BES to plan the trail. We assume the plant will be there.]

Community Values Work Session

The group was asked to answer: *What is important to you and the communities around the river?* and to jot down their thoughts on this question.

The four small CAC groups, and a group of audience members, developed lists of issues and community values within categories that had identified by the TAC to guide the evaluation and recommendation process.

The groups discussed the following technical team categories of criteria for potential landing sites:

- Connectivity and Safety
- Environmental Impacts
- Compatibility with Recreational Goals
- Compatibility with Existing Developments and Neighborhoods
- Cost and Economic Impact
- Compatibility with adopted plans

Each group presented its top three priorities for each criterion (Attachment A). Some of the key issues were:

- Concerns about parking
- Make the bridge iconic, something neighbors can be proud of
- Enhance the environment and minimize negative impacts in the water and from lighting pollution
- Create a positive user experience – views, smooth access and accessible grades
- Preserve the experience of nature in parks
- Connect the trail network
- Use a small footprint for landings
- Avoid negative impacts on neighbors

Additional issues that may not fit in those categories included:

- Equity is important and general enough that it could have its own technical title
- Attention to the parking needs near both landing points is crucial
- Need accommodations for users on or near the bridge, such as benches, drinking fountains and toilets

Next Steps

The team will present the results of tonight's meeting to the Policy Committee at a public meeting on June 6, 6:30-8:30 p.m., at Lake Oswego City Hall. The results will also be used by the project team to refine the evaluation criteria. At the next meeting, consultants will present landing opportunities. The materials from tonight's meeting will be posted to the website.

Project team members are available to present at community meetings, if desired.

The next CAC meeting will be an evening meeting on the west side. The final CAC meeting, in early September, will be held at an accessible location somewhere between Oak Grove and Lake Oswego. The first public open house will be in July. A Doodle poll will be sent out to gather CAC members' best July meeting dates/times.

County Commissioner Paul Savas, an audience member, asked for a public comment opportunity on the website, and was told that this is planned.

Attachment A

Small Group Discussion Notes on Technical Team Categories of Criteria

Bolded items below indicate that it was one of the group's top priorities. The number in parenthesis indicates how many dots were placed on the idea during the interactive dot exercise.

Existing Developments and Neighborhoods

Group 1

- **Small footprint**
- Reduction of green space – NCPRD (1 CAC dot)
- **Iconic bridge – destination bridge** (7 CAC dots**)**
- Adjacent property impacts (1 CAC dot, 1 community dot)

Group 2

- Stampher connection to 43 is dangerous to peds
- **Increase in traffic to Residential** (1 CAC dot, 1 community dot)
- Potential for increase nuisance crimes (what was result of Trolley Trail construction?)
- Houses limit width of locations

Group 3

- Concerns about impacts to neighbors (1 CAC dot, 2 community dots,)
- Bad intersection for bike/peds at State Street and A Street

Group 4

- **Lack of parking on east side (5 CAC dots)**
- Stairs to connect Courtney
- **Landing footprint on east side (smaller is better) (3 CAC dots)**
- Grade on east side (1 CAC dot)
- Minimize construction impacts (1 CAC dot)

Community Group

- Impacts to beauty/aesthetics
- What is impact to neighbors of bridge approach and landing
- What is appearance of bridge from land/neighbors
- Concern about impacts to park. Will landing or approach consume the park (Rivervilla)
- Character of bridge to fit neighborhood

- Funneling bike/ped traffic to existing business area e.g. historic Oak Grove (downtown) and positive impact businesses
- Connections
    - Trolley Trail – connection eventually from west to T.T.
    - T.T. not adding new crossings (already have Courtney and Oak Grove)
    - Impacts to fewer residents at Tryon Cove Park

Connectivity and Safety

Group 1

- **Resident safety – increase of traffic** (1 CAC dot)
- User safety (1 CAC dot)
- Connect to MAX in O.G. (1 CAC dot)
- If you need EMS on the bridge, who do you call?

Group 2

- **Connect to Trolley Trail/River Road crossing** (4 CAC dots)
- **Priority to existing trails** (10 CAC dots)
- **Safe crossing of 43 to Tryon Creek Park** (2 CAC dots)
- Community options for diverse populations
- Can be traversed by everyone (1 CAC dot)
- **Access to Light Rail**
- Keep people off Railroad Bridge

Group 3

- Remember/consider all forms of transit (e.g. bus, MAX)
- **Elevation question: consider the differences on the east versus west side**
- Courtney Avenue connection is good for Trolley Trail access but poor for surrounding neighbors
- This project is all about connectivity. West side could connect to Highway 43
- Connecting to Tryon Creek S.P. would be great (1 CAC dot)
- **Link the fish passage with bike/ped passage at Tryon Creek at Highway 43** (3 CAC dots)
- Regional benefit is key -- wherever the bridge lands on each side should have good connectivity to the region (2 community dots)
- Challenge of biking/walking up steep hill near certain landings, e.g. Courtney Road
- Accommodations for peds along the way

Group 4

- MobilAx challenged convenience
- Slower/older walkers (ADA)
- Equitable access (2 CAC dots)
- Convenience for commuters (bike)

- Convenience to business in O.G. and L.O.
- Reduced conflicts with cars (2 CAC dots)

Community Group

- Connect to existing network/trail
- No new road crossings on Trolley Trail (5 community dots)
- Connecting business districts (1 community dot)
- Roads on map may not be accurate
- **Steep! How do you tie in for bikes/peds**
- Parking – people will drive to access the bridge
- Earthquake – emergency evacuation in seismic event (short sighted letting cost dictate emergency needs)

Recreational Goals

Group 1

- River Access – increase (1 CAC dot)
- **User experience**

Group 2

- **Access to parks and events in Foothills and Milwaukie**
- **Springwater regional connection**
- Tryon Creek Park connectivity (2 CAC dots)
- **Car(e)free Sunday in Milwaukie on August 4th**

Group 3

- Emphasis on linkage of bridge landings with transit (1 community dot)
- Question: How many people would use the bridge to commute vs for recreational purposes?
- Question: Would L.O. residents use the bridge to get to the MAX Orange Line? (1 CAC dot)
- Connectivity – remember all forms of transit (2 CAC dots)
- **Equity question: Who would be served by this bridge? Consider age, race, income level, mobility, etc.** (5 CAC dots, 1 community dot)

Group 4

- **Connecting amenities and businesses (destinations)**
- **Regional trails connection** (3 CAC dots)
- Tourism goals – support
- Diversity of activities
- **Wildlife viewing (birding)**

Community Group

- Currently no bike lanes on west side. O.G. not to solely serve as rec for both sides. Balance bike/ped access on both sides

Environmental Impacts

Group 1

- **Wildlife**
  - Piers in river (1 CAC dot)
  - Construction impacts
- Lighting

Group 2

- Letter from users
- How the river banks might be impacted
- **Trees – keep existing/ mature restoration potential?** (2 CAC dots, 1 community dot)
- **Limits of existing greenspace in Rivervilla – can project avoid or increase? (8 CAC dots)**

Group 3

- Security
- Water quality – endangered species
- **Reduction of carbon footprint/pollution is key -- less car community** (3 CAC dots)
- Height of bridge – what is the effect on birds?
- Question: Can we quantify the number of trips deferred that would happen with this project? Good data collection measure
- **The experience of nature is hard to quantify. Minimize impacts on existing parks and natural areas on both the east and west side.** (3 CAC dots)
- **How are we going to make things better for the environment? Flip the question: Instead of impacts, ask how it will positively affect the environment.** (4 CAC dots)

Group 4

- **Habitat protection – restoration** (5 CAC dots)
- Light pollution (4 CAC dots, 1 community dot)
- Wildlife friendly/nesting (1 CAC dot, 1 community dot)
- Environmental mitigation measures
- **Connectivity to nature (viewing)** (2 CAC dots)
- Construction impacts – “light foot print”
- Fewer impacts during construction

Community Group

- Views -- how it affects
- **Don’t disrupt wildlife**

- **Viewpoint/viewing area on bridge**
- **Minimize in-water work (piers)**

Cost and Economic Development Impacts

Group 1

- Sewer pipe on/under the bridge – funding option?
- **Milwaukie and O.G. business development**
- Support BD efforts in O.G. (3 CAC dots)

Group 2

- **Access to Saturday Market in L.O. and to Sunday Market in Milwaukie** (4 CAC dots)
- Tourism to Milwaukie Bay Park
- Downtown L.O. shops
- **Is a proposed bridge affordable?** (2 CAC dots)
- Increase in land value
- Oak Grove Blvd traffic – revitalize development of services and economic opportunities (2 CAC dots)

Group 3

- Evaluate the benefits to commerce
- The cost and time savings for people (1 CAC dot)
- Some L.O. residents would consider O.G. as L.O.'s low-income housing inventory (for comp plan zoning)

Group 4

- **Keeping bridge ped/bike only**
- **T2020 Bond measure – a target money source**
- **Tourism – business access**

Compatibility with Adopted Plans

Group 1

- **Future growth – future Cal use?** (4 CAC dots)
- Walkability

Group 2

- NCPRD
- L.O. TSP

Group 3

- Connection to regional trails (1 CAC dot, 1 Community dot)

Community Group

- Treatment plant plans

Other Topic

Community Group

- Future walk/bike ferry
- 24 hour access will be a concern
- Consider historical character, i.e. 1910 RR Bridge, L.O. Ironworks (1 Community dot)
- Viewing areas on bridge

Community Advisory Committee (CAC) Meeting #2 Summary

July 22, 2019
6 PM – 9 PM
City of Lake Oswego Maintenance Center

Meeting purpose: To share, discuss, and gather committee input on potential landing locations and alignments across the river; input will be shared with Policy Committee

Attendees

CAC Members: Julie Budeau, Ted Labbe, Jeff Gudman, Bruce Parker, Tina Moullet, Mike Perham, Pixie Adams, Tom Civiletti, Lynn Fisher, Anatta Blackmarr, Mary Beth Coffey, Tieneke Pavesic, Joseph Edge, Joe Buck, Charles "Skip" Ormsby

Staff: Clackamas County: Steve Williams (project manager), Ellen Rogalin, Scott Hoelscher, Mike Ward, Joel Howie; City of Lake Oswego: Ivan Anderholm; North Clackamas Parks & Recreation District: Heather Koch; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson (meeting facilitator), Kristen Kibler, Tracie Heidt

Guests: Jane Civiletti, Jacki Ohman, Lisa Novak, Bob Earls, Paul Savas, Lydia Lipman

Welcome and Opening

Steve Williams welcomed the committee to this second meeting.

Agenda Review/Introductions

Steve reviewed the agenda and the purpose of the study

Jeanne Lawson noted that the group's purpose tonight was to give feedback on identified alignments and help narrow the 10 possible alternatives. The CAC input will be shared with the Policy Committee (PC) to aid in narrowing the range of possible alignments to three to be further explored and compared. The project team will also garner feedback for the PC via public outreach, an online open house, and recommendations from the Technical Advisory Committee (TAC).

The project team, staff, CAC members, and guests introduced themselves.

Study Overview/Schedule

Steve reviewed the activities scheduled in upcoming months:

- August:
  - Open houses for public to learn about and comment on possible bridge alignments
  - Second PC meeting to review CAC and public input, and TAC recommendations; select three top alignment options and discuss governance
- September:
  - Third CAC meeting and second public meeting to share more detailed information about the top three alignments explored further.
  - Third PC meeting to review interjurisdictional discussions on governance, and make final recommendations for next steps on the feasibility study
- October: Complete the study report

Informing the Discussion on Landing Locations

Jeanne reviewed the technical evaluation criteria, created by Technical Advisory Committee members, and used by the CAC during their first meeting:

- Connectivity and safety
- Environmental impacts
- Compatibility with recreational goals
- Compatibility with existing developments and neighborhoods
- Cost and economic impact
- Compatibility with adopted plans

Jeanne highlighted the community values that emerged as themes during the first CAC meeting. The PC supported the TAC criteria, supported the CAC values, and added a request to include the option of emergency vehicle access.

Online community input

Kristen Kibler summarized the results from the online questionnaire that was open from May 15 through June 15. About 540 people responded.

- More than half of the respondents said they lived in Lake Oswego
- About a quarter of those who responded said they would not use the bridge.
- Comments included general support, funding/cost concerns, support for connecting across the river, safety, homeless concerns, support for bike trail connections/paths.
- There was additional discussion generated on Nextdoor as the online tool was shared through social media.
- About a quarter of respondents had a negative sentiment, with the rest being positive or neutral.

Potential landing locations with alignments (Mike Pyszka)

The consultant team identified a limited number of landing locations on public property to conceptualize alignments. The TAC reviewed the possibilities and removed a few options that

met fewer criteria. Mike reminded the group that the railroad bridge was not considered because the owner will not consent and it is too far from trail connectivity. The TAC eliminated an alignment that landed at Stampher Road boat dock because of the significant impact on the dock.

Mike Pyzska reviewed the 10 potential bridge alignments (see below). Committee members then discussed them in small table groups and shared their comments with the entire CAC. Members of the public had their own discussion group.

Alignments:

A-2 SW Terwilliger Blvd to SE Bluff Rd
A-3 SW Terwilliger Blvd to SE Courtney (Upper)
B-2 Tryon Cove (Upper) to SE Bluff Rd
B-3 Tryon Cove (Upper) to SE Courtney (Upper)
C-2 Tryon Cove (Lower) to SE Bluff Rd
D-1 Foothills Park to Rivervilla Park
D-2 Foothills Park to SE Bluff Rd
D-3 Foothills Park to SE Courtney (Upper)
E-4 Roehr Park to Oak Grove Blvd
F-4 William Stafford to Oak Grove Blvd

Group Discussion/Questions

- When was the river level clearance measured? [The annual average water level is used.]
- What is the "envelope" width for the river clearance? [250 feet wide by 74 feet high.]
- Could you apply for a waiver on the 250 x 74? [Yes, we could, but it is a federal mandate.]
- If the railroad bridge was the preferred alternative, could we use eminent domain to secure it? [In order to apply for eminent domain, we would have to go to the Commerce Department in Washington D.C. to get their approval.]
- Have you considered the high volume of truck traffic at the water reclamation facility in L.O.? [That would need to be taken into consideration in relation to a construction phase.]
- Is the terminus of the alignments at Tryon Cove on the west side near the Shoreline Trail? [No, but it could be possible to design a tie-in ramp on some alignments.]
- Have we received input from the Oak Lodge and BES wastewater facilities? [Steve will meet with Oak Lodge next week to discuss the bridge designs.]
- Which landing location causes less impact: Bluff Road or Courtney Avenue? [The impact is about the same, but the Courtney alignment is 155 feet higher.]
- I am concerned about the lack of parking at each of these alignments. [In general, the only location for parking is the parking lot at Foothills Park. This issue would have to be further addressed.]
- Can you restrict bridge parking near the Oak Grove homes? [That would be a policy question for County Commissioners.]
- How obtrusive would a bridge be to the residents on the south side of Courtney Avenue? [There would be potential screening on the bridge, i.e. fencing to give the residents more privacy, but residents would see and feel the presence of the bridge.]

- In terms of a “destination bridge,” do people currently drive and park to use the Tillicum Crossing (pedestrian/transit) Bridge? [There is no parking there, except the OMSI lot and meter/pay parking on the west side.]
- Foothills Park has concerts that can draw more than 2,000 people, and as it is the city has to close surrounding streets.
- I am concerned about the aesthetics around the bridge. The alignments near the water reclamation facilities would feel too industrial.
- There are no sidewalks on Courtney Avenue.
- Foothills Park is hard to get in and out of.
- What happens if the Policy Committee wants emergency vehicle access on the bridge, but it is not feasible? [The Policy Committee thinks it a good idea to build a bridge that can accommodate emergency vehicles if we can. They want to know the trade-offs and cost.]

Small Group Discussions

Jeanne asked the small table groups to record their thoughts and questions about the 10 alignments and decide on their top three choices. After their discussions, each group reported its top alignment preferences:

- Group 1 (Heather Koch, NCPRD, recorder) preferences: **D3** (top choice), **E4** and **A3**.
- Group 2 (Joel Howie, Clackamas County, recorder) preferences: **E4, B3** and maybe **A2/A3**
- Group 3 (Mike Ward, Clackamas County, recorder) preference: **A2**, but **A3** was also acceptable.
- Group 4 (Ivan Anderholm, Lake Oswego and Scott Hoelscher, Clackamas County, recorders) preference: **D3**.
- Public group: no alignment preference.

After the discussion, each CAC member was asked to place a green (consider), yellow (neutral), or red (don’t consider) dot on the 10 alignment maps to indicate their preference.

Individual Dot Exercise

Alignment	Green	Red	Yellow
A-2	2	8	5
A-3	7	3	8
B-2	0	9	5
B-3	0	8	8
C-2	0	12	3
D-1	0	16	0
D-2	0	5	11
D-3	14	3	2
E-4	8	6	3
F-4	0	12	2

The top alignment preferences were: **D3, A3** and **E4**. Attached are photos of the display board maps with dots.

Public Comment

Lydia Lipman – I have a vested interest in Stampher Road. Residents have a privileged location on the river, but the fish in Tryon Creek would be impacted by a bridge. A lot of money has been spent on reclaiming the natural area and the bridge would destroy fish access to spawning grounds. Any bridge landing location would impact the environment. The City of Lake Oswego is already packed with cars. Bringing more bikes and pedestrians over the bridge by dangling the illusion that they will have better bike access is frustrating for those who live in the area. I don't like outsiders imposing their will on Lake Oswego residents.

Next Steps

Two public meetings are scheduled to share information about alignment options and gather feedback from people on both sides of the Willamette River:

- **August 5**, 6-8 p.m. – Lake Oswego Maintenance Center, 17601 Pilkington Rd, Lake Oswego
- **August 7**, 7-9 p.m. – Rose Villa Performing Arts Center, 13505 SE River Rd, Oak Grove

In addition, the public will be able to learn about the options and comment online from **July 29 – Aug. 9** at www.clackamas.us/transportation/oglo.

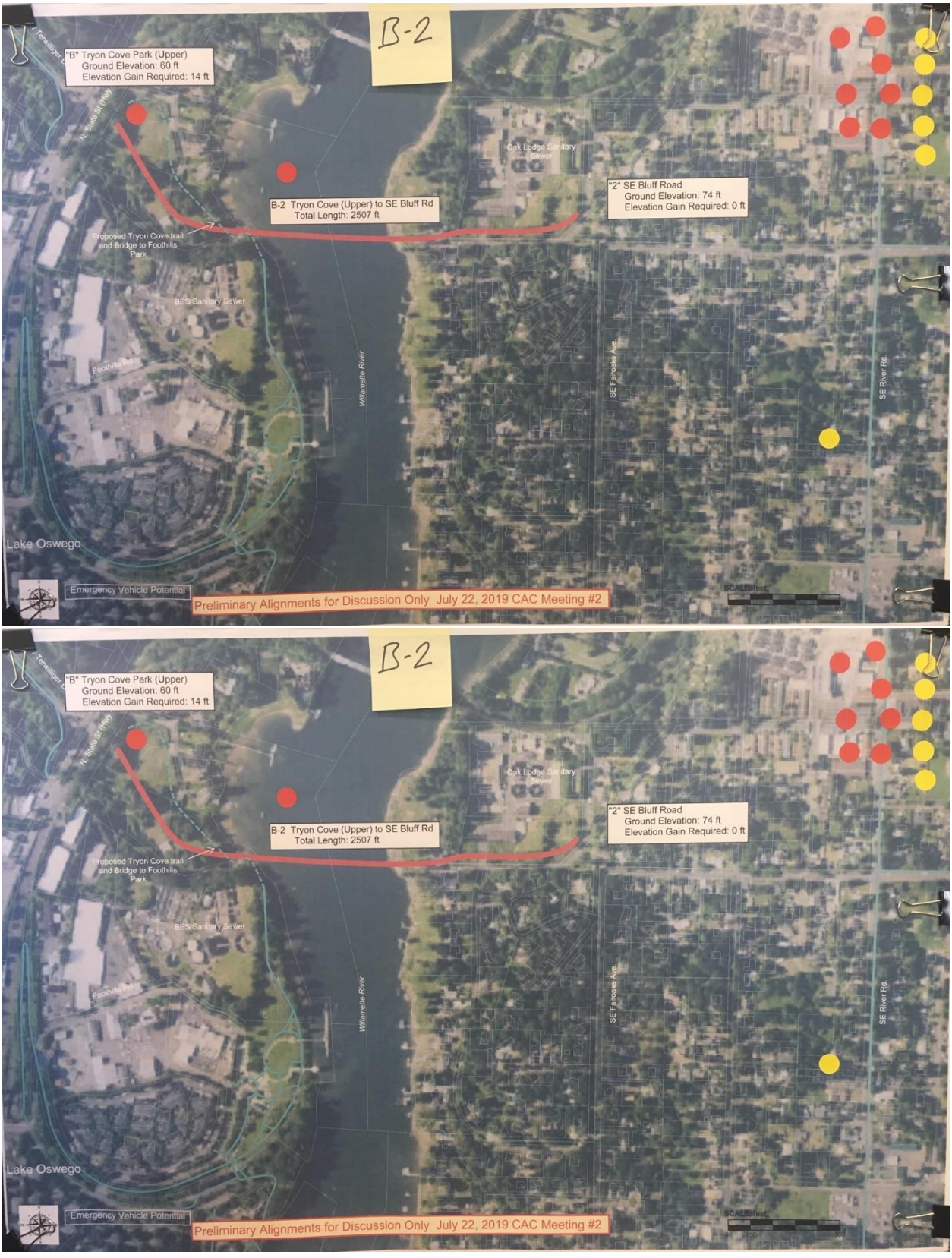
The displays/maps from this meeting will be posted to the website.

The project team will present the results of tonight's alignment preferences to the Policy Committee at its next public meeting on August 16 from 8 – 10 a.m. at Milwaukie City Hall.

The results of the online open house and meeting summaries from both public open houses will be sent to the CAC and PC.

The final CAC meeting will be held in September.

Attachment – Alignment Maps with Dots (CAC Member Exercise)




C-2
"C" Tryon Cove Park (Lower)
Ground Elevation: 30 ft
Elevation Gain Required: 44 ft
C-2 Tryon Cove (Lower) to SE Bluff Rd
Total Length: 3096 ft
"2" SE Bluff Road
Ground Elevation: 74 ft
Elevation Gain Required: 0 ft
Proposed Tryon Cove trail and Bridge to Foothills Park
Oak Lodge Sanitary Sewer
BES Sanitary Sewer
Foothills Rd
Willamette River
SE Fairoaks Ave
SE River Rd
Lake Oswego
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


D-1
"1" Rivervilla Park
Ground Elevation: 23 ft
Elevation Gain Required: 51 ft
D-1 Foothills Park to Rivervilla Park
Total Length: 2851 ft
"D" Foothills Park
Ground Elevation: 30 ft
Elevation Gain Required: 44 ft
Oak Lodge Sanitary Sewer
BES Sanitary Sewer
Foothills Rd
Willamette River
SE Fairoaks Ave
SE River Rd
Lake Oswego
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2

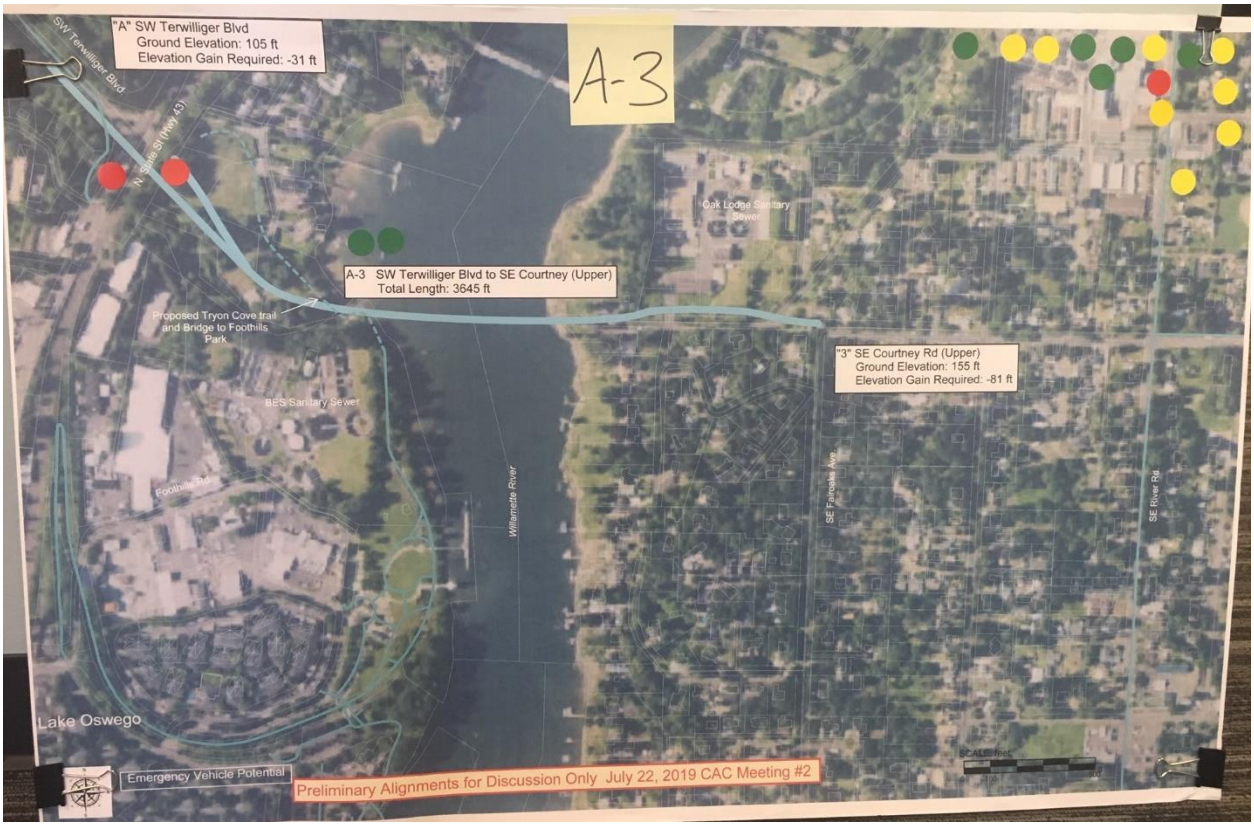

D-2
D-2 Foothills Park to SE Bluff Rd
Total Length: 2470 ft
"2" SE Bluff Road
Ground Elevation: 74 ft
Elevation Gain Required: 0 ft
"D" Foothills Park
Ground Elevation: 30 ft
Elevation Gain Required: 44 ft
Oak Lodge Sanitary Sewer
BES Sanitary Sewer
Willamette River
SE Fairoaks Ave
SE River Rd
N State St (Hwy 43)
Lake Oswego
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


D-3
D-3 Foothills Park to SE Courtney (Upper)
Total Length: 2632 ft
"3" SE Courtney Rd (Upper)
Ground Elevation: 155 ft
Elevation Gain Required: -81 ft
"D" Foothills Park
Ground Elevation: 30 ft
Elevation Gain Required: 44 ft
Oak Lodge Sanitary Sewer
BES Sanitary Sewer
Willamette River
SE Fairoaks Ave
SE River Rd
N State St (Hwy 43)
Lake Oswego
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


E-4
"E" Roehr Park
Ground Elevation: 35 ft
Elevation Gain Required: 39 ft
E-4 Roehr Park to Oak Gove Blvd
Total Length: 2634 ft
"4" Oak Grove Blvd
Ground Elevation: 100 ft
Elevation Gain Required: -26 ft
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


F-4
F-4 William Stafford to Oak Grove Blvd
Total Length: 2449 ft
"4" Oak Grove Blvd
Ground Elevation: 100 ft
Elevation Gain Required: -26 ft
"F" William Stafford Pathway
Ground Elevation: 35 ft
Elevation Gain Required: 39 ft
Oswego
SE Fairfield Ave.
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


A-2
"A" SW Terwilliger Blvd
Ground Elevation: 105 ft
Elevation Gain Required: -31 ft
SW Terwilliger Blvd
N. State St (Hwy 43)
A-2 SW Terwilliger Blvd to SE Bluff Rd
Total Length: 3485 ft
"2" SE Bluff Road
Ground Elevation: 74 ft
Elevation Gain Required: 0 ft
Proposed Tryon Cove trail and Bridge to Foothills Park
BES Sanitary Sewer
Oak Lodge Sanitary Sewer
Willamette River
SE Fairoaks Ave
SE River Rd
Lake Oswego
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2


A-3
"A" SW Terwilliger Blvd
Ground Elevation: 105 ft
Elevation Gain Required: -31 ft
SW Terwilliger Blvd
N. State St (Hwy 43)
A-3 SW Terwilliger Blvd to SE Courtney (Upper)
Total Length: 3645 ft
"3" SE Courtney Rd (Upper)
Ground Elevation: 155 ft
Elevation Gain Required: -81 ft
Proposed Tryon Cove trail and Bridge to Foothills Park
BES Sanitary Sewer
Oak Lodge Sanitary Sewer
Willamette River
SE Fairoaks Ave
SE River Rd
Lake Oswego
Emergency Vehicle Potential
Preliminary Alignments for Discussion Only July 22, 2019 CAC Meeting #2

The Public Group's individual dot exercise feedback on the alignments was:

A-2 4 red, 1 yellow

A-3 4 red, 1 yellow

B-2 4 red, 1 yellow

B-3 3 red, 2 yellow

C-2 4 red, 1 yellow

D-1 4 red

D-2 4 red, 1 green

D-3 2 red, 2 yellow, 1 green

E-4 2 red, 3 yellow

F-4 4 red, 1 yellow

Community Advisory Committee (CAC) Meeting #3 Summary

September 19, 2019
6 – 8 PM
Robinwood Station Community Center, West Linn

Meeting purpose: Present and gather CAC feedback to forward to the Policy Committee (PC) for consideration in the final recommendations on preferred connections between the bridge and the pedestrian and bicycle network, and transit.

Attendees

CAC Members: Anatta Blackmarr, Yvonne Tyler, Charles "Skip" Ormsby, Glenna Henrici, Kathleen Wien, Mary Beth Coffey, Tieneke Pavesic, Mike Perham, Ben Rousseau, Joseph Edge, Tom Civiletti

Staff: Clackamas County: Steve Williams (project manager), Ellen Rogalin, Joel Howie; North Clackamas Parks & Recreation District: Heather Koch; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson (meeting facilitator), Tracie Heidt

Guests who signed in: Lisa Novak, Bob Earls, Michael Deviitz, Kathy Witkowski, Michael Hoeye, Jane Civiletti, Lura Lee, Sonia Kehler, Yvonne Laren, Rachel Dawson, Robert Rose, Val Sabo, Kirsten Pauken, J. Witthauer, Cecelia Monto, Suzanne Burdette, Fred Sawyer, Collen and Jack Lewy, Tom Pauken, Steve Morris, Troy Douglass, Mary Ann Dougherty, Mike Erickson, Mike Richardson, Commissioner Paul Savas, Lydia Lipman

Welcome and Opening

Steve Williams welcomed the committee to this third and final CAC meeting.

Agenda Review/Introductions

Jeanne Lawson reviewed the agenda and the purpose of the study, noting that the group's purpose tonight was to provide final recommendations on connections between the bridge and the pedestrian and bicycle network, and on transit.

Update on Alternative Alignments for Study

Steve and Jeanne reviewed the activities that had taken place over the last two months and explained how the final alternative alignments were selected. At the last CAC meeting, the

committee moved alternatives D3, A3 and E4 forward. Among the three, there was significantly less support for E4, which landed on Oak Grove Boulevard. Since then, the Technical Advisory Committee (TAC) met, there were two public open houses, and the Policy Committee held its second meeting to review the feedback and select the three final alternative alignments.

- August 5 and 7: Two open houses, one on each side of the river, for the public to learn about and comment on possible bridge alignments.
    - Jeanne reviewed the common themes from the comments received.
- July 29-August 9: Online open house. The following landings were most popular:
    - A3/A2 SW Terwilliger Blvd to SE Courtney or Bluff
    - B3/B2 Tryon Cove to SE Courtney or Bluff
    - D3/D2 Foothills Park to SE Courtney or Bluff
- Based on review of the technical information and public input, the TAC recommended the following alignments to present to the Policy Committee:
    - A3 SW Terwilliger Blvd to SE Courtney and includes looking at Tyron Cove landing
    - D3 Foothills Park to SE Courtney
    - D2 Foothills Park to SE Bluff Rd
- September 6: Policy Committee meeting. Approved alignment options recommended by the TAC.

Policy Committee Direction for Study

Jeanne said a scientific random sample public opinion poll was conducted to gather statistically valid data on the general public's response to the bridge. The poll, based on voter registration in the Oak Grove/Lake Oswego/Milwaukie area, was evenly split between both sides of the river.

Transit Element

Steve said that Metro recently requested that a transit element be added to the study, specifically for a one-lane TriMet bus crossing. Therefore, the project team will analyze the feasibility of including transit on D2 and D3. PC members expressed concern about the transit alternative but agreed to address Metro's request.

New Information Collected about Alternatives

Mike Pyzska reviewed maps of the three final alternative alignments and photos of pedestrian/bicycle bridge styles to show different design options. He also shared technical drafts of main span deck section alternatives at the pier level, typical approach spans with and without the transit element, and elevation comparisons with the Sellwood, Tillikum and St. John's bridges.

Group Discussion/Questions

What about the island-in-the-river idea, to put a pier there? [You could put piers in the river, but it adds a lot of cost.]

Would the bridge be comparable in clearance to the railroad bridge? [Yes.]

I support transit on the bridge but putting buses on Courtney Avenue is very inappropriate and there would be a lot of neighborhood opposition and impact.

Small Group Discussions

Committee members and members of the public sat in small groups to discuss and evaluate potential connections from the landing sites to transit stations, trails and business districts. Each group shared their comments with the entire group.

CAC group 1:

- Courtney Avenue is less than 5% grade at Courtney landing, so it is preferred for users if we don't consider neighbors. Bluff Road is steeper. Must improve Fair Oaks and Courtney.
- A Terwilliger landing down to State Street would not be good; the sidewalks and streets are too narrow. Neighbors do not want parking on their streets, but this probably wouldn't be a park to which people drive. It shouldn't be a problem after the first month.
- Good connection to the Milwaukie Farmers' Market and Oak Grove Farmers' Market.

CAC group 2:

- Trolley Trail has good access to transit, and there are good bus connections on McLoughlin.
- There is a biking/walking path around Foothills, although it is hilly.
- Oak Grove has the Trolley Trail nearby and Lake Oswego could try to connect to the George Rogers Park with a new trail.
- There are pretty good business district connections on both sides.

Public group 1:

- Oak Grove has the Trolley Trail connection, but there are concerns about driveway impacts on Courtney Road.
- The Lake Oswego landing is better in Foothills Park because there are no neighbor impacts.
- There could be a Terwilliger back side connection into downtown Lake Oswego.
- There are Stampher Road bike/ped conflicts.

Public group 2:

- Impact issues in Foothills Park and the Stampher area and aesthetics concerns.
- Limited connectivity for Highway 43: the corridor from Macadam to Portland is not safe.
- The bridge would not necessarily be a destination to which people drive, so parking shouldn't be an issue.

Public group 3:

- Steepness on the east side at Courtney is a concern, with limited visibility for people coming off the trail. There is a guard rail there.
- Terwilliger Blvd is steep and not a good connection to downtown. There are more trail facilities on the east side.
- The people who live in the 120 condo units near Foothills Park are not excited.

Public Comment

Bob _____ -- How can we get the word back to Metro that transit on the bridge is a bad idea? It complicates the whole project. TriMet is not interested.

Mike Erickson -- I live on Stampher Road. I see the value of trail connectivity, but Stampher would be dangerous because it is a narrow, steep, curvy road with two hairpin turns. I'm not sure we need a bridge. I see the same people regularly walking across the Railroad Bridge to traverse the river as is. [It is against the law to trespass on the Railroad Bridge.]

_____ -- How will you answer the homeless question? What about the neighborhood impacts to the people who don't want traffic on their street? How will you control the budget? Why can't you use the railroad right of way? [The railroad will not allow shared use.]

Troy Douglass -- How will this bridge affect people who live within eyeshot and earshot of the project? I will open my door and see a bridge.

Lisa Novak -- Courtney and Fair Oaks is a dangerous intersection. If the bridge lands on Courtney Road, 10 homes along Courtney will suffer hardship. Bluff Road is only 18 feet wide and there is no way to widen it.

Lydia Lipman -- Conceptually this is a good idea, but the devil is in the details. Why is there a rush? It has been poorly advertised and there have been changes in meeting places. The bridge cost is key, and you can't make a decision if you don't know that.

Lake Oswego resident -- This will deteriorate Lake Oswego. It will open it up to crime. People will walk over the bridge to break into cars from the other side.

Tom _____ -- At the launch point on the east side, the aesthetics are unpleasant and feel industrial. It will impact a number of people throughout the neighborhood. Courtney Road and the east side are not adequate and are unsafe.

Fred Sawyer -- TriMet knows how to build on right of way. The Terwilliger crossing is poor. We need to adjust Tryon to 1st Avenue to connect to downtown Lake Oswego. We could use the existing railroad right of way if transit is included.

Next Steps

The next steps include:

- developing cost estimates,
- preliminary engineering designs,
- writing an environmental scoping report,
- conducting an equity and displacement analysis, and
- finalizing a governance agreement among the four jurisdictions.

If the PC deems the project feasible, it could be considered as part of the Metro T2020 transportation investment measure being considered for the November 2020 ballot. If the ballot measure passes and this project were funded, local governments would pay only for ongoing bridge maintenance.

Jeanne asked the CAC members' opinions on feasibility.

- about half fully supported moving forward,
- most of the rest indicated they had questions they hoped would be addressed, and
- a few do not support moving forward.

Jeanne reminded the group that the CAC charge is to advise the PC about issues related to goals, potential landing sites and alignments, and trail connections. The PC is charged with making the recommendation.

- October 25, 11 a.m. – 1 p.m., Development Services Building, 150 Beavercreek Road, Oregon City: Third PC meeting to review feedback from this meeting, interjurisdictional discussions on governance, and make final recommendations for next steps on the feasibility study
- October: Complete the study report.

Appendix – Small Group Table Notes

CAC Group 1

Connectivity

- Courtney Avenue – less than 5% grade at Courtney Road landing - Preferred for users if not considering neighbors
- Bluff Road is steeper and west of Laurie Avenue is steeper
- Must improve Fairoaks and Courtney
- If the grant Oak Grove submitted goes through, we can improve Courtney Ave sidewalks
- West side: Foothills Park trail is very zig-zaggy as it approaches State Street. A Terwilliger landing down to State Street would not be good— sidewalks and street too narrow. Foothills is inconvenient but has good redevelopment potential.

Parking

- The neighborhoods do not want parking on their streets, but it will not necessarily be a destination park to which people drive, so parking should not be a problem.

Business Districts

- Connection to both Milwaukie Farmers' Market and Oak Grove Farmers' Market is good.
- The future Kronberg Park connection will help too.
- How can you connect to the Trolley Trail?
- Concern with the gap at the Terwilliger landing. Need a connection to E Avenue.

CAC Group 2

Access to Transit

- Trolley Trail (paved)
- Buses on McLoughlin
- Bike/walk path around Foothills (paved) - hilly
- To LO Transit Center, up to 43 and crosswalks very walkable, not too steep

Trails

- LO -- Try to connect to George Rogers Park with a new trail
- OG-TT -- LO-Tryon – bike trail on edge

Business Districts

- LO – Right there.
- OG-TT to downtown OG or Milwaukie

Transit: Not a good idea!

Public Group 1

Transit Connections for Bikes/Peds to Transit

Oak Grove Opportunities:

- Direct connections to transit center via Courtney and Trolley Trail
- TriMet buses go along River Road and McLoughlin

Oak Grove Concerns:

- Bluff Road extremely steep – greater than 9%

- Long way to transit center parking/MAX station
- Conflict with residential, schools
- Intersection conflicts: cars, bikes, peds
- No bike lanes and sidewalks in Oak Grove

Lake Oswego Concerns:

- No good place for bus to go
- Easement over RR right of way challenges

Bike/ped Connections to Trails

- Oak Grove opportunity: Trolley Trail connection
- Oak Grove concerns: Courtney landing goes through driveways
- Lake Oswego opportunities:
  - Better to land on Foothills where there is a park and infrastructure
  - Doesn't impact neighborhoods
  - Terwilliger landing access to park and possible access to E Avenue
- Lake Oswego concerns:
  - Crime at Stampher/Tryon Cove
  - Homeless management
  - Stampher Rd at Hwy 43 bike/ped challenges
  - Visual impacts to residents on Stampher

Public Group 2

- A bridge over the trail at Foothills Park will ruin the beauty of the park
- This is a MAJOR impact to Foothills Park (not a minor impact as stated)
- Never mention of impact on Stampher neighborhood—dramatic impact; huge elevated bridge in all eye sights
- Limited connectivity on west side, 43 not safe; no safe access from Macadam to Portland
- Trails at Foothills are too narrow for bikes and pedestrians

Public Group 3

Connecting to Bike/Ped Routes, Transit, and Commercial

- None of landing sites land in commercial district
- Flat connection at Foothills (later is hill)
- Narrow at Bluff Road and steep
- Courtney Rd is blind corner – there is a drop just east of corner and peds/bikes coming off bridge would not see oncoming traffic
- Conflicts with driveways at corner with Courtney Rd
- How could transit fit?
- Have PC members visited site? They need to.
- Steep in first part of Courtney Rd
- Tryon Cove landing connection is challenging
  - State St does not have safe crossing
  - Connection to south needs a bridge across creek to Terwilliger – the path on Terwilliger is challenging

- Connection to Park Ave is a long walk – only feasible
- Trolley Trail – not as safe (or perceived as safe when opened)
- Are there bathroom facilities? They are at Rivervilla and Foothills, but are they feasible to access? How many do we need?

Oak Grove – Lake Oswego Pedestrian & Bicycle Bridge Feasibility Study

Community Advisory Committee Charter

The following is the charter for the Community Advisory Committee that will be formed for the Oak Grove – Lake Oswego Pedestrian Bicycle Bridge Feasibility Study. This charter defines the organizational structure and decision making process for the project, the membership and responsibilities for the committee, as well as the expectations for committee participation and attendance, communications and meeting protocol.

Project Purposes:

The purpose of this project is to analyze the feasibility of pedestrian & bicycle bridge over the Willamette River by studying three issues: 1) The engineering and environmental feasibility of developing the bridge and providing connections to the existing and planned pedestrian-bicycle network; 2) The level of support for the bridge in the project area; 3) How the city, county and regional governments could work together to build and maintain a bridge.

Project Organizational Structure and Decision Making:

There will be four committees organized for this project that will be responsible for receiving community input, evaluating technical information and making recommendations:

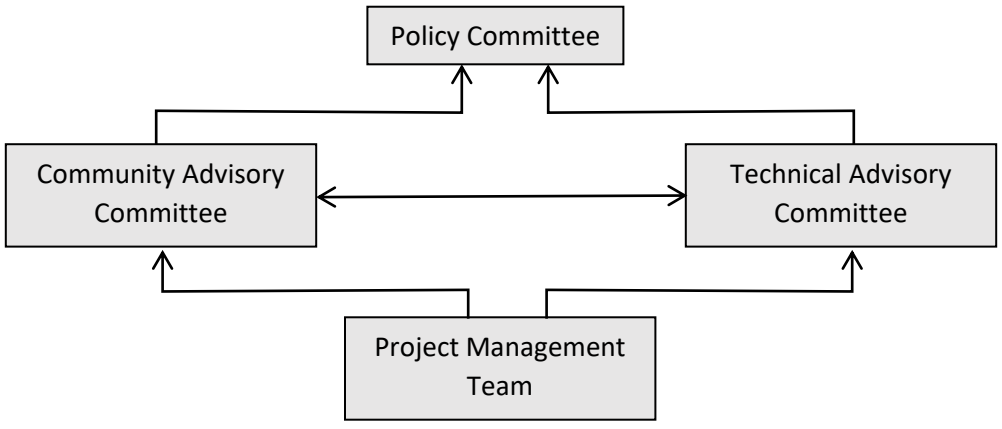
Policy Committee (PC):
The Policy Committee will be the decision making body for this feasibility study and will make recommendations to the partner governments at key decision points in the study.

Community Advisory Committee (CAC):
The Community Advisory Committee will be made up of study area residents and business owners, as well as representatives of community groups with an interest in the proposed bridge project. The CAC will make recommendations to the PC and the TAC on key decisions in the feasibility study.

Technical Advisory Committee (TAC):
The Technical Advisory Committee will be made up of staff members from the four partner governments with expertise in planning, bike/pedestrian transportation, engineering, community engagement and parks. The TAC will make recommendations to the PC and CAC on key decisions in the feasibility study.

Project Management Team (PMT): The Project Management Team will be made up of members of Clackamas County staff and the consultant Project Manager. The PMT will be responsible for the management of the project.

The diagram below depicts the decision making structure for the project:



Community Advisory Committee Membership and Responsibilities

Community Advisory Committee Membership:

The CAC's membership will provide a balanced representation of a wide range of local and regional stakeholder's values and interests. For example, the CAC could include members representing affected neighborhoods and business, walking/cycling enthusiasts, environmental or resource protection groups, business associations, or groups that are under-represented transportation in transportation decision making. The Community Advisory Committee will have 28 members. Members of the Policy Committee, Technical Advisory Committee and Project Management Team, elected officials from any of the partners or staff from any of the partners will not be eligible to be voting members of the CAC. The members of the CAC will be recommended by the Cities of Lake Oswego and Milwaukie, Clackamas County and Metro. At their first meeting, the Policy Committee will appoint the members of the CAC based on the recommendations of the local government partners and Metro. Members of the CAC will be nominated in the following fashion:

City of Lake Oswego will nominate up to 10 representatives as follows:

- At least 4 representatives that reside, have a business or own property within the study area (see attached study area map)
- At least 1 representative living in the city that is engaged on bicycle or pedestrian issues
- At least 1 representative living in the city that is engaged in park and recreation issues
- No more than 4 representatives "at large" from other areas of Lake Oswego with at least two being from groups that are often under-represented in the transportation decision making process such as those who are non-white or disabled.

Clackamas County will nominate up to 10 representatives as follows:

- At least 4 representatives that reside, have a business or own property within the study area (see map)
- At least 1 member of the Clackamas County Pedestrian Bicycle Advisory Committee
- At least 1 member who is a resident of the North Clackamas Parks and Recreation District
- No more than 4 representatives "at large" from other areas of Clackamas County with at least two being from groups that are often under-represented in the transportation decision making process such as those who are non-white or disabled.

City of Milwaukie will nominate up to 4 representatives as follows:

- At least 2 representatives that reside, have a business or own property within the study area
- No more than 2 representatives "at large" from other areas of Milwaukie with at least one being from groups that are often under-represented in the transportation decision making process such as those who are non-white or disabled.

Metro will nominate 4 representatives as follows:

- 2 representatives of Willamette River resource protection groups
- 1 representative of a bicycling enthusiast group
- 1 representative of a walking, hiking or running enthusiast group

There will be three ex-officio members who will staff the Community Advisory Committee as follows:

- The Clackamas County Project Manager
- The Project Manager for the consultant team

- A neutral meeting facilitator

Term of Membership

Members of the CAC shall serve until the completion of the feasibility study, which is expected to require about 9 months. If the bridge project is determined to be feasible by the partner governments, and if sufficient funding is available, the bridge project may move into subsequent phases for engineering design and environmental analysis. Membership for the committees for those subsequent phases will be nominated by the member governments. Members of the feasibility study CAC will be eligible for nomination to committees for the subsequent phases.

Community Advisory Committee Responsibilities:

The CAC is charged with:

- Recommending criteria to be used in the evaluation of project alternatives.
- Making recommendations to the Policy Committee on the preferred bridge landing points.
- Making recommendations to the Policy Committee on the preferred connections between the bridge and the pedestrian and bicycle network.
- Making recommendations to the Policy Committee on the selection of up to three bridge concepts to be advanced into the next stage of the project to be considered in detail.

To fulfill their charge, the CAC members are responsible for:

- Participating in all CAC meetings.
- Reviewing meeting materials provided in advance of the meetings.
- Considering input from the public, the Technical Advisory Committee and the Project Management Team.
- Attending project public meetings and open house events.
- Acting as project liaisons to their constituent groups, by providing information and soliciting feedback from those groups to inform and engage them in the project.

Community Advisory Committee Operation Agreements:

Meeting Attendance

- All members will make their best effort to attend each of the Community Advisory Committee meetings and to arrive promptly and stay for the duration of the meeting.
- If members are unable to attend, their seat on the committee will be unfilled for that meeting. Alternates or proxies will not be accepted. A member that does not attend a scheduled meeting will have forfeited his or her opportunity to modify the decisions reached at that meeting.
- If a member of the Community Advisory Committee must end their service, staff will work to ensure that all project viewpoints are represented. The partner government represented by the departed representative will nominate another representative that will be appointed by the Policy Committee. New appointments must be consistent with the member criteria identified above.

Meeting Schedule:

- This project will move quickly and will require close coordination between the four committees and the consultant team. To enable the project to move forward quickly and achieve close coordination, a meeting schedule for all committees including the CAC will be established at the beginning of the project and strictly followed.

Meeting Protocol

- A quorum shall consist of a majority of voting members
- Meeting agendas will be distributed in advance and include the amount of time scheduled for each meeting topic.
- Meeting summaries will be prepared and distributed after the meeting for review.
- The meetings will begin with an opportunity for members to raise questions or comments about the summary of the last meeting.
- Discussions will be facilitated by a neutral professional.
- The facilitator will start and end meetings on time unless the group agrees to extend the meeting time.
- The facilitator will maintain on ongoing list of off-agenda topics to be addressed as time permits.
- All CAC meetings shall be conducted in accordance with Oregon Public Meetings Law and are open to the public. Community members will be invited to provide comments to the CAC as time allows as noted on the agenda. Written comments are always welcome by emailing Project Manager Steve Williams and will be shared with CAC members. The facilitator may allow public comments or questions at other times during the meeting if time permits.

Internal Communications

- CAC members agree that they will treat all positions expressed with respect, whether or not the participants agree.
- CAC members will ask questions as necessary to make sure that they understand the information being presented.
- CAC members will hold questions until the end of a presentation to help the group keep to the agenda.

CAC Recommendations

- Recommendations will ideally be made by consensus. Consensus means no one will choose to block or prohibit the implementation of a decision. If consensus is not possible, recommendation will be considered as "motions" made by CAC members will be asked to vote to express their recommendation; a simple majority of the voting members present will prevail.
- Any CAC members who do not support a recommendation may prepare a minority opinion for Policy Committee consideration.
- Discussions will be described in a meeting summary and will be shared with other committees and decision makers.

Communications Outside Meetings

- CAC members understand that they are the public face of this project, and will speak in ways that respect and support the collaborative process, while being mindful of the concerns/interests of all members.
- CAC members may represent their personal opinions to the media, but will refer all formal media inquiries to Stephen Williams, Clackamas County Project Manager, for an official project response.
- To act with transparency and comply with Oregon's public meetings laws, no discussion about any business of the CAC should be discussed by a quorum (a simple majority) of the CAC members outside of the Task Force meetings. Discussions include conversations in person, by telephone, by email and/or by any other electronic means, including social media.

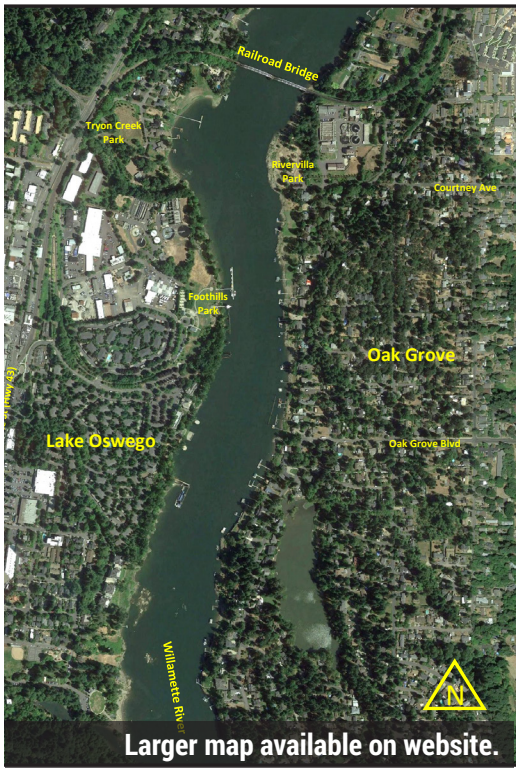
FEASIBILITY STUDY / FAQs

Oak Grove-Lake Oswego Pedestrian / Bicycle Bridge Feasibility Study

Study purpose

The purpose of the study is to determine the feasibility of a new pedestrian/bicycle bridge across the Willamette River between Oak Grove and Lake Oswego. Comments received during previous planning indicated great demand for a bridge at that location. However, questions remain regarding the feasibility of the project:

- Are "landing locations" for the bridge available on publicly-owned property on both sides of the river?
- Is it possible to connect to other pedestrian/bicycle trails without interfering with existing uses?
- How much would it cost to construct such a bridge and who would pay for it?
- What steps are needed to build a bridge at that location?
- If a bridge is built, who would own and maintain it?



Larger map available on website.

For more information

Stephen Williams
503-742-4696
swilliams@clackamas.us
www.clackamas.us/transportation/oglo

Metro

CLACKAMAS COUNTY

Frequently asked questions

Get involved!

There will be many opportunities for the public to get involved.

- Public workshops
- Community meetings
- Online surveys

Details of all public involvement opportunities will be posted at **www.clackamas.us/transportation/oglo**.

Need more information?
For questions or concerns, ontact Project Manager Stephen Williams at swilliams@clackamas.us or 503-742-4696.

Who is conducting this study and why is it being done now?

This study is being carried out by Clackamas County, Lake Oswego, Milwaukie and Metro. We are studying this now because many people have asked for such a bridge and there may be funding available in the next few years through Metro, the State of Oregon and/or the federal government that would pay most or all of the costs of the bridge. We have a better chance of receiving funding if the feasibility study is already complete.

Why do we need another bridge across the Willamette River?

There is no bridge across the Willamette River for pedestrians and bicyclists between the Sellwood Bridge in Portland and the OR 43 "Arch" Bridge in Oregon City, a distance of about 10 miles. The addition of this bridge between Oak Grove and Lake Oswego will reduce that 10-mile trip to a pedestrian or bicycle trip of less than a mile and connect to bike and pedestrian pathways on both sides of the river. This will benefit everyone who needs to travel between the two communities for work, shopping or recreation and also help reduce travel on some of our busiest streets.

Can't you just add on to the railroad bridge?

There are a couple of reasons that adding to the railroad bridge is not an option. Please see map on other side.

- The most important is that Union Pacific Railroad, the company that owns the bridge, has made it clear that it does not want bikes or pedestrians near the trains for safety reasons, and as local government agencies we don't have the authority to force a private business to allow public use of their facilities.
- In addition, on the Oak Grove-Milwaukie side of the river, the access to the railroad line is challenging and very narrow, which would make it difficult and unsafe for use by the public.

Will emergency vehicles like fire trucks, ambulances and law enforcement be able to use the bridge?

Lake Oswego and Oak Grove both have high levels of emergency services, and emergency services agencies have not expressed a need for a connection between the communities. In addition, designing a bridge for fire trucks and other emergency vehicles would greatly increase the bridge's cost and impact on the communities on both sides of the river.

If the bridge is built now for bikes and pedestrians, could it be expanded later to add transit or cars?

A bridge for bikes and pedestrians is built quite differently than a bridge for transit or cars, and it would not be feasible to build it now for bikes and pedestrians and expand it later. Bridges for transit or cars also are much more expensive than bike and pedestrian bridges so we would not build it now for transit and cars unless we were absolutely sure it would be needed.

What will the bridge cost?

At this point we don't know what the bridge would cost. This feasibility study will allow us to determine the cost of the bridge and the cost trade-offs of different bridge locations. We expect to have a good cost estimate for the bridge when we finish the study in late 2019.

Will homes or businesses be removed to make way for this bridge?

We are only studying publicly-owned properties such as parks as possible landing locations for the bridge on both sides of the river so that we can avoid impacts to homes or businesses.

Will the bridge affect navigation on the river?

As part of this study, we will work with the U.S. Coast Guard to design the bridge so that it will not affect navigation on the river.

Has the decision about this bridge already been made or will you still listen to the public? How can I get involved?

The decision about this bridge has not been made. This study will help determine whether such a bridge is even feasible based on costs, benefits and impacts to the community, and other factors. There will be many opportunities for the public to get involved in coming months at public workshops, community meetings and online. We encourage everyone to look at the project website to find out when and where meetings will be held, and to submit comments and questions at **www.clackamas.us/transportation/oglo**.

OGLO Landing Site Evaluation Criteria-*Draft*

Criterion A – Connectivity and Safety

This criterion is to connect to existing or planned bike/pedestrian routes directly or on streets with sidewalks and bike lanes that meet minimum safety and design standards for bicycle and pedestrian users. Alternative bridge alignments and landings will be considered along with various connections to existing and planned local and regional bike/pedestrian routes. In addition, alternatives will differ in how much they meet or exceed design standards for bike and pedestrian facilities. Considerations for this project:

- Bike/pedestrian connections to existing east/west infrastructure.
  - Topography considerations.
  - Width considerations to fit a trail or bike lane/sidewalk connection.
  - Connection to the East Trolley Trail.
  - Connection to the West Willamette River Greenway, Terwilliger Trail
- Slope/grade of site (ADA restrictions / Metro guidelines).
- Directness of connection to other existing or planned pathways.
- Safety/comfort of connection.

Criterion B – Environmental Impacts

This criterion is to avoid adverse impacts on environmental resources. Impacts may vary depending on alternative bridge alignments and landing locations. Considerations for this project:

- Avoid or minimize adverse impacts on wildlife habitat and trees.
- Avoid or minimize adverse impacts on waters and wetlands.
- Avoid or minimize adverse impacts on cultural and historic resources.
- Avoid or minimize light pollution emitting from aesthetic lighting.
- Avoid or minimize noise pollution resulting from construction.
- Maximize project eligibility for programmatic environmental permitting.

COMMUNITY ADVISORY COMMITTEE VALUES

- ✓ Prioritize connection to *existing* trails
- ✓ Leverage needed connections, such as Trolley Trail/River Road
- ✓ Equity – ensure it is easily accessible for all
- ✓ Connect to transit, such as east side light rail
- ✓ Safety & comfort of grade
- ✓ Consider safety of connecting roads (Hwy 43)
- ✓ Security for neighbors and users
- ✓ Emergency services access to respond to medical and safety needs

- ✓ Avoid light pollution impacts on wildlife
- ✓ Create *positive* impacts on the environment
- ✓ Minimize impacts on existing parks on east and west sides of the river
- ✓ Minimize loss of green space
- ✓ Minimize construction impacts to environment
- ✓ Encourage commuting by bike and other modes to reduce GHG

Criterion C – Compatibility with Recreational Goals

This criterion is to maximize the recreational benefits the bridge provides and enhance the current recreational activities that exist in the area (biking, walking, boating, picnicking, etc). There are several opportunities to improve or enhance recreational opportunities. The opportunities vary among the alternative bridge alignments and landing locations. Considerations for this project:

- Maintain/improve river access.
- Preserve/maximize future use of public waterfront property.
- Maximize connections of local neighborhoods to the area to increase community opportunity to access the recreational areas.

- ✓ Enhance user experience – views, nature, smooth access and grades
- ✓ Preserve experience with nature in parks – minimize loss of green space.
- ✓ Enhance regional trail network

Criterion D – Compatibility with Existing Developments and Neighborhoods

This criterion is to avoid displacement of and incompatibility with residences, businesses, parks, and planned infrastructure improvements and to minimize adverse effects of locating and accessing the bridge. Impacts may vary among the alternative bridge alignments and landing locations. Considerations in this project:

- Avoid private property acquisition.
- Minimize size of bridge landings to reduce impacts to public property.
- Integrate with surroundings to enhance existing neighborhoods and green spaces.
- Ensure bridge appearance and aesthetics for visual integration.

- ✓ Create an iconic bridge that neighboring communities embrace.
- ✓ Minimize negative and create positive impacts on neighbors
- ✓ Minimize neighborhood parking impacts from destination visitors
- ✓ Integrate with existing development
- ✓ Small landing footprint
- ✓ Minimize construction impacts on adjacent neighborhoods and businesses

Criterion E – Cost and Economic Impact

This criterion is to minimize the cost and adverse economic impacts of the project. There are temporary and permanent economic impacts which could improve or hinder local and regional economics. Cost and economic impacts may differ not only among the alternative bridge alignment and landing locations, but also among the bridge types (signature vs. traditional) used to support the alignments. Considerations in this project include:

- Up-front bridge costs and future maintenance costs.
- Underwater cable and other area utilities.
- Air access (float planes).
- Potential increase in tourism.
- Increases in local jobs and opportunities during construction.
- Minimize land acquisitions and/or easement required for construction of the structure.

- ✓ Support business development efforts, such as current Oak Grove planning
- ✓ Link major community attractions, such as Lake Oswego and Milwaukie farmers markets
- ✓ Make bridge affordable to build

Criterion F – Compatibility with Land Use Planning

This criterion is to review local and regional development plans for areas surrounding bridge landing locations and to minimize impacts to future development plans. Considerations in this project include:

- Compatibility with local and regional adopted plans.
- Avoid negative impact to long-term plans.
- Minimize impacts to existing public viewpoints.

- ✓ Plan for future growth
- ✓ Support plans for more walkable/accessible communities

Open House Notice

Come learn about and comment on possible bridge landing locations.

- Monday, August 5, 6-8 p.m. – Lake Oswego Maintenance Center, 17601 Pilkington Rd, Lake Oswego
- Wednesday, August 7, 7-9 p.m. – Rose Villa Performing Arts Center, 13505 SE River Rd, Oak Grove
- Online July 29 - August 9 at www.clackamas.us/transportation/oglo

CLACKAMAS COUNTY

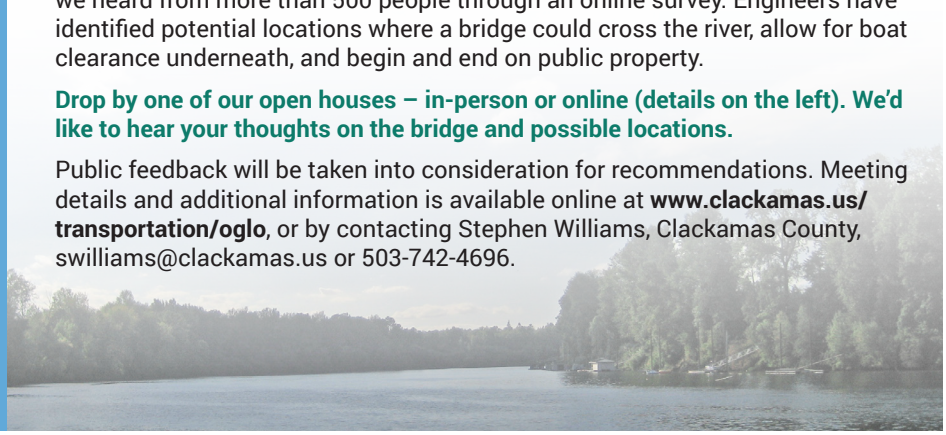
150 BeavercreekRoad | Oregon City, OR 97045
www.clackamas.us/transportation/OGLO

Oak Grove - Lake Oswego Pedestrian/ Bicycle Bridge Feasibility Study Update

Clackamas County is leading a Metro-funded study in partnership with local jurisdictions to determine the feasibility of a pedestrian/bicycle bridge across the Willamette River between unincorporated Oak Grove and Lake Oswego. In late spring, the Community Advisory Committee and Policy Committee discussed evaluation criteria for possible bridge alignments and landing locations, and we heard from more than 500 people through an online survey. Engineers have identified potential locations where a bridge could cross the river, allow for boat clearance underneath, and begin and end on public property.

Drop by one of our open houses – in-person or online (details on the left). We'd like to hear your thoughts on the bridge and possible locations.

Public feedback will be taken into consideration for recommendations. Meeting details and additional information is available online at **www.clackamas.us/transportation/oglo**, or by contacting Stephen Williams, Clackamas County, swilliams@clackamas.us or 503-742-4696.



CLACKAMAS COUNTY

Clackamas County
Transportation Planning
150 Beavercreek Road
Oregon City, OR 97045

Oak Grove — Lake Oswego Pedestrian / Bicycle Bridge Feasibility Study

Open houses Aug. 5 and 7: Come learn about and comment on possible bridge landing locations.

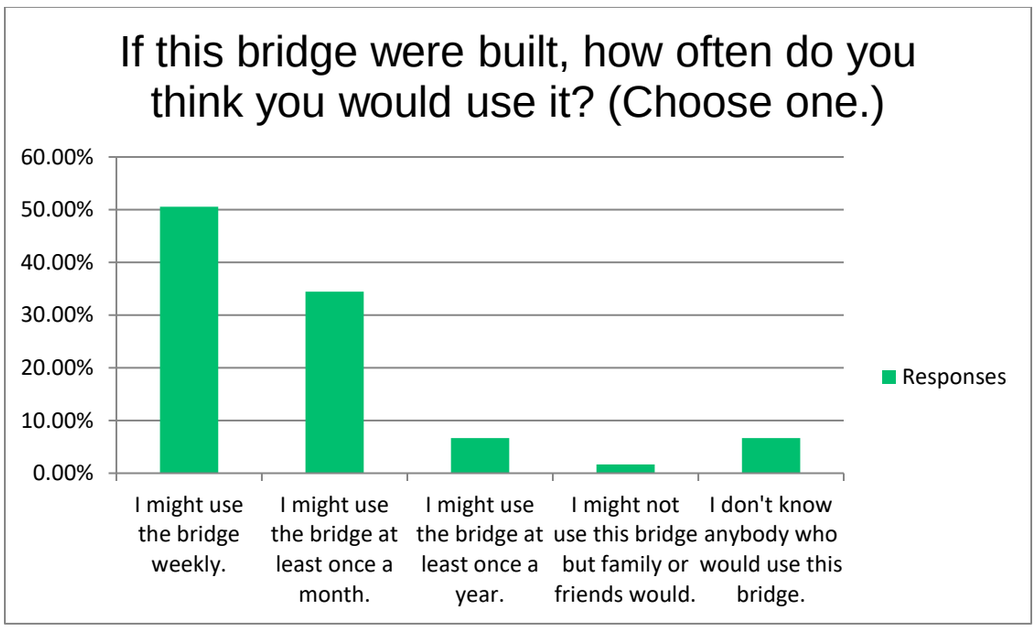
[Distributed during PC Meeting#2 9/6/19 – for informational purposes]

Web Responses: 602 people responded online. 27% - Lake Oswego, 37% - Oak Grove/near east, 34% -elsewhere

The following show responses to the question:

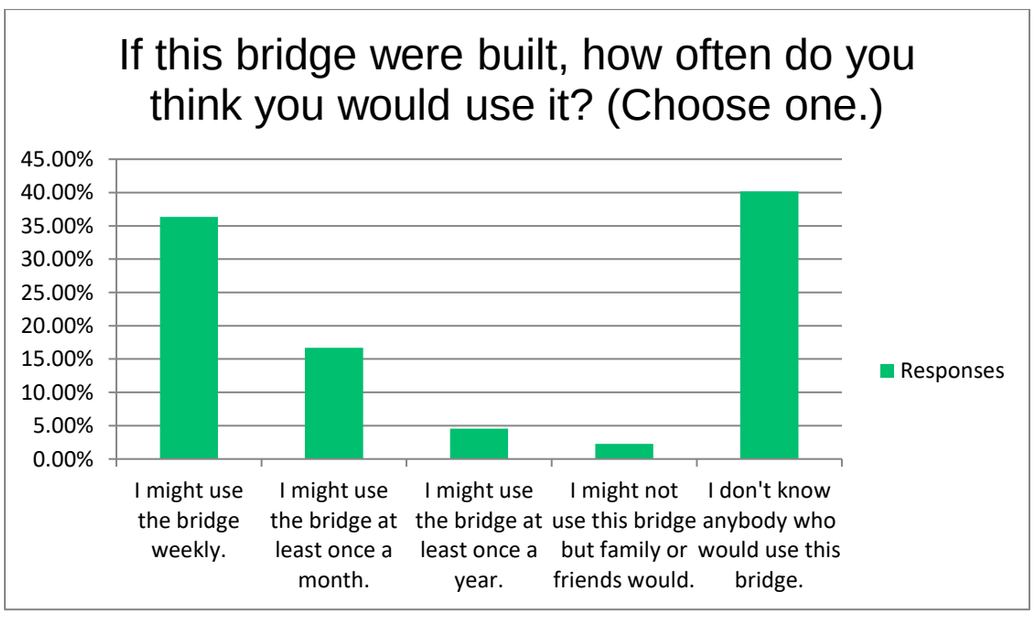
If this bridge were built, how often do you think you would use it?

180 people who indicate living in Oak Grove/near east answered the following question.



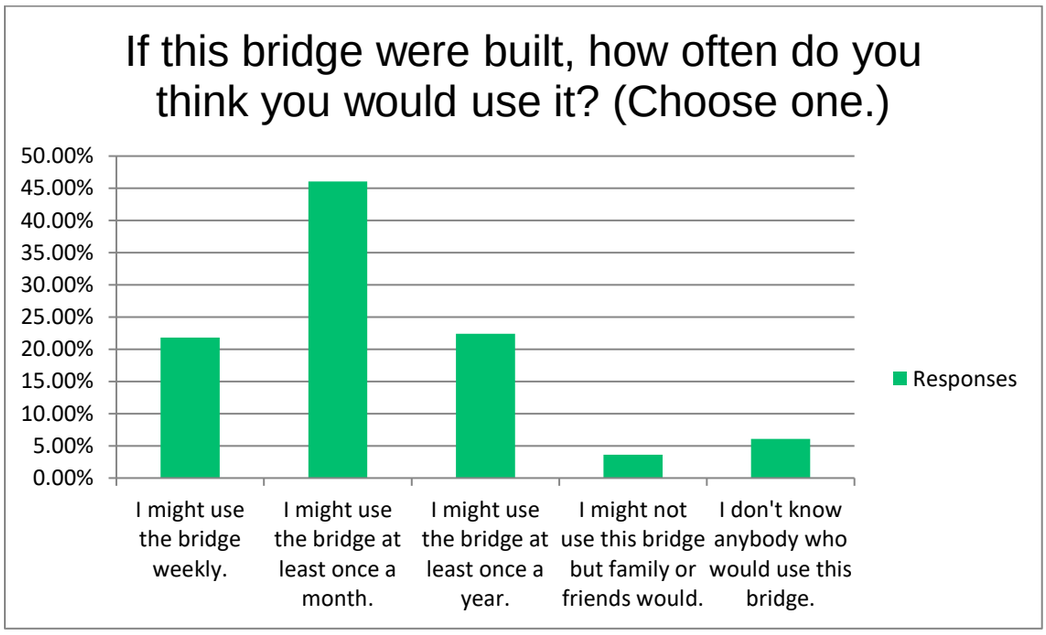
Answer Choices	Responses	
I might use the bridge weekly.	50.56%	91
I might use the bridge at least once a month.	34.44%	62
I might use the bridge at least once a year.	6.67%	12
I might not use this bridge but family or friends would.	1.67%	3
I don't know anybody who would use this bridge.	6.67%	12
	Answered	**180**

132 people who indicate living in Lake Oswego answered the following question.



Answer Choices	Responses	
I might use the bridge weekly.	36.36%	48
I might use the bridge at least once a month.	16.67%	22
I might use the bridge at least once a year.	4.55%	6
I might not use this bridge but family or friends would.	2.27%	3
I don't know anybody who would use this bridge.	40.15%	53
	Answered	**132**

165 people who indicate living elsewhere in the region answered the following question.



Answer Choices	Responses	
I might use the bridge weekly.	21.82%	36
I might use the bridge at least once a month.	46.06%	76
I might use the bridge at least once a year.	22.42%	37
I might not use this bridge but family or friends would.	3.64%	6
I don't know anybody who would use this bridge.	6.06%	10
	Answered	**165**

NOTE:

From paper comment forms collected at meeting held in Lake Oswego (not separated by indicated residence).

If this bridge were built, how often do you think you would use it?

7 Might use the bridge weekly.
3 Might use the bridge at least once a month.
2 Might use the bridge at least once a year.
3 Might not use this bridge but family or friends would.
10 Don’t know anybody who would use this bridge.

From paper comment forms collected at meeting held on east side (not separated by indicated residence).

If this bridge were built, how often do you think you would use it?

31 Might use the bridge weekly.
20 Might use the bridge at least once a month.
8 Might use the bridge at least once a year.
7 Might not use this bridge but family or friends would.
13 Don’t know anybody who would use this bridge.

OAK GROVE – LAKE OSWEGO PEDESTRIAN/BICYCLE BRIDGE FEASIBILITY STUDY

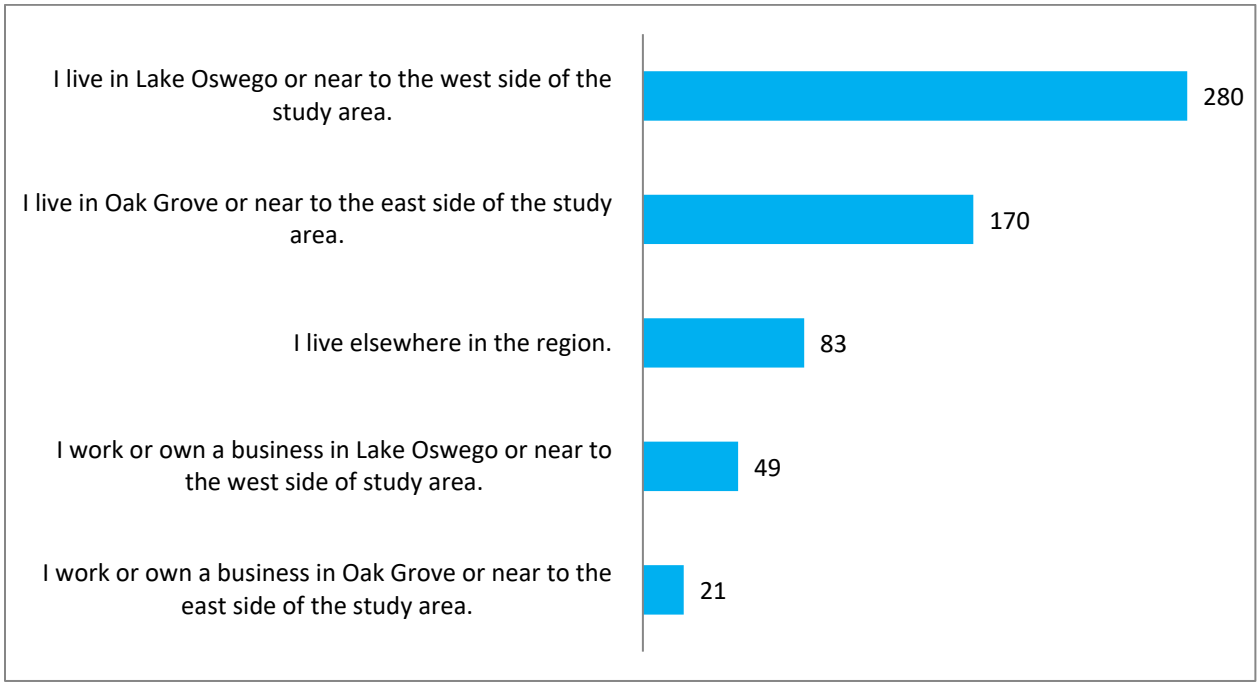
SUMMARY OF MAY/JUNE 2019 ONLINE SURVEY

A survey was open between May 16, 2019 and June 17, 2019 to provide the public with the opportunity to share their thoughts on Clackamas County's study to determine feasibility of a pedestrian/bicycle bridge across the Willamette River between Oak Grove and Lake Oswego. A total of 546 people took the survey, with spikes in participation taking place on May 30, June 3, and June 12. Below is a summary of the feedback.

1. **What would you like us to know as we begin this study? What is most important to you? What are your main concerns?** *This was an open-ended question. Responses were read and coded for comment themes, issues, concerns. Many people indicated more than one topic in their comments. A total of 406 people responded to this question.*
    - General support – 134
    - Funding/cost concerns – 97
    - Support for connecting across the river (shorter commutes) – 71
    - Safety (general) – 62
    - Support for active transportation – 60
    - Homeless concerns – 53
    - Support for bike trail connections, paths, and infrastructure – 37
    - Ensuring ease of access to bridge and to connection trails – 36
    - General opposition – 32
    - Concerns about increased crime on the bridge and on the LO side – 32
    - Concern about neighborhood/property impacts – 28
    - Ease of access to the bridge – 20
    - General traffic concerns – 20
        - Neighborhood traffic
        - Increased congestion
        - Minimal impact to existing congestion
    - Support for trail connections – 15
    - Parking concerns on either side of the river – 15
    - Usage justification and concerns – 14
    - Environmental, wildlife, habitat impact concerns – 14
    - Support for the reduction of SOVs – 14
    - Support access to LO – 13
    - Connection to east side – 12
        - Concern about why LO residents would want to access Oak Grove or Oregon City

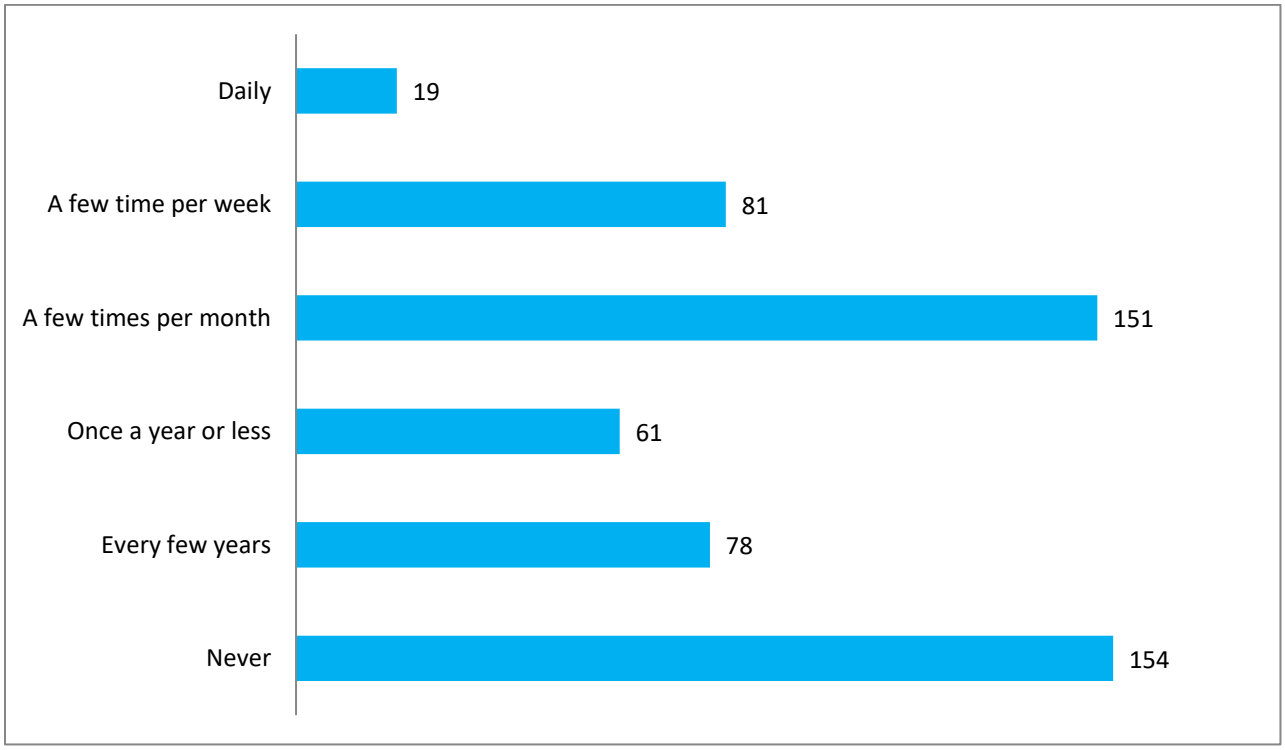
- Ensure maintenance and management of the bridge and connecting paths to reduce litter and vandalism – 12
- Economic benefits – 11
- Lack of bike and pedestrian infrastructure in LO to support increased users – 11
- Concern about the feasibility of the bridge – 10
- Provide access for cars on bridge – 9
- Access to recreational opportunities – 8
- Prioritize investments in road improvements – 8
- Support for better access to downtown – 7
- Ensure functionality of bridge – shared/separated bike/pedestrian facilities – 7
- Concern about the location of the bridge – 7
- Support for the climate benefits of the bridge – 6
- Traffic benefits – 5
- Bridge that supports light rail or transit – 5
- Health benefits of the bridge – 5
- Concern about the appearance/aesthetics of the bridge – 5
- Seismic retrofits and benefits – 3
- Concerns about overcrowding in LO – 3
- Ensure river boat clearance – 3
- Concern about noise pollution – 3
- Ensure transit connections to the bridge – 3
- Emergency vehicle access onto bridge - 3
- Continue studying the potential to use the rail road bridge – 3
- Ferry – 2
- ADA accessibility – 2
- Need for affordable housing – 2
- Opposition to increased bike traffic – 2

2. How would you describe yourself? *A total of 543 people responded to this question.*



GENERAL RESPONSES BY AREA	Live in LO or west side	Live in OG or east side	Work/own business in LO or west side	Work/own business in OG or east side	Live elsewhere
Neutral (questions, concerns, but no direct opposition, or stated direct support)	92	43	11	6	24
Positive (explicitly stated support or express desires/hopes that indicate support)	70	64	13	8	19
Negative (explicitly stated opposition or raised concerns that strongly indicated opposition)	65	7	12	3	11

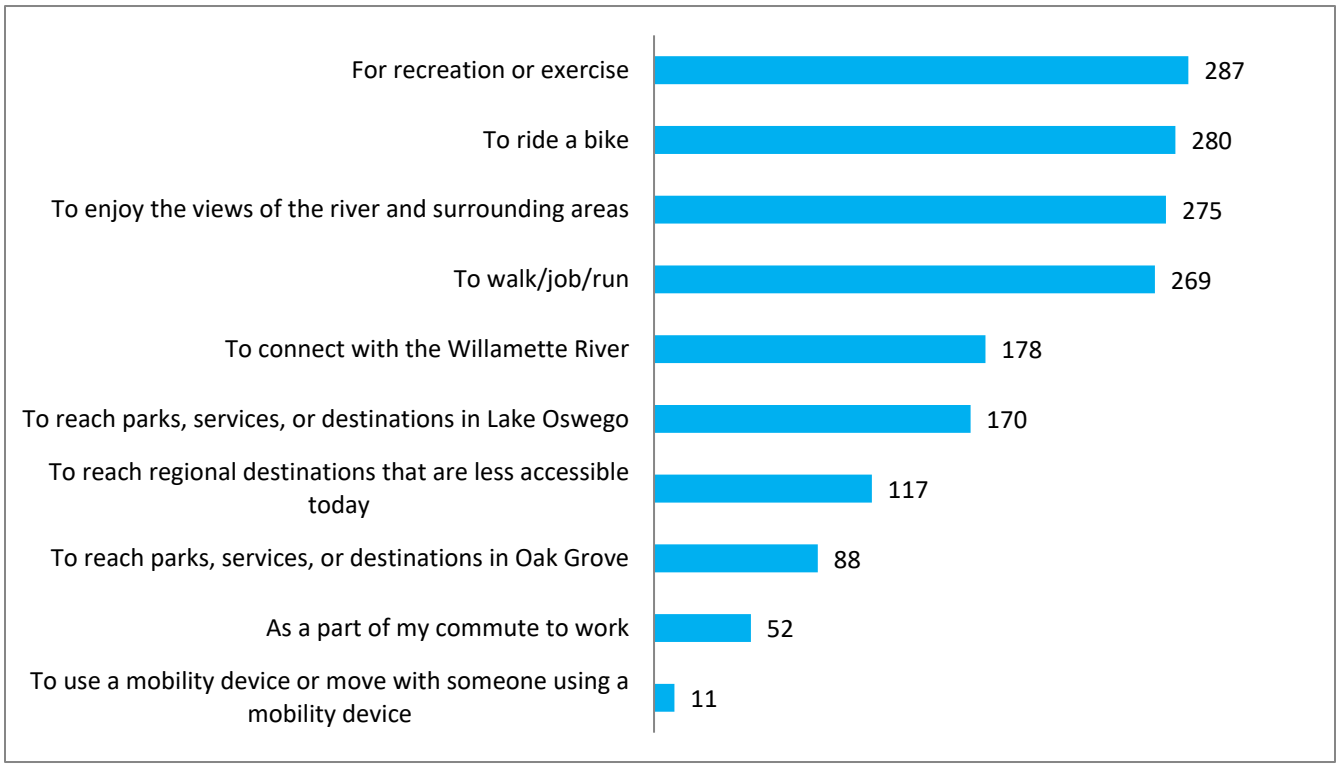
3. How often would you use the new bridge? *A total of 544 people responded to this question.*



RESPONSES BY AREA

Area	Total respondents	# who would never use the bridge
Live in LO or west side	280	120
Live in OG or east side	169	15
Work/own business in LO	49	17
Work/own business in OG	21	2
Live elsewhere	83	16

4. **How do you think you would use the new bridge?** *A total of 471 people responded to this question. They could choose more than one response.*



A total of 101 people selected "other" to this question. Responses included:

- Would never use it – 61
- Answer not applicable – 18
- To explore the area/tourism/wildlife viewing/recreation – 6
- To visit friends or family – 5
- To access transit/MAX – 3
- To go shopping – 2
- To avoid driving – 1
- Would only cross if there was vehicle access – 1
- In the case of an earthquake – 1

Lake Oswego Open House – August 5, 2019
Comments

- Fantastic- I just hope we do not have to wait 10-20 years for this needed connection. I t opens up so many things to both sides of the river. It will benefit even those who do not use it by decreasing auto traffic on Hwy 43 and the Sellwood Bridge. For sure 40% of L.O. will oppose it....that is a given.
- Personally, I wouldn't care which alignment is used as long as something is built. Biking from L.O. today is an atrocious, hair-raising experience, regardless of route. A future that reduces carbon must include a cycling option to reach Portland or Oregon City SAFELY!
- I think this will be a waste of money. The projections of bicyclists and walkers are overstated and will not come to fruition. Without adequate parking you significantly limit the numbers of people who will use this bridge, particularly among pedestrians.
- I think this project is aimed at a VERY small percentage of the population….for a whole lot of money. Most families have both spouses working. To assume they will commute on this bridge is beyond reason. They will have to take kids to daycare, market, run errands, etc. after work. I don't believe you have surveyed the population to see if they are interested.
- Options should include access from L.O. and from Riverdale/Dunthorpe. If an option that connects directly from Terwilliger is not chosen, there must be a traffic light (for bikes only?) at Terwilliger/Hwy 43 junction with easy access to more (or E Ave or D Ave) southerly bridge access.
- My main concern is cost and cost per crossing. The Salem footbridge across the Willamette cost about $10 million and gets about 556 peds and bikes a day (about 200,000 a year). This is about $50 per crossing if paid off in one year. This bridge is likely twice as expensive. The Sellwood Bridge cost $324 and gets 30,000 crossings a day (about 11 million a year). This is about $30 per crossing if paid off in one year.
- This project is too expensive and does not make sense at all. It is for recreation use, does not help the process of getting vehicle traffic across the river. Cyclists need to be certified to ride on roads with cars and dress properly so they can be seen. This project would only benefit a few.
- River front development is problematic due to flooding. We don't need more playthings. We need practical roads for cars and transportation for the masses in the suburbs!!! More road capacity please!
- No mention of homeless management (look at Springwater for potentials). 4+ parking spaces and overflow onto streets. No accommodation for seniors. No mention of lights on either and hours and how it will affect residents.
- We don't need this bridge. It opens LO up to crime from the other side of the bridge. Also we have greater needs for road repair/resurfacing that we should spend on. If the bridge can carry a police car or small ambulance, it will be used illegally by a car or some vehicle intent on illegal/punishable activities.
- This project is for recreational activities only. Too high cost for too few. The very small use for worker community would not justify high cost. Any metro funding available should widen Hwy

43 through Dunthorpe and include proper bicycle lanes. What city funding will be required to support this project? Where do cyclists go west? Up A Ave and Country Club to I-5 Tigard.

- Bridge completely unnecessary. This would have no use as it would serve little or no commercial interests. There are plenty of places to walk or bike. The bridge would disrupts the river environment, surrounding homes and neighborhoods. Tax payer dollars should be spent elsewhere - for other far more dire concerns. How much use during the rainy season? Very little.
- I would add the weather factor. I literally walk Foothills/Roehr Park everyday. The number of people that walk during inclement weather goes down quite a bit. I can't see folks using this as much. I don't feel the money doesn't equal the need.
- No mention of impact on Stampher and West Side River neighborhoods which is a major negative impact. Change your posters to reflect this information. Note: anything from Rivervilla on east side to Tryon Cove to Foothills a major negative for Stampher neighborhood.
- The alignment must connect to the existing Terwilliger separated path without this connection it will be the bridge to nowhere. The connection to the Trolley Trail is great. The only 2 alignments wroth continuing are A2 and A3. There is also a need to connect to the path at George Rogers Park. There is only a small existing gap that needs attention. No one wants to cycle or walk along State Street. The traffic volume is too high and moves too fast.
- I would like to have a ped/cycling bridge, but am very concerned about a potential influx of transients/vagrants into LO. I would not support funding of the bridge unless this issue is addressed. I would use the bridge for recreational purposes only (cycling).
- Considering more than half of respondents to the survey said they would never (or 1/yr) use this bridge, I'm not really sure why it's desirable. Parking at Foothills and George Rogers Parks are almost always at capacity, though it's less likely LO residents will go to O.G. vs the opposite. Increased traffic on pathways will only increase issues. Benefits do not outweigh the potential problems.
- This is a waste of money. Why?? Do I need to walk/bike to O.G?? Used to live Jennings and Oakfield. No no no.
- I would not travel to O.G. The Milwaukie bike path is used by some and homeless as well. I do not understand how the proposed bridge would benefit BOTH sides of the river. How will homeless issues be handled and how will it be paid for (tax payer dollars). Not a good use of my money. Why are there still homeless people in Tryon Creek? There would just be more coming.
- Jim Howell attached a map of a proposed bus line that could use the proposed bridge (a single bus lane and bikeway). The #78 from Beaverton/LO could travel from Beaverton, across the bridge, to the Park Ave Max Station.
- Most options have negative impact on Stampher Rd neighborhood without addressing car access problem (single lane road with hairpin turn and no light on 43). This bridge would inevitably bring more traffic and access to Stampher Rd MUST be addressed. Also, must address security -- there is already homeless in Tryon Cove and not well patrolled. Young children live in this neighborhood whose bus stop is at the top of Stampher and 43--this increased traffic would be significant safety risk. Why are we spending money on a ped bridge when existing bridges in PDX are not earthquake safe. This will negatively impact property values in Stampher

neighborhood. I haven't seen studies looking at expected use and increased car traffic to either end of bridge. Additionally what impact will there be on fragile ecosystem of salmon and native plants within Tryon Cove Park?

- All should connect with lightrail. Courtney and Bluff closest to light rail. Terwilliger to Courtney and Bluff with crossing at Hwy 43 and State.
- Thank you for working on improved transport options! It will increase positive business and is a green solution to traffic congestion. All options should connect with the MAX orange line. Also, I think safe crossing at Hwy 43 is essential. I also hope there is a connecting bike path across LO in the public and easement zones. Ideally, there would be bike path along the Trolley line that is raised (like Highline Park in NY). Connectivity is a good thing!
- I think this project would be an excellent enhancement to livability and will stimulate economic activity. I want access to the lovely parks, farmers' market, and lightrail in Milwaukie. Excellent and efficient use of transportation dollars! The economies of ratio areas that are integrated thrive. Concerns about crime are not warranted. -Martin Monto, PhD, Sociology UCLA 1992

Oak Grove Open House – August 7, 2019
Comments

- Please visit (walk) Courtney/Fairoaks crossroad. This landing is not safe for peds and has a negative impact to the surrounding neighborhoods on Fairoaks and Laurie. We use Courtney as an arterial street to access river and McGloughlin. A shared road on Courtney with no bike lanes, sidewalks or shoulders is not safe for all. The last stretch of Courtney is also so steep you cannot see approaching cars (along with the curve on Fairoaks) if we are all merging here, I foresee safety issues. Walking is also an issue. Bluff Rd has more visibility and keeps bridge traffic on low population streets. You could also build a path from Bluff to Laurie to Courtney to connect to River Rd.
- I am very concerned about the impact of the landings on Oak Grove community. Because it is highly residential the need for parking would affect community life. I am not in favor of locating the bridge here.
- As an approximately 18 year resident of LO and now living in OG, I genuinely think that LO will get the better end of this deal--and it's one we will both benefit from. One of the reasons I would not consider LO for living is due to the lack of investment in bike infrastructure and eco-friendly, accessible public transit. So let's all share Trolley Trail and Springwater! (And the lovely Orange line.) I live just off Courtney and this will certainly make things busier and people will park near my house, but let's not let "not in my neighborhood" attitudes stop us. This is a long time coming.
- I admit that I am examining all the connections for car/ped/bicycle bridge the width of Sellwood Bridge. Other than the recent replacement of the Sellwood Bridge, 1970 was when the new 205 Bridge went in. The 10 mile span between the Sellwood and OC is becoming unsustainable. The population has tripled since 1970. Considering a 9.0 earthquake is also a consideration in consideration of overall mobility when the majority of Portland bridges fail.
- All of the alignment options will have a significant impact on the environment, disturbing trees, animals, land habitat and river habitat, as well as community members. The bridge will impact street parking (those who drive here to use the bridge need a place to park) and the visual impact will be negative (in my opinion) to those who live within sight of the bridge.
- All of these alignments would have significant negative impact on the environment and surrounding neighborhoods.
- I live on OGB --If we have an emergency how is an ambulance/fire truck going to get to our home?
- I prefer no option of landing on Oak Grove Blvd due to impact on residents (even though it would be more convenient for me). I like bike connections from Courtney to Terwilliger or Foothills Park options.
- Please make it impossible to connect to the FROG ferry system if that will be moving forward. Don't we want to get around and leave our cars at home?! This is a great opportunity!
- Assuming access more directly linked to Park Ave to the MAX is not possible, Courtney Rd to Tryon Cover (upper and lower) would offer the best value.

- I consider this to be a luxury item and I cannot afford to continue paying for luxuries and helping non-profits who meet needs of people. If this project is completed, by law I will be forced to help pay for it. Who is requesting this project? Maybe there is a need? Is it to connect with MAX line?
- Option A3 seems to be the best option given of the 10. It accomplishes many positive goals this project should have--low grade/crossing Hwy 43/connecting to other trails. Please build it!! I can't wait to go to the LO Farmers' Market and beyond. Thank you!
- It would be helpful to have a blow up map showing connections to existing and planned bike/ped trails on the west side in relation to the proposed landing locations. Not knowing LO I was confused about what might be my best option.
- I can't support any option that does not offer Emergency vehicle access.
- Be nice if could run across without using RR bridge.
- Thank you for testing this open house. It's much easier to weigh the options printed large on poster board. This bridge would be a GAME CHANGER for members of my family who live in OG and work in the west (Tualatin). It would also make it easier to visit LO on weekends to go to the fancy grocery stores or whatever that they have over there. Lots of great options here. I hope one gets built!!
- Thanks for your work. Continue this to fruition please.
- We seem to have lost our way as a community. Prioritizing funds for a bike/ped bridge instead of caring for our citizens' basic human needs (affordable housing, mental health, addiction prevention, living wage jobs, mitigating food scarcity) will have consequences that will privilege the white middle class community and continue to divert resources from those in need.
- Yes- please continue with this project. We desperately need more bridges to connect East to West over the River. Commuters need other options besides the Sellwood Bridge.
- I walk to Rivervilla Park once or twice a week with my wife from Linden Lane. We both use bicycles frequently and would love the opportunity to use a bike/ped bridge as proposed esp if they are starting or entering near or at Courtney and Trolley Trail. We are both very excited about this prospect of this type of bridge and the positive impacts it would have.
- I prefer the two alignments that go over Hwy 43, and the bridge would make a much safer crossing than a crosswalk. Although these options are more expensive, the Tilikum Crossing in Portland provides a similar example. Early on there was an option to extend the bike/ped path up the viaduct directly to Portland State University but it was abandoned due to cost. In retrospect it would have been better to spend the money and provide that extension.
- Parking options are a concern for the sites I have favored (B3 and D3) on the east side. Also, what is going to be done about the ped access on Courtney--very narrow front yards between River Rd and Fairoaks.
- I think emergency vehicles need access. I like the less expensive options. I love to walk and will use the bridge often and my daughter is a biker who will use it often as well.
- I would use the bridge a lot to visit friends, frequent businesses, dine, shop and hike on the west side. Have been saying we need a bridge like this since moving to the area. So excited!!

- I'm tired of my gas tax money being spent on everything except motorists. The transportation dept has not built a new freeway in almost 40 years (I-205). Before you spend another dime of my gas tax dollars appeasing the freeloading bicyclists, at least add two lanes to I-5 and I-205. Actually, we could use a car bridge in this area.
- The grade should be less than 8%. If you use SE Courtney as a landing site you must improve traffic control (a light) at the corner of SE Courtney and River Rd. It's a dangerous intersection I bike commute across daily. Keep that in mind. Must have emergency vehicle access.
- I feel the money needed to build a bridge could be used for something more important.
- It's difficult - considering the trade offs, steep grades, concern about narrow streets with no sidewalks, disruption of park lands and to some neighborhood residents, parking or no parking. Emergency vehicle access. It would be wonderful to have direct and relatively easy access to both sides of the river by foot, etc.
- I would be more interested in a bridge that would accommodate auto traffic!
- I miss having a way to drive to Oswego -- more interest in building a bridge for cars and bikes.
- Next time separate out landings on one side - perhaps rank type voting : east side winner and west side winner. We need a P&F bridge - we need to have low impact on our Rivervilla Park. Please investigate tram? Alignments over/near Oak Lodge Water District should be considered with mitigation funds to OLWD.
- The effects of climate change make it important we create transportation options that allow everyone a chance to get out of cars and onto alternative transportation means.
- Why isn't light rail being considered for the bridge? This could be like Tilikum Crossing south!
- Emergency vehicle access important. Community access and parking important. Terwilliger end point needs intermediate (Tryon Park) access.
- Will this bring life to OG businesses? Who will patrol - make sure it is not being camped on? What is impact on crime, bringing homeless into area? How much more bike trail will this give me? Does it connect into anything trail wise for bikes on the west? I want to ride/run farther than Trolley Trail currently permits. How many bikes a day do you predict?
- Any crossing would be nice. Preference is closer to downtown LO. Pdx marathon could shift to a closed off road loop if a bridge happens.
- Parking and emergency vehicle are a must.
- Oak Grove Blvd already has major impact from the boat ramp. If you closed that I would consider the bridge. Parking is a problem, private property impact, LOCR is there--an important kids club -- a delicate sport!
- I do not see this project as fiscally viable. Long term costs, maintenance, staff, residential impact on both sides of the river and the river itself should be enough for a reasonable person to not support this project. Homeowner impact would be horrific as our family is already a victim of the Foothills Park Dock. We were told to give it a chance, it might not be as bad as you think! The were correct, its SO much worse than anticipated. I see the same thing here.
- I am a daily user of the Trolley Trail (with my family) and I would love a connection to LO so that I can more easily utilize businesses there. I also would enjoy a connection to Tryon State Park. We purchased a home here in 2017 because we know this area has enormous potential. I am

hopeful that this will be an option for us in the future. I believe that the critical items for a bridge are: Emergency vehicle access and a connection that isn't too steep.

- Oak Grove Blvd seems like the best east side landing.
- Not sure a good use of money. Ask for money for needed infrastructure and now want to spend $22mil on bridge -- better uses of money. How many people would use it? Is it seismic in case of earthquake? Would put some houses in shadow of bridge --unacceptable. Limited to no parking is a problem. Neighborhood impact (negative).
- Must have emergency vehicle access. Watch grades to keep them as minimal as possible. Parking access.
- Oak Grove Blvd landing is inferior to all other configurations. Tryon Creek/Terwilliger landing is superior to all other configurations.
- I really hope that this project comes to completion at any of the proposed alignments. The OG connection seems to be the preferred.
- With earthquake considerations, the stability of the land would not be suitable for this project for safety reasons. We need to spend county money elsewhere -- homeless? Improving roads?
- No to all of your bright ideals for our quiet, peaceful neighborhoods. Are the peds and bicycles going to pay anything for construction and use. NO! The tax payers will!!
- My concerns are: Preserve Rivervilla Park -- there are few places along the river dedicated to passive use. Building a structure that folk would use. Just getting access/egress won't create use--where are folks going and why/how do they best get there?
- I think the bridge is a great idea!
- Discourage parking on east side of bridge in residential neighborhoods. Walking access to Tryon Creek Park and downtown LO a priority.
- I would hate to see use of Rivervilla Park compromised.
- Great idea.
- We live by Courtney/Fairoaks corner. Love the idea of the bridge but HATE the thought of parking in front of our house!! Could there be "no parking" ordinance for non-residents?
- I would like walking access to the shops in downtown LO.
- As a short-time resident of Rose Villa, I do not have sufficient information to address most of these options. Thanks for the opportunity!
- Concerned about parking on Courtney the area is not designed for this and do not like the impact it will have on the neighborhood. Oak Grove Blvd has more parking and stores. Put MAX in LO if they need more access to public transportation.
- None seems to be worth the cost. As a property owner, Metro already taxes us to death. Traffic is already terrible on River Rd in a.m. and from 4:30 - 6:00 hard to cross both lanes. This would put a huge burden on an overtaxed rd. Main concern: cost!!! Why!! Why now? Not needed at this seems to be a total perk for developers and income for the bridge builders. This is not at all fair to people who live along the development sites. Roads in our area will not support the bicycle traffic. LO is not my concern. My home is on Courtney that is what affect me and our neighborhood.

- Prefer to keep OG esp near the river more peaceful. No extra traffic, no more parking in front of homes to go across to LO. The $40 to be spent on a recreation bridge is put to much better use improving the current traffic concerns because of the new higher population in our area. Please keep OG quiet, peaceful. Use a kayak if you can't use public transportation or your car to get to the west side!
- A bridge through any neighborhood would adversely affect the homeowner. Add a ped bridge to the train trestle if needed.

Public Input, August 5 & 7

August 5 open house in Lake Oswego

- 47 attendees
- 29 comment forms
  (22 indicated they live in Lake Oswego)

August 7 open house in Oak Grove

- 165 attendees
- 87 comments forms
  (73 indicated they live in/near Oak Grove)

CLACKAMAS COUNTY

Metro

Public Input: Comments

- Both support and opposition for bridge from both sides of the river
- Funding/cost concerns
- Support for connecting across the river
- Support for active transportation
- Support for bike trail connections, paths and infrastructure
- Homeless concerns
- Concern about crime
- Concern about neighborhood/property impacts
- Ease of access to the bridge (grade)
- General traffic concerns
  - Neighborhood traffic
  - Increased congestion
  - Minimal impact to existing congestion
- Support for trail connections
- Parking concerns
- Environmental, wildlife, habitat impact concerns
- Support for reduction of single-occupancy vehicles

CLACKAMAS COUNTY

Metro

Public Input: Aug. 5 & 7

More support from both open houses for looking further at alternatives:

- A-3: SW Terwilliger Blvd to SE Courtney (upper)
- B-3: Tryon Cove (Upper) to SE Courtney (upper)
- D-3: Foothills Park to SE Courtney (upper)

CLACKAMAS COUNTY

Metro

Public Input Online: July 29 – Aug. 9

602 responses online

- 27% from Lake Oswego
- 37% from or near Oak Gove
- 34% from elsewhere

More support for further looking at:

- A-3/A-2: SW Terwilliger Blvd to SE Courtney or Bluff
- B-3/B-2: Tryon Cove (upper) to SE Courtney or Bluff
- D-3/D-2: Foothills Park to SE Courtney or Bluff

CLACKAMAS COUNTY

Metro

Policy Committee (PC) Meeting #1 Summary

June 7, 2019
6 PM – 8 PM
Lake Oswego City Hall

Meeting purposes:

- Review context for bridge landing locations
- Provide direction on project evaluation criteria
- Discuss formation of governance agreement

Attendees

PC Members: Mark Gamba, Mayor of Milwaukie; Christine Lewis, Metro Councilor; Jackie Manz, Lake Oswego City Councilor; Paul Savas, Clackamas County Commissioner

Project Staff: Clackamas County: Steve Williams, Ellen Rogalin; City of Lake Oswego: Mike Ward; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson (facilitator), Kristen Kibler, Tracie Heidt

PC Member Staff: Tracy Moreland, with Commissioner Savas; Ramona Perrault, with Christine Lewis

Guests: Iris Walling; Mike Bliziotes; Jeff Gudman, CAC; John Charles; Thelma Haggenmiller; Skip Ormsby, CAC; Casey Snoeberger

Welcome and Opening

Councilor Jackie Manz welcomed everyone to Lake Oswego City Hall. Jeanne Lawson asked the PC members to introduce themselves and share their hopes for this feasibility project.

- Councilor Manz would like the group to make this project happen. Its implementation depends on a number of factors, but it is a Metro Tier 2 project and therefore elevated in importance.
- Mayor Gamba as an avid cyclist understands how important the bridge is to opening up east/west connectivity.
- Councilor Lewis said that by the time Metro refers the funding measure in 2020, we can have a plan in place and perhaps move this project into the funding measure. There is community buy-in on both sides of the river. It would be an attraction for recreational users and a major bonus for bike commuters.
- Commissioner Savas recalls policy-makers discussing the bridge idea decades ago and likes the possibility of a bridge reducing traffic congestion in the region. It's a great opportunity to connect the communities on each side of the river. The Trolley Trail is the most used trail in Clackamas County and the bridge would allow a great extension of it.

Agenda Review

Jeanne noted that this meeting is intended to lay the foundation for the decisions the PC will make in the feasibility study.

Mayor Gamba: Will we talk about right of way approaches on both sides of the river? Mike Pyszka: We are only taking a high-level look right now.

Public Comments

- John Charles, Cascade Policy Institute: Earlier today we released a paper about the Sellwood Bridge reconstruction -- "Promises Unfulfilled." We have the scope of work and consultants for this feasibility study project so that in analyzing different sites we should locate a site for a traffic bridge that is superior to the Sellwood Bridge, which failed because it has not alleviated traffic congestion. Metro sponsored a study about 25 years ago to examine 20 potential bridge crossings, but they all were rejected. Congestion on both sides of the river is bad and the cut-through traffic is a problem. He handed out a paper documenting the problem. Metro should launch a better study for a larger bridge site and the information from this feasibility study could serve a future task force for a traffic bridge site as well.

- Thelma Haggenmiller: I wasn't allowed to speak at the CAC meeting last week. It is short-sighted to plan a bridge designed for bikes and peds but not cars. There will be a lot of growth within the next 20 years, and this bridge will not accommodate future widening or retrofitting to allow vehicles. The bridge will need to accommodate emergency vehicles cars if there is a natural disaster. [Mayor Gamba said that when Milwaukie was designing a bike path parallel to 99E, they were required to design a path to accommodate emergency vehicles, so this bridge would most likely have to accommodate emergency vehicles, too.]

Study Purpose and Overview (Steve Williams)

When Clackamas County updated its Transportation System Plan in 2012, this was the highest interest project in the entire county. The County has been looking for ways to move this project forward for several years and appreciates Metro's offering of transportation funds for the study. We are looking at what a bridge could mean and do for Lake Oswego, Oak Grove and the greater region. It makes sense to conduct a feasibility study first, rather than a design study, to ask the basic question of whether the bridge could be built at a reasonable cost, and if there is enough public support to move it forward. This is a unique project because all the other bridges in the region are owned and maintained by just one jurisdiction.

PC Role and Charter (Jeanne Lawson)

The draft protocols in the charter are to not have alternates and that the group strives to make decisions by consensus. The draft outlines a process for decision-making if they can't initially achieve consensus. The group agreed with the suggested protocols.

The PC is to decide on:

- Preferred landing points
- Preferred connections
- Bridge concepts
- Governance

The governance question is the most important point on which to achieve consensus. The goal is to reach a decision that can be durable to all the partner organizations. The question of funding, ownership and maintenance among their jurisdictions is key.

Commissioner Savas asked Mayor Gamba if Milwaukie, without jurisdiction in the project area, would consider helping defray the cost and/or managing the bridge. Mayor Gamba said he would have to ask his city council, but he thinks there would be council interest.

Context for Locating a Bridge (Mike Pyszka)

Connecting regional trails is a Metro priority, and this bridge could connect to the Trolley Trail, Willamette River Trail and the conceptual Bridgeport-to-Milwaukie Trail.

The bridge would fill an important gap on the Willamette River, as the nearest crossings from the proposed project site are the Sellwood Bridge, four downstream miles, and the Oregon City Arch Bridge five miles upstream.

The Railroad Bridge is not an option because Union Pacific, which owns it, is not interested in expanding the bridge. Furthermore, creating access to that bridge on the Oak Grove side would be difficult and dangerous.

A bike/ped bridge is less expensive to build, has fewer impacts and a much smaller footprint than a bridge built for cars or transit.

Discussion

Commissioner Savas: Is it possible to accommodate emergency vehicles? [Mike: We are studying the landing and technical design criteria and through these will look at the load required for emergency vehicles. So far, the assumption has been that there is not a great need because there are full emergency services on both sides of the river in the vicinity of the bridge.]

Councilor Manz: Could you scale the design to consider accommodating a smaller or mid-sized emergency vehicle rather than a large ladder truck? [Mike: We can look at both scenarios. We would need to factor in a 20,000-pound design load as well as structure depths and heights.

Councilor Lewis: Can you define what the financial and right of way requirements would be for such a design so we can have that information available to evaluate options? [Mike: Yes, that can be factored in.]

Mayor Gamba: What is the required ship clearance? [Mike: The U.S. Coast Guard is working with us and the current assumption is 75 feet based on clearance for the adjacent railroad bridge and the I-205 bridge upstream.]

Environmental Scoping Process (Mike Pyszka)

This study will set the stage for an environmental assessment to be done during the next phase if the project moves forward. During this phase, the team will hold a scoping workshop and produce a NEPA scoping and permitting report. If the funding is local (Metro T2020 or other non-Federal), then the U.S. Coast Guard would be the lead agency. If the funds are Federal, then the US Army Corps of Engineers would be the lead agency. Either way, work performed

for the feasibility study can be applied to future phases. This phase will look at environmental impacts from a broad level, not in detail.

Public Involvement Process (Kristen Kibler)

Three hundred online surveys had been completed so far. Community outreach will be conducted over the summer in parks and at farmers' markets.

Councilor Manz: Should we give local partners the survey information to distribute to our constituents? [Kristen: The CAC members are distributing the survey and it was recently posted in the *Hello LO* and *Milwaukie Pilot* newsletters. Ellen Rogalin added that the survey will close on June 15 so the County will give it a final promotional push on social media.]

Commissioner Savas: I would like a public comment period available at all of the project events. [Kristen: We will make sure there are opportunities. All the public meetings and events are interactive in some way. At the CAC meeting, the group is so large that the project team wanted to make sure all of their voices were heard; therefore, public comment was focused on the Policy Committee and other outreach. The CAC meetings will provide the public an opportunity to give some feedback at the meeting.

Discussion

Question: Is there limited landing space on the Lake Oswego side due to the railroad tracks?

Answer/Discussion: Tryon Creek Cove Park has an at-grade crossing at Highway 43. From the Tryon Cove Concept Plan there are two options for a pedestrian crossing at Highway 43: a new signal at the intersection of Terwilliger and 43 or a tunnel underneath the intersection. As part of this study, an alignment will be considered for crossing over the railroad tracks and 43. The required clearance is 25 feet from the tracks. A landing at Foothills Park is also an option.

Councilor Manz: Foothills Park makes sense as a landing point, but it would be nicer to connect to Tryon Creek Cove Park.

Mike: The southern-most connection on the east side would be on Oak Grove Boulevard and the connection point on the west side would be Roehr Park. The CAC feedback was that the community would like an iconic bridge that they could be proud of. On the east side, the public property options are Rivervilla Park or Courtney Avenue.

Commissioner Savas: I recommend that each of us go for a walk on the side of the river that is least familiar to us to get a real sense of the possible landings.

Evaluation Criteria and Community Values (Jeanne Lawson)

The community values came from the CAC and the technical criteria came from the TAC and agency staff. At the CAC meeting, there was a larger representation from the east side and the team will keep this in mind as they refine the values. The CAC brainstormed individually and working in small groups, and then shared their groups' priorities with the large group. They ended by noting their individual priorities.

Connectivity and Safety

- Commissioner Savas: Are ADA requirements well covered? [Mike: ADA requirements tie into several criteria.] Commissioner Savas: There is a high population of senior

citizens on both sides of the river near the proposed landing sites. Consider an inclusive design and an appropriate slope.
- Mayor Gamba: It is prudent to take the future Cascadia earthquake into account. It wouldn't be wise to build a spiral landing because that can't accommodate emergency vehicles if needed. [Mike: The landing size affects the design significantly.
- Commissioner Savas: The public would more readily support the bridge project with a public safety component. [Mike: The AASHTO design loads for pedestrian bridges are 90 pounds per square foot for pedestrians and a 20,000-pound vehicle load. This would be an ambulance or small first responder vehicle. To accommodate a full-size fire truck or emergency vehicle would require a standard vehicle bridge.

Environmental Impacts
- Avoid adverse impacts to listed species – fish and birds.
- Avoid both long-term and construction impacts.
- Light pollution is a concern.
- Look at pier spacing in the river to minimize impacts to sensitive species.

Existing Development and Neighborhoods
- Avoid displacement of businesses and residents.
- Concern was expressed about the privacy of the residents below the bridge landings. Some people might not like the idea at first, but if we build a beautiful, iconic bridge they may accept it later, like the tram.
- Consider how parking will work. If the bridge is iconic and draws large crowds, people will drive to it. Connections in residential neighborhoods would have limited or no parking to accommodate this type of use.

Cost and Economic
- Business owners would like businesses to benefit.
- Privacy and safety screening on the bridge is important to some, but others don't want to compromise the view from the bridge. It is important to consider design trade-offs with operational costs.
- Sea planes would still be able to fly and land in the river.

Land use planning
- Consider not only the location of the bridge, but the trails connections as well.
- We want neighborhoods that work for everyone.

Governance Agreement

The governance agreement is probably the most important element before the group in terms of the success of the project. Steve said Mike Bezner, Clackamas County Assistant Director of Transportation, will convene a small group of executive leaders from the partner agencies to discuss the governance agreement and then report back to the Policy Committee.

Committee members were asked to share issues they would like the executive team to consider. The guiding questions are who would own the bridge, pay for it and maintain it?

Commissioner Savas: The parks departments of the agencies may take the lead.

Councilor Manz: Intergovernmental agreements (IGAs) can be difficult to manage and the upfront cost of ongoing maintenance is a big question.

Mayor Gamba: None of the three jurisdictions have any experience owning and maintaining bridges like this one and therefore it seems beyond the scope of a parks department or district. Because splitting ownership is difficult, one entity should own the bridge and the other partners could help support it. This would mean consortium funding and an ongoing IGA for maintenance.

Commissioner Savas: It's wise to study other successful models. Steve: There are several bike/ped bridges on the Willamette River with different owners on each side, and we will speak to those agencies about how they have managed ownership issues.

Public Comment

Skip Ormsby, CAC member from Lake Oswego: Current connections across the Willamette River are not good. Millennium Plaza in Lake Oswego might be a good landing point because of the adequate railroad clearance. The four top factors to consider when designing the bridge are vessel clearance on the river, Highway 43 crossing to Terwilliger, the railroad tracks and seaplane flight approaches.

Casey Snoeberger, Oak Grove: Thanks for covering the issues well. Parking is important to consider. Special events on or near the bridge could cause parking issues. Sometimes motorized vehicles drive on the Trolley Trail illegally, and they might do so on the bridge as well, so liability should be considered. Consider fishing options off the bridge.

Next Steps

The Policy Committee will meet again in August on the west side of the river.

Policy Committee (PC)

Meeting Summary

September 6, 2019
9 – 11 am
Milwaukie City Hall

Meeting Objectives

1) Present the 10 alignment options and share the three top choices of the Community Advisory Committee (CAC) and the Technical Advisory Committee (TAC) and
2) Learn the PC's top three alignment recommendations.

Attendees

PC Members: Mark Gamba, Mayor of Milwaukie; Christine Lewis, Metro Councilor; Jackie Manz, Lake Oswego City Councilor; Paul Savas, Clackamas County Commissioner

Project Staff: Clackamas County: Steve Williams (project manager), Ellen Rogalin; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson, Kristen Kibler, Tracie Heidt

PC Member Staff: Tracy Moreland, Clackamas County

Guests: Anatta Blackmarr, CAC; Tina Moullet, CAC; Brock Inman; Julie Budeau; CAC; Michael Dewitz; Lydia Lipman; Lisa Nowak; Alivia Cetas; Marc Laubaugh; Rachel Dawson; Gene Fifield; Jane Civiletti; Tom Civiletti, CAC; Michelle Matt; Myke Landis; Lance Landis; Gerald Fox, CAC; Fred Sawyer; Deborah Bokowski; Chips Janger; Steve Morris; Robert Rose; Bill Osburn; Jeff Gudman, CAC; Thelma Haggenmiller; Skip Ormsby, CAC; Andrew Kershaw

Welcome, Meeting Purpose, and Agenda Review

Jeanne Lawson welcomed the PC and announced that she would be the facilitator of the meeting.

Steve Williams noted that the project schedule was moving quickly because the project team would like to provide the PC's recommendation to the Metro T2020 group by the end of September. At the final PC meeting on September 27, the PC will determine whether the project is feasible to move forward.

The project team deemed it more important to conduct a scientific survey of public interest in the bridge rather than conduct another public open house. This survey will help inform the PC's final decision. A third public open house, along with an online open house, will be held later in the process when the product is finalized.

Jeanne reviewed the meeting agenda.

Opening Public Comment

Lisa Novak -- During my vacation I sat at Riverilla Park to inform visitors about the project and how problematic it would be for the park. It would hurt parking. Rivervilla Park is a beautiful, active park and place of neighborhood unity and that unity could be torn apart.

Bill Osburn -- I agree with Lisa's points. This is a foolish project that would benefit few people while the rest of the public foots the bill. A bridge that does not also alleviate traffic congestion is not worth building at this time.

Brock Inman -- I agree with the previous two speakers. The brief allotment of time for public comment during today's meeting is indicative of the project's lack of interest in public input. Why are Milwaukie and Lake Oswego at the table if this is a Clackamas County project? I don't want further intrusion into Lake Oswego.

Steve Morris -- I own a house on State Street in Lake Oswego. The project should post all objections to the project on the project website in addition to a good cost estimate. I'm concerned about user access; more parking must be considered. I don't like the northern landing options in Lake Oswego but could live with the southern one. Consider light impacts on neighbors, as well as homeless management.

Bob -- I bike to downtown Portland and Oregon City and would never drive to the bridge. At a time when society needs to reduce its carbon footprint, we should consider this bridge. I don't care which alignment is chosen, as long as a bridge is built.

Presentation of Alignment Alternatives

Mike Pyszka presented the 10 potential bridge alignments (see below), and PC members discussed the alignments and asked questions.

Alignments:

A-2 SW Terwilliger Blvd to SE Bluff Rd
A-3 SW Terwilliger Blvd to SE Courtney
B-2 Tryon Cove (Upper) to SE Bluff Rd
B-3 Tryon Cove (Upper) to SE Courtney
C-2 Tryon Cove (Lower) to SE Bluff Rd
D-1 Foothills Park to Rivervilla Park
D-2 Foothills Park to SE Bluff Rd
D-3 Foothills Park to SE Courtney
E-4 Roehr Park to Oak Grove Blvd
F-4 William Stafford to Oak Grove Blvd

Discussion and Questions

Regarding A2, how much would a landing that spanned Highway 43 cost? [That particular cost point is yet unknown but including this element in the bridge would eliminate the need for a

future project to cross Highway 43, as the Tryon Cove Creek project proposes. A2 and A3 are longer alignments so they would cost more.]

Why was a Bluff Road landing considered if there is no direct connection to the Trolley Trail? [It eliminates neighbor impacts and the team wanted to include such an option. A3 has a better connection to the Trolley Trail.]

What would be the structural impacts to Rivervilla Park? Would there be support columns that span across the park? [The columns would be 150 feet apart. It would track along the southern edge of the Oak Lodge Water District facility or into the Courtney Road right of way rather than in the park itself. The Bluff Road and Courtney Road alignments have minimal impacts to the park. The bridge would cross over the parking lot but not impact it.]

How much would it cost to extend B2 to cross over Highway 43 at Tryon Creek Cove Park? [The next step in the study will be to do a cost estimate of the three best alignments.]

I am sensitive to the public's and CAC's recommendations on the alternatives and want to support their recommendations.

Mike -- C2 would have more impacts on Tryon Creek Cove Park, as the bridge would have to reach the height to the river. It would land at a lower site and there would be a challenge of BES fill to reduce the length of the bridge. D1 has a great benefit to Foothills Park and trail connectivity, and there is potential parking on site; but it has a significant impact to Rivervilla Park due to the grade and the compromising of usable space in the park. D2 would be a shorter structure; both D2 and D3 have better connectivity. They meet most of the criteria, cost less and have the best connectivity to downtown Lake Oswego.

Is the high water table a problem? [No.]

Mike – I've been looking at parallel studies for future connections at Foothills Park. E4 from Roehr Park to Oak Grove Boulevard would have a lot of impacts on residents, as people would see the bridge from their front door. It would benefit downtown Oak Grove but has a steep grade to access Oak Grove beyond the landing. Courtney Road has a smaller grade. F4 is secluded on the west side, but ties into an existing trail. There would be significant impacts on both sides of the river, and there are strict zoning and covenant restrictions on the Lake Oswego side.

What is the best alignment option for bicycle commuters who would travel from Oak Grove to Lake Oswego en route to Kruse Way? [The Terwilliger Boulevard landings.]

How wide is the Oak Grove Boulevard right of way? [60 feet. The disadvantage of the Courtney Road landing is that it is narrow and heavily used by neighborhood traffic.]

Summary of Input from Public and Committees

Jeanne reviewed highlights from the July 22nd CAC meeting and outlined themes. The CAC ultimately identified **A3, D3 and E4** as their top three choices. They were not as enthusiastic about E4, but they liked the connection it provided to downtown Oak Grove businesses.

Kristen summarized the two public open houses, held August 5th and August 7th in Lake Oswego and Oak Grove respectively, as well as the online open house. The approximately 600 people who visited the online open house were self-selected and therefore the survey was not statistically valid. It confirmed, however, what the project team had been hearing from the beginning: there are those who would like a bridge regardless of the precise alignment option and those who do not want a bridge at all. The survey indicated there would be a significant user base. The public's top three choices were **A3, B3 and D3**.

The Technical Advisory Committee's top three choices were **A3, D3 and D2**.

Further PC Discussion

Parking is tighter on the east side than the west side. Housing is denser on the east side and the streets are narrower. On the west side, there is the potential to acquire parking around Foothills Park if needed.

Bicycle commuters are concerned with the high volume of auto/bike/ped traffic on Fairoaks Avenue. If Courtney Road is a landing point, then a traffic study should be conducted there. The right of way is narrow.

Scheduling the PC to tour the landing sites as a group is a good idea now that we have narrowed them down to three. [Steve will schedule that at the end of this meeting.]

All three alignments the CAC recommended can accommodate EMT access.

Regarding governance of the bridge, representatives of each of the four involved governments have been talking about the process. They will develop a legal agreement if the time comes.

Commissioner Savas noted that he has heard feedback regarding parking concerns on the east side. The project team should factor in whether parking would be available and how it would affect the neighborhood. He has heard more negative feedback from the public than positive but surmised that many of the complaints might fall away now that the alignment options have been narrowed.

Mayor Gamba recommended the team add the following question to the upcoming survey: "How often would you drive your car to the bridge in order to use it?"

Jackie Manz said that her constituents in Lake Oswego have focused on the homelessness issue and crime, and she recognized that parking issues can derail a project. She advised the team to be clear on messaging about the project goal so that people understand that this is a bike/ped bridge only.

The PC members agreed that A3 and D3 are their two top choices and they agreed to D2 as well, despite the fact that they believed Bluff Road is not an ideal landing. This decision paralleled the recommendation of the TAC. The CAC had recommended E4 instead of D2, but due to the residential impacts on Oak Grove Boulevard, the TAC and PC decided against E4.

Analysis of Transit on Bridge

Steve said there was a recent request from Metro staff for the project to analyze transit on the bridge. The team plans to look at alignment D3 and study how the inclusion of transit would affect the design and costs. Transit in this case would include a small bus but not light rail. Adding a single transit lane would double the width of the bridge and most likely the cost and would have a greater impact to the area due to its size. TriMet has said it is not interested in adding a bus route to the future bridge.

The group was surprised that Metro had made this request so late in the process and was concerned that the public would feel betrayed by this sudden change in scope. Steve said that they would study the transit element as requested by Metro, which is funding this project, but that the PC's final recommendations about the project would be key.

Next Steps

September 19, 6 - 8 p.m. – Community Advisory Committee meeting, Robinwood Station Community Center, 3706 Cedar Oak Drive, West Linn

September 27, 11 a.m.–1 p.m. – Policy Committee meeting, Clackamas County Development Services Building auditorium, 150 Beavercreek Rd, Oregon City

The displays/maps from this meeting will be posted to the website.

The next steps for this project, if the PC determines it is worth pursuing to the next stage, would be environmental scoping and the governance agreement.

Closing Public Comment

- I live near Oak Grove and moved there because my family and I love the area and love to bike on the Trolley Trail. An Oak Grove Boulevard landing is a good option.
- Have you visited the Courtney landing? It is a dangerous corner and has an existing drainage problem.
- Climate change demands that we consider this bridge. It closes a gap of trail connectivity. I like the option to split the ramps on the Lake Oswego side to serve both locations.
- The Oak Grove area is underserved with parks and Rivervilla is the best park area, so be sensitive to the impacts for the park. Explain what minimal impact means to the community.
- I recommend that the PC visit each landing site to make a meaningful vote.
- I don't like the rushed nature of the project. The environment around Tryon Creek is fragile with fish life. I don't think this will resonate in the community.
- Are all new bridges required to accommodate EMT vehicles? [No, this is not required for bicycle/pedestrian bridges.]
- There is a legal crossing at E Avenue for bikes. What would be the cost of a bridge or tunnel over or under Highway 43?
- Connectivity is the issue and the project needs infographics on bike/ped information, the height of the bridge, etc. The Mary's Woods connection is also a problem.

Policy Committee (PC) Meeting Summary

October 25, 2019, 11 a.m. – 1 p.m.
Clackamas County Development Services Building

Meeting Objective

To decide whether the project is feasible and whether it should move forward for further study.

Attendees

PC Members: Mark Gamba, Mayor of Milwaukie; Christine Lewis, Metro Councilor; Jackie Manz, Lake Oswego City Councilor; Paul Savas, Clackamas County Commissioner

Project Staff: Clackamas County: Steve Williams (project manager), Ellen Rogalin; Parametrix: Mike Pyszka; JLA Public Involvement: Jeanne Lawson (meeting facilitator), Tracie Heidt

Guests: Danielle Smart; Bradley Bond; Cole M.; Robert Rose; Tina Schohick; Ellen Smith; Liz Hartman; Julie Budeau, CAC; John LaMotte, Lake Oswsego City Councilor; Mike Budeau; Martha Banyas; Michael Hoeye; William Farley; Fred Sawyer; Johanna Lourisbury; Elain Heiman; Jeff Bailey; Kathleen Gordon; Jane Civiletti; Walter Robinson; Nita Chabala, CAC; Thelma Haggenmiller; Kelly Perlewitz; Scott Schraeter; Joe Buck, CAC; Asia Alvarez Zeller; Cindy Ellison; Lorea Alba; David Craig; Bob Sack; Scott MacWilliams; Ron Gronowski; Jeff Gudman, CAC; Heather Koch, North Clackamas Park & Recreation District; Gavin Mahaley; Matthew Wicks; Hans Tschersich; Kirk Mouser; Chris Ommert; Mike Perham, CAC; Steven Lohmann; Seth Davis; Margi Bradley, Metro; Micah Meskel; Caroline Fitchett; Evelyn Jerde; Lauren Fulwiler; Dorene Tschersich; Meryl Haber; Gordon Haber; Morgan Wyenn; Barrett Meeker; Rita and Michael Smith Kingen; Bruce Parker, CAC; Brock Inman; Mary Beth Coffey, CAC; Judith Rossner; Jeff Heiman; David Keifer; Michael Selvaggio; Christy Clark; SR Eymer, Chips Janger; Rachel Dawson; Jack and Sally Hardwick; Miriam Reed; Amy Gillcrist; Tad Reeves; James Jerde; Al Belais; Charles (Skip) Ormsby, CAC; Ann Hadley; Ted Labbe, CAC; Ray Thornhill; David Rowe; Wylie Dulmage; Michael Dewitz; Ed Riddle; Lura Lee; Anatta Blackmarr, CAC; Jean Clinton; Tom Civiletti, CAC; Jan Lindstrom; Sandi Gadow; Sarah Ellison; Bruce Ellison; William Waite; Tom Pauken; C. Stephen White; Lisa Adatto; Mary Ratcliff; Matt Tracy; Josephine Adamski; Andy Mercier; Helen Leek; Kathy Hyzy, Milwaukie City Councilor; Andrew Kershaw; Lisa Nowak

Welcome, Meeting Purpose and Agenda Review

Commissioner Savas, representing the hosting jurisdiction, welcomed the PC and audience.

Jeanne Lawson reviewed the meeting agenda. Steve Williams summarized the history of the feasibility study and said that today the project team would present the final alternative alignments and early cost estimates.

Public Involvement and Opinion Poll

Ellen Rogalin, Clackamas County Community Relations Specialist, reviewed the public involvement for the project, including an initial public input questionnaire, two in-person open houses, an online open house, a postcard mailing, three Community Advisory Committee meetings, three Policy Committee meetings and presentations at community meetings, as well as the project website, emails to interested parties and social media.

Jeanne summarized the results of the recent scientific opinion poll that was designed to capture what people saw as the benefits and drawbacks of a bridge. A total of 401 registered voters in Lake Oswego, Oak Grove and Milwaukie were contacted at random by phone, with equal representation from both sides of the river.

- 63% favored the idea of a bridge
  - 71% from Oak Grove/Milwaukie area
  - 55% from Lake Oswego
- 9% were unsure
- 28% were opposed

Analysis of Bridge Alternatives

Steve shared photographs of existing park bridges in Des Moines, Grants Pass, and the Darlene Hooley bike/ped bridge in Portland; draft plan and elevations of the Terwilliger to Courtney and Foothills to Courtney bridge alternatives; main-span deck section alternatives for the river piers; typical approach span sections with and without the transit element; and elevation comparisons with the Sellwood, Tillikum and St. John's bridges.

He explained how the 10 alignments that the project team had initially presented to the PC had been narrowed down to two landing sites in Oak Grove (Upper Courtney Avenue and Bluff Road) and two in Lake Oswego (Foothills Park and one that would land on Terwilliger Boulevard and Upper Tryon Cove Park).

The top public preference was the Foothills Park to Upper Courtney Avenue alignment, the second was Foothills Park to Bluff Road, and the third was Terwilliger Blvd to Upper Courtney Avenue.

Steve presented total cost estimates for the bridge types, including the options that included transit (see presentation slide). Prices ranged from $30.3 million to $63.8 million depending on the main-span structure and approach span types. He also compared the annual cost to maintain a bridge with concrete construction vs steel construction for the three alignment options over 75 years. The average annual maintenance cost would be $110,000 to $220,000, depending on the main-span structure and approach span types. He also outlined the National Environmental Policy Act (NEPA) requirements, which would be studied in a future phase to consider impacts on the human and natural environment.

Discussion

Councilor Lewis: I'm prepared to report to Metro that transit should not be included in the study.

The PC members unanimously agreed to not consider transit for the bridge.

Mayor Gamba: The aesthetics of the bridge are important.

Commissioner Savas read a statement from the Board of County Commissioners, which said that the BCC did not support a transit option; was not prepared to discuss further feasibility until the project team narrowed the alignment options to one instead of three; and asked for more public outreach.

Mike Pyszka: The next phase of the study, if it takes place, would be a federal process that would require that there be at least two bridge alternatives, in addition to a "no build" option.

Councilor Manz: The project team has not presented to my city council yet and I am not ready to make a decision.

The group discussed taking more time (perhaps 60-90 days) before making any decisions to extend the study and allow time for more outreach, especially with Lake Oswego.

Public Comment

Miriam Reed – There wasn't a single public hearing. This meeting today is at a time when working people cannot come. Studies show the key reason that people don't use transit more is that buses don't come frequently enough. Spend money to expand light rail instead.

Bob Rose – I am from Lake Oswego and I support the bridge and generally support a bike solution. I commuted by bike to the Sellwood Bridge for 10 years and it was dangerous. ODOT needs to do something about Highway 43.

Hans Tschersich – I am an 80-year-old active bicyclist and use the Trolley Trail often. I am in favor of the bridge.

Danielle Smartt – The transit option is not safe. The survey is flawed because participants didn't really have a chance to state their preference. I want to know more about the property taxes, wildlife, neighbor impacts and air quality.

Bruce Parker – I live in Canby and am on the County Ped/Bike Committee. There is a 9-mile break between crossings over the Willamette. Connectivity is important. The age statistics show that the younger you are, the more support you have for the bridge. This is a long-range study, and this bridge would serve generations to come, not my generation.

Fred Sawyer – Talk to the railroad so we can connect Stampher Road to E Avenue in Lake Oswego, cross the highway at E Avenue and close Stampher at Hwy 43. The Tryon-to-Terwilliger connections need to be better, too.

Bradley Bondy – It would be short-sighted and irresponsible to not study the possibility of transit. It is not costing the County any more to study transit. We are not committing to build it.

Nita Chabala – I live on the west side of Stampher. It is an interesting concept but imagine if your house looked onto the bridge to see homeless people and litter. Safety is important and Stampher is an unsafe road, not a destination, and dangerous to walk to. Spend the money to improve Stampher. There is nowhere to ride a bike on Hwy 43. There is already a lot of traffic in Lake Oswego. This is not a good idea at all.

Kelly Kelowitz – Lake Oswego is opposed to spending money without clear direction on what we are looking for and what people want. The access sites are not well thought out, especially on the west side. There is a lot of congestion on the west side. This should not be a bridge that benefits only a minority of people.

Ted Labbe – There has been good public process, and there should be more. There is big regional significance of this project. Transit is not opportune right now, so we should drop it. With this, off-street active transportation in Lake Oswego could take the Orange Line to get into town. We are in a climate crisis, so it's important to invest in trails. Move ahead with the study.

Helen Leek – I am from Lake Oswego and am opposed to this. There has been very little awareness about this project. I take issue with the Foothills Park landing site—putting a monstrosity in the middle of a beautiful park. The west side is more impacted than the east. Spend the money on bike paths on Hwy 43 instead. This is an unnecessary overreach by Metro.

Mike Muscal – I represent the Portland Audubon Society. We would like you to move forward. This can help reduce emissions, connect communities to nature, and build out the trails system. We would like to be part of the process and help reduce impacts going forward. The future is transit and active transportation.

Charles “Skip” Ormsby – Because the social engineering impacts are not yet known, I am against this. We should consider other river reaches between Portland and Newberg. Bikes on the Willamette shoreline are not good. Rehabilitate bike paths between Lewis and Clark College and Lake Oswego. ADA grades over 5% are bad.

Tina Schohick – I am from Oak Grove and am surprised at all the opposition. People in my neighborhood like the idea of using the bridge to walk to Lake Oswego to eat in restaurants and walk in parks. I strongly endorse continuing.

Ted Reeves – I am from Oak Grove and used to live in Lake Oswego. It is very hard to commute to the city from Lake Oswego. I support the bridge very much. It would be good for me personally and good for the community.

Mike Perham – I represent the Lake Oswego Sustainability Committee. This project would advance active transportation through an Oak Grove connection. I often go to Tigard because it is easy to get there. I would like to go to Oak Grove, but I rarely bother because it takes so long to get there. This is sustainable for the area and I am strongly in support.

David Keifer – I live on River Road, am a regular biker, runner and walker, and use the Trolley Trail a lot. I am strongly in favor of the project. How are the different designs earthquake-ready?

Jeff Bailey – I live on Courtney Avenue, two blocks from the Fairoaks landing. I don’t like that Courtney would have 1,500 more people a day riding down the middle of the street. The street is not improved. How much more money will be included for roadway improvements? What about the other side of Courtney? Consider Courtney improvements from the river to Fairoaks as part of the project.

Lisa Nowak – Even after people cross the bridge, they will have to go another 4-5 miles to the Park Avenue MAX Station. For those going to Portland, it doesn’t make sense to ride to Oak Grove first. We have bike paths and people admit they don’t use them the way they should because of crime, homeless and trash. Take some of this money and create a dedicated force to patrol the bike paths so the police don’t have to.

Judith Rossner – I work in the Lake Oswego Parks and Recreation Department. Foothills Park is often rented out for memorial services, parties, etc. The bridge will reduce the revenue we get from park rentals, which support our community events. Why rent the park if construction is an interference? Parking is a problem; there are only 17 parking spots plus two ADA spots.

Marybeth Coffey – This process has been hushed and rushed. Now we are down to three connections and the Oswego Pointe Village residents don’t like it. People come to use Foothills Park and park wherever they want. This is not NIMBY; it’s safety.

Brock Inman – I am from Oak Grove and oppose this because of the daily impacts it would have. This is counter to Metro’s bond measures to protect water quality. The information-gathering process was flawed and didn’t give people a choice. Metro wants to balance buses, light rail and traffic gridlock, but didn’t mention a bike/ped bridge. I am burdened by Lake Oswego dock boat traffic every summer.

Sarah Ellison – I live in Lake Oswego and want to see the bridge move forward. It's a crucial link with the regional trails system. Our whole family will use it regularly. It's a real opportunity for active transportation. There are not a lot of good trails going out of Lake Oswego. It would be great to see a bridge that can handle emergency vehicles in case of a natural disaster.

Wylie – A bridge must be built, not just for bikes and peds, but for people who want a walkable Portland, less congestion and better air quality. It will give stakeholders better lives. It is hard to bike through Riverview Cemetery, and very hard to ride down Highway 43.

Matt – I live in Oak Grove. Shouldn't this study be more comprehensive? I like the ped bridge idea but fear the lack of information. Having more information would combat the fear factor. Do the second phase of the study so we have more information to make a better decision.

Lisa Adatto – I'm from the Lake Oswego Sustainability Network and have a petition with signatures from 600 plus people in favor of the bridge. I love biking and have spent hundreds of hours on the Trolley Trail, but unfortunately have to drive across the river from Lake Oswego and put my bike on the car. When you bike a lot, you get excited about hills. When will the bridge be a priority? It's time to invest in biking in Lake Oswego.

Tom Pauken – I live on the corner of Fairoaks and Courtney. I would see the bridge from my driveway, 30 feet from the front door, over my head between my house and my neighbor's house. On the face of it, it is a good idea, but if Lake Oswego bicyclists want to bike out of Lake Oswego, they can spend money on a trail system on the west side.

Ben Mckinnle – I am a Street Trust board member. I bike into work two or three days a week and have been hit by cars three times on State Street. My sister lives in Milwaukie and having the connectivity of a bridge would be great. This is a good opportunity for elected officials to make a difference and solve long-term traffic problems later. It would also create a disaster pathway in case of earthquake.

Will Farley – I live off Oak Grove Boulevard. With a bridge, my bike commute time would go from 53 to 24 minutes and my commute distance from 10 to 2.4 miles. I like the connectivity for communities on either side of the river. The project team has done a good job creating multiple options and narrowing them to a few options to study. More details will come out in future. Let's move forward, and look at the pros and cons. Maybe we won't include transit at this time but can add a bus line in future.

Morgan Wyenn – I live in Oak Grove and we love going biking as a family.

Barrett Wyenn – Bike sales in the area are up 65% and electric bikes are growing 73% year after year. Biking is becoming more viable and bikes are better than cars and better for the environment. Let's look to the future.

[Note: 19 completed comment cards and seven written statements were also submitted.]

Discussion and Recommendations

Commissioner Manz: Lake Oswego hasn't received enough information about the project yet. I like the idea of a bridge but cannot speak on behalf of the council. I'm concerned about the rushed timeline and don't like that the scope suddenly shifted to consider transit.

Mayor Gamba: Our task is simply to decide whether the project is feasible and whether we should move forward with the Environmental Review and Permitting phase, which would answer a lot of questions. The project is clearly feasible and all of the public's concerns will be tended to

and studied during the next phase. The bridge would significantly increase the walking and biking radius for Lake Oswego residents. Future discussions about the project need to be informed by factual data; otherwise, discussions are based on dreams or fears.

Commissioner Savas: A 60-90 day extension period would be wise so Lake Oswego can have time to consider the project and there can be more public outreach. The plan is a lot more expensive than it was in the Transportation System Plan. I understand that moving forward with just one alternative is not an option, so I withdraw that request. I never thought Courtney Avenue would be one of the landing sites. The bridge should be beneficial to the local communities it serves. The bridge would be for pedestrians as well as bicyclists. A ferry could also be a feasible alternative; perhaps it could be included in the study.

Councilor Lewis: There aren't adequate east/west connections in Clackamas County. I would like to study all options for a bridge to meet people's needs. The Metro funds being used for the study are available exclusively for planning and cannot be used for fixing roads. My priority is to build a bridge, but there needs to be more communication.

Mayor Gamba: Examining a ferry alternative, which is not feasible or part of the scope, would muddy the conversation.

Mike Pyszka: The next phase, including the environmental (NEPA) process, would determine the purpose and need. It would involve Clackamas County, Metro and Lake Oswego, and study all reasonable and prudent alternatives. If the intent is to pause to answer questions, the reality is that the answers to those questions will not be known until after the environmental study process is complete.

Outcomes

The committee members unanimously agreed on the following next steps:

- No longer consider a transit option for the bridge;
- Continue the project for the next 90 days, with additional public outreach to partner jurisdictions, especially Lake Oswego, and a public meeting in early-mid January;
- Hold another Policy Committee meeting no later than Jan. 25, 2020, to report back to the Policy Committee and to give the Policy Committee another opportunity to determine whether to move the project forward into the second phase of the analysis. (It is understood that this second phase would again be funded by Metro and would take 12-18 months.); and
- Send information about the study to Metro by Thursday, Oct. 31, so the project can remain in possible consideration for Metro's T2020 transportation investment measure, tentatively planned for November 2020. (It is understood that if a decision is made for the project not to move forward, it would be withdrawn from the Metro process.)

Next Steps

Steve said he is scheduled to provide a status report and next steps at the November 5 Lake Oswego City Council meeting.

Adjourn

Commissioner Savas thanked everyone for attending and adjourned the meeting at 2 p.m.

Oak Grove – Lake Oswego Pedestrian & Bicycle Bridge Feasibility Study

Policy Committee Charter

The following is the charter for the Policy Committee that will be formed for the Oak Grove – Lake Oswego Pedestrian Bicycle Bridge Feasibility Study. This charter defines the organizational structure and decision making process for the project, the membership and responsibilities for the committee, as well as the expectations for committee participation and attendance, communications and meeting protocols.

Project Purposes:

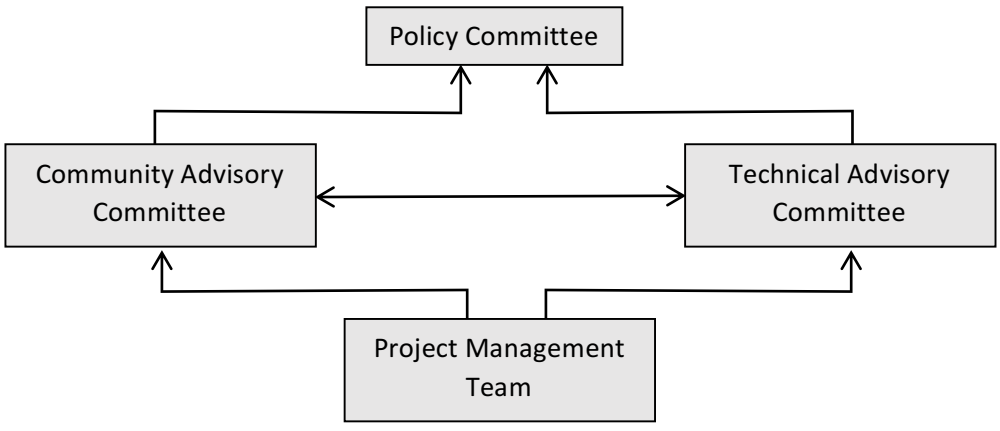
The purpose of this project is to analyze the feasibility of a pedestrian and bicycle bridge over the Willamette River between Oak Grove and Lake Oswego by studying three issues: 1) The engineering and environmental feasibility of developing the bridge and providing connections to the existing and planned pedestrian-bicycle network; 2) The level of support for the bridge in the project area; 3) The manner in which the city, county and regional governments could work together to build and maintain a bridge.

Project Organizational Structure and Decision Making:

There will be four committees organized for this project that will be responsible for receiving community input, evaluating technical information and making recommendations:

Policy Committee (PC):
The Policy Committee will be the decision making body for this feasibility study and will make recommendations to the partner governments at key decision points in the study.
Community Advisory Committee (CAC):
The Community Advisory Committee will be made up of study area residents and business owners, as well as representatives of community groups with an interest in the proposed bridge project. The CAC will make recommendations to the PC and the TAC on key decisions in the feasibility study identified above.
Technical Advisory Committee (TAC):
The Technical Advisory Committee will be made up of staff members from the four partner governments with expertise in planning, bike/pedestrian transportation, engineering, community engagement and parks. The TAC will make recommendations to the PC and CAC on key decisions in the feasibility study.
Project Management Team (PMT): The Project Management Team will be made up of members of Clackamas County staff and the consultant Project Manager. The PMT will be responsible for the management of the project.

The diagram below depicts the decision making structure for the project:



Policy Committee Membership and Responsibilities

Policy Committee Membership:

The Policy Committee membership will be as follows:

- Clackamas County – One County Commissioner appointed by the Board of County Commissioners
- City of Lake Oswego – One City Councilor appointed by the City Council
- City of Milwaukie – One City Councilor appointed by the City Council
- Metro – One member of the Metro Council, appointed by Metro Council

Term of Membership:

Members of the PC shall serve until the completion of the feasibility study, which is expected to require about nine months. If the bridge project is determined to be feasible by the partner governments, and if sufficient funding is available, the bridge project may move into subsequent phases for engineering design and environmental analysis. The committee structure will be evaluated at the end of the feasibility study and a determination made regarding the committee structure that is needed for the succeeding phases. Each of the four partner agency decision-making bodies will be responsible for determining their representation for subsequent phases.

Policy Committee Responsibilities:

The Policy Committee will be the decision making body for this feasibility study and will make recommendations to the partner governments on key decisions in the study, including

- Bridge Alternatives including bridge concepts, alignments, landing points, and plans for connection to the pedestrian and bicycle network;
- Bridge Conceptual Costs
- Preliminary environmental screening
- Organizational plan for the development and maintenance of the bridge
- Bridge feasibility

Policy Committee Operation Agreements:

Meeting Attendance

- All members will attend each of the Policy Committee meetings, arrive promptly, and stay for the duration of the meeting.
- Alternates or proxies will not be accepted.
- If a member of the Policy Committee must end their service, the government that member represented will be asked to appoint a replacement representative prior to the next Policy Committee meeting and will ensure that member has been fully briefed on the deliberations to date.

Meeting Schedule:

- This project will move quickly and will require close coordination between the four committees and the consultant team. To enable the project to move forward quickly and achieve close coordination, a meeting schedule for all committees, including the PC will be established at the beginning of the project and strictly followed.

Meeting Protocol

- A quorum shall consist of a majority of voting members
- Meeting agendas will be distributed in advance and include the amount of time scheduled for

each meeting topic.

- Meeting summaries will be prepared and distributed after the meeting for review.
- The meetings will begin with an opportunity for members to raise questions or comments about the summary of the last meeting.
- Discussions will be facilitated by a neutral professional.
- The facilitator will start and end meetings on time unless the group agrees to extend the meeting time.
- The facilitator will maintain on ongoing list of off-agenda topics to be addressed as time permits.
- All PC meetings shall be conducted in accordance with Oregon Public Meetings Law and are open to the public. Community members will be invited to provide comments to the PC as time allows as noted on the agenda. Written comments are always welcome by emailing Project Manager Steve Williams and will be shared with PC members. The facilitator may allow public comments or questions at other times during the meeting if time permits.

<u>PC Actions</u>

- PC actions will ideally be made by consensus. Consensus means no one will choose to block or prohibit the implementation of a decision.
- If consensus on a proposed decision cannot initially be achieved, the committee will explore modifications and alternatives that address the outstanding issues until consensus can be reached.
- If consensus is not reached, the PC will determine if a majority decision can be reached on a milestone and, if so, whether the action is viable without the dissenting member. If not, or in the event of a tie vote, the proposed action will be deemed to have failed for that meeting and the PC may choose to continue to seek solutions outside of the group meetings as follows:
    - The facilitator and/or project manager will hold separate meetings with each of the PC members along with their key staff to discuss the outstanding issues and potential solutions. If it appears a consensus solution is possible, the group will be reconvened in a brief meeting (such as a web meeting) to take action.
    - If it is clear, that no consensus is possible on a decision that requires consensus, three of the four partner agency representatives must agree in order for a decision to be forwarded as a recommendation of the committee, and the committee will elevate the decision by forwarding the recommendation to each of the partner agencies' decision-making bodies, and all positions will be reported and reflected fairly.
- Discussions will be described in a meeting summary and will be shared with other committees and decision makers.

VOLUNTEER OPPORTUNITY

County seeks residents who live near the Willamette River in the Oak Lodge area to serve on Community Advisory Commitee

If you are interested in volunteering on the Community Advisory Committee and can attend three evening meetings during 2019, please contact Project Manager Steve Williams at swilliams@clackamas.us or 503-742-4696.

CLACKAMAS COUNTY

150 BeavercreekRoad | Oregon City, OR 97045
www.clackamas.us/transportation/OGLO

Oak Grove – Lake Oswego Pedestrian / Bicycle Bridge Feasibility Study

Clackamas County is leading a study to determine if it might be feasible to build a pedestrian/bicycle bridge across the Willamette River between Oak Grove and Lake Oswego.

- This would be a new bridge that would not serve cars, trucks or transit.
- The existing railroad bridge is not an option for this purpose.
- The study will include public outreach, including a Community Advisory Committee (CAC) of area residents and others to advise the project team, and review and comment on the study results.

The CAC is scheduled to meet three times between April and October 2019 in the Oak Grove / Lake Oswego area. We believe it is very important that the CAC includes people who live and/or own property near the river in the project area, which is why you are receiving this special notice.

Get involved! If you are interested in volunteering for the Community Advisory Committee and would have the time to attend three evening meetings during 2019, please indicate your interest using our online survey at **www.clackamas.us/transportation/OGLO**. For questions contact Project Manager Steve Williams at swilliams@clackamas.us or 503-742-4696.

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Oak Grove — Lake Oswego Pedestrian / Bicycle Bridge Feasibility Study

Volunteer opportunity: County seeks residents who live near the Willamette River in the Oak Lodge area to serve on Community Advisory Committee

Oak Grove – Lake Oswego (OGLO) Pedestrian/Bicycle Bridge Feasibility Study

July 24, 2019

Purpose

The purpose of this study is to determine the feasibility of a new pedestrian/bicycle bridge across the Willamette River between Oak Grove and Lake Oswego. Comments received during previous planning indicated great demand for a bridge at this location. However, questions remain regarding the feasibility of the project:

- Are "landing locations" for the bridge available on publicly-owned property on both sides of the river?
- Is it possible to connect to other pedestrian/bicycle trails without interfering with existing uses?
- How much would it cost to construct such a bridge and who would pay for it?
- What steps must be taken to build a bridge at this location?
- If a bridge is built, who would own and maintain it?

Existing Railroad Bridge is Not an Option

- A 2009 Metro study determined that the railroad bridge owners would not agree to addition of pedestrian /bicycle facilities.
- Access to the railroad bridge for pedestrians and bicyclists would be very difficult.

Upcoming Study Activities

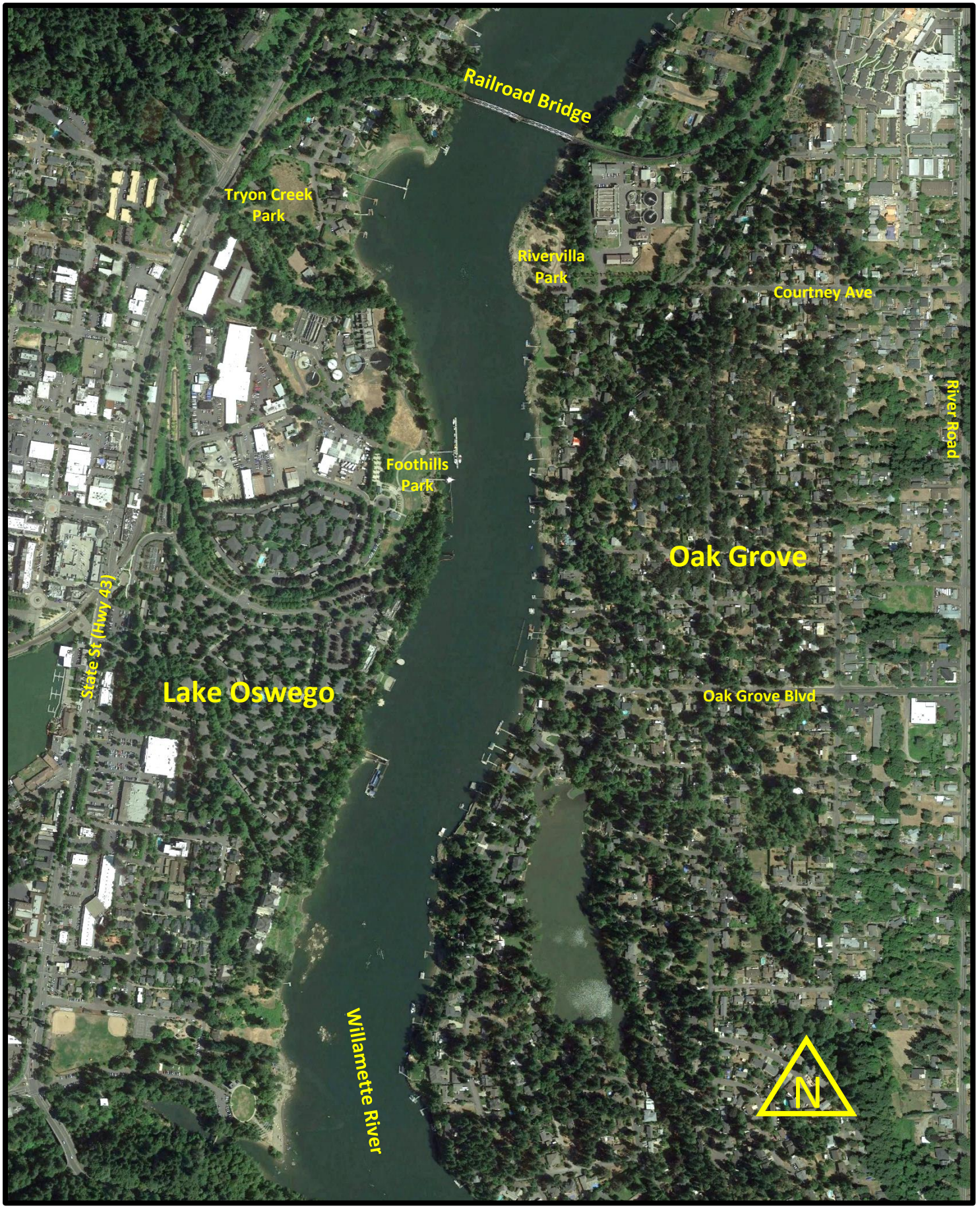
The study is funded by the *Metro Active Transportation Development Fund*. The study area is shown in the map on the back. Upcoming study tasks include the following:

- **Consideration of Possible Bridge Alignments** – 10 potential bridge alignments across the Willamette River have been identified. During August members of the public and project committees are being asked to consider the alternatives and express their views on those options. The process during August will reduce the number of alignments being considered from 10 to three final alternatives.
- **Public Involvement** – Public input opportunities on the possible bridge alignments include:
  July 29 to August 9 – Online open house (https://www.clackamas.us/transportation/oglo)
  Monday, August 5, 6-8 p.m. – Lake Oswego Maintenance Center, 17601 Pilkington Road, Lake Oswego
  Wednesday, August 7, 7-9 p.m. – Performing Arts Center at Rose Villa, 13505 SE River Rd, Oak Grove
- **Planning Cost Estimate and Funding Plan** – A planning level cost estimate is being developed for bridge and construction and long-term costs to maintain the bridge, and a funding plan will be prepared.
- **Environmental Scoping** – Though this study does not include environmental assessment or data collection in this phase, environmental scoping meetings are being held with agency representatives to identify environmental issues and permitting requirements that would need to be addressed.
- **Equity Analysis** – An equity analysis is being prepared to ensure that no group is disproportionately affected.
- **Intergovernmental Coordination** – Clackamas County anticipates that if this bridge project does move forward, it would be advanced by a group of local and regional government partners. This task will find the most appropriate group of partners that is open to participation.

The study is expected to be concluded by the end of 2019. If the study finds that the bridge is feasible and a group of government agency partners agrees to move forward with the project, the next steps would be design, environmental studies and permitting, along with additional public outreach.

For more information: Contact Project Manager Stephen Williams at swilliams@clackamas.us or 503-742-4696.

OGLO Bridge Study Area



Oak Grove – Lake Oswego (OGLO) Pedestrian/Bicycle Bridge Feasibility Study

October 8, 2019

Study Purpose and Process

The purpose of the study is to determine the feasibility of a new pedestrian/bicycle bridge across the Willamette River between Oak Grove and Lake Oswego. Key steps in the study process include:

- Criteria for bridge locations selected by community advisory committee
- 10 possible alignments identified for consideration
- Public input to select final three bridge alternatives
- Approval of final three alternatives by Policy Committee
- Development of concepts and cost estimates for final three bridge alternatives

Final Alternatives

- **Foothills Park to Courtney Ave:** Estimated cost - $30.3 million (plan on back of page)
- **Terwilliger Blvd to Courtney Ave:** Estimated cost - $44.5 million (plan on back of page)
- **Foothills Park to Bluff Rd:** Estimated cost - $30.3 million
- **Foothills Park to Courtney Ave including transit** (consideration of a pedestrian/bike/transit alternative was requested by Metro): Estimated cost - $54.2 million

Scientific Survey

A scientific survey of 400 randomly selected individuals evenly split between the east and west sides of the Willamette River was conducted in September 2019. Survey respondents were asked 10 questions on their support or opposition to the proposed bridge, support or opposition to transit on the bridge. The graph below shows support/opposition to the bridge with/without transit.

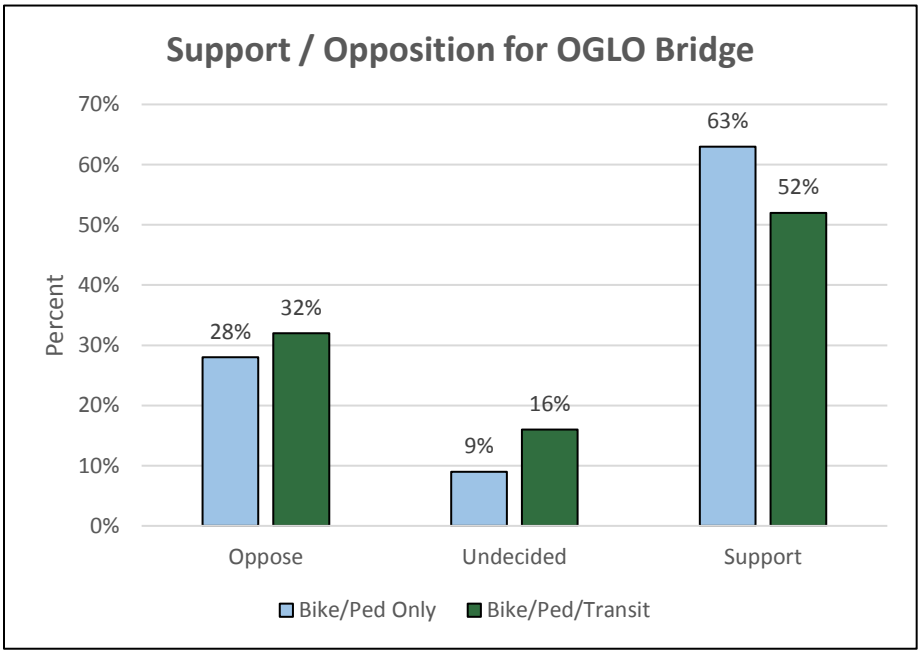
Respondents were also asked about their view of benefits and concerns.

Benefits:

- Connectivity across river (15%)
- Encourages bike/pedestrian mobility (8%)
- Encourages exercise (6%)
- Saves travel time (4%)

Concerns:

- Cost (19%)
- Traffic/parking (17%)
- Security/safety (12%)
- Environmental impacts (4%)



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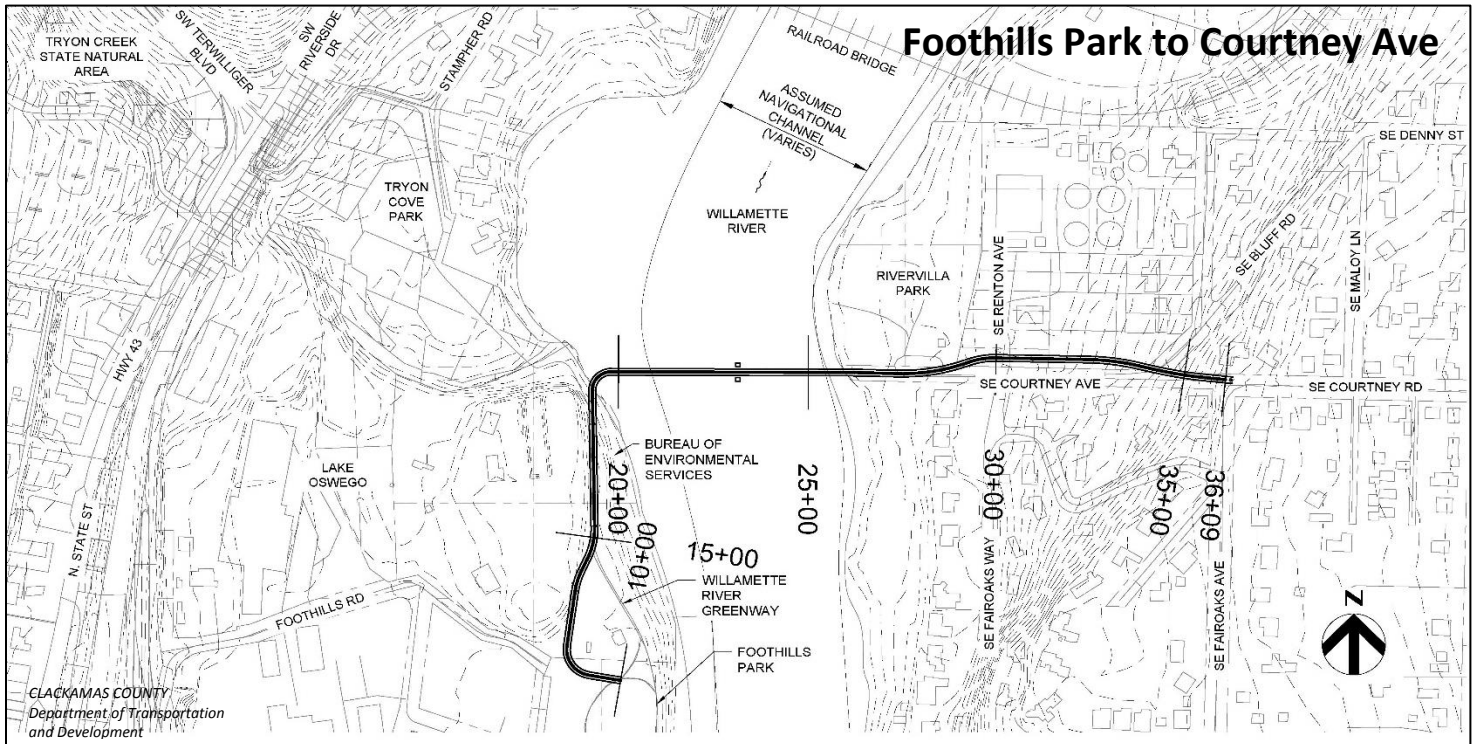
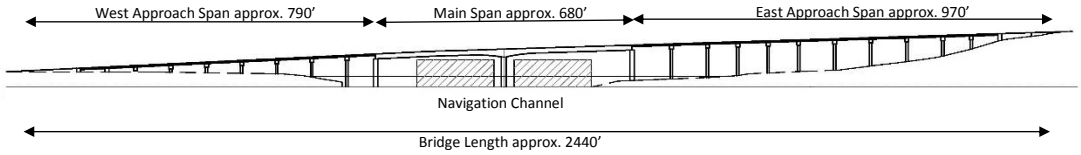
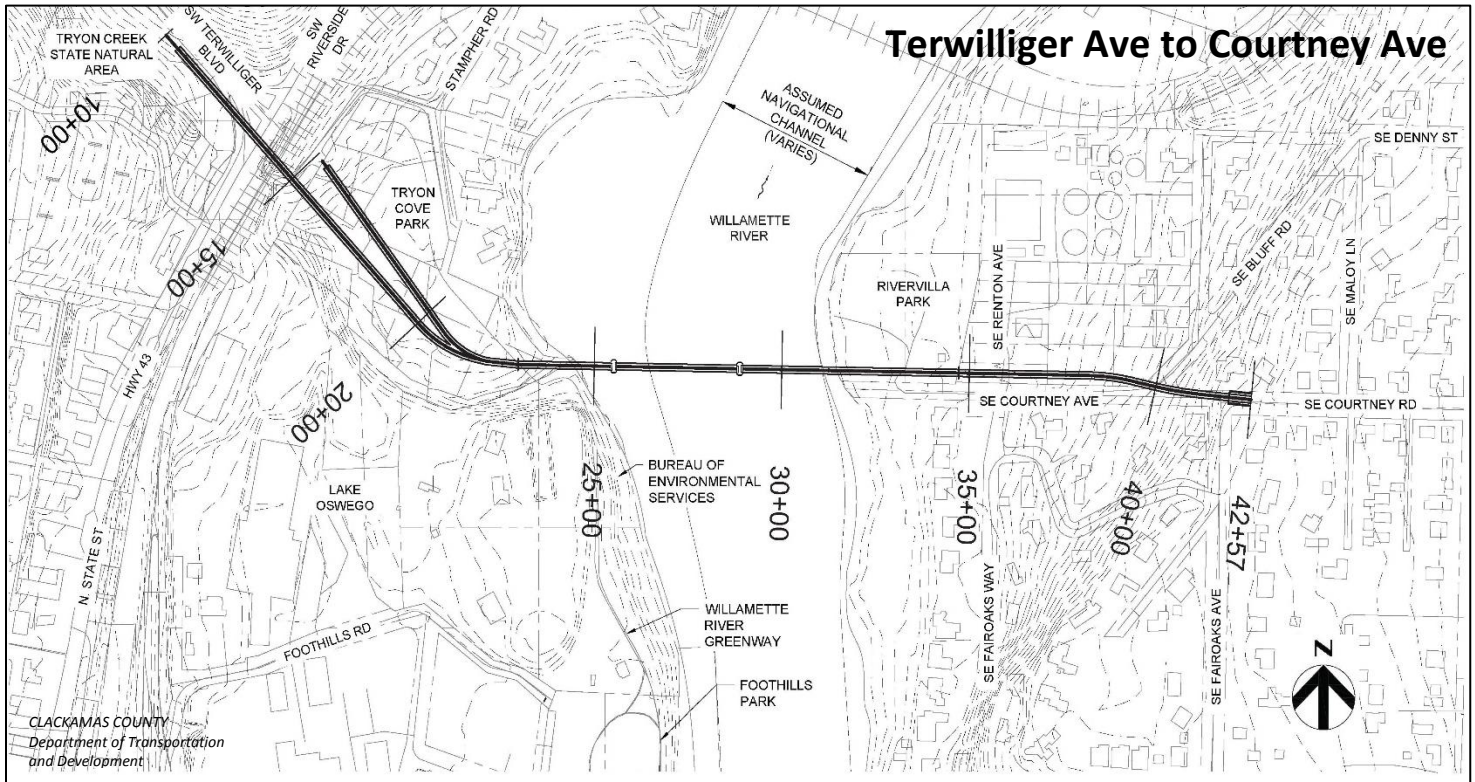
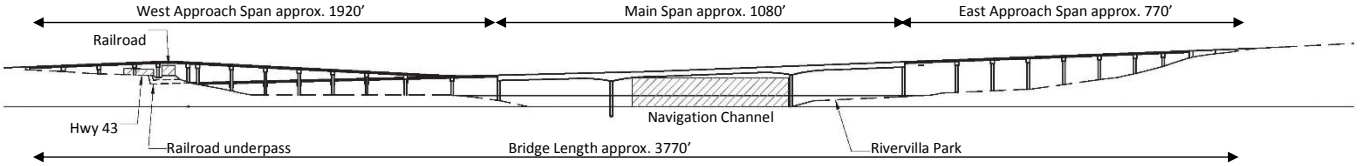
Foothills Park to Courtney Ave





Terwilliger Ave to Courtney Ave





RILEY RESEARCH ASSOCIATES
Research for Marketing, Public Relations, and Planning

CLACKAMAS COUNTY

OAK GROVE – LAKE OSWEGO PEDESTRIAN-BIKE BRIDGE SURVEY

SUMMARY REPORT

SEPTEMBER 30, 2019

Michael J Riley, APR, PRC
Riley Research Associates

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EXECUTIVE OVERVIEW

Some 400 residents in Milwaukie, Oak Grove, and Lake Oswego areas were surveyed for their opinions regarding a proposed pedestrian-bike bridge between Oak Grove and Lake Oswego.

- Area residents on both sides of the river strongly supported having Clackamas County continue to explore the possibility of the pedestrian-bike bridge with 63% in favor of the idea, 9% unsure, and 28% opposed.

- The highest level support was among voters on the east side of the Willamette River, with 71% in support, compared to 55% support on the west side.

- Reasons for supporting the bridge most often included the connectivity the bridge would bring (15%) and transit connections specifically (6%), as well as encouraging low-impact transportation (8%), and opportunities for exercise (6%).

- Concerns included cost (19%) and tax implications (13%), followed by traffic/parking/noise (17%), and security/safety issues (12%). Security was cited by 18% of Lake Oswego residents, but only 7% of east-siders.

- More than half of the people surveyed (52%) said they were more likely to support the proposal, knowing it will be paid for by grants, or regional and state dollars.

- A majority of respondents said they would use the bridge at least once (53%), although the vast majority of seniors (those age 65+) said they would never use the bridge (72%). Most residents would likely walk, bike or take transit to access the bridge (70%), but 50% also said they may drive to one side or the other.

INTRODUCTION

Riley Research Associates (RRA) was asked to conduct a scientific poll to determine perceptions about the exploration of a proposed pedestrian and bicycle bridge over the Willamette River between Lake Oswego and Oak Grove.

Riley Research surveyed a representative sample of registered voters in the cities of Lake Oswego, Milwaukie, and the precincts that make up the area known as Oak Grove on the east side of the Willamette River.

METHODOLOGY

RRA conducted a scientific telephone survey among 400 voters proportional to the voting population in the three areas surveyed. The purpose of using a voter sample was to ensure that participants were from the specific geographic areas of interest. A sample of 400 produces information considered accurate to within a margin of error of +/-5%, at a 95% level of confidence.

The questionnaire (in the appendix) included eight questions about the issues, as well as demographics. The sample was monitored to ensure that it was proportionally representative of the geographic areas of Oak Grove, Lake Oswego, and Milwaukie, Oregon.

The study sample is representative of registered voters in terms of gender, although has slightly more seniors, and slightly fewer non-affiliated voters, in terms of political parties. The demographics section is at the end of this report and details the voter list versus sample proportions.

The following is a question-by-question summary of the findings, with in-depth analysis by demographics and attention called to those questions where significant differences exist.

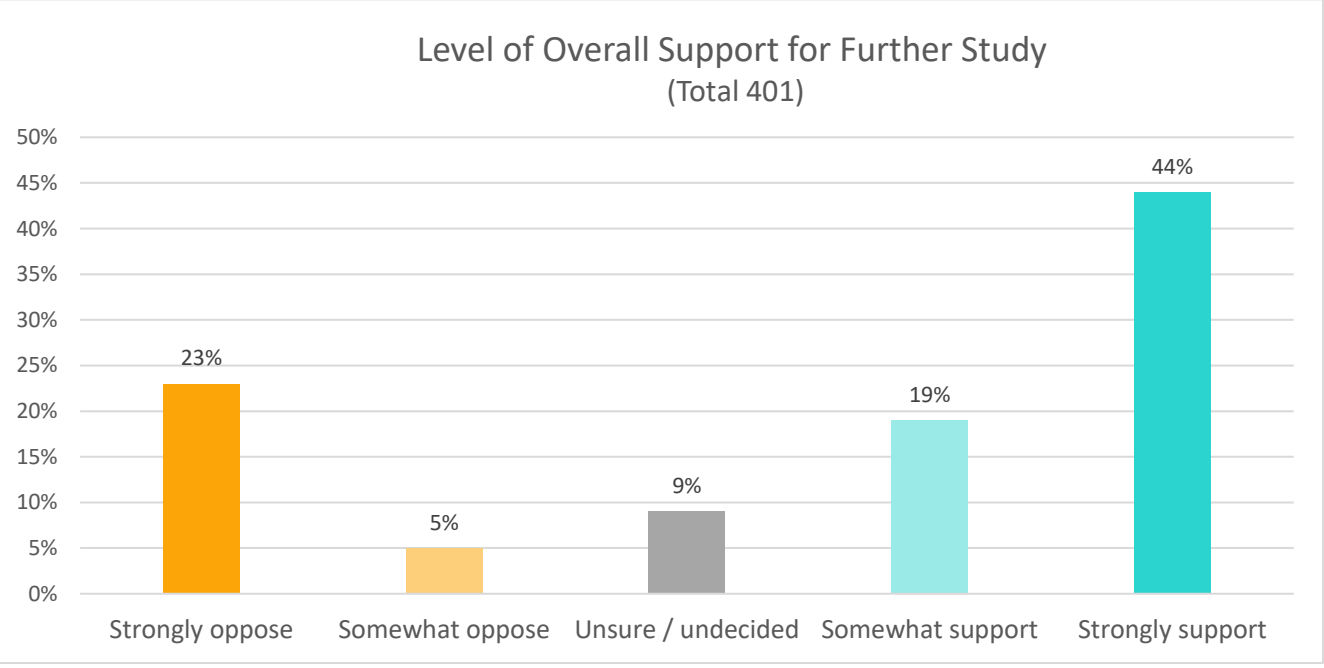
RESULTS

(This statement was read to respondents) To give you a bit of background, the Clackamas County Transportation Department would like to determine whether or not there is enough interest among local residents to continue to explore the possibility of the pedestrian and bicycle bridge. The current feasibility study is being funded by Metro. The cities of Lake Oswego and Milwaukie, as well as the North Clackamas Parks & Recreation District, are partners in this project.

The idea for this new project was raised in part because there is currently no way for the public to cross the Willamette River for a nine-mile stretch between the Oregon City Bridge and the Sellwood Bridge. The bridge would accommodate pedestrians and bicycles, would be accessible for those with disabilities, and would allow access for emergency vehicles. It would connect to current and planned bicycle and pedestrian paths on both sides of the river.

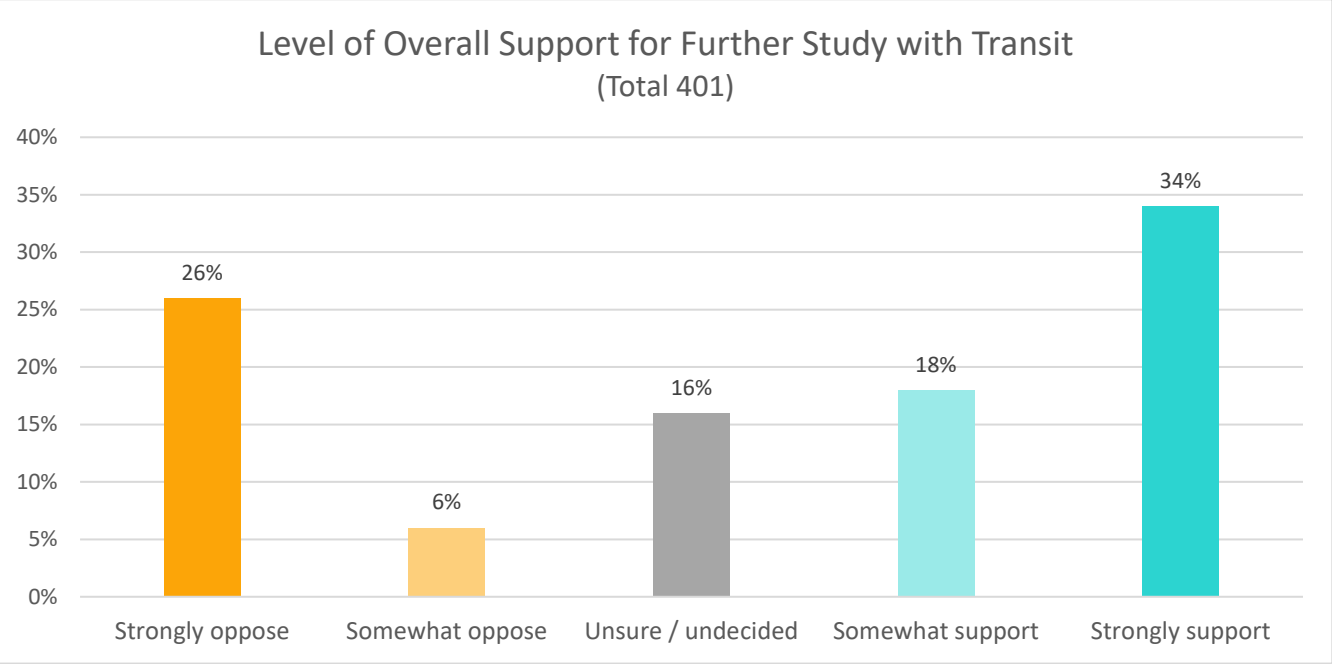
Q1. If the project were to move forward, the county would seek funding – NOT from property taxes – but from sources that could include grants, or funds from local cities, Metro, and the State. Based on this description, would you support or oppose having Clackamas County continue to explore this idea? (Probe) Strongly or somewhat?

Residents on both sides of the river strongly support having Clackamas County continue to explore the viability of the pedestrian-bike bridge with a total of 63% in favor of the idea and 9% unsure. A total of 28% oppose the idea. The highest support was on the east side of the Willamette River, with 71% support compared to 55% support on the west side.



Q2. Would you support or oppose the county continuing to explore this idea if the bridge was built to <u>also</u> allow small transit vehicles on the bridge to transport people from the Park Avenue light rail station to the Lake Oswego Transit station?

The proposal to add small transit vehicles to the proposal dropped support from 63% to 52%. Those unsure increased from 9% to 16% and those opposed increased from 28% to 32%. Support among west-siders decreased from 55% to 46%.



Q3. What thoughts, benefits, or possible concerns does the idea of this bridge raise? (Coded verbatim responses – Multiple responses allowed)

Comments were 55% negative, 33% positive, and 26% neutral, with the largest single issue being the cost (19%) and tax implications (13%), followed by traffic/parking/noise (17%), and security/safety issues (12%). Security was cited by 18% of those on the west side, but only 7% of east-siders.

Among the positive responses, the top mention was connectivity (15%) and transit connections (6%), plus encouraging low-impact transportation (8%), and encouraging exercise (6%).

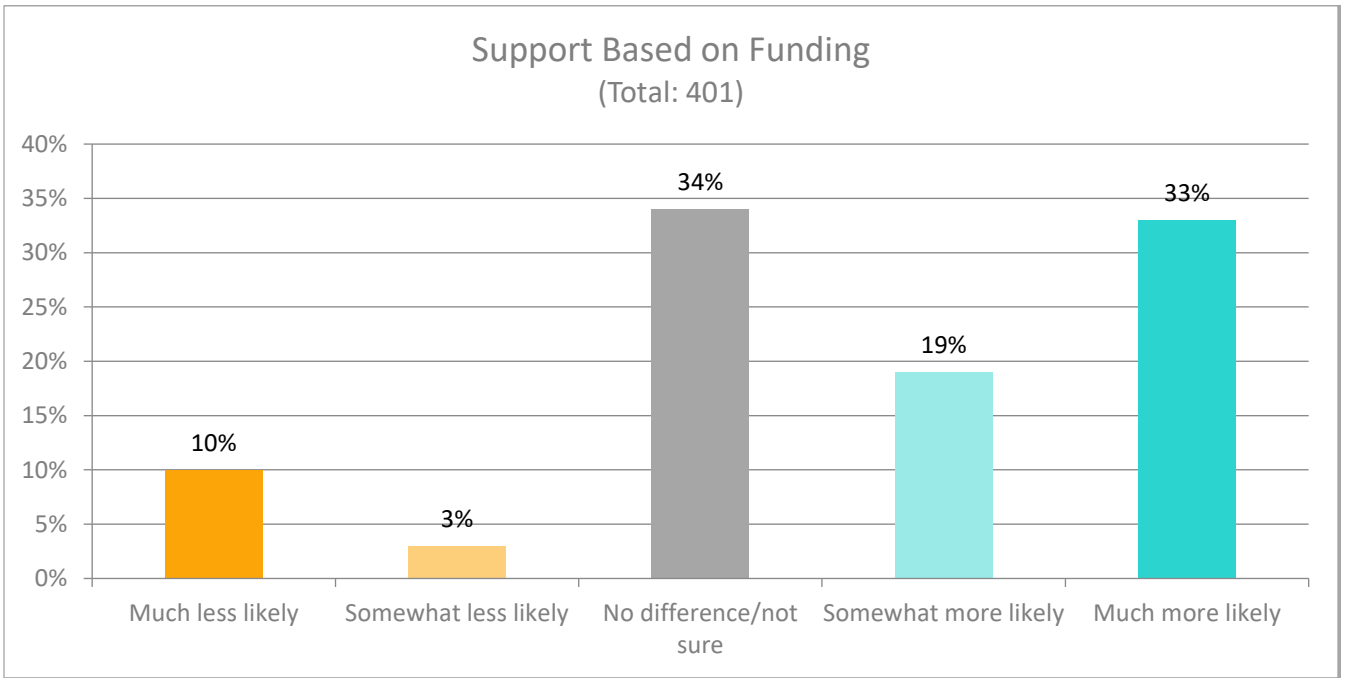
	Total
Negative Comments	**55%**
Cost / other priorities / not needed	19%
Traffic / parking / noise	17%
Cost tax implications	13%
Security / safety / vandalism / crime / homeless	12%
Environmental costs / burdens	4%
Impact to property owners / existing housing	3%
Appearance / negative aesthetics	1%
Miscellaneous negative	7%

	Total
Positive Comments	**33%**
Need the connectivity	15%
Encourages low impact ped-bike transport	8%
Opportunity for transit connection	6%
Encourages exercise	6%
Saves travel time	4%
River access	3%
Environmental benefit	2%

	Total
Neutral Comments	**26%**
No thoughts or concerns	17%
Need more information	3%
Neutral - access	3%
Connection to other trails	1%
Other neutral	3%

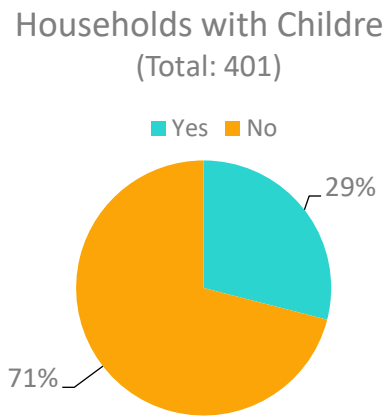
Q4. Are you more or less likely to support this idea, knowing that it will be paid for by grants, or regional and state dollars? (Probe) Much more so, or somewhat?

More than half of the people surveyed (52%) said this information made them more likely to support the bridge proposal.



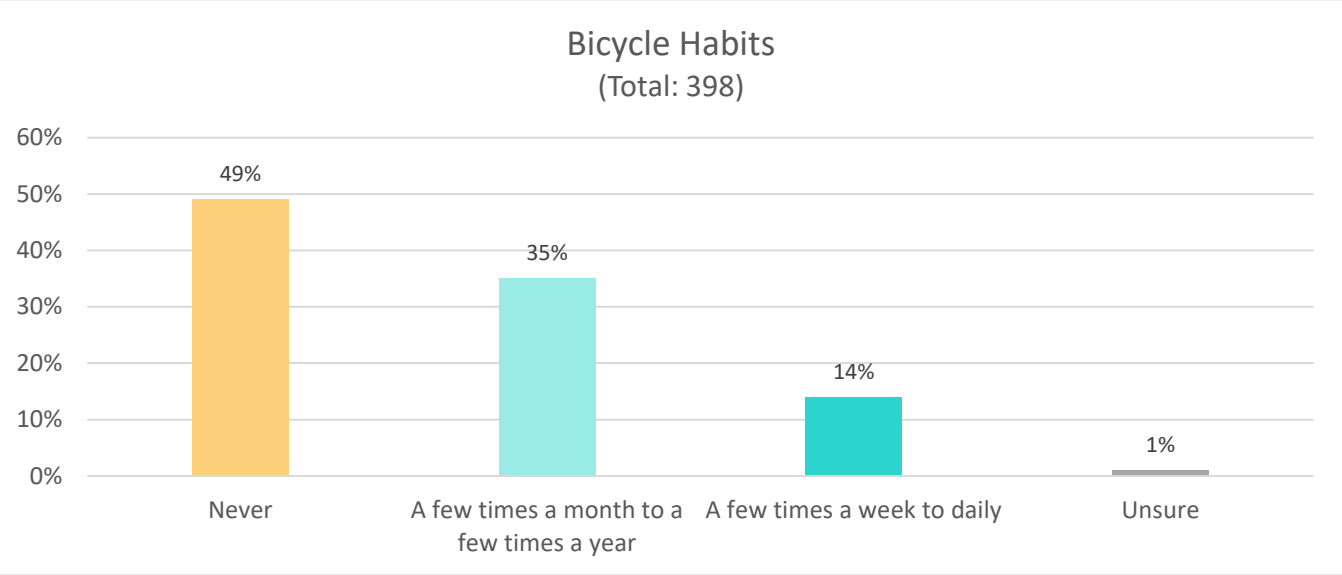
Q5. Do you have children age 18 or younger living in your household?

Three in 10 households have children



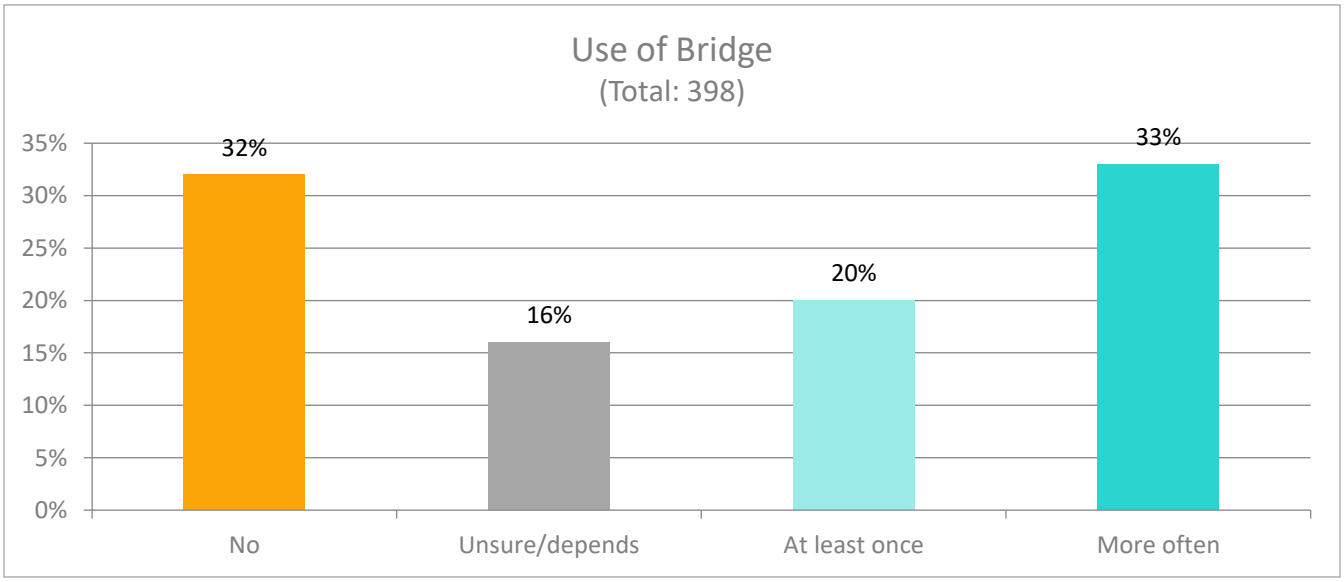
Q6. How often do you ride a bicycle for recreation and/or transportation purposes?

About half of respondents ride a bicycle at least once in a while (49%), while half never do (49%).



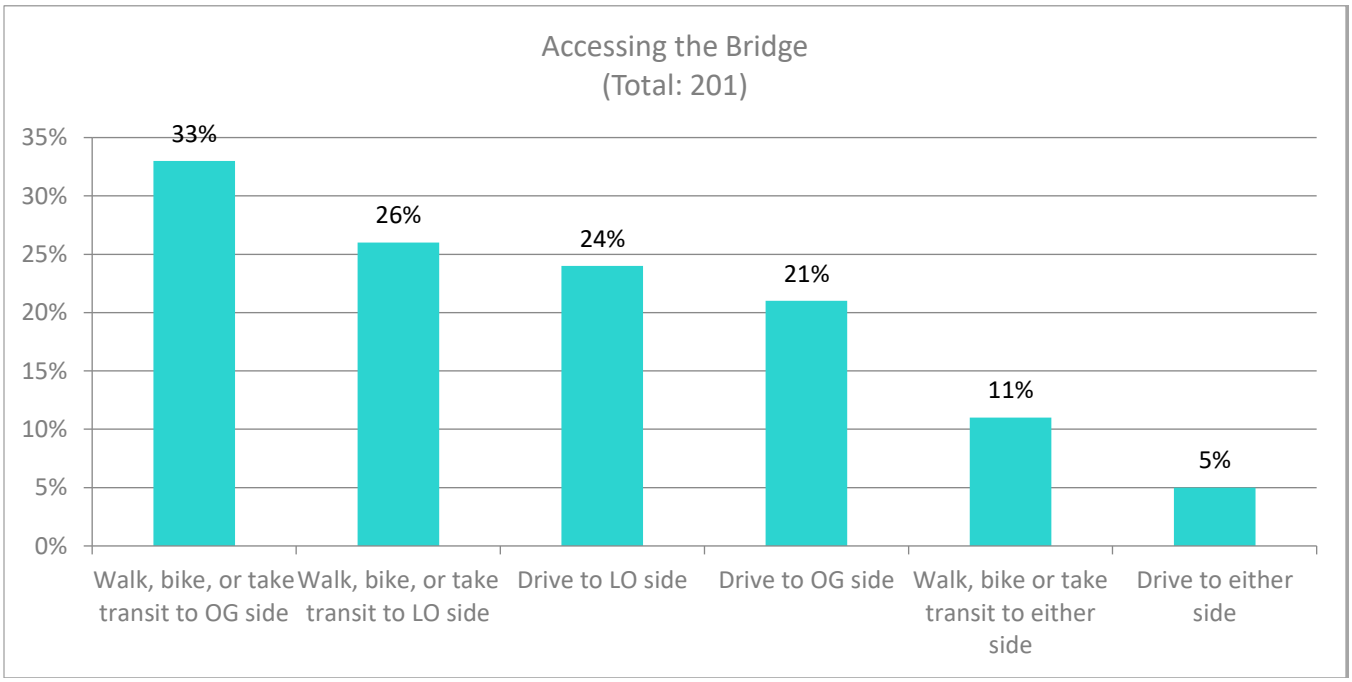
Q7. And if built, do you think you or your family members might use this bridge?

A majority of respondents would use the bridge at least once (53%), but the vast majority of those age 65+ would never use the bridge (72%).



Q8. (Of those who would use the bridge at least once) How would you or your family members most likely access the bridge? (Multiple responses allowed)

Most residents would likely walk, bike or take transit to access the bridge (70%), but 50% also said they may drive to one side or the other.



Demographics

Sample Analysis

RRA conducted this scientific telephone survey among 400 voters proportional to the voting population in the three areas surveyed. The purpose of using a voter sample was to ensure that participants were from the specific geographic areas of interest. A sample of 400 produces information considered accurate to within a margin of error of +/-5%, at a 95% level of confidence.

Q9. Party

	Sample	List
	401	12,000
Democrat	45%	47%
Republican	27%	26%
Independent	12%	5%
Non-affiliated	10%	20%
Libertarian	1%	1%
Other	4%	1%

Q10. Gender

	Sample	List
	401	11,488
Male	48%	45%
Female	52	55%

Q11. Age

	Sample	List
	401	11,988
18-24	1%	4%
25-34	5	8%
35-44	15	16%
45-54	20	17%
55-64	18	21%
65+	41	34%

APPENDIX: QUESTIONNAIRE

Clackamas County Transportation
Oak Grove – Lake Oswego Pedestrian/Bicycle Bridge Poll
Questionnaire Ver 3.1 9-6-2019

Introduction

Hello, Clackamas County has asked us to poll local residents to hear your thoughts about a proposed pedestrian and bicycle bridge over the Willamette River between Lake Oswego and Oak Grove. (If necessary) The poll will take less than five minutes. I'm looking at a voter list for your area, is this (first name)?

S1) According to Oregon voter files, your residence is in the (see list) area; is that still the case?

1	Lake Oswego (~50%)
2	Milwaukie (~30%)
3	Oak Grove (~20%)
4	Other – DISCONTINUE (if not one of these areas)

Questions

Q1) To give you a bit of background, the Clackamas County Transportation Department would like to determine whether or not there is enough interest among local residents to continue to explore the possibility of the pedestrian and bicycle bridge. The current feasibility study is being funded by Metro. The cities of Lake Oswego and Milwaukie, as well as the North Clackamas Parks & Recreation District, are partners in this project.

The idea for this new project was raised in part because there is currently no way for the public to cross the Willamette River for a nine-mile stretch between the Oregon City Bridge and the Sellwood Bridge. The bridge would accommodate pedestrians and bicycles, would be accessible for those with disabilities, and would allow access for emergency vehicles. It would connect to current and planned bicycle and pedestrian paths on both sides of the river.

If the project were to move forward, the county would seek funding – NOT from property taxes – but from sources that could include grants, or funds from local cities, Metro, and the State. Based on this description, would you support or oppose having Clackamas County continue to explore this idea? Strongly or somewhat?

1	Support strongly	5
2	Support somewhat	4
3	Unsure / Undecided	3
4	Oppose somewhat	2
5	Oppose strongly	1

Q2) Would you support or oppose the county continuing to explore this idea if the bridge was built to also allow small transit vehicles on the bridge to transport people from the Park Avenue light rail station to the Lake Oswego Transit station?

1	Support strongly	5
2	Support somewhat	4
3	Unsure / Undecided	3
4	Oppose somewhat	2
5	Oppose strongly	1

Q3) What thoughts, benefits, or possible concerns does the idea of this bridge raise?
(Ask open ended – else code responses as below)

VERBATIM Codes

	Negatives
1	Cost / Other Priorities / Not needed
2	Cost / Tax implications
3	Environmental costs / burdens
4	Security / Safety / Vandalism / Crime / Homeless
5	Traffic / Parking / Noise
6	Aesthetics – appearance / View
7	Impact to property owners / existing housing
9	Miscellaneous negative: list
	Neutral
10	Where would it be? How access?
11	Need more information
12	When would it happen?
13	How connected to other trails?
19	Miscellaneous neutral: list
	Positives
20	Needed transportation connectivity
21	Encourages low-impact (ped/bike) transportation
22	Encourages recreation / Exercise
23	Saves travel time
24	Environmental benefit / Saves energy
25	River access
26	Opportunity for transit connection
29	Miscellaneous positive: list
30	None

Q4) Are you more or less likely to support this idea, knowing that it will be paid for by grants, or regional and state dollars? (Much more so, or somewhat?)

1	Much more likely	5
2	Somewhat more likely	4
3	No difference / Not sure	3
4	Somewhat less likely	2
5	Much less likely	1

Demographics

Q5) To finish up, do you have children age 18 or younger living in your household?

1	Yes
2	No

Q6) How often do you ride a bicycle for recreation and/or transportation purposes? (Read list)

1	Daily	5
2	A few times a week	4
3	A few times a month	3
4	A few times a year	2
5	Never	1
6	Not sure	9

Q7) And if built, do you think you or your family members might use this bridge? (Read list)

1	At least once	2	
2	More often	3	
3	No	1	Do not ask Q8
4	Not sure - depends	9	Do not ask Q8

Q8) (If planning to use the bridge at least once) How would you or your family members most likely access the bridge? Select all that apply. (Read list)

1	Drive to bridge on Lake Oswego side
2	Drive to the Oak Grove side
3	Walk, bike or take transit to the bridge on Lake Oswego side
4	Walk, bike or take transit to the Oak Grove side
5	Drive to either side
6	Walk, bike or take transit to either side

Those are all of our questions, thank you for taking the time to share your thoughts!

From Voter List

Q9) Indicate Party (proportional)

1	Democrat
2	Republican
3	Non-affiliated
4	Libertarian Party
5	Pacific Green Party
6	Constitution Party
7	Working Families
8	Independent Party
9	Other

Q10) Indicate Gender (proportional – 55/45)

1	Male
2	Female

Q11) Indicate Age Category (proportional to list – with limit on 65+)

1	18-24
2	25-34
3	35-44
4	45-54
5	55-64
6	65+

Bridge Economic Development

Memorandum

Date	December 5, 2019
To	Kristen Kibler, JLA
From	Alisa Pyszka, Bridge Economic Development
	Ayreann Colombo, Bridge Economic Development
Subject	Equitable Development Analysis
Project	OGLO

SUMMARY

There has been minimal construction of new housing units within the study area that add to the overall housing supply, and the new units are largely single family. Furthermore, due to aging population with no new millennials, it is assumed that a large percentage of the population is aging in place, which precludes turn-over in the existing housing supply. This local trend is exacerbated by the current national trend of dramatic shifts in generational preferences and household demographic trends, migration to cities over the past decade are at highest level since World War II, while housing production has fallen to historic lows. This imbalance between housing supply and demand has led to rapidly rising housing prices, economic displacement of lower income families and communities of color, and increases in homelessness. Without an increase in the amount and diversity of housing supply, housing costs in the study area will only continue to increase. Therefore, the ped/bike bridge should be viewed as an amenity (based on information outlined in the conclusion section) that will attract construction of a new diverse housing supply, as allowed by zoning, that can flatten or decrease the growing rate of housing costs and rents. If these communities do not increase the amount and diversity of housing types, housing costs will only increase making this area less equitable.

BACKGROUND

Project Description

Clackamas County is leading a study to determine if it might be feasible to build a pedestrian/bicycle bridge across the Willamette River between unincorporated Oak Grove and the City of Lake Oswego. The study is expected to be concluded by the end of 2019. If the study finds that the bridge is feasible and a group of government agency partners agrees to move forward with the project, the next steps would be design, environmental studies and permitting, along with additional public outreach.

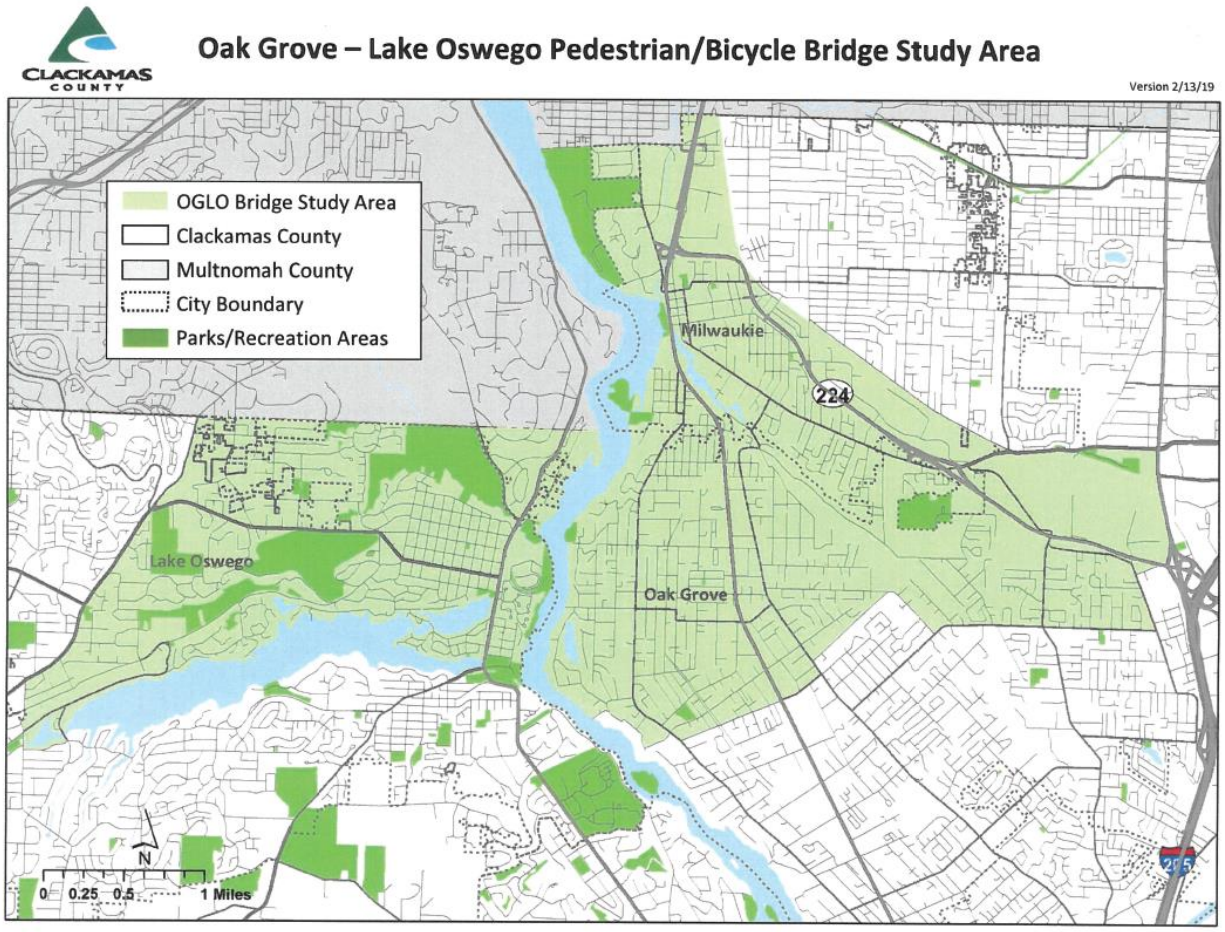
Objectives for Economic Impacts Memo

The objectives of this memorandum are to document project area demographics to establish current and recent demographic trends in the past 10-years. Additionally, an evaluation of properties that have the potential for redevelopment based on land value in comparison to building value is provided. This information establishes a baseline to evaluate the potential for new private investment within the project area. Future anti-displacement programs can be targeted to areas identified for potential redevelopment.

Study Area

The Study Area includes the Clackamas County census tracts 201, 202, 208, 212, 213, 214 and 215 within Lake Oswego, Oak Grove and a portion of Milwaukie, Oregon as identified in the following map. All following information pertains to this area.

Figure 1: Project Area



Source: Clackamas County

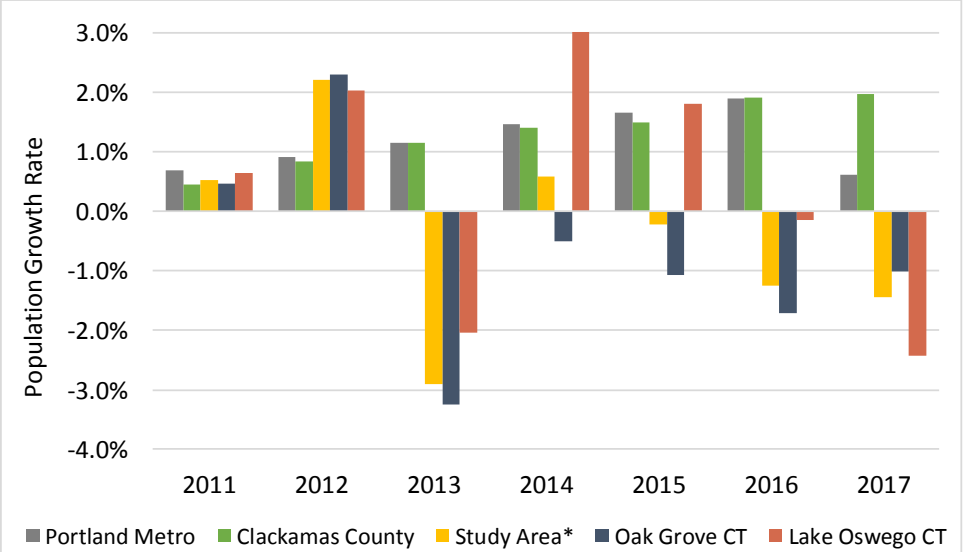
DEMOGRAPHICS

Analyzing the demographics for the study area provides an understanding of growth trends and make-up of the population. The entire study area has seen flat to negative growth rate since 2010. The study area is getting older, increasing from 43 to 46 years, compared to the Portland Metro median age of 37.8 years. There has been no increase in the millennial population[1]. Racial diversity has increased in the study area by 1.5 percent and people of Hispanic origin have increased by 2%. Education attainment of a bachelor's degree has increased by 5 percent. In 2017, median household income averaged $72,423 in the Study Area, with an average annual increase of 2.8 percent.

Population

- Study Area including Oak Grove and Lake Oswego Census Tracts (CT):
  - Population: 33,315
  - Annual population growth: average 0% since 2010, with the last five years trending negative.
- Oak Grove CT:
  - Population: 23,235
  - Annual growth population growth: average -0.7% since 2010, with the last five years trending negative.
- Lake Oswego CT:
  - Population: 10,075
  - Annual growth population growth: average 0.4% since 2010, with the last five years trending slightly higher.

Figure 2: Population Growth Rate Between 2010-2017, Portland Metro, Clackamas County & Study Area



Source: PSU Population Research Center and U.S. Census Bureau
*Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

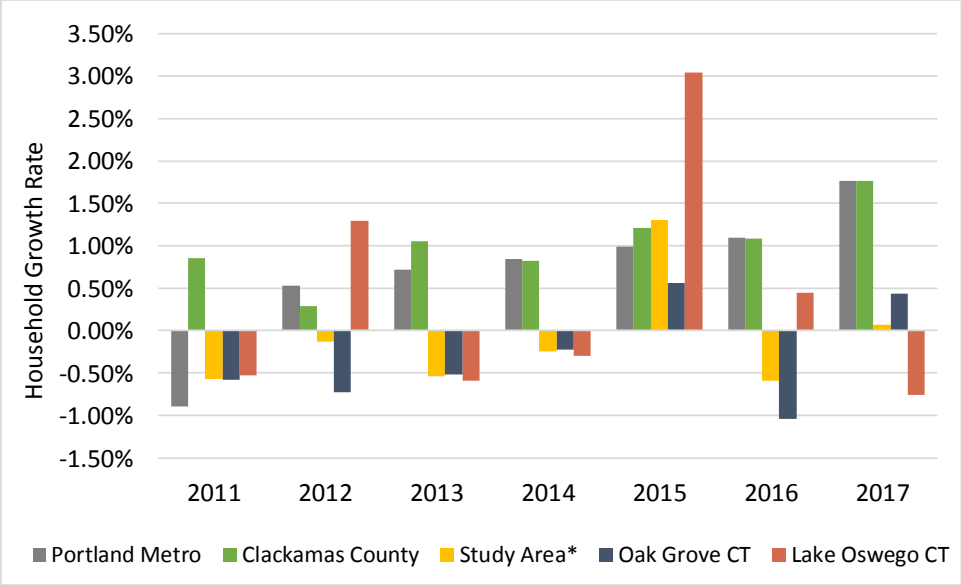
[1] Millennials are officially defined as adults between the age of 23 and 38. Due to the delineation of age brackets in Census data, we are counting adults between the age of 20 and 40.

Households

Similarly, household growth has been flat for the Study Area averaging -0.1% since 2010. While Lake Oswego CTs experienced slightly positive growth, it was offset by slightly negative in the Oak Grove CT area.

Given our experience with other work in the area as well as this assessment, we consider the reason for the flat or negative growth to be closely tied with the lack of new housing developed and/or available in the area. As illustrated below, growth in housing units in the Study Area has been similarly flat or negative with the exception of positive growth in 2017. In 2017, the Study Area had 14,600 households.

Figure 3: Household Growth Rate Between 2010-2017, Portland Metro, Clackamas County & Study Area



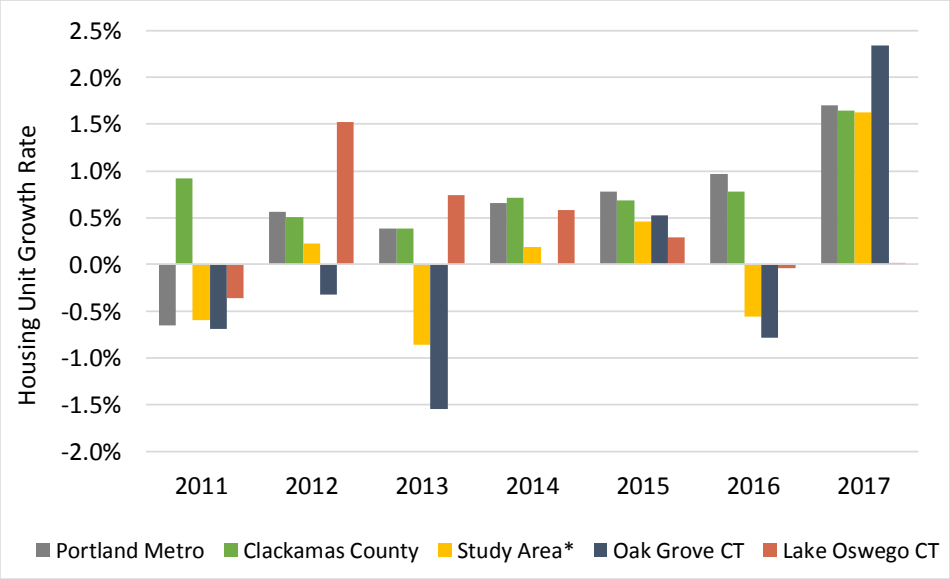
Source: U.S. Census ACS 5-Year Estimates
*Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Housing Units

Since 2010, growth in housing units[2] in the Study Area has averaged 0.4% annually. The Study Area added 72 housing units—130 in Lake Oswego while Oak Grove lost 58 units. Typically, negative growth in housing units indicates a high level of demolitions or housing that becomes uninhabitable. Between 2016 and 2017, the Study Area added 253 units (all in Oak Grove CTs) to bring the total housing units as of 2017 to 15,845.

[2] Housing units accounts for all residential units including mobile homes.

Figure 4: Growth Rate of Housing Units Between 2010-2017, Portland Metro, Clackamas County & Study Area

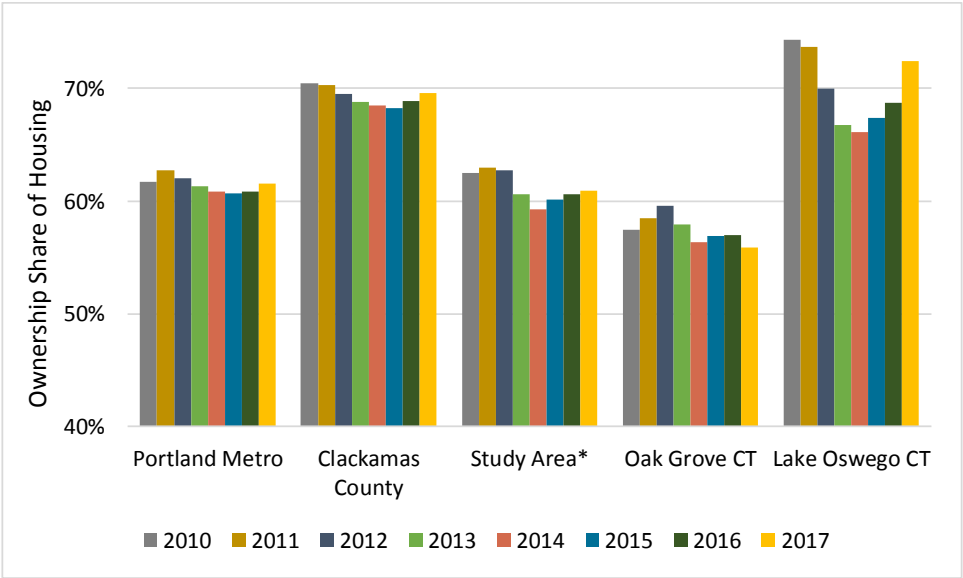


Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Tenure

The level of ownership-households to renter-households in the Study Area has remained stable since 2010 remaining at about 61% owner households. Oak Grove CTs have averaged ownership levels of 57% over the period while Lake Oswego CTs averaged 70%. Likewise, Portland Metro and Clackamas County have maintained ownership levels of 62% and 70%, respectively.

Figure 5: Percentage of Residential Ownership Between 2010-2017, Portland Metro, Clackamas County & Study Area

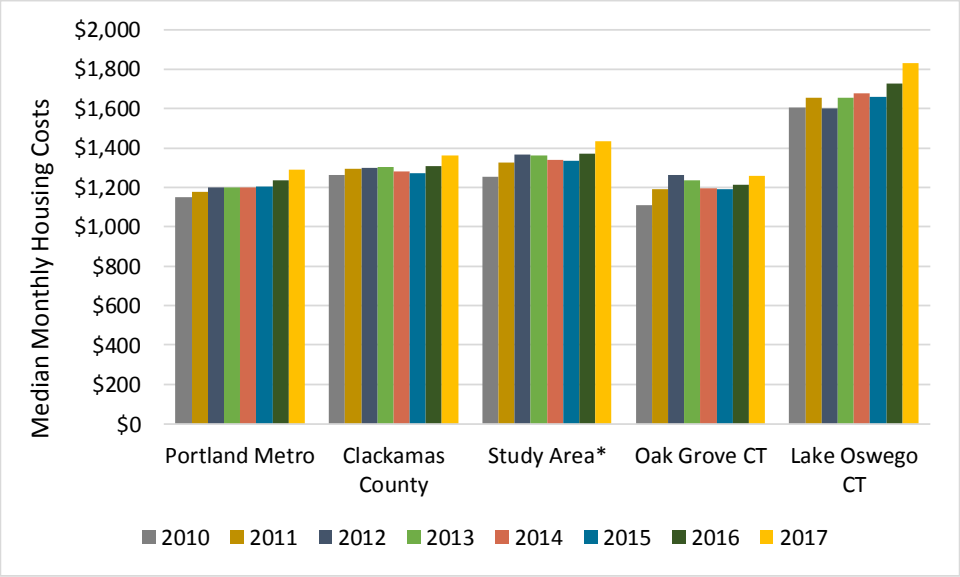


Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Housing Costs

Median monthly housing costs have increased by an average of 1.9% annually in the Study Area since 2010 with a significant portion of the increase, 4.5%, occurring between 2016 and 2017. Oak Grove and Lake Oswego CTs maintained similar levels of increase in housing costs until 2016 at which time Oak Grove CTs increased 3.7% through 2017 and Lake Oswego CTs averaged 6.2%. Portland Metro has averaged 1.6% annual growth over the same time period, while Clackamas County's monthly housing costs averaged 1.1% annual increases. Housing costs are defined by the Census as the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property (including payments for the first mortgage, second mortgages, home equity loans, and other junior mortgages); real estate taxes; fire, hazard, and flood insurance on the property; utilities (electricity, gas, and water and sewer); and fuels (oil, coal, kerosene, wood, etc.) Lake Oswego housing costs (mortgage costs) typically increase at a greater rate than the region due to greater appreciation.

Figure 6: Median Monthly Housing Costs Between 2010-2017, Portland Metro, Clackamas County & Study Area



Source: U.S. Census ACS 5-Year Estimates
*Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

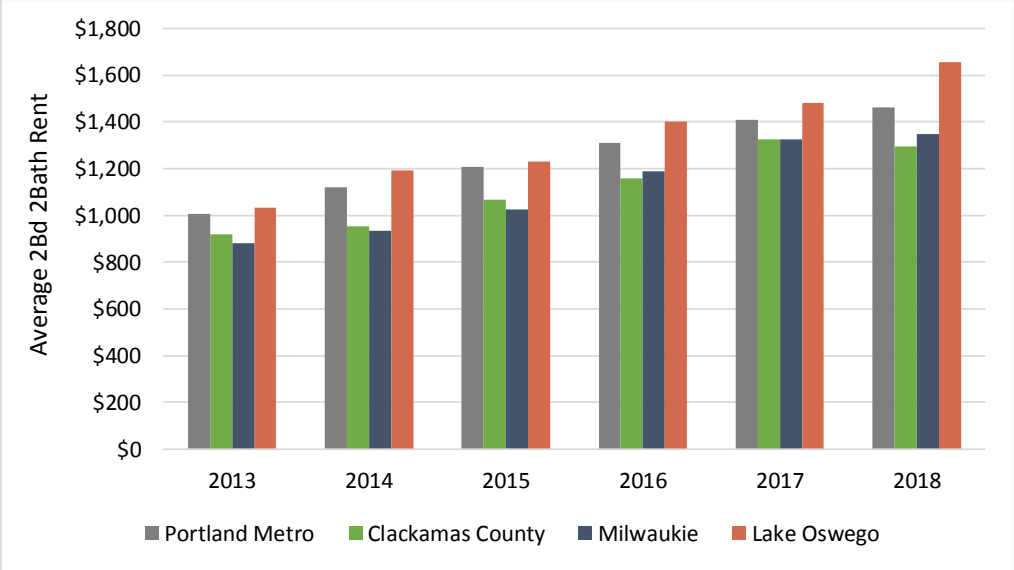
Rental Rates

Average monthly rental rates for 2 bedroom/2 bath apartments in Milwaukie[3] increased by 15.80% in 2016 and 11.71% in 2017. The rental rate increase slowed to 1.58% in 2018. The overall rental rate for Milwaukie in the Fall of 2018 was an average of $1.43 per square foot. In Lake Oswego, average rental rates for 2 bedroom/2 bath units increased by 13.64% in 2016, 5.86% in 2017 and 11.61% in 2018. The average rent per square foot was $1.46.

[3] In this case, "Milwaukie" is defined by The Apartment Report, the source of the data, as the area from south of the Springwater Corridor (to the north) south to just north of the city of Gladstone. "Lake Oswego" includes both Lake Oswego and West Linn.

Data for 2019 is not yet available but given an influx of apartment supply in the metro area and overall market indications, we expect that growth in rental rates for 2019 will have slowed relative to recent years.

Figure 7: Median Monthly Rental Rate Between 2013-2019, Portland Metro, Clackamas County, Milwaukie & Lake Oswego*



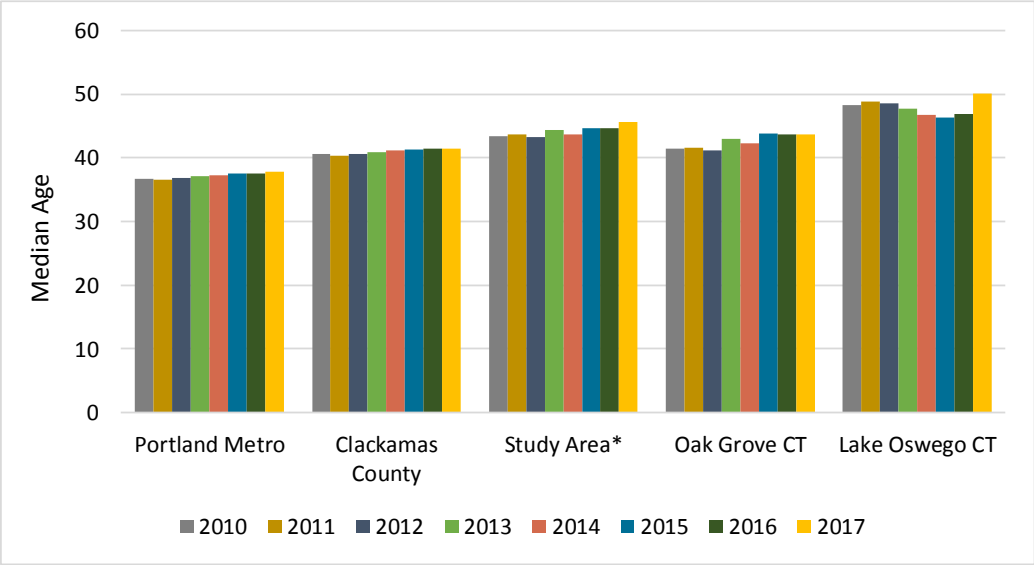
Source: The Apartment Report, Multifamily Vol. 29 NW Fall 2018
*2 bedroom/bath market-rate apartment, Portland Metro includes Vancouver, WA

Median Age

- Since 2010, the median age within the Study Area increased from 43 to 46. The addition of residents age 60 and older grew by 2% between 2010 and 2017. During the same period, the millennial population[4] grew by 0% due to a negative growth in millennials in Lake Oswego while Oak Grove grew the millennial population 2%.
- Similarly, residents within Portland Metro and Clackamas County have aged over the last seven years but less so with median ages increasing by only about one year (36.7 to 37.8 in Portland and 40.6 to 41.1 in Clackamas County). In 2017, millennials accounted for about 21 percent of the population in Portland Metro and Clackamas County.

[4] Millennials are officially defined as adults between the age of 23 and 38. Due to the delineation of age brackets in Census data, we are counting adults between the age of 20 and 40.

Figure 8: Median Age Between 2010-2017, Portland Metro, Clackamas County & Study Area



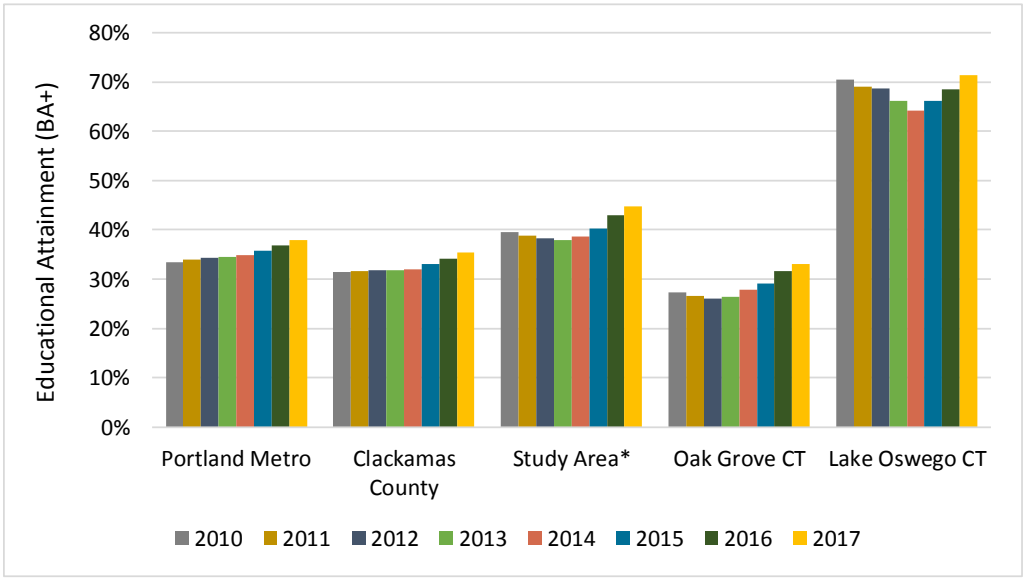
Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Educational Attainment

The level of educational attainment has increased within the Study Area since 2010:

- 2010: 39.6% with a bachelor's degree
- 2017: 44.7% with a bachelor's degree

Figure 9: Educational Attainment Between 2010-2017, Portland Metro, Clackamas County & Study Area



Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Race

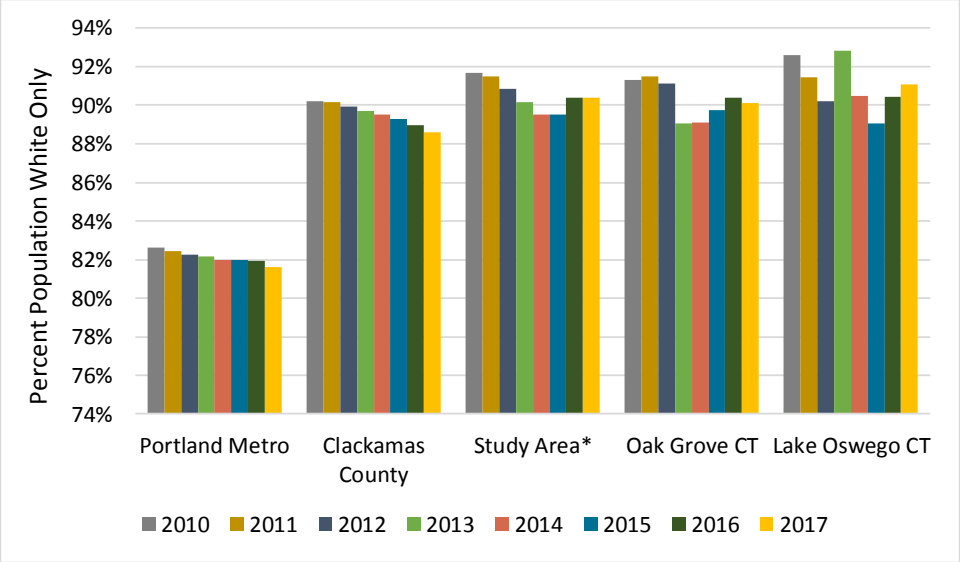
Racial diversity in the Study Area has increased only slightly in the last seven years, averaging a total increase of about one to one-and-one-half percentage points since 2010. The Census Bureau does

not categorize Hispanic/Latino as "Race" but rather as an origin. Therefore, the Hispanic/Latino population is categorized across races. The majority of people of Hispanic/Latino origin are captured in race as White with a fewer number captured as Black or African American. From 2010 to 2017, the changes were as follows:

- Whites – decreased by 1,219
- Asians – increased by 138
- African Americans – increased by 45
- American Indian/Alaskan Native – increased by 207
- Native Hawaiian/Other Pacific Islanders – increased by 102

In 2017, approximately 7% (2,455) of the Study Area population was of Hispanic or Latino origin, an increase from 5% (1,600) in 2010. This trend is also represented in the Oak Grove Elementary School that consists of 18% Hispanic/Latino students and 8 spoken languages in the 2017-18 school year[5].

Figure 10: Change in Race, White Only Between 2011-2017, Portland Metro, Clackamas County & Study Area

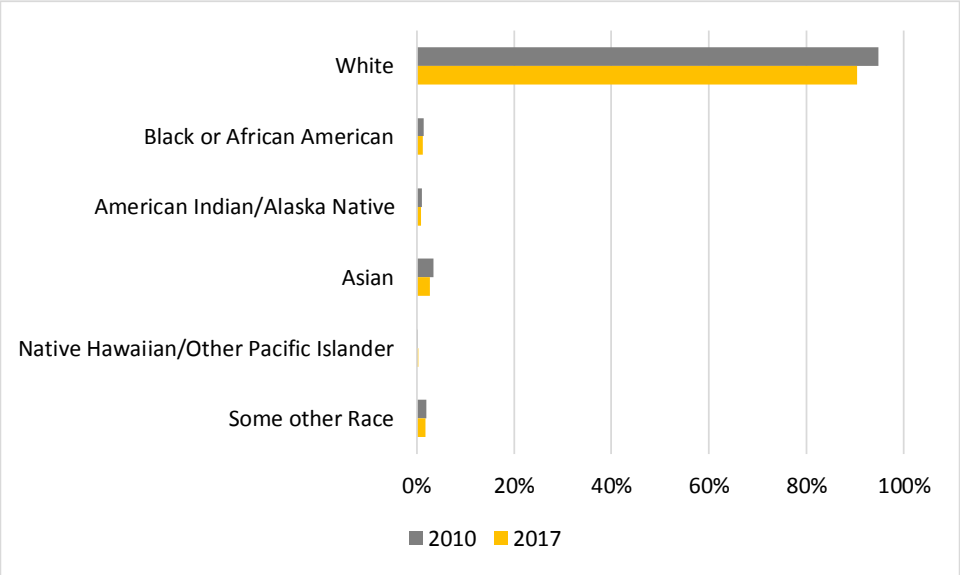


Source: U.S. Census ACS 5-Year Estimates

* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

[5] Oregon At-a-Glance School Profile 2017-18 Oak Grove Elementary, Oregon Department of Education 2018

Figure 11: Race Between 2010-2017, Study Area



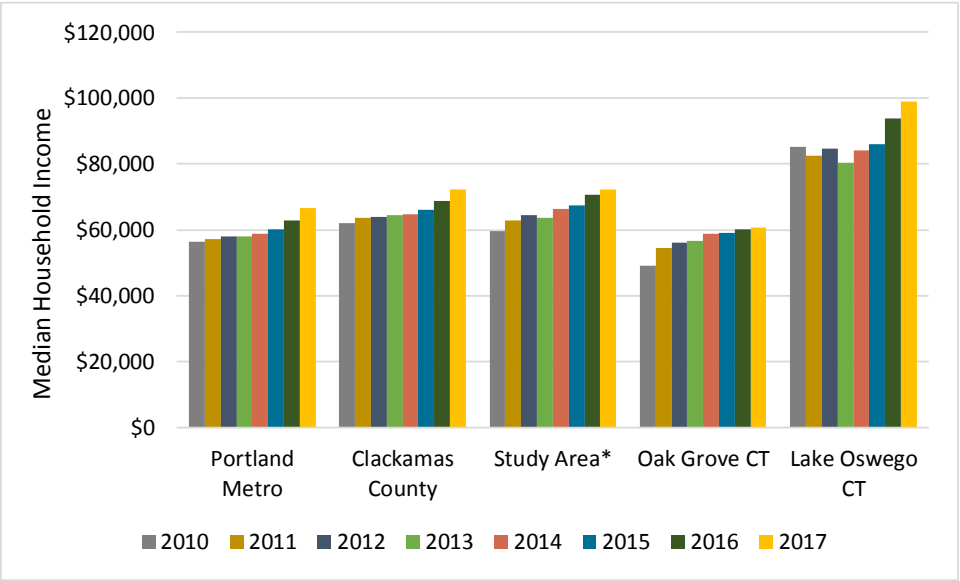
Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Household Income

Median household income in the Study Area grew moderately between 2010 and 2017 averaging a 2.8% increase annually. The Oak Grove CTs experienced an increase in median household income of 3.1% while Lake Oswego CTs experienced an increase of 2.2%. In 2017, median household income averaged $72,423 in the Study Area.

Portland Metro and Clackamas County had similar gains in median household income.

Figure 12: Median Household Income Between 2010-2017, Portland Metro, Clackamas County & Study Area

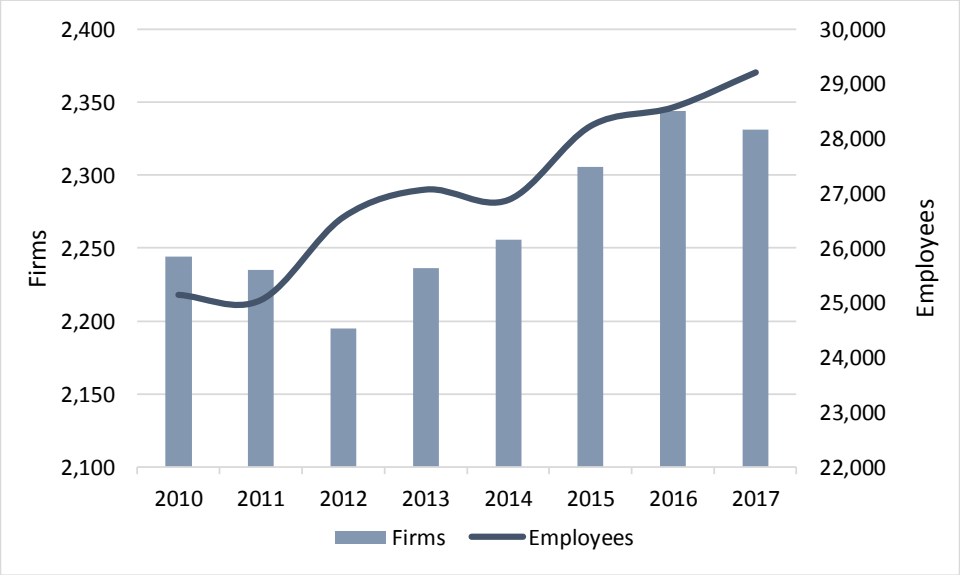


Source: U.S. Census ACS 5-Year Estimates
* Study Area: Includes Lake Oswego Census Tracts (201 & 202) and Oak Grove Census Tracts (208, 212, 213, 214 & 215).

Employment

The Study Area added about 4,000 employees between 2010 and 2017, averaging an annual growth rate of about 2.2% with some years seeing significantly. Meanwhile, the Study Area added 87 new firms. Employment includes all jobs ranging from retail to professional services.

Figure 13: Employment Between 2010-2016, Study Area (Zip Codes: 97034, 97222 & 97267)



Source: U.S. Census Zip Code Business Patterns

Building Permits

According to City of Lake Oswego data for the last ten years, Lake Oswego has issued 348 permits for new construction. Of those, four have been for commercial construction (a school, a building for the Center of the Arts, a mixed-use building and general commercial building) while the remaining 344 have been issued for single family housing. Of the 344 housing permits, 226 include demolition of existing residents and replacement with a new unit. Therefore, 118 new housing units have been added to the overall supply. According to Clackamas County data, there have been 1,663 housing units constructed in the Oak Grove area portion of the study area since 2001. In the last 10 years, 924 units have been constructed.

CONCLUSION

Recent studies indicate that real estate values increase with proximity to bicycle paths and walking trails as summarized below. [6]

- *Indianapolis, Indiana*. A 2014 study of Indianapolis's eight-mile (13 km) Indianapolis Cultural Trail by the Indiana University Public Policy Institute found that since its opening in 2008, the value of properties within a block of this high-quality biking and walking trail

[6] Urban Land Institute: Active Transportation and Real Estate: The Next Frontier. Washington, D.C.: The Urban Land Institute, 2016

has risen an astonishing 148 percent. The value of the nearly 1,800 parcels within 500 feet (152 m) of the trail increased by more than $1.01 billion over the same period.

- *Dallas, Texas*. Since the opening of the 3.5-mile (5.6 km) Katy Trail in the Uptown neighborhood of Dallas in 2006, property values have climbed nearly 80 percent, to $3.4 billion, according to Uptown's business improvement district.
- *Radnor, Pennsylvania*. A 2011 study by the GreenSpace Alliance and the Delaware Valley Regional Planning Commission found that properties within a quarter-mile (0.4 km) of the Radnor Trail in Radnor Township, Pennsylvania, were valued on average $69,139 higher than other area properties further away. Real estate listings in Radnor frequently mention trail access in their advertisements.
- *Atlanta BeltLine*. In 2013, REMAX Realty in Atlanta explained that homes near the BeltLine - a transit and trail loop around the city that will include a planned total of 33 miles (53 km) of pedestrian and bicycle trails—were selling within 24 hours. Before the Atlanta BeltLine project began, homes along the corridor had typically stayed on the market for 60 to 90 days.
- *Minneapolis, Minnesota*. A University of Minnesota study found that, in the Minneapolis/St. Paul area, for every 1,312 feet (400 m) closer a median-priced home is to an off-street bicycle facility, its value increases by $510.
- *United States*. A 2009 nationwide study by CEOs for Cities, a cross-sector organization that develops ideas to make U.S. cities more economically successful, found that "houses located in areas with above-average walkability or bikability are worth up to $34,000 more than similar houses in areas with average walkability levels."

As identified in the demographic information above, there has been minimal construction of new housing units that add to the overall housing supply, and the new units are largely single family. Furthermore, due to aging population with no new millennials, it is assumed that a large percentage of the population is aging in place, which precludes turn-over in the existing housing supply.

This local trend is exacerbated by the current national trend of dramatic shifts in generational preferences and household demographic trends, migration to cities over the past decade are at highest level since World War II, while housing production has fallen to historic lows. This imbalance between housing supply and demand has led to rapidly rising housing prices, economic displacement of lower income families and communities of color, and increases in homelessness[7]. Without an increase in the amount and diversity of housing supply, housing costs in the study area will only continue to increase. Therefore, the ped/bike bridge should be viewed as an amenity that will attract construction of a new diverse housing supply (as allowed by zoning) that can flatten or decrease the growing rate of housing costs and rents. If these

[7] Housing Underproduction in the US, Up for Growth National Coalition, 2018

communities do not increase the amount and diversity of housing types, housing costs will only increase making this area less equitable.