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TECHNICAL MEMORANDUM

Date:	May 25, 2017	Project #: 19890.6
To:	Jim Whynot and Jacque Betz, City of Gladstone Gail Curtis, Oregon Department of Transportation, Region 1	
From:	Matt Bell and Molly McCormick, Kittelson and Associates, Inc.	
Project:	Gladstone Transportation System Plan (TSP) Update	
Subject:	Draft Tech Memo 9: Planned and Financially Constrained Transportation Systems (Subtask 6.1)	

The purpose of this memorandum is to identify the projects included in the planned and financially constrained transportation systems for the Gladstone Transportation System Plan (TSP) update. Previous technical memorandums documented existing and future transportation system needs, see *Tech Memo #6: Needs Analysis*, and potential solutions to address the needs, see *Tech Memo #8: TSP Solutions*. The consultant team combined the information provided in these and other technical memorandums to develop projects for the planned transportation system and identify priorities for the financially constrained transportation system based on input from the project team as well as the TSP goals and objectives and evaluation criteria, see *Tech Memo #2: Project Goals and Objectives and Evaluation Criteria*. The information provided in this memorandum will be revised based on input from the project team and the general public. The final version of this memorandum will identify projects for the planned and financially constrained transportation systems that will be incorporated in the Gladstone TSP update.

PROJECT EVALUATION CRITERIA AND PRIORITIZATION

The project evaluation criteria were used to evaluate projects included in the planned transportation system and identify priorities for the financially constrained transportation system. The projects were identified as high, medium, and low priority projects based on how well they address the goals of the TSP update. The goals are documented in Tech Memo #2 and summarized below.

- **Goal I: Safety** – Provide a safe and efficient multimodal transportation system that accommodates all members of the community.
- **Goal II: Mobility** – Provide a multimodal transportation system that is a good state of repair and meets applicable state, regional, and local performance standards and targets.
- **Goal III: Accessibility** – Provide a multimodal transportation system that is accessible to all members of the community and minimizes out of direction travel.
- **Goal IV: Connectivity** – Provide a multimodal transportation system that increases connections to all areas of the City and works to overcome barriers to regional connectivity.

- **Goal V: Health** – Develop a transportation system that encourages active transportation and supports healthy and active choices for the community.
- **Goal VI: Coordination** – Develop a transportation system that is consistent with other state, regional, and local plans.
- **Goal VII**: Financial Responsibility – Invest in financially feasible infrastructure projects that will serve the city for years to come.

The evaluation criteria are included in Attachment A. Attachment A also indicates how the evaluation criteria were used to evaluate and prioritize the projects. A summary of the evaluations for the pedestrian, bicycle, and motor vehicle plan projects is included in Attachment B.

PLANNING LEVEL COST ESTIMATES

Planning level cost estimates were developed for the projects based on average unit costs for similar projects within the Pacific Northwest. The cost estimates help provide a realistic plan that reflects the City's financial forecast. The financially constrained plan was developed by identifying forecasted transportation funding (documented in *Tech Memo 3: TSP Financial Forecast*) and selecting higher priority projects from the planned system that can be funded with forecasted funds.

TRANSPORTATION FUNDING

The TSP will include a planned transportation system, which identifies all of the projects and programs needed to address all of the transportation needs within the city and a financially constrained transportation system, which identifies the projects and programs the City anticipates being able to fund over the next 25 years. The amount of local funds available for capital projects is estimated to be approximately $3,750,000 or roughly $150,000 per year.[1]

PLANNED TRANSPORTATION SYSTEM COST SUMMARY

Table 1 provides a summary of the full cost of the planned and financially constrained transportation systems. As shown, the full cost of the planned system is approximately $17.6 million over the 25 year period, including $2.9 million in high priority projects, 10.5 million in medium priority, and 4.2 million in low priority projects. Based on the anticipated funds available for capital improvement projects, **the draft financially constrained plan includes all of the high priority projects.** This leaves approximately $0.9 million in funding for the City to complete medium and low priority projects over the 25 year period.

[1] This number does not include potential additional funding from state and federal grants such as the Statewide Transportation Improvement Program (STIP) and Metro Regional Flexible Funds. While it is likely that these funds will be used to fund some transportation improvements within the city over the next 25 years, because of the uncertainty in acquiring grant funds, these funding sources are not accounted for in the City's revenue forecast.

Table 1: Planned Transportation System Cost Summary

Project Type	High Priority (Financially Constrained Plan Projects) (0-5 years)	Medium Priority (5-10 years)	Low Priority (10-25 years)	Total
Planned Transportation System				
TSMO[1]	$25,000	$25,000	$75,000	**$125,000**
TDM[1]	$50,000	$50,000	$225,000	**$325,000**
Land Use	$0	$75,000	$0	**$75,000**
Access Management	$0	$75,000	$0	**$75,000**
Safety	$140,000	$50,000	$0	**$190,000**
Pedestrian	$1,210,000	$10,075,000	$3,065,000	**$14,350,000**
Bicycle	$1,460,000	$65,000	$215,000	**$1,740,000**
Transit	$0	$85,000	$0	**$85,000**
Motor Vehicle	$0	$55,000	$605,000	**$660,000**
Total	**$2,885,000**	**$10,555,000**	**$4,185,000**	**$17,625,000**
Available Funding				
Total	$3,750,000	$0	$0	$3,750,000

TSMO: Transportation System Management and Operations
TDM: Travel Demand Management
1: Includes annual costs occurred every year.

TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSMO) PLAN

Transportation System Management and Operations (TSMO) is a set of integrated transportation solutions intended to improve the performance of existing transportation infrastructure. Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies are two complementary approaches to managing transportation and maximizing the efficiency of the existing system. TDM addresses the *demand* on the system: the number of vehicles traveling on the roadways each day. TDM measures include any method intended to shift travel demand from single occupant vehicles to non-auto modes or carpooling, travel at less congested times of the day, etc. TSM addresses the *supply* of the system: using strategies to improve the system efficiency without increasing roadway widths or building new roads. TSM measures are focused on improving operations by enhancing capacity during peak times, typically with advanced technologies to improve traffic operations.

Transportation System Management (TSM)

Transportation System Management (TSM) focuses on low cost strategies that can be implemented within the existing transportation infrastructure to enhance operational performance. Finding ways to better manage transportation while maximizing urban mobility and treating all modes of travel as a coordinated system is a priority. TSM strategies include traffic signal timing and phasing, traffic signal coordination, traffic calming, access management, local street connectivity and intelligent transportation systems (ITS). Traffic signal coordination and ITS typically provide the most significant tangible benefits to the traveling public. The primary focus of TSM measures are region-wide improvements, however there are a number of TSM measures that could be used in a smaller scale

environment such as within the City of Gladstone. The following sections identify the TSM measures that could be implemented within the City of Gladstone. Table 2 summarizes the strategies that best meet the goals and objectives of the TSP update.

Table 2: Transportation System Management Projects and Programs

Project/Program Number	Name	Description	Priority	Cost
TSM1	Signal Retiming and Optimization	Update signal timing plans and coordinate signals to better match prevailing traffic conditions	High/Medium/Low	$5,000/year
TSM2	Transit Signal Priority	Work with ODOT to establish transit Signal Priority on OR 99E and 82nd Drive as needed	Medium	TBD
TSM3	Truck signal priority	Work with ODOT to establish truck signal priority on OR 99E and SE 82nd Drive as needed	Low	TBD
			TOTAL High Priority Costs	**$25,000**
			TOTAL Medium Priority Costs	**$25,000**
			TOTAL Low Priority Costs	**$75,000**
			TOTAL Program Costs (25 years)	**$125,000**

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) is a policy tool as well as a general term used to describe any action that removes single occupant vehicle trips from the roadway during peak travel demand periods. As growth in the City of Gladstone occurs, the number of vehicle trips and travel demand in the area will also increase. The ability to change a user's travel behavior and provide alternative mode choices will help accommodate this potential growth in trips.

Tech Memo #8 identifies several policies and programs that may be effective for managing transportation demand in the City of Gladstone, especially within the next 10 to 20 years. Table 3 summarizes the strategies that best meet the goals and objectives of the TSP update. As with all new public and private investments, the implementation of TDM strategies is sure to draw opposition from some. Given Gladstone's lack of experience with TDM strategies, it is important that decision-makers understand their long-term costs and benefits and are able evaluate these along-side arguments from opponents in achieving outcomes that best reflect the City's vision and goals while effectively reducing travel demand.

Table 3: Transportation Demand Management Program Strategies

Program/Project Number	Name	Description	Priority	Cost
TDM1	Carpool Match Services Service	Work with Metro to coordinate a rideshare/carpool program that regional commuters can use to find other commuters with similar routes to work	High/Medium/Low	$5,000/year
TDM2	Collaborative Marketing	Work with nearby cities, employers, transit service providers, and developers to collaborate on marketing for transportation options that provide an alternative to single-occupancy vehicles	High/Medium/Low	$5,000/year

TDM3	Limited and/or Flexible parking Requirements	Refine the City's current parking policy to include parking maximums, low(er) minimums, shared parking provisions, fee in-lieu options, and other strategies to encourage multi-modal transportation	Low	$50,000
TDM4	Parking Management	Modify the City's current parking policy to impose time limits in commercial areas and allow for the potential to charge for parking	Low	$25,000
			TOTAL High Priority Costs	**$50,000**
			TOTAL Medium Priority Costs	**$50,000**
			TOTAL Low Priority Costs	**$225,000**
			TOTAL Program Costs (25 years)	**$325,000**

Other potential TDM projects include:

- Support continued efforts by TriMet, Metro, ODOT, and Clackamas County to develop productive TDM measures that reduce commuter vehicle miles and peak hour trips.
- Encourage the development of high speed communication in all part of the city (fiber optic, digital cable, DSL, etc). The objective would be to allow employers and residents the maximum opportunity to rely upon other systems for conducting business and activities than the transportation system during peak periods.
- Encourage developments that effectively mix land uses to reduce vehicle trip generation. These plans may include development linkages (particularly non-auto) that support greater use of alternative modes.

Land Use

The types and intensities of land uses are closely correlated with travel demand. Land use patterns in many areas of the city are suburban in nature and low density, with more moderate densities near I-205 in the south part of the City. In the future the city is envisioned to be a mixture of housing densities and areas of mixed use development (i.e., a mix of residential, retail, commercial and/or office uses). Technical Memorandum #2 demonstrates the benefits of incorporating commercial nodes into residential neighborhood and encouraging mixed-use development on transit ridership and other more active modes of transportation. Technical Memorandum #10 identifies several land use strategies that could be implemented in Gladstone. Table 4 summarizes the strategies that best meet the goals and objectives of the TSP update.

Table 4: Land Use Projects

Project Number	Name	Description	Priority	Cost
LU1	Commercial Nodes	Revise existing zoning map to include more commercial nodes in residential areas	Medium	$25,000
LU2	Mixed Use Development	Modify city policies and/or development code to encourage mixed use developments in commercial areas and/or future town centers	Medium	$25,000

LU3	Alternative Mobility Standards	Work with ODOT to develop alternative mobility standards on OR 99E and at the I-205 interchanges ramps in order to accommodate higher density development patterns along the corridors	Medium	$25,000
			TOTAL Medium Priority Costs	**$75,000**
			TOTAL Program Costs (25 years)	**$75,000**

Neighborhood Traffic Management (NTM)

Neighborhood Traffic Management (NTM) is a term that has been used to describe traffic control devices typically used in residential neighborhoods to slow traffic or possibly reduce the volume of traffic. NTM is commonly referred to as traffic calming because of its ability to reduce travel speeds and improve neighborhood livability. The City of Gladstone has implemented NTM in locations throughout the city; however, there they do not have a formal process for implementation.

The City has an established traffic safety committee that meets on a monthly basis to discuss traffic safety issues within the city. The City could work with the committee to establish a formal process for NTM implementation that starts with the identification of a concern by citizens, after which the committee could review the situation and conduct a speed/volume survey if warranted to obtain necessary data. Once the concern has been identified and classified, the committee could recommend appropriate follow-up action. There are many different NTM options available to the committee, including various education, enforcement, and engineering solutions. If it is determined that an engineering solution is required, the committee could forward their information to engineering staff for follow-up and budgeting as appropriate. The implementation of the selected NTM solution may be funded by the city and/or the concerned citizens.

While no specific NTM projects are identified for the TSP update, they are an important part of the City's ongoing effort to improve livability. Any future NTM projects should include coordination with emergency agency staff to ensure public safety is not compromised. NTM engineering solutions are limited to local streets. Implementation of NTM solutions that limit traffic on collector and arterial streets is counterproductive and can lead to cut through traffic onto local streets. NTM is also restricted on collector and arterial street to avoid conflicts with emergency access/public safety as well as conflicts with public transit.

ACCESS MANAGEMENT PLAN

Access management is a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. Access management is a policy tool which seeks to balance mobility, the need to provide efficient, safe and timely travel with the ability to allow access to individual properties. Proper implementation of access management techniques should guarantee reduced congestion, reduced accident rates, less need for roadway widening, conservation of energy, and reduced air pollution. Measures may include but are not limited to restrictions on the type and amount of access to roadways, and use of physical controls, such as signals and channelization including raised medians, to reduce impacts of approach road traffic on the main facility.

The City's current access management policy is limited; however, maintains and enhances the integrity (capacity, safety, and level of service) of city streets. Numerous driveways or street intersections increase the number of conflicts and potential for collisions and decrease mobility and traffic flow. The City of Gladstone, as with every city, needs a balance of streets that provide access with streets that serve mobility. *Technical Memo 8* identifies a number of potential access management techniques and strategies that help to preserve transportation system investments and guard against deteriorations in safety and increased congestion. Table 5 summarizes the projects that best meet the goals and objectives of the TSP update.

Table 5: Access Management Projects

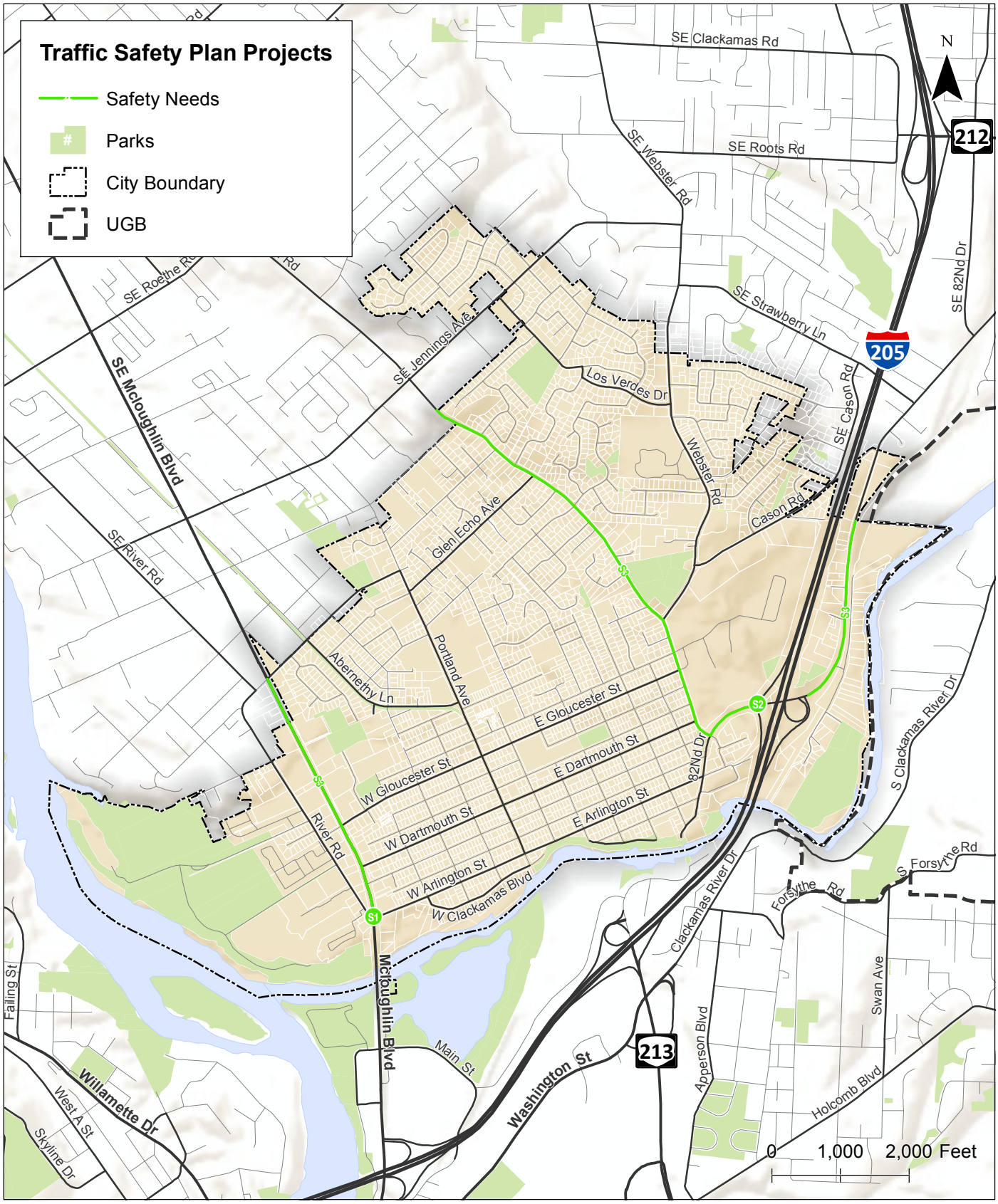
Project Number	Name	Description	Priority	Cost[1]
AM1	Access Spacing Standard Modification	Modify city-wide access spacing standards according to a roadway's jurisdiction and functional classification	Low	$25,000
AM2	Access Variance Process	Define a variance process for when the standard cannot be met	Low	$25,000
AM3	Access Consolidation	Establish an approach for access consolidation over time	Low	$25,000
			TOTAL Low Priority Costs	**$75,000**
			TOTAL Program Costs (25 years)	**$75,000**

TRAFFIC SAFETY PLAN

Traffic safety has a significant impact on how people use the transportation system within Gladstone, particularly in areas where real or perceived safety risks prevent people from using more active travel modes, such as walking, biking, and taking transit. The traffic safety solutions identified in Tech Memo 8 are largely focused on systemic issues that occur along roadways and at intersections throughout the city. While projects that address these issues have not been identified for the TSP update, a toolkit that includes a variety of potential treatments the city can implement will be developed for the TSP update. Table 6 identifies the traffic safety projects that will be included in the Gladstone TSP update. Additional safety projects and improvements are identified as part of the pedestrian, bicycle, transit, and motor vehicle plans later in this memorandum. Figure 1 illustrates the traffic safety plan projects.

Table 6: Traffic Safety Plan Projects

Project Number	Location	Description	Priority	Cost[1]
S1	OR 99E/Arlington Street	Reconfigure the westbound approach to include a separate left-turn lane with protected phasing and a shared through-right-turn lane.	High	$40,000
S2	I-205 Southbound Ramp Terminal/SE 82nd Drive	Install enhanced signs with flashing beacons and pavement markings	High	$100,000
S3	City-wide	Evaluate traffic safety along OR 99E, Oatfield Road, and SE 82nd Drive to identify appropriate countermeasures	Medium	$50,000
			TOTAL High Priority Costs	**$140,000**
			TOTAL Medium Priority Costs	**$50,000**
			TOTAL Program Costs (25 years)	**$190,000**



Traffic Safety Plan Projects
Gladstone, Oregon

Figure
1

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Oregon Department of Transportation, Portland Metro Data Resource Center

PEDESTRIAN PLAN

A majority of city streets currently have sidewalks on both sides of the roadway, with a few exceptions. Therefore, the pedestrian plan includes several projects to fill-in the gaps in the sidewalks along the city's arterial and collector streets and a few local streets that provide access to essential destinations such as schools, parks, churches, etc. The pedestrian plan also includes several enhanced pedestrian crossings as well as multi-use paths, trails, and accessways that augment and support the pedestrian system.

Table 7 identifies the pedestrian plan projects for the Gladstone TSP update. As shown, the projects are separated into projects on arterials, collectors, and local streets as well as projects at intersections and in other locations throughout the city. The priorities shown in Table 7 are based on the project evaluation criteria. The cost estimates are based on average unit costs for roadway improvements. Figure 2 illustrates the location of the pedestrian plan projects.

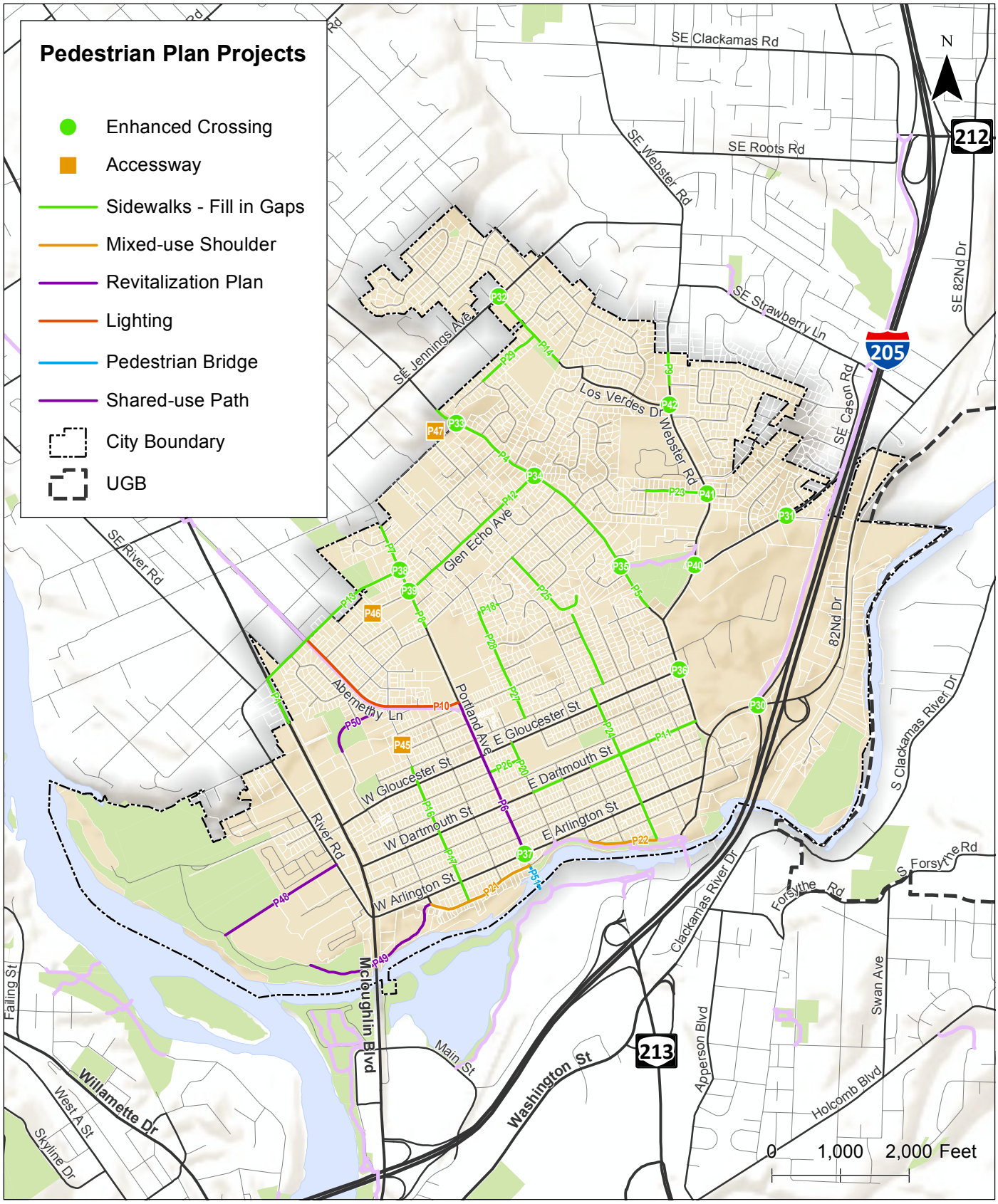
Table 7: Pedestrian Plan Projects

Location		Type	Project	Cost Estimate	Priority
Arterials					
P1	OR 99E	Sidewalks - Fill in gaps	Fill in the gap on the west side of the roadway with new sidewalks, south of Glen Echo Avenue	Low	$50,000
P2[1]	OR 99E	Landscaping	Plant street trees along both sides of OR 99E within the existing landscape strips. (Note: ODOT Permits are required for street trees)	Low	$115,000
P3[1]	OR 99E	Speed reduction	Reduce the posted speed limit to 35 mph	Low	$5,000
P4	Oatfield Road	Sidewalks - Fill in gaps	Fill in the gaps on the north side of the roadway with new sidewalks	Medium	$130,000
P5	Oatfield Road	Sidewalks - Fill in gaps	Fill in the gaps on the south side of the roadway with new sidewalks	Medium	$485,000
P6	Portland Avenue	Pedestrian improvements	Implement pedestrian improvements from Arlington Street to Abernathy Lane consistent with the Downtown Revitalization Plan	High	N/A
P7	Portland Avenue	Sidewalks - Fill in gaps	Fill in the gaps on the east side of the roadway from Nelson Lane to north city limits	Low	$235,000
P8	Portland Avenue	Sidewalks - Fill in gaps	Fill in the gaps on the west side of the roadway between Nelson Lane and north city limits	Low	$50,000
P9	Webster Road	Sidewalks - Fill in gaps	Fill in the gap on the east side of the roadway from Charolais Drive to the north city limits	Low	$55,000
Collectors					
P10	Abernathy Lane	Lighting	Provide pedestrian-scale lighting along the shared-use path	Low	$175,000
P11	Dartmouth Street	Sidewalks - Fill in gaps	Fill in gaps on the north side of the roadway from Chicago Avenue to Harvard Street and from Yale Avenue to Oatfield Road	Low	$260,000
P12	Glen Echo Avenue	Sidewalks - Fill in gaps	Fill in gaps on the north side of the roadway with new sidewalks	Low	$515,000
P13	Glen Echo Avenue	Sidewalks - Fill in gaps	Fill in gaps on the south side of the roadway with new sidewalks	Low	$460,000

Location		Type	Project	Cost Estimate	Priority
P14	Los Verdes Drive/Valley View Road	Sidewalks - Fill in gaps	Fill in the gap along the north side of the roadway from Valley View Road to Jennings Avenue	Low	$120,000
P15	Los Verdes Drive/Valley View Road	Sidewalks - Fill in gaps	Fill in the gap along the south side of the roadway from Valley View Road to Jennings Avenue	Low	$15,000
Local Streets					
P16	Beatrice Avenue	New sidewalk	Install new sidewalks of appropriate width along the east side of the roadway	Medium	$240,000
P17	Beatrice Avenue	New sidewalk	Install new sidewalks of appropriate width along the west side of the roadway	Medium	$215,000
P18	Beverly Lane	Sidewalks - Fill in gaps	Fill in the gap on the south side of the roadway from Harvard Avenue to Beverly Drive	Low	$35,000
P19	Chicago Avenue	Sidewalks - Fill in gaps	Fill in the gaps along the east side of the roadway between Hereford Street and Exeter Street	Medium	$60,000
P20	Chicago Avenue	Sidewalks - Fill in gaps	Fill in the gaps along both the west side of the roadway between Hereford Street and Exeter Street	Medium	$95,000
P21	Clackamas Boulevard	Mixed-use Shoulder	Install a mixed-use shoulder on the north side of the roadway	Low	$310,000
P22	Clackamas Boulevard	Mixed-use Shoulder	Install a mixed-use shoulder on the south side of the roadway	Low	$310,000
P23	Clayton Way	Sidewalks - Fill in gaps	Fill in the gaps along both sides of the roadway from roadway terminus to Webster Road	Low	$135,000
P24	Cornell Avenue	New sidewalk	Install new sidewalks along the east side of the roadway	Medium	$390,000
P25	Cornell Avenue	New sidewalk	Install new sidewalks along the west side of the roadway	Medium	$455,000
P26	Fairfield Street	Sidewalks - Fill in gaps	Fill in the gap on the south side of the roadway between Portland Avenue and Chicago Avenue	Low	$50,000
P27	Harvard Avenue	Sidewalks - Fill in gaps	Fill in the gaps along the east side of the roadway between Hereford Street and Beverly Lane and adjacent to Gladstone High School	Medium	$145,000
P28	Harvard Avenue	Sidewalks - Fill in gaps	Fill in the gaps along the west side of the roadway between Hereford Street and Beverly Lane and adjacent to Gladstone High School	Medium	$175,000
P29	Oakridge Drive	Sidewalks - Fill in gaps	Fill in gaps along both sides of the roadway	Low	$70,000
Intersections					
P30	Se 82nd Drive/I-205 Southbound Ramp Terminal	Enhanced crossing	Install signalized pedestrian crossing in the southwest corner	Medium	$25,000
P31	Cason Road/Ohlson Road	Enhanced crossing	Install an enhanced pedestrian crossing	High	$25,000
P32	Jennings Avenue/Valley View Road	Enhanced crossing	Install an enhanced pedestrian crossing	High	$25,000
P33	Oatfield Road/Hull Road	Enhanced Crossing	Install an enhanced pedestrian crossing, assumed to include median refuge islands, high visibility pavement markings and signs, and RRFBs	High	$65,000
P34	Oatfield Road/Glen Echo Avenue	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include median refuge islands, high visibility pavement markings and signs, and RRFBs	High	$65,000

Location		Type	Project	Cost Estimate	Priority
P35	Oatfield Road/Shared-use Path	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include median refuge islands, high visibility pavement markings and signs, and RRFBs	High	$65,000
P36	Oatfield Road/Gloucester Street	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include high visibility pavement markings and signs and RRFBs	High	$65,000
P37	Portland Avenue/Arlington Street	Enhanced crossing	Install an enhanced pedestrian crossing	High	$25,000
P38	Portland Avenue/Glen Echo Avenue (North)	Enhanced crossing	Install an enhanced pedestrian crossing	High	$25,000
P39	Portland Avenue/Glen Echo Avenue (South)	Enhanced crossing	Install an enhanced pedestrian crossing	High	$25,000
P40	Webster Road/ Cason Road	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include high visibility pavement markings and signs and RRFBs	High	$65,000
P41	Webster Road/ Clayton Way	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include high visibility pavement markings and signs and RRFBs	High	$65,000
P42	Webster Road/Los Verdes Drive	Enhanced crossing	Install an enhanced pedestrian crossing, assumed to include high visibility pavement markings and signs and RRFBs	High	$65,000
P43[1]	Portland Ave	Enhanced crossing	Install curb extensions along Portland Avenue at every major intersection and mid-block between Arlington Street and Nelson Lane (up to 15 locations)	High	$375,000
P44[1]	Arlington St	Enhanced crossing	Install curb extensions along Arlington Street at every major intersection between OR 99E and 82nd Avenue (up to 10 locations)	High	$250,000
Off-street Improvements					
P45	Beatrice Avenue Accessway	Accessway	Install a new accessway that connects Beatrice Avenue from Ipswich Street to W Jersey Street	Low	$25,000
P46	Duniway Avenue Accessway	Accessway	Install a new accessway that connects Duniway Avenue (east) and Duniway Avenue (west)	Low	$25,000
P47	Hull Avenue Accessway	Accessway	Install a new accessway that connects Hull Road to Oatfield Road – Coordinate with Project P34	Low	$50,000
P48	Jenson Road Shared-use Path	Shared-use Path	Shared-use path	High	$5,000
P49	Shared-use Path under OR 99E	Shared-use Path	Shared-use path	Medium	$45,000
P50	Ohlson Wetlands Shared-use Path	Shared-use Path	Shared-use path	Medium	$115,000
P51	Trolley Trail Bridge	Bridge	Pedestrian Bridge	Medium	$7,500,000
				TOTAL High Priority Costs	**$1,210,000**
				TOTAL Medium Priority Costs	**$10,075,000**
				TOTAL Low Priority Costs	**$3,065,000**
				TOTAL Program Costs (25 years)	**$14,040,000**

1. Project no shown on Pedestrian Plan Map



Pedestrian Plan Projects
Gladstone, Oregon

Figure
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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Portland Metro Data Resource Center

BICYCLE PLAN

On-street bike lanes and other bicycle facilities are currently provided on a few major roadways within the city. Therefore, the bicycle plan includes several projects along the city's arterial and collector streets and a few local streets that provide direct access to essential destinations. The bicycle plans also includes several enhanced bicycle crossings as well as other off-street amenities that augment and support the bicycle system.

Table 8 identifies the bicycle plan projects for the Gladstone TSP update. As shown, the projects are separated into projects on arterials, collectors, and local streets as well as projects at intersections and in other locations throughout the city. The priorities shown in Table 8 are based on the project evaluation criteria. The cost estimates are based on average unit costs for roadway improvements. Figure 3 illustrates the location of the bicycle plan projects.

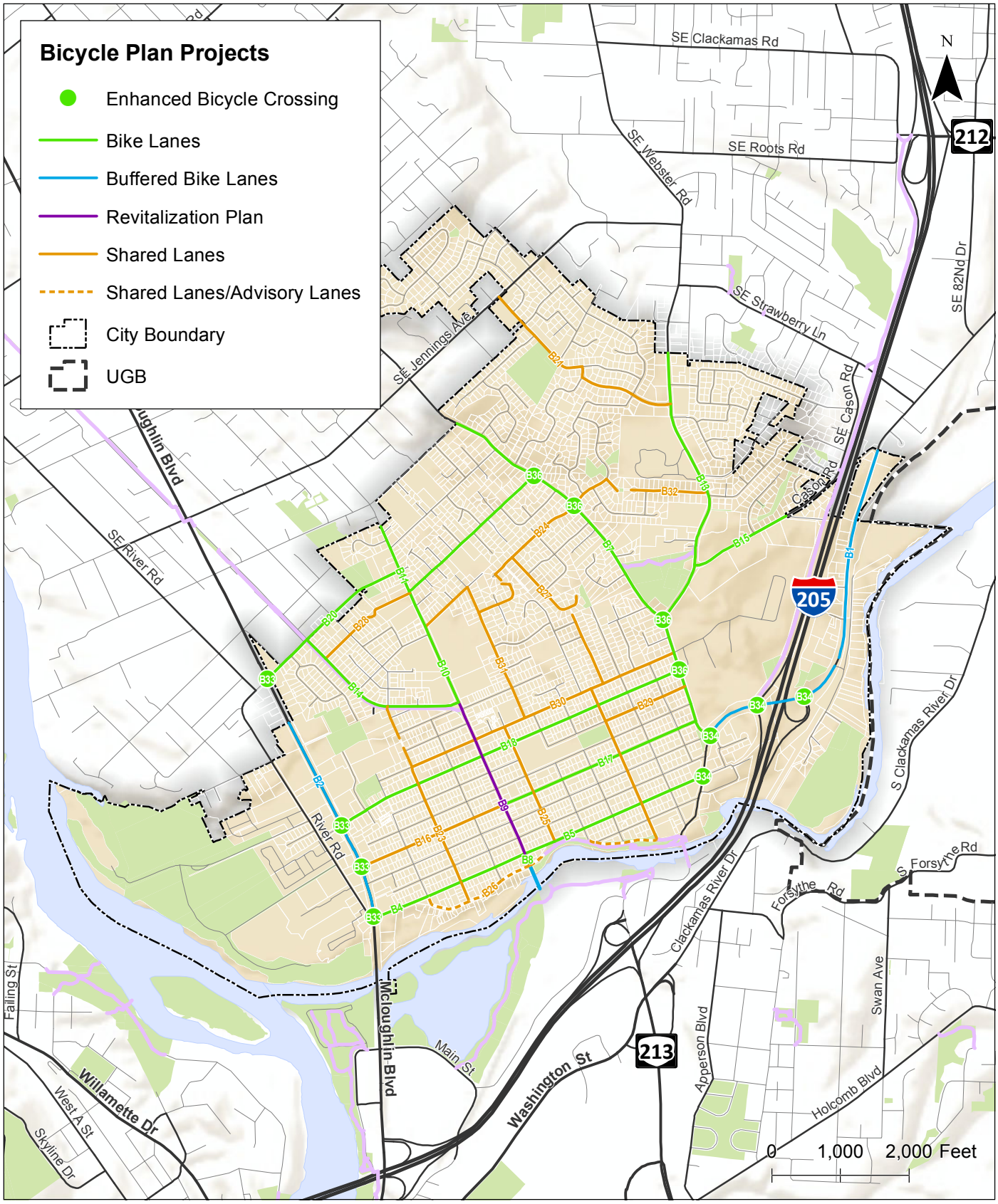
Table 8: Bicycle Plan Projects

Location		Type	Project	Cost Estimate	Priority
Arterials					
B1	SE 82nd Drive	Buffered Bike lanes	Reduce the travel lane width and install buffered bike lanes on both sides of the roadway from Oatfield Road to the north city limits	High	$105,000
B2	OR 99E	Buffered Bike lanes	Reduce the travel lane width and install buffered bike lanes on both sides of the roadway	High	$70,000
B3[1]	Arlington Street	Alternative route	Establish an alternative route along Clackamas Boulevard with wayfinding signs and pavement markings	Low	$5,000
B4	Arlington Street	Bike lanes	Remove parking from both sides of the roadway from OR 99E to Clackamas Boulevard and install on-street bike lanes	Medium	$10,000
B5	Arlington Street	Bike lanes	Widen the roadway OR remove on-street parking and install on-street bike lanes on both sides of the roadway from Clackamas Boulevard to SE 82nd Drive	Medium	$50,000[2]
B6[1]	Oatfield Road	Speed reduction	Reduce the posted speed limit to 30 mph	Low	$5,000
B7	Oatfield Road	Bike lanes	Reduce the travel lane width and install wider bike lanes on both sides of the roadway	High	$75,000
B8	Portland Avenue	Bike lanes	Remove the center two-way left-turn lane and install on-street bike lanes on both sides of the roadway from Clackamas Boulevard to Arlington Street	High	$5,000
B9	Portland Avenue	Revitalization Plan	Implement bicycle improvements from Arlington Street to Abernathy Lane consistent with the Portland Avenue Revitalization Plan	Low	$5,000
B10	Portland Avenue	Bike lanes	Remove the center two-way left-turn lane and install on-street bike lanes on both sides of the roadway from Abernathy Lane to Nelson Lane	High	$15,000
B11	Portland Avenue	Bike lanes	Widen the roadway to City standards and install on-street bike lanes and parking on both sides of the roadway from Nelson Lane to the north city limits	High	$265,000
B12[1]	Webster Road	Speed reduction	Reduce the posted speed limit to 30 mph	Low	$5,000
B13	Webster Road	Bike lanes	Reduce the travel lane width and install wider bike lanes on both sides of the roadway	High	$55,000
Collectors					

Location		Type	Project	Cost Estimate	Priority
B14	Abernathy Lane	Bike lanes	Install bike lanes on the north side of the roadway adjacent to the parking lane	High	$25,000
B15	Cason Road	Bike lanes	Restripe the on-street bike lanes at the east leg of the Webster Road/Cason Road intersection and install bike symbols	High	$5,000
B16	Dartmouth Street	Shared lane	Install shared lane pavement marking and signs from OR 99E to Portland Avenue	Low	$20,000
B17	Dartmouth Street	Bike lanes	Install on-street bike lanes from Portland Avenue to Oatfield Road	High	$55,000
B18	Gloucester Street	Bike lanes	Widen the roadway to City standards OR remove on-street parking and install on-street bike lanes on both sides of the roadway	High	$70,000[2]
B19[1]	Glen Echo Avenue	Speed reduction	Reduce the posted speed limit to 25 mph	Low	$5,000
B20	Glen Echo Avenue	Bike lanes	Widen the roadway to City standards and/or remove on-street parking and install on-street bike lanes on both sides of the roadway	High	$650,000[2]
B21	Los Verdes Drive/Valley View Road	Shared lane	Install shared lane markings and signs	Low	$20,000
B22[1]	River Road	Signage	Install a "Bike Lane Ends" sign at the south-eastbound approach to OR 99E	Medium	$5,000
Local Streets					
B23	Beatrice Avenue	Shared lane	Install shared lane markings and signs from Abernathy Lane to Clackamas Boulevard – Coordinate with Project P43	Low	$20,000
B24	Beverly Lane/Collins Crest	Shared lane	Install shared lane markings and signs from Harvard Avenue to Oatfield Road	Low	$5,000
B25	Chicago Avenue	Shared lane	Install shared lane markings and signs from Hereford Street to Arlington Street	Low	$15,000
B26	Clackamas Boulevard	Shared lane/ Advisory Lane	Install shared lane markings and signs OR advisory lanes from Arlington Road to 82nd Drive	Low	$15,000
B27	Cornell Avenue	Shared lane	Install shared lane markings and signs from Clackamas Boulevard to Collins Crest	Low	$35,000
B28	Duniway Avenue	Shared lane	Install shared lane markings and signs from Abernathy Lane to Portland Avenue – Coordinate with Project P42	Low	$5,000
B29	Fairfield Street	Shared lane	Install shared lane markings and signs from Cornell Avenue to Oatfield Road	Low	$5,000
B30	Hereford Street	Shared lane	Install shared lane markings and signs from Beatrice Avenue to Oatfield Road	Low	$25,000
B31	Nelson Lane/Harvard Avenue	Shared lane	Install shared lane markings and signs from Portland Avenue to Hereford Street	Low	$15,000
B32	Ridgegate Drive/Penny Court/Clayton Way	Shared lane	Install shared lane markings and signs from Oatfield Road to Webster Road	Low	$10,000
Intersections					
B33	OR 99E	Enhanced crossing	Install skip striping along OR 99E through all major intersections with green paint in all conflict areas	High	$15,000
B34	SE 82nd Drive	Enhanced crossing	Install skip striping along 82nd Drive through all major intersections with green paint in all conflict areas	High	$20,000

Location		Type	Project	Cost Estimate	Priority
B36	Oatfield Road/Webster Road	Enhanced crossing	Reconfigure the intersection to facilitate bicycle turning movements	High	$15,000
B37	Oatfield Road	Enhanced crossing	Install skip striping along Oatfield Road through all major intersections with green paint in all conflict areas	High	$15,000
				TOTAL High Priority Costs	**$1,460,000**
				TOTAL Medium Priority Costs	**$65,000**
				TOTAL Low Priority Costs	**$215,000**
				TOTAL Program Costs (25 years)	**$1,740,000**

1. Project no shown on Bicycle Plan Map
2. Cost estimate assumes removal of on-street parking



Bicycle Plan Projects
Gladstone, Oregon

Figure **3**

H:\19\19890 - Gladstone TSP Update\gis\TM9\03 Bicycle Plan Projects.mxd - mbell - 2:55 PM 5/26/2017

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TRANSIT PLAN

Public transit can provide important connections to destinations for people that do not drive or bike and can provide an additional option for all transportation system users. Public transit complements walking, bicycling, or driving trips: users can walk to and from transit stops and their homes, shopping or work places, people can drive to park-and-ride locations to access a bus, or people can bring their bikes on transit vehicles and bicycle from a transit stop to their final destination.

Providing transit service in smaller cities is generally led by a local or regional transit agency, and relies on appropriate land uses and densities that can support transit service. The city can plan for transit-supportive land use patterns and support future transit viability by designing and building streets that will comfortably accommodate transit stops and include the right-of-way that could allow for transit stops to be located as close as possible to important destinations in the city. At a minimum, a transit stop should be well-signed and have a comfortable space to wait. Benches and shelter from the weather can improve user comfort, and including bike parking near bus stops allows people to leave their bike at one trip-end instead of taking it with them on the bus.

The City of Gladstone can support improved transit service by providing easy and safe walking and bicycling connections between key roadways, neighborhoods, and local destinations by providing amenities, such as shelters and benches, at transit stops, by encouraging an appropriate mix and density of uses that support public transit, and by providing and planning for park-and-ride locations. Table 9 summarizes the transit plan identified for Gladstone.

Table 9: Transit Plan

Project Number	Location	Agency Responsible	Description	Priority	Cost Estimate
T1	City-wide	City/TriMet	Coordinate with TriMet on new and re-routed fixed-route service identified in the TriMet Service Enhancement Plan for Southeast	Medium	$0[1]
T2	City-wide	City/TriMet	Coordinate with TriMet to install shelter and other amenities at bus stops consistent with TriMet Bus Stop Guidelines	Medium	$25,000
T3	City-wide	City/TriMet	Identify a location for a new park-and-ride facility	Medium	$50,000
T4	OR 99E/Arlington Street	City/TriMet	Relocate the southbound transit stop to the far side of the intersection	Medium	<$5,000
T5	Webster Road/Clayton Way	City/TriMet	Install a no-parking/bus zone sign along the west side of Webster Road	Medium	<$5,000
			TOTAL Medium Priority Costs		**$85,000**
			TOTAL Program Costs (25 years)		**$85,000**

1. Project costs to be funded by others.

MOTOR VEHICLE PLAN

The street system within Gladstone is largely built-out and there are few opportunities to construct new roadways. There are also few operational issues under existing and projected future traffic conditions. Therefore, the Motor Vehicle Plan includes projects to increase the efficiency of the transportation system through changes in the functional classification of roadways, development of roadways standards and standard cross sections, improvements to street system connectivity, and improvements to the capacity of key intersections.

Functional Classification

The proposed changes to the functional classification of roadways within Gladstone were determined based on a review of the existing Gladstone TSP and other regional plans as well as direction provided by City staff. Several of the changes have been proposed to better align the classifications with the intended use of the roadways. These changes primarily lower the roadway's classification from arterial to collector or from collector to local. Figure 4 and Table 10 summarize the proposed changes in functional classification.

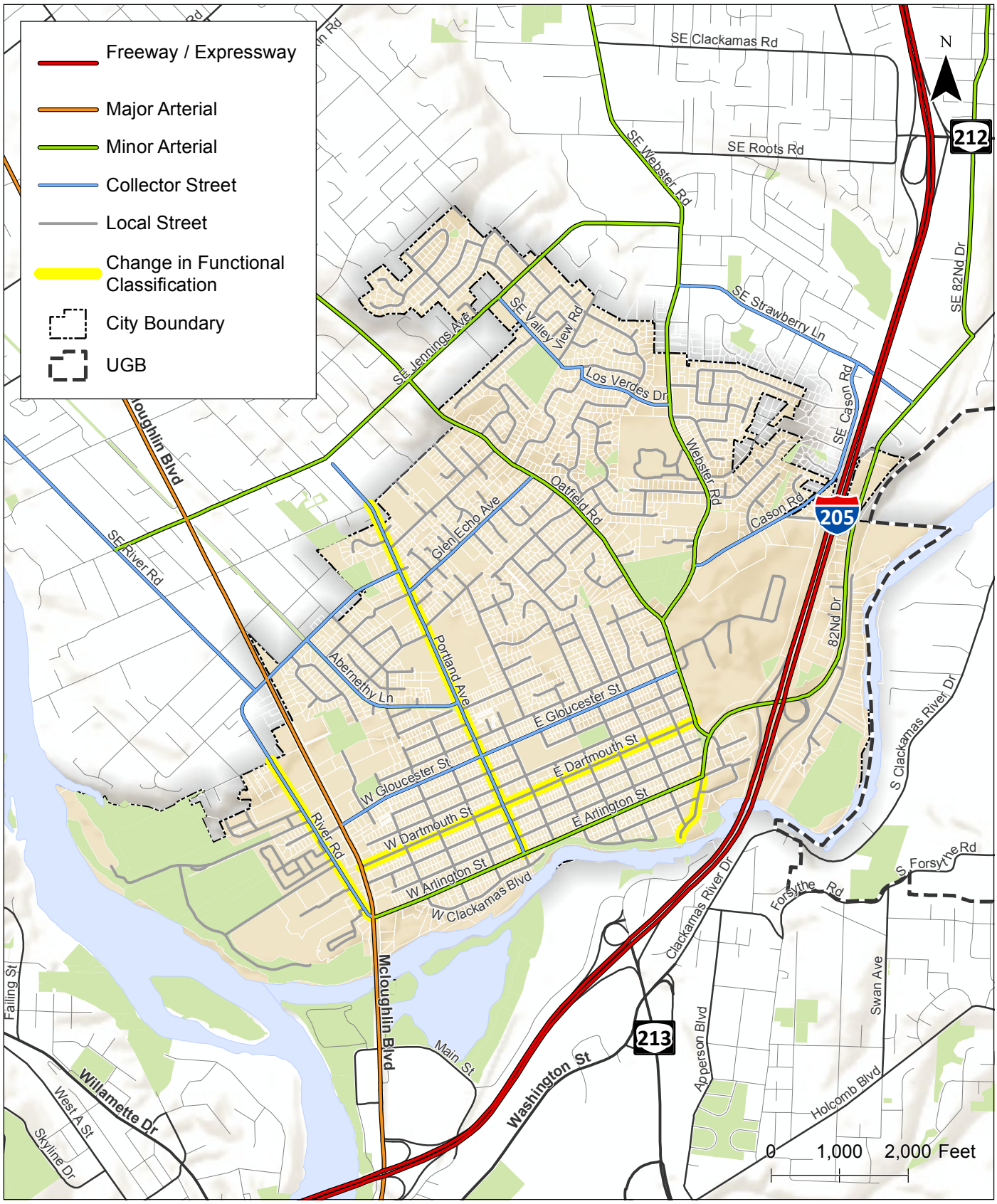
Table 10: Proposed Changes in Functional Classification

Street	Segment	Existing Classification	Future Classification
Portland Avenue	Arlington Street to north City limits	Arterial	Collector
River Road	OR 99E to north City limits	Arterial	Collector
SE 82nd Drive	Arlington Street to southern terminus	Arterial	Local
Dartmouth Street	Or 99e TO Oatfield Road	Collector	Local

The proposed changes in functional classification shown in Figure 4 and Table 10 will impact the design and function of the roadways as well as the types of treatments that can be considered to manage traffic. The proposed changes in functional classification will be evaluated further by the project team and the general community prior to inclusion in the TSP update.

Roadway Cross Section Standards

Roadway cross section standards were developed for the Gladstone TSP update based on the characteristics of existing roadways within the city. While the actual design of roadways can (and will) vary from street to street and segment to segment due to adjacent land uses and demand, the roadway cross section standards are intended to define a system that allows standardization of key characteristics to provide consistency, but also to provide criteria for application that provides some flexibility while meeting the design standards. Table 11 outlines the roadway cross section standards for city streets. Exhibits 1 through 3 illustrate the cross section standards for each functional classification.



Functional Classification Plan Updates
Gladstone, Oregon

Figure **4**

H:\19\19890 - Gladstone TSP Update\gis\TM9\04 Functional Classification Plan Updates.mxd - mbell - 2:55 PM 5/26/2017

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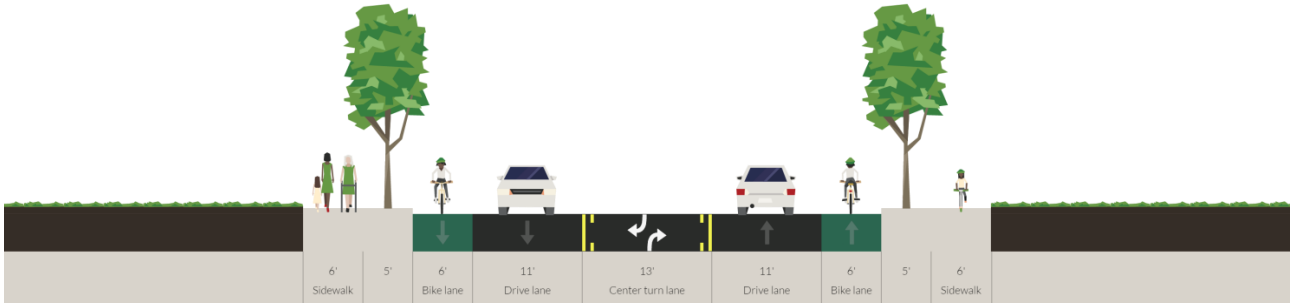
Unless prohibited by significant topographic or environmental constraint, newly constructed streets shall meet the maximum standards indicated in the cross sections. When widening an existing street, the City may use lesser standards than the maximum to accommodate physical and existing development constraints where determined to be appropriate by the City Engineer. Examples of constrained street cross sections are shown for minor arterial and collector streets. These constrained cases may be applied where future daily volumes do not require center left-turn pockets or raised medians. In some locations "green streets" (those that utilize vegetation or pervious material to manage drainage) may be appropriate due to design limitations or adjacent land use. Green street elements (as described in the notes for the cross section exhibits) may be used, where appropriate as determined by the City Engineer.

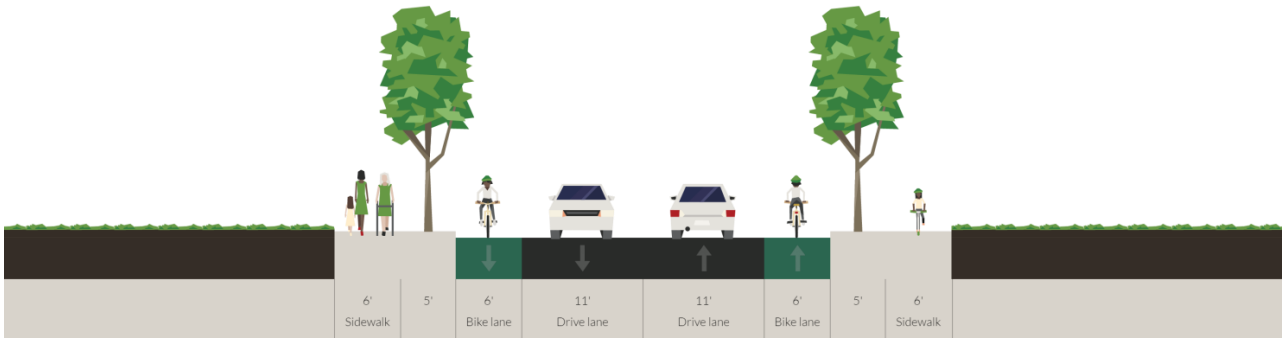
Table 11: Roadway Cross Section Standards

Street Element	Characteristic	Width/Options
Vehicle Lane Widths (Typical widths)	Arterial	11-12 feet
	Collector	10-12 feet
	Local	10-12 feet
On-Street Parking	Arterial	Optional (7-8 feet)
	Collector	Optional (7-8 feet)
	Local	Optional (7-8 feet)
Bike Lanes	Arterial	6-7 feet
	Collector	5-6 feet
Sidewalks	Arterial	6 feet, 10-12 feet in commercial zones
	Collector	6 feet, 8-20 feet in commercial zones
	Local	6 feet
Landscape Strips	Can be included on all streets	5-6 feet typical
Raised Medians	5-Lane	Optional
	3-Lane	Optional
	2-Lane	Consider if appropriate
Neighborhood Traffic Management (NTM)	Arterial	Not Appropriate
	Collector	Only in special circumstances
	Local	At the discretion of the City Engineer
Transit	Arterial	Appropriate
	Collector	Only in special circumstances
	Local	Not recommended

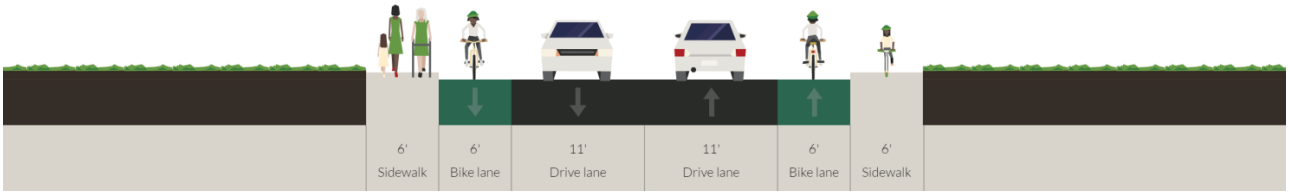
Exhibit 1: Arterial Cross Sections



Arterial with Median/Center Turn Lane



Arterial without Median/Center Turn Lane



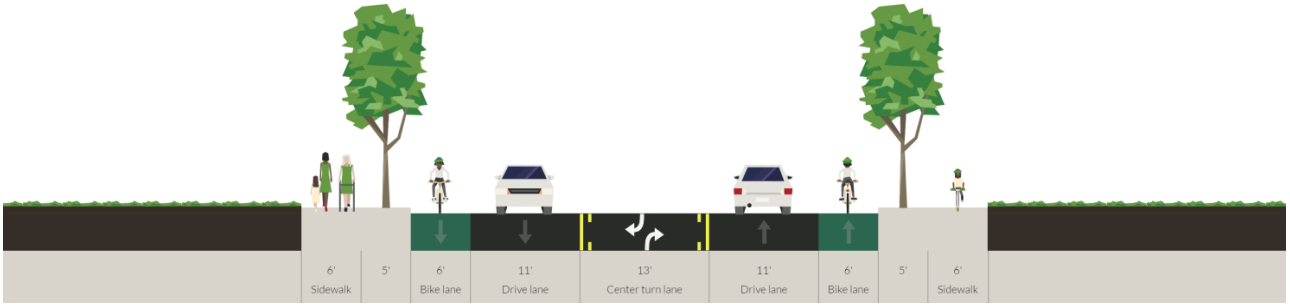
Arterial Constrained

Table 12: Arterial Cross Section Standards

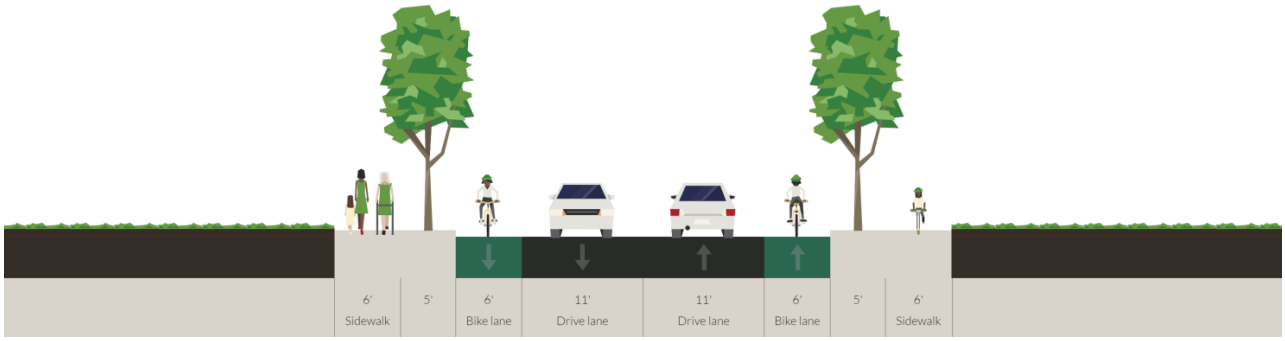
Standards	Arterial
Vehicle Lanes	11-12 feet
On-Street Parking	Optional (7-8 feet)[1]
Bike Lanes	6-7 feet
Sidewalks	6 feet; 10-12 feet in commercial zones
Landscape Strips	5-6 feet[2]
Median/Center Turn Lane	13-14 feet
Neighborhood Traffic Management	Not Appropriate

1. Allowance of on-street parking shall be based upon the nature and intensity of adjacent development and physical constraints.
2. Landscape strips may be reduced and/or removed at the discretion of the City Engineer.
3. The City Engineer or may recommend green street variations of each cross section. These variations may include replacing the standard landscape strip with a rain garden or swale, using pervious material for the sidewalk/cycle track, and in some cases providing a sidewalk on only one side of the street.

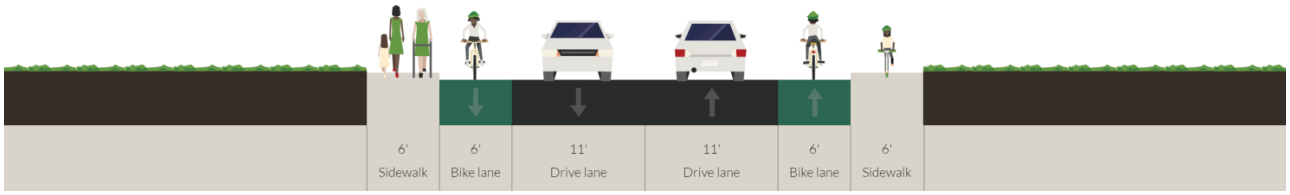
Exhibit 2: Collector Cross Sections



Collector with Median/Center Turn Lane



Collector without Median/Center Turn Lane



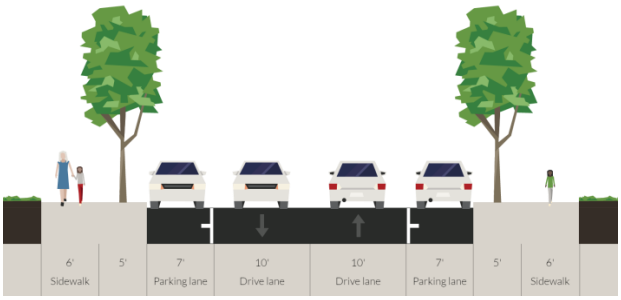
Collector Constrained

Table 13: Collector Cross Section Standards

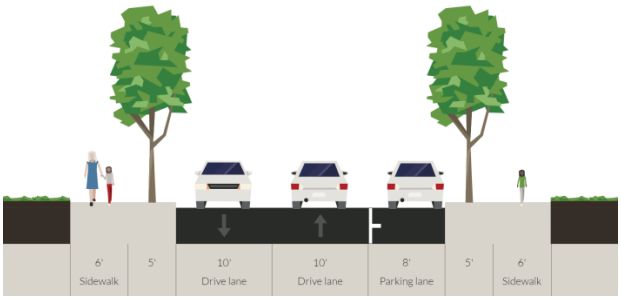
Standards	Arterial
Vehicle Lanes	10-12 feet
On-Street Parking	Optional (7-8 feet)[1]
Bike Lanes	5-6 feet[2]
Sidewalks	6 feet; 8-20-feet in commercial zones
Landscape Strips	5-6 feet[3]
Median/Center Turn Lane	13-14 feet
Neighborhood Traffic Management	Only in special circumstances

1. Allowance of on-street parking shall be based upon the nature and intensity of adjacent development and physical constraints.
2. Bike lanes required where future traffic volumes > 3,000 ADT. When < 3,000 ADT, 14-foot wide travel lanes will be provided.
3. Landscape strips may be reduced and/or removed at the discretion of the City Engineer.
4. The City Engineer or may recommend green street variations of each cross section. These variations may include replacing the standard landscape strip with a rain garden or swale, using pervious material for the sidewalk/cycle track, and in some cases providing a sidewalk on only one side of the street.

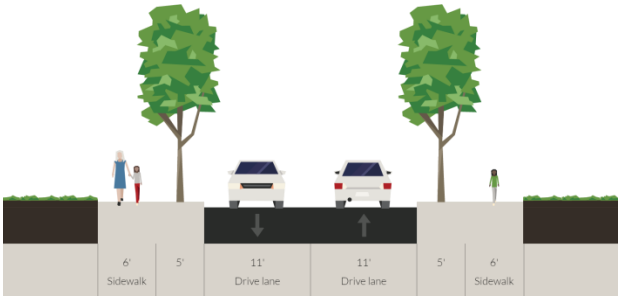
Exhibit 3: Local Street Cross Sections



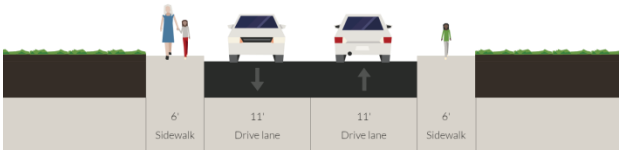
34-foot Local (Parking on Both Sides)



28-foot Local (Parking on One Side)



24-foot Local (No Parking)



Local Constrained

Table 14: Local Street Cross Section Standards

Standards[3]	Local Streets
Vehicle Lane Widths	10-12 feet
On-Street Parking	Optional (7-8 feet)[1]
Sidewalks	6 feet
Landscape Strips	5-6 feet[2]
Median/Turn Lane Widths	None
Neighborhood Traffic Management	At the discretion of the City Engineer

1. Allowance of on-street parking shall be based upon the nature and intensity of adjacent development and physical constraints.
2. Landscape strips may be reduced and/or removed at the discretion of the City Engineer.
3. The City Engineer or may recommend green street variations of each cross section. These variations may include replacing the standard landscape strip with a rain garden or swale, using pervious material for the sidewalk, and in some cases providing a sidewalk on only one side of the street.

Street System Connectivity

As indicated above, the street system within Gladstone is largely built-out. Therefore, there are limited opportunities for new arterial or collector streets. However, there are opportunities for new local streets in select areas throughout the city that could improve access and circulation for all travel modes.

Figure 5 illustrates the location of the local street connections identified for the Gladstone TSP update. Table 15 summarizes the connections and identifies their priority based on the project evaluation criteria. Costs are not provided for these projects as they are anticipated to be constructed by future development. Any local street connectivity projects that are desired to be city-initiated projects should be identified as a high priority and included in the cost-constrained plan.

Table 15: Street Connections by Priority

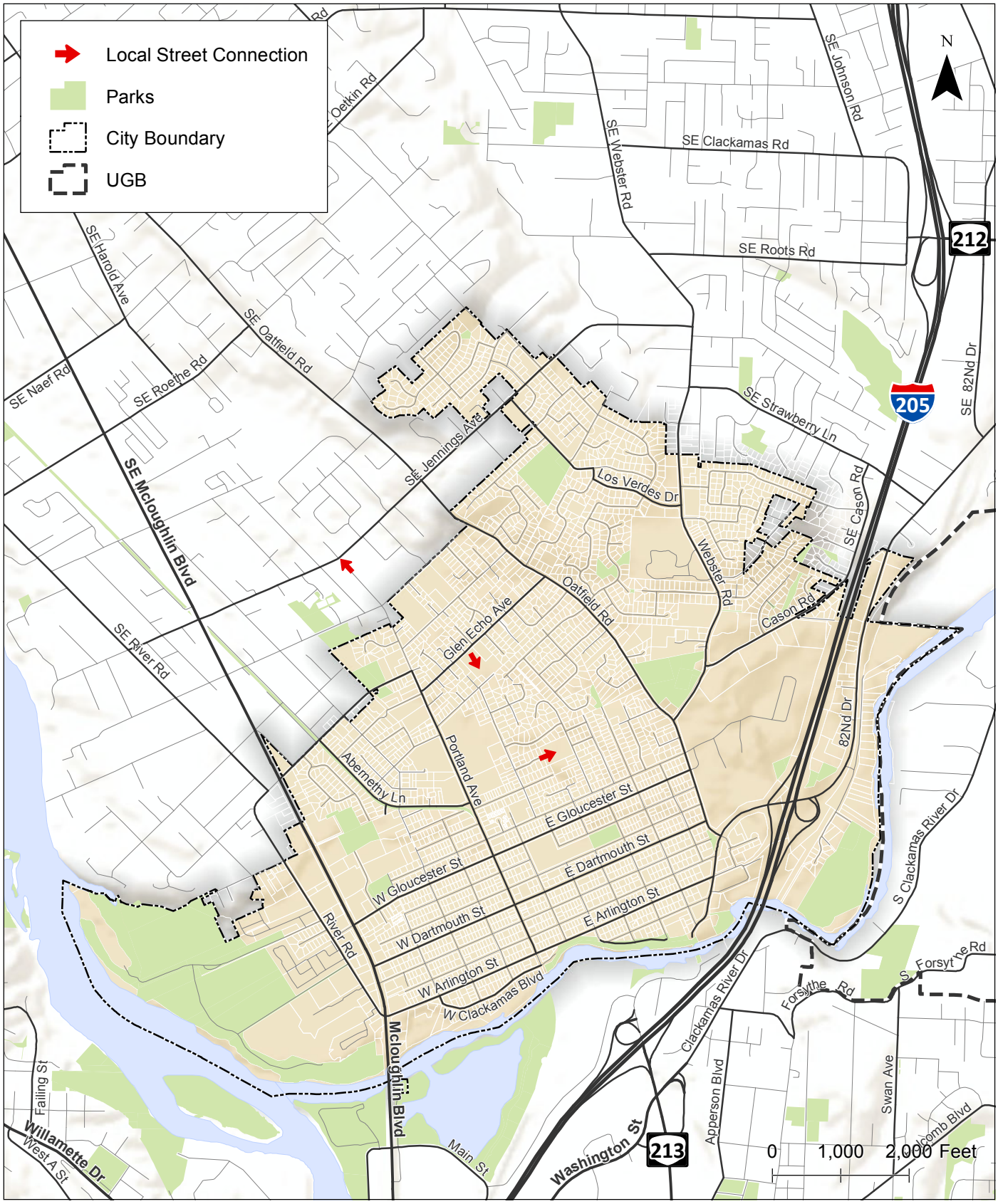
Project Number	Location	Description	Priority
SC1	Portland Avenue	Extend to Jennings Avenue	Low
SC2	Tyron Court	Extend to Nelson Lane	Low
SC3	Kenmore Street	Connect two segments	Low

Roadway Capacity

The roadway capacity projects developed for the Gladstone TSP update are summarized in Table 16 and shown in Figure 6. These projects are intended to address existing and projected future transportation system needs for motor vehicles as well as all other modes of transportation that depend on the roadway system for travel, such as pedestrians, bicyclists, transit users, and freight.

Table 16: Motor Vehicle Plan Projects

Project Number	Location	Description	Priority	Cost Estimate
M1	OR 99E/ E Arlington Street	Restrict eastbound movements at the intersection	Low	$100,000
M2	OR 99E/ Glen Echo Avenue	Install a separate right-turn lane on the westbound approach	Low	$5,000
M3	I-205 Ramp Terminals/ SE 82nd Drive	I-205 Interchange Refinement Plan	Medium	$20,000
M4	Oatfield Road/ Glen Echo Avenue	Install a traffic signal when warranted	Low	$250,000
M5	Oatfield Road/ Gloucester Street	Install a traffic signal when warranted	Low	$250,000
M6	Oatfield Road/ Dartmouth Street	Install a median along Oatfield Road to restrict left-turn movements to/from Dartmouth Street as well as other local street connections	Medium	$35,000
			TOTAL Medium Priority Costs	**$55,000**
			TOTAL Low Priority Costs	**$605,000**
			TOTAL Program Costs (25 years)	**$660,000**



Local Street Connectivity Projects
Gladstone, Oregon

Figure **5**

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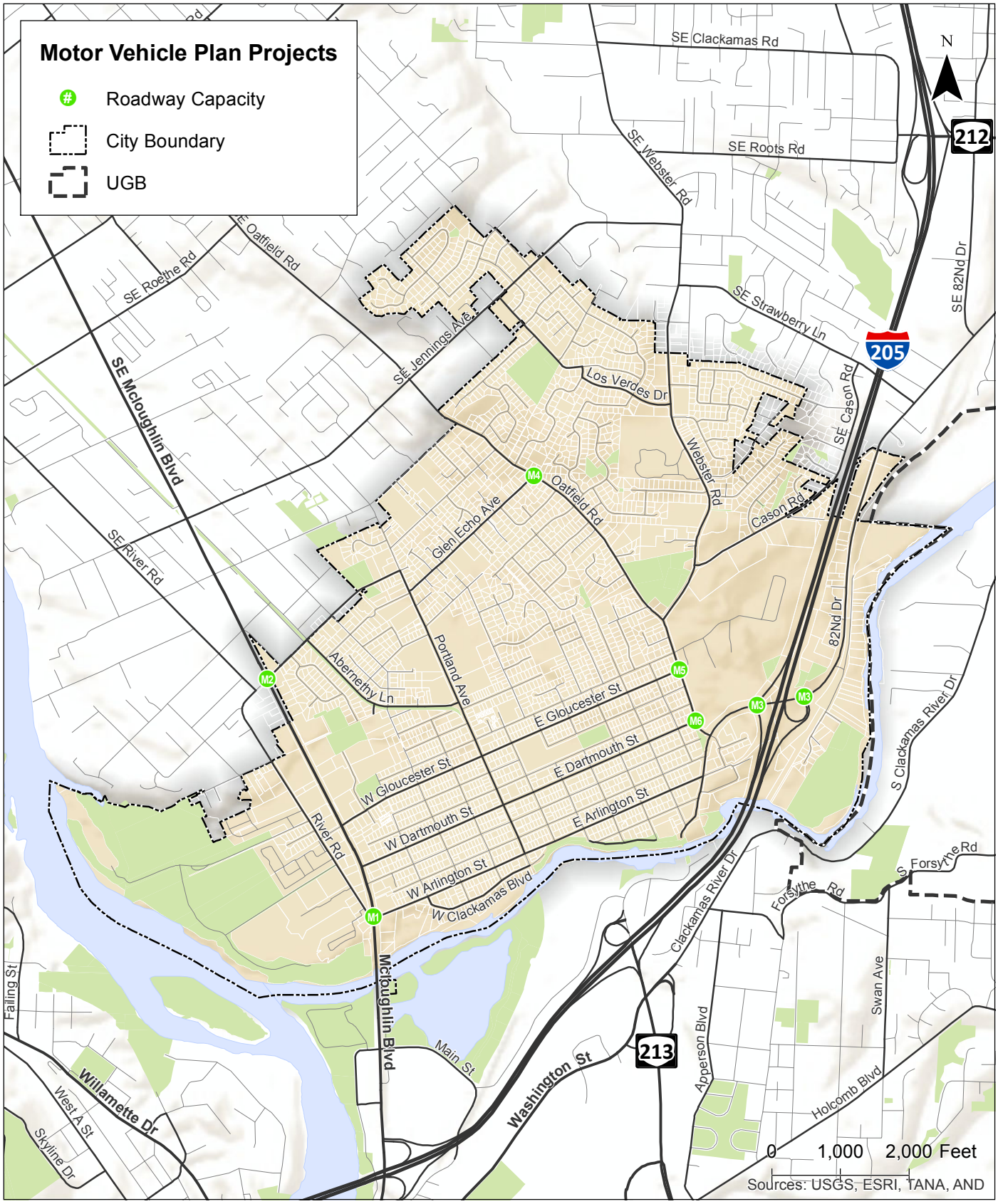
Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Oregon Department of Transportation, Portland Metro Data Resource Center



Motor Vehicle Pln Projects
Gladstone, Oregon

Figure **6**

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Oregon Department of Transportation, Portland Metro Data Resource Center

Attachment A Project Evaluation Criteria

PROJECT EVALUATION CRITERIA

The project evaluation criteria were used to evaluate projects included in the planned transportation system and identify priorities for the financially constrained transportation system. The projects were identified as high, medium, and low priority based on how well they address the goals for the transportation system. The evaluation criteria use a qualitative rating method of positive, neutral, and negative as described below.

- Positive: The project supports the intent of or has a positive impact on the related goal and objective. (+1)
- Neutral: The goal and objective does not apply to the project or the project has no impact on the goal and objective. (0)
- Negative: The project does not support the intent of or has a negative impact on the goal and objective. (-1)

Table A-1 presents the goals and objectives and related evaluation criteria that were used to evaluate the projects for the Gladstone TSP update.

Table A-1: Evaluation Criteria

Objective	Evaluation Criteria	Evaluation Score
Goal I: Safety – Provide a safe and efficient multimodal transportation system for all members of the community.		
Objective A. Address safety issues at locations with a history of fatal, serious injury, or frequent bicycle/pedestrian-related crashes	Project could reduce the potential for fatal, serious injury, or bicycle/pedestrian-related crashes	+1
	Project would have no impact on the potential for fatal, serious injury, or bicycle/pedestrian-related crashes	0
	Project could increase the potential for fatal, serious injury, or bicycle/pedestrian-related crashes	-1
Objective B. Implement strategies that reduce the potential for future conflicts between travel modes	Project could reduce potential for future conflicts between travel modes	+1
	Project would have no impact on the potential for future conflicts between travel modes	0
	Project could increase the potential for future conflicts between travel modes	-1
Goal II: Mobility – Provide a multimodal transportation system that is in a good state of repair and meets applicable State, regional, and local operational performance measures.		
Objective A. Maintain the transportation system in a good state of repair	Project could improve the state of the transportation system	+1
	Project would have no impact on the state of the transportation system	0
	Project could diminish the state of the transportation system	-1
Objective B. Meet applicable State, regional, and local operational performance measures	Project will meet applicable State, regional, and local operational performance measures	+1
	Project will not impact State, regional, and local operational performance measures	0
	Project will not meet State, regional, and local operational performance measures	-1
Goal III: Accessibility – Provide a multimodal transportation system that is accessible to all members of the community and minimizes out of direction travel.		
Objective A. Ensure adequate access for children, disabled, low-income, or elderly people	Project improves access in an area with a high concentration of children, disabled, low-income, or elderly people	+1
	Project does not improve access in an area with a high concentration of children, disabled, low-income, or elderly people	0

Objective	Evaluation Criteria	Evaluation Score
	Project impedes access in an area with a high concentration of children, disabled, low-income, or elderly people	-1
Objective B. Ensure adequate access for all members of the community to schools, parks, churches, and other essential destinations	Project improves access to schools, parks, churches, and other essential destinations	+1
	Project does not improve access to schools, parks, churches and other essential destinations	0
	Project impedes access schools, parks, churches, and other essential destinations	-1
Goal IV: Connectivity – Provide a multimodal transportation system that increases connections to all areas of the City and works to overcome existing barriers to regional connectivity		
Objective A. Improve existing connections between residential areas and local school, parks, churches and other essential destinations	Project will improve an existing connection	+1
	Project will not improve an existing connection	0
	Project will impede an existing connection	-1
Objective B. Create new connections between residential areas and local school, parks, churches, and other essential destinations	Project will create a new connection	+1
	Project will not create a new connection	0
	Project will impede the creation of a new connection	-1
Goal V: Health – Develop a transportation system that encourages active transportation and supports healthy and active choices for the community.		
Objective A. Increase the number of active transportation options available to all members of the community	Project could increase the number of active transportation options	+1
	Project would not increase the number of active transportation options	0
	Project could reduce the number of active transportation options	-1
Objective B. Integrate active transportation options with other modes of travel within the community	Project could integrate active transportation options with other modes of travel	+1
	Project would not integrate active transportation options with other modes of travel	0
	Project could impede integration of active transportation options with other modes of travel	-1
Goal VI: Coordination – Develop a transportation system that is consistent with other state, regional, and local plans.		
Objective A. Ensure consistency with State, regional, and local planning rules and regulations	Project will ensure consistency with State, regional, and local planning rules and regulations	+1
	Project will not ensure consistency with State, regional, and local planning rules and regulations	0
	Project will defy State, regional, and local planning rules and regulations	-1
Objective B. Coordinate land use, financial, and environmental planning to prioritize strategic transportation investments	Project will coordinate land use, financial, and environmental planning	+1
	Project will does require coordination between land use, financial, and environmental planning	0
	Project will disrupt coordination between land use, financial, and environmental planning	-1
Goal VII: Financial Responsibility – Invest in financially feasible infrastructure projects that will serve the city for years to come		
Objective A. Ensure adequate funding is available to fund further study or implementation of the planned transportation system	Adequate funding is currently available	+1
	Adequate funding is available through an existing grant program or other funding source	0
	Adequate funding is not available	-1
Objective B. Ensure there are no significant barriers to implementation of the planned transportation system	There are no significant barriers	+1
	There are barriers, but they can be overcome	0
	There are significant barriers	-1

Attachment B Project Evaluation Matrix

Project Number	Location	Solutions	Evaluation Criteria															Cost	Priority
			Safety		Mobility		Accessibility		Connectivity		Health		Coordination		Financial Responsibility				
			Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Total		
Pedesatrian System																			
Arterials																			
P1	OR 99E (McLoughlin Boulevard)	Fill in the gaps	1	1	0	0	1	0	0	1	1	0	0	0	-1	0	4	$ 50,000	Low
P2	OR 99E (McLoughlin Boulevard)	Fill in the gaps	1	1	0	0	1	0	0	1	1	0	0	0	-1	0	4	$ 115,000	Low
P3	OR 99E (McLoughlin Boulevard)	Reduce posted speed limits	1	0	0	0	1	0	1	0	1	0	0	1	1	-1	5	$ 5,000	Low
P4	Oatfield Road	Fill in the gaps	1	1	0	0	1	1	0	1	1	0	0	0	0	0	6	$ 130,000	Medium
P5	Oatfield Road	Fill in the gaps	1	1	0	0	1	1	0	1	1	0	0	0	0	0	6	$ 485,000	Medium
P6	Portland Avenue	Downtown Revitalization Plan	1	1	1	0	1	1	1	0	0	1	0	1	0	0	8	N/A	High
P7	Portland Avenue	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 235,000	Low
P8	Portland Avenue	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 50,000	Low
P9	Webster Road	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 55,000	Low
Collectors																			
P10	Abernathy	Install street lighting	0	0	1	0	1	1	1	0	0	0	0	0	0	0	4	$ 175,000	Low
P11	Dartmouth Street	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 260,000	Low
P12	Glen Echo Avenue	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 515,000	Low
P13	Glen Echo Avenue	Fill in the gaps	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 460,000	Low
P14	Los Verdes Drive/Valley View Road	Fill in the gaps	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3	$ 120,000	Low
P15	Los Verdes Drive/Valley View Road	Fill in the gaps	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3	$ 15,000	Low
Local Streets																			
P16	Beatrice Avenue	Install new sidewalks	0	1	1	0	1	1	0	1	1	0	0	0	0	0	6	$ 240,000	Medium
P17	Beatrice Avenue	Install new sidewalks	0	1	1	0	1	1	0	1	1	0	0	0	0	0	6	$ 215,000	Medium
P18	Beverly Lane	Fill in the gaps	0	1	1	0	0	1	1	0	1	0	0	0	0	0	5	$ 35,000	Low
P19	Chicago Avenue	Fill in the gaps	0	1	1	0	1	1	1	0	1	0	0	0	0	0	6	$ 60,000	Medium
P20	Chicago Avenue	Fill in the gaps	0	1	1	0	1	1	1	0	1	0	0	0	0	0	6	$ 95,000	Medium
P21	Clackamas Boulevard	Install mixed-use shoulder	0	1	1	0	1	0	0	1	1	0	0	0	0	0	5	$ 310,000	Low
P22	Clackamas Boulevard	Install mixed-use shoulder	0	1	1	0	1	0	0	1	1	0	0	0	0	0	5	$ 310,000	Low
P23	Clayton Way	Fill in the gaps	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3	$ 135,000	Low
P24	Cornell Avenue	Install new sidewalks	0	1	1	0	1	1	0	1	1	0	0	0	0	0	6	$ 390,000	Medium
P25	Cornell Avenue	Install new sidewalks	0	1	1	0	1	1	0	1	1	0	0	0	0	0	6	$ 455,000	Medium
P26	Fairfield Street	Fill in the gaps on one side	0	1	0	0	1	1	0	1	1	0	0	0	0	0	5	$ 50,000	Low
P27	Harvard Avenue	Fill in the gaps	0	1	1	0	1	1	1	0	1	0	0	0	0	0	6	$ 145,000	Medium
P28	Harvard Avenue	Fill in the gaps	0	1	1	0	1	1	1	0	1	0	0	0	0	0	6	$ 175,000	Medium
P29	Oakridge Drive	Fill in the gaps	0	1	1	0	1	0	1	0	1	0	0	0	0	0	5	$ 70,000	Low
Intersections																			
P30	82nd Drive/I-205 Southbound Ramp Terminal	Signalized pedestrian crossing	1	1	1	1	0	0	1	0	1	1	0	0	-1	0	6	$ 25,000	Medium
P31	Cason Road/Ohlson Road	Install enhanced pedestrian crossing	0	1	1	0	0	1	1	0	1	1	0	0	1	0	7	$ 25,000	High
P32	Jennings Avenue/Valley View Road	Install enhanced pedestrian crossing	1	1	1	0	0	0	1	0	1	1	0	0	1	0	7	$ 25,000	High
P33	Oatfiled/Hull Road	Install enhanced pedestrian crossing	1	1	1	0	0	0	1	0	1	1	0	0	1	0	7	$ 65,000	High
P34	Oatfield Road/Glen Echo Avenue	Install enhanced pedestrian crossing	1	1	1	0	0	0	1	0	1	1	0	0	1	0	7	$ 65,000	High
P35	Oatfield Road/Shared Path	Install enhanced pedestrian crossing	1	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 65,000	High
P36	Oatfield Road/Gloucester Street	Install enhanced pedestrian crossing	1	1	1	0	1	0	1	0	1	1	0	0	1	0	8	$ 65,000	High
P37	Portland Avenue/Arlington Street	Install enhanced pedestrian crossing	0	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 25,000	High
P38	Portland Avenue/Glen Echo Avenue (North)	Install enhanced pedestrian crossing	0	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 25,000	High
P39	Portland Avenue/Glen Echo Avenue (South)	Install enhanced pedestrian crossing	0	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 25,000	High
P40	Webster Road/Cason Road	Install enhanced pedestrian crossing	0	1	1	0	0	1	1	0	1	1	0	0	1	0	7	$ 65,000	High
P41	Webster Road/Clayton Way	Install enhanced pedestrian crossing	0	1	1	0	0	1	1	0	1	1	0	0	1	0	7	$ 65,000	High
P42	Webster Road/Los Verdes Drive	Install enhanced pedestrian crossing	0	1	1	0	0	1	1	0	1	1	0	0	1	0	7	$ 65,000	High
P43	Portland Avenue	Curb extensions	0	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 375,000	High
P44	Arlington Street	Curb extensions	0	1	1	0	1	0	1	0	1	1	0	0	1	0	7	$ 250,000	High
Off-street Improvements																			
P45	Beatrice Avenue Accessway	Accessway	0	1	0	0	1	1	0	1	1	0	0	1	0	-1	0	$ 25,000	0
P46	Duniway Avenue Accessway	Accessway	0	1	0	0	1	0	0	1	1	0	0	1	1	-1	4	$ 25,000	Low
P47	Hull Avenue Accessway	Accessway	0	1	0	0	1	1	0	1	1	0	0	1	0	-1	5	$ 50,000	Low
P48	Jenson Road Shared-use Path	Path	0	1	0	0	0	1	1	0	1	1	0	0	1	1	7	$ 5,000	High
P49	Shared-use Path under OR 99E	Path	1	1	0	0	0	1	0	1	1	1	0	1	0	-1	6	$ 45,000	Medium
P50	Ohlson Wetlands Shared-use Path	Path	0	1	0	0	1	1	0	1	1	1	0	1	0	-1	6	$ 115,000	Medium
P51	Trolley Trail Bridge	Bridge	0	1	0	0	0	0	0	1	1	1	0	1	1	-1	6	$ 7,500,000	Medium

Project Number	Location	Solutions	Evaluation Criteria: Safety Objective A	Safety Objective B	Mobility Objective A	Mobility Objective B	Accessibility Objective A	Accessibility Objective B	Connectivity Objective A	Connectivity Objective B	Health Objective A	Health Objective B	Coordination Objective A	Coordination Objective B	Financial Responsibility Objective A	Financial Responsibility Objective B	Total	Cost	Priority
Bicycle System																			
Arterials																			
B1	82nd Drive	Reduce lane width and install buffered bike lanes	1	1	1	0	0	0	1	0	1	1	1	0	0	0	7	$ 105,000	High
B2	OR 99E (McLoughlin Boulevard)	Reduce lane width and install buffered bike lanes	1	1	1	0	1	0	1	0	1	1	1	0	-1	0	7	$ 70,000	High
B3	Arlington Street	Establish alternative route	0	0	0	0	1	0	0	1	1	1	0	0	1	0	5	$ 5,000	Low
B4	Arlington Street	Widen roadway and install bike lanes and parking	0	1	1	0	1	0	0	1	1	1	0	0	0	0	6	$ 10,000	Medium
B5	Arlington Street	Widen roadway and install bike lanes and parking	0	1	1	0	1	0	0	1	1	1	0	0	0	0	6	$ 50,000	Medium
B6	Oatfield Road	Reduce posted speed limit	1	0	0	-1	1	1	1	0	0	0	1	0	1	0	5	$ 5,000	Low
B7	Oatfield Road	Reduce lane width and widen bike lanes	1	1	1	0	1	1	1	0	1	1	1	0	0	0	9	$ 75,000	High
B8	Portland Avenue from Clackamas Boulevard to Arlington Street	Remove center turn lane and install bike lanes	1	1	1	0	1	1	0	1	1	1	1	0	0	0	9	$ 5,000	High
B9	Portland Avenue	Downtown Revitalization Plan	1	1	1	0	1	1	1	0	0	1	0	1	0	0	0	$ 5,000	Low
B10	Portland Avenue from Abernathy Lane to Nelson Lane	Remove center turn lane and install bike lanes	1	1	1	0	1	1	0	1	1	1	1	0	0	0	9	$ 15,000	High
B11	Portland Avenue from Nelson Lane to north	Widen roadway and install bike lanes and parking	0	1	1	0	1	1	0	1	1	1	0	0	0	0	7	$ 265,000	High
B12	Webster Road	Reduce posted speed limit	0	0	0	-1	1	1	1	0	0	0	1	0	1	0	4	$ 5,000	Low
B13	Webster Road	Reduce lane width and widen bike lanes	0	1	1	0	1	1	1	0	1	1	1	0	0	0	8	$ 55,000	High
Collectors																			
B14	Abernathy	Install bike lanes on one side	0	1	0	0	1	1	1	0	1	1	1	0	0	0	7	$ 25,000	High
B15	Cason Road	Restripe east leg of Webster Road/Cason Road intersection	0	1	1	0	1	1	1	0	0	1	0	0	0	1	7	$ 5,000	High
B16	Dartmouth Street	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	0	0	4	$ 20,000	Low
B17	Dartmouth Street	Remove parking and install bike lanes	0	1	1	0	1	1	0	1	1	1	0	0	0	0	7	$ 55,000	High
B18	Gloucester Street	Widen roadway and install bike lanes and parking	0	1	1	0	1	1	0	1	1	1	1	0	0	0	8	$ 70,000	High
B19	Glen Echo Avenue	Reduce posted speed limit	0	0	0	-1	1	1	0	1	0	0	0	0	1	0	3	$ 5,000	Low
B20	Glen Echo Avenue	Widen roadway and install bike lanes and parking	0	1	1	0	1	1	0	1	1	1	0	0	0	0	7	$ 650,000	High
B21	Los Verdes Drive	Install shared lane markings and signs	0	-1	0	0	0	0	0	1	1	1	0	0	0	0	2	$ 20,000	Low
B22	River Road	Install "Bike Lane Ends" sign	0	0	0	0	1	0	1	0	0	1	1	0	1	1	6	$ 5,000	Medium
Local Streets																			
B23	Beatrice Avenue, from Abernathy Lane to Clackamas Boulevard	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	0	0	4	$ 20,000	Low
B24	Beverly Lane/Collins Crest, from Harvard Avenue to Oatfield Road	Install shared lane markings and signs	0	-1	0	0	0	1	0	1	1	1	0	0	1	0	4	$ 5,000	Low
B25	Chicago Avenue, from Hereford Street to Arlington Street	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	0	0	4	$ 15,000	Low
B26	Clackamas Boulevard, Arlington Road to 82nd Drive	Install shared lane markings and signs	0	-1	0	0	1	0	0	1	1	1	1	0	0	0	4	$ 15,000	Low
B27	Cornell Avenue, from Clackamas Boulevard to Collins Crest	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	0	0	4	$ 35,000	Low
B28	Duniway Avenue, from Abernathy Lane Abernathy Lane to Portland Avenue	Install shared lane markings and signs	0	-1	0	0	1	0	0	1	1	1	0	0	1	0	4	$ 5,000	Low
B29	Fairfield Street, from Cornell Avenue to Oatfield Road	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	1	0	5	$ 5,000	Low
B30	Hereford Street, from Beatrice Avenue to Oatfield Road	Install shared lane markings and signs	0	-1	0	0	1	1	0	1	1	1	0	0	0	0	4	$ 25,000	Low
B31	Nelson Lane/Harvard Avenue, from Portland Avenue to Hereford Street	Install shared lane markings and signs	0	-1	0	0	0	1	0	1	1	1	0	0	0	0	3	$ 15,000	Low
B32	Ridgegate Drive/Penny Court/Clayton Way, from Oatfield Road to Webster Road	Install shared lane markings and signs	0	-1	0	0	0	1	0	1	1	1	0	0	0	0	3	$ 10,000	Low
Intersections																			
B33	OR 99E	Install skip striping and green paint at major intersections	1	1	0	0	1	0	1	0	1	1	1	0	0	0	7	$ 15,000	High
B34	82nd Drive	Install skip striping and green paint at major intersections	1	1	0	0	0	1	1	0	1	1	1	0	0	0	7	$ 20,000	High
B35	Oatfield Road/Webster Road	Reconfigure intersection	1	1	0	0	0	1	1	0	1	1	1	0	0	0	7	$ 15,000	High
B36	Oatfield Road	Install skip striping and green paint at major intersections	1	1	0	0	1	0	1	0	1	1	1	0	0	0	7	$ 15,000	High

Project Number	Location	Solutions	Evaluation Criteria															Cost	Priority
			Safety		Mobility		Accessibility		Connectivity		Health		Coordination		Financial Responsibility				
			Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Objective A	Objective B	Total		
M1	OR 99E/E Arlington Street	Restricted eastbound movements	1	1	0	1	1	0	1	0	1	1	0	1	-1	0	7	$ 100,000	High
M2	OR 99E/Glen Echo Avenue	Westbound turn lane	1	0	0	1	1	0	1	0	0	0	0	0	-1	1	4	$ 5,000	Low
M3	I-205 Ramp Terminals/SE 82nd Drive	Interchange Refinement Plan	1	0	1	1	0	0	1	0	0	0	1	1	-1	0	5	$ 20,000	Low
M4	Oatfield Road/Glen Echo Avenue	Install median to restrict left-turn movements	1	1	0	0	0	0	1	0	0	0	0	0	0	0	4	$ 250,000	Low
M5	Oatfield Road/Gloucester Street	Install median to restrict left-turn movements	1	1	0	0	0	0	1	0	0	0	0	0	0	0	5	$ 250,000	Low
M6	Oatfield Road/Dartmouth Street	Install median to restrict left-turn movements	1	1	0	0	0	0	1	0	0	0	0	0	0	0	3	$ 35,000	Low