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MEMORANDUM

Date: May 25, 2015

Project #: 17817

To: Zach Pelz, City of West Linn
Gail Curtis, Oregon Department of Transportation

From: Susan Wright, PE, Matthew Bell, and Ribeka Toda, Kittelson & Associates, Inc.

Project: West Linn Transportation System Plan (TSP) Update

Subject: Revised Technical Memorandum #11: Planned and Financially Constrained Transportation Systems

The purpose of this memorandum is to present the draft planned and cost constrained transportation systems for the City of West Linn Transportation System Plan (TSP) update. Previous technical memorandums documented existing and future conditions and recommended solutions to the existing and anticipated system deficiencies. The consultant team developed the draft planned transportation system and identified priorities using the input gathered from the Project Management Team (PMT), Technical Advisory Committee (TAC), Citizen Advisory Committee (CAC), and Community Workshops on the solutions as well as the TSP goals, objectives, targets and project evaluation criteria documented in Technical Memorandum #3.

Project Evaluation Criteria and Prioritization

The draft planned system identifies high, medium, and low priority projects required to address the City of West Linn's goals for the transportation system. The goals are documented in detail in Technical Memorandum #3 and summarized below.

- **Goal 1: Safety** – Reduce transportation-related fatalities and serious injuries across all modes.
- **Goal 2: Mobility, Access and the Environment** – Improve peoples' access to jobs, schools, health care and other regular needs in ways that improve health, reduce pollution and retain money in the local economy.
- **Goal 3: Equity** – Develop transportation facilities that are accessible to all members of the community.
- **Goal 4: Maintenance** – Deliver access and safety improvements cost effectively, and within available revenues.

Targets and measures for evaluating the City's progress towards the goals were developed to identify and prioritize solutions that will help the city advance the target. The targets and measures (described in Technical Memorandum #3) were used to develop evaluation criteria to prioritize projects. The evaluation criteria help identify how well a project advances TSP targets. In addition to evaluation criteria related to the above goals, two additional project evaluation criteria were added which include whether a project is currently identified as a priority project in an existing transportation plan (such as the City's Trails Master Plan and the Regional Active Transportation Plan) and if the project is considered to be fiscally efficient as defined by the Metro Regional Transportation Plan.

Draft project evaluation criteria were applied to the solutions in Technical Memorandum #10 and reviewed with the TAC and CAC in April, 2015. The evaluation criteria were then revised based on the committee's input and were applied in this memorandum. The project evaluations were used to identify the projects within each section of the plan as high, medium, or low priority relative to each other. *The revised evaluation criteria are included in Attachment A. The evaluation of each of the projects in the draft planned system is included in Attachment B.*

Planning level cost estimates were generated for each project within the preferred alternative. These cost estimates were used to construct the cost constrained alternative to provide a more realistic plan based on the City's financial forecast. The draft cost constrained plan was developed by identifying forecasted transportation funding (documented in Technical Memorandum #4) and selecting higher priority projects from the draft planned system that can be funded with forecasted funds.

Transportation funding

The TSP will include a cost constrained plan which identifies the projects and programs the City anticipates being able to fund in the 25-year horizon. The estimated amount of local funds available for capital projects over the next 25 years is estimated to be approximately $50,000,000 or roughly $2,000,000 per year on average (documented in Technical Memorandum #4).[1]

[1] This number does not include potential additional funding from state and federal grants and loans such as Statewide Transportation Improvement Program (STIP), Metro Regional Flexible Funds, Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants, Transportation Infrastructure Finance and Innovation Act (TIFIA), and Safe Routes to Schools Program (SRTS). Historically, State and Federal grants have been a key source of revenue for major transportation capital projects. However, due to reduced state and federal transportation funding, competition for these grants has greatly increased. Although it is likely that these funds will be used in whole or in part to fund at least some transportation improvements 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.

Planned Transportation System Cost Summary

Table 1 provides a summary of the full cost of the planned transportation system. As shown, the total cost of the planned system is approximately $85,000,000. The cost of the projects in the high priority category is approximately $40,000,000. **The draft financially constrained plan can be assumed to primarily include the high priority projects.** This leaves approximately $10,000,000 for medium priority projects to be included in the financially constrained plan. The medium priority projects with the highest scores are included in Attachment "B". It should also be noted that the high priority projects will likely take more than ten years to complete due to the availability of funding being spread out over the 25 year horizon.

Table 1: Planned Transportation System Cost Summary

Project Type	High Priority (Cost Constrained Plan Projects) (0-10 years)	Medium Priority (10-20 years)	Low Priority (20-25 years)	Total
Planned Transportation System				
TSMO[1]	$150,000	$150,000	$75,000	**$375,000**
TDM[1]	$750,000	$750,000	$495,000	**$1,995,000**
Land Use		$185,000		**$185,000**
Access Management			$75,000	**$75,000**
Bike/Ped	$16,450,000	$21,887,500	$1,140,000	**$39,477,500**
Transit		$485,000		**$485,000**
Motor Vehicle	$22,275,000	$3,870,000	$16,600,000	**$42,475,000**
Total	**$39,625,000**	**$27,327,500**	**$18,385,000**	**$85,337,500**
Available Funding				
Total	$19,876,000	$19,876,000	$9,938.00	$49,690,000

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

DRAFT PLANNED SYSTEM

This section outlines the policies, programs, and projects included in the draft planned system. These were identified based on a technical analysis of the West Linn transportation system and comments from the Project Management Team (PMT), Technical Advisory Committee (TAC), and Citizen Advisory Committee (CAC) members.

This section is divided into the following sections outlined below:

- Functional Classification
- Transportation System Management and Operations (TSMO)
    - Transportation System Management (TSM)

    - Travel Demand Management (TDM)
    - Land Use Management
    - Neighborhood Traffic Management (NTM)
    - Access Management
    - Local Street Connectivity
    - Safety
    - Maintenance
- Pedestrian and Bicycle Plan
    - Trails Plan
    - Arterials
    - Collectors
    - Neighborhood Routes and Local Streets
- Transit Plan
- Motor Vehicle Plan
- Freight and Rail Plan

The recommendations in each section may include any of the following:

- Policies: Policy modifications that should be considered for implementation by the City of West Linn.
- Programs: Programs recommended to be implemented by the City of West Linn.
- Studies: Proposed studies or refinement plans for intersections and/or corridors throughout West Linn.
- Projects: Proposed capital improvement projects developed based on an analysis of existing and forecasted deficiencies of the transportation system within the City of West Linn.

Functional Classification

The functional classification of a roadway aids in defining its primary function and associated design standards for the facility. The hierarchy of the roadway facilities within the network in regards to the type of traffic served (through or local trips), balance of function (providing access and/or capacity), and the level of use (generally measured in vehicles per day) are generally dictated by its functional classification.

The proposed functional classification of roadways within West Linn was developed based on a review of the existing West Linn TSP and direction provided by City staff. Several changes have been proposed

to the existing functional classification to align with existing use and defined characteristics. These changes primarily lower the roadway's classification from arterial to collector, collector to neighborhood route, and from neighborhood route to local street. Table 2 summarizes the proposed changes in functional classification.

Table 2: Proposed Changes in Functional Classification

Street	Segment	Existing Classification	Future Classification
12th Street	Willamette Falls Drive to Tualatin Avenue	Minor Arterial	Collector
Alpine Drive	Killarney Drive to Bland Circle	Local	Neighborhood Route
Bay Meadows Drive	Rosemont Road to eastern roadway terminus	Neighborhood Route	Local
Beacon Hill Drive	Riverknoll Way to Barrington Drive	Local	Neighborhood Route
Beacon Hill Drive	Barrington Drive to Beacon Hill Lane	Neighborhood Route	Local
Beacon Hill Lane	Beacon Hill Drive to Winkle Way	Neighborhood Route	Local
Bland Circle	Salamo Road to Crestview Drive	Collector	Neighborhood Route
Bland Circle	Crestview Drive to northern terminus	Collector	Local
Bland Cirlce	Salamo Road to western roadway terminus	Collector	Local
Blankenship Road	10th street to Tannler Drive	Minor Arterial	Neighborhood Route
Broadway Street	McKillican Street to Willamette Falls Drive	Neighborhood Collector	Local
Buck Street	Elliot Street to Failing Street	Collector	Local
Burns Street	Highway 43 to Hood Street	Collector	Lcaol
Carriage Way	Suncrest Drive to Hidden Springs Road	Collector	Neighborhood Route
Cedar Oak Drive	Highway 43 to Old River Drive	Collector	Neighborhood Street
Cedar Oak Drive	Old River Drive to Elmran Drive	Neighborhood Route	Local
Chestnut Street	Sunset Avenue to Willamette Falls Drive	Minor Arterial	Collector
Clark Street	Skyline Drive to Long Street	Collector	Neighborhood Route
Cornwall Street	Lancaster Street to Sunset Avenue	Minor Arterial	Collector
Crestview Drive	Alpine Drive to Bland Circle	Local	Neighborhood Route
Debok Drive	Blankenship Road to Killarney Drive	Collector	Neighborhood Route
Debok Drive	Killarney Drive to northern roadway terminus	Collector	Local
Dillow Dive	Highway 43 to Larson Avenue	Neighborhood Route	Local
Dillow Drive	Larson Street to Failing Street	Collector	Local
Dollar Street	Willamette Falls Drive to western terminus	Collector	Local
Elliot Street	Highway 43 to Buck Street	Collector	Local
Elmran Drive	Old River Drive to Nixon Avenue	Collector	Local
Exeter Street	Oxford Street to Long Street	Neighborhood Route	Local
Failing Street	Dillow Drive to Buck Street	Collector	Local
Greene Street	Salamo Road to Tannler Drive	Neighborhood Route	Local
Hidden Springs Road	Rosemont Road to Highway 43	Minor Arterial	Collector
Hillcrest Drive	Marylhurst Drive to Suncrest Drive	Collector	Local
Hood Street	Highway 43 to Burns Street	Collector	Local
Jolie Pointe Road	Highway 43 to Larson Avenue	Collector	Local
Lancaster Street	Parker Road to Cornwall Street	Minor Arterial	Collector
Larson Avenue	Jolie Pointe Road to Dillow Drive	Collector	Local
Leonard Street	Simpson Street to Riverview Avenue	Collector	Neighborhood Route
Long Street	Exeter Street to Simpson Street	Neighborhood Route	Local
Long Street	Simpson Street to Clark Street	Collector	Neighborhood Route

Mapleton Drive	Highway 43 to Nixon Avenue	Collector	Local
Marylhurst Drive	Hillcrest Drive to Hillcrest Drive	Collector	Local
McKillican Drive	West A Street to Highway 43	Collector	Local
Nixon Avenue	Elmran Drive to Mapleton Drive	Collector	Local
Old River Drive	Cedar Oak Drive to north City limits	Collector	Neighborhood Route
Oxford Street	Summit Street to Exeter Street	Neighborhood Route	Local
Parker Road	Salamo Road to Lancaster Street	Minor Arterial	Collector
Riverknoll Way	Barrington Drive to Beacon Hill Drive	Neighborhood Route	Local
Riverview Avenue	Leonard Street to Sunset Avenue	Collector	Neighborhood Route
Santa Anita Drive	Rosemont Road to Hidden Springs Road	Minor Arteri	Collector
Shannon Lane	Horton Road to Rosemont Road	Neighborhood Route	Local
Simpson Street	Long Street to Leonard Street	Collector	Neighborhood Route
Skyline Drive	Summit Street to West A Street	Minor Arterial	Collector
Summit Street	Skyline Drive to Rosemont Road	Minor Arterial	Collector
Summit Street	Pimlico Drive to Skyline Drive	Collector	Neighborhood Route
Suncrest Drive	Hidden Springs Road to Martin Court	Neighborhood Route	Local
Sunset Avenue	Summit Street to Willamette Falls Drive	Minor Arterial	Collector
Riverview Avenue	Leonard Street to Sunset Drive	Collector	Neighborhood Route
Rosemont Road	Salamo Road to Summit Street	Minor Arterial	Collector
Tannler Drive	Blankenship Road to Bland Circle	Collector	Neighborhood Route
Tualatin Road	12th Street to south city limits	Minor Arterial	Collector
West A Street	Willamette Falls Drive to Highway 43	Minor Arterial	Collector

The changes shown in Table 2 will impact the design standards applied to the roadways. Changes from a neighborhood route to a local street remove bicycle lanes from a roadway's standard; however, local streets identified as on-street connections for the Trails Master Plan could have a special standard for accommodation of bicycles. The proposed functional classification for the existing and planned roadways within the City of West Linn is shown in Figure 1. *Descriptions of the city's functional classifications and their cross-section standards are included in Attachment "C".*

Transportation System Management and Operations (TSMO)

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.

CITY OF West Linn

Lake Oswego

Gladstone

Mary S. Young Park

Wilderness Park

Willamette Park

Tualatin River

Willamette River

0 1,000 2,000 3,000 4,000 Feet

- Freeway
- Major Arterial
- Minor Arterial
- Collector
- Neighborhood Route
- Planned Neighborhood Route
- Local
- Planned Local
- Alley
- Misc
- Proposed Changes
- Parks
- City Boundary
- Urban Growth Boundary

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Proposed Functional Roadway Classification Plan
West Linn, Oregon

Figure 1

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center
Terrain Sources: Esri, USGS, NOAA

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Transportation System Management (TSM)

Transportation System Management (TSM) focuses on low cost strategies 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 signal improvements, traffic signal coordination, traffic calming, access management, local street connectivity and intelligent transportation systems (ITS). Traffic signal coordination and systems 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 West Linn. The following sections discuss TSM measures that could be appropriate for the City of West Linn. Technical Memorandum #10 identifies several potential TSM strategies for implementation in West Linn. Table 3 summarizes the strategies that best meet the goals and objectives of the TSP update.

Table 3: 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	Medium	$15,000/year
TSM2	Transit Signal Priority	Work with ODOT to establish transit Signal Priority on Highway 43 as needed	Medium	TBD
TSM3	Adaptive or active signal control	Work with ODOT to establish adaptive signal control on Highway 43 as needed	Low	TBD
TSM4	Traffic responsive control	Work with ODOT to establish transit responsive control as needed	Low	TBD
TSM5	Truck signal priority	Work with ODOT to establish truck signal priority on Highway 43 as needed	Low	TBD
		TOTAL Program Costs (25 years)		**$375,000**

Metro TSMO Plan

Metro's Regional TSMO Plan identifies TSM specific strategies for 24 mobility corridors in the region. The following strategies are identified for Mobility Corridor 7: Tualatin to Oregon City:

- **Freeway Management for I-205** – Expand freeway vehicle detection to provide comprehensive freeway traveler information including travel speed, travel times, volumes, forecasted information, incident conditions, and weather conditions. *This project was identified for the 6-10 year time frame with a cost of $650,000 and annual operating costs of $13,000.*
- **Arterial Corridor Management for Willamette Falls Drive** – Improve corridor operations by expanding traveler information and upgrading traffic signal equipment and timings. Install upgraded traffic signal controllers, establish communications to the central traffic signal system, provide arterial detections (including bicycle detection where appropriate) and routinely update signal timings. Provide real-time and forecasted traveler information on arterial roadways including current roadway conditions, congestion information, travel

times, incident information, construction work zones, current weather conditions and other events that may affect traffic conditions. *This project was identified for a timeframe beyond 11 years with a cost of $1,600,000 and annual operating costs of $30,000.*

Other regional projects identified in the Metro's Regional Transportation Plan Project List include the following:

- RTP Project #: 10020 – **Clackamas County ITS Plan** - Deploy traffic responsive signal timing, ramp metering, traffic management equipment for better routing of traffic during incidents along the three key ODOT corridors - I-205, I-5, 99E. Install signal controller upgrades and update county ITS plan. *This project was identified for 2014-2040 with an estimated cost of $21,300,000*
- RTP Project #: 11104 – **Regional TSMO** - Provide strategic and collaborative program management including coordination of activities for TransPort TSMO committee; allocation and implementation of MTIP programming for TSMO; manage regional policy and project development; and oversee performance data development and tracking. *This project was identified for 2014-2040 with an estimated cost of $40,500,000.*
- RTP Project #: 11584 – **Region-Wide TSMO Active Transportation** – specific projects to be determined. *This project was identified for 2033-2040 with an estimated cost of $90,630,000*

Clackamas County Intelligent Transportation Systems (ITS)

ITS involves the application of advanced technologies and proven management techniques to relieve congestion, enhance safety, provide services to travelers and assist transportation system operators in implementing suitable traffic management strategies. ITS focuses on increasing the efficiency of existing transportation infrastructure, which enhances the overall system performance and reduces the need to add capacity (e.g. travel lanes). Efficiency is achieved by providing services and information to travelers so they can (and will) make better travel decisions and to transportation system operators so they can better manage the system and improve system reliability.

Clackamas County has prepared an ITS plan for the urbanized area of the County. The plan identifies opportunities for regional coordination and funding and calls for Clackamas County to dedicate funding sources for projects. The Clackamas County ITS Plan[2] identifies ITS projects in West Linn located along I-205 and Highway 43. The two projects located along I-205 have been completed. The remaining projects along Highway 43 (and planned implementation schedules) are:

- CCTV cameras at three locations [Planned 11-20 years]
- Detector station [Planned 11-20 years]

[2] Clackamas County ITS Plan, DKS Associates, Inc. and Zenn Associates, February 2003.

- Incident management corridor [Planned 11-20 years]
- Transit priority corridor (and information display) [Planned 6-10 years]
- Fiber optic cable [Planned 11-20 years]

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 network during peak travel demand periods. As growth in the City of West Linn 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.

Technical Memorandum #10 identifies several program and policy based strategies that may be effective for managing transportation demand and increasing system efficiency in the City of West Linn, especially within the next 10 to 20 years. Table 4 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 West Linn'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 4: 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	Medium	$30,000/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	Medium	$45,000/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	$80,000
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	$40,000
			TOTAL Low Priority Costs	**$120,000**
			TOTAL Program Costs (25 years)	**$1,995,000**

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 West Linn. Table 5 summarizes the strategies that best meet the goals and objectives of the TSP update.

Table 5: 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	$80,000
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	$80,000
LU3	Alternative Mobility Standards	Work with ODOT to develop alternative mobility standards on Highway 43 and at I-205 interchanges ramps in order to accommodate higher density development patterns along the corridors	Medium	$25,000
			TOTAL Medium Priority Costs	**$185,000**

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 West Linn currently utilizes NTM elements of education, enforcement and engineering (such as speed humps, raised pavement markings, medians, bulb-outs, etc).

The City has an established traffic safety committee (whose membership consists of city staff and a representative from Tualatin Valley Fire and &Rescue), which meets on a monthly basis and oversees

NTM issues among their other responsibilities. The committee has a set procedure for NTM implementation that starts with the identification of a concern by citizens, after which the committee review the situation and conducts a speed/volume survey if warranted to obtain necessary data. Once the concern has been identified and classified, the committee recommends appropriate follow-up action. There are many different NTM options available to the committee. Typically, the committee starts with education and enforcement. If it is deemed an engineering solution is required, the committee will forward this 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. Tualatin Valley Fire and Rescue maintains a list of common NTM engineering solutions acceptable to the agency where minimum street design criteria are met.

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 neighborhood routes and local streets. Implementation of NTM solutions that limit traffic on collector/arterial routes is counterproductive and can lead to cut through traffic onto local streets. NTM is also restricted on collector/arterial routes to avoid conflicts with emergency access/public safety as well as conflicts with public transit.

Access Management

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 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 West Linn, as with every city, needs a balance of streets that provide access with streets that serve mobility. Technical Memorandum #10 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 6 summarizes the projects that best meet the goals and objectives of the TSP update.

Table 6: Access Management Projects

Project Number	Name	Description	Priority	Cost[1]
AM1	Access Spacing Standard Modifications	Modify city-wide access spacing standards according to a roadway's jurisdiction and functional classification	Low	$20,000
AM2	Special Transportation Area Designation	Pursue Special Transportation Area (STA) designations along Highway 43 within the commercial areas to allow alternative access spacing (and mobility) standards	Low	$15,000
AM3	Access Spacing Variances	Develop an access spacing variance process for when the standard cannot be met	Low	$20,000
AM4	Access Consolidation	Refine the City's approach for access consolidation to focus on incremental improvements that can occur over time	Low	$20,000
			TOTAL Low Priority Costs	**$75,000**

Additional projects related to Access Management are included in the motor vehicle section and include the installation of separate left-turn lanes onto cross streets when warranted and the construction of raised median islands.

Local Street Connectivity

Much of the residential neighborhood development in West Linn has resulted in a network of cul-de-sacs and dead end streets. These streets can be desirable to residents because they can limit traffic speeds and volumes on local streets, but cul-de-sacs and dead end streets result in longer trip distances, increase response time for emergency responders, increased reliance on arterials for local trips, and limit options for people to walk and bike to the places they want to go. By providing connectivity between neighborhoods, out-of-direction travel and vehicle miles traveled (VMT) can be reduced, congestion on roads such as Rosemont Road, Salamo Road, or Hidden Springs Road could be improved, accessibility between various travel modes can be enhanced and traffic levels can be balanced among various streets. Additionally, public safety response time can be reduced.

The future street system needs to balance the benefits of providing a well-connected grid system with the topographical challenges in the city. Incremental improvements to the street system can be planned carefully to provide route choices for motorists, cyclists and pedestrians while accounting for potential neighborhood impacts. In addition, the quality of the transportation system can be improved by making connectivity improvements to the pedestrian and bicycle system separate from street connectivity.

Figure 2 illustrates the location of the local street connections identified for the TSP update. Table 7 summarizes the connections by their recommended type and 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 projects that are desired to be city initiated projects should be identified and identified as a high priority to be included in the cost-constrained plan.

CITY OF West Linn

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Lake Oswego

Gladstone

Oregon City

Mary S. Young Park

Wilderness Park

Willamette Park

Tualatin River

Willamette River

CHERRY LN
CORNELL
GLENMORRIE DR
OLD RIVER RD
SE CONCORD RD
SE OATFIELD RD
S BERGIS RD
PACIFIC HWY
SE ROETHE RD
SE RIVER RD
GREEN BLUFF DR
OLD RIVER DR
SE JENNINGS AVE
MARYLHURST DR
ELMRAN DR
NIXON AVE
SE MCLOUGHLIN BLVD
HILLCREST DR
CEDAROAK DR
S ROSEMONT RD
MAPLETON DR
S SWEETBRIAR RD
SUNCREST DR
CARRIAGE WAY
HIDDEN SPRINGS RD
JOLIE POINTE RD
RIVER RD
SANTA ANITA DR
PIMLICO DR
DILLOW DR
WILLAMETTE DR
HORTON RD
SHANNON LN
ROSEMONT RD
S GRAPEVINE RD
S WISTERIA RD
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SKYLINE DR
SUMMIT ST
CLARK ST
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PARKER RD
S WOODBINE RD
BLAND CIR
PONDERAY DR
SW JOHNSON RD
SUNSET AVE
MCLOUGHLIN BLVD
WASHINGTON ST
7TH ST
5TH ST
HIGH ST
DEBOK RD
KILLARNEY DR
BEACON HILL DR
JOHNSON RD
IMPERIAL DR
TANNLER DR
SALAMO RD
BARRINGTON DR
RIVERKNOLL WAY
GREENE ST
BLANKENSHIP RD
DOLLAR ST
OSTMAN RD
19TH ST
10TH ST
WILLAMETTE FALLS DR
S MCLOUGHLIN BLVD
S HIGH ST
12TH ST
LINN AVE
SW PETES MOUNTAIN RD
SOUTH END RD
PARTLOW RD
ROSE RD

43 99E 205

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0 1,000 2,000 3,000 4,000 Feet

Local Street or Bike/Ped Connection
Bike/Ped Connection Only
Commercial Center
Parks
City Boundary
Urban Growth Boundary

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Recommended Local Street Connectivity Projects
West Linn, Oregon

Figure **2**

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center
Terrain Sources: USGS, ESRI, TANA, AND

Table 7: Street Connections by Priority

Project Number	Name	Type	Priority
LSC-1	Woodhurst Place extension to Upper Midhill Drive	Bike/Ped	Low
LSC-2	Robin View Court extension to Old River Landing	Bike/Ped	Low
LSC-3	Calaroga Court extension to Nixon Avenue	Bike/Ped	Low
LSC-4	Fairview Way extension to Lazy River Drive	Bike/Ped	Medium
LSC-5	19th Street extension from Willamette Falls Drive to Swift Shore Drive	Bike/Ped	Low
LSC-6	Whitten Lane extension to Marylhurst Drive	Local Street	Low
LSC-7	New north-south connection from Crestline Drive to Whitten Lane extension	Local Street	Low
LSC-8	Horton Road extension to Horton Road	Local Street	Low
LSC-9	Apollo Road extension to Randall Street	Bike/Ped	Low
LSC-10	Shannon Lane extension to Ridge Lane	Local Street	Low
LSC-11	Ridge Lane extension to Ridge Lane	Local Street	Low
LSC-12	Roxbury Drive extension to Chinook Court	Local Street	Low
LSC-13	Damon Drive extension to Roxbury Drive extension	Local Street	Low
LSC-14	Maxfield Drive extension to Roxbury Drive extension	Local Street	Low
LSC-15	Landis Street extension to Landis Street	Local Street	Low
LSC-16	Sabo Lane extension to Sunset Avenue	Local Street	Low
LSC-17	Landis Street extension to Cornwall Street	Local Street	Low
LSC-18	New east-west connection from Reed Street to Cornwall Street	Local Street	Low
LSC-19	New north-south connection from the Landis Street extension to the new east-west connection	Local Street	Low
LSC-20	Bland Circle extension to Parker Road	Collector Street	Medium
LSC-21	New east-west connection from Bland Circle to Weatherhill Road	Local Street	Low
LSC-22	Crestview Drive extension to Crestview Drive	Local Street	Under Construction
LSC-23	Tannler Drive extension to Sunbreak Lane extension	Local Street	Under Construction
LSC-24	Sunbreak extension to Tannler Drive	Local Street	Under Construction
LSC-25	Tamarisk Drive extension to Grapevine Road	Local Street	Low
LSC-26	Wisteria Road extension to Wisteria Road	Local Street	Low
LSC-27	Wild Rose Loop extension to Chelan Drive	Bike/Ped	Medium
LSC-28	Orchard Street extension to Short Street	Local Street	Low
LSC-29	Brandon Place extension to Willamette Falls Drive	Local Street	Low
LSC-30	8th Avenue extension from 14th Street to Dollar Street	Local Street	Medium
LSC-31	Randall Street extension to Irving Street	Local Street	Low
LSC-32	New east-west connection from Elliot Street to Irving Street	Local Street	Low
LSC-33	Shady Hollow Way to Lazy River Drive	Local Street	Medium
LSC-34	Kapteyns Street to Carriage Way	Local Street	Medium
LSC-35	Maxfield Drive extension to Ridge Lane	Local Street	Medium

Safety

Based on the above safety analysis, the safety projects shown in Table 8 are recommended in addition to those identified in the pedestrian, bicycle, and vehicle plans. The priority is based on the project evaluation criteria.

Table 8: Safety Projects

Location	Type of Crash	Solution	Project
14th Street / Willamette Falls Drive	Severe Injury	Install pedestrian crossing across Willamette Falls Drive at 14th Street	A22
Hidden Springs Road, 75 feet north of Cottonwood Road	Severe Injury	Install bike lanes on one side of the roadway, which will likely narrow the roadway and reduce speeds	A4
12th Street / Willamette Falls Drive	Bicyclist Crash	Install traffic signal when warranted	M11
West A Street / Willamette Falls Drive	Bicyclist Crash	Install bike lanes on both sides of the roadway	A20
Broadway Street / Willamette Falls Drive	Pedestrian Crash	Install pedestrian crossing across Broadway Street at Willamette Falls Drive	A20
Santa Anita Drive / Rosemont Road	Pedestrian Crash	Traffic signal has already been installed	N/A
Salamo Road, 900 feet east of 10th Street	Pedestrian Crash	Install sidewalks on both sides of the roadway	A13

Maintenance

The City of West Linn has a Pavement Management Program (PMP) in place for cost effective maintenance treatments for city streets. A PMP is a systematic method of organizing and analyzing information about pavement conditions. As a management tool, it aids the decision-making process by determining the magnitude of the problem, the optimum way to spend funds for the greatest return on the dollar, and the consequences of insufficient and/or unwise street maintenance investments. The City of West Linn seeks to maintain an annual program of pavement management and monitors conditions in setting priorities for overlays, slurry seals and joint sealing. The City's 2014-2019 Capital Improvement Plan budgets a total of $3.8 million ($633,000/year avg.) for the pavement management program which represents one of the City's largest transportation expenditures.

Pedestrian and Bicycle Plan

The planned pedestrian and bicycle networks include completion of the sidewalks and bike lanes or alternative pedestrian and bicycle treatments on all collector and arterial roadways and some neighborhood routes. Sidewalk improvements have also been identified on some local streets and neighborhood route streets that are associated with Safe Routes to School, along routes that provide access to commercial areas, and in other high priority locations identified by the public. The Pedestrian and Bicycle Plan recognizes that these user groups may use both on- and off-street facilities to

complete at least some trips. For this reason, preference is given to on-street bicycle and pedestrian projects in the TSP that connect to existing and/or planned off-street facilities identified in the West Linn Trails System Master Plan. Finally, cycle tracks are recommended in lieu of bike lanes on all streets where the posted speed limit is 30 miles per hour or greater (regardless of vehicular volume).

The projects below are separated into projects on arterials, collectors and neighborhood routes, and local streets to aid in review. Some of the roadway functional classifications are proposed to change; however, the recommendations for bicycle and pedestrian facilities are not anticipated to be impacted by these changes unless noted.

Trails Plan

Figure 3 illustrates the City's Trails Master Plan which includes off-street trails as well as on-street connections to the trail system. The on-street connections and their priority in the Trails Master Plan were considered in the development of the on-street bicycle and pedestrian plan for the arterials, collectors, and local streets described in the following sections.

Arterials

Table 9 identifies the bicycle and pedestrian projects for various segments of the arterials throughout the City of West Linn. The priorities shown in Table 9 are based on the project evaluation criteria. The cost estimates are based on average unit costs for roadway improvements. Figure 4 illustrates the location of the arterial corridor projects.

Table 9: Arterial Pedestrian and Bicycle Projects

Segment		Type	Project	Cost Estimate	Priority
Hidden Springs Road					
A1	Suncrest Drive to Santa Anita Drive	Pedestrian	Install sidewalks on the south side of the roadway (Maintain existing curbline)	$80,000	Medium
A2	Santa Anita Drive to Bluegrass Way	Bicycle	Install bike lanes on both sides of the roadway (Striping only)	$30,000	Medium
A3	Bluegrass Way to Cottonwood Court	Bicycle	Install bike lanes on both sides of the roadway	$220,000	High
		Interim	*Install shared use pavement markings and/or signs on both side of the roadway*	*$20,*000	*Low*
		Pedestrian	Install sidewalks on the south side of the roadway from Carriage Way to Cottonwood Court	$145,000	High
		Pedestrian Crossing	Install crosswalks at Carriage Way and Cottonwood Court	$5,000	High
		Pedestrian Crossing	Install crosswalk at the existing off-street trail located approximately halfway between Wildwood Drive and Cottonwood Court	$5,000	High
A4	Cottonwood Court to Willamette Drive	Bicycle	Install bike lanes on the westbound side of the roadway from approximately 350 feet south of Cottonwood Court to Willamette Drive and shared use pavement markings and/or signs on the eastbound side of the roadway	$120,000	High

Continued Below

City of West Linn

Trails Plan
West Linn, Oregon

Figure **3**

Proposed Trails

- Primary Route
- Secondary Route
- Local Route
- Off-street
- On-street
- Existing Off-Street Trails

- Schools
- Adult Community Center
- Library
- Police Station
- City Hall
- Commercial Center
- Parks
- City Boundary
- Urban Growth Boundary

0 1,000 2,000 3,000 4,000 Feet

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center
Terrain Sources: Esri, USGS, NOAA

Kittelson & Associates, Inc.
Transportation Engineering/Planning

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CITY OF West Linn

N

Lake Oswego

Gladstone

Oregon City

Mary S. Young Park

Wilderness Park

Willamette Park

Tualatin River

Willamette River

OLD RIVER RD
SE CONCORD RD
SE OATFIELD RD
SE ROETHE RD
SE RIVER RD
SE JENNINGS AVE
SE MCLOUGHLIN BLVD
CORNELL
CHERRY LN
GLENMORRIE DR
S BERGIS RD
PACIFIC HWY
43
99E
OLD RIVER DR
MARYLHURST DR
HILLCREST DR
ELMRAN DR
NIXON AVE
CEDAROAK DR
MAPLETON DR
S ROSEMONT RD
CARRIAGE WAY
SUNCREST DR
S SWEETBRIAR RD
JOLIE POINTE RD
DILLOW DR
PIMLICO DR
SANTA ANITA DR
WILLAMETTE DR
SUMMIT ST
HORTON RD
SHANNON LN
S GRAPEVINE RD
S WISTERIA RD
S WOODBINE RD
PARKER RD
WILD ROSE DR
SKYLINE DR
WEST A ST
CLARK ST
BROADWAY ST
SW JOHNSON RD
BLAND CIR
PONDERAY DR
SUNSET AVE
MCLOUGHLIN BLVD
WASHINGTON ST
7TH ST
5TH ST
HIGH ST
DEBOK RD
KILLARNEY DR
BEACON HILL DR
JOHNSON RD
BLANKENSHIP RD
TANNLER DR
GREENE ST
SALAMO RD
BARRINGTON DR
RIVERKNOLL WAY
IMPERIAL DR
WILLAMETTE FALLS DR
S MCLOUGHLIN BLVD
S HIGH ST
DOLLAR ST
OSTMAN RD
19TH ST
12TH ST
SW PETES MOUNTAIN RD
SOUTH END RD
LINN AVE
WARNER PARROTT RD
ROSE RD
PARTLOW
RIVER RD
205

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21 A22 A23 A24 A25

High Priority
Medium Priority
Commercial Center
Parks
City Boundary
Urban Growth Boundary

0 1,000 2,000 3,000 4,000 Feet

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Recommended Arterial Projects
West Linn, Oregon

Figure **4**

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING/PLANNING

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center, ODOT
Terrain Sources: Esri, USGS, NOAA

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Lancaster Street					
A5	Parker Road to Cornwall Street	Pedestrian	Install sidewalks on the south side of the roadway	$110,000	Medium
		Pedestrian	Install sidewalks on the north side of the roadway from approximately 175 feet east of Parker Road to Cornwall Street	$90,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$115,000	Medium
		Interim Bicycle	*Install shared-use pavement markings and/or signs on both sides of the roadway*	*$10,000*	*Low*
Parker Road					
A6	Noble Lane to Lancaster Street	Pedestrian	Install sidewalks on both sides of the roadway from approximately 125 feet east of Noble Lane to approximately 100 feet west of Dillon Lane	$155,000	High
		Pedestrian crossing	Install a crosswalk at Noble Lane	$5,000	High
		Bicycle	Install bike lanes on both sides of the roadway from approximately 125 feet east of Noble Lane to approximately 100 feet west of Dillon Lane	$120,000	High
		Pedestrian	Install sidewalks on the north side of the roadway from approximately 150 feet east of Wild Rose Drive to 475 feet east of Wild Rose Drive and from 150 west of Damon Drive to 75 feet west of Chinook Court	$145,000	High
Rosemont Road					
A7	Carriage Way to Hidden Springs Road	Pedestrian	Install sidewalks on the south side of the roadway	$205,000	High
		Bicycle	Install bike lanes on the south side of the roadway	$160,000	High
		Pedestrian crossing	Install crosswalks at Carriage Way and Hidden Springs Road	$5,000	High
A8	Hidden Springs Road to Santa Anita Drive	Pedestrian	Install sidewalks on the south side of the roadway from Hidden Springs Road to approximately 100 feet east of Furlong Drive	$370,000	High
A9	Santa Anita Drive to Wild Rose Drive	Pedestrian	Install sidewalks on the south side of the roadway	$250,000	Medium
		Pedestrian	Improve the substandard sidewalks on the north side of the roadway from Santa Anita Drive to Oppenlander Field	$250,000	Medium
		Bicycle	Install bike lanes on the south side of the roadway	$195,000	Medium
A10	Shannon Lane to Summit Street	Pedestrian	Install sidewalks on both sides of the roadway	$540,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$345,000	Medium
Salamo Road					
A11	Weatherhill Road to Bland Circle	Pedestrian	Install sidewalks on the west side of the roadway	$115,000	High
A12	Remington Drive to Barrington Drive	Pedestrian	Install sidewalks on the west side of the roadway from approximately 750 feet south of Remington Drive to Barrington Drive	$70,000	High
A13	Barrington Drive to 10th Street	Pedestrian	Install sidewalks on the west side of the roadway	$380,000	High
		Pedestrian	Install sidewalks on the south side of the roadway from approximately 275 feet south of Barrington Drive to 10th Street	$345,000	High
		Bicycle	Install bike lanes on both sides of the roadway	$200,000	High
Santa Anita Drive					
A14	Hidden Springs Road to Pimlico Drive	Pedestrian	Install sidewalks on the east side of the roadway from Hidden Springs Road to Clubhouse Circle	$40,000	High
		Pedestrian	Install sidewalks on the east side of the roadway from approximately 250 feet south of Clubhouse Circle to Pimlico Drive	$50,000	High
		Bicycle	Improve the bicycle crossing at the northbound approach to Hidden Springs Road	$2,500	High

Skyline Drive					
A15	Summit Street to Firwood Drive	Pedestrian	Install sidewalks on the north side of the roadway from Summit Street to approximately 150 feet west of Firwood Drive	$55,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway from Summit Street to Firwood Drive (Striping Only)	$10,000	Medium
A16	Firwood Drive to West A Street	Pedestrian	Install sidewalks on the north side of the roadway from approximately 100 feet east of Firwood Drive to approximately 150 feet west of West A Street	$450,000	High
		Bicycle	Install bike lanes on both sides of the roadway from Firwood Drive to West A Street	$700,000	High
		Interim Bicycle	*Install shared-use pavement markings and/or signs on both sides of the roadway from Firwood Drive to West A Street*	$35,000	*Low*
		Pedestrian	Install sidewalks on the south side of the roadway from approximately 150 feet east of Woodwinds Court to approximately 750 feet west of West A Street	$365,000	High
Sunset Avenue					
A17	Cornwall Street to Willamette Falls Drive	Pedestrian	Install sidewalks on the north side of the roadway	$595,000	High
		Pedestrian	Install sidewalks on the south side of the roadway from Cornwall Street to approximately 150 feet west of Spring Rock Circle	$210,000	High
		Bicycle	Install bike lanes on both sides of the roadway	$680,000	High
West A Street					
A18	Willamette Drive to Skyline Drive	Pedestrian	Install sidewalks on the north side of the roadway from approximately 250 feet east of Willamette Drive to Skyline Drive	$210,000	High
		Pedestrian	Install sidewalks on the south side of the roadway from approximately 250 feet east of Willamette Drive to Terrace Drive	$175,000	High
A19	I-205 Bridge to Willamette Falls Drive	Bicycle	Install bike lanes on both sides of the roadway	$5,000	High
Willamette Falls Drive					
A20	Willamette Drive to Sunset Avenue	Pedestrian	Install sidewalks on the south side of the roadway from West A Street to Sunset Avenue	$300,000	High
		Pedestrian	Install pedestrian crossing across Broadway Street at Willamette Falls Drive	$30,000	High
		Bicycle	Install bike lanes on both sides of the roadway	$235,000	High
		Interim	*Reconfigure the roadway cross-section to a three-lane cross-section to provide space for sidewalks on the south side of the roadway and bike lanes on both sides of the roadway*	$15,000	*Low*
A21	Sunset Avenue to 10th Street	Pedestrian	Install sidewalks on the south side of the roadway	$2,565,000	High
		Interim	Install bike lanes on both sides of the roadway	$2,945,000	High
A22	10th Street to Dollar Street	Pedestrian	Install crosswalk on the west leg of the 14th Street / Willamette Falls intersection	$30,000	High
A23	Dollar Street (east) to West City Limits	Pedestrian	Install sidewalks on the north side of the roadway from Dollar Street (east) to 19th Street	$195,000	High
		Pedestrian	Install sidewalks on the north side of the roadway from Epperly Way to West City Limits	$290,000	High
		Pedestrian	Install sidewalks on the south side of the roadway from 16th Street to 200 feet west of 16th Street	$25,000	High
		Pedestrian	Install sidewalks on the south side of the roadway from 16th Street to Swift Shore Drive	$185,000	High

		Pedestrian	Install sidewalks on the south side of the roadway from Ostman Road to West City Limits	$465,000	High
10th Street					
A24	Blankenship Road to I-205 SB ramps	Pedestrian	Install sidewalks on the east side of the roadway	$110,000	High
		Bicycle Crossing	Improve bicycle crossing at the northbound approach to Blankenship-Salamo Road	$5,000	High
A25	I-205 SB ramps to Willamette Falls Drive	Pedestrian	Install sidewalks on the east side of the roadway from I-205 SB ramps to 8th Avenue-Court	$40,000	High
		Bicycle	Install bike lanes on both sides of the roadway from I-205 SB ramps to Willamette Falls Drive (Striping Only)	$10,000	High
		Bicycle Crossing	Improve bicycle crossing at the northbound approach to I-205 NB ramps	$5,000	High
			Total High Priority	$13,687,500	
			Total Medium Priority	$2,070,000	
			Total Low Priority	$80,000	
			TOTAL	**$15,837,500**	

Collectors

Table 10 identifies the bicycle and pedestrian projects for various segments of the collectors throughout the City of West Linn. The priorities shown in Table 10 are based on the project evaluation criteria. The cost estimates are based on average unit costs for roadway improvements. Figure 5 illustrates the location of the collector corridor projects.

Table 10: Collector Pedestrian and Bicycle Projects

Segment		Type	Project	Cost Estimate	Priority
Bland Circle					
C1	Salamo Road to Roadway Terminus	Pedestrian	Install sidewalks on the north side of the roadway from Salamo Road to Tannler Drive	$95,000	Medium
		Pedestrian	Install sidewalks on the north side of the roadway from Tannler Drive to approximately 100 feet east of Falcon Drive	$55,000	Medium
		Pedestrian	Install sidewalks on the north side of the roadway from Falcon Drive to approximately 400 feet north of Fircrest Drive	$230,000	Medium
		Pedestrian	Install sidewalks on the south side of the roadway from approximately 200 feet west of Tannler Drive to approximately 350 feet west of Tannler Drive	$20,000	Medium
		Pedestrian	Install sidewalks on the west side of the roadway from St Moritz Loop to approximately 150 feet north of St Mortiz Loop	$20,000	Medium
		Pedestrian	Install sidewalks on both sides of the roadway from approximately 400 feet north of Fircrest Drive to Weatherhill Road	$295,000	Medium
		Pedestrian	Install sidewalks on the west side of the roadway from Weatherhill Road to the roadway terminus	$130,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway from approximately 400 feet north of Fircrest Drive to Weatherhill Road *(may only be needed to Killarney if classification changed to local roadway east of Killarney)*	$230,000	Medium

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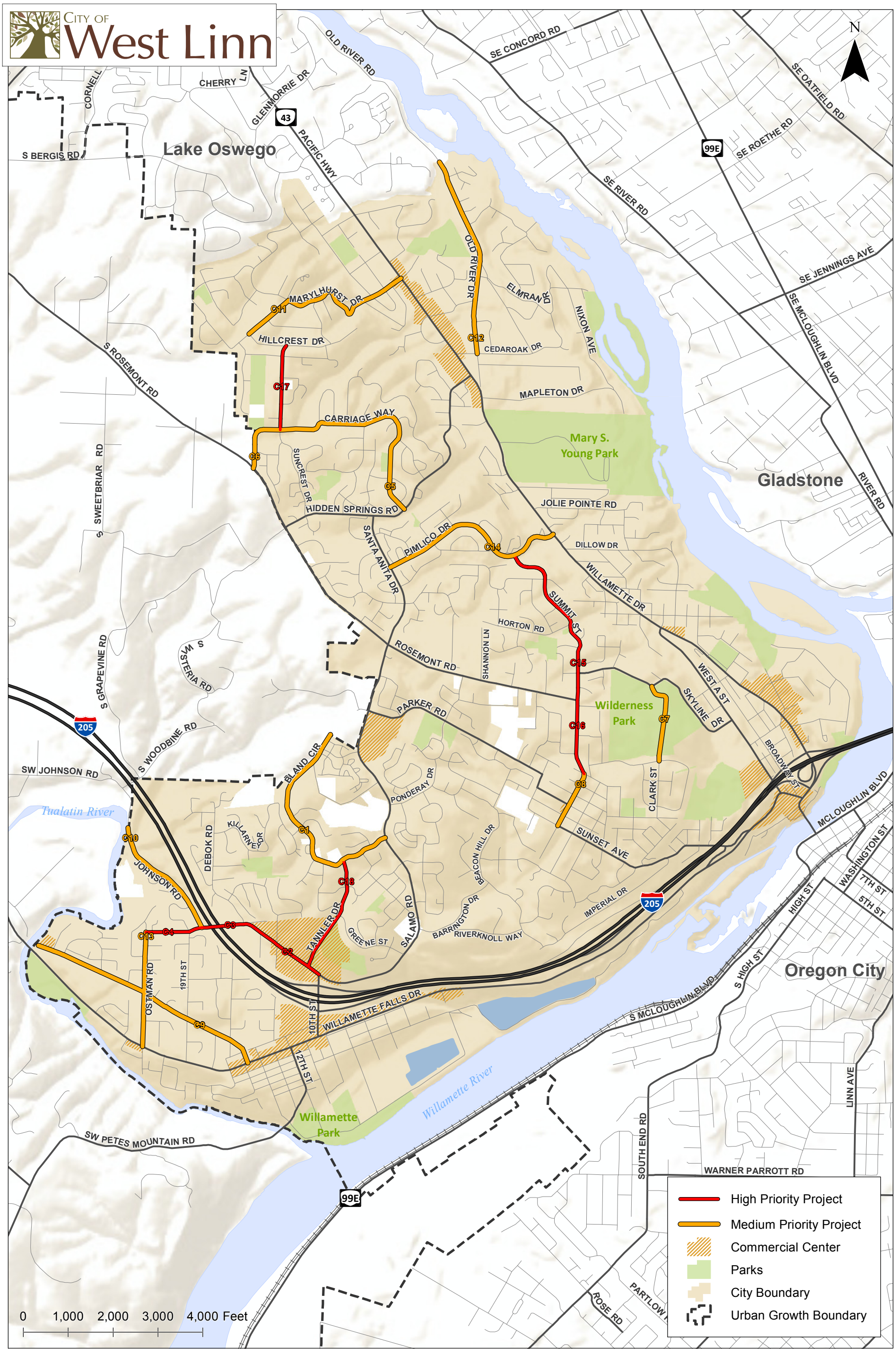

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Recommended Collector Projects
West Linn, Oregon

Figure **5**

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Kittelson & Associates, Inc.
Transportation Engineering/Planning

Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center, ODOT
Terrain Sources: Esri, USGS, NOAA

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Blankenship Road					
C2	10th Street to Debok Road	Pedestrian	Install sidewalks on the north side of the roadway from 10th Street to approximately 50 feet east of the Willamette Corporate Center driveway	$65,000	High
C3	Debok Road to 19th Street	Pedestrian	Install sidewalks on the north side of the roadway from approximately 400 feet west of Debok Road to Johnson Road	$90,000	High
		Pedestrian	Install a crosswalk at the north leg of the Johnson Road/Blankenship Road intersection and extend the sidewalks on the north side of Blankenship Road west of Johnson Road to the intersection	$15,000	High
		Bicycle	Install bike lanes on both sides of the roadway from Debok Road to 19th Street	$85,000	High
C4	19th Street to Ostman Road	Pedestrian	Install sidewalks on the south side of the roadway from 19th Street to approximately 175 feet east of Ostman Road	$110,000	High
		Bicycle	Install bike lanes from 19th Street to Ostman Road	$60,000	High
Carriage Way					
C5	Hidden Springs to Suncrest Drive	Bicycle	Install bike lanes on both sides from Hidden Springs to approximately 350 feet west of Suncrest Drive (Striping only)	$75,000	Medium
C6	Suncrest Drive to Rosemont Road	Pedestrian	Install sidewalks on the north-west side of the roadway from approximately 350 feet west of Suncrest Drive to Rosemont Road	$265,000	Medium
		Bicycle	Install bike lanes on both sides from approximately 350 feet west of Suncrest Drive to Rosemont Road	$15,000	Medium
Clark Street (Long Street, Simpson Street, Leonard Street, Riverview Avenue)					
C7	Skyline Drive to Windsor Boulevard	Pedestrian	Install sidewalks on both sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard	$475,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard	$370,000	Medium
		Interim	*Install a mixed-use shoulder on one side of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard*	*$185,000*	*High*
		Interim Bicycle	*Install shared use pavement marking on both sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard to Windsor Boulevard*	*$20,000*	*Low*
		Bicycle	Install bike lanes on both sides of the roadway from approximately 150 feet north of Windsor Boulevard to Windsor Boulevard	$2,500	Medium
Cornwall Street					
C8	Oxford Street to Sunset Avenue	Pedestrian	Install sidewalks on both sides of the roadway	$355,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$140,000	Medium
Dollar Street					
C9	Willamette Falls Drive to the Western Terminus	Pedestrian	Install sidewalks on the south side of the roadway	$740,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$385,000	Medium
Johnson Road					
C10	Blankenship Road to Western City	Pedestrian	Install sidewalks on both sides of the roadway	$775,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$605,000	Medium

	Limits	*Interim Bicycle*	*Install shared-use pavement markings and/or signs on both sides of the roadway*	*$30*,000	*Low*
		Interim	*Install mixed use shoulders on one side of the roadway*	*$305*,000	*High*
Marylhurst Drive					
C11	Willamette Drive to Hillcrest Drive (West)	Pedestrian	Install sidewalks on both sides of the roadway	$1,170,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway	$915,000	Medium
		Interim Bicycle	*Install shared-use pavement markings and/or signs on both sides of the roadway*	$45,000	*Low*
		Interim	*Install mixed use shoulders on one side of the roadway*	$455,000	*Low*
Old River Drive					
C12	Northern City limits to Cedar Oaks Drive	Pedestrian	Install sidewalks on the east side of the roadway from approximately 100 feet north of Riverside Court to Cedar Oak Drive	$550,000	Medium
		Pedestrian	Install sidewalks on the west side of the roadway from approximately 200 feet north of Riverside Court to Cedar Oak Drive	$475,000	Medium
		Bicycle	Install bike lanes on both sides from the northern City limits to Cedar Oak Drive	$945,000	Medium
		Interim Bicycle	*install shared used pavement markings and /or signs on both sides of the roadway from the northern City limits to Cedar Oak Drive*	*$35*,000	*Low*
		Interim	*Install a mixed-use shoulder on the east side of the roadway from the northern City limits to Cedar Oak Drive*	*$475*,000	*Low*
Ostman Road					
C13	Blankenship Road to Willamette Falls Drive	Pedestrian	Install sidewalks on the east side of the roadway from approximately 150 feet south of Blankenship Road to Dollar Street	$75,000	Medium
		Pedestrian	Install sidewalks on the east side of the roadway from Dollar Street to Willamette Falls Drive	$100,000	Medium
		Pedestrian	Install sidewalks on the west side of the roadway from Michael Drive to approximately 150-feet south of Michael Drive	$40,000	Medium
		Pedestrian	Install sidewalks on the west side of the roadway from Dollar Street to Willamette Falls Drive	$330,000	Medium
		Bicycle	Install bike lanes from Blankenship Road to Willamette Falls Drive	$180,000	Medium
Pimlico Drive					
C14	Santa Anita Drive to Willamette Drive	Pedestrian	Install sidewalks on the south side of the roadway from Santa Anita Drive to approximately 100 feet west of Palomino Way (west)	$85,000	Medium
		Pedestrian	Install crosswalks at Santa Anita Drive and Palomino Way (west) to improve access to the sidewalks on the north side of the roadway	$10,000	Medium
		Pedestrian	Install sidewalks on the north side of the roadway from Pimlico Terrace to Treetop Lane	$85,000	Medium
		Pedestrian	Install sidewalks on the south side of the roadway from Palomino Way (east) to Willamette Drive	$140,000	Medium
		Pedestrian	Install crosswalk at Palmino Way (east) to improve access to the sidewalks on the north side of the roadway	$5,000	Medium
		Bicycle	Install bike lanes on both sides of the roadway from Santa Anita Drive to Willamette Drive (Striping Only)	$65,000	Medium
		Interim Bicycle	*Install shared use pavement markings and/or signs on both sides of the roadway from Santa Anita Drive to Willamette Drive*	*$45*,000	*High*
Summit Street					

C15	Pimlico Drive to Skyline Drive	Pedestrian	Install sidewalks on both sides of the roadway from Pimlico Drive to 150 feet south of Pimlico Drive	$25,000	High
		Bicycle	Install bike lanes on both sides of the roadway from Pimlico Drive to approximately 150 feet south of Pimlico Drive (Striping only)	$2,500	High
		Pedestrian	Fill in the 65-foot gap in the sidewalk on the north side of roadway at approximately 350 feet south of Pimlico Drive	$5,000	High
C16	Skyline Drive to Oxford Street	Pedestrian	Install sidewalks on the west side of the roadway from approximately 150 feet south of Skyline Drive to Rosemont Road and from approximately 150 feet south of Rosemont Road to 400 feet south of Rosemont Road	$80,000	High
		Pedestrian	Install sidewalks on the west side of the roadway from approximately 100 feet south of Ridge Lane to Oxford Street	$50,000	High
		Pedestrian	Install sidewalks on the east side of the roadway from Woodsprite Court to 75 feet north of Knox Street	$125,000	High
		Pedestrian	Install sidewalks on the east side of the roadway from approximately 100 feet south of Knox Street to Oxford Street	$105,000	High
		Bicycle	Install bike lanes from Skyline Drive to Oxford Street	$320,000	High
Suncrest Drive					
C17	Carriage Way to Hillcrest Drive	Pedestrian	Install sidewalks on the east side of the roadway from approximately 250 feet south of Ridgebrook Drive (north) to Ridgebrook Drive (north)	$70,000	High
		Pedestrian	Install sidewalks on the east side of the roadway from approximately 150 feet north of Ridgebrook Drive (north) to Hillcrest Road	$135,000	High
		Pedestrian	Install sidewalks on the west side of the roadway from approximately 100 feet south of Ridgebrook Drive (south) to Ridgebrook Drive (south)	$25,000	High
		Pedestrian	Install sidewalks on the west side of the roadway from approximately 150 feet north of Ridgebrook Drive (south) to Ridgebroook Drive (north)	$130,000	High
		Pedestrian	Install sidewalks on the west side of the roadway from approximately 250 feet north of Ridgebrook Drive (north) to Hillcrest Drive	$135,000	High
		Bicycle	Install bike lanes on both sides of the roadway from Carriage Way to Hillcrest Drive	$30,000	High
		Interim Bicycle	*Install shared use pavement markings and/or signs on both sides of the roadway from Carriage Way to Hillcrest Drive*	*$20,*000	*High*
Tannler Drive					
C18	Blankenship Road to the Northern Terminus	Pedestrian	Install sidewalks on both sides of the roadway from Blankenship Road to Greene Street	$235,000	High
		Bicycle	Modify the existing striping to include bike lanes on both sides and parking on one side of the roadway from Blankenship Road to the northern terminus	$5,000	High
				Total High Priority	$2,457,500
				Total Medium Priority	$10,447,500
				Total Low Priority/NA	$1,060,000
				TOTAL	**$13,965,000**

Local Street and Neighborhood Routes

Table 11 identifies the pedestrian projects for various segments of the local street and neighborhood routes throughout the City of West Linn. The priorities shown in Table 11 are based on the project

evaluation criteria. The cost estimates are based on unit costs for roadway improvements. Figure 6 illustrates the location of the local street and neighborhood route projects.

Table 11: Local Street and Neighborhood Route Pedestrian and Bicycle Projects

Segment		Type	Project	Priority	Cost Estimate
Lowry Drive (Bolton Primary)					
L1	Dillow Drive to Tompkins Street	Pedestrian	Install sidewalks on both sides of the roadway	High	$305,000
Tompkins Street (Bolton Primary)					
L2	Lowry Drive to Caufield Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$90,000
Caufield Street (Bolton Primary)					
L3	Tompkins Street to Randall Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$80,000
Randall Street (Bolton Primary)					
L4	Caufield Street to Davenport Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$65,000
Davenport Street (Bolton Primary)					
L5	Randall Street to Buck Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$65,000
Holmes Street (Bolton Primary)					
L6	Buck Street to Perrin Street	Pedestrian	Install sidewalks on east side of the roadway from 150 feet south of Buck Street to Perrin Street	Medium	$80,000
		Pedestrian	Install sidewalks on the west side of the roadway from Buck Street to Perrin Street	Medium	$60,000
Perrin Street (Bolton Primary)					
L7	Holmes Street to Lewis Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$290,000
13th Street (Willamette Primary)					
L8	Timothy Lane to 8th Avenue	Pedestrian	Install sidewalks on the west side of the roadway from Timothy Lane to 8th Avenue and on the east side of the roadway from Timothy lane to approximatley 350-feet north of 8th Avenue	Medium	$125,000
L9	4th Avenue to Tualatin Avenue	Pedestrian	Install sidewalks on the east side of the roadway from 100 feet north of Tualatin Avenue to Tualatin Avenue	Medium	$15,000
8th Avenue (Willamette Primary)					
L10	13th Street to 400 feet east of 12th Street	Pedestrian	Install sidewalks on the south side of the roadway from 12th Street to 400 feet east of 12th Street	Medium	$55,000
4th Avenue (Willamette Primary)					
L11	14th Street to 12th Street	Pedestrian	Install sidewalks on the south side of the roadway from 14th Street to 12th Street	Medium	$100,000
5th Avenue (Willamette Primary)					
L12	11th Street to 7th Street	Pedestrian	Install sidewalks on the north side of the roadway from 11th Street to 7th Street	Medium	$250,000
			Install sidewalks on the south side of the roadway from 25 feet west of 8th Street to 150 feet east of 8th Street	Medium	$25,000

Continued Below

CITY OF West Linn

Lake Oswego
Gladstone
Oregon City
Mary S. Young Park
Wilderness Park
Willamette Park
Tualatin River
Willamette River

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L19 L20 L21 L22 L23 L24 L25 L26 L27 L28 L29 L30 L31 L32 L33 L34 L35 L36 L37 L38 L39 L40 L41 L42 L43 L44

0 1,000 2,000 3,000 4,000 Feet

High Priority Project
Medium Priority Project
Commercial Center
Parks
City Boundary
Urban Growth Boundary

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Recommended Local Street and Neighborhood Route Projects - West Linn, Oregon

Figure **6**

H:\proj\file\17817 - West Linn Transportation System Plan\gis\TM1\16_SRTS Corridors.mxd - jsommerville - 4:53 PM 5/26/2015

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center, ODOT
Terrain Sources: Esri, USGS, NOAA

Continued from Above

Clubhouse Circle (Trillium Creek Primary)					
L13	Santa Anita Drive to 200 feet east of Clubhouse Court	Pedestrian	Install sidewalks on the south side of the roadway from Belmont Way to 200 feet east of Clubhouse Court	Medium	$45,000
Sussex Street (Sunset Primary)					
L14	Oxford Street to Sunset Avenue	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$350,000
Exeter Street (Sunset Primary)					
L15	Oxford Street to Sunset Avenue	Pedestrian	Install sidewalks on the west side of the roadway from Oxford Street to Long Street	Medium	$90,000
		Pedestrian	Install sidewalks on the east side of the roadway from Long Street to Sunset Avenue	Medium	$105,000
		Pedestrian	Install sidewalks on the west side of the roadway from Lancaster Street to Sunset Avenue	Medium	$75,000
Oxford Street (Sunset Primary)					
L16	Bonnet Drive to Sussex Street	Pedestrian	Install sidewalks on the south side of the roadway	Medium	$35,000
L17	Exeter Street to Bittner Street	Pedestrian	Install sidewalks on the south side of the roadway	Medium	$50,000
Bonnet Drive (Sunset Primary)					
L18	Windsor Terrace to Oxford Street	Pedestrian	Install sidewalks on the west side of the roadway	Medium	$50,000
Oregon City Boulevard (Sunset Primary)					
L19	Bonnet Drive to Clark Street	Pedestrian	Install sidewalks on the north side of the roadway from Bonnet Drive to 350 feet east of Prospect Street	Medium	$135,000
Prospect Street (Sunset Primary)					
L20	Knox Street to Oregon City Boulevard	Pedestrian	Install sidewalks on the east side of the roadway from Knox Street to Oregon City Boulevard	Medium	$135,000
		Pedestrian	Install sidewalks on the west side of the roadway from 125 feet south of Knox Street to Oregon City Boulevard	Medium	$115,000
Bittner Street (Sunset Primary)					
L21	Oxford Street to Long Street	Pedestrian	Install sidewalks on the east side of the roadway	Medium	$180,000
Long Street (Sunset Primary)					
L22	Bittner Street to Clark Street	Pedestrian	Install sidewalks on both sides of the roadway from Bittner Street to Simpson Street	Medium	$90,000
		Pedestrian	Install sidewalks on the north side of the roadway from 125 feet east of Simpson Street to 250 feet east of Simpson Street	Medium	$115,000
Simpson Street (Sunset Primary)					
L23	Long Street to Charman Street	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$415,000
Cedar Oaks Drive (Cedar Oak Primary)					
L24	Old River Drive to Trillium Drive	Pedestrian	Install sidewalks on the north side of the roadway from Old River Drive to Trillium Drive	Medium	$170,000
		Pedestrian	Install sidewalks on the south side of the roadway from Older River Drive to 200 feet west of Trillium Drive	Medium	$140,000
L25	Trillium Drive to Elmran Drive	Pedestrian	Install sidewalks on the south/east side of the roadway from Trillium Drive to Elmran Drive	Medium	$210,000
Trillium Drive (Cedar Oak Primary)					

L26	Glen Terrace to 700 feet south of Glen Terrace	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$320,000
Shady Hollow Way (Robinwood Commercial Area)					
L27	Highway 43 to Arbor Drive	Pedestrian	Install sidewalks on the north side of the roadway	Medium	$275,000
L28	Highway 43 to Arbor Drive	Pedestrian	Install sidewalks on the south side of the roadway from approximately 150-feet east of Highway 43 to Arbor Drive	Medium	$230,000
Fairview Way (Robinwood Commercial Area)					
L29	Highway 43 to Rose Way	Pedestrian	Install sidewalks on the north side of the roadway from approximately 200-feet east of Highway 43 to approximately 100-west of Rose Way	Medium	$100,000
L30	Chippewa Court to the roadway terminus	Pedestrian	Install sidewalks on the north side of the roadway	Medium	$200,000
L31	Highway 43 to the roadway terminus	Pedestrian	Install sidewalks on the south side of the roadway from approximately 200-feet east of Highway 43 to the roadway terminus	Medium	$420,000
Walling Way (Robinwood Commercial Area)					
L32	Highway 43 to Old River Drive	Pedestrian	Install sidewalks on both sides of the roadway from approximately 350-feet east of Highway 43 to Old River Drive	Medium	$435,000
L33	Highway 43 to Highway 43	Pedestrian	Install sidewalks on the west side of the roadway from approximately 250-feet west of Highway 43 to Highway 43	Medium	$235,000
L34	Highway 43 to Highway 43	Pedestrian	Install sidewalks on the east side of the roadway	Medium	$305,000
Failing Street (Bolton Commercial Area)					
L35	Highway 43 to Buck Street	Pedestrian	Install sidewalks on the east side of the roadway from approximately 200-feet north of Highway 43 to Buck Street	Medium	$65,000
Holly Street (Bolton Commercial Area)					
L36	Highway 43 to River Street	Pedestrian	Install sidewalks on both sides of the roadway from approximately 150-feet east of Highway 43 to River Street	Medium	$620,000
Webb Street (Bolton Commercial Area)					
L37	West A Street to Highway 43	Pedestrian	Install sidewalks on both sides of the roadway from West A Street to Highway 43	Medium	$385,000
Lewis Street (Bolton Commercial Area)					
L38	Highway 43 to Perkins Street	Pedestrian	Install sidewalks on both sides of the roadway from Highway 43 to Perkins Street	Medium	$305,000
19th Street (10th Street Commercial Area)					
L39	Blankenship Road to Dollar Street	Pedestrian	Install is sidewalks on the west side of the roadway	Medium	$540,000
L40	Dollar Street to Willamette Falls Drive	Pedestrian	Install sidewalks on the west side of the roadway	Medium	$265,000
L41	Nova Court to Dollar Street	Pedestrian	Install sidewalks on the east side of the roadway	Medium	$400,000
L42	Dollar Street to High Touch Street	Pedestrian	Install sidewalks on the east side of the roadway from Dollar Street to approximately 200-feet north of High Touch Street	Medium	$90,000
13th Street (10th Street Commercial Area)					
L43	Blankenship Road to the roadway terminus	Pedestrian	Install sidewalks on both sides of the roadway	Medium	$295,000
Summerlinn Drive (10th Street Commercial Area)					

L44	Summerlinn Way to Blankenship Road	Pedestrian	Install sidewalks on the west side of the roadway	Medium	$180,000
			Total High Priority	$305,000	
			Total Medium Priority	$9,370,000	
			Total Low Priority	$0	
			TOTAL	**$9,675,000**	

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 West Linn 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 12 summarizes the transit plan identified for West Linn.

Table 12: Transit Plan

Project/ Program Number	Name	Agency Responsible	Description	Priority	Cost
T1	Provide Transit Amenities at Major Transit Stops	West Linn/ TriMet	Provide shelters, information kiosks, etc. along key transit routes in West Linn with land use development (30 average daily boardings and alightings are required by TriMet to warrant a shelter).	Medium	$80,000
T2	Improve Pedestrian Connections to Transit Facilities	West Linn/ TriMet	Construct sidewalks, crosswalks, etc. adjacent to transit routes and facilities (i.e. park-and-ride lots, bus stops, etc.). Within one-quarter mile of bus stops, focus on enhancing pedestrian access. Give priority to pedestrian and bicycle projects near transit stops. Give priority to improvements within the designated overlay district in Willamette commercial area.	Medium	See Corridor Projects

T3	Increase Density Adjacent to Transit	West Linn	Direct growth to increase the density of houses within transit lines in the City of West Linn in an effort to support more frequent transit service and other regional transit service goals. This will include educational and outreach efforts along with amendments to the zoning ordinance, comprehensive plans, neighborhood plans, and other plans. Should be done in conjunction with LU2.	Medium	$150,000
T4	Provide More Local Service/ Coordinate with TriMet on Route 154 changes	West Linn/ TriMet	Coordinate with TriMet on proposed changes to Route 154 to Salamo Rd and Hidden Springs Drive.	Medium	$150,000
T5	Increase Park-and-Ride Capacity along Highway 43	West Linn/ TriMet	Work with TriMet and local property owners to identify additional locations for park-and-ride lots along Highway 43	Medium	$15,000
T6	Identify Park-and-Ride Lot Location near the 10th Street Interchange	West Linn/ TriMet	Work with TriMet to perform a feasibility analysis to identify future park-and-ride locations near the 10th Street Interchange to support future transit or shuttle service between Oregon City and Tualatin and/or high-capacity transit in the I-205 corridor	Medium	$30,000
T7	Implement Employee Commute Options Program	West Linn	Work with larger employers on development of employee commute options program	Medium	See TDM1 and TDM2
T8	Support TriMet's marketing efforts	West Linn/ Trimet	Support TriMet's marketing efforts	Medium	See TDM1 and 2
T9	Feasibility analysis for development of local public transit shuttle	West Linn	Conduct a feasibility analysis of development of local public transit shuttle	Medium	$30,000
T10	Feasibility analysis for development of commuter shuttle	West Linn	Conduct a feasibility analysis of development of commuter shuttle	Medium	$30,000
				Total Medium Priority	$485,000
				TOTAL	**$485,000**

1. Specific projects and costs included in Pedestrian Plan of this TSP

Motor Vehicle Plan

The Motor Vehicle Plan identifies projects to meet the needs of motor vehicles using the transportation system in West Linn. The motor vehicle improvement locations are shown in Figure 7. These projects are intended to bring roadways up to current standards and improve motor vehicle operations at intersections and along corridors in West Linn.

Highway 43 Corridor

The Highway 43 Concept Plan was developed by the City of West Linn in coordination with ODOT as part of the 2008 TSP update. The Plan identifies needs, deficiencies, and solutions (such as pedestrian crossings, street trees, landscaping, transit stops, and lighting, to better support the needs of all roadway users and adjacent land uses) for the portion of Highway 43 between the north City limits and McKillican Street.

CITY OF West Linn

N

Lake Oswego

Gladstone

Oregon City

Mary S. Young Park

Wilderness Park

Willamette Park

Tualatin River

Willamette River

CHERRY LN
CORNELL
GLENMORRIE DR
OLD RIVER RD
SE CONCORD RD
SE OATFIELD RD
S BERGIS RD
PACIFIC HWY
SE ROETHE RD
SE RIVER RD
OLD RIVER DR
MARYLHURST DR
ELMRAN DR
NIXON AVE
SE JENNINGS AVE
SE MCLOUGHLIN BLVD
HILLCREST DR
CEDAROAK DR
S ROSEMONT RD
MAPLETON DR
CARRIAGE WAY
SUNCREST DR
HIDDEN SPRINGS RD
JOLIE POINTE RD
SANTA ANITA DR
PIMLICO DR
DILLOW DR
WILLAMETTE DR
SUMMIT ST
HORTON RD
SHANNON LN
ROSEMONT RD
WEST A ST
SKYLINE DR
BROADWAY ST
PARKER RD
CLARK ST
S GRAPEVINE RD
S WOODBINE RD
BLAND CIR
PONDERAY DR
SUNSET AVE
SW JOHNSON RD
KILLARNEY DR
DEBOK RD
BEACON HILL DR
MCLOUGHLIN BLVD
WASHINGTON ST
7TH ST
5TH ST
HIGH ST
JOHNSON RD
BLANKENSHIP RD
TANNLER DR
GREENE ST
SALAMO RD
BARRINGTON DR
RIVERKNOLL WAY
IMPERIAL DR
DOLLAR ST
OSTMAN RD
19TH ST
WILLAMETTE FALLS DR
S MCLOUGHLIN BLVD
S HIGH ST
12TH ST
SW PETES MOUNTAIN RD
SOUTH END RD
LINN AVE
ROSE RD
PARTLOW RD
RIVER RD
S SWEETBRIAR RD
S WILLAMETTE FALLS DR

M20 M25 M26 M21 M27 M24 M28 M29 M22 M23 M30 M17 M19 M1 M2 M3 M15 M18 M7 M6 M9 M10 M16 M8 M14 M11 M4 M13 M5 M12

43 99E 205

0 1,000 2,000 3,000 4,000 Feet

- High Priority Project
- Medium Priority Project
- Low Priority Project
- Commercial Center
- Parks
- City Boundary
- Urban Growth Boundary

Recommended Motor Vehicle Projects
West Linn, Oregon

Figure **7**

H:\projfile\17817 - West Linn Transportation System Plan\gis\TM11\7_Motor Vehicles.mxd - jsommerville - 4:53 PM 5/26/2015

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Coordinate System: NAD 1983 HARN StatePlane Oregon North FIPS 3601 Feet Intl
Data Sources: City of West Linn, Metro Data Resource Center
Terrain Sources: Esri, USGS, NOAA

The Plan maintains the current cross-section of one travel lane in each direction in order to keep the local character and meet community concerns, while not requiring additional right of way acquisition from private land owners. Improvements such as adding left turn lanes to the median and traffic control are planned in some locations to increase capacity. However, due to the stated constraints, performance standards are not expected to be met at several locations, and exceptions to ODOT design standards will be required. This Plan is currently being refined in an effort to resolve discrepancies between the planned roadway cross-section and available right-of-way width in the corridor and to improve safety for pedestrians and bicyclists. The findings of the updated Plan will be incorporated into the TSP.

The projects identified in the current Highway 43 Corridor Plan are summarized in Table 13 and the Bicycle and Pedestrian Plan tables for arterials. All projects associated with the Highway 43 Plan were identified as a high priority based on the project evaluation criteria with the exception of the Arbor Drive intersection which scored as a medium priority project.

10th Street Interchange Area

Technical Memorandum #8 identifies two alternative sets of improvements for addressing motor vehicle issues along the 10th Street corridor. At the publication date of this draft memorandum, a final recommendation regarding improvements at the south end of the 10th Street corridor were still being evaluated. The alternatives being analyzed include a signal at the intersection of 10th Street/8th Avenue/Court and an extension of 8th Court east to Willamette Falls Drive. The likelihood/feasibility of both projects are questionable: the traffic signal is likely to create coordination difficulties with other signals in the corridor and the extension of 8th Court may be cost-prohibitive relative to the incremental performance benefit such an improvement would provide. A final improvement recommendation for this corridor is dependent upon a cost-benefit analysis of the alternatives above. Table 13 summarizes the motor vehicle improvements projects for the 10th Street corridor assuming an extension of 8th Court. *A concept sketch of the improvements is provided in Attachment "D".*

Other Vehicle Improvements

In addition to the Highway 43 and 10th Street corridor improvements identified above, Table 13 includes additional intersection and roadway projects throughout the City of West Linn.

Table 13: Motor Vehicle Plan Projects

Project Number	Location	Description	Priority	Cost
City of West Linn Facility Projects				
M1	Willamette Falls Drive/ Sunset Avenue	Add a traffic signal when warranted	Low	$260,000
M2	Rosemont Road/ Carriage Way	Add a center median on Rosemont Road to allow two-stage left turn from Carriage Way	Low	$1,475,000

M3	Rosemont Way/ Hidden Springs Road	Add a traffic signal when warranted and northbound/southbound left turn lanes on Rosemont Road	Medium	$780,000
M4	Willamette Falls Drive/ Ostman Road	Widen Willamette Falls Drive with center median 500' on each side of intersection to allow for two-stage left turn from Ostman Rd	Low	$1,335,000
M5	Willamette Falls Drive/ Dollar Street (east)	Widen Willamette Falls Drive with center median 500' on each side of intersection for two-stage left turn from Dollar St	Low	$1,475,000
M6	10th Street (Blankenship to Willamette Falls Drive)	Widening to four lanes with side-by-side left-turn lanes between the ramp terminals	Medium	$2,000,000
M7	Blankenship Road/ 10th Street	Add 2nd eastbound right turn lane and 2nd westbound left-turn lanes.	Low	$520,000
M8	10th Street/ Willamette Falls Drive	Install traffic signal with dual eastbound left-turn lanes	Medium	$830,000
M9	10th Street/ 8th Avenue	Restrict to right-in, right-out, left-in when warranted if of 8th Court is extended to Willamette Falls Drive	Low	$20,000
M10	8th Court	Extend 8th Ct to Willamette Falls Dr. to provide additional access to 8th Court retail. (Concurrently make 10th Street/8th Avenue right-in right-out access.)	Low	$2,075,000
M11	Willamette Falls Drive/ 12th Street	All way stop control/ traffic signal when warrants are met	Medium	$260,000
M12	Willamette Falls Drive/ 14th Street	All way stop control when warrants are met	High	$10,000
M13	Willamette Falls Drive/ 19th Street	All way stop control when warrants are met	Low	$10,000
M14	8th Avenue	Modify Dollar St connection to reconnect to 8th Avenue, and provide alternative route for local trips.	Low	$1,035,000
M15	19th Street/ Blankenship Road	Upgrade to current City standards from Blankenship Road/Debok Road to Willamette Falls Drive	Low	$6,115,000
M16	8th Avenue	Upgrade from 10th Street to Dollar Street	Low	$1,760,000
M17	Salamo Road/ Parker Road	Add a traffic signal when warranted	Low	$260,000
M18	Tannler Street Realignment	Realign Tannler Street at Blankenship Road to align with the driveway located approximately 200-feet west	High	$920,000
ODOT Facility Projects				
M19	Highway 43 / Willamette Falls Drive	Add a traffic signal that is coordinated with adjacent signal at I-205 NB Off Ramps	Low	$260,000
ODOT Facility Projects (Highway 43 Concept Plan Improvements)				
M20	Highway 43 / Arbor Drive	Add left turn lanes on Highway 43 (cost included in Highway 43 segment cost, listed below)	Medium	$0
M21	Highway 43 / Cedar Oak Drive	Realign shopping center driveway located to the southeast with intersection	High	$520,000
M22	Highway 43 / Holmes Street	Modify circulation to allow exit only traffic from Holmes Street	High	$10,000
M23	Highway 43 / Lewis Street	Modify circulation to prohibit left turns out from Lewis Street	High	$10,000
M24	Highway 43 / Pimlico Drive	Add a traffic signal when warranted	High	$260,000
M25	North City Limit to Marylhurst	Highway 43 Improvements**	High	$3,030,000
M26	Marylhurst to Hidden Springs	Highway 43 Improvements**	High	$4,350,000
M27	Hidden Springs to Pimlico	Highway 43 Improvements**	High	$5,585,000
M28	Pimlico to Buck	Highway 43 Improvements**	High	$3,460,000
M29	West A Street to Webb	Highway 43 Improvements**	High	$2,140,000
M30	Webb to Hood-McKillican	Highway 43 Improvements**	High	$1,980,000
		Total High Priority	$22,275,000	

Total Medium Priority	$3,870,000
Total Low Priority/NA	$16,600,000
TOTAL	**$42,475,000**

Freight and Rail Plan

There are no freight corridors or rail corridors within the City of West Linn. The following summarizes West Linn's policies related to freight and rail.

Freight and Goods Movement

The two routes within West Linn most used for freight movement by truck are I-205 and Highway 43, both under the jurisdiction of the Oregon Department of Transportation. West Linn will encourage the ODOT to monitor the traffic and accident patterns along I-205, especially in the vicinity of the Highway 43 interchange.

Highway 43, which extends from Gibbs Street in Portland to Main Street in Oregon City, is a multi-modal major arterial, designed to accommodate the movement of people and goods in and around the region. The Draft Interim Corridor Strategy is dedicated to ensuring adequate access to I-205 from the corridor and to removing future bottlenecks at this location. West Linn will continue to be involved in this corridor study and in the development of appropriate plans to improve goods movement in the corridor. West Linn will encourage measures which result in non-local freight trips bypassing Highway 43.

Rail Transportation

Given West Linn's current density and the urban form of the Portland metropolitan area, it is unlikely that passenger rail transportation will come directly to the City of West Linn. It is recommended that residents continue to use the services and facilities in the Portland area. Potential improvements in service exist with the expansion of regional systems currently being discussed. West Linn will continue to support and promote regional improvements to the transit system, and be actively involved in the coordination of these services and possible connecting services to best serve its residents. West Linn will advocate for good connections and service enhancements for Amtrak and high-speed passenger rail in Oregon City.

NEXT STEPS

The draft planned and financially constrained plans will be reviewed with the PMT and CAC for input on the projects and policies as well as the evaluation criteria and project prioritization.

Attachment A Project Evaluation Criteria

PROJECT EVALUATION CRITERIA

Each of the TSP goals include targets that were used to evaluate projects developed during the solutions phase (see Technical Memorandum #10) of the draft TSP Update. Each goal category and target within that category has been assigned an individual score (weight) based on feedback regarding priorities as expressed by the TAC and PAC. In most cases, projects receive the full point allocation for a given target if they are likely to advance the objectives of that target (e.g., a safety improvement project at a location with a known crash history will receive 11 of 11 total points). In limited circumstances, points are awarded to projects on a graded scale, based on the relative importance of the project (e.g., pedestrian improvements that are recommended as Tier 1 projects in the Trails System Master Plan receive 4 of 4 total points, pedestrian projects that are recommended as non-Tier 1 projects receive 2 of 4 total points and pedestrian projects that are not included in the Plan receive 0 of 4 total points). The total points available for each goal category is as follows:

- Safety – 22 points (two targets valued at 11 points each)
- Mobility, Access and the Environment – 20 points (four targets valued from 3 to 8 points each)
- Equity – 6 points (one target)
- Priority Project in Other Plans – 12 points (based on four different plans valued from 2 to 4 points each)
- Fiscal Efficiency – 4 points

Table A-1 defines the scoring methodology used and the resources used to assess the score (i.e., crash history, forecast travel information, GIS maps, land use characteristics, and demographic data).

Table A-1: Evaluation Criteria and Scoring Methodology

Goal	Target	Resources for determining score	Scoring methodology
Safety: Reduce transportation-related fatalities and injuries for all transportation modes	1A: Would likely reduce severe injury and fatal crashes at a location with known or perceived safety risks for that mode.	Severe injury and fatal crash locations are roadway segments with at least one collision that resulted in a severe injury (classified as Injury A by ODOT) or a fatality, as shown in Figure 1 of TM 9.	11 points if: the project or program is likely to reduce injury and fatal crashes at a location with a crash history on Figure 1 of TM 9 or another location known by the City
	1B: Would likely reduce the number of high collision locations	High collision locations are roadway segments with a relatively high number of crashes within a certain roadway segment between 2009 and 2014 as shown in Figure 10 of TM 7	11 points if: the project or program would likely reduce crashes at this segment over a 5 year period following project/program implementation
Mobility, Access and the Environment: Improve access to jobs, schools, health care and other regular needs in ways that improve health, reduce pollution and retain money in the local economy	2A: Would likely reduce VMT		3 points if: the project/program would likely reduce vehicle miles traveled
	2B: Supports a compact urban form and would likely increase non-SOV modes of travel in 2040 Regional Investment Centers	Location of commercial centers in West Linn, located along Highway 43, Willamette Falls Drive, and Salamo Road.	8 points if: the project/program supports direct access to these commercial centers for non-single occupancy vehicle modes
	2D: Would allow more people to access schools, parks and open spaces, and employment and commercial areas within a 20-minute walk, bike or bus ride	20 minute walking radius: 1 mile 20 minute biking radius: 2 miles 20 minute transit radius: 0.25 miles (walking to nearest transit stop)	6 points if: the project/program increases the number of people within a 20-minute walk, bike and bus-shed of schools (6 points), parks (4 points) and open spaces (2 points)
	2F: Implementation would result in ”good” or better level of quality bicycle or pedestrian facility	Figure 2: Pedestrian Facilities; Figure 3: Bicycle Facilities; Figure 4: Bicycle LTS	3 points if: the project/program improves the quality of a bicycle or pedestrian facility that is currently rated below “good,” to good or better.
Equity: Deliver transportation improvements equitably	3A: Would allow more people, who are considered transportation disadvantaged (elderly, youth, and transit users), to access schools, parks and open spaces, and employment and commercial areas within a 20-minute walk, bike or bus ride	20 minute walking radius: 1 mile 20 minute biking radius: 2 miles 20 minute transit radius: 0.25 miles (walking to nearest transit stop) Figures 12, Figure 14	6 points if: the project/program increases the number of persons considered transportation disadvantaged (elderly, youth, and transit riders), within a 20-minute walk, bike and bus-shed of schools, parks and open spaces, and employment and commercial areas
Concurrency	Project or program is identified in local or regional adopted plan	City of West Linn Trails Master Plan	4 points if: the project/program is identified in the Trails Master Plan as a top tier project, 2 points for other tiers.

Attachment B Project Evaluation Matrix

Attachment C Roadway Functional Classification Descriptions and Cross-section Standards

ROADWAY FUNCTIONAL CLASSIFICATION DESCRIPTIONS AND CROSS-SECTION STANDARDS

Functional Classifications

Freeways are state or interstate facilities that provide regional travel connections. These routes have the highest capacity and the most restrictive access requirements. Interstate 205 (I-205) is the only freeway facility within the West Linn City Limits. Two local freeway interchanges at 10th Street and at Highway 43 serve the entire city of West Linn. Interchanges are grade-separated facilities with arterial or principal arterial streets.

Major Arterials are typically state highways that provide the high level roadway capacity to local land uses. These routes connect over the longest distance (sometimes miles long) and are less frequent than other arterial or collectors. These highways generally span several jurisdictions and often have statewide importance (as defined in the ODOT State Highway Classification). These facilities should provide for a high level of transit service and include transit priority measures to expedite bus travel. Highway 43 is the only principal arterial within the West Linn city limits. Neighborhood Traffic Management strategies are not appropriate on major arterials.

Minor Arterials serve to interconnect the City. These streets link major commercial, residential, industrial and institutional areas. Arterial streets are typically spaced at least one mile apart to assure accessibility and reduce the incidence of traffic using collectors or local streets for through traffic in lieu of a well-placed arterial street. Access control is a key feature of an arterial route. Arterials are typically multiple miles in length. Neighborhood Traffic Management strategies are not appropriate on minor arterials.

Collector Streets provide both access and circulation within and between residential and commercial/industrial areas. Collectors differ from arterials in that they provide more of a citywide circulation function and do not require as extensive access control. They also access (compared to arterials) and penetrate residential neighborhoods, distributing trips from the neighborhood and local street system. Collectors are typically greater than 0.5 to 1.0 miles in length. Neighborhood Traffic Management strategies are not appropriate on collector streets.

Neighborhood Routes are usually long relative to local streets and provide connectivity to collectors or arterials. Since neighborhood routes have greater connectivity, they generally have more traffic than local streets and are used by residents in the area to access the neighborhood, but do not serve citywide/large area circulation. They are typically about a quarter to a half-mile in total length. Traffic from cul-de-sacs and other local streets may drain onto neighborhood routes to gain access to collectors or arterials. Because traffic needs are greater than a local street, certain measures should be considered to retain the neighborhood character and livability of these streets. Neighborhood traffic management measures are sometimes appropriate on neighborhood routes to balance traffic and livability/character as determined by an engineering study.

Local Streets have the sole function of providing access to immediately adjacent land uses. Service to "through traffic movement" on local streets is deliberately discouraged by design. Similar to the neighborhood routes, neighborhood traffic management measures are sometimes appropriate on local street to balance traffic and livability/character as determined by an engineering study.

Roadway Cross-Section Standards

The design characteristics of streets in the City of West Linn need to meet the function and demand for each facility type. The actual design of a roadway can vary from segment to segment due to adjacent land uses and demands. The objective was 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 C-1 outlines the width requirements for different street elements for streets in the City of West Linn. The cross-section standards for each functional classification are further detailed in Exhibits 1 through 4.

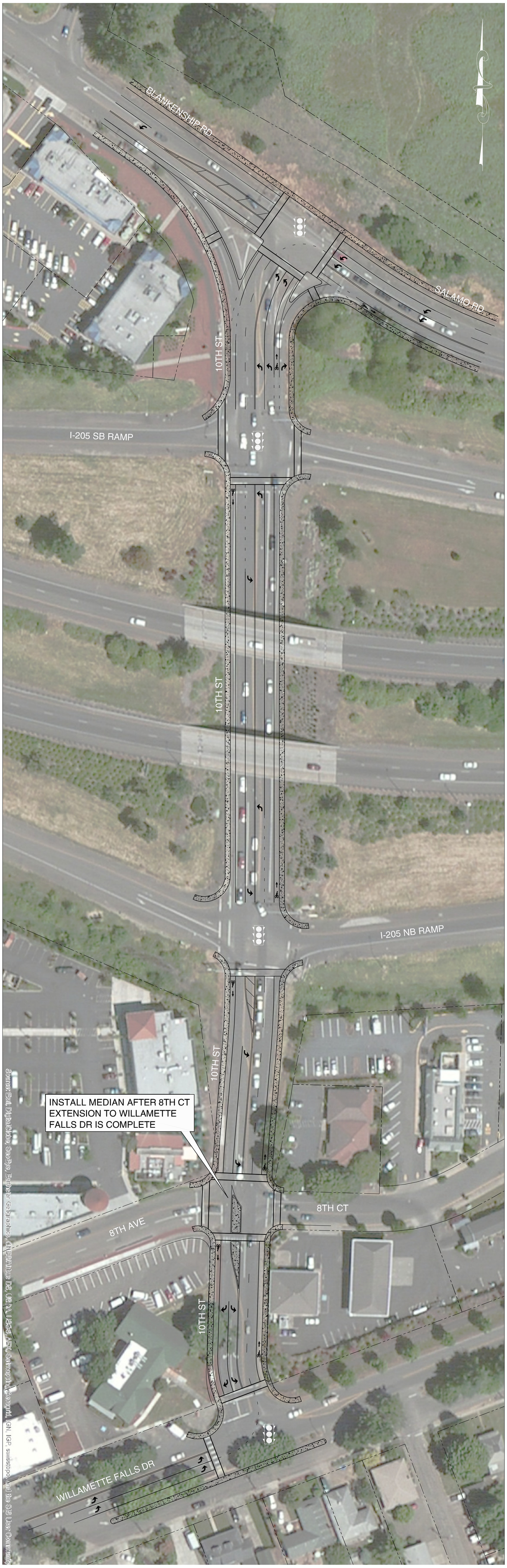
Unless prohibited by significant topographic conditions or modification recommended by the City Engineer responding to another environmental constrain, newly constructed streets shall meet the maximum standards indicated in the cross-sections. When widening an existing street, lesser standards than the maximum may be used 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 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 to manage drainage) may be appropriate due to design limitations or adjacent land use. Green street elements (shown in the cross section figures) may be used as determined by the City Engineer.

Table C-1: City of West Linn Roadway Cross-Section Standards

Street Element	Characteristic	Width/Options
Vehicle Lane Widths (Typical widths)	Arterial	11-12 feet
	Collector	10-12 feet
	Neighborhood Route	10-12 feet
	Local	10-12 feet
	Turn Lane	10-14 feet
On-Street Parking	Arterials	Limited (in designated commercial areas)
	Collectors	Optional (8 feet typical)
	Neighborhood Route	Optional (8 feet typical)
	Local	Optional (8 feet typical)
Bicycle Lanes (Typical widths)	Arterial	5-6feet
	Collector	5-6 feet
	Neighborhood Route	5-6 feet
Cycle Track	Arterial (30 MPH or greater)	7 feet
	Collector (30 MPH or greater)	7-feet

Sidewalks (Typical widths)	Arterial/Collector	6 feet, 8 feet in commercial areas
	Along Cycle Track	5-6 feet, 8 feet in commercial areas
	Neighborhood/Local	6 feet (4-5 feet historic), 8 feet in commercial areas
Landscape Strips	Can be included on all streets	6 feet
Raised Medians	5-Lane	Optional
	3-Lane	Optional
	2-Lane	Consider if appropriate
Neighborhood Traffic Management	Arterials	None
	Collectors	None
	Neighborhood Route	At the discretion of the City Engineer
	Local	
Transit	Arterial/Collectors	Appropriate
	Neighborhood	Only in special circumstances
	Local	Not recommended

Attachment D 10th Street Long-Term Improvements


BLANKENSHIP RD
SALAMO RD
10TH ST
I-205 SB RAMP
10TH ST
I-205 NB RAMP
INSTALL MEDIAN AFTER 8TH CT EXTENSION TO WILLAMETTE FALLS DR IS COMPLETE
8TH AVE
8TH CT
10TH ST
WILLAMETTE FALLS DR
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community