



## MEMORANDUM

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Project #: 17817.0

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

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

Project: West Linn Transportation System Plan (TSP) Update

Subject: Draft Technical Memorandum #10: TSP Solutions

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This memorandum documents potential solutions to address the existing and future transportation system needs within the City of West Linn, which were identified in Technical Memorandum 7. The solutions fall into the following categories:

- Transportation System Management and Operations (TSMO)
- Access Management
- Safety Solutions
- Pedestrian, Bicycle, Trail and Transit Solutions
- System Connectivity
- Freight Mobility and Reliability
- Roadway Capacity

These solutions are intended to address the city's goals and desired outcomes for the performance of the transportation system. These include:

- **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

The solutions include potential projects, policies, and programs for inclusion in the city's updated Transportation System Plan (TSP) which provides a framework and plan for addressing the city's existing transportation needs and the additional needs to serve future growth. These solutions will be reviewed by the project Technical Advisory Committee (TAC), Citizens Advisory Committee (CAC), and general public to determine if they should move forward into the Draft Transportation System Plan and to identify the highest priorities are for limited funding.

## TRANSPORTATION SYSTEM MANAGEMENT AND OPERATIONS (TSMO) SOLUTIONS AND IMPROVEMENTS

Transportation Demand Management (TDM) and Transportation System Management (TSM) strategies are two complementary approaches to managing transportation and maximizing the existing system. Together, these strategies are referred to as Transportation System Management and Operations (TSMO). 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.

Metro's Regional TSMO Plan identifies four main areas of investment to improve system performance:

- Multi-modal traffic management
- Traffic incident management
- Traveler information
- Transportation demand management (TDM)

The Plan also identifies specific strategies for 24 mobility corridors in the region. The following strategies are identified for the mobility corridors in the City of West Linn:

- Freeway Management for I-205
- Arterials Corridor Management for Highway 43
- Arterial Corridor Management for Willamette Falls Drive

In the TSMO Plan, Freeway Management refers to the expansion of freeway vehicle detection to provide comprehensive freeway traveler information including travel speed, travel times, volumes, forecasted information, incident conditions, and weather conditions. Arterial Corridor Management (ACM) refers to installing upgraded traffic signal controllers, establishing communications to the central traffic signal system, providing arterial detection (including bicycle detection where appropriate), routinely updating signal timings, upgrading traffic signage, and performing on-going maintenance and parts replacement. In addition, it may include providing real-time and forecast 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.

The following section provides an overview of a broad range of TSMO measures that are being implemented and considered in the region and identifies and explains those that are most applicable to the City of West Linn.

### TSMO Strategies

Successful implementation of TSMO strategies relies on the participation of a variety of public and private entities. Strategies can be implemented by the city, a neighborhood, or particular employer. In addition, they can be categorized as policies, programs, or physical infrastructure investments. Table 1 provides a summary of potential measures that can be implemented within West Linn and which entities are generally in the position to implement each one. As the city continues to grow and redevelop over the next 10 to 20 years, the applicability of these strategies can be further reviewed. Additional information on potential strategy implementation within West Linn is discussed below.

**Table 1: Transportation system management and transportation demand management strategies**

TSMO Strategy	TDM or TSM?	Type of Investment	City	TMA	Developers	Transit Provider	Employers	State
Parking management	TSM/TDM	Policy	P		S	S	S	
Limited/flexible parking requirements	TDM	Policy	P		S		S	
Access management	TSM/TDM	Policy/ Infrastructure	P					P
Connectivity standards	TSM/TDM	Policy/ Infrastructure	P		S			P
Congestion pricing	TSM/TDM	Policy/ Infrastructure	P					P
Flexible Work Shifts	TDM	Program/Policy	S				P	
Frequent transit service	TDM	Program	S			P		
Free or subsidized transit passes	TDM	Program	S				P	
Preferential carpool parking	TDM	Program	S				P	
Carpool match services	TDM	Program	S	P			S	
Parking cash out	TDM	Program		S		S	P	
Carsharing program support	TDM	Program	P	S	P	P	P	
Bicycle facilities	TDM	Infrastructure	P		S		S	S
Pedestrian Facilities	TDM	Infrastructure	P		S			
Regional ITS	TSM	Infrastructure	P					
Regional traffic management	TSM	Infrastructure	P					
Advanced signal systems	TSM	Infrastructure	P			S		
Real time traveler data	TSM	Infrastructure	P					P
Arterial corridor management	TSM	Infrastructure	P					

TMA: Transportation Management Association – A TMA does not currently exist in the City of West Linn  
 P: Primary role  
 S: Secondary/Support role

## Strategies for West Linn

The following section provides more detail on policy, programming and infrastructure 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. Given the limited transit network and the perceived rural character, not all of the options listed may receive strong public support or involvement in the near future. As such, care should be taken to implement strategies that are consistent with West Linn's vision and goals, while still effectively reducing travel demand.

### ***Programming***

Programming solutions can provide effective and low cost options for reducing transportation demand. Some of the most effective programming strategies can be implemented by employers and are aimed at encouraging non-single occupancy vehicle (SOV) commuting. These strategies are discussed below.

#### *Carpool Match Services*

Metro coordinates a rideshare/carpool program (see the DriveLessConnect.com website) that regional commuters can use to find other commuters with similar routes to work. The program allows commuters to connect and coordinate with others on locations, departure times, and driving responsibilities. Employers can also play a role in encouraging carpooling by sharing information about the system, providing preferential carpool parking, and allowing employees flexibility in workday schedules.

#### *Collaborative Marketing*

Cities, employers, future transit service providers, and developers can collaborate on marketing to get the word out to residents about transportation options that provide an alternative to single-occupancy vehicles.

### ***Policy***

Policy solutions can be implemented by cities, counties, regions, or at the statewide level. Regional and state-level policies will affect transportation demand in West Linn, but local policies can also have an impact.

#### *Limited and/or Flexible Parking Requirements*

Cities set policies related to parking requirements for new developments. In order to allow developments that encourage multi-modal transportation, cities can set parking maximums and low minimums and/or allow for shared parking between uses. Cities can also provide developers the option to pay in-lieu fees instead of constructing additional parking. This option provides additional flexibility to developers that can increase the likelihood of development, especially on smaller lots where surface parking would cover a high portion of the total property.

Cities can also set policies that require provision of parking to the rear of buildings, allowing buildings in commercial areas to directly front the street. This urban form creates a more appealing environment for walking and window-shopping. In-lieu parking fees support this type of development for parcels that do not have rear- or side-access points.

### *Parking Management*

Parking plays a large role in transportation demand management, and effective management of parking resources can encourage use of non-single occupancy vehicle modes. Cities can tailor policies to charge for public parking in certain areas and impose time limits on street parking in retail centers. Cities can also monitor public parking supply and utilization in order to inform future parking strategy.

### *Access Management*

Access management describes a practice of managing the number, placement, and movements of intersections and driveways that provide access to adjacent land uses. Access management policies can be an important tool to improve transportation system efficiency by limiting the number of opportunities for turning movements on to or off of certain streets.

In addition, well deployed access management strategies can help manage travel demand by improving travel conditions for pedestrian and bicycles. Eliminating the number of access points on roadways allows for continuous sidewalk and bicycle facilities and reduces the number of potential interruptions and conflict points between pedestrians, bicyclists, and cars.

Access management is typically adopted as a policy in development guidelines. It can be extremely difficult to implement an access management program once properties have been developed along a corridor. Cooperation among and involvement of relevant government agencies, business owners, land developers and the public is necessary to establish an access management plan that benefits all roadway users and businesses.

Additional information on potential access management solutions is provided in a following section.

### *Signal Systems Improvements*

Signal retiming and optimization offer a relatively low cost option to increase system efficiency. Retiming and optimization refers to updating timing plans to better match prevailing traffic conditions and coordinating signals. Timing optimization can be applied to existing systems or may include upgrading signal technology, such as signal communication infrastructure, signal controllers, or cabinets. Signal retiming can reduce travel times and be especially beneficial to improving travel time reliability. In high pedestrian or desired pedestrian areas, signal retiming can facilitate pedestrian movements through intersections by increasing minimum green times to give pedestrians time to cross during each cycle, eliminating the need to push pedestrian crossing buttons. Signals can also facilitate bicycle movements with the inclusion of bicycle detectors.

Signal upgrades often come at a higher cost and usually require further coordination between jurisdictions. However, upgrading signals provides the opportunity to incorporate advanced signal systems to further improve the efficiency of a transportation network. Strategies include coordinated signal operations across jurisdictions, centralized control of traffic signals, adaptive or active signal control, and transit or freight signal priority. These advanced signal systems can reduce delay, travel time and the number of stops for transit, freight, and other vehicles. In addition, these systems may help reduce vehicle emissions and improve travel time reliability.

**Transit signal priority** systems use sensors to detect approaching transit vehicles and alter signal timings to improve transit performance. This improves travel times for transit, reliability of transit travel time, and overall attractiveness of transit. The City of Portland has the only system of bus priority in the region, which is applied on most of the major arterial corridors throughout the city.

**Adaptive or active signal control** systems improve the efficiency of signal operations by actively changing the allotment of green time for vehicle movements and reducing the average delay for vehicles. Adaptive or active signal control systems require several vehicle detectors at intersections in order to detect traffic flows adequately, in addition to hardware and software upgrades.

**Traffic responsive control** uses data collected from traffic detectors to change signal timing plans for intersections. The data collected from the detectors is used by the system to automatically select a timing plan best suited to current traffic conditions. This system is able to determine times when peak-hour timing plans begin or end; potentially reducing vehicle delays.

**Truck signal priority** systems use sensors to detect approaching heavy vehicles and alter signal timings to improve truck freight travel. While truck signal priority may improve travel times for trucks, its primary purpose is to improve the overall performance of intersection operations by clearing any trucks that would otherwise be stopped at the intersection and subsequently have to spend a longer time getting back up to speed. Implementing truck signal priority requires additional advanced detector loops, usually placed in pairs back from the approach to the intersection.

### ***Real-Time Traveler Information***

Traveler information consists of collecting and disseminating real-time transportation system information to the traveling public. This includes information on traffic and road conditions, general public transportation and parking information, interruptions due to roadway incidents, roadway maintenance and construction, and weather conditions. Traveler information is collected from roadway sensors, traffic cameras, vehicle probes, and more recently, media access control (MAC) devices such as cell phones or laptops. Data from these sources are sent to a central system and subsequently disseminated to the public so that drivers track conditions specific to their cars and can provide historical and real-time traffic conditions for travelers.

When roadway travelers are supplied with information on their trips, they may be able to avoid heavy congestion by altering a travel path, delaying the start of a trip, or changing which mode they can

choose. This can reduce overall delay and fuel emissions. Traveler information projects can be prioritized over increasing capacity on roadway, often with high project visibility among the public.

### ***Real-Time Transit Information***

Transit agencies or third-party sources can disseminate both schedule and system performance information to travelers through a variety of applications, such as in-vehicle, wayside, or in-terminal dynamic message signs, as well as the Internet or wireless devices. Coordination with regional or multimodal traveler information efforts can increase the availability of this transit schedule and system performance information. TriMet has implemented this through its Transit Tracker system.

These systems enhance passenger convenience and may increase the attractiveness of transit to the public by encouraging travelers to consider transit as opposed to driving alone. They do require cooperation and integration between agencies for disseminating the information.

## **ACCESS MANAGEMENT SOLUTIONS**

The Oregon Highway Plan (OHP) defines access management as a set of measures regulating access to streets, roads, and highways, from public roads and private driveways. Measures may include but are not limited to restrictions on the siting of interchanges, 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 OHP requires that new connections to arterials and state highways be consistent with designated access management categories. The intent of this requirement is to provide guidance on the spacing of future extensions and connections along existing and future streets that are needed to provide reasonably direct routes for bicycle and pedestrian travel.

The City's access management policy maintains and enhances the integrity (capacity, safety, and level of service) of city streets while conforming to ODOT's requirement for Highway 43. The TSP should identify access management techniques and strategies that help to preserve transportation system investments and guard against deteriorations in safety and increased congestion. The City's approach to access management should balance the need for land use activities and property parcels to be served with appropriate access while preserving safe and efficient movement of traffic. Access management solutions include:

- setting city-wide access spacing standards according to a roadway's functional classification;
- defining a variance process for when the standard cannot be met;
- obtaining special area designations along ODOT facilities that have alternative access spacing standards; and,
- establishing an approach for access consolidation over time to move in the direction of the standards at each opportunity.

## Access Spacing Standards

### *ODOT Standards*

Oregon Administrative Rule 734, Division 51 establishes procedures, standards, and approval criteria used by ODOT to govern highway approach permitting and access management consistent with Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), statewide planning goals, acknowledged comprehensive plans, and the OHP. The OHP serves as the policy basis for implementing Division 51 and guides the administration of access management rules, including mitigation and public investment, when required, to ensure highway safety and operations pursuant to this division.

Access management standards for approaches to state highways are based on the classification of the highway and highway designation, type of area, and posted speed. The OHP classifies Highway 43 as a Statewide Highway from the northern City limits (Mile Point 8.04) to the I-205 NB Off-Ramp (Mile Point 11.29) and a District Highway from the I-205 NB Off-Ramp (Mile Point 11.29) to the southern City limits (Mile Point 11.43). Future developments along Highway 43 (new development, redevelopment, zone changes, and/or comprehensive plan amendments) will be required to meet the OHP access management policies and standards. Table 2 summarizes ODOT's current access management standards for Highway 43 per the OHP. It is important to note that the information presented in Table 2 reflects recent updates in ODOT's access management policies and standards that occurred following the adoption of the 2008 TSP.

**Table 2: Highway 43 Access Spacing Standards**

Highway Classification	Posted Speed (MPH)	Spacing Standards (Feet) <sup>1</sup>
Statewide Highway	30 & 35	720
District Highway	30 & 35	350

<sup>1</sup> These access management spacing standards do not apply to approaches in existence prior to April 1, 2000 except as provided in OAR 734-051-5120(9).

### *Special Transportation Area*

Special Transportation Areas (STA) are highways or highway segments where alternate mobility and access management standards are considered. STAs look like traditional main streets with development generally located near the back of sidewalk on both sides of the highway. The primary objective of STAs is to provide access to and circulation amongst community activities, businesses and residences and to accommodate pedestrian, bicycle and transit movement on and across the highway. Direct local street connections and shared on-street parking are encouraged. Local auto, pedestrian, bicycle and transit movements to the area are generally as important as the through movement of traffic. Traffic speeds are slow, generally 25 miles per hour or lower.

STAs can be located on Statewide Highway and District Highways, such as Highway 43. While STAs may include some properties that are currently developed for auto dependent uses (e.g. drive through restaurants, gas stations, car washes), areas where the predominant land use pattern is auto-

dependent uses are generally not appropriate for STA designation. STAs that include properties developed for auto-dependent uses should include planning and zoning that provide for redevelopment of the properties overtime to uses consistent with STA implementation.

Two locations on Highway 43 can be considered for STAs, including the northern commercial district and the Bolton Area commercial district. Both locations have intersections that are projected to exceed their respective mobility standards in 2040 and multiple local street connections and driveways that do not meet access spacing standards. Designating Highway 43 as an STA within these commercial areas would allow them to operate with more congestion and with closer access spacing than would typically be allowed. The Oregon Transportation Commission’s approval is needed to establish an STA.

**City Standards**

Access management standards for approaches to City streets are also based on classification. Table 3 identifies the City’s current standards as they relate to new development and redevelopment.

**Table 3: City Street Access Spacing Standards**

Roadway Functional Classification	Area	Traffic Signals (miles)	Public Intersections (feet)	Private Driveways (feet)	Median Opening (feet)
Arterial	Urban	½	600	300	600
Arterial	Commercial area	¼	NA	NA	NA
Collector	All	¼	200	150	NA
Neighborhood Route	All	¼	150	100	NA
Local Residential Street	All	NA	100	50	NA
Local Commercial Street	All	NA	100	50	NA

“Urban” refers to intersections inside the West Linn urban growth boundary and outside the central business district or designated town centers. “Commercial” refers to the designated commercial areas located in the Robinwood, Bolton, and Willamette neighborhoods.

**Access Spacing Variances**

Access spacing variances may be provided to parcels whose highway/street frontage, topography, or location would otherwise preclude issuance of a conforming permit and would either have no reasonable access or cannot obtain reasonable alternate access to the public road system. In such a situation, a conditional access permit may be issued by ODOT or the City, as appropriate, for a connection to a property that cannot be accessed in a manner that is consistent with the spacing standards. The permit can carry a condition that the access may be closed at such time that reasonable access becomes available to a local public street. The approval condition might also require a given land owner to work in cooperation with adjacent land owners to provide either joint access points, front and rear cross-over easements, or a rear access upon future redevelopment.

The requirements for obtaining a deviation from ODOT’s minimum spacing standards are documented in OAR 734-051-3050. For streets under the City’s jurisdiction, the City may reduce the access spacing standards at the discretion of the City Engineer if the following conditions exist:

- Joint access driveways and cross access easements are provided in accordance with the standards;
- The site plan incorporates a unified access and circulation system in accordance with the standards;
- The property owner enters into a written agreement with the City that pre-existing connections on the site will be closed and eliminated after construction of each side of the joint use driveway; and/or,
- The proposed access plan for redevelopment properties moves in the direction of the spacing standards.

The City Engineer may modify or waive the access spacing standards for streets under the City's jurisdiction where the physical site characteristics or layout of abutting properties would make development of a unified or shared access and circulation system impractical, subject to the following considerations:

- Unless modified, application of the access standard will result in the degradation of operational and safety integrity of the transportation system.
- The granting of the variance shall meet the purpose and intent of these standards and shall not be considered until every feasible option for meeting access standards is explored.
- Applicants for variance from these standards must provide proof of unique or special conditions that make strict application of the standards impractical. Applicants shall include proof that:
  - Indirect or restricted access cannot be obtained;
  - No engineering or construction solutions can be applied to mitigate the condition; and,
  - No alternative access is available from a road with a lower functional classification than the primary roadway.
- No variance shall be granted where such hardship is self-created.

### Access Consolidation through Management

From an operational perspective, access management measures limit the number of redundant access points along roadways. This enhances roadway capacity and benefits circulation. Enforcement of the access spacing standards should be complemented with provision of alternative access points. Purchasing right-of-way and closing driveways without a parallel road system and/or other local access could seriously affect the viability of the impacted properties. Thus, if an access management approach is taken, alternative access should be developed to avoid "land-locking" a given property.

As part of every land use action, the City should evaluate the potential need for conditioning a given development proposal with the following items in order to maintain and/or improve traffic operations and safety along the arterial and collector roadways.

- Provision of crossover easements on all compatible parcels (considering topography, access, and land use) to facilitate future access between adjoining parcels.
- Issuance of conditional access permits to developments having proposed access points that do not meet the designated access spacing policy and/or have the ability to align with opposing driveways.
- Right-of-way dedications to facilitate the future planned roadway system in the vicinity of proposed developments.
- Half-street improvements (sidewalks, curb and gutter, bike lanes/paths, and/or travel lanes) along site frontages that do not have full build-out improvements in place at the time of development.

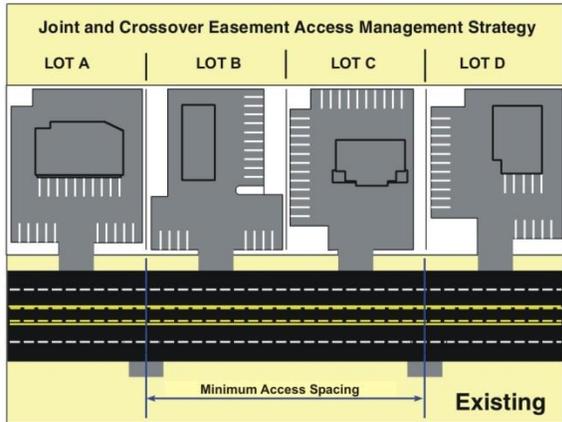
Exhibit 1 illustrates the application of cross-over easements and conditional access permits over time to achieve access management objectives. The individual steps are described in Table 4. As illustrated in the exhibit and supporting table, by using these guidelines, all driveways along the highways can eventually move in the overall direction of the access spacing standards as development and redevelopment occur along a given street.

**Table 4: Example of Crossover Easement/Indenture/Consolidation**

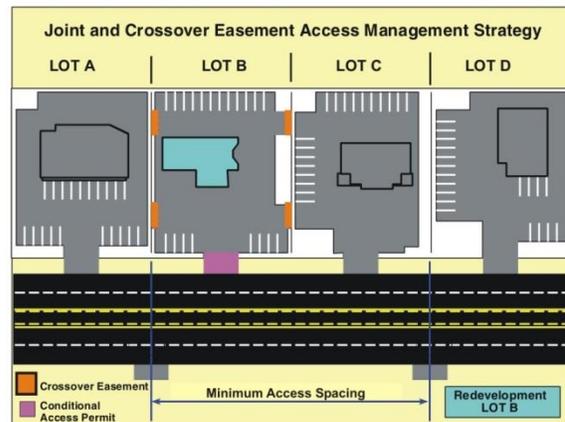
Step	Process
1	EXISTING – Currently Lots A, B, C, and D have site-access driveways that neither meet the access spacing criteria of 500 feet nor align with driveways or access points on the opposite side of the highway. Under these conditions motorists are into situations of potential conflict (conflicting left turns) with opposing traffic. Additionally, the number of side-street (or site-access driveway) intersections decreases the operation and safety of the highway
2	REDEVELOPMENT OF LOT B – At the time that Lot B redevelops, the City would review the proposed site plan and make recommendations to ensure that the site could promote future crossover or consolidated access. Next, the City would issue conditional permits for the development to provide crossover easements with Lots A and C, and ODOT/City would grant a conditional access permit to the lot. After evaluating the land use action, ODOT/City would determine that LOT B does not have either alternative access, nor can an access point be aligned with an opposing access point, nor can the available lot frontage provide an access point that meets the access spacing criteria set forth for segment of highway.
3	REDEVELOPMENT OF LOT A – At the time Lot A redevelops, the City/ODOT would undertake the same review process as with the redevelopment of LOT B (see Step 2); however, under this scenario ODOT and the City would use the previously obtained cross-over easement at Lot B consolidate the access points of Lots A and B. ODOT/City would then relocate the conditional access of Lot B to align with the opposing access point and provide an efficient access to both Lots A and B. The consolidation of site-access driveways for Lots A and B will not only reduce the number of driveways accessing the highway, but will also eliminate the conflicting left-turn movements the highway by the alignment with the opposing access point.
4	REDEVELOPMENT OF LOT D – The redevelopment of Lot D will be handled in same manner as the redevelopment of Lot B (see Step 2)
5	REDEVELOPMENT OF LOT C – The redevelopment of Lot C will be reviewed once again to ensure that the site will accommodate crossover and/or consolidated access. Using the crossover agreements with Lots B and D, Lot C would share a consolidated access point with Lot D and will also have alternative frontage access the shared site-access driveway of Lots A and B. By using the crossover agreement and conditional access permit process, the City and ODOT will be able to eliminate another access point and provide the alignment with the opposing access points.
6	COMPLETE – After Lots A, B, C, and D redevelop over time, the number of access points will be reduced and aligned, and the remaining access points will meet the access spacing standard.

Exhibit 1: Cross Over Easement

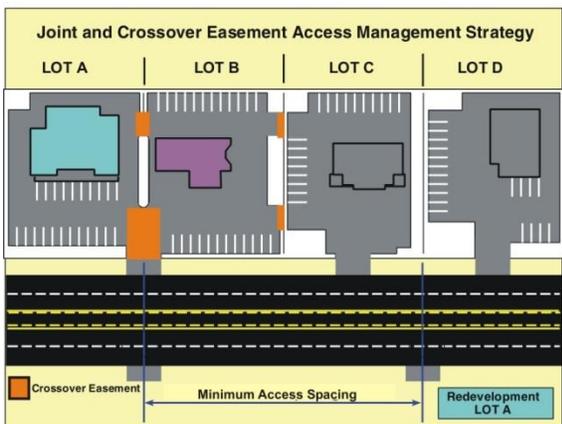
Proposed Access Management Strategy



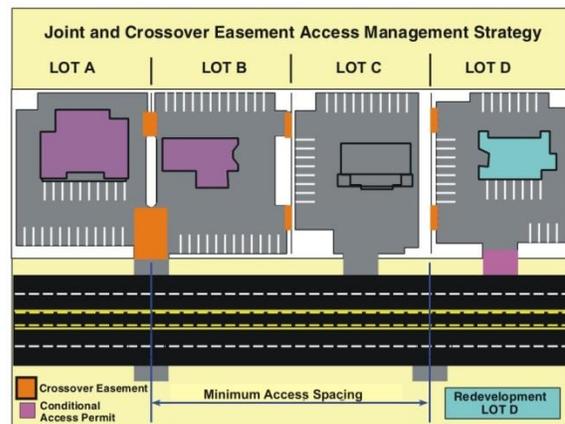
Step 1



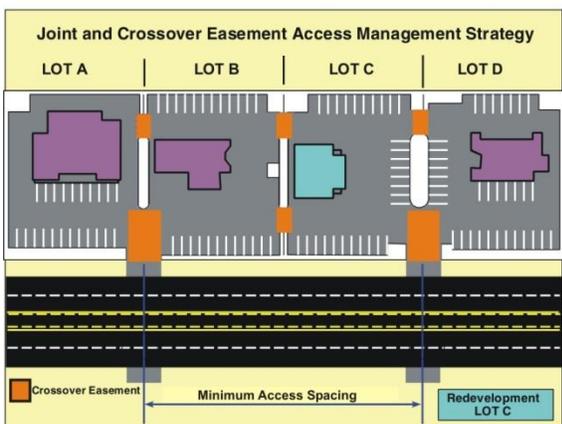
Step 2



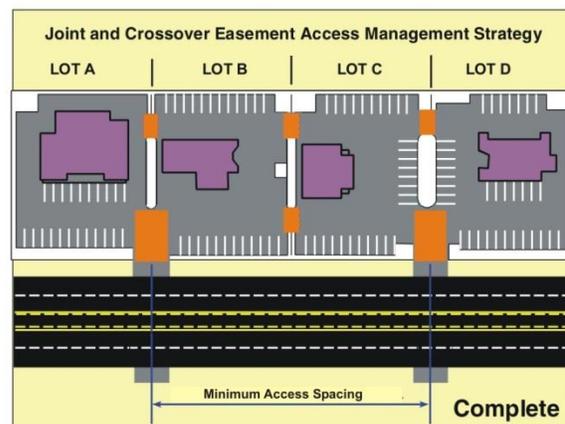
Step 3



Step 4



Step 5



Step 6

## SAFETY SOLUTIONS

The 2008 TSP does not include any projects specifically identified as safety improvements. For the TSP update, the five most recent years of crash data available (January 1, 2009 to December 31, 2013) was obtained from ODOT and reviewed to identify three classifications of crashes that may be of high priority for safety improvements – motor vehicles crashes that were classified as fatal or injury A crashes (incapacitating/broken bones) and pedestrian/bicyclist crashes. Willamette Drive was excluded from this analysis as the existing Highway 43 Concept Plan considered safety needs and the upcoming Highway 43 Concept Plan Refinement Project will consider the most recent safety data and issues along the corridor. Crashes that occurred along I-205 were also excluded, as it is an ODOT facility on the Interstate system.

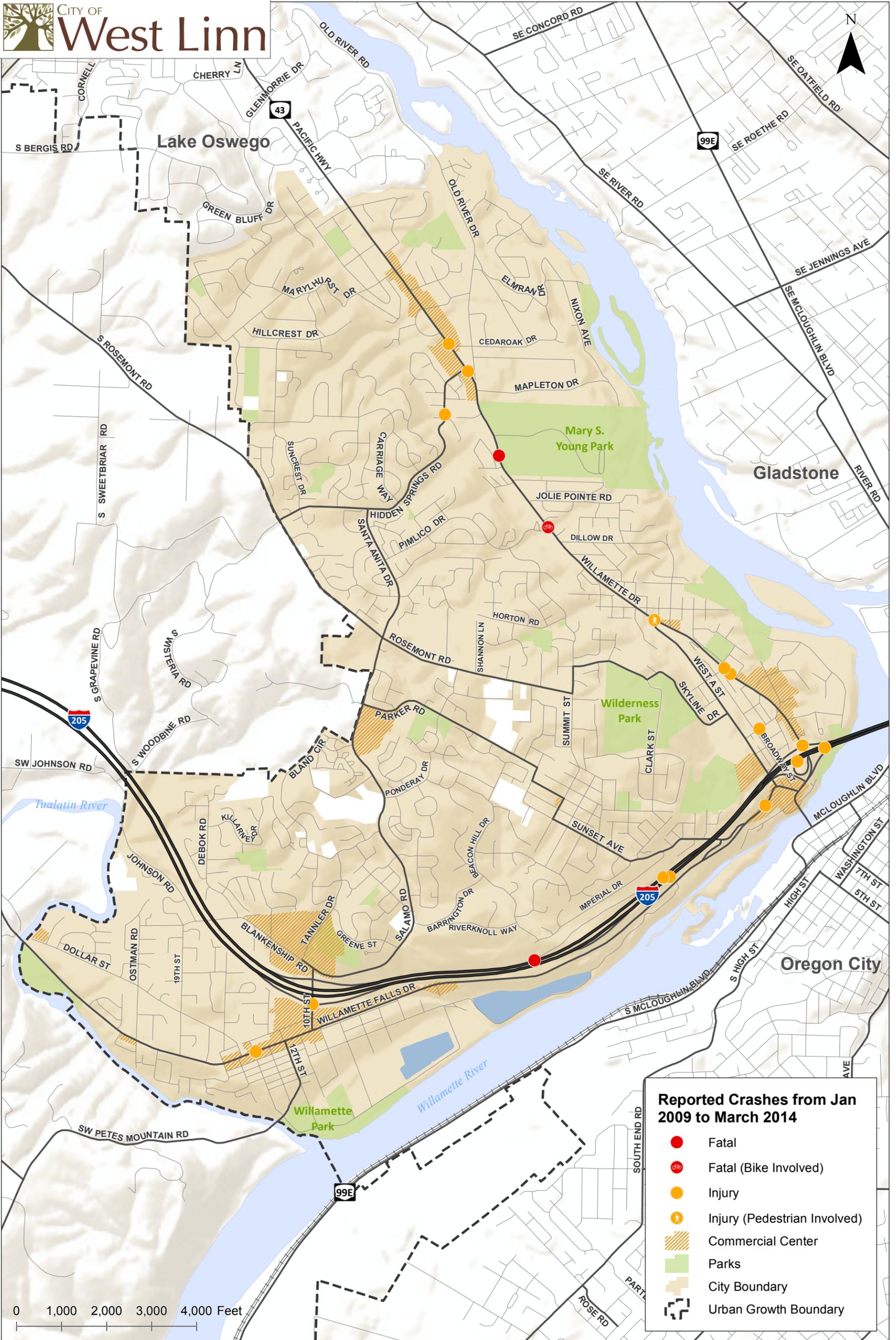
The three categories of crashes are addressed below. For each category the crash locations and potential solutions that may improve the safety at these locations are identified. If there are no relevant improvements in the pedestrian improvements, the bicycle improvements, the transit improvements, or the motor vehicle improvements presented above, alternative solutions are presented.

### Motor Vehicles Crashes

A total of three fatal and 15 Injury A crashes occurred within West Linn over the five year period. Two of the fatal crashes occurred along Willamette Drive and one along I-205. The fatal crash locations are denoted in red in Figure 1. The fatal crashes that occurred along Willamette Drive will be considered in the Highway 43 Concept Plan update. No solutions are proposed for the fatal crash that occurred along I-205. Six of the Injury A crashes occurred along Willamette Drive and five along I-205. The Injury A crashes are denoted in orange in Figure 1. No solutions are proposed for the Injury A crashes that occurred along Willamette Drive and I-205 as described above. The four remaining crashes are summarized below.

#### ***Willamette Falls Drive***

- Intersection crash at the 14<sup>th</sup> Street/Willamette Falls Drive intersection:
  - Rear end crash due to driver inattention
  - The motor vehicle solutions identify the potential conversion of the intersection to all way stop control when warranted, which may improve safety
- Segment crash at 500 feet west of West A Street:
  - Mid-block head-on collision due to driver inattention and car driving to the left of the centerline
  - No potential solutions are identified to address this type of crash



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**Fatal and Injury A Crashes  
West Linn, Oregon**

**Figure  
1**

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### ***Hidden Springs Drive***

- Segment crash at 75 feet north of Cottonwood Court:
  - Mid-block collision with retaining wall due to excessive speed
  - No potential solutions are identified to address this type of crash

### ***McKillican Street***

- Segment crash at 100 feet northeast of Broadway Street:
  - Turning movement crash at a midblock location
  - No potential solutions are identified to address this type of crash

## **Pedestrian/Bicyclist Crashes**

There were a total of 19 crashes involving pedestrians and/or bicyclists over the five year period, five involved pedestrians and 14 involved bicyclists. One resulted in a fatal crash. The pedestrian and bicycle crash locations are denoted with pedestrian and bicycle symbols in Figure 1. As shown, seven crashes occurred along Willamette Drive and one occurred at an I-205 ramp. No solutions are proposed for crashes that occur along Willamette Drive and I-205 as described above. The 11 remaining crashes are summarized below. Several potential solutions have been proposed to improve pedestrian and bicycle safety at these locations.

### ***Willamette Falls Drive***

- Segment crash with pedestrian at 150 feet west of 14<sup>th</sup> Street:
  - Mid-block pedestrian collision
  - Potential pedestrian improvements include the installation of sidewalks along both sides of Willamette Falls Drive as described below. These improvements should improve pedestrian safety along this segment
  - Additional improvements proposed: Crosswalk on west side leg of 14<sup>th</sup> Street
- Driveway crash with bicyclist at 55 feet east of 13<sup>th</sup> Street:
  - Bicyclist not visible for turning vehicle
  - Potential bicycle improvements include the installation of bike lanes along both sides of Willamette Falls Drive as described below. These improvements should improve bicyclist safety at this intersection
- Intersection crash with bicyclist at 12<sup>th</sup> Street/Willamette Falls Drive:
  - Angle crash due to ROW non-compliance at stop sign
  - Potential bicycle improvements include the installation of bike lanes along both sides of Willamette Falls Drive as described below. These improvements should

improve bicyclist safety at this intersection. In addition, the motor vehicle improvements identify the potential conversion of the intersection to an all-way stop-control when warranted, which may improve the safety

- Intersection crash with bicyclist at West A Street/Willamette Falls Drive:
  - Crash due to ROW non-compliance at stop sign
  - Potential bicycle improvements include the installation of bike lanes along both sides of Willamette Falls Drive as described below. These improvements should improve bicyclist safety at this intersection
- Intersection crash with pedestrian at Broadway Street/Willamette Falls Drive
  - Pedestrian not visible for vehicle
  - Potential pedestrian improvements include the installation of sidewalks along Willamette Falls Drive as described below. These improvements should improve pedestrian safety at this intersection. In addition, the motor vehicle improvements propose the installation of a traffic signal at the Willamette Drive/Willamette Falls Drive intersection
  - Additional improvements proposed: Crosswalk across Broadway Street

### ***Hidden Springs Road***

- Intersection crash with bicyclist at Santa Anita Drive/Hidden Springs Road:
  - Turning crash due to ROW non-compliance
  - Potential bicycle improvements include the installation of bike lanes along both sides of Hidden Springs Road and along both sides of Santa Anita Drive as described below. These improvements should improve bicyclist safety at this intersection

### ***Rosemont Road***

- Intersection crash with pedestrian at Santa Anita Drive/Rosemont Road:
  - Crash due to ROW non-compliance
  - The motor vehicle improvements propose the installation of a traffic signal at the Santa Anita Drive/Rosemont Road intersection when warranted

### ***Cornwall Street***

- Intersection crash with bicycle at Lancaster Street/Cornwall Street:
  - Phantom / Non-contact vehicle
  - Pedestrian and bicycle improvements are proposed for this segment; however, they are not anticipated to have an impact on this type of crash

### ***Salamo Road***

- Intersection crash with bicycle at Day Road/Salamo Road:
  - Crash due to ROW non-compliance
  - Pedestrian and bicycle improvements are proposed for this segment; however, they are not anticipated to have an impact on this type of crash
- Segment crash with pedestrian at 900 feet east of 10th Street:
  - Mid-block pedestrian collision
  - The pedestrian improvements propose the installation of sidewalks along both sides of Salamo Road in this segment, which should improve pedestrian safety

### ***Imperial Drive***

- Intersection crash with bicyclist at Rockridge Drive/Imperial Drive:
  - Turning crash due to ROW non-compliance
  - No relevant improvements have been identified in the pedestrian, bicycle, transit, or motor vehicle improvements

## **PEDESTRIAN, BICYCLE, TRAIL, AND TRANSIT SOLUTIONS AND IMPROVEMENTS**

The following describes a variety of potential pedestrian, bicycle, trail, and transit solutions and improvements for addressing the transportation system needs identified in Tech Memo 7. The on-street pedestrian and bicycle networks need to be designed to complement the existing and future transit network as well as off-street trails identified in the City's Trails Master Plan. This will ensure access to the transit and the trails network for pedestrians and cyclists which increases resident's access to transit for longer trips and increases access to the lower-stress walking and cycling network which will help attract more people to these modes of travel.

Following a brief overview of the potential pedestrian and bicycle solutions and improvements, alternatives specific to the following arterials, collectors, neighborhood routes, and local streets along the Safe Routes to Schools (SRTS) for the five primary schools with SRTS programs are provided. Relative costs (high, medium, and low) are provided for each improvement based on a per/foot cost. Figure 2 illustrates the location of the following corridors.

- |                       |                           |                    |
|-----------------------|---------------------------|--------------------|
| ▪ Lancaster Street    | ▪ Willamette Falls Drive  | ▪ Marylhurst Drive |
| ▪ Hidden Springs Road | ▪ 10 <sup>th</sup> Street | ▪ Old River Drive  |
| ▪ Parker Road         | ▪ Bland Circle            | ▪ Ostman Road      |
| ▪ Rosemont Road       | ▪ Blankenship Road        | ▪ Pimlico Drive    |
| ▪ Salamo Road         | ▪ Carriage Way            | ▪ Summit Street    |

- Santa Anita Drive
- Skyline Drive
- Sunset Avenue
- West A Street
- Clark Street
- Cornwall Street
- Dollar Street
- Johnson Road
- Suncrest Road
- Tannler Drive
- SRTS Local Streets

Although there are a variety of alternative solutions identified for each of the above corridors, the project evaluation criteria (see Technical Memo 3) have been applied to help identify priorities amongst the corridors. This will help identify which corridors should be prioritized for improvements based on how well they advance the TSP Update goals and will move the City in the direction of achieving the various system performance targets. *This project evaluation matrix is included in Attachment A.*

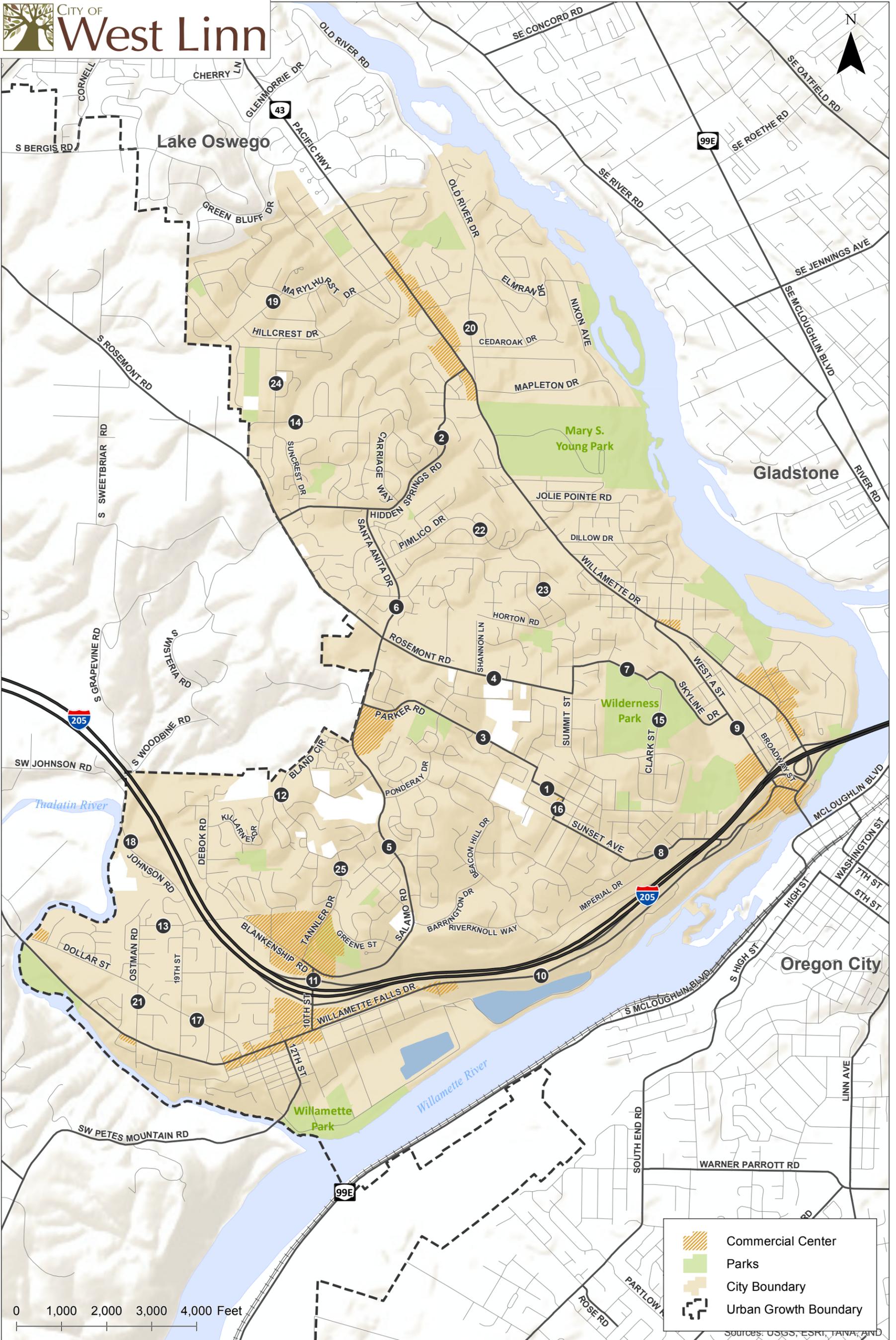
## Pedestrian Solutions

Pedestrian facilities are the elements of the transportation system that enable people to walk safely and efficiently between neighborhoods, commerce centers, employment areas, and transit stops. These include facilities for pedestrian movement along key roadways (e.g., sidewalks, mixed-use shoulders, shared-use paths, and trails) as well as for safe roadway crossing locations (e.g., crosswalks, crossing beacons, pedestrian refuge islands). Each plays a role in developing a comprehensive pedestrian network. The following provides a summary of the types of solutions identified below to address pedestrian needs along each corridor.

### *Sidewalks*

Sidewalks are the fundamental building block of a pedestrian system. Sidewalks enable people to comfortably, conveniently and safely walk from place to place. They also provide an important means of mobility for people with disabilities and families with strollers, and others who may not be able to travel on an unimproved roadside surface. Sidewalks are usually constructed from concrete and they provide an area separated from the roadway by a curb, landscaping, and/or on-street parking. Sidewalks are widely used in urban and suburban settings. The images below show sidewalks in a variety of urban and suburban settings.





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.

**Corridor Solutions  
West Linn, Oregon**

**Figure  
2**

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## ***Pedestrian Crossings***

Crossing facilities enable pedestrians to safely cross streets, railroad tracks, and other transportation facilities. Planning for appropriate pedestrian crossings requires the community to balance vehicular mobility needs with providing crossing locations that the desired routes of walkers.

The state of Oregon considers all roadway intersections to be legal crossing locations for pedestrians regardless of whether a painted crosswalk is provided. At these locations, drivers are required to yield the right of way to pedestrians to allow them to cross. Driver compliance to yielding is often inconsistent and pedestrians often have difficulty crossing higher volume and higher speed roadways. There are several different types of pedestrian crossing treatments that can be used in West Linn; each of these is applicable under a different range of considerations. The images below show pedestrian crossings in a variety of urban and suburban settings.



## **Bicycle Solutions**

Bicycle facilities enable cyclists to travel safely and efficiently on the transportation system. Both public infrastructure (bicycle lanes, cycletracks, mixed-use trails, signage and striping) and “on-site” facilities (secure parking, changing rooms, and showers at worksites) are important to providing a comprehensive bicycle system.

Many different bicycle facility types are needed to create a complete bicycle system that connects people to their destinations and allows cyclists to feel comfortable and safe while riding. While there are some bicycle lanes along select arterial and collector streets within the city, these lanes are not provided along the entire lengths of the corridors. This existing network could be supplemented by additional bicycle lanes or other types of bicycle facilities. The following provides a summary of the types of solutions identified below to address bicycle needs along each corridor.

### ***Bicycle Lanes***

Bike lanes are on-street facilities that provide designated spaces for bicycles, separated from vehicles by pavement markings. Bike lanes are generally used on collector and arterial streets with adequate space to accommodate the bike lane width and with vehicular travel volumes and speeds that make it difficult for drivers and cyclists to “share the road.” A bike lane can consist of white striping with a bicycle symbol, or it can be filled with a solid paint color, usually green.

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### ***Shared-use Pavement Markings***

Shared-use pavement markings, or sharrows, are pavement markings that can be used where space does not allow for a bike lane and/or where vehicular travel speeds and volumes allow cyclists to comfortably and conveniently “share the road” with motorists. Sharrows remind motorists of the presence of bicycles and indicate to cyclists where to safely ride within the roadway.

### ***Mixed-Use Shoulders***

A mixed-use shoulder is a roadway shoulder that is wide enough to be used by pedestrians and bicyclists as a mixed-use path. Mixed-use shoulders are ideal on low-volume streets where topography or the surrounding environment does not allow for the addition of a sidewalk or separate bicycle facility.

### ***Bicycle Crossings***

Bicycle crossing treatments connect bike facilities at high traffic intersections, trailheads, or other bike routes. Planning for appropriate bicycle crossings requires the community to balance vehicular mobility needs with providing crossing locations that the desired routes of cyclists.

### ***On-Site Facilities***

Bicyclists also benefit from facilities that are located on-site within key employment, commercial and institutional locations. These facilities can include indoor and/or outdoor secure bicycle parking, open or covered U-shaped racks, showers/changing rooms, and storage lockers for clothing and gear. The City of West Linn can use incentives to encourage or require developers to include these types of facilities in new buildings.

### **Public Transit Solutions**

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 for certain trips. Public transit links to 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 is dependent on having the land use and densities that can support 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 the option to leave their bike at one trip-end instead of bring it on the bus.

The City of West Linn can support potential future transit service by including easy and safe walking and bicycling network connections between key roadways and neighborhoods. The following provides a summary of the types of solutions identified below to address transit needs along select corridors.

### ***Transit Stops***

Transit stops are designated locations where residents can access local transit service. Transit stops are normally located at major intersections. The types of amenities provided at each transit stop (i.e. pole, bench, shelter, ridership information, trash receptacles) tend to reflect the level of usage. A minimum of 30 average daily boardings and alightings is required by TriMet to warrant a shelter.

### ***Park & Ride***

Park-and-ride facilities provide parking for people who wish to transfer from their personal vehicle to public transportation or carpools/vanpools. Park-and-rides are frequently located near major intersections, at commercial centers, or on express and commuter bus routes. It is Oregon state policy to encourage the development and use of park & ride facilities at appropriate urban and rural locations adjacent to or within the highway right-of-way. Park-and-ride facilities can provide an efficient method to provide transit service to low density areas, connecting people to jobs, and providing an alternate mode to complete long-distance commutes.

Park-and-ride facilities may be either shared-use, such as at a school or shopping center, or exclusive-use. Shared-use facilities are generally designated and maintained through agreements reached between the local public transit agency or rideshare program operator and the property owner. Shared lots can save the expense of building a new parking lot, increase the utilization of existing spaces, and avoid utilization of developable land for surface parking. In the case of shopping centers, the presence of a shared-use park-and-ride has frequently been shown to be mutually beneficial, as park-and-riders tend to patronize the businesses in the center.

The City has indicated the potential for a new park-and-ride facility within the 10<sup>th</sup> Street interchange area. A park-and-ride in this location could server TriMet Line 154 as well as a potential shuttle service between the Oregon City Transit Center and the Bridgeport Village Center.

## CORRIDOR SPECIFIC SOLUTIONS

### 1. Lancaster Street



Near Parker Road

Lancaster Street is classified as a minor arterial from Parker Road to Cornwall Street. However, several single family residential homes have direct access on both sides of the roadway. As a minor arterial, this segment of Lancaster Street should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards.

#### ***Pedestrian Solution Alternatives***

- Install sidewalks on the south side of the roadway from Parker Road to Cornwall Street – *this potential improvement will require widening the roadway, which may not be feasible until redevelopment occurs.*
- Install sidewalks on the north side of the roadway from approximately 175 feet east of Parker Road to Cornwall Street *this potential improvement will require widening the roadway, which may not be feasible until redevelopment occurs.*

#### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Parker Road to Cornwall Street – *this potential improvement will require widening the roadway in some areas, which may not be feasible until redevelopment occurs.*
- As an interim improvement, install shared-use pavement markings and/or signs on both sides of the roadway from Parker Road to Cornwall Street.

#### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## 2. Hidden Springs Road



Near Bluegrass Way

Hidden Springs Road provides an important east-west connection between Rosemont Road and Willamette Drive. Hidden Springs Road is classified as a minor arterial, which is generally consistent with how it operates today. As a minor arterial Hidden Springs Road should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards. The segment of Hidden Springs Road between Santa Anita Drive and Willamette Drive is identified as a potential future transit opportunity corridor, and therefore should be prioritized amongst the list of potential improvements.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the south side of the roadway from 500' east of Suncrest Drive to Santa Anita Drive – *while this potential improvement would improve pedestrian access along Hidden Springs Road, existing pedestrian crossings at Suncrest Drive and Santa Anita Drive provide access to the sidewalks along the north side of the roadway. Relative Cost: medium*
- Install sidewalks on the south side of the roadway from Carriage Way to approximately 350 feet south of Cottonwood Court – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on the south side of the roadway. Relative Cost: high*
- As an alternative, install crosswalks at Carriage Way and Cotton Wood Court to improve access to the sidewalks on the north side of the roadway – *the potential crosswalk at Carriage Way would also improve access to the existing off-street trail located southeast of the Carriage Way/Hidden Springs Road intersection. Relative Cost: low*
- Install a crosswalk at the existing off-street trail located approximately half-way between Wildwood Drive and Cotton Wood Court. – *this potential project would also provide access to a planned off-street trail on the north side of the roadway. Relative Cost: low*

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Santa Anita to Bluegrass Way – *this potential improvement could be completed with striping only.* **Relative Cost: low**
- Install bike lanes on both side of the roadway from Bluegrass Way to approximately 350 feet south of Cottonwood Court – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on the north and south sides of the roadway.* **Relative Cost: high**
- As an alternative, install shared use pavement markings and/or signs on both side of the roadway from Bluegrass Way to approximately 350 feet south of Cottonwood Court. **Relative Cost: low**
- Install bike lanes on both sides of the roadway from approximately 350 feet south of Cottonwood Court to Willamette Drive – *this potential improvement would require removal of the separate left-turn lanes at Wilderness Drive and the business park driveway and the reconfiguration of the eastbound approach to the Willamette Drive/Hidden Springs Road intersection.* **Relative Cost: medium**
- An al alternative, install shared use pavement markings and/or signs on both side of the roadway from approximately 350 feet south of Cottonwood Court to Willamette Drive. **Relative Cost: low**

### ***Transit Solution Alternatives***

- Work with TriMet to install transit stops on both sides of the roadway at Santa Anita Drive, Bluegrass Way, and Cottonwood Court – *these potential improvements would serve TriMet Line 154 once it is re-routed to Lake Oswego via Salamo Road, Santa Anita Road, Hidden Springs Road, and Willamette Drive.* **Relative Cost: low**

### **3. Parker Road**



Near Wild Rose Drive

Parker Road is classified as a minor arterial, which is generally consistent with how it operates today. As a minor arterial Parker Road should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from approximately 125 feet east of Noble Lane to approximately 100 feet west of Dillon Lane – *this potential improvement will require widening of the roadway. Relative Cost: medium*
- Install a crosswalk at Noble Lane to improve access to the sidewalks, multi-use path, and commercial center on the south side of the roadway. **Relative Cost: low**
- Install sidewalks on the north side of the roadway from approximately 150 feet west of Damon Drive to approximately 75 feet west of Chinook Court – *this potential improvement will require widening of the roadway. Relative Cost: high*

### ***Bicycle Solution Alternatives***

- Install bike lanes from approximately 125 feet east of Noble Lane to approximately 100 feet west of Dillon Lane – *this potential improvement will require widening the roadway. Relative Cost: high*

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## **4. Rosemont Road**



*Near Hidden Springs Road*

Rosemont Road provides an important east-west connection between West Linn and areas located further west. Rosemont Road is classified as a minor arterial, which is generally consistent with how it operates today west of Salamo Road. However, east of Salamo road, several single family residential

homes have direct access on both sides of the roadway. As a minor arterial, Rosemont Road should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the south side of the roadway from Carriage Way to Hidden Springs Road – *this potential improvement will require widening the roadway and retaining walls in several areas, which may not be feasible until redevelopment occurs.* **Relative Cost: high**
- As an interim improvement, , improve access to the sidewalks on the north side of the roadway with crosswalks at Carriage way and Hidden Springs Road. **Relative Cost: low**
- Install sidewalks on the south side of the roadway from Hidden Springs Road to approximately 100 feet east of Furlong Drive. **Relative Cost: medium**
- Improve the substandard sidewalks on the north side of the roadway from Santa Anita Drive to Oppenlander Field. **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from Santa Anita Drive to Wild Rose Drive – *This potential improvement will require widening the roadway, which may not be feasible until redevelopment occurs.* **Relative Cost: high**
- Install sidewalks on both sides of the roadway from Shannon Lane to Summit Street – *There are three small segments along both sides of the roadway with existing substandard or new and improved sidewalks.* **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on the south side of the roadway from Carriage Way to Hidden Springs Road – *this potential improvement will require widening the roadway with retaining walls in several areas, which may not be feasible until redevelopment occurs.* **Relative Cost: high**
- As an interim improvement, install a mixed-use shoulder on the south side of the roadway – while this potential improvement will still require widening the roadway, it will serve pedestrian and bicyclists. **Relative Cost: medium**
- Install bike lanes on the south side of the roadway from Hidden Springs Road to approximately 100 feet east of Furlong Drive – *this potential improvement will require widening the roadway.* **Relative Cost: medium**
- As an interim improvement, install a mixed-use shoulder on the south side of the roadway – while this potential improvement will still require widening the roadway, it will serve pedestrian and bicyclists. **Relative Cost: medium**
- Install bike lanes on the south side of the roadway from Santa Anita Drive to Wild Rose Drive – *This potential improvement will require widening the roadway to meet current street standards.* **Relative Cost: high**

- Install bike lanes on both sides of the roadway from Shannon Lane to Summit Street – *this potential improvement will require widening on both sides of the roadway.* **Relative Cost: high**

## 5. Salamo Road



Near Bland Circle

Salamo Road provides an important north south connection between 10<sup>th</sup> Street and Rosemont Road. Salmo Road is classified as a minor arterial, which is generally consistent with how it operates today. As a minor arterial, Salamo Road should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards. Salamo road is identified as a potential future transit opportunity corridor, and therefore should be prioritized amongst the list of potential improvements.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the west side of the roadway from Weatherhill Road to Bland Circle. **Relative Cost: medium**
- Install sidewalks on the west side of the roadway from approximately 750 feet south of Remington Drive to approximately 300 feet south of Barrington Drive. **Relative Cost: medium**
- Install sidewalks on both sides of the roadway from approximately 300 feet south of Barrington Drive to 10<sup>th</sup> Street – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on both sides of the roadway.* **Relative Cost: high**
- As an alternative, install a mixed-use path on the west-north side of the roadway from approximately 300 feet south of Barrington Drive to 10<sup>th</sup> Street. Install a crosswalk at approximately 300 feet south of Barrington Drive to provide access to the shared-use path. **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from approximately 300 feet south of Barrington Drive to 10<sup>th</sup> Street – *this potential improvements will require widening the roadway.* **Relative Cost: high**

### ***Transit Solution Alternatives***

- Work with TriMet to install transit stops on both sides of the roadway at Rosemont Road, Parker Road, Day Road, Ponderay Drive, Vista Ridge Drive, Barrington Drive, and Greene Street – these potential improvements would serve TriMet Line 154 once it is re-routed to Lake Oswego via Salamo Road, Santa Anita Road, Hidden Springs Road, and Willamette Drive. **Relative Cost: low**

## 6. Santa Anita Drive



*Near Pimlico Drive*

Santa Anita Drive is classified as a minor arterial, which is generally consistent with how it operates today. Several local streets and one collector (Pimlico Drive) provide access to the roadway. As a minor arterial, Santa Anita Drive should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards. Santa Anita Drive is identified as a potential future transit opportunity corridor, and therefore should be prioritized amongst the list of potential improvements.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the east side of the roadway from Hidden Springs Road to Clubhouse Circle. **Relative Cost: medium**
- Install sidewalks on the east side of the roadway from approximately 250 feet south of Clubhouse Circle to Pimlico Drive. **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Improve the bicycle crossing at the northbound approach to Hidden Springs Road. **Relative Cost: low**

### ***Transit Solution Alternatives***

- Work with TriMet to install transit stops on both sides of the roadway at Horton Road, Pimlico Drive and Hidden Springs Road – these potential improvements would serve TriMet Line 154 once it is re-routed to Lake Oswego via Salamo Road, Santa Anita Road, Hidden Springs Road, and Willamette Drive. **Relative Cost: low**

## **7. Skyline Drive**



*Near West Linn High School*

Skyline Drive provides an important east-west connection between Summit Street and West A Street as well as access to West Linn High School. Skyline Drive is classified as a minor arterial; however, several single family residential homes have direct access on both sides of the roadway. As a minor arterial, Skyline Drive should provide continuous sidewalk and bicycle lanes on both sides of the roadway to meet City standards.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the north side of the roadway from Summit Street to approximately 150 feet west of Firwood Drive. **Relative Cost: medium**
- 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– *this potential improvement will require widening the roadway, which may not be feasible due to existing development patterns and steep grades along the north side of the roadway.* **Relative Cost: high**
- Install sidewalks on the south side of the roadway from approximately 150 feet east of Woodwinds court to approximately 750 feet west of Willamette Drive– *this potential*

*improvement will require widening the roadway, which may not be feasible due to steep grades on the south side of the roadway. **Relative Cost: medium***

- As an alternative, install a mixed use shoulder on the south side of the roadway from approximately 150 feet east of Woodwinds court to approximately 750 feet west of Willamette Drive – while this potential improvement will still require widening the roadway, it will serve both pedestrians and bicyclists. **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Summit Street to Firwood Street – *this potential improvement could be completed with striping only. **Relative Cost: low***
- Install bike lanes on both sides of the roadway from Firwood Drive to West A Street – *this potential improvement will require widening the roadway, which may not be feasible due to existing development patterns and steep grades on the north and south side of the roadway. **Relative Cost: high***
- Install shared use pavement markings and/or signs on both side of from Firwood Drive to West A Street. **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential Transit improvements have been identified for the roadway.

## **8. Sunset Avenue**



*Cedar Oak Drive*

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the north side of the roadway from Cornwall Street to Willamette Falls Drive – *this potential improvement will require widening the north side of the roadway, which may not be feasible due to existing development patterns. **Relative Cost: high***

- Install sidewalks on the south side of the roadway from Cornwall Street to approximately 150 feet west of Spring Rock Circle – *this potential improvement will require widening the north side of the roadway, which may not be feasible due to existing development patterns.* **Relative Cost: high**
- As an alternative to sidewalks on both sides of the roadway, install sidewalks on the south side of the road only and a crosswalk at Cornwall Road to improve pedestrian access to the south side of the roadway. **Relative Cost: high**

### ***Bicycle Solution Alternatives***

- Install bike lanes from Cornwall Street to Willamette Falls Drive – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: high**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## 9. West A Street



Near Webb Street

West A Street is classified as a minor arterial; however, several single family residential homes and West Linn Highway School have direct access on both sides of the roadway. As a minor arterial, West A Street should include continuous sidewalks and bike lanes on both sides of the roadway.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the north side of the roadway from approximately 250 feet east of Willamette Drive to Skyline Drive. **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from approximately 250 feet east of Willamette Drive to Terrace Drive. **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes from the west side of the I-205 bridge to Willamette Falls Drive – *this potential improvement could be completed with striping only.* **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential Transit improvements have been identified for the roadway.

## 10. Willamette Falls Drive



Near 12th Street



Near Tanner Creek

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the east side of the roadway from approximately 250 feet south of West A Street to Sunset Avenue – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on the east side of the roadway.* **Relative Cost: high**

- As an alternative, install a crosswalk at approximately 250 feet south of West A Street to improve pedestrian access to the sidewalks on the west side of the roadway as well as access to the transit stops. **Relative Cost: low**
- Install sidewalks on both sides of Willamette Falls Drive from Sunset Avenue to 10<sup>th</sup> Street – *this potential improvement will require widening the roadway – there are two short segments on the south side and one short segment on the north side of the roadway with sidewalks adjacent to transit stops. There is also a multi-use path on the north side from 8<sup>th</sup> Street to 10<sup>th</sup> Street.* **Relative Cost: medium**
- As an alternative, install a mixed use shoulder on one or two sides of the roadway from Sunset Avenue to 10<sup>th</sup> Street – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: low**
- Install sidewalks on the north side of the roadway from Dollar Street (east) to approximately 200 feet east of 19<sup>th</sup> Street –*this potential project will require widening the roadway.* **Relative Cost: medium**
- Install sidewalks on the north side of the roadway from approximately 150 feet west of Epperly Way to the west City limits – *this potential project will require widening the roadway.* **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from 16<sup>th</sup> Street to approximately 200 feet west of 16<sup>th</sup> Street. **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from approximately 500 feet west of 16<sup>th</sup> Street to 350 feet east of Swift Shore Drive. **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from approximately 200 feet east of Ostman Road to the west City limits – *this potential project will require widening the roadway.* **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Willamette Drive to Sunset Avenue – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on both sides of the roadway.* **Relative Cost: high**
- As an alternative, reconfiguring the roadway cross section from Willamette Drive to Sunset Avenue to a three lane cross section (road diet) would provide space for bike lanes on both sides of the roadway. **Relative Cost: low**

### ***Transit Solution Alternatives***

- Work with TriMet to relocate the stop located on the west side of the roadway near West A Street further south across from the stop on the east side of the roadway – *this potential*

*improvement would allow the installation of a crosswalk between the two stops. Relative Cost: low*

## 11. 10<sup>th</sup> Street



*Near 8th Avenue*

10<sup>th</sup> Street provides an important north-south connection below I-205 as well as access to I-205 for local residents. 10<sup>th</sup> Street is classified as a minor arterial, which is consistent with how it operates today. As a minor arterial, 10<sup>th</sup> Street should provide continuous sidewalks and bike lanes on both sides of the roadway. Additional information on the motor vehicles improvements is provided in the motor vehicle solutions section of this memorandum.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the east side of 10<sup>th</sup> Street from Blankenship Road to I-205 SB Ramps – *this potential improvement may require widening the roadway. Relative Cost: medium*
- Install sidewalks on the east side of 10<sup>th</sup> Street from I-205 SB Ramps to 8<sup>th</sup> Avenue-Court. **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on 10<sup>th</sup> Street from the I-205 SB Ramps to Willamette Falls Drive – *this potential improvement will require widening the roadway, which may not be feasible due to existing development patterns. Relative Cost: high*
- Install shared use-pavement marking and/or signs on both sides of the roadway from the I-205 SB Ramps to Willamette Falls Drive. **Relative Cost: low**
- Improve the bicycle crossing at the northbound approach to Blankenship-Salamo Road. **Relative Cost: low**

- Improve the bicycle crossing at the northbound approach to I-205 NB Ramps. **Relative Cost: low**

**Transit Solution Alternatives**

- Work with TriMet to install a stop on the east side of the roadway at Salamo Road – this potential improvement could serve TriMet Line 154 once it is re-routed to Lake Oswego via Salamo Road, Santa Anita Road, Hidden Springs Road, and Willamette Drive. **Relative Cost: low**

**12. Bland Circle**



Near Tannler Drive



Near Weatherhill Road

**Pedestrian Solution Alternatives**

- Install sidewalks on the north side of the roadway from Salamo Road to Tannler Drive. **Relative Cost: medium**

- Install sidewalks on the north side of the roadway from Tannler Drive to approximately 100 feet east of Falcon Drive. **Relative Cost: medium**
- Install sidewalks on the north side of the roadway from Falcon Drive to approximately 400 feet north of Fircrest Drive. **Relative Cost: medium**

*These potential improvements will require widening the roadway in some areas, which may not be feasible due to the built environment. As an alternative, improve pedestrian access to the sidewalks on the south side of the roadway.*

- Install sidewalks on the south side of the roadway from approximately 200 feet west of Tannler Drive to approximately 350 feet east of Tannler Drive. **Relative Cost: low**
- Install sidewalks on the west side of the roadway from St Moritz Loop to approximately 150 feet north of St Mortiz Loop. **Relative Cost: medium**
- Install sidewalks on both sides of the roadway from approximately 400 feet north of Fircrest Drive to Weatherhill Road – *this potential improvement project will require widening the roadway.* **Relative Cost: high**
- Install sidewalks on the west side of the roadway to the roadway terminus.

#### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Salamo Road to the roadway terminus – this potential improvement will require widening the roadway in some areas, which may not be feasible due to the built environment. As an alternative, install shared use pavement marking and/or signs on both sides of the roadway from Salamo Road to the roadway terminus. **Relative Cost: high**

#### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

### 13. Blankenship Road



Near 10<sup>th</sup> Street

#### ***Pedestrian Solution Alternatives***

- Install sidewalks on the north side of the roadway from 10<sup>th</sup> Street to approximately 50 feet east of the Willamette Corporate Center driveway. **Relative Cost: medium**
- Install sidewalks on the north side of the roadway from approximately 400 feet west of Debok Road to Johnson Road – *this potential improvement will require widening the roadway and potential modifications to the I-205 bridge structure.* **Relative Cost: high**
- Install a crosswalk at the north leg of the Johns Road/Blankenship Road intersection and extend the sidewalks on the north side of Blankenship Road west of Johns Road to the intersection – *this potential crosswalk would be improved by reconfiguring the intersection to reduce the curb radius in the northeast corner of the intersection.* **Relative Cost: low**
- As an alternative, improve pedestrian access to the sidewalks along the south side of the roadway. **Relative Cost: low**
- Install sidewalks on the south side of the roadway from 19<sup>th</sup> Street to approximately 175 feet east of Ostman Road. **Relative Cost: high**

#### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Debok Road to 19<sup>th</sup> Street – *this potential improvement will require widening on both sides of the roadway and potential modifications to the I-205 bridge structure.* **Relative Cost: high**
- As an alternative, install shared-use pavement markings and/or signs on both sides of the roadway from Debok Road to 19<sup>th</sup> Street. **Relative Cost: low**
- Install bike lanes from 19<sup>th</sup> Street to Ostman Road – *this potential improvement will require widening on both sides of the roadway.* **Relative Cost: high**

- As an alternative, install shared-use pavement markings and/or signs on both sides of the roadway from 19<sup>th</sup> Street to Ostman Road. **Relative Cost: low**

#### ***Transit Solution Alternatives***

- Improve access to the existing transit stops with pedestrian crossings at the Albertson's main driveway, Virginia Lane, Debok Road, and 19<sup>th</sup> Street. **Relative Cost: low**

### 14. Carriage Way



Near Derby Street-Court

Carriage Way is classified as a collector, which is generally how it operates today. As a collector, Carriage Way should provide continuous sidewalks and bike lanes on both sides of the roadway to meet City standards.

#### ***Pedestrian Solution Alternatives***

- Improve the substandard sidewalks on the north side of the roadway from Sun Circle to approximately 200 feet west of Sun Circle. **Relative Cost: medium**
- Install sidewalks on the north-west side of the roadway from approximately 350 feet west of Suncrest Drive to Rosemont Road – *this potential improvement will require widening the roadway.* **Relative Cost: high**
- As an alternative, improve pedestrian access to the sidewalk on the south-east side of the roadway with a crossing at Suncrest Drive. **Relative Cost: low**

#### ***Bicycle Solution Alternatives***

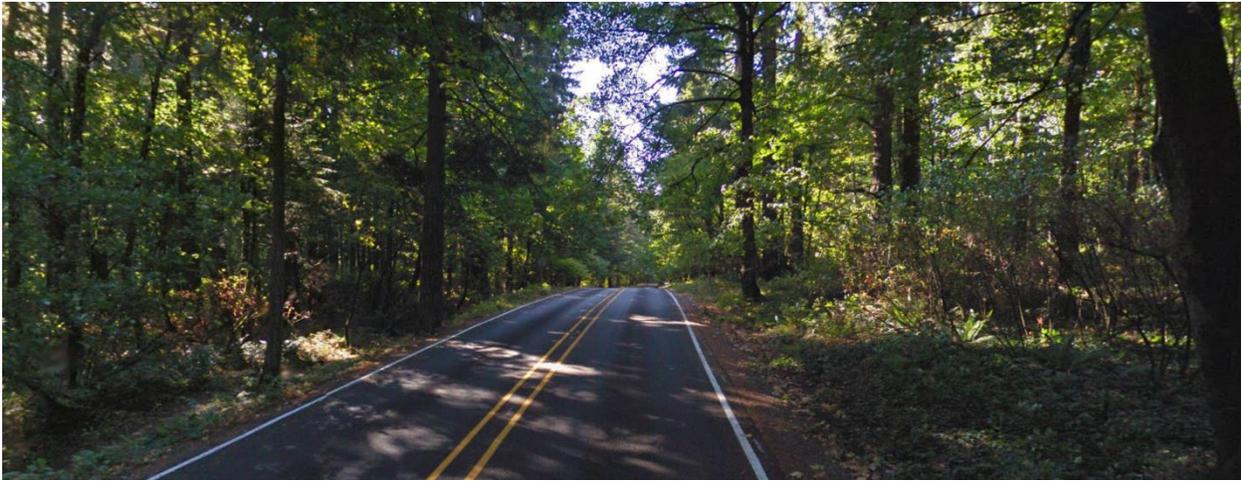
- Install bike lanes on Carriage Way from Hidden Springs Road to approximately 350 feet west of Suncrest Drive – *this potential improvement could be completed with striping only.* **Relative Cost: low**

- Install bike lanes on Carriage Way from approximately 350 feet west of Suncrest Drive to Rosemont Road – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: medium**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

### **15. Clark Street (Long Street, Simpson Street, Leonard Street, Riverview Avenue)**



*Near Sana Anita Drive*



*Near Windsor Terrace*

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard – *this potential improvement will require widening the roadway.* **Relative Cost: high**

- Install a mixed-use shoulder on one or two sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard – *this potential improvement will require widening the roadway.* **Relative Cost: high**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Skyline Drive to approximately 150 feet north of Windsor Boulevard – *this potential improvement will require widening the roadway.* **Relative Cost: high**
- As an alternative, 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.
- Install bike lanes on both sides of the roadway from approximately 150 feet north of Windsor Boulevard to Windsor Boulevard – *this potential improvement can be completed with striping only.* **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## **16. Cornwall Street**

The segment of Cornwall Street from Lancaster Street to Sunset Avenue is classified as a minor arterial. As a minor arterial, Cornwall Street should provide continuous sidewalks and bike lanes on both sides of the roadway to meet City standards.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Oxford Street to Sunset Avenue – *this potential improvement will require widening the roadway* **Relative Cost: high**
- As an alternative, install mixed-use shoulders on both sides of the roadway from Oxford Street to Sunset Avenue – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Oxford Street to Sunset Avenue – *this potential improvement could be completed with striping only.* **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## 17. Dollar Street



Near Ostman Road

Dollar Street is classified as a collector, which is generally consistent with how it operates today. As a collector, Dollar Street should provide continuous sidewalks and bike lanes on both sides of the roadway to meet City standards.

### *Pedestrian Solution Alternatives*

- Install sidewalks on the south side of the roadway from Willamette Falls Drive to the western terminus – *this potential improvement will require widening the roadway.* **Relative Cost: high**
- As an alternative, improve pedestrian access to the sidewalks on the north side of the street with crossings at 16<sup>th</sup> Street, 19<sup>th</sup> Street, and Ostman Road. **Relative Cost: low**

### *Bicycle Solution Alternatives*

- Install bike lanes on both side of the roadway from Willamette Falls Drive to the western terminus – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: medium**
- As an alternative, install shared road pavement markings and/or signs on both side of the roadway from Willamette Falls Drive to the western terminus. **Relative Cost: low**

### *Transit Solution Alternatives*

- No potential transit improvements have been identified for the roadway.

## 18. Johnson Road



Near Blankenship Road

Johnson Road is classified as a collector, which is generally consistent with how it functions today.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Blankenship Road to the western City limits – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on both sides of the roadway.* **Relative Cost: high**
- As an alternative, install mixed use shoulders on one or two sides of the roadway from Blankenship Road to the western City limits – *this potential improvement will require widening the roadway, which may not be feasible due to steep grades on both sides of the roadway.* **Relative Cost: medium**

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Blankenship Road to the western City limits – *this potential improvement will require widening the roadway in some areas, which may not be feasible due to steep grades.* **Relative Cost: medium**
- As an alternative, install shared-use pavement markings and/or signs on both sides of the roadway from Blankenship Road to the western City limits. **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## 19. Marylhurst Drive



Near View Drive

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Willamette Drive to Hillcrest Drive (west) – *this potential improvement will require widening the roadway, which will likely only occur with private development. Relative Cost: high*
- As an interim improvement, install mixed-use shoulders on one or two sides of the roadway – while this potential improvement will also require widening the roadway, it will *serve both pedestrians and bicyclists. Relative Cost: medium*

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Willamette Drive to Hillcrest Drive (west) – *this potential improvement will require widening the roadway, which will likely only occur with private development. Relative Cost: high*
- As an interim improvement, install shared-use pavement markings and/or signs on both sides of the roadway from Willamette Drive to Hillcrest Drive (west) or the mixed-use should described above. **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential Transit improvements have been identified for the roadway.

## 20. Old River Drive (Cedar Oak Street)



Cedar Oak Drive

### ***Pedestrian Solution Alternatives***

- Install sidewalks on the east side of the roadway from approximately 100 feet north of Riverside Court to Cedar Oak Drive – *this potential improvement will require widening of the roadway. Relative Cost: high*
- Install sidewalks on the west side of the roadway from approximately 200 feet north of Riverside Court to Cedar Oak Drive – *this potential improvement will require widening of the roadway. Relative Cost: high*
- As an alternative to sidewalks on both sides of the roadway, install a mixed-use shoulder on the east side of the roadway - *this will require widening of the roadway but will serve both pedestrians and bicyclists. Relative Cost: medium*

### ***Bicycle Solution Alternatives***

- Install bike lanes from the northern City limits to Cedar Oak Drive – *this potential improvement will require widening of the roadway. Relative Cost: high*
- As an alternative to bike lanes, install shared used pavement markings and /or signs on both sides of the roadway from the northern City limits to Cedar Oak Drive. **Relative Cost: low**
- As an alternative to sidewalks on both sides of the roadway, install a mixed-use shoulder on the east side of the roadway - *this will require widening of the roadway but will serve both pedestrians and bicyclists. Relative Cost: medium*

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## 21. Ostman Road



Near Blankenship Road

Ostman Road is classified as a collector street, which is generally consistent with how it functions today; however, there are several single family residential homes with direct access on both sides of the roadway. As a collector, Ostman Road should provide continuous sidewalks and bike lanes on both sides of the roadway to meet City standards.

### *Pedestrian Solution Alternatives*

- Install sidewalks on the east side of the roadway from approximately 150 feet south of Blankenship Road to Dollar Street – *there are current several short segments of sidewalk on the east side of the roadway that meet city standard and several others that do not.* **Relative Cost: medium**
- Install sidewalks on the east side of the roadway from Dollar Street to Willamette Falls Drive – *there are current several short segments of sidewalk on the east side of the roadway that meet city standard and several others that do not.* **Relative Cost: medium**
- Install sidewalks on the west side of the roadway from Michael Drive to approximately 150-feet south of Michael Drive. **Relative Cost: low**
- Install sidewalks on the west side of the roadway from Dollar Street to Willamette Falls Drive. **Relative Cost: high**

### *Bicycle Solution Alternatives*

- Install bike lanes from Blankenship Road to Willamette Falls Drive – *this potential improvement will require widening on both sides of the roadway.* **Relative Cost: high**
- As an alternative, install shared-use pavement markings and/or signs on both sides of the roadway from Blankenship Road to Willamette Falls Drive. **Relative Cost: high**

### **Transit Solution Alternatives**

- Improve the visibility of the transit stop located in the northwest corner of the Ostman Road/Dollar Street intersection

## 22. Pimlico Drive



Near Sana Anita Drive

Pimlico Drive is classified as a collector, which is generally consistent with how it functions today. As a collector, Pimlico Drive should provide continuous sidewalks and bike lanes on both sides of the roadway to meet City standards.

### **Pedestrian Solution Alternatives**

- Install sidewalks on the south side of the roadway from Santa Anita Drive to approximately 150 feet west of Palomino Way (west). **Relative Cost: medium**
- Install crosswalks at Santa Anita Drive and Palomino Way (west) to improve access to the sidewalks on the north side of the roadway. **Relative Cost: low**
- Install sidewalks on the north side of the roadway from Pimlico Terrace to Treetop Lane – *this potential improvement may not be feasible due to steep grades on the north side of the roadway; however it may be more feasible than installing sidewalks on the south side of the roadway.* **Relative Cost: medium**
- Install sidewalks on the south side of the roadway from Palomino Way (east) to Willamette Drive - *this potential improvement may not be feasible due to steep grades on the south side of the roadway.* **Relative Cost: high**
- Install crosswalk at Palomino Way (east) to improve access to the sidewalks on the north side of the roadway. **Relative Cost: low**

### ***Bicycle Solution Alternatives***

- Install bike lanes from Santa Anita Drive to Willamette Drive – *this potential improvement could be completed with striping only. Relative Cost: low*
- Install shared use pavement markings and/or signs on both side of the roadway from Santa Anita Drive to Willamette Drive – *this potential improvement allow on-street parking to occur along a majority of Pimlico Drive. Relative Cost: low*

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

## **23. Summit Street**



*Near Causey Way*

The segment of Summit Street from Skyline Drive to Rosemont Road is classified as a minor arterial. As a minor arterial, this segment of Summit Street should provide continuous sidewalks and bike lanes on both sides of the roadway.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Pimlico Drive to 150 feet south of Pimlico Drive. **Relative Cost: medium**
- Fill in the 65-foot gap in the sidewalk on the north side of roadway at approximately 350 feet south of Pimlico Drive. **Relative Cost: low**
- Install sidewalks on the west side of the roadway from approximately 100 feet south of Skyline Drive to Rosemont Road and from approximately 150 feet south of Rosemont Road to 400 feet south of Rosemont Road. **Relative Cost: high**

- Install sidewalks on the west side of the roadway from approximately 100 feet south of Ridge Lane to Oxford Street. **Relative Cost: high**
- Install sidewalks on the east side of the roadway from Woodsprite Court to 75 feet north of Knox Street. **Relative Cost: high**
- Install sidewalks on the east side of the roadway from approximately 100 feet south of Knox Street to Oxford Street. **Relative Cost: medium**

#### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Pimlico Drive to approximately 150 feet south of Pimlico Drive – *this potential improvement can be completed with striping only.* **Relative Cost: low**
- Install bike lanes from Skyline Drive to Oxford Street – *this potential improvement will require widening the roadway in some areas.* **Relative Cost: medium**

#### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

### 24. Suncrest Drive



*Near Suncrest Drive*

#### ***Pedestrian Solution Alternatives***

- Install sidewalks on the east side of the roadway from approximately 200 feet north of Carriage Way to approximately 100 feet south of Ridgebrook Drive (south). **Relative Cost: medium**
- Install sidewalks on the east side of the roadway from approximately 250 feet south of Ridgebrook Drive (north) to Ridgebrook Drive (north). **Relative Cost: medium**

- Install sidewalks on the east side of the roadway from approximately 150 feet north of Ridgebrook Drive (north) to Hillcrest Road. **Relative Cost: medium**
- Install sidewalks on the west side of the roadway from approximately 100 feet south of Ridgebrook Drive (south) to Ridgebrook Drive (south). **Relative Cost: medium**
- Install sidewalks on the west side of the roadway from approximately 150 feet north of Ridgebrook Drive (south) to approximately 10 feet south of Ridgebrook Drive (north). **Relative Cost: medium**
- Install sidewalks on the west side of the roadway from approximately 250 feet north of Ridgebrook Drive (north) to Hillcrest Drive. **Relative Cost: medium**
- Each of these potential improvements will require widening the roadway in some areas.

### ***Bicycle Solution Alternatives***

- Install bike lanes on both sides of the roadway from Hillcrest Drive to Carriage Way – *this potential improvement may require widening the roadway in some areas.* **Relative Cost: medium**
- Install sidewalks on both sides of the roadway from Carriage Way to Hidden Springs Road – *this potential improvement could be completed with striping only.* **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential Transit improvements have been identified for the roadway.

## 25. Tannler Drive



*Near Blankenship Road*

Tannler Drive is classified as a collector, which is generally consistent with how it operates today.

### ***Pedestrian Solution Alternatives***

- Install sidewalks on both sides of the roadway from Blankenship Road to Greene Street.  
**Relative Cost: high**

### ***Bicycle Solution Alternatives***

- 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. **Relative Cost: low**
- As an alternative, maintain the existing striping and install shared use pavement marking and/or signs from Blankenship Road to the northern terminus. **Relative Cost: low**

### ***Transit Solution Alternatives***

- No potential transit improvements have been identified for the roadway.

### **Safe Routes to School**

Several of the Safe Routes to School (SRTS) currently lack sidewalks and bike lanes as well as other transportation facilities that accommodate students walking and biking to school. The following provides a summary of the potential improvements for the City’s existing designated SRTS.

### ***Bolton Primary Safe Routes***



- Install sidewalks on both sides of the following roadways and roadway segments consistent with the City’s local street standard:
  - Lowry Drive from Dillow Drive to Tompkins Street
  - Tompkins Street from Lowry Drive to Caufield Street
  - Caufield Street from Tomkins Street to Randal Street

- Randal Street from Caufield Street to Davenport Street
  - Davenport Street from Randal Street to Buck Street
  - Buck Street from Davenport Street to Holmes Street – *this segment of Buck Street currently has sidewalks on both sides of the roadway; however, with the exception of the sidewalk on the south side of Buck Street from Elliot Street to Failing Street, most of the sidewalks are substandard and will need to be replaced as develop occurs.*
  - Holmes Street from Buck street to Perrin Street
  - Perrin Street from Holmes Street to Lewis Street
- Each of these potential improvements will require widening the roadway, which may not be feasible due to existing developments. The following provides a number of alternatives solutions:
- Install sidewalks on one side of the roadways only –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments.*
  - Install mixed use shoulders on one side of the roadways –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments and it will serve both pedestrians and bicyclists.*
  - Change the designation of the roadways from local streets to shared streets.

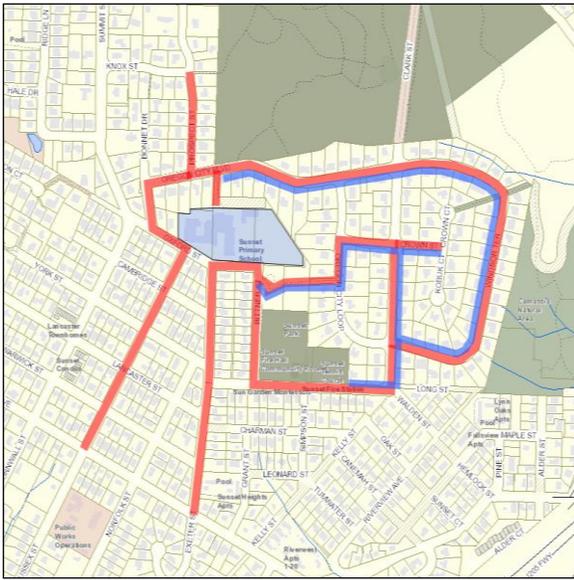
### Cedar Oak Safe Routes



- Install sidewalks on both sides of Cedar Oak Drive from Old River Road to Trillium Drive consistent with the City’s standards for neighborhood routes– *there is a multi-use path on the south side of Cedar Oak Drive from Tannler Creek to Trillium Drive with a marked pedestrian crossing at Trillium Drive.*
- This potential improvement will require widening the roadway, which may not be feasible due to existing developments. The following provides a number of alternatives for addressing pedestrian needs:

- Install sidewalks on the north side of the roadway only and improve pedestrian access with a new crossing at Old River Road –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments.*
- Install a mixed-use shoulder on the south side of the roadway –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing development and it will serve both pedestrians and bicyclists.*
- Install sidewalks on the south side of Cedar Oak Drive from Trillium Drive to Glen Terrace consistent with the City’s standards for neighborhood routes.
- This potential improvement will require widening the roadway, which may not be feasible due to existing developments. The following provides a number of alternatives for addressing pedestrian needs:
  - Improve access to the sidewalks on the north side of the roadway.
- Install sidewalks on both sides of Trillium Drive from Glen Terrace to Cedar Oak Drive consistent with the City’s local street standard – *this potential improvement will require widening the roadway, which may not be feasible due to existing developments.* The following provides a number of alternatives pedestrian solutions:
  - Install sidewalks on one side of the roadway only –*this potential improvement will still require widening the roadway; however, it will have less of an impact on existing developments.*
  - Install a mixed use shoulder on one side of the roadway –*this potential improvement will still require widening the roadway; however, it will have less of an impact on existing developments and it will serve both pedestrians and bicyclists.*
  - Change the designation of the roadway from a local street to a shared street.
- Install bike lanes on both sides of Cedar Oak Drive from Old River Road to Glen Terrace consistent with the City’s neighborhood route standard - *this potential improvement will require widening the roadway.*
- Install shared roadway pavement markings and/or signs on both sides of the roadway from Old River Road to Glen Terrace.

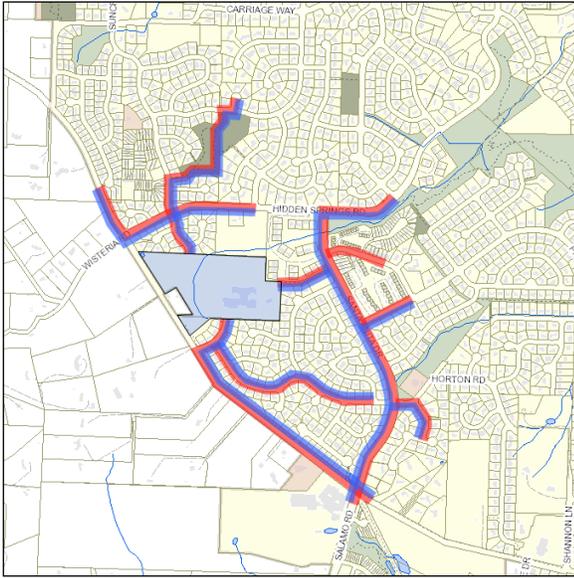
### Sunset Primary Safe Routes



- Install sidewalks on both sides of the following roadway segments consistent with the City's local street standard:
  - Sussex Street from Sunset Avenue to Oxford Street
  - Prospect Avenue from Knox Street to Oregon City Boulevard
  - Exeter Street from Lancaster Street to Sunset Avenue
- These potential improvements will require widening the roadways, which may not be feasible due to existing developments. The following provides a number of alternatives pedestrian solutions:
  - Install sidewalks on one side of the roadways only –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments.*
  - Install mixed use shoulders on one side of the roadways –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments and it will serve both pedestrians and bicyclists.*
  - Change the designation of the roadway from a local street to a shared street.
- Install sidewalks on one side of the following roadway segments consistent with the City's local street standard:
  - the west side of Bonnet Drive from Oxford Street to Windsor Terrace
  - the north side of Windsor Terrace from Bonnet Drive to approximately 350 feet east of Prospect Street.

- The east side of Bitner Street from Long Street to Oxford Street – *the sidewalks on the west side of the roadway also appear to be substandard*
- The south side of oxford Street from Bitner Street to Exeter Street
- The east side of Exeter Street from Long Street Lancaster Street
- These potential improvements will require widening the roadways, which may not be feasible due to existing developments. As an alternative, improve pedestrian access at major intersections to the side of the street with sidewalks.
- Install sidewalks (and bike lanes) on both sides of the following roadways consistent with the City’s neighborhood routes standard:
  - Long Street from Simpson Street to Exeter Street
  - Oxford Street from Exeter Street to Sussex Street
- These potential improvements will require widening the roadways, which may not be feasible due to existing developments. The following provides a number of alternative solutions:
  - Install sidewalks on one side of the roadways only –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments.*
  - Install mixed use shoulders on one side of the roadways –*this potential improvement will still require widening the roadways; however, it will have less of an impact on existing developments and it will serve both pedestrians and bicyclists.*
- Install sidewalks (and bike lanes) on one side of the following roadways consistent with the City’s neighborhood routes standard:
  - The west side of Exeter Street from Long Street to Oxford Street
  - The south side of Oxford Street from Sussex Street to Bonnet Drive
- These potential improvements will require widening the roadways, which may not be feasible due to existing developments. As an alternative, improve pedestrian access at major intersections to the side of the street with sidewalks.

### Trillium Creek Primary Safe Routes



The Trillium Creek Primary SRTS consist of sidewalks and bike lanes on arterials, collectors, neighborhood routes, and local streets. The arterial and collector streets are addressed above. The following summarizes the transportation solutions for the neighborhood routes and local streets.

- All of the neighborhood routes and local streets currently have sidewalks on both sides of the roadway.
- Install bike lanes on the following roadway segments consistent with the city's neighborhood route standards:
  - Suncrest Drive from Sunburst Park to Hidden Springs Road
  - Suncrest Drive from Hidden Springs Road to the southern terminus
  - Bay Meadows Drive from Rosemont Road to the northern terminus

## Willamette Primary Safe Routes



The Willamette Primary SRTS consist of sidewalks and bike lanes on arterials and local streets. The arterial are addressed above. The following summarizes the transportation solutions for the local streets.

- Install sidewalks on the following roadways and roadway segments consistent with the City’s local street standard:
  - The west side of 13<sup>th</sup> Street from Timothy Lane to Willamette Falls Drive
  - The east side of 13<sup>th</sup> Street from Timothy Lane to approximately 100 feet north of Christy Court
  - The south side of 4<sup>th</sup> Avenue from 14<sup>th</sup> Street to 12<sup>th</sup> Street
  - The north side of 5<sup>th</sup> Avenue from 12<sup>th</sup> Street to 7<sup>th</sup> Street
- These potential improvements will require widening the roadways, which may not be feasible due to existing developments. As an alternative, improve pedestrian access at major intersections to the side of the street with sidewalks.
- There are several additional roadway segments with substandard sidewalks that should be updated as development occurs.

## SYSTEM CONNECTIVITY IMPROVEMENTS

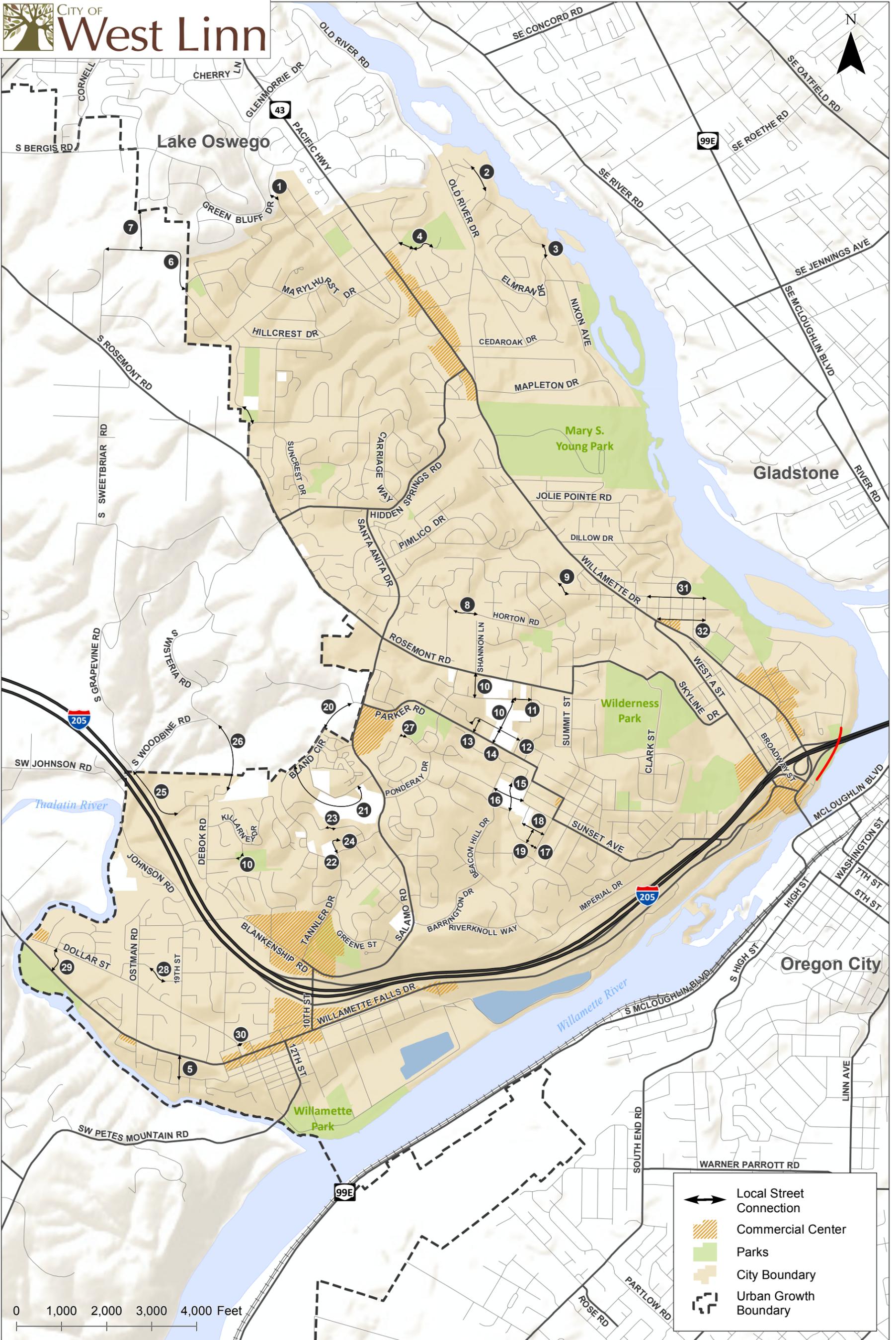
Much of the residential neighborhood development in West Linn has resulted in a network of cul-de-sacs and dead end streets. These streets can be desirable to residents because they can limit traffic speeds and volumes on local streets, but cul-de-sacs and dead end streets result in longer trip

distances, increased reliance on arterials for local trips, and limit options for people to walk and bike to the places they want to go.

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.

Given that there are limited opportunities for new arterial collector streets within the City, the following identifies the potential local street connectivity improvements. Figure 3 illustrates the conceptual alignment of the potential connections.

1. Woodhurst Place extension to Scenic Drive – *this potential connection exists today as an informal off-street connection for pedestrians and bicyclists. Given existing developments and topography, it will likely remain as a pedestrian/bicycle connection in the future.*
2. Robin View Court extension to Old River Landing – *this potential connection exists today as a series of driveways to private residences, and therefore may not be feasible as a pedestrian/bicycle or local street connection in the future.*
3. Calaroga Court extension to Nixon Avenue – *this potential connection will have significant impacts to the built environment, and therefore may only be feasible as a ped/bike connection.*
4. Fairview Way extension to Shady Hollow – *this potential connection will have significant impacts to the built environment, and therefore may only be feasible as a ped/bike connection.*
5. 19<sup>th</sup> Street extension from Willamette Falls Drive to Swift Shore drive – *this potential connection will have significant impacts to the built environment, and therefor may only be feasible as a ped/bike connection.*
6. Whitten Lane extension to Marylhurst Drive - *this potential connection could be completed as a local street with minimal impacts to the built environment.*
7. New north-south connection from Crestline Drive to Whitten Lane extension – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
8. Horton Road extension to Horton road - *this potential connection will have minimal impacts to the built environment; however, impacts on the natural environment should be considered.*



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.

**Local Street Connectivity Solutions  
West Linn, Oregon**

**Figure  
3**

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9. Apollo Road extension to Randal Street – *this potential connection exists today as a series of driveways to private residences, and therefore may not be feasible as a pedestrian/bicycle or local street connection in the future.*
10. Shannon Lane extension to Ridge Lane – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
11. Ridge Lane extension to Ridge Lane – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
12. Roxbury Drive extension to Chinook Court – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
13. Damon Drive extension to Roxbury Drive extension – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
14. Maxfield Drive extension to Roxbury Drive extension – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
15. Landis Street extension to Landis Street – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
16. Sabo Lane extension to Sunset Avenue – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
17. Landis Street extension to Cornwall Street – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
18. New east-west connection from Reed Street to Cornwall Street – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
19. New north-south connection from the Landis Street extension to the new east-west connection – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
20. Bland Circle extension to Parker Road – *this potential connection could be completed as a collector street with minimal impacts to the built environment.*
21. New east-west connection from Bland Circle to Weatherhill Road – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
22. Crestview Drive extension to Crestview Drive - *this future local street connection is currently underway.*
23. Tannler Drive extension to Sunbreak Lane extension - *this future local street connection is currently underway.*

24. Sunbreak extension to Tannler Drive - *this future local street connection is currently underway.*
25. Tamarisk Drive extension to Grapevine Road – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
26. Wisteria Road extension to Wisteria Road – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
27. Wild Rose Loop extension to Chelan Drive – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
28. Orchard Street extension to Short Street – *this potential connection will have significant impacts to the built environment, and therefore may only be feasible as a ped/bike connection.*
29. Brandon Place extension to Willamette Falls Drive – *this potential connection could be completed as a local street with minimal impacts to the built environment; however, impacts on the natural environment should be considered.*
30. 8<sup>th</sup> Avenue extension from 14<sup>th</sup> Street to Dollar Street – *this potential connection exists today as a series of driveways to private residences, and therefore could be completed as a local street with minimal impact to the built environment.*
31. Randal Street extension to Irving Street – *this potential connection could be completed as a local street with minimal impacts to the built environment.*
32. New east-west connection from Elliot Street to Irving Street – *this potential connection could be completed as a local street with minimal impacts to the built environment.*

## FREIGHT MOBILITY AND RELIABILITY IMPROVEMENTS

### 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 should 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. As the details of these systems and potential connecting points are not yet known, it is not possible to incorporate them into existing plans and facility improvements. West Linn should advocate for good connections from the city to future passenger rail stations.

## ROADWAY CAPACITY IMPROVEMENTS

The potential motor vehicle improvements shown in Figure 4 and identified below are those from the 2008 Motor Vehicle Action Plan and Master Plan that have not yet been implemented. These projects are intended to bring the roadways up to current standards and improve the motor vehicle operations at intersections and along corridors in West Linn. Projects along Willamette Drive are included in the Highway 43 Concept Plan and are addressed separately, and projects related to the 10<sup>th</sup> Street interchange for I-205 are included in the 10<sup>th</sup> Street Interchange Project and are also addressed separately.

### 2008 TSP solutions

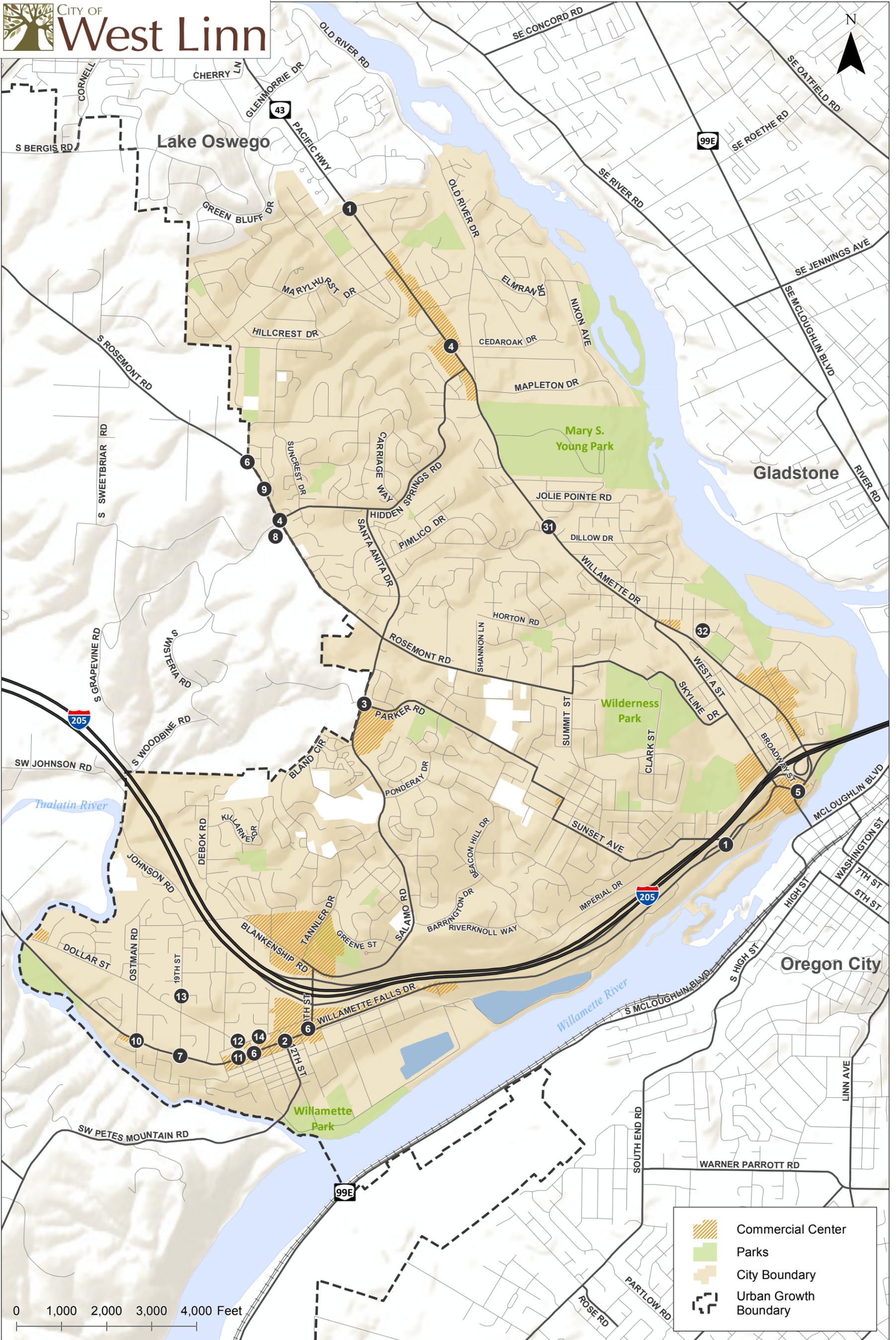
- Install traffic signals at the following intersections when warranted:
  1. Willamette Falls Drive/Sunset Avenue
  2. Willamette Falls Drive /12<sup>th</sup> Street
  3. Salamo Road/Parker Road
  4. Rosemont Road/Hidden Springs Road
  5. Highway 43/Willamette Falls Drive (traffic signal should be coordinated with the adjacent signal at I-205 NB Off Ramps)
- Modify the traffic control at the following intersections to all way stop control when warranted:
  6. Willamette Falls Drive/14<sup>th</sup> Street
  7. Willamette Falls Drive/19<sup>th</sup> Street
- Install separate left and right turn lanes at the following intersections when warranted:
  8. Rosemont Road/Hidden Springs Road (northbound and southbound lefts)
- Widen the following roadway segments as indicated below:
  9. Add a center median on Rosemont Road to allow two-stage left turn from Carriage Way
  10. Widen Willamette Falls Drive with center median 500' on each side of intersection to allow for two-stage left turn from Ostman Road
  11. Widen Willamette Falls Drive with center median 500' on each side of intersection for two-stage left turn from Dollar Street
- Upgrade the following roadway segments as indicated below:
  12. Modify Dollar Street connection to reconnect to 8<sup>th</sup> Avenue, and provide alternative route for local trips.

13. Upgrade 19<sup>th</sup> Street to current City standards from Blankenship Road/Debok Road to Willamette Falls Drive
14. Upgrade 8<sup>th</sup> Avenue from 10<sup>th</sup> Street to Dollar Street

### OR 43 Concept Plan Solutions

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 the needs, deficiencies, and solutions for the portion of Highway 43 between the north City limits and McMillican Street that are assumed for the TSP update, such as pedestrian crossings, street trees, landscaping, transit stops, and lighting to better support the needs of all roadway users as well as adjacent land uses. The Plan is currently being updated concurrent with the TSP update. The findings of the updated Plan will be incorporated into the TSP.

- Install a traffic signal at the Highway 43/Pimlico Drive intersection when warranted
- Add left turn lanes at the northbound and southbound approaches to the Highway 43/Arbor Drive intersection
- Realign the shopping center driveway located to the southeast of the Highway 43/Cedar Oak Drive intersection with the intersection
- Modify circulation at the Highway 43/Holmes Street intersection to allow exit only traffic from Holmes Street
- Modify circulation at the Highway 43/Lewis Street intersection to prohibit left turns out from Lewis Street
- Modify traffic signal timing at the Highway 43/Hood Street/McKillican Street intersection to have protected/permitted phasing on Hood-McKillican Street
- Install sidewalks, planter strips, raised bikeways, and two travel lanes, one in each direction from the northern City limits to Marylhurst Drive
- Install sidewalks, planter strips, raised bikeways, a landscaped median, and two travel lanes, one in each direction from Marylhurst Drive to Hidden Springs Road
- Install sidewalks, planter strips, raised bikeways, and two travel lanes, one in each direction from Hidden Springs Road to Pimlico Drive – some segments contain a median, or a dual left turn lane
- Install sidewalks, planter strips, raised bikeways, and two travel lanes, one in each direction from Pimlico Drive to Buck Street – one segment includes a separated bike lane
- Install sidewalks, raised bikeways, and two travel lanes, one in each direction from West A Street to Webb Street – one segment includes plant strips
- Install sidewalks, raised bikeways, a landscaped median with a pedestrian refuge, and two travel lanes, one in each direction from Webb Street to Hood-McKillican Street.



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.

**Motor Vehicle Solutions  
West Linn, Oregon**

**Figure  
4**

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## 10<sup>th</sup> Street Solutions

This section identifies the potential motor vehicle solutions for the 10<sup>th</sup> Street interchange. The pedestrian, bicycle, and transit solutions are identified on page 33 of this memorandum. Two sets of potential solutions were evaluated in Tech Memo 8 for the 10<sup>th</sup> Street interchange to address motor vehicle needs. Both sets of solutions include near and long-term improvements. The alternative that ultimately moves forward will be determined on feedback from ODOT on the feasibility of extending 8<sup>th</sup> Court to Willamette Falls Drive as identified in Alternative 1 and installing a traffic signal at the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection identified in Alternative 2.

### **Alternative 1**

Alternative 1 includes several of the motor vehicle improvements identified in the 2008 TSP and the 10<sup>th</sup> Street Study as well as a few new improvements not evaluated in any previous studies conducted by the City or ODOT. The improvements have been separated into near-term and long-term improvements based on an evaluation of existing and year 2040 operations.

#### *Near-Term Improvements*

The following near-term improvements are included in Alternative 1 to address issues identified under existing conditions:

- Restripe the westbound approach to the 10<sup>th</sup> Street/Blankenship-Salamo Road intersection to include an exclusive left-turn lane and shared left-through lane.
  - This improvement would require replacing the signal heads and detector loops and reprogramming the traffic signal.
- Install a raised median island at the eastbound approach to the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection to restrict the eastbound left-turn and through movements.
  - This improvement would result in an increase in the east-bound left-turn volume at the 10<sup>th</sup> Street/Willamette Falls Drive intersection, where the eastbound left-turn movement would then operate at LOS F (delay = 83.1 seconds versus 35.6 seconds today) and over capacity ( $v/c = 1.07$  versus 0.84 today); however, the delay would be less than the delay at the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection and the overall intersection would operate at LOS E.

#### *Long-Term Improvements*

The following long-term improvements are included in Alternative 1 to address issues identified under year 2040 conditions:

- Widen the eastbound and westbound Blankenship-Salamo Road approaches approximately 500 feet in each direction to provide dual westbound left-turn lanes, a single westbound through lane, and to accommodate dual northbound left-turn lanes.

- Add a second exclusive right turn lane to the eastbound approach to the 10<sup>th</sup> Street/Blankenship-Salamo Road intersection to prevent queues from spilling past the Albertson's driveway.
  - This improvement would increase the crossing distance located at the south leg of the 10<sup>th</sup> Street Blankenship-Salamo Road intersection.
  - The need for this improvement could be reduced by restricting access to the commercial property located in the southwest corner of the 10<sup>th</sup> Street Blankenship-Salamo Road intersection and/or realigning Tannler Road to the main access further to the west.
- Modify and/or widen 10<sup>th</sup> Street between the I-205 NB Ramps and the I-205 SB Ramps to two lanes in either direction. This allows for one continuous left turn lane and one continuous through-movement lane in either direction between the ramps (the left-turn lanes between the ramps would be side-by-side instead of back-to-back allowing for twice the amount of queue storage)<sup>1</sup>.
- Widen 10<sup>th</sup> Street between the I-205 NB Ramps and Willamette Falls Drive to provide two lanes in each direction.
- Extend 8<sup>th</sup> Court to Willamette Falls Drive to provide additional access to 8<sup>th</sup> Court retail.
- Install a median along 10<sup>th</sup> Street to restrict the eastbound and westbound approaches to the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection to right-in/right-out.
- Install a traffic signal and separate dual eastbound left-turn lanes at the 10<sup>th</sup> Street/Willamette Falls Drive intersection.

## **Alternative 2**

Alternative 2 also includes several of the motor vehicle improvements identified in the 2008 TSP as well as a few new improvements not evaluated in any previous studies conducted by the City or ODOT. Similar to Alternative 1, the improvements have been separated into near-term and long-term improvements based on an evaluation of existing and year 2040 operations.

### *Near-Term Improvements*

The following improvements are included in Alternative 2 (*Note: the improvements unique to Alternative 2 are identified in **bold text***):

- Restripe the westbound approach to the 10<sup>th</sup> Street/Blankenship-Salamo Road intersection to include an exclusive left-turn lane and shared left-through lane.

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<sup>1</sup> Widening of 10<sup>th</sup> Street under the I-205 bridges may be possible without complete bridge reconstruction through the use of retaining walls or minor modifications to the bridge structures.

### Long-Term Improvements

The following long-term improvements are included in Alternative 1 to address issues identified under year 2040 conditions:

- Widen the eastbound and westbound Blankenship-Salamo Road approaches approximately 500 feet in each direction to provide dual westbound left-turn lanes, a single westbound through lane, and to accommodate dual northbound left-turn lanes.
- Add a second exclusive right turn lane to the eastbound approach to the 10<sup>th</sup> Street/Blankenship-Salamo Road intersection to prevent queues from spilling past the Albertson's driveway.
  - This improvement would increase the crossing distance located at the south leg of the 10<sup>th</sup> Street Blankenship-Salamo Road intersection.
  - The need for this improvement could be reduced by restricting access to the commercial property located in the southwest corner of the 10<sup>th</sup> Street Blankenship-Salamo Road intersection and/or realigning Tannler Road to the main access further to the west.
- Modify and/or widen 10<sup>th</sup> Street between the I-205 NB Ramps and the I-205 SB Ramps to two lanes in either direction. This allows for one continuous left turn lane and one continuous through-movement lane in either direction between the ramps (the left-turn lanes between the ramps would be side-by-side instead of back-to-back allowing for twice the amount of queue storage)<sup>2</sup>.
- **Install a traffic signal at the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection<sup>3</sup>.**
- Install a traffic signal at the 10<sup>th</sup> Street/Willamette Falls Drive intersection.
- Coordinate all of the traffic signals along 10<sup>th</sup> Street to minimize queuing and delay at each approach to the I-205 Ramp terminals.

The installation of a traffic signal at the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection eliminates the need to widen 10<sup>th</sup> Street between the I-205 NB Ramps and Willamette Falls Drive. It also eliminates the need for turn movement restrictions at the 10<sup>th</sup> Street/8<sup>th</sup> Avenue-Court intersection, which in turn reduces the need for the 8<sup>th</sup> Court extension to Willamette Falls Drive and dual left-turn lanes at the 10<sup>th</sup> Street/Willamette Falls.

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<sup>2</sup> Widening of 10<sup>th</sup> Street under the I-205 bridges may be possible without complete bridge reconstruction through the use of retaining walls or minor modifications to the bridge structures.

<sup>3</sup> In lieu of access restrictions and the extension of 8<sup>th</sup> Court.

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## PERFORMANCE MEASURES AND TARGETS AND SYSTEM PERFORMANCE MONITORING

The TSP Update has four primary goals and desired outcomes for the transportation system. They include:

- **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.

Table 5 identifies the targets and measures for evaluating progress towards the City's goals for performance of the transportation system. It also identifies how the city is currently performing on each target, the proposed solutions that will help the city advance the target, how the city could perform on each target if the proposed solutions could all be implemented, and how the targets and system performance can be monitored over time.

**Table 5: West Linn TSP Update Targets, Performance Measures, and Monitoring Plan**

Target	Success is...	Solutions that Advance Target	Current Baseline Metric	Projected 2040 Metric of Unconstrained Plan	Monitoring Plan
<b>Target 1A</b> – Zero severe injury and fatal collisions by mode.	A steady reduction each year in the number of severe injury and fatal collisions as compared to prior years.	<ul style="list-style-type: none"> <li>• Intersection improvements with consideration for bicyclists and pedestrians</li> <li>• Pedestrian crossings near schools and high pedestrian traffic areas</li> <li>• Bicycle and pedestrian treatments at intersections (e.g., crossing islands, painted boxes and bike signals)</li> <li>• Bicycle and pedestrian facility improvements with emphasis on separated facilities on high-speed or high-volume roads</li> <li>• Traffic calming and greenways</li> <li>• Education and enforcement</li> </ul>	<ul style="list-style-type: none"> <li>• 15 Injury A crashes (2013)</li> <li>• 3 fatal crashes (2013)</li> <li>• 19 crashes involving pedestrians or bicyclists (2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Vision 0</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure on an annual basis based on a review of data maintained by ODOT. Successful progress towards the target includes a steady reduction each year in the number severe injury and fatal collisions compared to prior years.</li> </ul>
<b>Target 1B</b> - Reduce total number of high collision locations to zero by 2040.	A steady reduction each year in the number of locations on the ODOT Safety Priority Index System (SPIS) List or where collision rate exceeds 1.0 crashes per million entering vehicles	<ul style="list-style-type: none"> <li>• Intersection improvements with consideration for bicyclists and pedestrians</li> <li>• Bicycle and pedestrian treatments at intersections (e.g., crossing islands, painted boxes and bike signals)</li> <li>• Bicycle and pedestrian facility improvements with emphasis on separated facilities</li> <li>• Traffic calming and greenways</li> <li>• Pedestrian crossings near schools and high pedestrian traffic areas</li> </ul>	<ul style="list-style-type: none"> <li>• 1 ODOT SPIS location (2013)</li> <li>• No intersections with a crash rate above 1.0 crashes/MEV (2013)</li> </ul>	<ul style="list-style-type: none"> <li>• Vision 0</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure on an annual basis based on a review of data maintained by ODOT. Successful progress towards the target includes a steady reduction each year in the number of SPIS locations and locations with a crash rate above 1.0.</li> </ul>
<b>Mobility, Access and Environment</b> <b>Target 2A</b> - Reduce single- occupant vehicle miles traveled (VMT) per capita as compared to 2010 so that total VMT remains steady or declines as growth occurs.	A reduction in VMT per capita such that VMT remains steady or declines over time even as growth occurs.	<ul style="list-style-type: none"> <li>• Transit queue jumps</li> <li>• Improved use of technology to improve user information</li> <li>• Park and ride lots with secure bike racks</li> <li>• Bicycle, pedestrian, and transit amenities Frequent bus service</li> <li>• Educational and incentive programs to encourage and facilitate shifts to carpool, bike, walk, transit, telecommuting</li> </ul>	<ul style="list-style-type: none"> <li>• Metro Travel Demand Model VMT and VMT per Capita (2010)</li> </ul>	<ul style="list-style-type: none"> <li>• Metro Travel Demand Model VMT and VMT per Capita (2040)</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure each time a new base year is created for the Metro Travel Demand Model. Successful progress towards the target includes a reduction in VMT per capita such that VMT remains steady or declines over time even as growth occurs.</li> </ul>

Target	Success is...	Solutions that Advance Target	Current Baseline Metric	Projected 2040 Metric of Unconstrained Plan	Monitoring Plan
<p><b>Mobility, Access and Environment</b> <b>Target 2B</b> – Achieve 40-45% non-single occupant vehicle (SOV) trip mode share in 2040 industrial and employment areas and neighborhoods, and 45-55% in 2040 town centers, main streets, and corridors by 2040.</p>	<p>40-45 percent non-SOV mode share in industrial and employment areas and neighborhoods by 2040 <i>and</i> 45-55 percent non-SOV mode share in town centers, main streets and corridors by 2040</p>	<ul style="list-style-type: none"> <li>• Bicycle, pedestrian, and transit facility improvements</li> <li>• Bus rapid transit, such as transit priority</li> <li>• Educational and incentive programs to encourage shifts to carpool, bike, pedestrian, and transit</li> <li>• Bicycle, pedestrian, and transit amenities such as bus shelters and benches, signage, bike maps, bike parking</li> </ul>	<ul style="list-style-type: none"> <li>• Metro Travel Demand Model Non-SOV mode share in industrial and employment areas and neighborhoods (2010)</li> <li>• Metro Travel Demand Model Non-SOV mode share in town centers, main streets and corridors (2010)</li> </ul>	<ul style="list-style-type: none"> <li>• Metro Travel Demand Model Non-SOV mode share in industrial and employment areas and neighborhoods (2040)</li> <li>• Metro Travel Demand Model Non-SOV mode share in town centers, main streets and corridors (2040)</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure each time a new base year is created for the Metro Travel Demand Model. Successful progress towards the target includes an increase in the non-SOV mode share in the 2040 investment areas over time even as growth occurs.</li> </ul>
<p><b>Mobility, Access and Environment</b> <b>Target 2C</b> – Improve freight travel time reliability.</p>	<p>Lower degree of variability from mean commercial heavy vehicle travel time compared to baseline on I-205 and OR 43</p>	<ul style="list-style-type: none"> <li>• Reduce peak-hour travel</li> <li>• Intersection operational improvements</li> <li>• Signal synchronization</li> <li>• Transit queue jumps</li> <li>• Improved use of technology to improve user information</li> <li>• Increase access to Oregon City transit and light rail transit to increase transit mode split</li> </ul>	<ul style="list-style-type: none"> <li>• Metro DTA model Travel Time Reliability on I-205 (2010)</li> <li>• Metro DTA model Travel Time Reliability on OR 43 (2010)</li> </ul>	<ul style="list-style-type: none"> <li>• Metro DTA model Travel Time Reliability on I-205 (2040)</li> <li>• Metro DTA model Travel Time Reliability on OR 43 (2040)</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure each time a new base year is created for the Metro Travel Time Reliability (DTA) Model. Successful progress towards the target includes steady decline in the variability of travel time on I-205 and OR 43</li> </ul>
<p><b>Mobility, Access and Environment</b> <b>Target 2D</b> - Increase the percentage of people that can access key destinations via a 20 minute walk, bike or public transit ride by 40 percent by 2040.</p>	<p>An increase at each TSP Update in the percent of the West Linn population within a 20 minute walk, bike or public transit ride of key destinations.</p>	<ul style="list-style-type: none"> <li>• Educational and incentive programs to encourage and facilitate shifts to carpool, bike, walk, transit, telecommuting</li> <li>• Bicycle and pedestrian facilities near major activity centers with emphasis on filling gaps in the network</li> <li>• Transit level of service improvements, such as service frequency, hours, and coverage</li> <li>• Implement the Oregon Highway 43 Conceptual Design Plan</li> <li>• ADA curb ramps</li> <li>• Developer incentives to support transit, walking and biking and off-peak travel</li> </ul>	<ul style="list-style-type: none"> <li>• Percent of the population within a 20 minute walk, bike, or public transit ride of key destinations (2010)</li> </ul>	<ul style="list-style-type: none"> <li>• Percent of the population within a 20 minute walk, bike, or public transit ride of key destinations (2040)</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update based on current Metro Transportation Analysis Zone (TAZ) information. Successful progress towards the target includes steady increase in the percent of the population within a 20 minute walk, bike or public transit ride of key destinations.</li> </ul>

Target	Success is...	Solutions that Advance Target	Current Baseline Metric	Projected 2040 Metric of Unconstrained Plan	Monitoring Plan
<p><b>Mobility, Access and Environment</b> <b>Target 2E</b> –Active Safe Routes to School (SRTS) Programs in place in all West Linn schools.</p>	<p>All schools in West Linn having SRTS programs that conduct one or more events per year to encourage walking and biking to school.</p>	<ul style="list-style-type: none"> <li>• Pedestrian and bicycle projects that provide facilities and crossings and increase the safety of the SRTS routes.</li> </ul>	<ul style="list-style-type: none"> <li>• As of 2014, SRTS routes have been identified for the five primary schools. The number of programs/activities that occur per year to encourage walking and biking is unknown.</li> </ul>	<ul style="list-style-type: none"> <li>• All schools, including elementary, middle, and high schools</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update. Successful progress towards the target includes the identification of SRTS for each school, information being made available to parents/students, and one or more events per year occur at each school that help disseminate the information and encourage walking and biking to school.</li> </ul>
<p><b>Mobility, Access and Environment</b> <b>Target 2F</b> – A good quality pedestrian network and low stress bicycle network connecting all residents to key destinations.</p>	<p>All residential areas and key destinations connected to the network of “Good” quality pedestrian facilities and LTS Level 2 or better bicycle facilities</p>	<ul style="list-style-type: none"> <li>• Bicycle and pedestrian facilities in key destination areas with emphasis on filling gaps in the network</li> <li>• Bicycle/pedestrian separated facilities</li> <li>• Bicycle and pedestrian treatments at intersections (e.g. crossing islands, painted boxes, bike signals etc.)</li> <li>• Wider sidewalks buffered from automobile traffic</li> <li>• Traffic calming and greenways</li> <li>• Curb ramps</li> </ul>	<ul style="list-style-type: none"> <li>• 2014 “Good” quality pedestrian network</li> <li>• 2014 LTS 2 or better bicycle network</li> <li>• 2014 residential areas and key destinations not connected to the network</li> <li>• Calculate with GIS</li> </ul>	<ul style="list-style-type: none"> <li>• All streets with “good” quality pedestrian network</li> <li>• All streets with LTS 2 or better bicycle network</li> <li>• All residential areas and key destinations connected to the network</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update. Successful progress towards the target includes an increase in the network of “Good” quality pedestrian facilities and LTS Level 2 or better bicycle facilities and a reduction in the number of residential areas and key destinations that are not connected to this network.</li> </ul>
<p><b>Mobility, Access and Environment</b> <b>Target 2G</b> – Increase the number of green street facilities by 2040</p>	<p>Number of green street facilities in West Linn in 2040 is higher than baseline.</p>	<ul style="list-style-type: none"> <li>• Update street standards to incorporate green streets.</li> <li>• Build green streets</li> <li>• Updated maintenance practices to reduce rate of run-off</li> </ul>	<ul style="list-style-type: none"> <li>• 2014 number of green street facilities</li> <li>• Coordinate with City</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update. Successful progress towards the target includes an increase in the number of green street facilities at each TSP Update.</li> </ul>
<p><b>Equity</b> <b>Target 3A</b> – By 2040 increase walking, bicycle and public transit access, for transportation disadvantaged populations, to key destinations, by 40 percent</p>	<p>An increase at each TSP Update in the percent of the transportation disadvantaged population within a 20 minute walk, bike or public transit ride of key destinations.</p>	<ul style="list-style-type: none"> <li>• Bicycle and pedestrian facility improvements near schools and other transportation disadvantaged destinations with emphasis on filling gaps in the network and ADA improvements</li> <li>• Transit improvements such as increased service on high ridership routes</li> <li>• Curb ramps</li> <li>• Rail transit</li> </ul>	<ul style="list-style-type: none"> <li>• Percent of the transportation disadvantaged population within a 20 minute walk, bike, or public transit ride of key destinations (2010)</li> <li>• Calculate with GIS</li> </ul>	<ul style="list-style-type: none"> <li>• Percent of the transportation disadvantaged population within a 20 minute walk, bike, or public transit ride of key destinations (2040)</li> <li>• Calculate with GIS</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update based on current census data information. Successful progress towards the target includes steady increase in the percent of the population within a 20 minute walk, bike or public transit ride of key destinations.</li> </ul>

Target	Success is...	Solutions that Advance Target	Current Baseline Metric	Projected 2040 Metric of Unconstrained Plan	Monitoring Plan
<b>Equity Target 3B</b> - Ensure transportation services (and impacts) are equitably distributed to all segments of the population.	Number of projects, on 2040 TSP financially constrained project list, that are within or adjacent to areas of low income or minority populations is proportionate to the population in those areas relative to the City of West Linn as a whole	<ul style="list-style-type: none"> <li>• Transit improvements such as increased frequent-service routes</li> <li>• Street or streetscape improvements</li> <li>• Bicycle and pedestrian improvements</li> </ul>	<ul style="list-style-type: none"> <li>• N/A</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure at each TSP Update</li> </ul>
<b>Maintenance Target 4A</b> - Increase the average local road pavement condition index (PCI) to 70 by 2040.	2040 average local road PCI is 70 or greater.	<ul style="list-style-type: none"> <li>• Maintenance, repair and operation of local roadways</li> <li>• Road rehabilitation and reconstruction</li> </ul>	<ul style="list-style-type: none"> <li>• 2014 average local road PCI.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure annually. Successful progress towards the target includes an increase in the average local road PCI.</li> </ul>
<b>Maintenance Target 4B</b> - Reduce the number of transportation facilities in “distressed” condition by 5 percent by 2040.	Number of transportation facilities in distressed condition in 2040 is at least 5 percent below 2014 baseline	<ul style="list-style-type: none"> <li>• Maintenance, repair and operation of local roadways</li> <li>• Bus replacements</li> <li>• Upgrades to transit facilities</li> <li>• Road rehabilitation and reconstruction</li> </ul>	<ul style="list-style-type: none"> <li>• 2014 number of facilities in distressed condition.</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Document the measure annually. Successful progress towards the target includes a reduction in the number of facilities in distressed condition.</li> </ul>

## Attachment A Project Evaluation Criteria

Goal		Safety: Reduce transportation-related fatalities and injuries for all transportation modes		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							Equity: Deliver transportation improvements equitably	Maintenance: Deliver access and safety improvements cost effectively, within available revenues, and responsively to the needs of all users of the transportation system		Concurrency				Fiscal Efficiency (RTFP 3.02.220)	
Target / Resource		1a: Would likely reduce severe injury and fatal crashes at location with known or perceived safety risks/ (TM 7 Figure 10: Crash Data)	1b: Would likely reduce the number of high collision locations/ (TM 10 Figure 1: Crash Severity)	2A: Would likely reduce VMT	2B: Supports a compact urban form and would likely increase non-SOV modes of travel in West Linn's commercial districts	2C: Would result in improved freight travel time reliability/ (Figure 3-10: Freight Routes)	2D: Would allow more people to access schools, parks and open spaces, within a 20 minute walk, bike or bus ride/ (Figure 3-6: Functional Roadway Classifications)	2E: Increases number of schools with SRTS programs in place that conduct one or more activities per year to encourage walking and biking to school.	2F: Implementation would result in "good" or better, level of quality bicycle or pedestrian facility/ ( Figure 3-2; Pedestrian Facilities; Figure 3-3: Bicycle Facilities; Figure 3-4: Bicycle LTS)	2G: Is a "green street" facility	3A: Would allow more people, who are considered transportation disadvantaged, to access schools, parks and open spaces, and employment and commercial areas within a 20 minute walk, bike or bus ride/ Figures 3-11 through 3-16)	4A: Improves the pavement condition index	4B: Improves a distressed facility	Project or program is in Trails Master Plan (TM 7: Figure 4)	Project or program is in Metro Regional Trails and Greenways Plan	Project or program is part of SRTS (TM 7: Figure 4)	Project or program is in 2008 TSP Action Plan (TM 7: Figure 4)	Project is one of the following: 1) TSMO (4 points); 2) Transit, bike and/or ped improvements (4 points); 3) Traffic-calming (3 points); 4) Land use strategies (2 points); 5) Connectivity improvements (1 point); 6) Motor-vehicle capacity improvements (0 points)	
Points		4	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	1	1	1	1	4	32
Project Type	Project/Goal	1A	1B	2A	2B	2C	2D	2E	2F	2G	3A	4A	4B	NA	NA	NA	NA	NA	Total Score
10th-1	10th St - Alternative 1	4	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	0	0	0	0	4	12
10th-2	10th St - Alternative 2	4	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	0	0	0	0	4	12
C-1	Willamette Drive (Highway 43 Concept Plan)	4	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	1	4	30
C-2	Willamette Falls Drive	4	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	1	4	30
C-3	10 <sup>th</sup> Street	4	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	1	4	30
C-4	Hidden Springs Road	4	4	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	1	0	4	28
C-5	Rosemont Road	0	4	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	1	1	1	4	26
C-6	West A Street	0	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	0	4	25
C-7	Ostman Road	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	1	4	20
C-8	Old River Drive (Cedar Oak Street)	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	0	4	19
C-9	Carriage Way	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	0	4	19
C-10	Salamo Road	0	4	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	1	4	18
C-11	Blankenship Road	0	4	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	1	4	18
C-12	Dollar Street	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	4	18
C-13	Parker Road	0	4	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	17
C-14	Santa Anita Drive	0	4	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	1	0	4	16
C-15	Skyline Drive	0	4	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	15
C-16	Summit Street	0	4	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	15
C-17	Sunset Avenue	0	4	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	15
C-18	Tannler Drive	0	0	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	13
C-19	Pimlico Drive	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-20	Johnson Road	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-21	Lancaster Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-22	Cornwall Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-23	Clark Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-24	Bland Circle	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
C-25	Jolie Pointe Road	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	0	4	19
C-26	Marylhurst Drive	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	0	0	4	19
C-27	Nixon Avenue	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	0	0	4	11
LSC-1	Fairview Way extension to Shady Hollow	0	0	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	18
LSC-2	8th Avenue extension from 14th Street to Dollar Street	0	0	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	18
LSC-3	Woodhurst Place extension to Scenic Drive	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-4	Robin View Court extension to Old River Landing	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-5	Calaroga Court extension to Nixon Avenue	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-6	19th Street extension from Willamette Falls Drive to Swift Shore Drive	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-7	Whitten Lane extension to Marylhurst Drive	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-8	New north-south connection from Crestline Drive to Whitten Lane extension	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-9	Apollo Road extension to Randall Street	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-10	Orchard Street extension to unnamed roadway	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-11	Randal Street extension to Irving Street	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	2	16
LSC-12	Bland Circle extension to Parker Road	0	0	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	10
LSC-13	Wild Rose Loop extension to Chelan Drive	0	0	2	2	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	10
LSC-14	Horton Road extension to Horton Road	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-15	Shannon Lane extension to Ridge Lane	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-16	Ridge Lane extension to Ridge Lane	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-17	Roxbury Drive extension to Chinook Court	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-18	Damon Drive extension to Roxbury Drive extension	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-19	Maxfield Drive extension to Roxbury Drive extension	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-20	Landis Street extension to Landis Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8

LSC-21	Sabo Lane extension to Sunset Avenue	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-22	Landis Street extension to Cornwall Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-23	New east-west connection from Reed Street to Cornwall Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-24	New north-south connection from the Landis Street extension to the new east-west connect	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-25	New east-west connection from Bland Circle to Weatherhill Road	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-26	Crestview Drive extension to Crestview Drive	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-27	Tannler Drive extension to Sunbreak Lane extension	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-28	Sunbreak extension to Tannler Drive	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-29	Tamarisk Drive extension to Grapevine Road	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-30	Wisteria Road extension to Wisteria Road	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-31	Brandon Plae extension to Willamette Falls Drive	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
LSC-32	New east-west connection from Elliot Street to Irving Street	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	0	0	0	0	2	8
OR43-1	Cross section improvements - Highway 43 from Maryhurst Dr to Hidden Springs Rd	4	4	2	2	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	28
OR43-2	Cross section improvements - Highway 43 from West A St to Webb St	4	4	2	2	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	28
OR43-3	Cross section improvements - Highway 43 from Webb St to Hood-McKillican St	4	4	2	2	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	28
OR43-4	Cross section improvements - Highway 43 from Hidden Springs Rd to Pimlico Dr	4	4	2	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	26
OR43-5	Cross section improvements - Highway 43 from Pimlico Dr to Buck St	4	4	2	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	26
OR43-6	Traffic signal - Highway 43 / Pimlico Dr	4	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	24
OR43-7	Modify circulation - Highway 43 / Lewis St	4	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	24
OR43-8	Cross section improvements - Highway 43 from Northern City limits to Maryhurst Dr	0	4	2	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	22
OR43-9	Modify circulation - Highway 43 / Holmes St	0	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	4	20
OR43-10	Realign driveway - near Highway 43 / Cedar Oaks Dr	4	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	4	14
OR43-11	LTL - Highway 43 / Arbor Dr	0	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	4	10
OR43-12	Modify signal timing- Highway 43 / Hood-McKillican St	0	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	4	10
S-1	Crosswalk - West leg of 14th St / Willamette Falls Dr	4	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	4	28
S-2	Crosswalk - E-W at Broadway St / Willamette Falls Dr	0	4	2	2	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	0	0	4	24
SRTS-1	SRTS - Bolton Primary	0	4	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	1	0	1	0	4	24
SRTS-2	SRTS - Willamette Primary	0	0	2	0	N/A	2	N/A	2	N/A	8	N/A	N/A	0	0	1	0	4	19
SRTS-3	SRTS - Trillium Creek Primary	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	1	1	0	4	13
SRTS-4	SRTS - Sunset Primary	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	1	0	4	12
SRTS-5	SRTS - Cedar Oak Primary	0	0	2	0	N/A	2	N/A	2	N/A	0	N/A	N/A	1	0	1	0	4	12
V-1	AWSC - Willamette Falls Dr / 14th St	4	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	0	20
V-2	Traffic signal - Willamette Falls Dr / 12th St	0	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	0	16
V-3	Traffic signal - Rosemont Rd / Hidden Springs Rd	0	4	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	0	16
V-4	AWSC - Willamette Falls Dr / 19th St	0	0	0	0	N/A	2	N/A	0	N/A	8	N/A	N/A	1	0	0	1	0	12
V-5	Traffic signal - Willamette Falls Dr / Sunset Ave	0	4	0	0	N/A	2	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	8
V-6	Traffic signal - Salamo Rd / Parker Rd	0	4	0	0	N/A	2	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	8
V-7	Traffic signal - Highway 43 / Willamette Falls Dr	0	4	0	0	N/A	2	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	8
V-8	Separate LT and RT lanes - Rosemont Rd / Hidden Springs Rd	0	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	6
V-9	Widening - Willamette Falls Dr near Dollar St	0	4	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	6
V-10	Widening - Rosemont Rd near Carriage Way	0	0	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	2
V-11	Widening - Willamette Falls Dr near Ostman Rd	0	0	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	2
V-12	Upgrade - Dollar St	0	0	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	2
V-13	Upgrade - 8th Ave	0	0	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	1	0	2
V-14	Upgrade - 19th St	0	0	0	0	N/A	0	N/A	0	N/A	0	N/A	N/A	1	0	0	0	0	1

C = Corridor  
 SRTS = Safe Routes to School  
 V = vehicle  
 OR 43 = OR43 Concept Plan  
 10th = 10th St interchange  
 S = safety improvement  
 AWSC = all-way stop control  
 LSC = Local street connection