

2016 Scappoose Transportation System Plan: Volume I



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Scappoose

Transportation System Plan

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The Outcome

The Context

The City of Scappoose is located approximately 30 miles north of Portland on US 30 along the Columbia River, as shown in Figure 1. Scappoose maintains a small-town feel but is still conveniently close to Oregon's biggest metropolitan area. The city is within a half-hour drive to Portland and an hour-and-a-half drive to the Oregon Coast. The city limits are located approximately one mile west of the Multnomah Channel of the Columbia River.

Scappoose is bordered by the Multnomah Channel on the east side and abutted by farms and rural forests on its other borders. The city lies in Columbia County and is just over the West Hills from Washington County, a major employment center for the Portland metropolitan region. This setting, with its relatively short commutes to downtown Portland and the Silicon Forest of Washington County, has proved attractive to new residents as the population has grown from 4,976 in the 2000 U.S. Census to 6,592 in 2010.¹ The City of Scappoose continues to be an attractive location to visit and live.

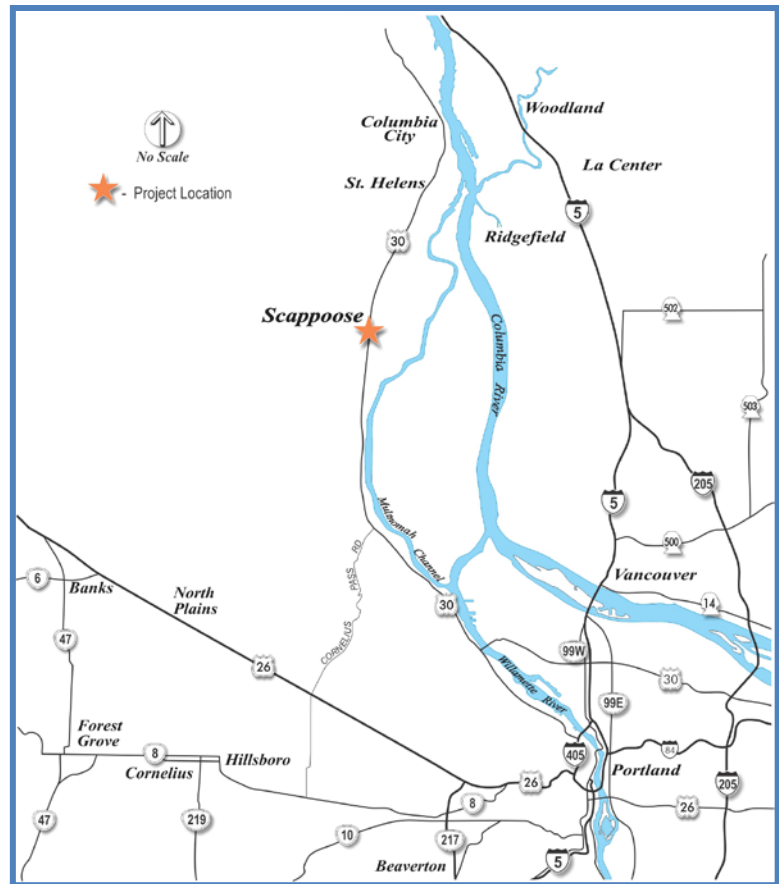


Figure 1: Scappoose Vicinity Map

¹ American Fact Finder website, accessed April 13, 2013.

The Context

The Challenge

Scappoose faces the challenge of accommodating population and employment growth while maintaining acceptable service levels on its transportation network. The transportation system must accommodate highway through traffic, new residents, and thousands of new employees who are expected to work in Scappoose in the next couple of decades. With limited funding for transportation improvements, and built and natural environment challenges, the city must balance its investments to ensure that it can develop and maintain the transportation system adequately to serve the city and everyone who travels in and through Scappoose.

Engaging Seniors, Non-English Speakers, and Low Income Populations

As part of the outreach to engage citizens and stakeholders in the TSP project, the city made special efforts to involve seniors, minority and low income groups. For more information on the public involvement plan for the TSP, see Memo 1 in Volume 2.

According to the 2010 Census, over 90 percent of the population of Scappoose is Caucasian and about five percent of the population is of Hispanic or Latino origin. See Volume 2 for more information.

To assist those that cannot drive, and help engage senior citizens, public meetings were held at locations accessible via transit, walking or biking when feasible. Downloadable materials were provided on the project website. Hard copies of project documents were available upon request for those without internet access.

The Context

The Transportation System Plan

The 2016 Transportation System Plan (TSP) prepares Scappoose for accommodating traffic within its urban growth boundary (UGB) in the best manner possible through 2035. The TSP's big picture view allows it to guide the city in developing and maintaining acceptable transportation network performance more efficiently than a piecemeal or unorganized approach.

As the transportation element of the city's Comprehensive Plan, the TSP embodies the community's vision for an equitable and efficient transportation system. The TSP outlines strategies and projects that are important for protecting and enhancing the quality of life in Scappoose through the next 20 years. The TSP is a collection of current inventory, forecasts, past and current project ideas, decisions, and standards into a single document. The city, Columbia County, private developers, and state and federal agencies all have a role in implementing elements of the TSP.

By setting priorities for available and anticipated funds in the 20-year planning period, the TSP provides a foundation for budgeting, grant writing, and requiring public improvements of private development. It also identifies and advocates for the projects and services that the city would like to implement, but cannot reasonably expect to fund during the next 20 years.

The State of Oregon requires the TSP to integrate the city's transportation investment plans into the statewide transportation system. The plan attempts to balance the needs of walking, bicycling, driving, transit, and freight. The TSP reflects community values and protects what makes Scappoose a great place to call home, do business, and visit.



The Process

The Scappoose TSP is the result of a collaboration among various public agencies, the community, and the project team of city staff, Oregon Department of Transportation (ODOT), and consultants. Throughout this process, graphically depicted in Figure 2, the project team took time to understand multiple points of view, obtain fresh ideas, and encourage broad participation, as it collected and analyzed data and possible solutions.

A community advisory committee (CAC), comprised of local residents and business representatives, was formed to help steer the project. This group reviewed and commented on policy and technical aspects of the process and met with the project team to provide feedback at key stages during the project. They also helped the project team find agreement on project issues and alternatives. The project team met with the CAC nine times and held meetings with the Planning Commission and City Council (For a summary of the meetings, see the Public Involvement Summary in Volume 2). The team conversed informally with members of the community throughout the process and held three public events at key stages to give residents an opportunity to learn more about the project and express their thoughts on how to improve the transportation system.

Transportation Conditions	Goals and Objectives	Transportation Solutions	Draft TSP	Final TSP
Review the transportation system to identify current conditions and problems, and determine future needs through 2035.	Develop project goals, objectives and evaluation criteria. These were revised later in the process based on community input.	Identify and evaluate solutions and projects for the identified needs of the transportation system through 2035.	The solutions and projects that best meet the project goals and associated evaluation criteria were incorporated into a Draft TSP.	City adoption of Final TSP.
• CAC Meeting #1 • CAC Meeting #2 • CAC Meeting #3	• CAC Meeting #4 • Public Event #1	• CAC Meeting #5 • CAC Meeting #6 • CAC Meeting #7 • Public Event #2	• CAC Meeting #8 • Public Event #3	• CAC Meeting #9 • Public Hearings

Figure 2: The TSP Process

The Process

The Public Review Process

The five-stage process in Figure 2 included a series of technical memoranda that discussed specific topics ranging from existing conditions to funding assumptions to transportation solutions. The project website (www.scappoosetsp.com) provided access to each memorandum, giving the community opportunity to provide feedback and keep up to date with the project. The CAC reviewed and commented on each memorandum and worked with the project team to find agreement on issues and alternatives. The project team revised the draft memoranda based on feedback from the committees, the public, the City Council, and the Planning Commission.

As illustrated in Figure 3, these memoranda, as revised, ultimately became part of the Draft TSP. Public hearings with the Planning Commission and City Council on the Draft TSP led to the adoption of the 2016 Scappoose Transportation System Plan on [date to be determined].

Throughout the planning effort, the project website provided a centralized location to get project news, relevant documents, and meeting notices. It also included an interactive map, which received approximately 70 comments from residents about the transportation system, locations of problems, and opportunities for improvement.



Figure 3: Public Review Process

The Vision

Scappoose could not properly maintain or improve its transportation system without a vision for what it could or should be. The TSP process provided a forum for discussing the ideal transportation system for the community, one that reflects Scappoose's values. In initial discussions, the community advisory committee and other community members expressed a desire for a transportation system that supports community livability, accommodating residents and visitors in a safe, friendly, and affordable way (see Memo 8 in Volume 2).

TSP Goals

These nine transportation goals set priorities for solutions and plan implementation. The objectives provide manageable stepping-stones for achieving the TSP's goals.

■ Goal 1: Health and Safety

Develop a transportation system that maintains and improves individual health and safety by maximizing pedestrian and bicycle transportation options public safety and service access, and safe and smooth connections.

Goal 1 Objectives

- A. Maximize active transportation options
- B. Improve safety and provide safe connections for walking, biking and driving trips
- C. Identify locations in the city where enhanced street crossings for walking and biking users are needed
- D. Provide safe east-west access for pedestrian and bicyclists across US 30
- E. Identify improvements to address high collision locations
- F. Improve the visibility of transportation users in constrained areas, such as on hills and blind curves and in landscaped areas
- G. Install amenities (e.g., chirpers, directional ramps) at signalized pedestrian crossings to improve safety of underserved and vulnerable populations
- H. Identify programs that encourage walking and bicycling, and educate good traffic behavior and consideration for all users.



The Vision

- I. Increase the city's ability to manage emergencies
- J. Improve safety at railroad crossings

■ Goal 2: Transportation System Management

Emphasize effective and efficient management of the transportation system for all users.

Goal 2 Objectives

- A. Develop an arterial and collector street system that provides additional north-south local access routes and an alternative route to US 30
- B. Minimize the adverse impact of through travel on US 30
- C. Seek to shift travel to off-peak periods
- D. Identify opportunities to improve travel reliability and safety with system management operation strategies
- E. Maintain existing facilities to preserve their intended function and useful life
- F. Maximize mobility for all users, including those with special transportation needs
- G. Adopt transportation impact study guidelines for development



■ Goal 3: Travel Choices

Develop and maintain a well-connected transportation system that offers convenient and available pedestrian, bicycle and transit trips.

Goal 3 Objectives

- A. Provide safe, comfortable and convenient transportation options
- B. Incorporate amenities in the transportation system such as street lighting, bike parking, weather protection that better meet the needs of the walking, biking and transit user
- C. Improve walking and biking connections to community destinations and continue to address deficiencies and gaps in the pedestrian and bicycle systems
- D. Enhance way finding signage for those walking and biking, directing them to bus stops, trails, and key routes and destinations
- E. Promote walking, bicycling, and sharing the road through public information and participation
- F. Ensure connectivity between compatible land uses for



The Vision

- pedestrian and bicycle trips
- G. Establish and maintain transit stops in locations that are safe and convenient for users and that are consistent with the Columbia County Community-Wide Transit Plan
- H. Coordinate with transit providers to improve the coverage, quality and frequency of services as needed in areas where existing and planned land uses support transit services
- I. Promote and implement carpool/vanpool programs for reducing commuter vehicular travel demand along US 30 (to Portland).
- J. Encourage increased opportunities for local and regional public transit routes and facilities

■ Goal 4: Economic Vitality

Support the development and revitalization efforts of the city, Region, and State economies and ensure the efficient movement of people and goods.

Goal 4 Objectives

- A. Improve the freight system efficiency, access, and travel reliability
- B. Manage parking efficiently and ensure that it supports downtown business needs and promotes new development
- C. Balance local access with the need to serve regional traffic on US 30
- D. Provide transportation facilities that support existing and planned land uses
- E. Enhance the vitality of the Scappoose downtown area by incorporating roadway design elements for all modes
- F. Provide for convenient parking and access to community destinations such as businesses and scenic/recreation areas.
- G. Ensure that all new development contributes a fair share toward on-site and off-site transportation system improvements
- H. Ensure that transportation planning provides for future freight facility needs at the Scappoose Industrial Airport

■ Goal 5: Livability

Provide transportation solutions that support active transportation, facilitates access to daily needs and services, and enhances the livability of the Scappoose neighborhoods and business community.



The Vision

Goal 5 Objectives

- A. Protect residential neighborhoods from excessive through traffic and travel speeds
- B. Enhance transportation connections between community destinations
- C. Balance the need to accommodate freight movement on US 30 with livability conditions in downtown Scappoose
- D. Minimize transportation conflicts between neighborhoods and businesses
- E. Incorporate streetscape amenities that reflect the city's unique character (e.g., street furnishings, landscaping)

■ **Goal 6: Sustainable Transportation System**

Provide a transportation system that meets the needs of present and future generations and is environmentally sustainable.

Goal 6 Objectives

- A. Support travel options that allow individuals to reduce single-occupant vehicle trips
- B. Identify areas where alternative land use types would significantly shorten trip lengths or reduce the need for motor vehicle travel within the city
- C. Minimize impacts to Scappoose Creek and other natural areas or environments
- D. Support the reduction of greenhouse gas emissions from transportation sources
- E. Support and encourage transportation system management (TSM) and transportation demand management (TDM) solutions to congestion
- F. Develop and support alternative mobility standards on state and city facilities where necessary

■ **Goal 7: Fiscal Responsibility**

Sustain an economically viable transportation system for existing and future users that protects and improves existing transportation assets while cost-effectively enhancing the total system.

Goal 7 Objectives

- A. Plan for an economically viable and cost-effective transportation system
- B. Identify and develop diverse and stable funding sources to

The Vision

- implement recommended projects in a timely fashion and ensure sustained funding for transportation projects and maintenance
- C. Make maintenance of the transportation system a priority
- D. Consider costs and benefits when identifying project solutions and prioritizing public investments
- E. Prioritize funding of projects that are most effective at meeting the goals and policies of the Transportation System Plan

■ Goal 8: Equitable Transportation System

Provide a transportation system that is accessible to all users regardless of age, income, and health.

Goal 8 Objectives

- A. Develop and maintain a transportation system that supports a variety of travel options
- B. Ensure that the transportation system provides equitable access to underserved and vulnerable populations
- C. Ensure that the transportation system supports users with a range of ages
- D. Ensure the pedestrian facilities are clear of obstacles and obstructions (e.g., utility poles)
- E. Provide connections for all modes that meet applicable Americans with Disabilities Act (ADA) standards



■ Goal 9: Coordinate Transportation Planning

Develop a transportation system that is consistent with the City's Comprehensive Plan and that is coordinated with County, State, and Regional plans.

Goal 9 Objectives

- A. Coordinate and cooperate with adjacent jurisdictions and other transportation agencies to develop transportation projects that benefit the City, Region, and State as a whole
- B. Work collaboratively with other jurisdictions and agencies to ensure the transportation system functions seamlessly
- C. Review city transportation standards periodically to ensure consistency with Regional, State, and Federal standards
- D. Coordinate with the County and State agencies to ensure that improvements to County and State highways within the city

The Vision

- benefit all modes of transportation
- E. Participate with ODOT and Columbia County in the revision of their transportation system plans, and coordinate land development outside of the Scappoose area to ensure provision of a transportation system that serves the needs of all users
- F. Participate in updates of the ODOT State Transportation Improvement Program (STIP) and Columbia County Capital Improvement Program (CIP) to promote the inclusion of projects identified in the Scappoose TSP
- G. Develop TSP policy and municipal code language to implement the TSP update
- H. Coordinate public transit planning improvements within city limits with Columbia County to ensure that future transit routes and facilities are consistent with the findings and recommendations of the adopted Columbia County Community-Wide Transit Plan
- I. Continue to work with the Port of St. Helens to maintain the continuing viability of the Scappoose Industrial Airpark

The Trends

To determine needed investments for the city's transportation system, the project team reviewed current travel conditions and forecasted future growth and travel trends through 2035. Initial analysis assumed that only the transportation projects with committed funding would be built and that no further investments would be made to the transportation system during the planning period.

Scappoose in 2035

Today, Scappoose is home to about 7,100 residents, 2,800 housing units and 2,600 jobs. Between now and 2035, employment is expected to increase about 15 percent per year, outpacing the rate of housing growth over the same period (about 2.8 percent per year). By 2035, Scappoose will have about 4,500 housing units and about 11,000 jobs, a 62 and 331 percent increase, respectively, from 2013. With more residents, and particularly more jobs, as well as more through traffic to and from Portland, the transportation network will face increasing demand through 2035.



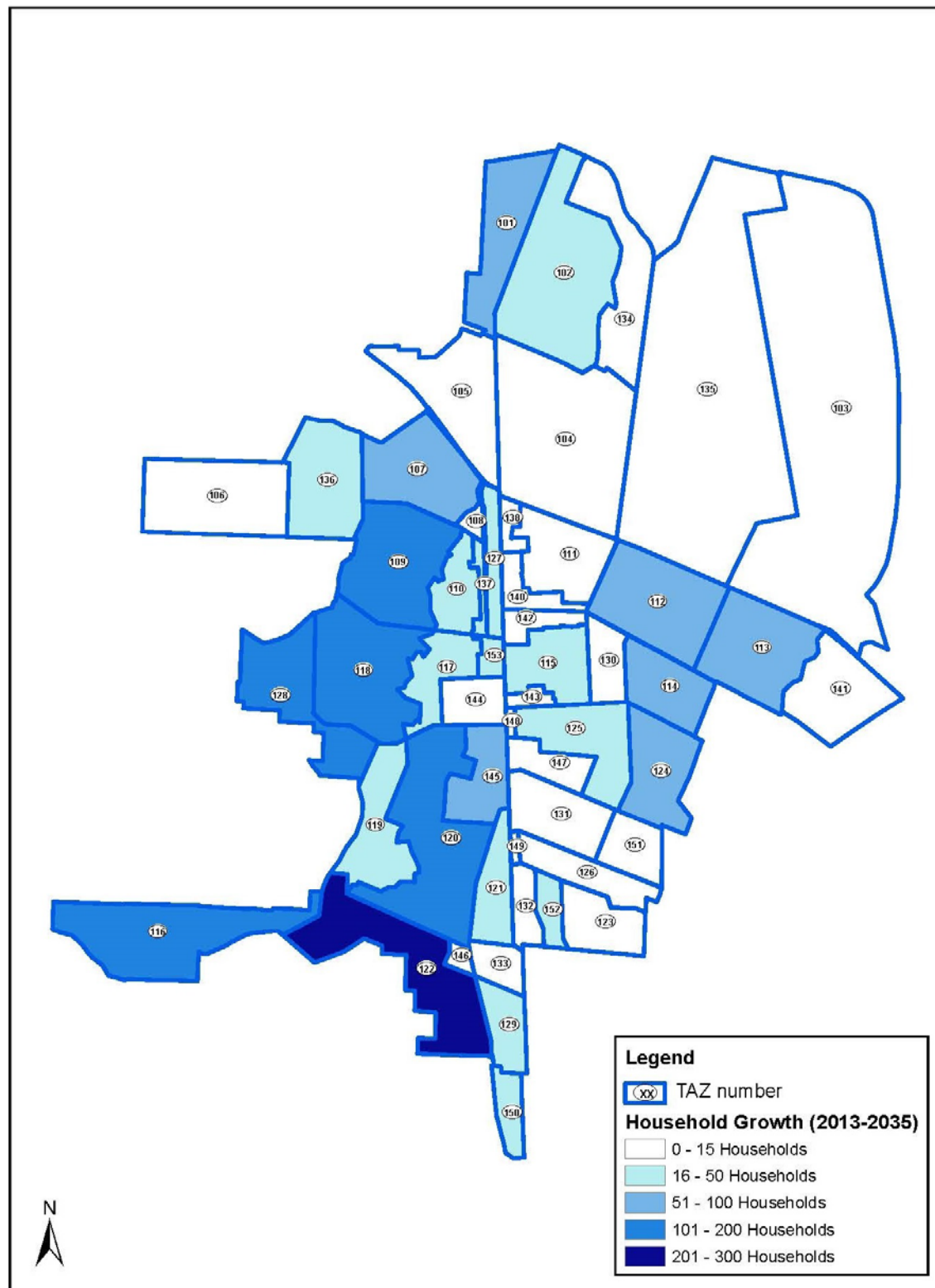
Population and Employment Growth

Figures 4 and 5 show expected distribution of housing and employment growth throughout the city, summarized by transportation analysis zone (TAZ). The figures show the highest household growth in south Scappoose, near Dutch Canyon Road, plus high growth in housing on the west side of town, west of Scappoose Creek, and slightly less growth on the east side of town, east of 6th and 4th Streets (see Memo 6 in Volume 2).

The figures show employment growth will be highest in the north part of town, particularly near the airport in the northeast part of town. They also show high employment growth along US 30 through town, with growth generally higher on the west side than the east side, primarily because the west side is not constrained by the railroad.

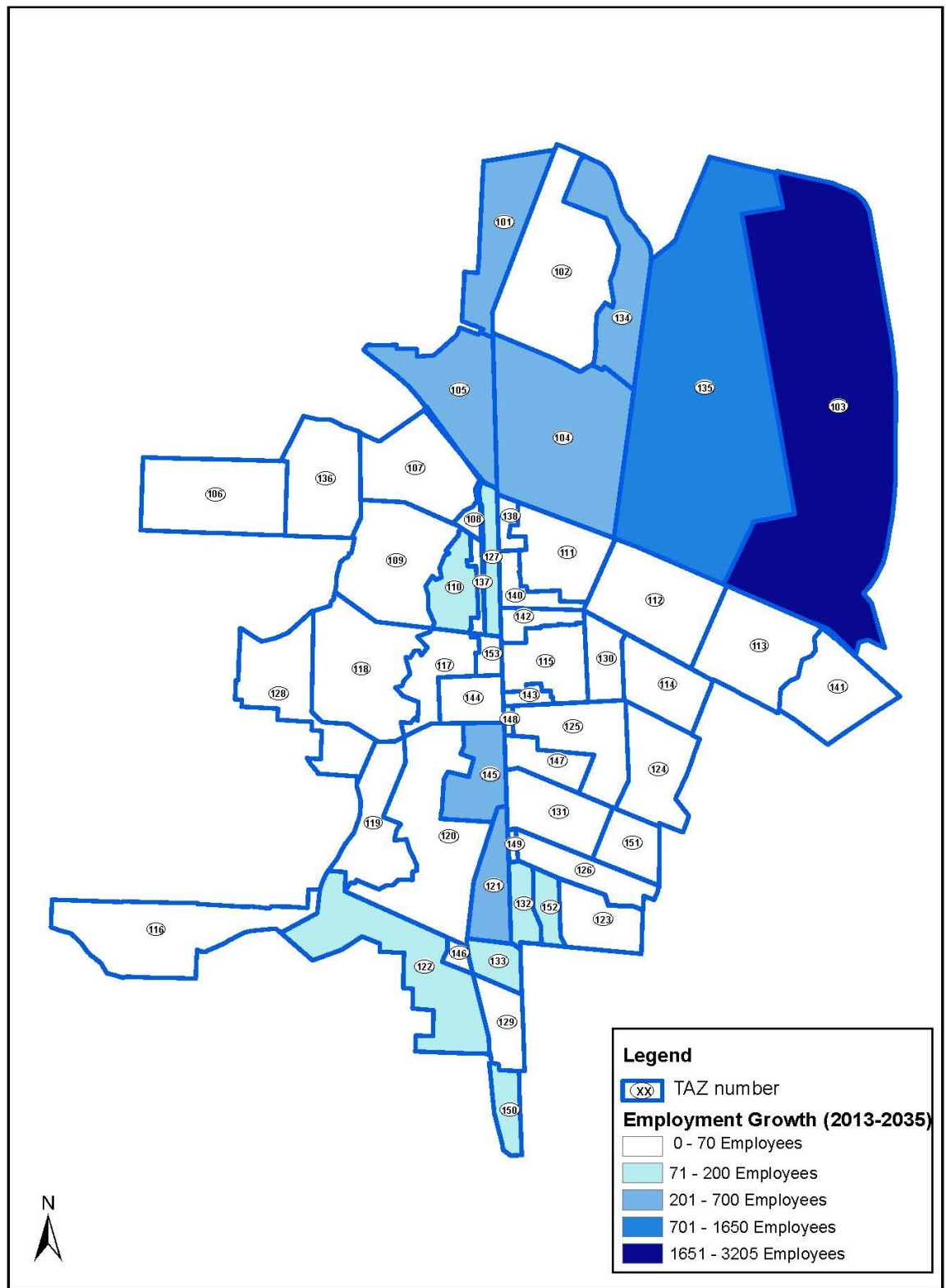
The Trends

Figure 4: Scappoose Household Growth (2013-2035)



The Trends

Figure 5: Scappoose Employment Growth (2013-2035)



The Trends

More Travel and Employment Trips

Assuming Scappoose does not significantly change its mode split (percentage of users traveling by motor vehicle versus walking, biking or transit), and adds more jobs, residents, and through traffic, the street

network in 2035 must accommodate about 12,000 additional motor vehicle trips during the evening peak hour.

Today, the Scappoose street network is generally able to handle the evening peak hour motor vehicle trips; however, the number of trips will likely increase by about 70 to 90 percent at intersections along US 30, through the central part of town, by the end of 2035.

Intersections near the airport will fare even worse. Much of the increased travel will begin or end in major employment growth areas, especially near the airport, and a smaller number of additional trips beginning or ending along US 30 throughout town.

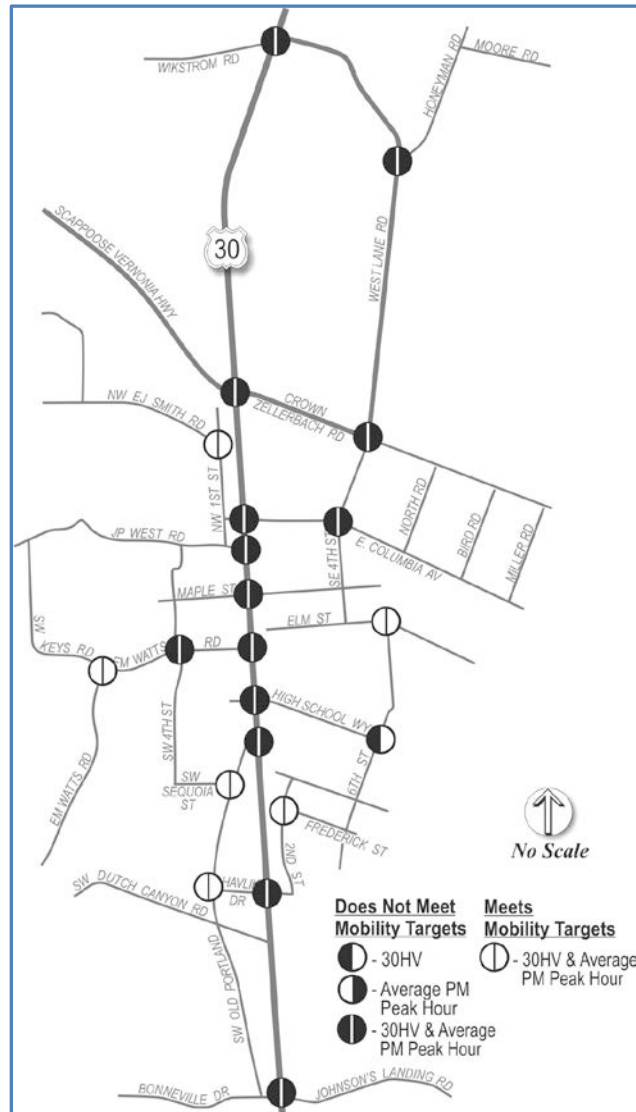


Figure 6: 2035 Motor Vehicle Operating Conditions

The Trends

More Congestion

An increase in motor vehicle travel leads to an increase in congestion. Travel activity, as reflected by evening peak hour motor vehicle trips beginning or ending in Scappoose, is expected to increase significantly through 2035. Through trips (trips that neither begin nor end in Scappoose) will also increase through 2035, due to general population growth in Oregon and in neighboring cities such as St. Helens. Figure 6 shows that the most congested locations will be along US 30 through town.

Intersections in the high growth areas near the airport and a few other intersections (e.g. 4th Street/E.M. Watts Road and 6th Street/High School Way) are also expected to experience significant congestion (see Memo 7 in TSP Volume 2).

More Walking, Biking and Transit Use

The TSP process identified areas of the city in close proximity to key destinations (such as schools, parks, transit stops, shopping, and employment) with potential to attract significant walking and biking trips. It identified those areas with existing deficiencies as priority locations for walking, biking or transit investments. The process also identified transit, walking, and biking as partial solutions to the city's congestion problems.



The Investments

Scappoose must make investment decisions to implement a set of transportation improvements that meet identified needs through 2035. Transportation funding is limited, so a fiscally responsible approach to enhancing and maintaining the transportation system is imperative.

Developing the TSP Investments

Scappoose's approach to developing the TSP emphasized investments in small, cost-effective solutions for the transportation system. A hierarchy of strategies (Figure 7) was applied to identify lower cost solutions, which were assessed in the development of a system-wide solution. This process allowed the city to maximize the existing infrastructure and use of available funds, minimize impacts to the natural and built environments, and balance investments across all modes of travel (see Memo 9 in Volume 2).

The TSP used measurable evaluation criteria (see Memo 8 in Volume 2) based on the goals and objectives (developed in coordination with the Community Advisory Committee) to screen and prioritize transportation solutions (Figure 8). Projects deemed to contribute more towards achieving the transportation goals of Scappoose ranked higher, and the plan assigned higher priority to their implementation. Consequently, solutions recommended in the TSP are generally consistent with the goals and objectives, as listed in The Vision, although the CAC used this evaluation as a guideline, making adjustments based on input from the community, city staff, and decision makers (elected and appointed officials) in Scappoose.

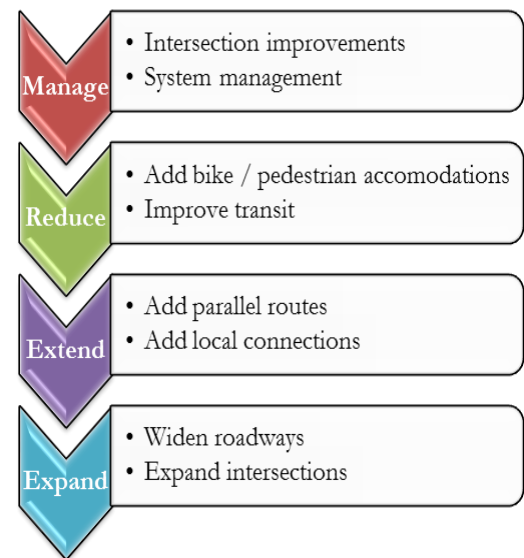


Figure 7: Transportation Solutions Identification Process

The Investments

Constrained and Aspirational Projects

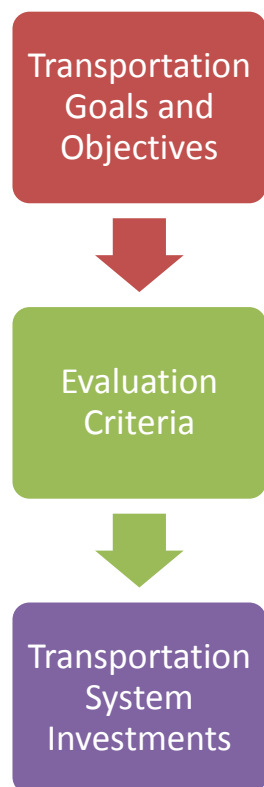


Figure 8: Reflecting the Goals and Objectives in the Plan

Constrained projects are those projects that the city and ODOT believe are reasonably likely to be funded during the 20-year planning horizon based on the constrained funding threshold established through city and ODOT funding analysis.

Aspirational projects (projects which the city supports and would like to implement) include all identified projects for improving Scappoose's transportation system, regardless of their primary funding source, and priority. In contrast to constrained projects, they are not reasonably likely to be funded during the 20-year planning horizon, but do address an identified problem and are supported by the city and ODOT.

The full list of constrained and aspirational projects is shown in Table 1 on page 27. The full list includes over 100 projects, totaling an estimated \$183 million worth of investments (see Memo 9 in Volume 2, for more information on the development of the TSP project list).

The TSP's multi-modal, network-wide approach to identifying transportation system solutions, assigns the projects to one of several categories:

- **Driving** projects would improve connectivity, safety, and mobility throughout the city for motorists. Scappoose identified 39 projects to improve driving conditions that, as originally proposed, would cost an estimated \$125 million to complete.

The driving improvements do not include significant US 30 widening projects (some turn lanes may be needed at key locations). Highway widening projects would have significant community, environmental, and right-of-way impacts and would require further environmental and technical analysis. Consequently, such projects simply are not financially feasible based on the current financial constraint threshold.

The Investments

It must also be noted that the future operational performance expectations established in this TSP are based on the assumption that no significant capacity projects on US 30 will be implemented south of Crown-Zellerbach Road within the 20-year planning horizon. To that end, the city will request that ODOT work with the Oregon Transportation Commission (OTC) to establish alternative mobility targets for US 30 that reflect the performance that is forecast based on no significant capacity improvements on US 30 over the planning horizon. TSP Volume 2 includes the full discussion of this analysis.

- **Walking** projects, including sidewalk infill improvements, would provide seamless connections for pedestrians throughout the city. Scappoose identified 42 sidewalk and crossing projects that, as originally proposed, would cost an estimated \$15 million to complete. The aspirational project list combines a number of walking projects with biking and driving projects and vice-versa, particularly where new roadways are proposed. The walking and biking projects are less problematic than roadway widening projects in that: 1) walking and biking projects have less impact than highway widening projects and most can be accomplished in the existing right-of-way; 2) construction of walking and biking projects can be in smaller phases or combined with a related maintenance activity like a pavement rehabilitation job; and 3) city and ODOT support is clear and unqualified for the full range of walking and biking projects identified, because they are generally non-controversial in nature, and provide clear safety benefits to the more vulnerable users of the transportation system, particularly children. The full discussion and illustrations of the specific walking improvements considered during the TSP analysis process are provided in TSP Volume 2.



The Investments



- **Biking** projects include an integrated network of bicycle lanes and marked on-street routes to facilitate safe and convenient travel citywide. Scappoose identified 24 biking projects that, as originally proposed, would cost an estimated \$34 million to complete.
- **Shared-Use Path** projects would provide local and regional off-street travel for walkers and cyclists. The envisioned citywide shared-use path network includes four projects that, as originally proposed, would total an estimated \$10 million to complete.
- **Transit** projects would enhance the quality and convenience for bus passengers. Two specific projects and four general categories of transit projects were originally proposed. The two projects identified would total less than \$2 million. The general projects (transit stops, etc.) would typically be the responsibility of development and the transit agency.

Funding Gap

The \$183 million total cost of the over 100 identified locally-funded transportation system projects is far greater than the city's ability to raise funds. About a third of Scappoose's current revenue streams for transportation fund capital improvements, with the remaining funds used for maintenance, debt service and staffing needs. Rising maintenance costs through 2035 will diminish the funds available for improvements. System development charges (SDC) revenues would increase based on the land use forecast for Scappoose. Historically, the city has collected an average of about \$117,000 annually from SDCs. However, annual SDC collections are estimated to increase to about \$1 million annually, assuming the level of development described previously. This would provide the city with about \$20.5 million through 2035. Unless Scappoose develops additional revenue streams, the city can expect to have no more than \$24.2

The Investments

million to spend on locally-funded improvements over the next 20 years.

In addition, ODOT has indicated about \$4 to \$6 million in discretionary state and/or federal funds may be available to invest in Scappoose over the next 20 years² for system modernization and enhancement.



² The State has not committed any future funding for projects in Scappoose. This assumption is for long-range planning purposes only. This estimate is based on the assumption that Scappoose will receive a reasonable share of the state/federal funding projected to be available over the 20-year planning horizon in Region 2 and based on ODOT sustaining their current revenue structure. It is used to illustrate the degree of financial constraints faced by ODOT as of the writing of this document. Actual funding through state and federal sources may be higher or lower than the range of this estimate. This estimate does not include projects that might be funded through the federal Highway Safety Improvement Program (HSIP).

The Plan

Without additional funding sources, the city has approximately \$24.2 million to cover the costs of projects for which it will be the primary source of funding over the next 20 years. The state might also contribute about \$4 to \$6 million for investments along US 30. The TSP sets priorities for spending those funds and identifies projects that would be possible with additional funding.

The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted for state facilities are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any state facility are subject to change, will ultimately be determined through a preliminary and final design process, and are subject to ODOT approval.

Prioritizing Investments

Unless the city expands its funding options, most of the desired transportation system projects are not likely to happen before 2035. For this reason, the TSP splits transportation solutions into Financially Constrained or Aspirational groups. The financially constrained group includes projects that could be funded by the approximately \$24 million likely to be available through existing city funding sources. This group also includes a reasonable estimate of how the city would use revenue from various state and/or federal sources. The aspirational projects are those remaining projects that likely would not have city or state funding by 2035.

The TSP evaluated and compared all proposed projects using the nine TSP goals (detailed in the “Vision” section of the TSP). Based on a project’s contribution to achieving the transportation goals of Scappoose, each transportation solution was assigned a score through the evaluation process. The process favored implementation of low cost projects that would have more immediate impacts and spread investment benefits citywide.



The Plan

Although the TSP identifies priorities for the investments, the city does not have to implement the projects in that order. Future circumstances could allow or require the city to fund projects not on the financially constrained project list to address a transportation need.

The Financially Constrained Plan

The financially constrained plan identifies the transportation solutions that the city prioritizes for funding and implementation by 2035 (see Table 1 and Figures 9, 10 and 11). Financially constrained projects have been further prioritized as high, medium, or low priority to give the city additional guidance for implementation. Project prioritization will be further influenced by the timing and location of growth within the community. The prioritization is for guidance only and is intended to allow the city flexibility in project implementation. If the city is able to implement the financially constrained plan within the next two decades, Scappoose residents will have access to a safer, more balanced multi-modal transportation network.

As shown in Table 1, the TSP has identified projects estimated at \$23 million for which the City of Scappoose would be the primary source of funding and projects estimated at just over \$23 million that would either be funded by Columbia County, or private developers (in conjunction with new development). For more information on funding assumptions, see Memo 9 in Volume 2.



Table 1: Financially Constrained Projects - Cost Estimates by Mode

	ODOT Cost	City Cost	County/ Development/ Other Cost	Total Cost
Walking	\$1.6M	\$8.3M	\$1.5M	\$11.4M
Biking	\$0	\$6.3M	\$0.1M	\$6.4M
Motor Vehicle	\$2.5M	\$8.4M	\$21.7M	\$32.6M
Total	\$4.1M	\$23.0M	\$23.3M	\$50.4M
Estimated Available Funds*	\$4-6M	\$24.2M		

* Estimated available funds summarized in TSP Volume 2.

The Plan

ODOT Projects on US 30



In addition to the projects included in the financially constrained plan that would primarily be funded by the city, ODOT has projected that the city could receive up to \$6 million from various state and/or federal sources over the next 20 years. Based on current needs, Table 1 and Figures 9, 10, and 11 show a reasonable estimate of how the city would use the state funds. This list may be modified and adapted within the limits of the financial constraint threshold, as it currently exists or as it may evolve, to advance any supported project on US 30 in response to any opportunity or issue that may arise during the planning horizon.

The Aspirational Plan

The aspirational plan identifies valuable solutions that will not have funding by 2035, unless additional sources become available. The Aspirational Plan includes about \$133 million in unfunded projects. Some of the projects require city funding and resources beyond what is available in the time frame of this plan. Others are contingent upon grants, development, or redevelopment. Some of the aspirational projects in Table 1 and in Figure 9, 10 and 11 could move into the financially constrained group, should the city develop new sources of funding. The Scappoose City Council has showed some interest in supporting increased System Development Charges (the current rate was reduced during the recession) and potentially a City Gas Tax.



The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
Transit Projects					
T1	US 30	Park and ride lot(s) near US 30 to support express and local bus service	\$1,550	ODOT STIP	Financially Constrained (High)
T2	City Wide	Use local bus routing to feed the inter-city express bus system	-	CC Rider	Aspirational
T3	Scappoose Industrial Airpark	Extend existing transit service to Airpark area to accommodate future demand	-	CC Rider	Aspirational
T4	City Wide	Provide flex route transit stops within ¼ mile of all residences throughout city	-	CC Rider	Aspirational
T5	Citywide	Transit amenity improvements (e.g., shelters, furniture, route schedules)	-	Development/ CC Rider	Aspirational
T6	US 30	Add northbound US 30 bus stop at Havlik	\$65	ODOT/ CC Rider	Financially Constrained (High)
Demand Management Projects					
M1	Neighborhood Traffic Calming Program	Implement program to process community requests for neighborhood traffic calming, investigate options, and implement improvements.	\$100	City	Aspirational
M2	Safe Routes to School Program	Provide support to the Safe Routes to School Program.	\$10	City	Aspirational
M3	Bike Parking Program	Install new bike parking throughout the city.	\$30	City	Aspirational
Intersection Projects (see Figure 9)					
I1	US 30/West Lane Rd.	Install major capacity improvement (e.g. traffic signal, roundabout, additional turn lanes)	\$1,000	ODOT	Financially Constrained (Low)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
12	US 30/Gilmore Rd.	Install major capacity improvement (e.g. traffic signal, roundabout)	\$1,000	ODOT	Aspirational
13	West Lane Rd./Crown Zellerbach Rd.	Install traffic signal Southbound right-turn lane Northbound right-turn lane Westbound left-turn lane	\$950	City	Aspirational
14	West Lane Rd./SE 4th St./E. Columbia Rd.	Install traffic signal or roundabout Southbound right-turn lane OR install single-lane roundabout	\$500	City	Aspirational
15	West Lane Rd./Honeyman Rd.	Install traffic signal or roundabout Southbound left-turn lane Westbound right-turn lane Eastbound left-turn lane Westbound left-turn lane OR two-lane roundabout	\$1,000	Development	Financially Constrained (Low)
16	US 30/Scappoose-Vernonia Hwy./Crown Zellerbach Rd.	Install intersection capacity improvement (e.g. 2nd westbound left-turn lane)	\$645	ODOT	Financially Constrained (Low)
17	US 30/Old Portland Rd.	Install turn restriction (e.g. convert to right-in/right-out only)	\$135	ODOT	Aspirational
18	SE 6th St./High School Way	Convert to two-way stop control (SE 6th St. uncontrolled)	\$4	City	Aspirational
19	SW 4th St./E.M. Watts Rd.	Realign SW 4th Street to eliminate or improve offset. Convert to all-way stop control.	\$440	City	Aspirational

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
I10	SE 3rd St./Elm St.	Convert to all-way stop control	\$4	City	Financially Constrained (High)
I11	SW 1st St./J.P. West Rd.	Extend southeast curb to better align east and west intersection approaches and provide shorter pedestrian crossing.	\$20	City	Financially Constrained (High)
I12	SE 6th St./Elm St.	Realign 6th Street to reduce skew angle. Realign 6th to reduce offset. Close private driveway on north side of intersection.	\$975	City	Financially Constrained (High)
I13	SW Keys Rd./E.M. Watts Rd./Eggleston Ln.	Tighten Keys Rd./E.M. Watts Rd. intersection. Realign Eggleston Ln. approximately 100 feet west of new intersection. Remove/realign existing 33060 SW Keys Rd. driveway to west of existing location. Realign 33076 SW Keys Rd. driveway to alternate access.	\$705	City	Aspirational
I14	SW Keys Rd./J.P. West Rd.	Clear vegetation, install street lighting, and investigate possibility of speed zone reduction on J.P. West Rd. (advance warning? Advisory speed signs?)	\$60	City	Aspirational
Driving Projects (see Figure 9)					
D1	Crown Zellerbach Rd.	New collector from West Lane Rd. to UGB, to the north of and separated from the existing Crown Zellerbach Trail	\$5,850	Development	Financially Constrained (High)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
D2	Moore Rd. Extension	Extension from existing terminus along UGB to Crown Zellerbach Rd. extension	\$23,940	Development	Aspirational
D3	Gilmore Rd.	New street from US 30 to West Lane Rd.	\$11,355	Development	Aspirational
D4	New street	New street from Wikstrom Rd. to Scappoose-Vernonia Hwy	\$14,230	Development	Aspirational
D5	Gilmore Rd. Improvement	Improvement of Gilmore Rd. to collector standards (west UGB to US 30)	\$655	Development	Aspirational
D6	SW 4th St.	New street from Seely Ln. to just south of Meersburg St.	\$620	City	Aspirational
D7	NW 4th St.	New street from Laurel St. to E.J. Smith Rd.	\$1,220	City	Aspirational
D8	New Street	New neighborhood street from Gilmore Rd. to Crown Zellerbach Rd.	\$8,950	Development	Aspirational
D9	New Street	New neighborhood street from West Lane Rd. (opposite Wagner Ct.) to new neighborhood street (D8)	\$1,120	Development	Aspirational
D10	New Street	New street from Havlik Dr./Old Portland Rd. to Dutch Canyon Rd.	\$4,150	Development	Aspirational
D11	Dutch Canyon Rd.	Improve to neighborhood standards from Old Portland Rd. to US 30	\$1,045	City	Aspirational
D12	New Street	New street from Old Portland Rd. to Walnut St.	\$3,255	Development	Aspirational
D13	Wheeler St. Improvement	Improve Wheeler St. to neighborhood standards from NW 5th Street to Scappoose-Vernonia Hwy. along Blair Ln. alignment	\$445	City	Financially Constrained (Medium)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
D14	SE Elm St. Improvement	Improve SE Elm St. to neighborhood standards from SE 6th St. to UGB	\$1,160	City	Aspirational
D15	West Lane Rd. Improvement	Improve West Lane Rd. to collector standards from US 30 to Honeyman Rd.	\$5,930	Development	Financially Constrained (Low)
D16	Moore Rd. Improvement	Improve Moore Rd. to collector standards from Honeyman Rd. to end	\$5,060	Development	Financially Constrained (Low)
D17	New Street	New neighborhood street from new street to US 30	\$1,680	Development	Aspirational
D18	New Street	New neighborhood street from West Lane Rd. to Gilmore Rd.	\$7,045	Development	Aspirational
D19	New Street	New neighborhood street from US 30 to new collector (D4)	\$2,105	Development	Aspirational
D20	US 30 Corridor	Signal Timing and Phasing Optimization and Truck Signal Priority (partially funded by ODOT ARTS)	\$600	ODOT/ ODOT ARTS	Financially Constrained (High)
D21	US 30 Corridor	Upgrade existing traffic signals to provide protective/permissive phasing (where appropriate)	\$225	ODOT	Financially Constrained (High)
D22	Honeyman Rd.	Improve Honeyman Rd. to collector standards from West Lane Rd. to Moore Rd.	\$4,230	Development	Financially Constrained (Low)
D23	Old Portland Rd.	Upgrade to collector standards from US 30 (south end) to D12	\$10,770	City/ Development	Financially Constrained (Medium)
D24	JP West Rd.	Upgrade to collector standards between SW 2nd St. and SW 4th St.	\$1,610	City/ County	Financially Constrained (High)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
D25	W. Columbia Ave.	Study to determine feasibility of converting W. Columbia Ave. to two-way traffic, including signal modification at US 30/Columbia Ave.	\$50	City	Financially Constrained (Medium)
Walking Projects (see Figure 10)					
W1	Old Portland Rd.	Bonneville Dr. to existing sidewalks north of Dutch Canyon Rd.	D23	Development	Aspirational
W2	Old Portland Rd.	Complete sidewalk system between Jenny Ln. and US 30	D23	City/ Development	Financially Constrained (Medium)
W3	New Collector St.	Old Portland Rd. to Walnut Street	D12	Development	Aspirational
W4	Dutch Canyon Rd.	Old Portland Rd. to US 30	D11	City	Aspirational
W5	E.M. Watts Rd.	Complete sidewalk system between US 30 and SW 4 th St.	\$255	City	Financially Constrained (Low)
W6	E.M. Watts Rd.	Complete west side sidewalk between SW 4 th St. to Keys Rd.	B10	City	Financially Constrained (Low)
W7	Keys Rd.	Complete sidewalk system between E.M. Watts Rd. and J.P. West Rd. (prioritize east side)	\$1,095	City/ Development	Aspirational
W8	J.P. West Rd.	Complete sidewalk system between Keys Rd. and SW 4 th St. (prioritize one side)	\$1,115	City/ Development	Financially Constrained (Low)
W9	J.P. West Rd.	Complete sidewalk system between SW 4 th St. and US 30 (north side)	\$110	City	Financially Constrained (Medium)
W10	SW 4 th St.	E.M. Watts Rd. to J.P. West Rd.	\$840	City	Financially Constrained (Medium)
W11	SW Maple St.	Complete sidewalk system between US 30 and SW 4 th St.	\$375	City	Financially Constrained (Medium)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
W12	SW 1 st St.	SW Maple St. to J.P. West Rd.	\$360	City	Financially Constrained (Low)
W13	High School Way	Complete sidewalk on north side between existing sidewalk and SE 6 th St.	\$295	City	Financially Constrained (High)
W14	SE Vine St.	Grant Watts Elementary School to SE 6 th St.	\$310	City	Financially Constrained (High)
W15	SE 3 rd Pl.	Grant Watts Elementary School to SE Elm St.	\$505	City	Financially Constrained (High)
W16	SE Elm St.	Complete sidewalk system from SE 3 rd St. to east UGB	\$760	City	Financially Constrained (Medium)
W17	SE 6 th St.	Complete sidewalk system between Vine St. and Elm St.	B19	City/ Development	Financially Constrained (Low)
W18	SE Maple St.	Complete sidewalk system between US 30 and SE 4 th St.	\$610	City	Financially Constrained (Low)
W19	SE 4 th St.	Elm St. to E. Columbia Ave.	B17	City	Financially Constrained (High)
W20	E. Columbia Ave.	Complete sidewalk system between US 30 and SE 4 th St./West Lane Rd.	\$440	City	Financially Constrained (High)
W21	West Lane Rd.	Existing sidewalk terminus north of Erin Dr. to Crown Zellerbach Rd.	\$125	City	Aspirational
W22	Miller Rd.	Complete sidewalk system between E. Columbia Ave. and Crown Zellerbach Rd.	B8	City	Aspirational
W23	E.J. Smith Rd.	NW 1 st St. to Bella Vista Dr.	\$1,865	City/ Development	Financially Constrained (Low)

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
W24	Crown Zellerbach Rd.	Complete sidewalk system on north side (side without trail) between West Lane Rd. and the Moore Rd. Extension	D1	Development	Financially Constrained (High)
W25	Scappoose-Vernonia Hwy.	US 30 to west UGB (south side only)	\$575	City	Financially Constrained (Low)
W26	US 30	Scappoose-Vernonia Hwy./Crown Zellerbach to West Lane Rd./Wikstrom Rd. (west side only)	\$2,045	ODOT	Aspirational
W27	Wikstrom Rd.	US 30 to west UGB	B14	Development	Aspirational
W28	Gilmore Rd.	US 30 to west UGB	D5	Development	Aspirational
W29	West Lane Rd.	US 30 to Crown Zellerbach Rd.	B5	Development	Aspirational
W30	Honeyman Rd.	West Lane Rd. to Moore Rd.	B6	Development	Aspirational
W31	Moore Rd.	Honeyman Rd. to Crown Zellerbach Rd.	D2, D16	Development	Aspirational
W32	NW 4 th Street	New section between J.P. West Rd. and Laurel St.	D6	Development	Aspirational
W33	E. Columbia Ave.	Complete sidewalk between SE 4 th St./West Lane Rd. and east UGB	B12	City/Development	Aspirational
W34	Gilmore Rd.	US 30 to West Lane Rd.	D3	Development	Aspirational
W35	New neighborhood street	US 30 to west UGB	D17	Development	Aspirational
W36	New neighborhood street	West Lane Rd. to Gilmore Rd.	D18	Development	Aspirational
W37	New neighborhood street	Gilmore Rd. to Crown Zellerbach Rd.	D8	Development	Aspirational
W38	New neighborhood street	West Lane Rd. to new neighborhood street	D9	Development	Aspirational
W39	New neighborhood street	Old Portland Rd. to E.M. Watts Rd.	D10	Development	Aspirational

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
W40	US 30	Havlik Drive to High School Way (curb-tight with appropriate separation from railroad tracks)	\$1,615	ODOT	Financially Constrained (Low)
W41	5 th Street	High School Way to Vine Street	\$385	City	Financially Constrained (Low)
W42	3 rd Street	Elm Street to Columbia Avenue	\$930	City	Financially Constrained (Low)
Bicycle Projects (see Figure 11)					
B1	Old Portland Rd.	Holland Dr. (terminus of existing bike lanes) to new street	D23	City/ Development	Financially Constrained (High)
B2	New street	Old Portland Rd. to Walnut St.	D12	Development	
B3	Walnut St.	New street to US 30	\$3	Development	Financially Constrained (Low)
B4	West Lane Rd.	E. Columbia Ave. to Crown Zellerbach Rd.	\$15	City	Financially Constrained (Medium)
B5	West Lane Rd.	Crown Zellerbach Rd. to US 30	\$8,635	Development	Aspirational
B6	Honeyman Rd.	West Lane Rd. to Moore Rd.	D22	Development	Aspirational
B7	Moore Rd.	Honeyman Rd. to Crown Zellerbach Rd.	D2, D16	Development	Aspirational
B8	Miller Rd.	Crown Zellerbach Rd. to E. Columbia Ave.	\$1,660	City	Aspirational
B9	SW Havlik Dr.	US 30 to Old Portland Rd.	\$1,215	City	Aspirational
B10	E.M. Watts Rd.	US 30 to Eggleston Ln./Keys Rd.	\$1,445	City	Financially Constrained (Medium)
B11	E. Columbia Ave.	US 30 to West Lane/SE 4th St.	\$15	City	Financially Constrained (High)
B12	E. Columbia Ave.	West Lane/SE 4th St. to Miller Rd.	\$3,320	City/ Development	Aspirational
B13	Gilmore Rd.	US 30 to West Lane Rd.	D3	Development	Aspirational
B14	Wikstrom Rd.	US 30 to west UGB	\$1,525	Development	Aspirational

The Plan

Table 2: Financially Constrained and Aspirational Project List

Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
B15	New street	Wikstrom Rd. to Scappoose-Vernonia Hwy.	D4	Development	Aspirational
B16	Gilmore Rd.	West UGB to US 30	D5	Development	Aspirational
B17	SE 4 th St.	Elm St. to E. Columbia Ave.	\$1,785	City	Financially Constrained (High)
B18	SE Elm St.	SE 6 th St. to SE 4 th St.	\$965	City	Financially Constrained (High)
B19	SE 6 th Street	Frederick St. to SE Elm St.	\$1,895	City	Financially Constrained (Medium)
B20	E.M. Watts Rd.	Keys Rd. to Dutch Canyon Road	\$6,975	City	Aspirational
B21	Dutch Canyon Rd.	Old Portland Rd. to E.M. Watts Rd.	\$3,975	City	Aspirational
B22	West side of Scappoose	Sign bike route on west side of US 30 between Columbia Ave. and E.M. Watts (cross US 30 as pedestrian at Columbia Ave.) and between E.M. Watts and Old Portland Rd. via SW 4 th St.	\$180	City/ Development	Financially Constrained (High)
B23	High School Way	US 30 to SE 6 th Ave.	\$20	City	Financially Constrained (High)
B24	Maple Street	SW 4 th St. to SE 4 th Ave.	\$25	City	Financially Constrained (Medium)
Shared-Use Path Projects (see Figure 11)					
S1	Crown Zellerbach Trail	Protect and enhance existing Crown Zellerbach Trail	D1	Development	Financially Constrained (High)
S2	Scappoose Creek Trail	Trail along Scappoose Creek from south city limits to Crown Zellerbach Road	\$5,870	City	Aspirational
S3	Scappoose Creek Trail	Trail along Scappoose Creek from north of Crown Zellerbach Road to north city limits	\$2,985	City	Aspirational

The Plan

Table 2: Financially Constrained and Aspirational Project List

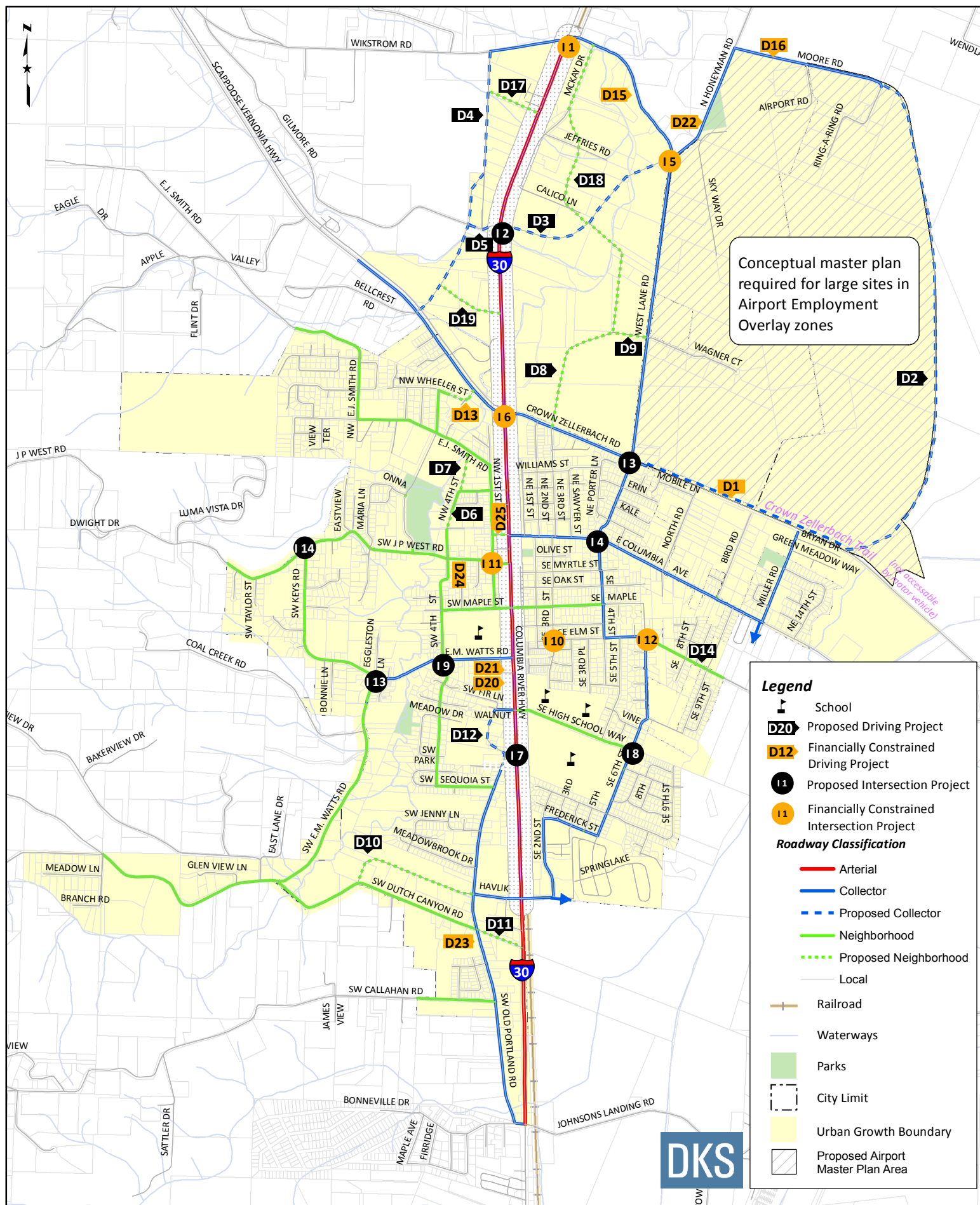
Project #	Project Location	Project Description	Estimated Cost (2015 Dollars - \$1,000s)	Primary Funding Source*	Improvement Package**
S4	Crown Zellerbach Trail	Construct shared use path to the north of Crown Zellerbach Rd. between US 30 and West Lane Rd.	\$1,350	Development	Aspirational
S5	US 30 Shared Use Path	Scappoose and Columbia County jointly study a potential shared use path/trail along the US 30 corridor through Scappoose and north to St. Helens	Not Identified	Other	Aspirational

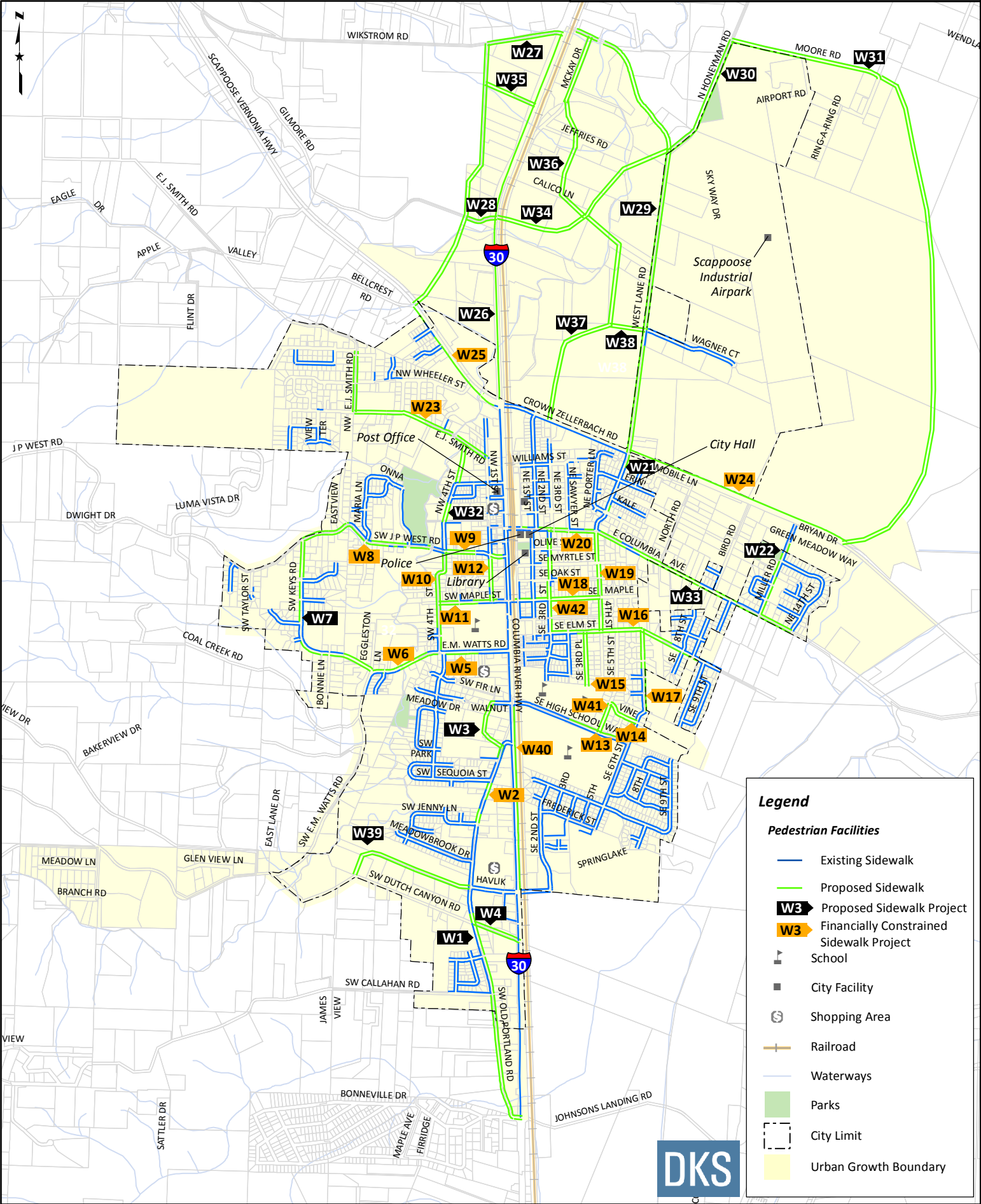
* Primary funding source is based on the agency who has jurisdiction over an existing facility, or who is expected to construct a new facility. "Other" could be funded by the county, grants, or other opportunities.

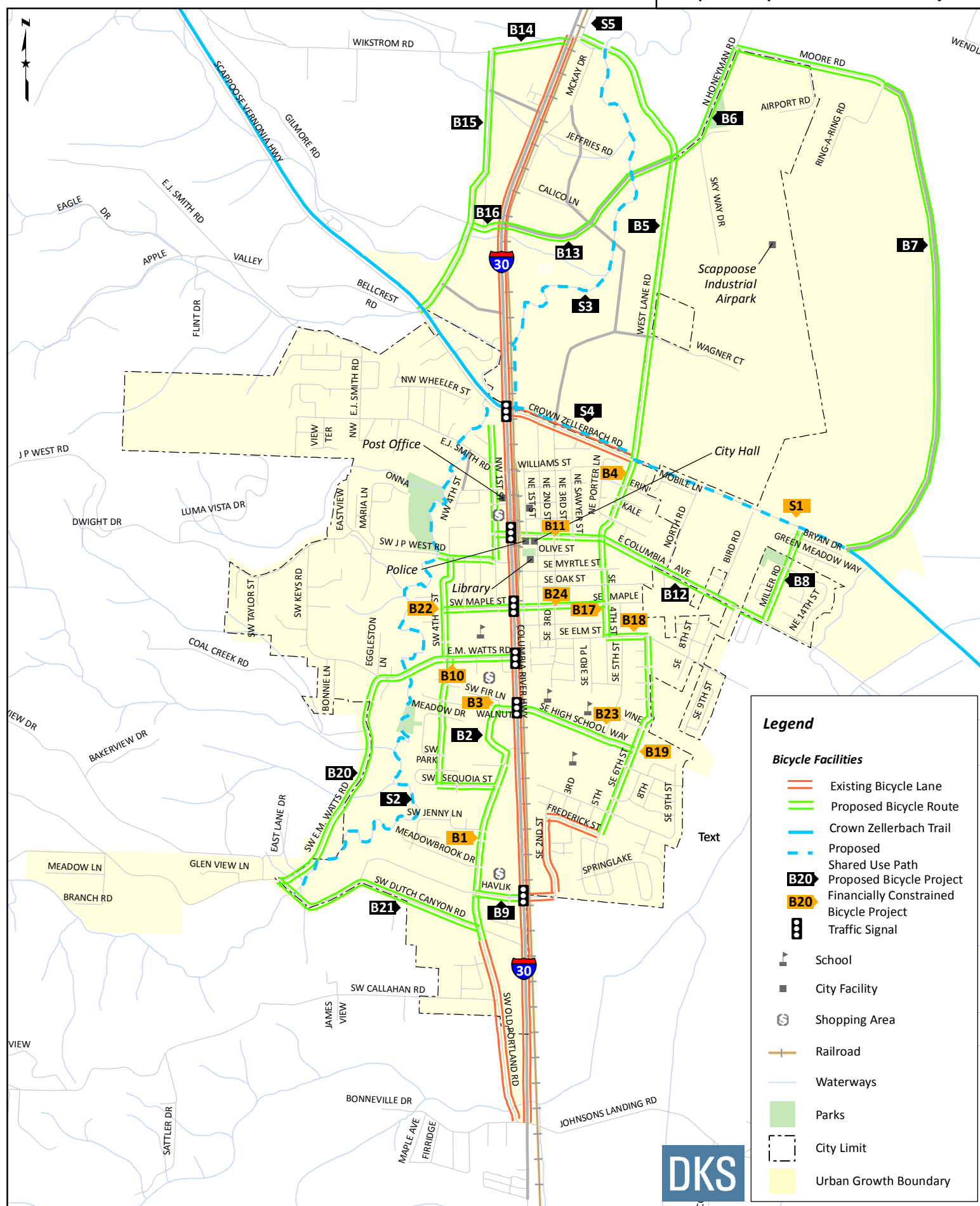
** Financially Constrained: Within the approximately \$24.2 million likely to be available through existing city funding sources (including SDC's). This funding plan also includes a reasonable estimate of how the city would use revenue from various state and/or federal sources. High, Medium and Low priority are indicated to help guide the City in project implementation.

Aspirational: Comprised of the aspirational projects, those remaining projects that likely would not have city or state funding by 2035.

Note: The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted for state facilities are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any state facility are subject to change, will ultimately be determined through a preliminary and final design process, and are subject to ODOT approval.







The Standards

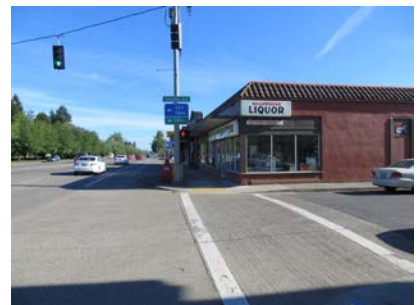
The TSP sets standards and regulations to ensure future development or redevelopment of property is consistent with the city's transportation goals and objectives.

Functional Classification System

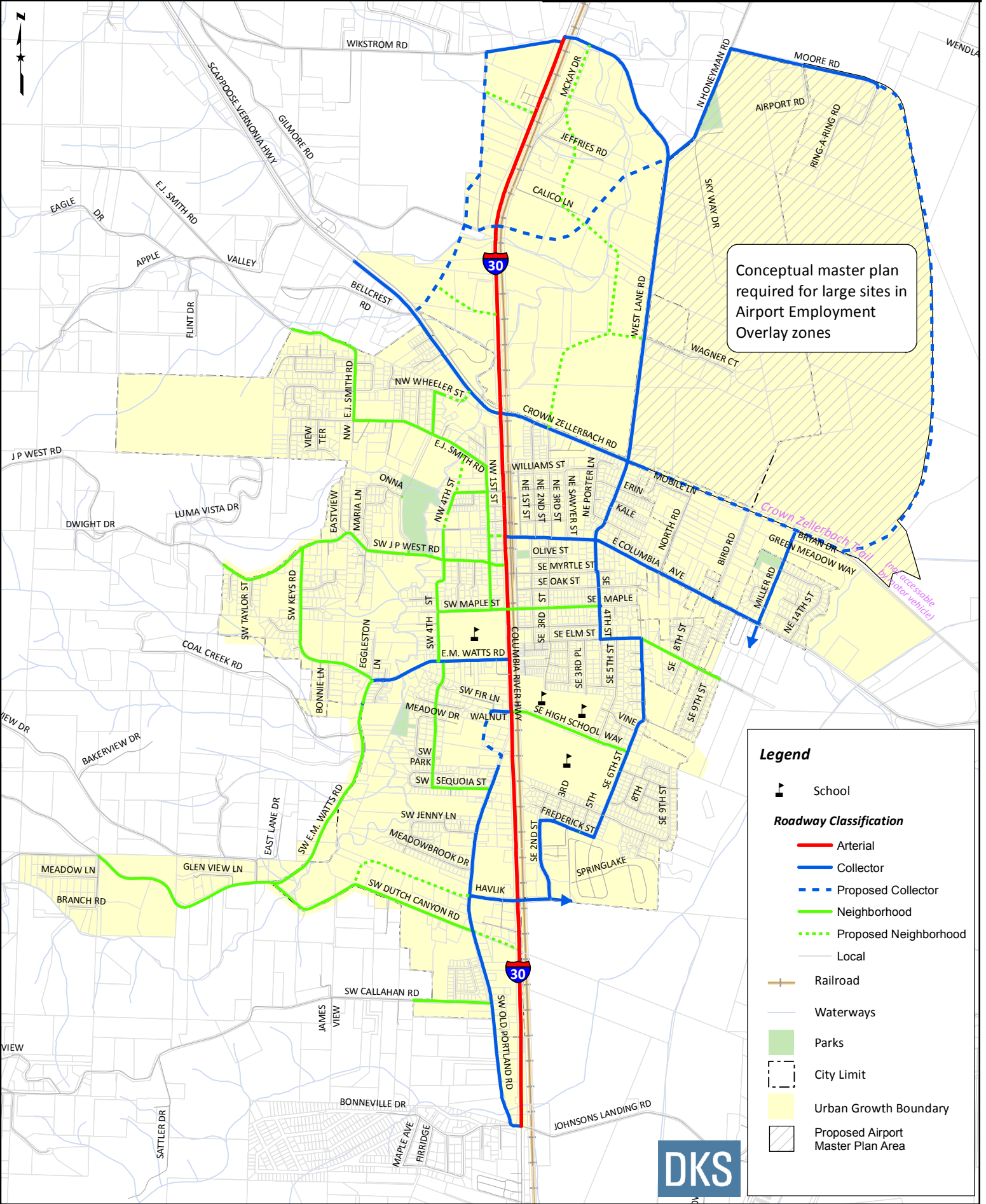
Traditionally, a roadway is classified based on the type of vehicular travel it is intended to serve (local versus through traffic). In Scappoose, the functional classification of a roadway determines the level of mobility for all travel modes, defining its level of access and usage within the city and region. The proposed functional classification of roadways was developed following a detailed review of the existing Scappoose and Columbia County functional classification systems.³ To the extent possible, arterials were designated at one-mile intervals and collectors at half-mile intervals. Since the state highway in Scappoose (US 30) serves regional travel through the city, it was designated as an arterial street. Streets providing primary access to neighborhoods and activity generators in Scappoose were designated as collectors or neighborhood routes, while all other streets were classified as local streets. Also, a proposed framework roadway system was developed within the TSP study area.

Functional Classification

The functional classification of a roadway (shown in Figure 12) determines the level of mobility for all travel modes, and defines anticipated level of access and usage. The functional classification system recognizes that individual streets do not act independently of one another, but instead form a network that serves travel needs on a local and regional level. From highest to lowest intended usage, the functional classifications are: arterial, collector, neighborhood, and local streets.



³ *Scappoose Transportation System Plan*, David Evans and Associates, October 1997. *Columbia County Rural Transportation System Plan*, June, 1998.



The Standards

Roadways with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (or mobility). Roadways with lower intended usage (local streets) have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations.

Street Design

Design Types of Streets

Design of streets in Scappoose requires attention to many elements of the public right-of-way and must consider how the street interacts with the adjoining properties. Street design varies based on the functional classification and, for some specific land uses, street type (commercial/industrial or mixed-use).

The TSP includes a number of different design types for streets ranging from high-use collectors to low-use local streets. The design criteria for other Scappoose streets are in Figures 13a and 13b, along with guidelines for constrained areas (e.g., steep, environmentally sensitive, historic, or previously developed areas) where the design may need to reduce or eliminate lower priority street elements. A constrained design requires a variance to the city's standard design prior to construction approval. The only arterial street in Scappoose is US 30, which is a state highway and is therefore subject to the design criteria in the Oregon Highway Plan and ODOT Highway Design Manual.

Special Street Types

Scappoose further classifies some of the roadways within the city based on the surrounding land use and the intended function for pedestrians, bicyclists and transit riders in that specific area. Commercial and industrial local streets and some select downtown mixed-use streets (e.g., NW First Street, E. Columbia Avenue) have special cross-sections.

The street types attempt to strike a balance between street functional classification, adjacent land use, zoning designation

The Standards

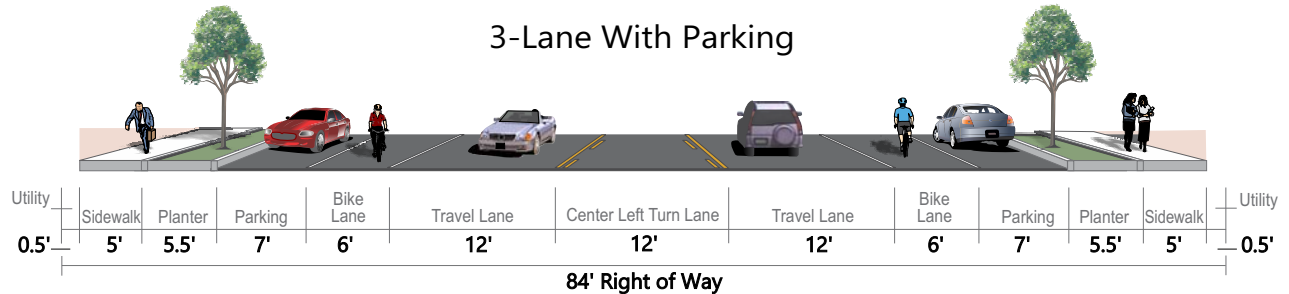
and the competing travel needs by prioritizing various design elements. Two special street types are described below for Scappoose:

- **Local Commercial/Industrial Streets** are primarily lined with retail and large employment complexes, and often serve industrial areas. These streets serve customers throughout the city and region and may not have a direct relationship with nearby residential neighborhoods. Buildings are typically set back behind parking lots. These streets are somewhat more auto-oriented, but should still accommodate pedestrians and bicyclists safely and comfortably. Roadway widths are typically wider to accommodate a high volume of large vehicles such as trucks, trailers and other delivery vehicles. The Local Commercial/Industrial Street cross-section would likely be applied to local streets in the Airport Employment Overlay zone and any other areas where a higher number of trucks are expected. This cross-section is shown in Figure 13b.
- **Mixed-Use Streets** typically have a higher amount of pedestrian activity and are often on a transit route or near a transit stop. These streets should emphasize a variety of travel choices such as pedestrian, bicycle and transit use to complement the development along the street. Since mixed-use streets typically serve pedestrian-oriented land uses, walking should receive the highest priority of all the travel modes. They should be designed with features such as wider sidewalks, pedestrian amenities, transit amenities, attractive landscaping, on-street parking, pedestrian crossing enhancements and bicycle facilities. Specific street cross-sections incorporating these elements have been identified for two streets in Scappoose (see Figure 14):

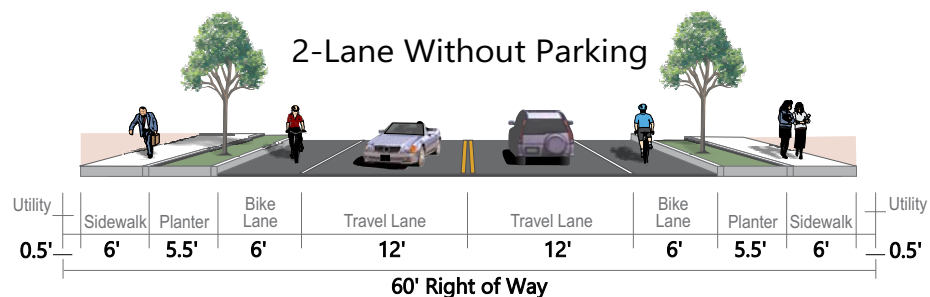
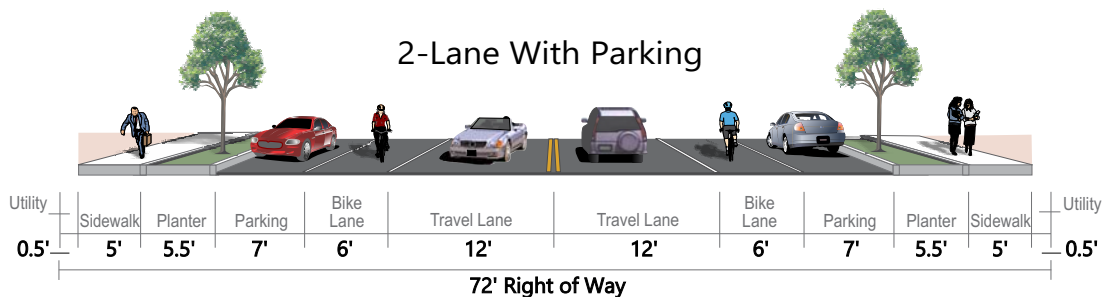
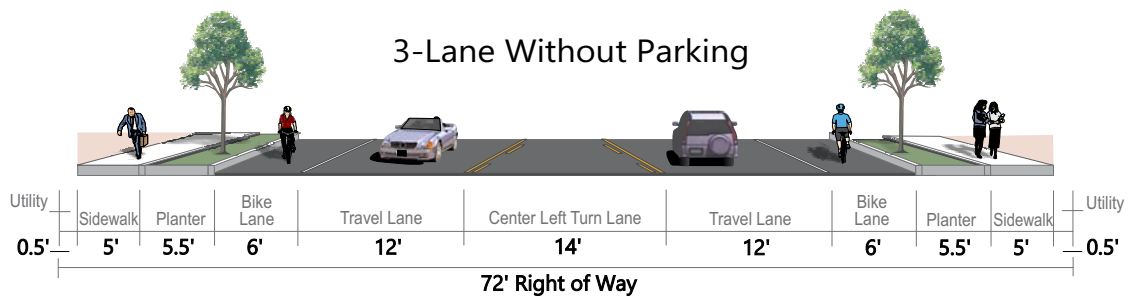
Arterial

ODOT's design standards would apply to US 30. See the ODOT Highway Design Manual, 2012.

Collector



New roadways should be built to three-lane standards with parking (as shown above). Reduced cross-sections (as shown below) could be considered in constrained environments or with infill at the discretion of the City, according to the *City of Scappoose Public Works Design Standards*.



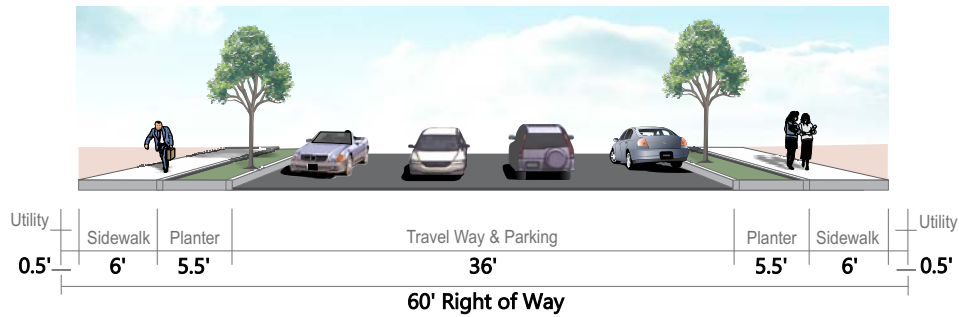
Note: The curb is included in the zone (planter strip or sidewalk) adjacent to the travel lane. When partial-street improvements are needed, more than 50 percent of the ultimate paved section may be required.

DKS

Figure 13a

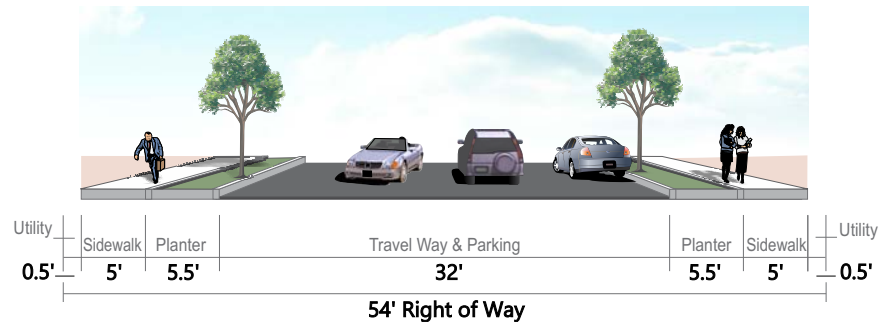
STREET DESIGN STANDARDS

Neighborhood Route



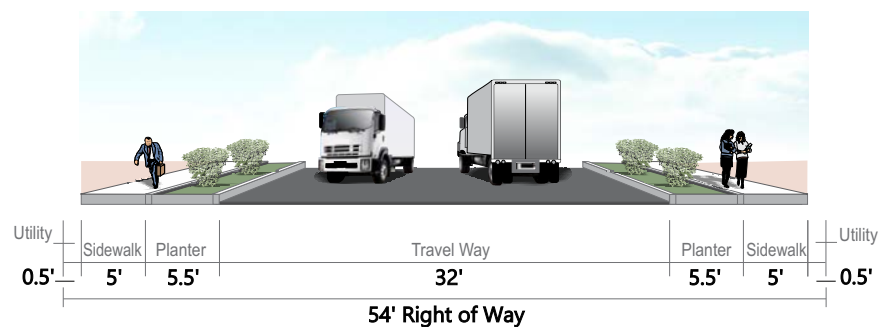
Reduced cross-sections for neighborhood routes may be considered on a case by case basis by the City, according to the *City of Scappoose Public Works Design Standards*. On-street parking may be removed in areas adjacent to industrial land uses.

Local Street



Reduced cross-sections for local street may be considered on a case by case basis by the City, according to the *City of Scappoose Public Works Design Standards*.

Local Commercial/Industrial Street



The Local Commercial/Industrial design standard would apply in commercial or industrial areas where more trucks are expected. The Local Commercial/Industrial design standard provides a wider travel way to accommodate trucks. Plantings should be kept at a low height to eliminate truck damage to trees.

Note: The curb is included in the zone (planter strip or sidewalk) adjacent to the travel lane. When partial-street improvements are needed, more than 50 percent of the ultimate paved section may be required.

DKS

Figure 13b

STREET DESIGN STANDARDS

Mixed-Use Collector

E. Columbia Avenue (between US 30 and West Lane Rd./SE 4th St.)



Mixed-Use Neighborhood Route

NW/SW 1st Street



Notes:

Streetscape amenities such as pedestrian bulb-outs, decorative lighting and street trees should be incorporated. The curb is included in the zone (planter strip or sidewalk) adjacent to the travel lane. When partial-street improvements are needed, more than 50 percent of the ultimate paved section may be required.

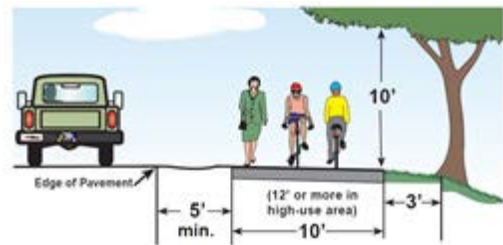
The Standards

Shared-Use Paths

Shared-use paths provide off-roadway facilities for walking and biking travel. Depending on their location, they can serve both recreational and transportation needs. Shared-use path designs vary in surface types and widths. Hard surfaces are generally better for bicycle travel. Widths need to provide ample space for both walking and biking and should be able to accommodate maintenance vehicles. The city may reduce the width of the typical paved shared-

use path to a minimum of eight feet in constrained areas located in steep, environmentally sensitive, historic, or

developed areas of the city. In areas with significant walking or biking demand, the paved shared-use path should be 12 feet; otherwise, it should be 10 feet wide (see sketch, above).



A variety of amenities can make a path inviting to the user. These could include features such as interpretive signs, water fountains, benches, lighting, maps, art, and shelters.

Access Spacing Standards

Access management is a broad set of techniques that balance the need to provide efficient, safe, and timely travel with the ability to allow access to individual destinations. Appropriate access management standards and techniques will reduce congestion and accident rates, and may lessen the need for constructing additional roadway capacity.

Table 2 identifies the minimum and maximum public street intersection and minimum private access spacing standards for streets in Scappoose. New streets or redeveloping properties must comply with these standards to the extent practical, as determined

The Standards

by the city. As the opportunity arises through redevelopment, streets not complying with these standards could improve with strategies such as shared access points, access restrictions (through the use of a median or channelization islands), or closure of access points, as feasible. Like street design and mobility targets, access spacing standards for US 30 are determined by ODOT. ODOT spacing standards are defined in the Oregon Highway Plan, OAR 734-051, and ODOT's Highway Design Manual.

Table 3: Street and Access Spacing Standards

	Arterial	Collector	Neighborhood	Local
Maximum Block Size (Public Street to Public Street)*		530 ft.	530 ft.	530 ft.
Minimum Block Size (Public Street to Public Street)		300 ft.	150 ft.	100 ft.
Minimum Driveway Spacing (Public Street to Driveway and Driveway to Driveway) – Commercial or Industrial	See Oregon Highway Plan	100 ft.	100 ft.	45 ft.
Minimum Driveway Spacing (Public Street to Driveway and Driveway to Driveway) - Residential		45 ft.**	45 ft.	N/A
* If the maximum block size is exceeded, mid-block pedestrian and bicycle accessways should be provided at spacing no more than 330 feet, unless the connection is impractical due to existing development, topography, or environmental constraints.				
** Only if alternate access is not feasible.				

Local Street Connectivity

Much of the local street network in Scappoose is built but not well connected. Multiple access opportunities for entering or exiting neighborhoods are limited. There are a number of locations where neighborhood traffic is funneled onto one single street. This type of street network results in out-of-direction travel for motorists and an imbalance of traffic volumes that can negatively impact residents. A lack of connectivity can result in the need for wider roads, traffic signals and turn lanes (which can negatively impact traffic flow). By providing connectivity between neighborhoods,

The Standards

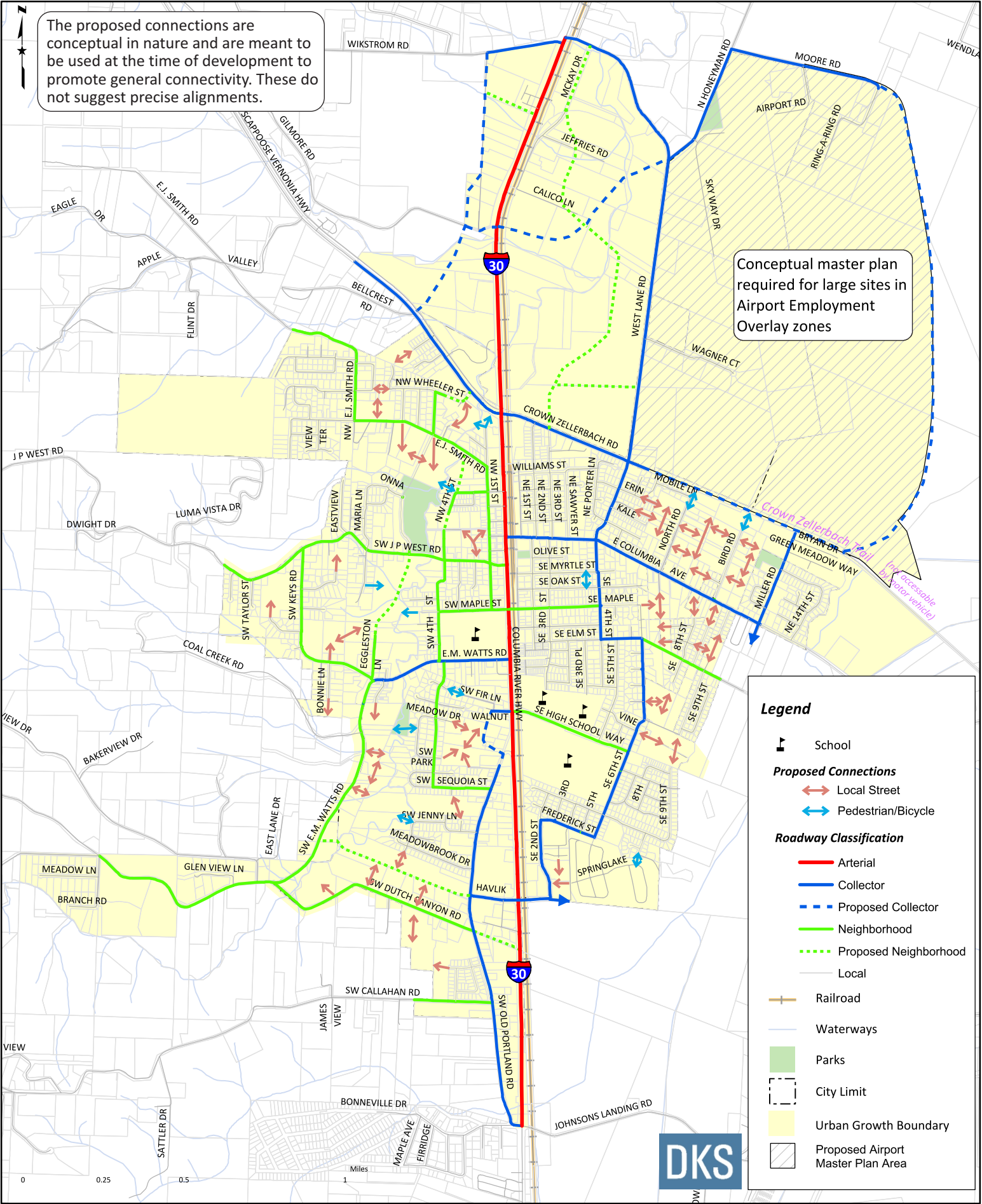
out-of-direction travel and vehicle miles traveled (VMT) can be reduced, accessibility between various travel modes can be enhanced and traffic levels can be balanced among various streets. Additionally, public safety response time is reduced.

Figure 15 shows the conceptual Local Street Connectivity Plan for Scappoose. In most cases, the connectors shown do not represent specific alignments and all are aimed at reducing potential neighborhood traffic impacts by better balancing traffic flows on neighborhood routes. The arrows shown in the figures represent conceptual connections and the general direction for the placement of the connection. Pedestrian/bicycle connections have also been identified and emergency vehicle needs should be considered at these locations. In each case, the specific alignments and design will be better determined upon development review.

To protect existing neighborhoods from potential traffic impacts of extending stub end streets, connector roadways should incorporate neighborhood traffic management into their design and construction. All stub streets should have signs indicating the potential for future connectivity.

Transportation System Management

US 30 could benefit from transportation system management infrastructure. Before future investments are made along this roadway, designs should be reviewed with city and ODOT staff to determine if communications or other intelligent transportation system infrastructure should be addressed as part of the street design/construction.



The Standards

Neighborhood Traffic Management (NTM)/ Traffic Calming

Neighborhood Traffic Management (NTM)/traffic calming refers to street design techniques that slow traffic and make streets (primarily in residential and mixed-use areas) safer and more pleasant for users and adjoining land uses without significantly changing vehicle capacity.

Table 3 lists common traffic calming applications and suggests which devices may be appropriate for streets in the city. Traffic calming measures must balance vehicle speeds and volumes with mobility, circulation, and function. Any traffic calming project should include coordination with emergency service providers to ensure the project does not impede response. See Memo 10 in Volume 2 for a toolbox of traffic calming measures.

Traffic calming influences driver behavior through physical and psychological means, by using one or more of the following:

- Narrowing the street by providing curb extensions or bulbouts, or mid-block pedestrian refuge islands
- Deflecting the vehicle path vertically by installing speed humps, speed tables, or raised intersections
- Deflecting the vehicle path horizontally with chicanes, roundabouts, and mini-roundabouts



The Standards

Table 4: Traffic Calming Measures by Street Functional Classification

	Collector	Neighborhood	Local / Shared
Narrowing travel lanes	Yes	Yes	All calming measures are generally appropriate on local streets that have connectivity (two or more accesses) and are infrequent emergency response routes
Placing buildings, street trees, on-street parking, and landscaping next to the street	Yes	Yes	
Curb Extensions or Bulbouts	Yes	Yes	
Roundabouts	Yes	Yes	
Mini-Roundabouts	Yes	Yes	
Medians and Pedestrian Islands	Yes	Yes	
Pavement Texture	Yes	Yes	
Speed Hump or Speed Table	No	Yes	
Raised Intersection or Crosswalk	No	Yes	
Speed Cushion (provides emergency pass-through with no vertical deflection)	Yes	Yes	
Choker	No	No	
Traffic Circle	No	No	
Diverter (with emergency vehicle pass through)	Yes	Yes	

Mobility Targets

Mobility targets for streets and intersections in Scappoose provide a metric to assess the impacts of new development on the existing transportation system. They are the basis for requiring improvements needed to sustain the transportation system (consistent with the TSP Goal 4) as growth and development occur. Two methods to gauge intersection operations include volume-to-capacity (v/c) ratios and level of service (LOS).

- **Volume-to-capacity (V/C) ratio:** A decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced. If

The Standards

the ratio is projected to be greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and will experience excessive queues and long delays. ODOT mobility targets are based on v/c ratios.



- **Level of service (LOS):** A “report card” rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays. Scappoose mobility targets are based on LOS.

All streets and intersections in Scappoose must operate at or below the adopted mobility targets or mitigation would be necessary to approve future growth. The following mobility targets are for streets under the city’s jurisdiction.

- **Signalized or All-way Stop Controlled Intersections:** The intersection as a whole must meet Level of Service (LOS) “D” or better during the highest one-hour period on an average weekday (typically, but not always, the evening peak period is between 4 p.m. and 6 p.m. during the spring or fall), with a maximum volume-to-capacity (v/c) ratio of 0.90.



- **All-way Stop Controlled Intersections:** Minimum level of service of “D”, with a maximum v/c ratio of 0.90, for the overall intersection.
- **Unsignalized Intersections:** Minimum level of service of “E”, or a maximum v/c ratio of 0.90, for the overall intersection.

The Standards

- **Roundabout Intersections:** Minimum level of service of “D”, with a maximum v/c ratio of 0.90, for the critical approach.

State-owned streets must comply with the mobility targets included in the Oregon Highway Plan. However, because constraints make widening US 30 impractical, OHP targets cannot be met. The TSP recommends that the Oregon Transportation Commission (OTC) adopt alternative mobility targets for the highway since several intersections along US 30 (between Havlik Drive and Scappoose-Vernonia Highway) are expected to experience congestion over multiple hours on an average weekday (up to four to six hours on weekdays) in the future. TSP Volume 2 includes the full discussion of this recommendation. Columbia County does not currently have mobility targets for county roadways, although targets are being planned as part of their current TSP update.



Street Crossings

Roadways with high traffic volumes and/or speeds in areas with nearby transit stops, residential uses, schools, parks, shopping and employment destinations generally require enhanced street crossings with treatments, such as marked crosswalks, high visibility crossings, and curb extensions to improve safety and convenience. Crossings should be consistent with the block spacing standards shown in Table 2. Blocks longer than the maximum block size shown in Table 2 should have mid-block pedestrian and bicycle access ways at spacing no more than 300 feet. Exceptions include where the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, or other factors that may prevent safe crossing (as determined by the city).



The Outcome

How will the constrained investment recommendations in the TSP improve the performance of the transportation network in Scappoose? To answer this question, the TSP evaluated investment decisions and compared them to anticipated trends through 2035.

The Improved Transportation System

Scappoose expects the following results from the TSP by 2035:

- **Enhanced transit stop amenities:** Increased amenities at bus stops will enhance travel convenience and comfort via transit.
- **Maintain Current Level of Transit Service:** While expansion of transit service is recommended and certainly needed, funding for expanded transit operations is not under the city's control. The identification of stable new sources of transit operating funds would be required for any expansion of services.
- **Increased congestion on US 30:** Traffic volumes and congestion will be significantly higher in 2035. During summer months, congestion is likely to be worse than currently experienced. Year round, congestion is likely to begin earlier and end later in the day than it does today.
- **Safer Streets:** Added turn lanes, improved intersection geometrics and traffic control, and managed travel speeds will make streets in Scappoose safer.
- **More walking and biking facilities:** More residents and visitors will be able to walk and bike to destinations in Scappoose on an expanded walking and biking network.



The Outcome

- **Greater street connectivity:** As areas of the city develop, new streets will provide increased motor vehicle, pedestrian, and bicycle connectivity.

To the Planning Horizon and Beyond

The 2016 Scappoose TSP has not resolved all of the city's transportation issues. The following require additional exploration:

Potential Additional Funding Sources

Based on the identified funding gap, Scappoose may wish to consider expanding its funding options in order to fund more of the desired improvements in a timely manner. Cities use the following sources to fund the capital and maintenance aspects of their transportation programs. A variety of factors affect the use of these sources, including the willingness of local leadership and the electorate to burden citizens and businesses with taxes or fees, the availability of local funds the city can dedicate or divert to transportation issues from other competing city programs, and the availability of state and federal funds. The city should consider all opportunities for providing or enhancing funding for the transportation improvements included in the TSP.

- **System Development Charge Increase:** The city currently has system development charges (SDCs) in place for new development projects. The city's current SDC schedule was most recently updated in July, 2015. However, the city's rates are still relatively low compared to other similar jurisdictions. Some cities' fee structures do not allow them to use SDC funds for pedestrian or bicycle only projects. It was assumed that SDC funds could be used for capacity improvement projects for any mode, including pedestrian and bicycle. An SDC rate increase could generate substantial additional funds for



The Outcome

A \$0.03 per gallon Local Gas Tax would allow the city to make an additional \$300,000 worth of investments each year through 2035 (about \$6 million in total)

transportation projects in Scappoose over the 20-year planning horizon.

- **Local Fuel Tax:** Fourteen cities and two counties in Oregon have adopted local gas taxes ranging from one to five cents per gallon. The taxes are paid to the cities monthly by distributors of fuel. Some cities increase their local gas tax during the summer months to place more of the burden on visitors than on year-round residents.

If Scappoose, for example, adopts a local gas tax, the city could expect to generate around \$100,000 per year for each cent per gallon taxed. The process for presenting such a tax to voters needs to be consistent with Oregon state law as well as the laws of the city.

- **Transportation Utility Fee:** A transportation utility fee is a recurring monthly charge paid by all residences and businesses within the city. A city can base the fee on the estimated number of trips a particular land use generates or as a flat fee per residence or business. The city can collect the fee through its regular utility billing. Existing law places no express restrictions on the use of transportation utility fee funds, other than the restrictions that normally apply to the use of government funds, and does not require public vote prior to implementing the fee. Some cities utilize the revenue for any transportation related project, including construction, modernization, and repairs. However, many cities choose self-imposed restrictions or parameters on the use of the funds.

- **ODOT Statewide Transportation Improvement Program (STIP) Enhance Funding:** ODOT has modified the process for selecting projects that receive STIP funding to allow local agencies to receive funding for projects off the state system that enhance system connectivity and improve multi-



The Outcome

modal travel options. The TSP prepares the city to apply for STIP funding.

- **ODOT Highway Safety Improvement Program (HSIP) Funding:** With significantly more funding under the HSIP and direction from the Federal Highway Administration to address safety challenges on all public roads, ODOT will increase the amount of funding available for safety projects on local roads. ODOT will distribute safety funding to each ODOT region, which will collaborate with local governments through the All Roads Transportation Safety (ARTS) Program to select projects that can reduce fatalities and serious injuries, regardless of whether they lie on a local road or a state highway.
- **General Fund Revenues:** At the discretion of the city council, the city can allocate general fund revenues to pay for its transportation program (general fund revenues primarily include property taxes, use taxes, and any other miscellaneous taxes and fees imposed by the city). This allocation becomes a part of the city's annual budget process, and competes with other community priorities set by the city council.
- **Local Improvement District:** Local Improvement Districts (LIDs) can fund capital transportation projects that benefit a specific group of property owners. LIDs require owner/voter approval and a specific project definition. Assessments against benefiting properties pay for the improvements. LID projects that benefit more than the adjacent properties can be used as a match for other funds in the system.
- **Fee in Lieu of Improvements:** As infill development occurs along existing streets, the city often defers improvements (such as sidewalks, curbs, gutters, storm water conveyance, and paving) through a "Waiver of Remonstrance" with the property owner.



The Outcome



When the city determines a need for improvements along the roadway, the city can theoretically collect the fee from the property owner. However, in practice, this is rarely done. As an alternative to “Waivers of Remonstrance”, the city could collect a fee at the time property develops that would go into a fund designated for improvements in the neighborhood. A fee would be easier to administer and more quickly put to use.

- **Debt Financing:** A city can use debt financing to pay for significant capital improvement projects and spread costs over the useful life of a project. Debt, however, must have a funding source to fulfill annual interest and repayment obligations.

Technology Advancements

The TSP is a plan for conditions 20 years into the future; however, it cannot anticipate all advancements in technology or their impact on the way people travel to and in Scappoose.

Advancements could include alternative fuel sources that lower the cost of driving and operating transit service, connected vehicle technology that improves the safety and efficiency of roadways, proliferation of electric-assisted bicycles that take the effort out of traveling across hilly topography and expand the number of travelers who can make that choice of mode. The city should continue to monitor opportunities arising from innovations in transportation technology and their impact on investment priorities.



Detailed Analysis of Physical Constraints

All proposed street extensions in this plan that enhance connectivity show conceptual alignments. The plan has not analyzed these alignments for hydrologic, topographic, or other geological constraints, which could require substantial modification. Detailed surveys need to precede final street alignments for these improvements.

The Outcome

Transit Service Enhancements

While Scappoose has identified several transit improvements in the TSP, many of these improvements would be implemented by Columbia County Rider (CC Rider) and all would require additional funding to expand service operations. Together, Scappoose and CC Rider should continue to evaluate the need to expand services, operations, facilities, funding and promotion and information services, consistent with the 2009 Columbia County Community-wide Transit Plan (CCCTP) and the US 30 Transit Access Plan, as the city and county grow through 2035.

Congestion

Assuming Scappoose grows in accordance with its existing, adopted land use plan, roadways in the city will not be able to meet local level-of-service (LOS) targets or ODOT's roadway volume-to-capacity (v/c) ratio-based mobility targets. This is a common problem in communities with roadways that experience high travel demands. In this situation, adoption of alternative mobility targets is appropriate. Alternative mobility targets reflect realistic expectations for roadway performance at the end of the 20-year planning horizon, based on traffic projections. Adopting realistic alternative targets relieves the state and local governments from having to make investments to comply with targets they cannot possibly achieve. The Alternative Mobility Targets Technical Memorandum (included in TSP Volume 2) documents the need for developing alternative mobility targets for US 30 through Scappoose and describes the recommended new targets.

The proposed alternative mobility targets change the focus from peak traffic volumes during the summer months to average weekday peak hour conditions the rest of the year. The more congested summer months impact life in Scappoose, but the state and city cannot make sufficient investment in the



The Outcome

transportation system to reduce that congestion to desired levels. Even if funding were assumed to be available, it is not clear that any project capable of reducing the congestion could be developed in a way that would be acceptable to the community or would be able to gain the necessary regulatory and environmental approvals. The State and Scappoose must handle the congestion as best they can, by managing travel demand, maximizing the efficiency of the existing transportation system, increasing walking, biking, and transit ridership, and other techniques as described in TSP Volume 2.