

**AN ORDINANCE ADOPTING THE FIRST KING CITY
TRANSPORTATION SYSTEM PLAN LU FILE # 23-01**

RECITALS:

WHEREAS, Oregon Administrative Rule (OAR) Section 660, Division 12 (the Oregon Transportation Planning Rule), specifies the requirements of Statewide Planning Goal 12 that requires cities and counties to prepare and adopt local Transportation System Plans (TSP) for lands within their planning jurisdiction as part of their comprehensive plans; and,

WHEREAS, OAR 660-012-0060 requires any comprehensive plan amendment to be evaluated according to the terms outlined in that OAR to demonstrate whether they will have a significant impact on the transportation system; and,

WHEREAS, the TSP is a comprehensive 20-year plan to guide transportation investments within the planning jurisdiction of the City of King City and the Urban Growth Boundary (UGB); and,

WHEREAS, the Oregon Transportation Planning Rule directs the City to adopt conceptual street maps into the TSP as a road plan for the City of King City system of arterials and collectors; and,

WHEREAS, Volume 2, Transportation System Plan Appendices contain background information and data to support and implement Volume 1 (the “King City Transportation System Plan.”); and,

WHEREAS, in accordance with the Public Involvement and Communication Plan (PICP,) the City of King City has provided several opportunities for public involvement in the Transportation System Plan development, including but not limited to a public project webpage, online open houses, mailed-in survey, in-person tabling events, and community newsletters.

WHEREAS, the City provided notice of the hearings before the Planning Commission and City Council as required by ORS 227.186(4); and,

WHEREAS, on March 22, 2023, the King City Planning Commission held a public hearing and considered all public testimony and recommended approval and adoption of the transportation system plan with special considerations; and,

WHEREAS, on May 17, 2023, the City Council of King City held a public hearing to consider the Planning Commission’s recommendation, hear public testimony, apply applicable decision-making criteria, and to consider appropriate findings and conclusions in support of the adoption; and,

WHEREAS, based upon the recommendations, evidence, and public testimony already in the record and the evidence and testimony presented at the May 17, 2023, City Council public hearing; and,

WHEREAS, Exhibit A, Volumes 1 and 2 show the Transportation System Plan, maps, and projects; and,

WHEREAS, Substantial evidence exists within the record to demonstrate that the proposed TSP, including the maps and projects, meet the Local, Regional, and State law requirements as described in the Recommended Findings and Conclusions.

NOW, THEREFORE, THE CITY OF KING CITY ORDAINS AS FOLLOWS:

SECTION 1. Findings: Based on the findings of facts and conclusions of law contained in the staff report and findings included herein and by this reference made a part hereof, the City of King City Transportation System Plan (TSP) is consistent with Statewide Planning Goals, Oregon Transportation Planning Rule (OAR 660-012), Portland Metro Regional Transportation Functional Plan, King City Comprehensive Plan, Metro UGB Decision (Ordinance 18-1427.) Findings of fact in support of Volumes 1 and 2 of the TSP are adopted by the City Council and attached as Exhibit A.

SECTION 2. Severability Clause: If any section, subsection, sentence, clause, phrase, paragraph, or portion of this ordinance is, for any reason, held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portion hereof.

SECTION 3. Effective Date: This Ordinance shall be effective 30 days after its adoption.

Read the first time on May 17, 2023, and moved to the second reading by roll call vote of the City Council.

Read the second time and adopted by the City of King City Council on June 14th, 2023.

Yeas: 6

Nays: 1

Abstained: 0

Signed by the Mayor on Jun 15, 2023.


Jaimie A. Fender (Jun 15, 2023 09:17 PDT)

Jaimie Fender, Mayor

ATTEST:



Ronnie L. Smith, City Recorder

Approved as to Form:
Peter Watts, City Attorney


Peter O. Watts (Jun 15, 2023 11:23 PDT)

City Attorney



City of King City

TRANSPORTATION SYSTEM PLAN – VOLUME 1

JUNE 2023



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VOLUME 2

Volume 2 of the King City Transportation System Plan includes all background memoranda, and technical data that were the basis for its development. The contents of Volume 2 represent an iterative process in the development of the TSP. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

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CHAPTER 1.

Context for the Plan

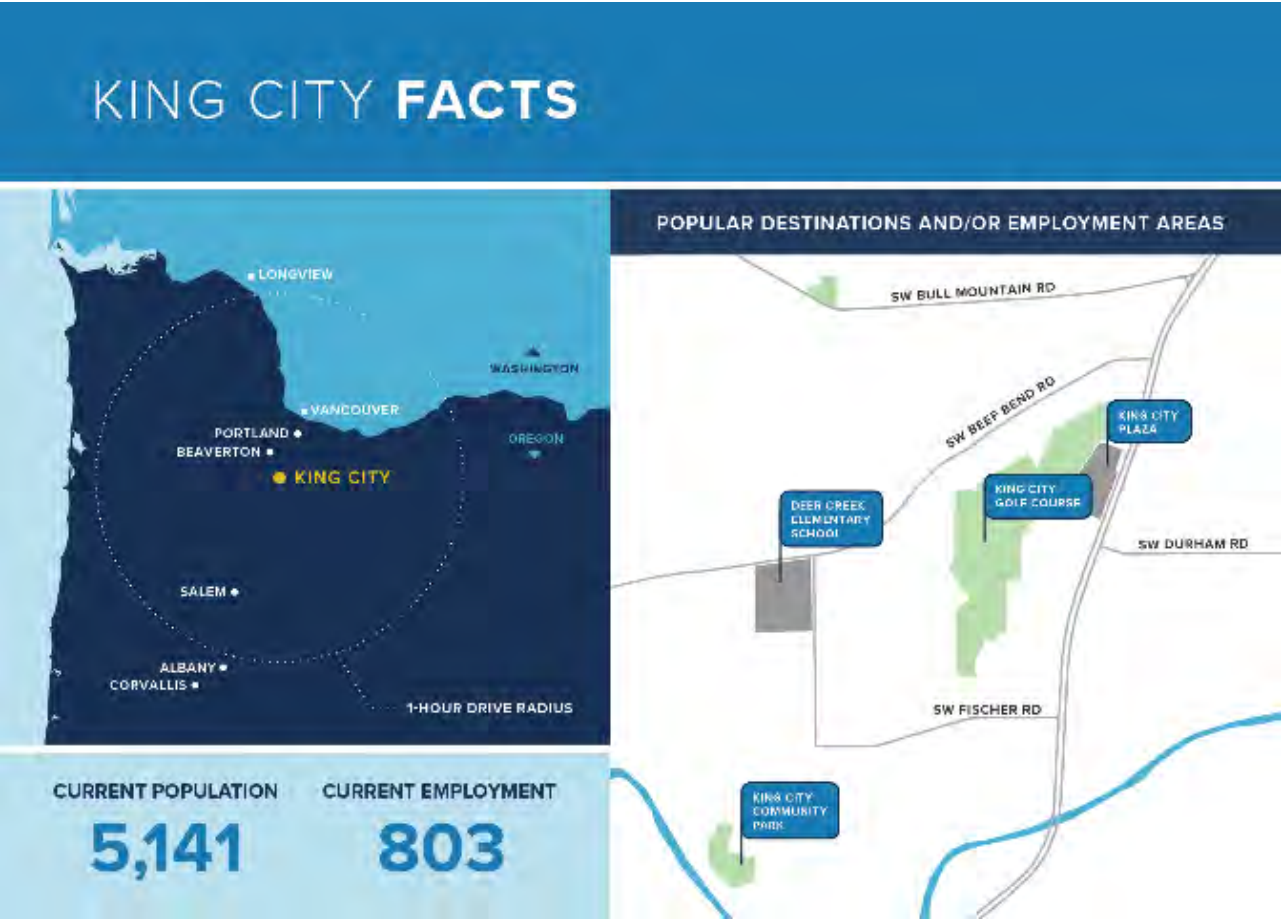


This chapter introduces King City and describes what a Transportation System Plan (TSP) is.

KING CITY AT A GLANCE

Initially developed as adult only retirement community, King City's roots began in 1963 to the south of SW Beef Bend Road, and west of Highway 99W (OR 99W). Here the community developed as one of the first planned unit developments in the region. With an abundance of recreational opportunities to attract residents, including a golf course, community center, and swimming pool. King City quickly grew to around 550 residents by 1966 when it was incorporated. As the City grew from its traditional roots as a retirement community into the 2000's, it has expanded southward and westward with new residential neighborhoods. While age restrictions have been dropped in the City, the original King City Civic Association still maintains those deeded restrictions requiring a 55-or-older householder and barring anyone under 18.

Today, King City has a population of 5,141 residents and includes 803 jobs. It is home to the regionally designated King City Town Center, which includes the King City Plaza, and is within a short distance of regionally significant employment and population centers, including those in the cities of Portland, Tigard, Beaverton, and Sherwood.



PLANNING AREA

The current City limits, shown in Figure 1, are generally bounded by OR 99W to the east, SW 137th Avenue to the west, SW Beef Bend Road to the north, and the Tualatin River to the south. Beyond the current City limits, is the Urban Growth Boundary (UGB), also shown in Figure 1. The UGB is a land use planning tool designed to control urban expansion and promote the efficient use of land, public facilities, and services. Land inside the UGB is intended for urban development that is supported by urban services such as roads, water and sewer systems, parks, schools and fire and police protection. This boundary also supports 20-years' worth of population and employment growth, of which cities must plan for urban services within their designated planning boundary.

King City is within the Portland metropolitan area's UGB managed by the Portland area regional government agency, Metro. The City is responsible for planning transportation infrastructure for all modes within its designated boundary, hereby referred to as "planning area", with the TSP being the City's tool for this effort. The City's planning area extends from OR 99W to SW Roy Rogers Road and from SW Beef Bend Road to the Tualatin River and portions of SW Elsner Road (see Figure 1).

The City's planning area includes three distinct areas: 1) the existing City limits; 2) developed unincorporated areas; and 3) the UGB expansion area, referred to as Kingston Terrace, which is planned for future urban development. The TSP focuses on how to improve the existing transportation system for areas 1 and 2 noted above, and how to create a new system to serve future development in area 3.

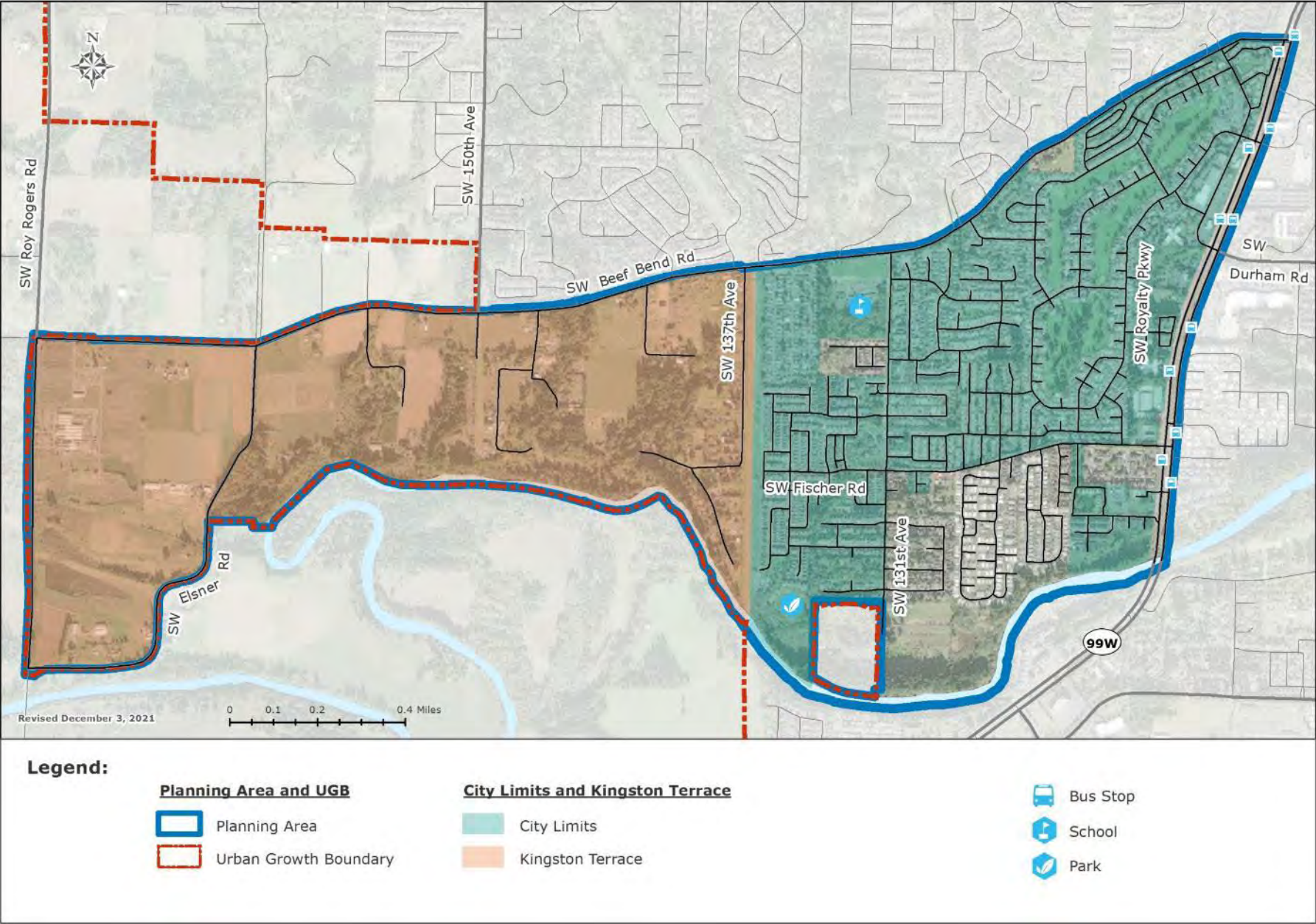
KINGSTON TERRACE

King City led a concept planning effort in 2017-2018 for the Kingston Terrace area, formerly called Urban Reserve Area 6D (URA 6D). This area had been identified by Metro as a suitable location for future urbanization, as it was determined that the existing UGB could not accommodate the anticipated future urban development and the additional land necessary for homes, businesses, and public facilities. The Metro UGB was later amended in 2018 to add four UGB expansion areas, including the King City URA 6D Concept Plan area.

A master planning process followed for Kingston Terrace, to further refine the 2018 Concept Plan. A series of technical reports was prepared as part of this TSP in response to Metro conditions for the UGB amendment that assessed market demand for various types of land uses, outlined urban design guidelines for the area, and ultimately provided the land use assumptions that were used to develop the TSP (see TSP Chapter 3). More information can also be found in the following technical reports included in the Appendix: 1) URA 6D: Existing Land Use Conditions; 2) King City Market Analysis: Urban Reserve Area 6D; 3) Urban Design Guidebook; and 4) Land Use Assumptions Report.

Most of the future housing and employment growth over the next 20-years (i.e., through the TSP future horizon year of 2040) will be in Kingston Terrace. The conceptual alignments of transportation facilities identified in this TSP are based on the Master Plan. The adoption of the TSP was coordinated with the development and adoption of the Kingston Terrace Master Plan.

FIGURE 1: PLANNING AREA FOR KING CITY



PURPOSE OF THE TSP

The King City TSP is a long-range plan to guide transportation investments within the City’s planning area through the future horizon year of 2040. These transportation system improvements address current deficiencies and serve future local and regional needs, and align with the community’s goals, objectives, and vision for the future. This TSP was developed through community and stakeholder input and is based on the City’s transportation system needs, opportunities, and anticipated available funding. The state and regional requirements of the TSP are summarized in Figure 2 and Figure 3.

FIGURE 2: STATE REQUIREMENTS OF A TRANSPORTATION SYSTEM PLAN

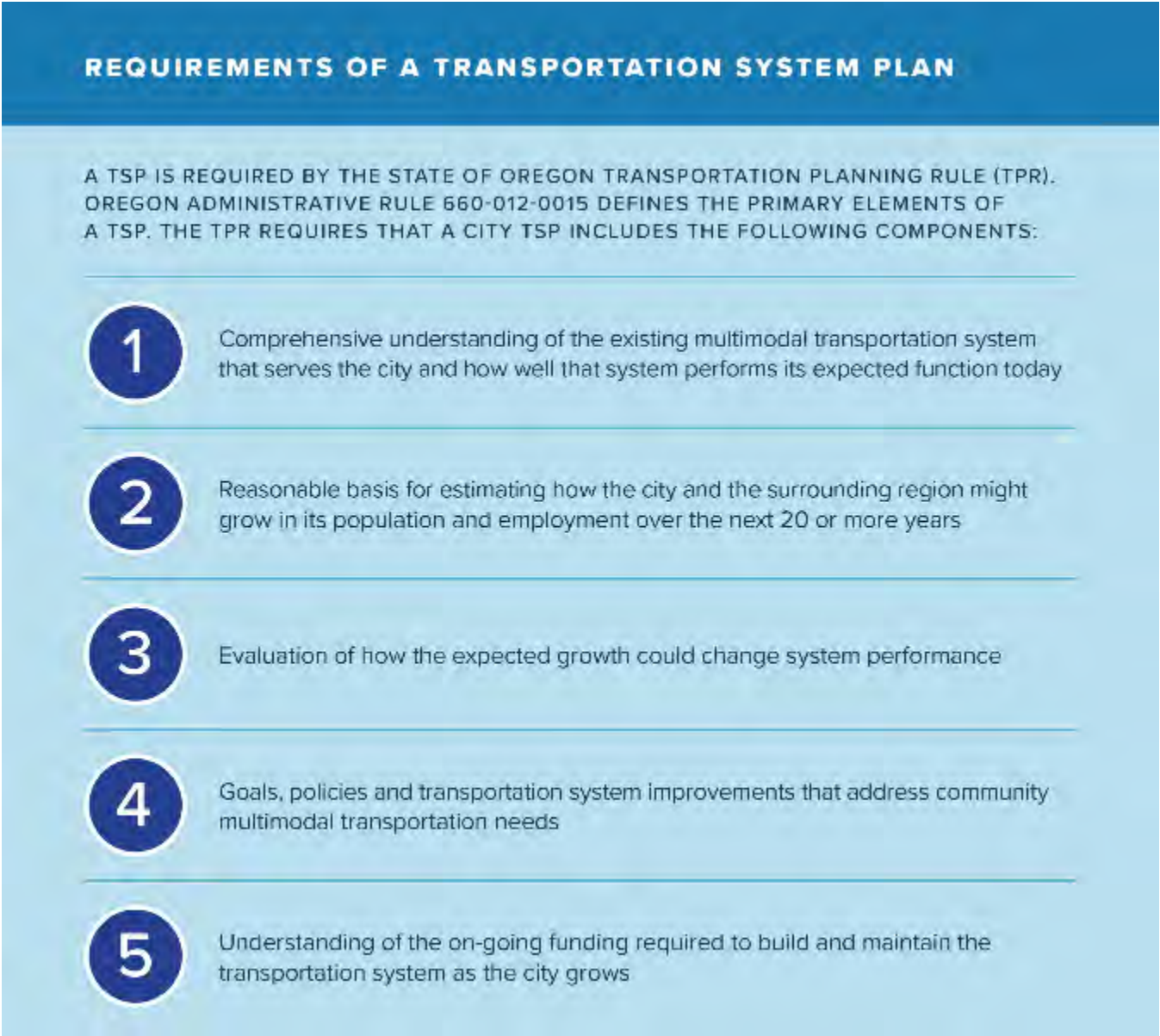


FIGURE 3: REGIONAL REQUIREMENTS FOR THE TRANSPORTATION SYSTEM PLAN

Metro's Regional Transportation Functional Plan (RTFP) addresses how local TSPs should implement the Regional Transportation Plan through the following directives:

- Regional and state transportation needs identified in the 2040 RTP should be included in local plans.
- Local needs must be consistent with the RTP in terms of land use, system maps and non-single occupancy vehicle (SOV) modal targets.
- When developing solutions, local jurisdictions must consider a variety of strategies, in the following order:
 - TSMO (Transportation System Management Operations) including localized Transportation Demand Management, safety, operational and access management improvements.
 - Transit, bicycle, and pedestrian projects.
 - Traffic calming.
 - Land use strategies in OAR 660-012-0035(2) to reduce auto-dependence.
 - Roadway connectivity that includes pedestrian and bicycle facilities.
 - Motor vehicle capacity projects.
- Local jurisdictions can propose regional projects as part of the RTP process.
- Local jurisdictions can propose alternate performance and mobility standards; however, changes must be consistent with regional and statewide planning goals.
- Local jurisdictions must include performance measures for safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit mode shares.
- Local parking regulations must be consistent with the RTFP.

In compliance with state and regional requirements summarized in Figure 2 and Figure 3, King City created its first TSP, which will be used to make strategic decisions about transportation system investments, to support grant applications to fund future projects, and to ensure that projects are built in coordination with land use actions and future development, particularly in Kingston Terrace.

CHAPTER 2.

How the Plan Was Developed



This chapter describes how the TSP was developed. The process involved a formal decision-making structure, community engagement, and a structured technical analysis.

SETTING DIRECTION FOR THE PLAN

A transportation vision, and set of goals, objectives, and performance measures (see Figure 4) were used to guide the project team in the development, evaluation, and prioritization of solutions that best fit the community and provided the basis for policies to support Plan implementation. They were established with guidance from the Technical Advisory Committee (TAC) and the public.

Collectively, the transportation-related goals, objectives, and performance measures describe what the community wants the transportation system to do in the future, as summarized by a **vision statement**. A vision statement generally consists of an imaginative description of the desired condition in the future. It is important that the vision statement for transportation align with the community’s core values.

Goals and objectives create manageable stepping stones through which the broad vision statement can be achieved. **Goals** are the first step down from the broader vision. They are broad statements that should focus on outcomes, describing a desired end state. Goals should be challenging, but not unreasonable.

Each goal is supported by more finite **objectives**. In contrast to goals, objectives should be specific and measurable. Where feasible, providing a targeted time period helps with objective prioritization and achievement. When developing objectives, it is helpful to identify key issues or concerns that are related to the attainment of the goal.

The solutions recommended through the TSP must be consistent with the goals and objectives. To accomplish this, **evaluation criteria** were developed based on the goals and objectives. For the King City TSP, they were used to inform the selection and prioritization of projects and policies for the plan by describing how well they support goal areas. The methodology for calculating the scores for each criterion can be found in Deliverable 5D and 5E, Transportation Performance Measures and Project Prioritization Framework, included in the Appendix.

FIGURE 4: DIRECTION FOR THE PLAN



VISION FOR THE PLAN

The overall vision statement for the TSP is described below.

“BY 2040, WE ENVISION A CITY WITH A **SMART AND EFFICIENT** TRANSPORTATION SYSTEM THAT SUPPORTS HEALTHY AND ACTIVE CITIZENS OF **ALL AGES AND ABILITIES**. PEOPLE TRAVEL IN A SAFE, ACCESSIBLE, AND CONVENIENT MANNER, USING TRANSPORTATION OPTIONS THAT ALLOW ALL USERS TO MEET DAILY NEEDS. THE TRANSPORTATION SYSTEM SUPPORTS A COMPETITIVE ECONOMY THAT INCREASES AFFORDABILITY AND PROVIDES FOR AN **ENHANCED NATURAL AND CULTURAL ENVIRONMENT**.”

GOALS AND OBJECTIVES FOR THE PLAN

The King City TSP goals and objectives are documented below.



GOAL 1

ACCESSIBILITY AND CONNECTIVITY

THE TRANSPORTATION SYSTEM IS CONVENIENT, ACCESSIBLE, AND CONNECTS PEOPLE TO DESTINATIONS THROUGHOUT THE CITY AND BEYOND.

- Objective a.** Provide direct, continuous, and connected transportation facilities to minimize out-of-direction travel and decrease travel times for all users.
- Objective b.** Increase the proportion of trips made by walking, bicycling, transit, and carpooling.
- Objective c.** Complete all gaps in the bicycle and pedestrian networks, including trails.
- Objective d.** Increase household and job access to transit.
- Objective e.** Increase household and job access to low stress bike and walk networks.
- Objective f.** Increase travel options that serve popular destinations, such as schools, services, and parks.
- Objective g.** Increase the number of jobs that households can reach within a reasonable travel time.



GOAL 2

SAFETY AND SECURITY

THE TRANSPORTATION SYSTEM IS SAFE AND SECURE FOR PEOPLE OF ALL AGES AND ABILITIES.

- Objective a.** Reduce fatal and serious injury crashes for all modes of travel.
- Objective b.** Reduce crashes involving pedestrians and bicyclists by improving conditions along and across streets and at other conflict points with motor vehicles.
- Objective c.** Ensure the pedestrian and bike thoroughways are well maintained and clear of debris, obstacles, and obstructions.
- Objective d.** Provide attractive streetscapes that encourage active transportation, appropriate traffic volumes, vehicle speeds, and safety for all users.
- Objective e.** Reduce the transportation system's vulnerability to natural disasters and climate change.



GOAL 3

HEALTHY PEOPLE AND ENVIRONMENT

THE TRANSPORTATION SYSTEM PROTECTS THE NATURAL, CULTURAL, AND DEVELOPED ENVIRONMENTS, AND ENCOURAGES HEALTHY AND ACTIVE LIVING FOR ALL THROUGH COMFORTABLE AND CONVENIENT, LOWER-POLLUTING TRANSPORTATION ALTERNATIVES.

- Objective a.** Reduce vehicles miles traveled per capita.
- Objective b.** Improve public health by promoting and providing safe, comfortable, and convenient active transportation options to meet daily needs and access services.
- Objective c.** Design all transportation facilities to be welcoming and attractive for all people walking and bicycling.
- Objective d.** Increase household access to parks, open spaces, and natural areas.
- Objective e.** Use sensitive design and mitigation approaches to natural, cultural, and developed resources.
- Objective f.** Reduce transportation-related air pollutants.



GOAL 4 EQUITY

THE TRANSPORTATION SYSTEM ELIMINATES TRANSPORTATION-RELATED DISPARITIES AND BARRIERS AND IS AFFORDABLE FOR ALL USERS.

- Objective a.** Reduce household transportation costs by providing walkable neighborhoods, active transportation options, and reduced reliance on motor vehicle travel.
- Objective b.** Develop a multimodal transportation system that allows all users to access employment, education, and services.
- Objective c.** Develop a low stress bike and walk network for users of all ages and abilities.
- Objective d.** Promote transportation investments that offer system connectivity and efficiency benefits and avoid, minimize, and mitigate negative impacts.
- Objective e.** Prioritize infrastructure investments that serve those with the least access to transportation resources and with the greatest mobility needs.



GOAL 5 RELIABILITY AND EFFICIENCY

MANAGE AND OPTIMIZE THE TRANSPORTATION SYSTEM TO EASE CONGESTION SO PEOPLE AND GOODS CAN AFFORDABLY, RELIABLY, AND EFFICIENTLY REACH THEIR DESTINATION.

- Objective a.** Build an integrated and connected system of roadways, freight routes, transit, bicycle, and pedestrian facilities.
- Objective b.** Build infrastructure and capacity to support electric vehicles and other emerging technologies to increase travel options.
- Objective c.** Leverage technological advances to increase efficiency of travel across all modes for all road users.
- Objective d.** Increase the number of people and businesses with access to travel information.
- Objective e.** Increase the number of households and businesses with access to outreach, education, incentives, and other tools that increase shared trips and use of travel options.



GOAL 6

FISCAL RESPONSIBILITY

STRATEGICALLY DESIGN, OPERATE, AND MAINTAIN THE TRANSPORTATION SYSTEM TO MAXIMIZE ASSETS, MINIMIZE COSTS, AND ENHANCE THE SURROUNDING COMMUNITY THROUGH RIGHT-SIZED INFRASTRUCTURE.

- Objective a.** Preserve and maintain transportation system assets to maximize their useful life and minimize project construction and maintenance costs.
- Objective b.** Build transportation infrastructure that is sized appropriately and encourages economical operation and maintenance.
- Objective c.** Align the function of transportation facilities with evolving character and design of the cross-section to enhance the adjacent land uses through right-sized infrastructure.
- Objective d.** Develop new revenue sources to prepare for increased travel demand, balancing fairness and equity across the community.



GOAL 7

COLLABORATION

THE TRANSPORTATION SYSTEM DECISIONS ARE MADE IN A TRANSPARENT AND COLLABORATIVE MANNER, AND THE BENEFITS AND BURDENS OF INVESTMENTS ARE DISTRIBUTED EQUALLY AMONG ALL USERS.

- Objective a.** Create a multimodal transportation system that seamlessly connects to existing and planned infrastructure in surrounding communities.
- Objective b.** Make transportation investment decisions using a performance-based planning and programming framework that is aligned with the local and regional goals and supported by meaningful public engagement, multimodal data, and analysis.
- Objective c.** Improve coordination and cooperation among the owners and operators of the transportation system to enhance the efficiency of roadways and multimodal facilities, and encouraging improved transit service.
- Objective d.** Engage a wider diversity of people to provide input at all stages of developing and maintaining the transportation system and services.

PERFORMANCE BASED PLANNING PROCESS

The TSP utilizes a performance-based planning process. The community vision is distilled into the measurable goals and supporting objectives. These goals and objectives were used to identify evaluation criteria to help evaluate potential projects to enhance transportation system performance, and to measure long-term alignment between King City's transportation system and the community's vision, goals, and objectives. The plan process is illustrated below in Figure 5, along with the key questions that were considered during three development stages of the TSP.

FIGURE 5: PERFORMANCE BASED PLANNING PROCESS



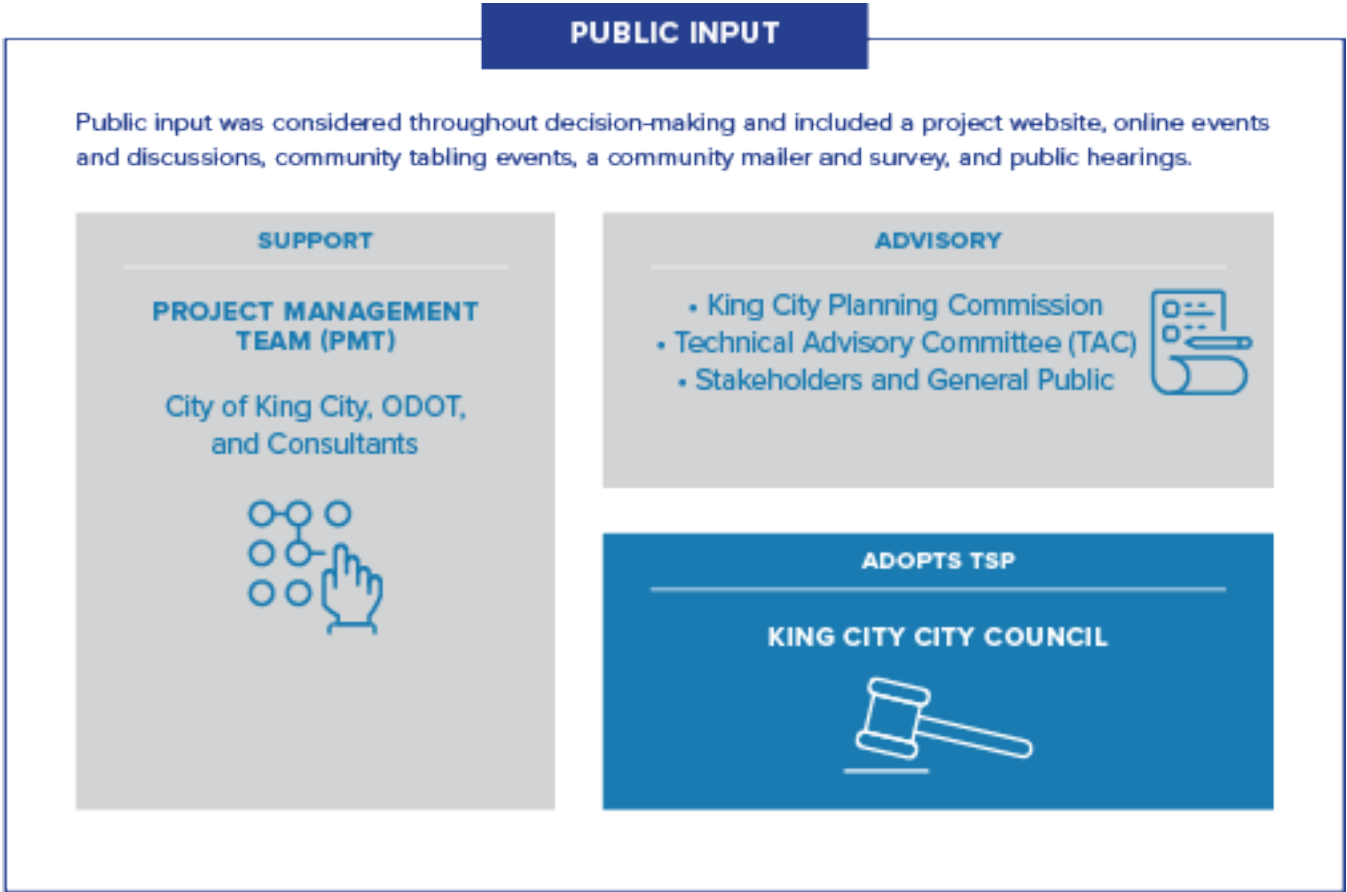
DECISION MAKING STRUCTURE

The decision-making structure for this TSP was developed to establish clear roles and responsibilities throughout the project. The decision-making structure (Figure 6) established a framework for broad-based community engagement for the project.

As the TSP was developed, the Project Management Team (PMT) worked with a Technical Advisory Committee (TAC) that included local business representatives, emergency service and transit providers, and agency staff members from the City of King City, Washington County, City of Tigard, City of Beaverton, the Oregon Department of Transportation, Metro, and the Oregon Department of Land Conservation and Development. The TAC was formed to provide community-based recommendations, and informed and guided the plan by reviewing draft deliverables, providing insight into community perspectives, commenting on technical and regulatory issues, and providing recommendations for the TSP.

The City Council and Planning Commission for King City were briefed during the development of this plan throughout the process. The PMT made recommendations to the City Council based on technical analysis and community input. The City Council made all final decisions pertaining to this TSP. The adoption of the TSP was coordinated with the development and adoption of the Kingston Terrace Master Plan.

FIGURE 6: KING CITY TSP ROLES AND RESPONSIBILITIES



PUBLIC ENGAGEMENT

Public outreach was conducted between September 2020 and June 2021 to share information about the TSP project. Community members, stakeholders, and other interested parties were invited to share their ideas and feedback about how people currently get around, what can be improved, and potential transportation projects. This feedback was instrumental in guiding the development of the TSP, including a list of transportation projects, which will continue to be further refined through the Kingston Terrace Master Plan project.

The Public Engagement Plan for the TSP, included in the Appendix, considered the demographic makeup of the project study area to inform outreach activities. Due to the COVID-19 pandemic, several engagement opportunities were adapted (virtual, in-person and by mail) to enable community members to safely participate and provide meaningful input. Approximately 350 people participated through a variety of outreach opportunities. These opportunities are summarized in Figure 7. These engagement opportunities were promoted through social media posts on the King City Facebook page, Nextdoor, Twitter, and Instagram, updates on the project website, postcards mailed to residents within the planning area, emails sent to interested parties, stakeholders, and community organizations, and press releases.



TABLING EVENT WHERE PEOPLE COULD TALK TO STAFF AND PROVIDE INPUT ON PROJECTS

FIGURE 7: PUBLIC ENGAGEMENT FACTS



SUMMARY OF COMMUNITY FEEDBACK

Overall, participants expressed satisfaction with the City’s transportation network, particularly the street, walking, and biking networks. Most participants indicated that they predominantly use a car to get around, so there were relatively few comments regarding transit service. A complete summary of the outreach efforts can be found in the Appendix.

Common themes:

- **Safety of pedestrians and bicyclists.** Many expressed a desire to see more walking and biking trails throughout the City, preferable separated from vehicle traffic.
- **Traffic and potential impacts to neighborhoods.** Many residents expressed concerns with expected population growth in the UGB expansion area (Kingston Terrace) and the potential impact it could have on the level of traffic on existing streets.
- **Vehicles travelling unsafe speeds.** Many noted that speeding was already a problem and were worried it would get worse with increased vehicular traffic.
- **Desire to remain isolated and exclusive.** Many residents expressed concerns about a connected street network, preferring instead long cul-de-sacs or loops that feed back to Beef Bend. Many participants were concerned that an extension of SW Fischer Road or SW Capulet Lane would negatively impact the Edgewater and Rivermeade communities and suggested that instead other alternatives be considered such as widening SW Beef Bend Road to accommodate east/west vehicle traffic.

TECHNICAL DEVELOPMENT

Figure 8 illustrates the technical tasks involved in creating the TSP. These are categorized in three major stages: the first to understand system needs and constraints, the second to develop solutions, and the third to prepare and adopt the plan. Community input guided the TSP development through all stages.

FIGURE 8: KING CITY TSP DEVELOPMENT TECHNICAL TASKS

UNDERSTAND	EVALUATE	RECOMMEND / ADOPT
<ul style="list-style-type: none">• Discuss community values and transportation goals• Evaluate funding for transportation improvements• Evaluate existing conditions and future growth trends• Coordinate with state and regional plans	<ul style="list-style-type: none">• Develop draft solutions: projects, programs, and standards for all modes of travel• Evaluate and refine draft solutions through community outreach	<ul style="list-style-type: none">• Prepare Draft Transportation System Plan• Public Adoption Hearings (TSP)• Publish Adopted Plan

CHAPTER 3.

King City Transportation System Today & Tomorrow



This chapter describes the transportation system as it exists and operates today and in the future. The assessment is used to identify community transportation needs and determine where the transportation system can be improved to better accommodate them. Needs were determined based on a comprehensive multimodal existing conditions analysis and projecting future conditions through the planning horizon (2040) based on assumed growth in households and employment, and the transportation standards from Chapter 4.

FACTORS IMPACTING TRAVEL DECISIONS

Travelers often weigh a variety of factors when deciding how to commute to or from their destination. Whether the trip will be via motor vehicle, walking, bicycle, public transportation, golf cart, scooter, or other mode, the choice is often a balance between ease and convenience of travel, travel cost, and travel time.

LAND USE AND KEY DESTINATIONS

Land use is a key component of transportation system planning. Where people live and where they go to work, shop, or access services and the distance between these key destinations has a big impact on how they get around and the demands they place on the transportation system. The King City Town Center on both sides of OR 99W, and the future town center in Kingston Terrace along SW Beef Bend Road and SW Roy Rogers Road will be the biggest employment centers in King City, while residential land uses will be located between these employment areas.

Many trips also occur between community amenities within the City's planning area, including parks, civic (e.g., schools, libraries, community centers), essential retail and services (e.g., grocery stores, pharmacies), and medical uses. These amenities are primarily located in the King City Town Center, on both sides of OR 99W. In addition, the King City Community Park is located at the south end of the City along the Tualatin River, while Deer Creek Elementary School is located at the north side along SW Beef Bend Road (see the Appendix for the location of these destinations). Future community amenities will also likely be built as development occurs in the Kingston Terrace area.

Those destined for a park or school generally have a higher likelihood to walk or bicycle than those going to work or shopping. The distance of that destination also plays a role in mode choice. Trips that are shorter generally present a better opportunity to walk or bicycle, and longer distance trips more often are conducive to transit or motor vehicle modes. Residents in the City's planning area who work outside of it (as well as people who work in the City's planning area but live elsewhere) are likely to commute by motor vehicle due to travel distance, commute time, and/or lack of adequate facilities. However, some commuters may choose bicycling or transit if the regional transportation system offers convenient and comfortable biking facilities or transit services between destinations.

QUALITY AND AVAILABILITY OF FACILITIES

The availability of sidewalks, shared-use paths, curb ramps to provide wheelchair access, crosswalks, and bicycle facilities increases the comfort and access of those walking and biking. The lack of or poor quality of these facilities, particularly along or across higher volume or higher speed roadways, discourages people from utilizing non-motorized vehicle modes of transportation.

For transit, the distance to bus stops, frequency of service, route coverage, connections to other transportation modes, and amenities at stops are some of the factors that play a role in a user's decision to utilize it.

DEMOGRAPHICS

As shown in Table 1 and Figure 9, residents of King City have a median age of 51, with about 39 percent of all residents within the peak working age range (i.e., ages 25 to 59) and about 39 percent of the population over the age of 60. Both age demographics are significantly different than those of the region and state, with the City accounting for 10 percent fewer working aged residents and nearly a 20 percent larger share of residents aged over 60.

As growth continues in the City, particularly in the Kingston Terrace area, it will likely result in an increase in the share of younger families, similar to that of the region and state. Although the City will always have a significant share of older residents given its retirement community origins. With the shifting age demographic, the City will continue to see people of all ages and abilities walking, biking, and using transit. It will also continue to see a lower share of work commute trips when compared to other cities in the region given the significant retirement community.

FIGURE 9: KEY DEMOGRAPHICS



TABLE 1: KING CITY AGE DEMOGRAPHICS

AGE	KING CITY	WASHINGTON COUNTY	OREGON
UNDER 19 YEARS	23%	32%	31%
20-24 YEARS	4%	6%	7%
25-44 YEARS	22%	30%	27%
44-59 YEARS	17%	20%	20%
60 YEARS AND OLDER	39%	18%	23%
MEDIAN AGE	51.4	36.4	39.2

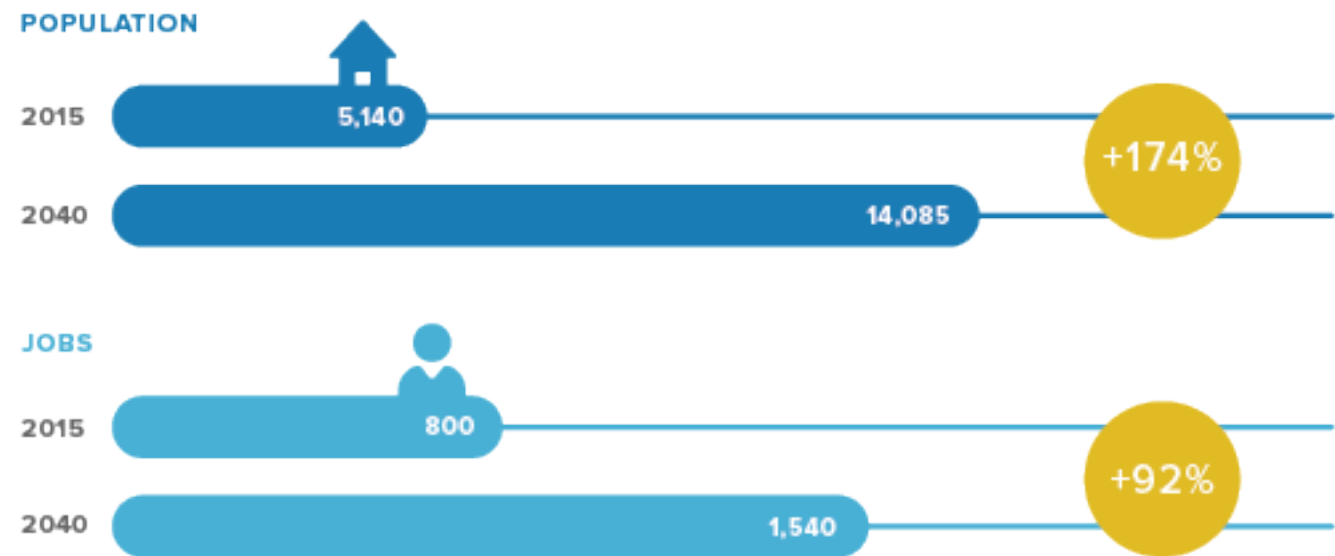
POPULATION AND EMPLOYMENT GROWTH

As growth occurs to the year 2040, the demands on the City’s transportation system will be influenced by changes in population, housing, and employment. These changes in travel demands will require better ways to manage the system, more choices for getting around, and targeted improvements to make the system safer and more efficient.

The King City planning area is growing, and it is estimated that about 8,945 more people will live here by 2040. Coupled with the current estimated population of 5,140 for the King City planning area, the population in 2040 is forecast to be about 14,085. This includes an estimated 4,125 new households by 2040, for a total of 6,990 ¹.

There are currently about 800 jobs in King City’s planning area, and that total is estimated to increase to 1,540, with 740 more people working in the City’s planning area by 2040 (see Figure 10). Projections for job growth indicate that the King City Town Center along OR 99W, and the future town center in Kingston Terrace along SW Beef Bend Road and SW Roy Rogers Road are likely to be the biggest employment centers in King City.

FIGURE 10. KING CITY PLANNING AREA POPULATION AND JOB GROWTH TRENDS



Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models; based on the King City planning area.

¹ The land use assumptions (population, household and jobs) for all planning area Transportation Analysis Zones (TAZs) were updated based on growth for 2050 as recommended by the TAC and reflected in the Land Use Assumptions Report in the Appendix. The land use assumptions for TAZs in Tigard’s River Terrace West and South areas were also updated to reflect the latest assumptions from that process (i.e., 4,541 housing units and 460 jobs).

TRAVEL DEMANDS AND CHARACTERISTICS

The number of people who choose to walk, bike, ride transit, or drive along with the distances they travel is important for assessing how well existing transportation facilities serve the needs of users. Available data on travel demand, travel mode choice, and trip length are used to better understand travel behavior in the community and inform the needs analysis for the transportation system. This data is largely derived from Washington County's Westside Focus Area Travel Demand Models, which is based on Metro's Travel Demand Model. Additional data is available from the US Census Bureau on employment-based trips; however, no other travel data is available from this source.

The following sections provide a summary of travel demands and characteristics in the City's planning area.

DAILY PERSON TRIPS

The increase in the number of residents and jobs in the King City planning area increases the overall number of person trips generated. Table 2 summarizes the total person trips (i.e., drive alone, shared ride, transit, walk, and bike trips) during an average weekday in the King City planning area for year 2015 and 2040. The transportation network in the planning area accommodates nearly 23,000 person trips during an average weekday as of 2015, and that number is estimated to increase by over 11,000 through 2040, to 34,148 daily person trips if the land develops according to the land use assumptions during an average weekday. Of these daily person trips in 2015, over 2,300 were bike, walk, or transit trips, and that amount is expected to increase by nearly 70 percent through 2040, to 4,003 daily trips. Drive alone trips (i.e., single occupant vehicle) are expected to increase by over 5,000 through 2040 during an average weekday, but this represents the smallest growth rate of all modes, at 43 percent. This is representative of the increase in jobs available in the planning area, and corresponding increase in retail or other destinations in closer proximity to households.

TABLE 2: PERSON TRIPS IN KING CITY PLANNING AREA

AVERAGE WEEKDAY PERSON TRIPS BY MODE	2015 DAILY PERSON TRIPS	2040 DAILY PERSON TRIPS	DAILY GROWTH (2015-2040)	DAILY GROWTH RATE (2015-2040)
DRIVE ALONE TRIPS (SOV)	12,044	17,220	5,176	43%
SHARED RIDE TRIPS	8,559	12,925	4,366	51%
TRANSIT TRIPS	1,210	2,110	900	74%
WALK TRIPS	846	1,324	478	57%
BIKE TRIPS	317	569	252	79%
TOTAL PERSON TRIPS	22,976	34,148	11,172	49%
TOTAL NON-SOV TRIPS	10,932	16,928	5,996	55%
TOTAL BIKE, WALK, TRANSIT TRIPS	2,373	4,003	1,630	69%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models; based on the King City planning area.

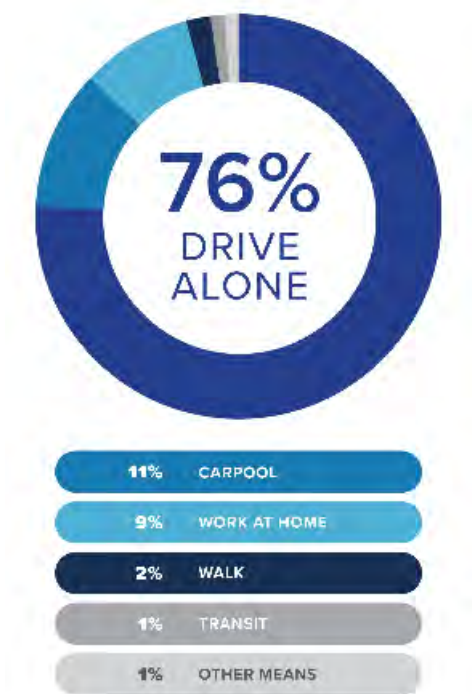
COMMUTER TRIPS

Much of the traffic in the King City planning area, especially during the more congested weekday peak periods, is related to employment. Residents in the King City planning area who are employed overwhelmingly commute to work outside of the planning area (98 percent), while jobs in the planning area are overwhelmingly filled by people who live outside of the planning area (94 percent)².

On average, almost 76 percent of employed residents in the King City planning area commute to work using single-occupant motor vehicles. About 11 percent of residents carpool to work and the remaining 13 percent work from home, walk, take transit, or use some other means of travel (see Figure 11).

About nine percent of employed residents in the King City planning area worked from home pre-COVID, and that figure likely increased due to COVID-19. It is not yet known how many of those workers will continue to telework after the threat of COVID-19 passes, but it seems likely that a higher percentage of workers will continue teleworking, at least part time. Any increase in the remote work share will change the demand on streets, including when and how they travel.

FIGURE 11: KING CITY PLANNING AREA COMMUTER MODE SHARE

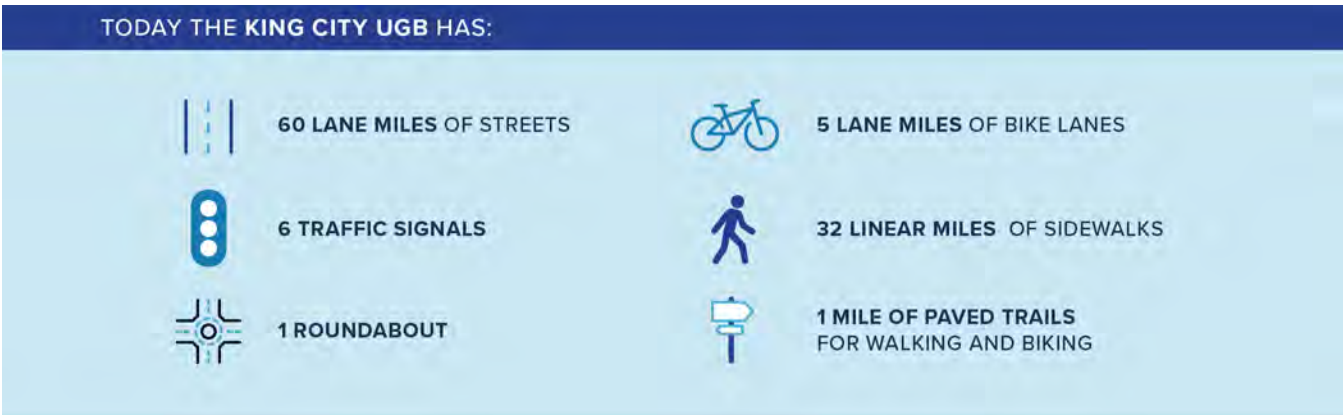


Source: US Census Bureau, 2015-2019 American Community Survey

² US Census Bureau, OnTheMap. Home/Work Distance/Direction Analysis, 2018.

TRANSPORTATION SYSTEM FACTS

To address changing transportation needs within the City’s planning area through 2040, the existing and future travel conditions must be considered. The transportation system review documented the existing pedestrian, bicycle, transit, and motor vehicle infrastructure. It also identified shortfalls and limitations regarding how people can travel within the City (such as lack of bike lanes or sidewalks). Solutions are identified in Chapter 5 for transportation infrastructure that is determined to not maintain acceptable service levels for residents.



STREET NETWORK

This TSP is less focused on reducing vehicle congestion, and instead addresses vehicle speeds, vehicle flow, and safety for everyone using the street. Traditionally, agencies have widened streets to respond to traffic congestion. But widening does not always work to reduce congestion in the long term. Widening is costly, has negative effects on adjacent properties, and makes the street even less safe and inviting for walking and biking. This TSP uses widening to add capacity as only the last option to respond to vehicle congestion issues, consistent with the regional requirements summarized in Figure 3 from Chapter 1. Instead, the TSP emphasize redesigning streets to slow vehicles and increase safety. The design of a street influences how a person drives more than the actual posted speed limit. For this reason, this TSP includes street standards designed so that vehicles operate more slowly, with projects to add roundabouts or mini roundabouts at intersections, center turn lanes and medians, and narrow travel lanes (i.e., 10 feet).

KEY STREETS

Major streets border the planning area, including:

- OR 99W (ODOT jurisdiction) that runs north-south along the east edge and provides a major connection with Tigard and Portland to the north, and Sherwood and McMinnville to the south.
- SW Roy Rogers Road (Washington County jurisdiction) that runs north-south at the west end, connecting SW Scholls Ferry Road to the north with OR 99W to the south in Sherwood.
- SW Beef Bend Road (Washington County jurisdiction) that runs east-west to the north and connects OR 99W with SW Roy Rogers Road.

Key streets that connect to OR 99W and provide access to neighborhoods are SW Royalty Parkway, SW 116th Avenue (SW Durham Avenue), and SW Fischer Road. Key streets that connect to SW Beef Bend Road include SW 116th Avenue, SW 131st Avenue, SW 137th Avenue, SW 150th Avenue, and SW Elsner Road. Existing connections to SW Roy Rogers Road are limited to SW Beef Bend Road and SW Elsner Road.

The regional connectivity requirements from the Metro Regional Transportation Plan require, to the extent possible, Arterials to be spaced at one mile intervals and Collectors to be spaced at half mile intervals, and Neighborhood or local streets to be provided at least every 530 feet (see the Appendix for more information). Streets within the current City limits largely comply with these standards, with SW Fischer Road and SW 131st Avenue serving as Collectors and OR 99W and SW Beef Bend Road serving as Arterials. However, several gaps were identified within the Kingston Terrace area, including:

- East to west connections between the current City limits and SW Roy Rogers Road, south of SW Beef Bend Road.
- North to south connections to SW Beef Bend Road, north of the Tualatin River.

The conceptual locations of future Collector and Neighborhood Routes have been identified to complete these gaps (see Figure 39 and Table 13 in Chapter 5). The alignments shown for these streets are preliminary and will continue to be refined through the typical development review process. Two large scale widening projects are anticipated for SW Roy Rogers Road (expansion to five-lanes) and SW Beef Bend Road to three-lanes west of SW 131st Avenue. These are some of the biggest and most costly projects in this TSP and will be funded through a variety of agency partners. Other reconstruction projects in this TSP include adding bike facilities, sidewalks, enhanced crosswalks, lighting, landscaping, and stormwater facilities.

LOCAL STREET CONNECTIVITY

Connecting the street grid is critical to achieve the goals outlined in this TSP. This means connecting dead end streets and building new streets as land develops. New street connections distribute traffic and provide more route options. This is important for reducing greenhouse gas emissions and improving emergency responses. Also, a grid of smaller streets and shorter blocks is especially important for making it easier to walk, bike, and get to bus stops.

Most new Local streets will be built by new private development. When a private development project is approved, the builder or developer is required to provide a street network that complies with the standards included in Chapter 4. The connectivity standards require streets to be provided at a minimum spacing of 530 feet in most cases, consistent with regional requirements (see the Appendix for more information). These Local streets occur at more frequent intervals and are spaced closer than the larger streets (i.e., Arterial or Collector streets).

Local street connectivity in the current City limits was reviewed to identify areas that do not comply with the maximum street spacing standard of 530 feet. The major areas lacking connectivity include:

- The King City Golf Course. This limits east to west and north to south connectivity within the King City Civic Association area. This barrier also limits direct east to west routes to the King City Town Center from other areas of the City.
- Between SW King Richard Drive and SW Fitzwilliam Court.
- Between the King City Highlands neighborhood and the King City Civic Association. No east to west connections are available between SW Beef Bend Road and SW Morocco Drive.
- Between SW 131st Avenue and SW 137th Avenue, near Deer Creek Elementary School. The Mountain View Mobile Estates neighborhood prevents east to west connection in the area.
- Between SW 131st Avenue and SW Versailles Road, south of SW Fischer Road. The Eldorado Mobile Villas, King Village, and neighborhoods east of SW 131st prevent east to west connections in the area.

Should new development occur in any of these or other developed areas of the planning area, the connectivity standards in Chapter 4 should be met.

STREET NETWORK PERFORMANCE ASSESSMENT

Congestion and safety for all modes was reviewed at intersections and streets in the City's planning area. This assessment shows how safe and efficient the street system is and provides information to identify needed improvements for the TSP.

Street Network Congestion

This assessment identified locations on the roadway network that operate above thresholds for congestion under current and future conditions. These are locations where motorists experience significant delay. These thresholds, identified in Chapter 4, provide a metric for assessing the impacts of new development on the transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur.

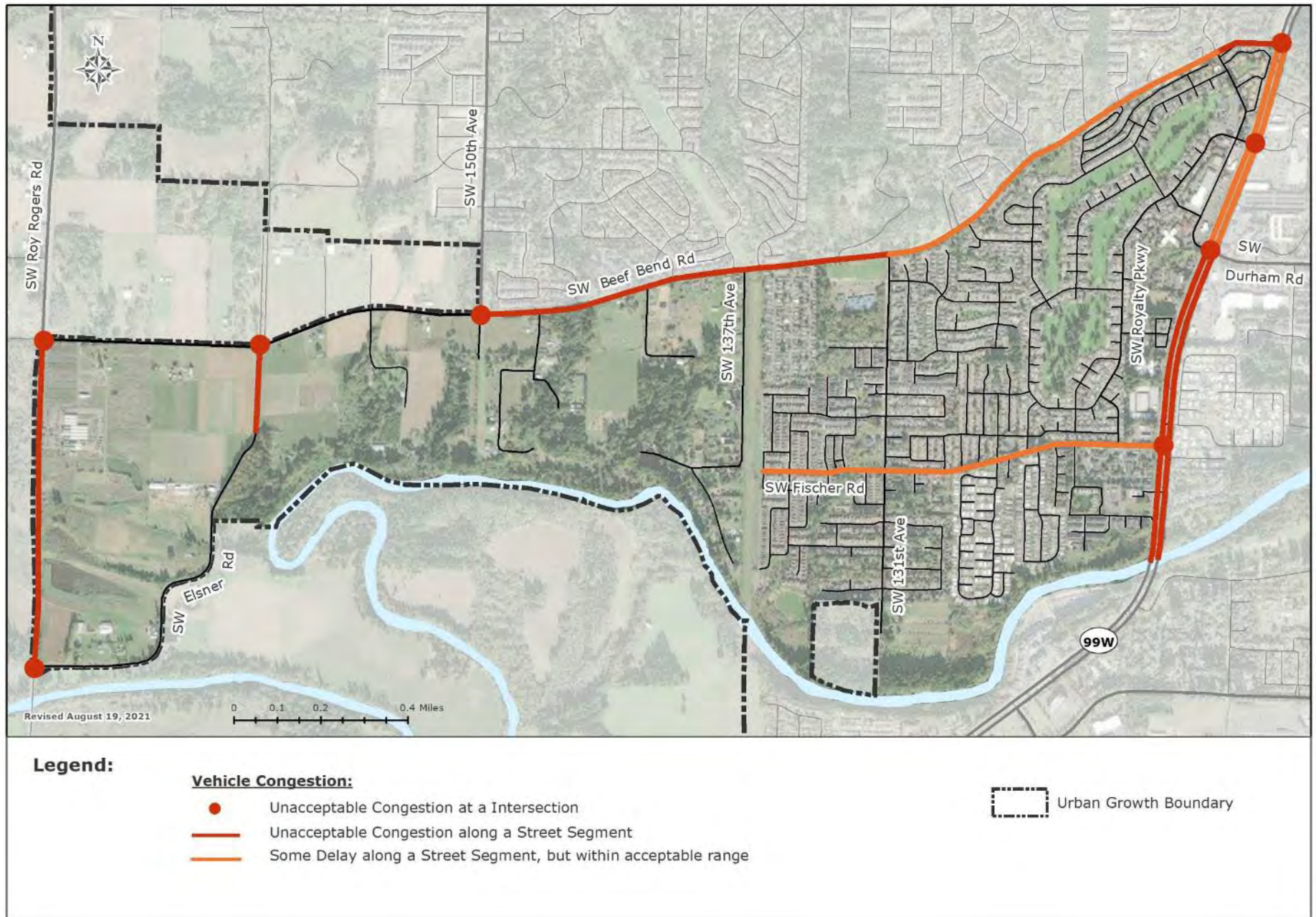
Figure 12 displays the results of the congestion analysis. The displayed conditions assume no improvements to the current street network. As shown, some minor congestion is expected along segments of OR 99W, SW Beef Bend Road and SW Fischer Road, while significant vehicle delay is expected along segments of OR 99W, SW Beef Bend Road, SW Roy Rogers Road and SW Elsner Road in the planning area.

In addition to these street segments, several intersections along Arterial streets are expected to be severely congested by 2040 during the weekday p.m. peak hour. This includes most intersections along OR 99W through King City, and several intersections along SW Beef Bend Road and SW Roy Rogers Road at the west end of the planning area where high growth is expected through 2040 (see Figure 12).

Delay for pedestrian and bicyclists at intersections has also been identified as a significant constraint for these users through field observations and public input. High delay occurs at signalized OR 99W intersections, and delay occurs at many unsignalized intersections along SW Beef Bend Road through the planning area. Out of direct travel delay also occurs for these users to reach a legal or controlled crossing, specifically along OR 99W and Beef Bend Road, and at OR 99W intersections related to prohibited pedestrian crossings along one leg at the traffic signals.

The TSP includes conceptual intersection enhancements, and locations of future Collector and Neighborhood Routes that will help to provide additional travel routes through Kingston Terrace and alleviate some of the local traffic from these major streets. A project to widen SW Roy Rogers Road to five-lanes, and SW Beef Bend Road to three-lanes is also included (see Figure 39 and Table 13 in Chapter 5).

FIGURE 12: STREET NETWORK CONGESTION (2040)



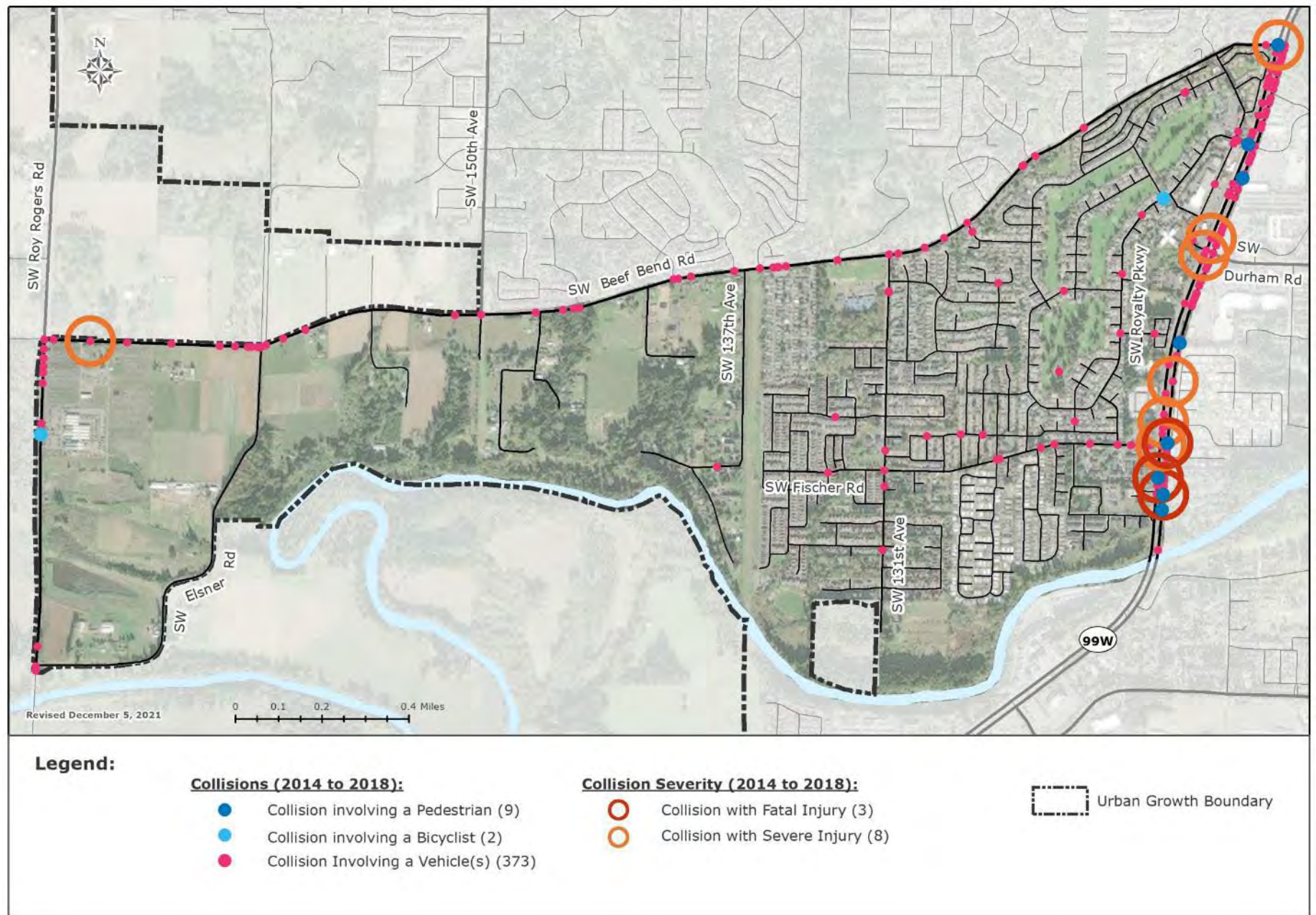
Street Network Safety

This assessment monitors the safety of travel in the planning area. It was used to track collision data over a 5-year period to provide trends related to total vehicle, pedestrian, and bicyclist collisions, fatal and severe injury collisions and total fatalities and severe injuries. Figure 13 shows data for the 5-year period between 2014 and 2018, with 384 collisions occurring in the City's planning area. Of these collisions, nine involved a pedestrian, two involved a bicyclist, and 373 involved a vehicle or multiple vehicles. All of the pedestrian collisions occurred along OR 99W, while the bicycle collisions occurred along SW Roy Rogers Road and SW Royalty Parkway. There were three fatalities, all pedestrians, and eight severe injuries, two of which were pedestrians. The fatalities occurred along OR 99W, near the SW Fischer Road intersection, with the pedestrian at fault in two of them, and the vehicle at fault in the third.

In addition, a safety analysis was evaluated for streets in the planning area. This included an analysis of collision rates at intersections and along street segments, and an identification of any top 10 percent ODOT Safety Priority Index System (SPIS) sites in the planning area. This analysis revealed that the entire segment of OR 99W through the planning area exceeded the statewide collision rate for similar facilities and identified OR 99W intersections with SW Beef Bend Road, SW 116th Avenue/SW Durham Road, and SW Fischer Road as safety focus areas.

The TSP includes several projects to improve this segment of OR 99W, specifically for pedestrians and bicyclists (see Figure 39 and Table 13 in Chapter 5). Another critical project is a regional study of the OR 99W Corridor through the planning area and neighboring jurisdictions, to develop a corridor-wide improvement plan to align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical OR 99W focus areas in the planning area are expanded and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight. Various projects in the TSP proposed along the highway through the planning area will likely be further refined in the future corridor study.

FIGURE 13: STREET NETWORK SAFETY



WALKING NETWORK

Walking supports healthy lifestyles, is an easy and economical way to travel, and is well suited for people of all ages and abilities. In this plan, "walking" and "pedestrian" are terms that include people who walk independently or use canes, wheelchairs, other walking aids, or strollers. Approximately two percent of commuters in the City walk to work, with one percent utilizing public transportation, which often includes walking at the beginning or end of the trip³. In addition to the work commute trips, walking trips are made to and from recreational areas, shopping areas, schools, and other key destinations in the City's planning area. Continuous and direct sidewalk connections to all key destinations and along all streets, in addition to safe crossing opportunities along major roadways, are essential to encourage walking and transit use.

The pedestrian network in the City's planning area, shown in Figure 14, is summarized in the following sections and is composed of sidewalks and pedestrian trails and accessways. An assessment of pedestrian facility gaps is also summarized later in this chapter.

SIDEWALKS

Many of the streets in the oldest City neighborhoods were initially built with narrow four-foot sidewalks. This width can make it difficult to walk side by side or maneuver with a wheelchair. Today, the City typically requires sidewalks on both sides of all new streets that are at least five feet wide. These slightly wider sidewalks are more accommodating to the needs of all pedestrians, including those in wheelchairs. This TSP continues to focus on completing needed sidewalks gaps and identifies priority routes for pedestrian travel that require even wider sidewalks between six and eight feet (i.e., streets with a Multimodal Area, Major Pedestrian or Neighborhood Pedestrian overlay; see Chapter 4 for more information).

TRAILS AND ACCESSWAYS

Trails or accessways can serve both recreational and transportation needs for pedestrians. Most are considered shared use paths and are well suited for citywide pedestrian and bicycle travel, and others offer only recreational opportunities for pedestrians. They can be separated or adjacent to the streets right-of-way and provide linear park facilities for pedestrian travel. Some provide shortcuts for people walking connecting a street to another street, a park, trail, or a major destination, like a school or shopping area.

³ US Census Bureau, 2015-2019 American Community Survey

There is currently about one mile of trails or accessways in the City, including within King City Community Park and scattered throughout the residential neighborhoods. Many of these occur between two disconnected streets. This TSP encourages continuous street connections, but they are not always possible due to a variety of circumstances (see Chapter 4 for more information). For this reason, this TSP requires pedestrian accessways at spacing of no more than 530 feet along all streets, ensuring a pedestrian never has to walk more than 265 feet out of direction to access the next street (see Chapter 4 for more information). This standard may be met with public streets or accessways on public easements or rights-of-way.



In developing this TSP, pathways that will improve travel in the City were identified. This plan identifies nearly 5 miles of separated shared use paths, and about 7 miles of street adjacent shared-use paths to be built through 2040 (see Figure 39 and Table 13 in Chapter 5).

STREET CROSSINGS

Busy streets with fast moving traffic are a barrier to people walking or biking, which is why this TSP included projects to add enhanced crossings along Arterial and Collector streets (i.e., streets with the highest motor vehicle volumes and travel speeds) in common places where pedestrian travel is expected. Enhanced crossings are more than a crosswalk marking on the pavement. They may have traffic signals, flashing beacon systems, refuge islands, or bulb-outs. Today, there are 54 locations with marked crosswalks in the City's planning area, and all but one are within the current City limits. This TSP identifies 43 places where enhanced or improved crossings are needed within the City's planning area (see Figure 39 and Table 13 in Chapter 5). This includes crossing enhancements along the OR 99W and SW Beef Bend Road corridors. These crossing locations and improvements may shift as future development occurs and more information becomes available regarding crossing demand.

Marked crosswalks are located at the four traffic signals along OR 99W through King City, and they are spaced at intervals of at least 1,320 feet. This exceeds the commercial corridor Urban Context Design Guidance from the ODOT Blueprint for Urban Design, which suggests spacing of 500 to 1,000 feet between crossings. This spacing is also greater than the typical distance a pedestrian will walk and could result in out of direction travel for pedestrians wishing to cross OR 99W. Each of the existing highway intersections also prohibit pedestrian crossings along one leg to facilitate vehicle turning movements at the traffic signals, further increasing out of direction travel for pedestrians. This TSP includes a project to improve existing crossings and identifies three potential segments of OR 99W where crossings are needed to serve transit and nearby destinations (see Figure 39 and Table 13 in Chapter 5).

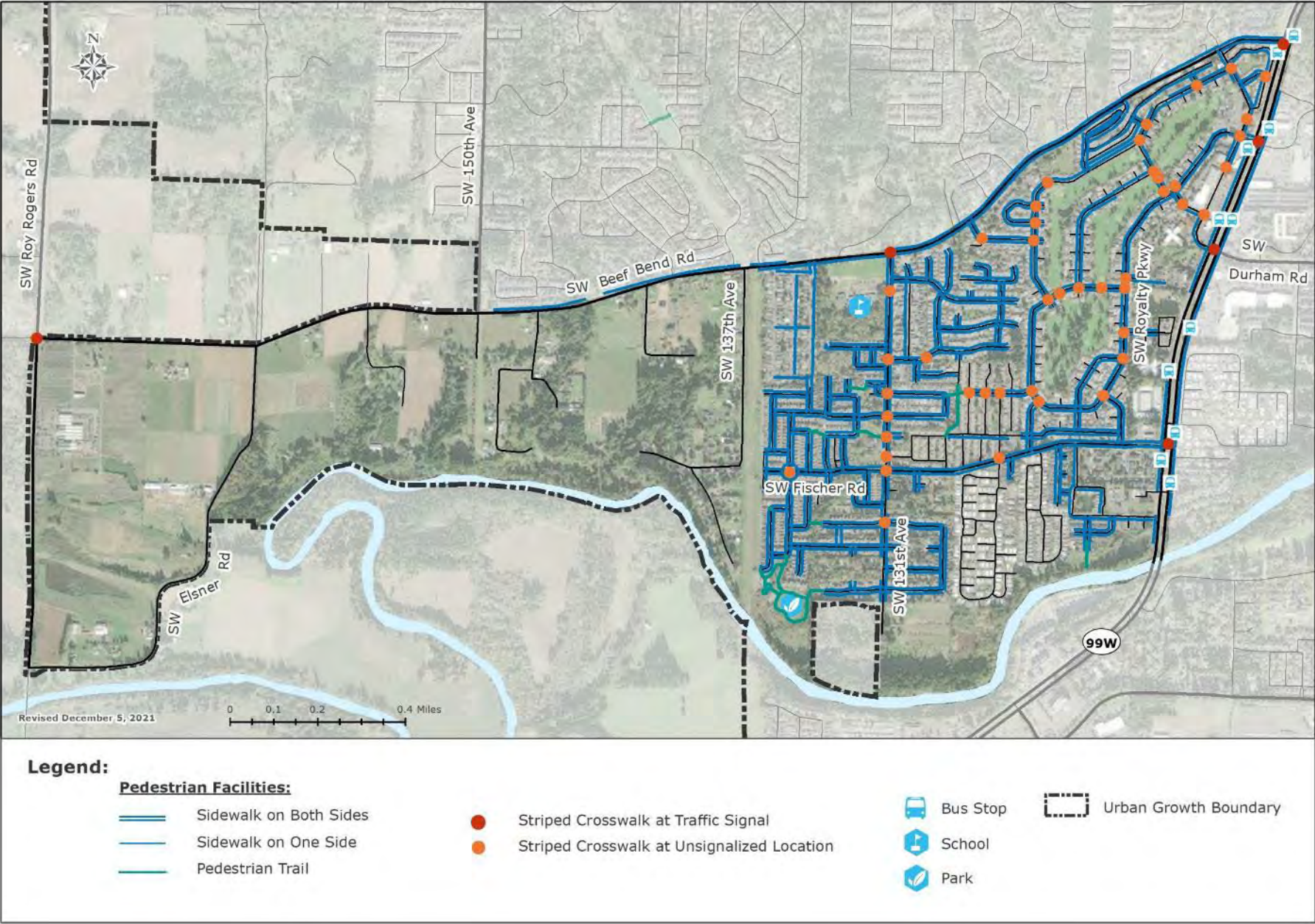
The SW 131st Avenue signalized intersection near Deer Creek Elementary School is the only marked crossing currently available along SW Beef Bend Road between OR 99W and SW Roy Rogers Road. More pedestrian activity is anticipated along SW Beef Bend Road, from a combination of pedestrian improvements and future development in the Kingston Terrace Master Plan area and Tigard's River Terrace on the north side of SW Beef Bend Road. Nine enhanced locations along SW Beef Bend Road are envisioned (see Figure 39 and Table 13 in Chapter 5).

Curb Ramps and Accessible Devices

Adding curb ramps and accessible devices to intersections or pedestrian crossings helps people with disabilities get around. Curb ramps make it easier for people using walking aids to get off and on a sidewalk. Adding accessible devices to traffic signals or beacons helps people with visual or hearing disabilities know when it is safe to cross the street.

The Americans with Disabilities Act (ADA) governs how we serve people with hearing, vision, and mobility disabilities. Many intersections in older parts of the City lack ADA compliant ramps, which provide important connections between sidewalks, making it easier to cross streets and handle the vertical drop at curbs. However, new curb ramps continue to be installed with recurring maintenance along streets in the City. While the presence of curb ramps is fairly consistent along streets in the King City Town Center, many of these are not ADA-compliant. This situation is complicated by the fact that many of the non-compliant streets and sidewalks are private. This TSP addresses how to make this area more accessible to people with disabilities by prioritizing curb ramp and sidewalk improvements here (see Figure 39 and Table 13 in Chapter 5).

FIGURE 14: PEDESTRIAN FACILITIES



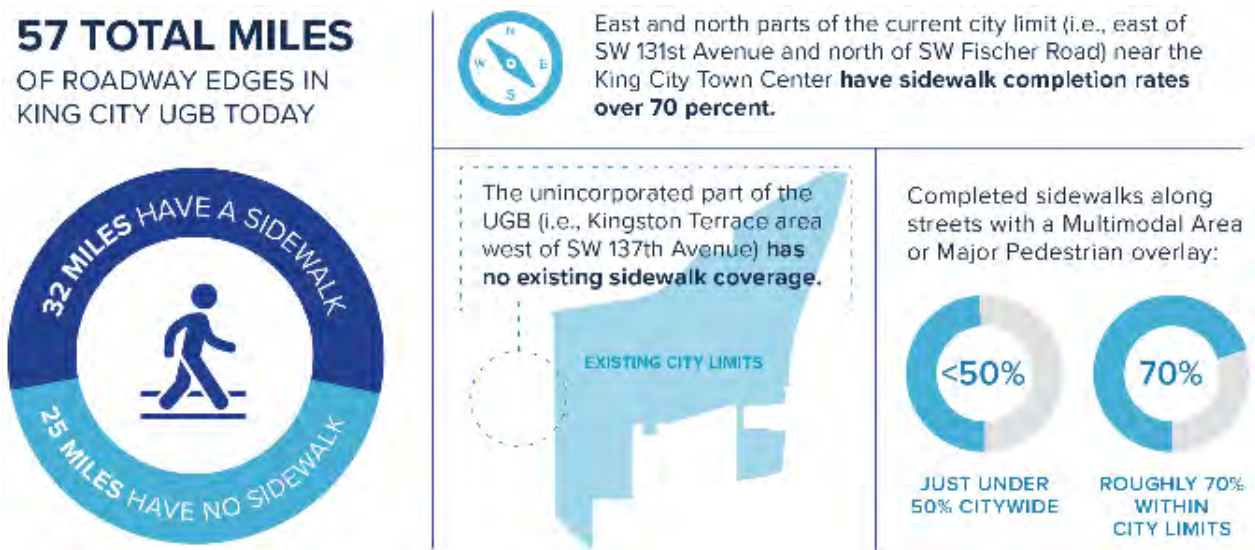
PEDESTRIAN FACILITY GAPS

As shown in Figure 14, the pedestrian network is fairly complete within the current City limits, with most residential development having a full sidewalk system with relatively few gaps. However, the pedestrian network in the planning area beyond the current City limits is less developed due to the rural nature of most existing land use. Critical gaps in the planning area occur along a few segments of OR 99W and most of SW Beef Bend Road and SW Roy Rogers Road. Some gaps also occur along low volume and low speed local streets throughout the planning area, although in many cases this condition is acceptable, and is less critical than the gaps along the major streets. East to west travel is also constrained for pedestrians through much of the current City limits and to the future Kingston Terrace area by existing development.

Of the 57 miles of potential sidewalks along streets in the City’s planning area today, currently 32 miles of them have a sidewalk, and 25 miles or about 45 percent do not have a sidewalk (see Figure 15). The east and north parts of the current City limits (i.e., east of SW 131st Avenue and north of SW Fischer Road) near the King City Town Center have sidewalk completion rates over 70 percent, while the unincorporated part of the planning area (i.e., Kingston Terrace area west of SW 137th Avenue) has limited sidewalk coverage. This analysis assumes all streets should have sidewalks on both sides, but in some cases low volume and speed streets may be suitable without a sidewalk or with a sidewalk on only one side.

Sidewalks along streets with a Multimodal Area or Major Pedestrian route designation (shown in Figure 26 in Chapter 4) are just under 50 percent complete citywide, but roughly 70 percent complete within the current City limits. Many of the sidewalk gaps along these streets in the Kingston Terrace area will be completed once projects within the TSP are completed with new development. The TSP also includes projects to complete the sidewalk gaps or improve existing sidewalk corridors along streets within the current City limits (see Figure 39 and Table 13 in Chapter 5).

FIGURE 15: KING CITY SIDEWALK FACTS

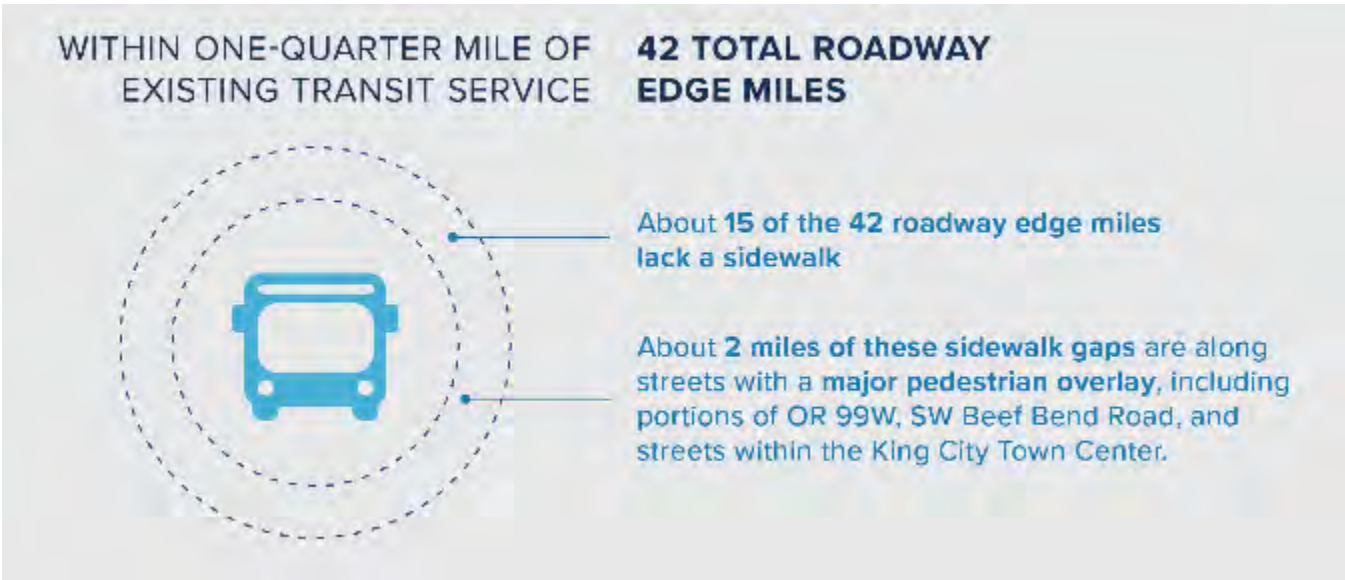


Sidewalk Coverage Near Transit

One-quarter mile walking distance has become an accepted distance for gauging a transit stop's walkable area. This distance is based on the distance people are typically willing to walk to transit. Transit access coverage is estimated based on the actual street network surrounding the stops as-the-crow-flies.

The sidewalk gaps are shown in Figure 18. Of the streets within one-quarter mile of existing transit service, about 15 of the total 42 street miles lack a sidewalk (or 36 percent of the street miles), as summarized in Figure 16. About 2 miles of these sidewalk gaps are along streets with a Major Pedestrian route designation, including portions of OR 99W, SW Beef Bend Road and streets within the King City Town Center. Most of the sidewalk gaps are located along Local Streets with Local Pedestrian route designations, which are streets with the lowest motor vehicle volumes and travel speeds. There are also gaps at several street crossings in these areas, particularly at OR 99W intersections where pedestrian crossings are prohibited along one leg to facilitate vehicle turning movements at the traffic signals, further increasing out of direction travel for pedestrians. See the Pedestrian Level of Traffic Stress discussion later in this chapter for more information on the condition of these crossings.

FIGURE 16: SIDEWALK COVERAGE NEAR TRANSIT



Sidewalk Coverage Near Community Amenities

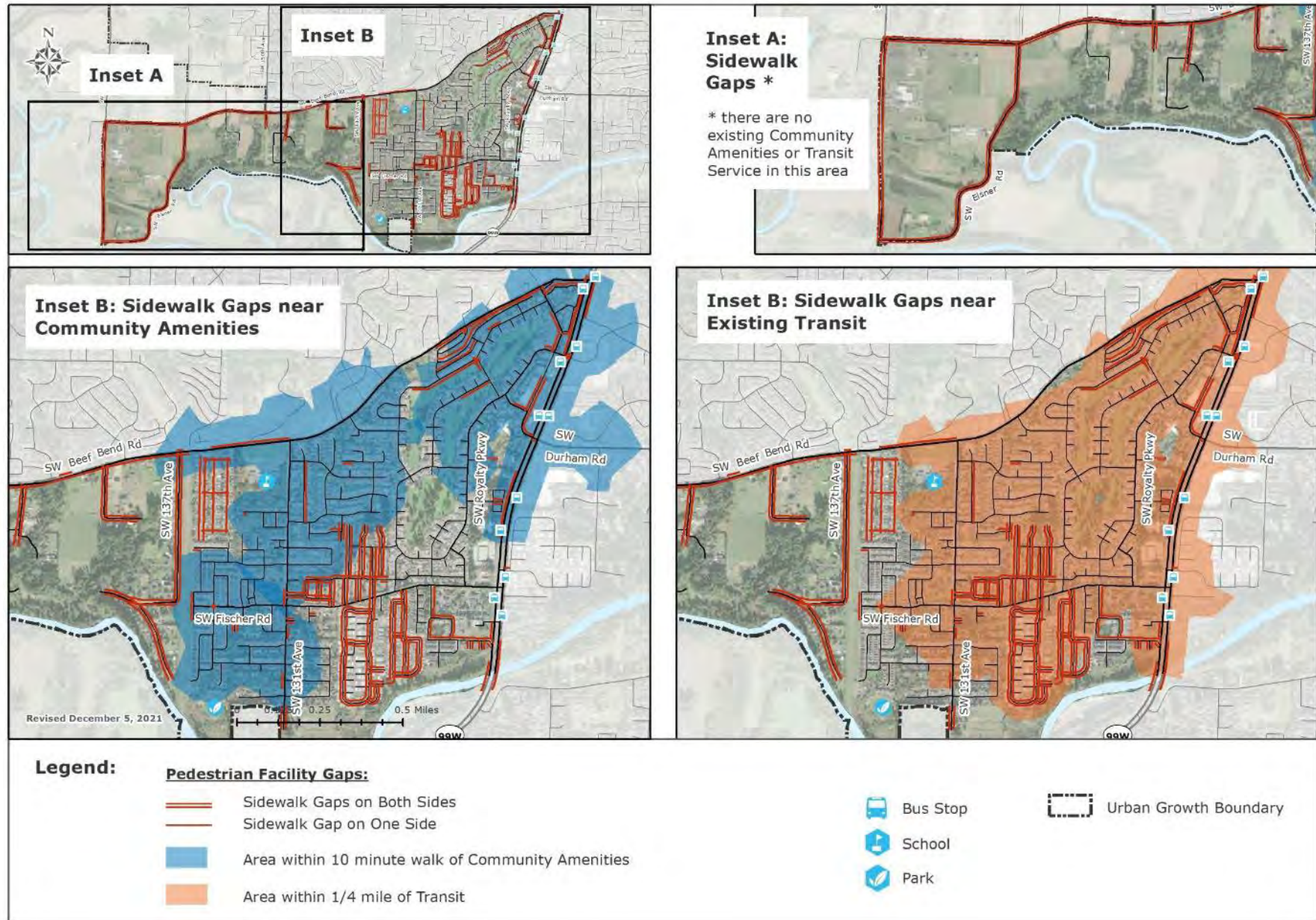
Sidewalk gaps near community amenities were also evaluated, including the King City Town Center, King City Community Park, and Deer Creek Elementary School (see the Appendix for the location of these destinations). Using a walking time of 10-minutes to and from these community amenities (based on average walking speeds and comfortable walking distances), a Geographic Information Systems (GIS) network analysis feature was used to create 10-minute walksheds around these locations based on the actual street network.

The TSP identified about 16 miles of sidewalk gaps within the 10-minute walksheds of these community amenities, or about 38 percent of all potential sidewalks in these areas (see Figure 17). Most of these sidewalk gaps are near the King City Town Center, although some key gaps are also located along SW Beef Bend Road near Deer Creek Elementary (see Figure 18. There are also gaps at several street crossings in these areas, see the Pedestrian Level of Traffic Stress discussion later in this chapter for more information on the condition of these crossings.

FIGURE 17: SIDEWALK COVERAGE NEAR COMMUNITY AMENITIES



FIGURE 18: SIDEWALK GAPS NEAR EXISTING TRANSIT AND COMMUNITY AMENITIES



PEDESTRIAN LEVEL OF TRAFFIC STRESS

The pedestrian level of traffic stress (LTS) evaluation provides a metric to understand a multimodal user's perception of the safety and comfort of the transportation network. This method was used to understand key gaps and barriers to walking to be addressed through targeted improvements.

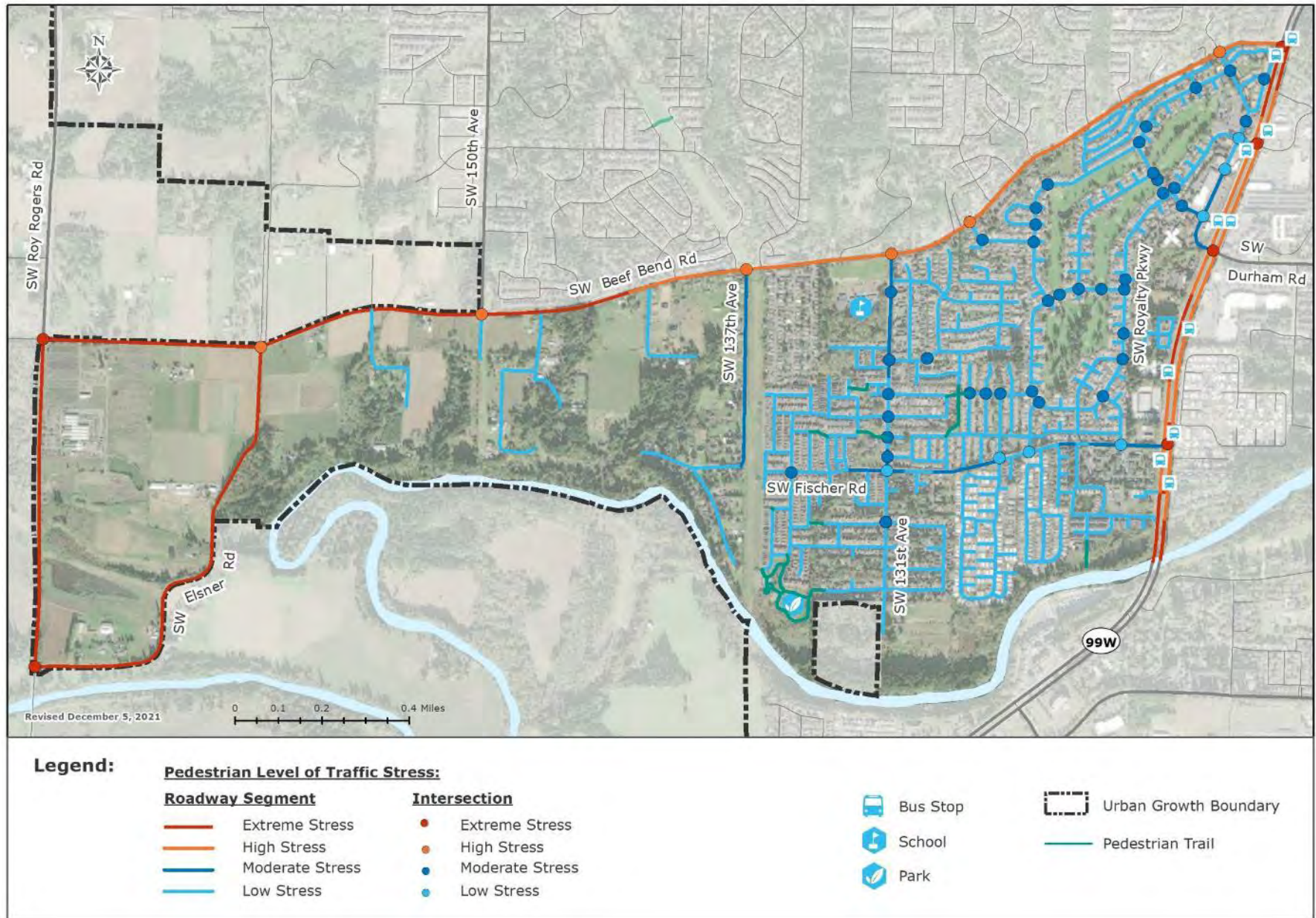
The LTS evaluation generates a ranking (i.e., low, moderate, high, or extreme stress) of the relative safety and comfort of a segment or intersection for pedestrians based on roadway and intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced pedestrian facilities are needed to maintain a system that is accessible and comfortable for all users.

Results of the pedestrian LTS evaluation are summarized in Figure 19. A pedestrian walking along roughly 80 percent of streets within the City's planning area will experience a low or moderate level of stress. This is generally representative of the many low volume and speed streets. Extreme or high level of stress is experienced along 20 percent of streets, mainly those with the highest speeds and traffic volumes. This includes OR 99W, SW Beef Bend Road, SW Roy Rogers Road and SW Elser Road. These are major multimodal streets (i.e., streets with a Multimodal Area or Major Pedestrian route designation) that are important for pedestrian travel, so this TSP places a higher priority for improvement projects along them consistent with the objectives of the respective pedestrian route designations.

As redevelopment and frontage improvements occur through 2040, particularly in the Kingston Terrace area, streets will be built to align with the standards outlined in Chapter 4. These standards require high-quality facilities, and an emphasis on safe, convenient, and comfortable travel in alignment with the multimodal level of traffic stress targets outlined in Chapter 4 to contribute towards a network wide lower stress pedestrian experience.

Equally important is the pedestrian experience while crossing streets. These locations are often when a pedestrian experiences some of the highest amount of stress and delay, particularly along major streets with high travel speeds and traffic volumes. Sixty-two intersections within the City's planning area were evaluated, with the results shown in Figure 19 (i.e., these included the 54 locations with marked crosswalks, as well as eight additional intersections without crosswalks along SW Roy Rogers Road, SW Beef Bend Road and SW Fischer Road). Not surprisingly, all intersections along the busiest streets (i.e., OR 99W, SW Roy Rogers Road and SW Beef Bend Road) have a pedestrian stress level of extreme or high, while the remaining 42 intersections have a low or moderate level of stress for pedestrians. As noted earlier in this TSP, 43 targeted locations are identified for enhanced or improved crossings (see Figure 39 and Table 13 in Chapter 5).

FIGURE 19: PEDESTRIAN LEVEL OF TRAFFIC STRESS



BIKING NETWORK

Bicycling is important for both transportation and recreation in the King City planning area. This includes people who bike to work and school, recreation, or running errands. Riding bicycles also plays a key role in the transportation system's ability to support healthy and active lifestyles and provide a viable alternative to the automobile. While walking tends to be a competitive choice for trips under half a mile, bicycling tends to be suited for longer trips of three miles or longer. King City's relatively compact size makes biking a great choice for many trips, with local jobs and housing typically in bikeable proximity.

This TSP includes projects to provide continuous bicycle connections between all key destinations that are essential for safe and attractive non-motorized travel options. It includes bicycle infrastructure that appeals to a wider range of people, both in age and ability. Many people want to bike, but they find riding near traffic in standard bike lanes stressful and unpleasant. This TSP includes a bicycle network of streets with Major Bicycle route designation facility standards designed to minimize interactions between people on bikes and car traffic (see Chapter 4 for more information). The network is designed so that everyone is within a quarter mile of one.

The bicycle network in the City's planning area, shown in Figure 20, is summarized in the following sections and is composed of bike lanes, roadway shoulders, shared roadways, and bicycle paths.

BIKE FACILITIES

The King City planning area has 5 miles of bike lanes along OR 99W, SW 131st Avenue, and SW Fischer Road and a shoulder bikeway along the segment of SW Roy Rogers Road between SW Beef Bend Road and SW Elsner Road. Most of the bike lanes are five feet wide and adjacent to the vehicle travel way, although two short segments of OR 99W include enhanced bike facilities in the form of buffered bike lanes. These widths and facility types do not align with the standards in this TSP for preferred bike facilities along these Major Bicycle routes (see Chapter 4 for more information), although additional improvements along them are largely hindered by existing development.

This TSP identifies over 6 miles of enhanced bike facilities within the planning area (see Figure 39 and Table 13 in Chapter 5). In addition, it also includes over 1.5 miles of conventional bike lanes to complete the network.

Most local streets in the City's planning area have slow speeds and few vehicles on them. When vehicular volumes and speeds are low, most people feel most comfortable bicycling in the shared roadway as they are able to maintain steady paths and riding speeds with limited pressure to move over for passing motor vehicles. Sometimes signs and pavement markings are added to these routes and the intersections with busy streets may be modified to make them easier to cross (e.g., adding all-way stop control or restricting vehicle movements). The planning area does not currently have any shared street improvements, but this TSP includes over 5.7 miles of shared street improvements along existing streets and about one mile along new streets (see Figure 39 and Table 13 in Chapter 5). Most of these corridors are located within the current City limits in areas

where existing development limits the build out of bike lanes, although some are along new streets in the Kingston Terrace area where low vehicular volumes and speeds are expected.

BICYCLE PATHS

The bike network is further knit together by using new and existing shared use paths and accessways. Shared use paths are well suited for citywide bicycle travel and can be separated or adjacent to the streets right-of-way and provide linear park facilities for bicycle travel. Accessways provide shortcuts for people biking connecting a street to another street, a park, trail, or a major destination, like a school or shopping area. Any shared use path or accessway open to bicycle travel should have minimum paved surface of 10 feet to allow for shared pedestrian and bicycle travel.

There is currently about one mile of trails or accessways in the City's planning area, including within King City Community Park and scattered throughout the residential neighborhoods. Many of these occur between two disconnected streets. This TSP encourages connected and continuous street connections, but they are not always possible due to a variety of circumstances (see Chapter 4 for more information). For this reason, this TSP requires bicycle accessways at spacing of no more than 530 feet along all streets, ensuring a bicyclist never has to travel more than 265 feet out of direction to access the next street (see Chapter 4 for more information). This standard may be met with public streets or accessways on public easements or rights-of-way.

In developing this TSP, pathways that will improve travel in the City were identified. This plan identifies nearly 5 miles of separated shared use paths, and about 7 miles of street adjacent shared-use paths to be built through 2040 (see Figure 39 and Table 13 in Chapter 5).

BICYCLE PARKING

End-of-trip bicycle facilities are a fundamental component of a bicycle network. Lack of safe and secure facilities for either short-term or long-term parking can be an obstacle to promoting bicycle riding. Short-term parking accommodates visitors, customers, and others expecting to depart within two hours. It requires a standard rack, appropriate location and placement, and weather protection. Long-term parking accommodates employees, students, residents, commuters, and others who park for more than two hours. This parking requires a secure, weather-protected manner and location. Short-term bicycle parking is available throughout King City, including at King City Community Park, Deer Creek Elementary School and within the King City Town Center. Bicycle parking is required with new multi-family residential, commercial, and institutional development in the City.

FIGURE 20: BICYCLE FACILITIES



BICYCLE FACILITY GAPS

Of the 28 miles of potential bikeways along streets with a Major Bicycle or Neighborhood Bicycle route designation in the City's planning area today (shown in Figure 27 in Chapter 4), currently 6 miles of them have bike facilities, and 22 miles or about 79 percent do not have bike facilities (see Figure 21). The southeast part of the planning area (i.e., east of SW 131st Avenue and south of SW Fischer Road) has the highest share of bikeways complete at 55 percent, largely due to the segment of SW Fischer Road with bike lanes.

Bikeways along streets with a Major Bicycle route designation are just over 35 percent complete citywide, but roughly 50 percent complete within the current City limits. Many of the bikeway gaps along these streets in the Kingston Terrace area will be completed once projects within this TSP are completed with new development. This TSP also includes projects to complete the bicycle facility gaps or improve existing bike facilities along streets within the current City limits (see Figure 39 and Table 13 in Chapter 5).

Bicycle Facility Coverage Near Transit

Two to three miles is typically an accepted distance for gauging a transit stop's bikeable area. This distance is loosely based on the amount people that are willing to bike to transit. Given this distance covers most of the City's planning area, a more modest distance of one-half mile was used to identify bicycle facility coverage nearest transit stops. Transit access coverage is estimated based on the actual street network surrounding the stops as-the-crow-flies.

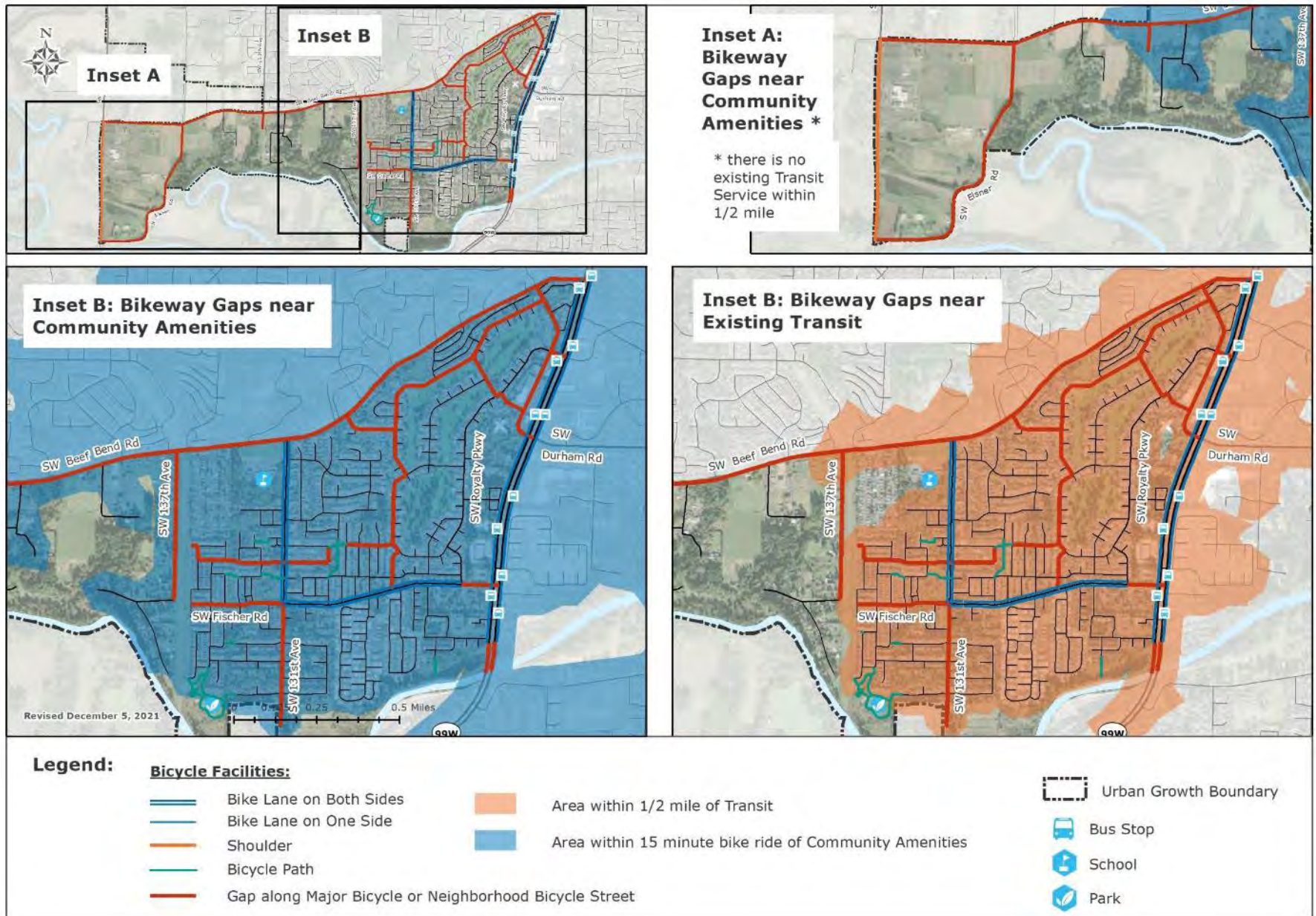
Of the streets within one-half mile of existing transit service, about 14 of the total 19 street miles lack any type of bike facility (or 77 percent of the street miles). About 4 miles of these bikeway gaps are along streets with a Major Bicycle route designation, including portions of OR 99W, SW Beef Bend Road and SW Fischer Road. This TSP includes projects to complete these bikeway gaps (see Figure 39 and Table 13 in Chapter 5).

Bike Facility Coverage Near Community Amenities

Bike facility gaps near community amenities were also evaluated, including the King City Town Center, King City Community Park and Deer Creek Elementary (see the Appendix for the location of these destinations). Using a biking time of 15-minutes to and from these community amenities (based on average biking speeds and comfortable biking distances), a GIS network analysis feature was used to create 15-minute bike sheds around these locations based on the actual street network.

The TSP identified about 18 miles of bikeway gaps within the 15-minute bike sheds of these community amenities, or about 80 percent of all potential bikeways in these areas (see Figure 21). Most of these bikeway gaps are near Deer Creek Elementary along SW Beef Bend Road. Several streets with a neighborhood bicycle route designation also have incomplete bikeways near the King City Town Center and King City Community Park. Again, this TSP includes projects to complete these gaps.

FIGURE 21: BICYCLE FACILITY GAPS NEAR EXISTING TRANSIT AND COMMUNITY AMENITIES



BICYCLE LEVEL OF TRAFFIC STRESS

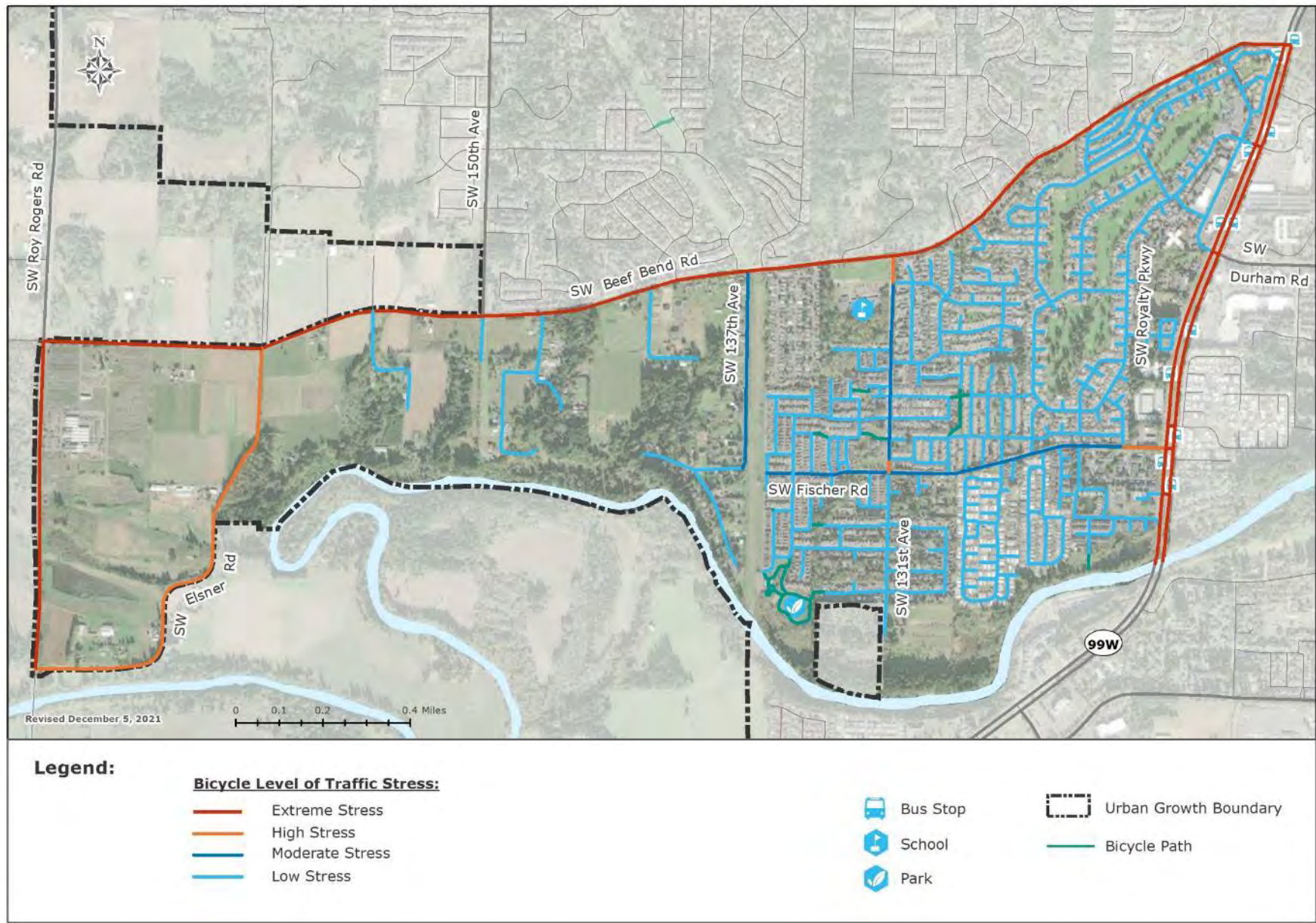
The bicycle level of traffic stress (LTS) evaluation provides a metric to understand a cyclist's perception of the safety and comfort of the transportation network. This method was used to understand key gaps and barriers to biking to be addressed through targeted improvements.

The LTS evaluation generates a ranking (i.e., low, moderate, high, or extreme stress) of the relative safety and comfort of a segment or intersection for bicyclists based on roadway and intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced bicycle facilities are needed to maintain a system that is accessible and comfortable for all users.

Results of the bicycle LTS evaluation are summarized in Figure 22. A bicyclist riding along roughly 78 percent of the streets within the City's planning area will experience a low or moderate level of stress. This is generally representative of the many low volume and speed local streets, which are reasonably comfortable for bicycling today. In contrast, an extreme or high level of stress is experienced along 22 percent of streets, mainly arterial and collector streets with the highest speeds and traffic volumes. This includes the extent of OR 99W, SW Beef Bend Road, SW Roy Rogers Road, and SW Elsner Road, and short segments of SW Fischer Road and SW 131st Avenue. These streets include a Major Bicycle route designation and are important for bicycle travel, so this TSP places a higher priority for improvement projects along them consistent with the objectives of the respective bicycle route designations.

As redevelopment and frontage improvements occur through 2040, particularly in the Kingston Terrace area, streets will be built to align with the standards outlined in Chapter 4. These standards require high-quality facilities, and an emphasis on safe, convenient, and comfortable travel, and align with the multimodal level of traffic stress targets outlined in Chapter 4 to contribute towards a lower stress bicycle experience throughout the network.

FIGURE 22: BICYCLING LEVEL OF TRAFFIC STRESS



TRANSIT

Transit service is provided in King City via three fixed bus routes (see Figure 23), a deviated route service, and an Americans with Disabilities Act (ADA) paratransit service. A park-and-ride facility, which is also served by the fixed bus routes, is located along SW Bull Mountain Road, just west of the OR 99W intersection. All TriMet buses are equipped with either a boarding ramp or a lift to allow wheelchair access and include bicycle racks. Riders are permitted to load their bicycle inside the bus only if there's room in one of the designated bike spaces.

TriMet transit service at a glance in King City:

- 11 bus stops on OR 99W
- 4 stops have shelters
- 500 total average weekday on/off

FIXED BUS ROUTES

TriMet provides transit service in King City via two fixed bus routes on 99W connecting the City with Downtown Portland, Tigard, and Sherwood. Transit riders can transfer to other TriMet routes at the Tigard Transit Center and within Downtown Portland. The TriMet bus routes include:

- TriMet Route 93 (Tigard/Sherwood) – service 33 times per day during the week and weekend between 4:30 a.m. and 11:30 p.m. headed north and 6:00 a.m. to 1:00 a.m. headed south.
- TriMet Route 94 (Pacific Hwy/Sherwood) – service 17 times per day during the week between 5:40 a.m. and 7:00 p.m. headed north and 7:30 a.m. and 8:30 p.m. headed south. There is no service on the weekends.

TriMet plans to combine these two routes into a single Route 94-Pacific Hwy/Sherwood, and Route 93-Tigard/Sherwood will terminate. This new route will provide better mid-day service between Sherwood and Portland, and additional trips will be added between Sherwood and Portland on weekdays. On weekends and holidays, Line 94 will run between Tigard Transit Center and Sherwood about every 30 minutes.

TriMet also plans to extend Route 36-South Shore Boulevard from the Tualatin Park & Ride to King City via 72nd Avenue and Durham Road to improve east-west connections between Lake Oswego, Tualatin, Tigard, and King City, and add trips.

The King City Town Center is a potential location for a transit hub for riders (see Figure 23). A portion of the King City Plaza parking lot could be repurposed for the facility and could offer riders a spot to connect to all bus routes that serve the City. This is currently envisioned in the King City Town Center Plan and Implementation Strategy, and TriMet's SW Service Enhancement Plan.

Bus Stops

TriMet has 11 bus stops along OR 99W serving these routes near the SW Beef Bend Road, SW Royalty Parkway, SW Durham Road, SW King James Place, and SW Fischer Road intersections. Each of the bus stops are signed, but many lack benches or shelter, and the SW King James Place southbound stop lacks a sidewalk. A summary of the stops is provided below, with pedestrian and bike facility gaps and street crossing shortfalls near these stops summarized earlier in this chapter.

- **SW Beef Bend Road intersection northbound.** This stop has 19 average weekday ons/offers. It includes a sidewalk connection, bench, and lighting at the stop. It lacks a shelter.
- **SW Beef Bend Road intersection southbound.** This stop has 17 average weekday ons/offers. It includes a sidewalk connection north to the SW Beef Bend Road intersection, but not to the south of the stop. It lacks a shelter, bench, and lighting at the stop.
- **SW Royalty Parkway intersection northbound.** This stop has 60 average weekday ons/offers. It includes a sidewalk connection, shelter, bench, and lighting at the stop.
- **SW Royalty Parkway intersection southbound.** This stop has 60 average weekday ons/offers. It includes a sidewalk connection, and lighting. It lacks a shelter and bench.
- **SW 116th Avenue-Durham Road intersection northbound.** This stop has 64 average weekday ons/offers. It includes a sidewalk connection, shelter, bench, and lighting at the stop.
- **SW 116th Avenue-Durham Road intersection southbound.** This stop has 90 average weekday ons/offers. It includes a sidewalk connection, shelter, bench, and lighting at the stop.
- **SW King James Place northbound.** This stop has 20 average weekday ons/offers. It includes a sidewalk connection, bench, and lighting at the stop. It lacks a shelter.
- **SW King James Place southbound.** This stop has 7 average weekday ons/offers. It offers lighting at the stop, but lacks a sidewalk connection, shelter, and bench.
- **SW Fischer Road northbound.** This stop has 73 average weekday ons/offers. It includes a sidewalk connection, shelter, bench, and lighting at the stop.
- **SW Fischer Road southbound.** This stop has 77 average weekday ons/offers. It includes a sidewalk connection, but lacks a shelter, bench, and lighting at the stop.
- **Commons Apartments northbound.** This stop has 13 average weekday ons/offers. It includes a sidewalk connection and bench, but lacks a shelter, and lighting at the stop.

This TSP includes projects to enhancing existing bus stops along OR 99W and improve pedestrian and bicycle access, including new and/or improved street crossings (see Figure 39 and Table 13 in Chapter 5).

Paratransit Service

TriMet's LIFT paratransit service provides public transportation to persons with disabilities who are unable to use regular fixed route buses. Curb to curb paratransit service, in wheelchair lift equipped minibuses, is available generally between 4:30 a.m. and 1:00 a.m. seven days a week.

Yamhill County Transit

Yamhill County Transit also provides a fixed bus route that connects McMinnville to Tigard (Route 44), with stops in King City at the SW Durham Road and SW Fischer Road intersections. It runs nine times per day during the week between the hours of 5:10 a.m. and 7:20 p.m. headed north and 7:50 a.m. and 8:45 p.m. headed south. On Saturday service runs from 7:50 a.m. to 6:05 p.m. headed north and 9:20 a.m. to 7:45 p.m. headed south.

DEVIATED ROUTE SERVICE

Ride Connection also provides deviated route service (buses that run on a route and schedule) via the King City Shuttle. This local service runs Monday through Friday from 9 a.m. - 4 p.m., along a route that connects the King City Town Center with the neighborhoods to the west. This service is free and open to the public (although there is a suggested donation), and transit riders are able to schedule an off-route pick-up or drop-off within ½ mile of the route.

POTENTIAL TRANSIT EXPANSION

As growth occurs within the City's planning area, opportunities to extend transit service into Kingston Terrace will need to be considered. A potential approach to the expanding transit circulation into Kingston Terrace is shown in Figure 23. The SW River Terrace Boulevard extension, SW Elsner Road, and the SW Fischer Road extension would serve as primary pedestrian and bicycle paths to the proposed bus service, where bus-bulb outs could be constructed into the on-street parking lanes for bus stops. Wide on-street sidewalks and shared-use paths will connect transit users from these facilities to other key destinations.

A few options to expand bus service include:

- A route modification to extend the Ride Connection King City Shuttle west from the SW King George Drive/SW Prince Albert Street intersection to SW Beef Bend Road. The route could travel west on SW Beef Bend Road and turn south onto the SW River Terrace Boulevard extension, before returning via SW Elsner Road and the SW Fischer Road extension.
- A route modification allowing TriMet buses to enter the King City Town Center at the SW Royalty Parkway intersection and exit at the SW 116th Avenue intersection, or vice versa. A potential bus-stop at the transit hub east of the SW Queen Elizabeth Avenue and SW 116th Avenue intersection.
- A potential new route along the SW Roy Rogers Road and/or SW River Terrace Boulevard corridor.

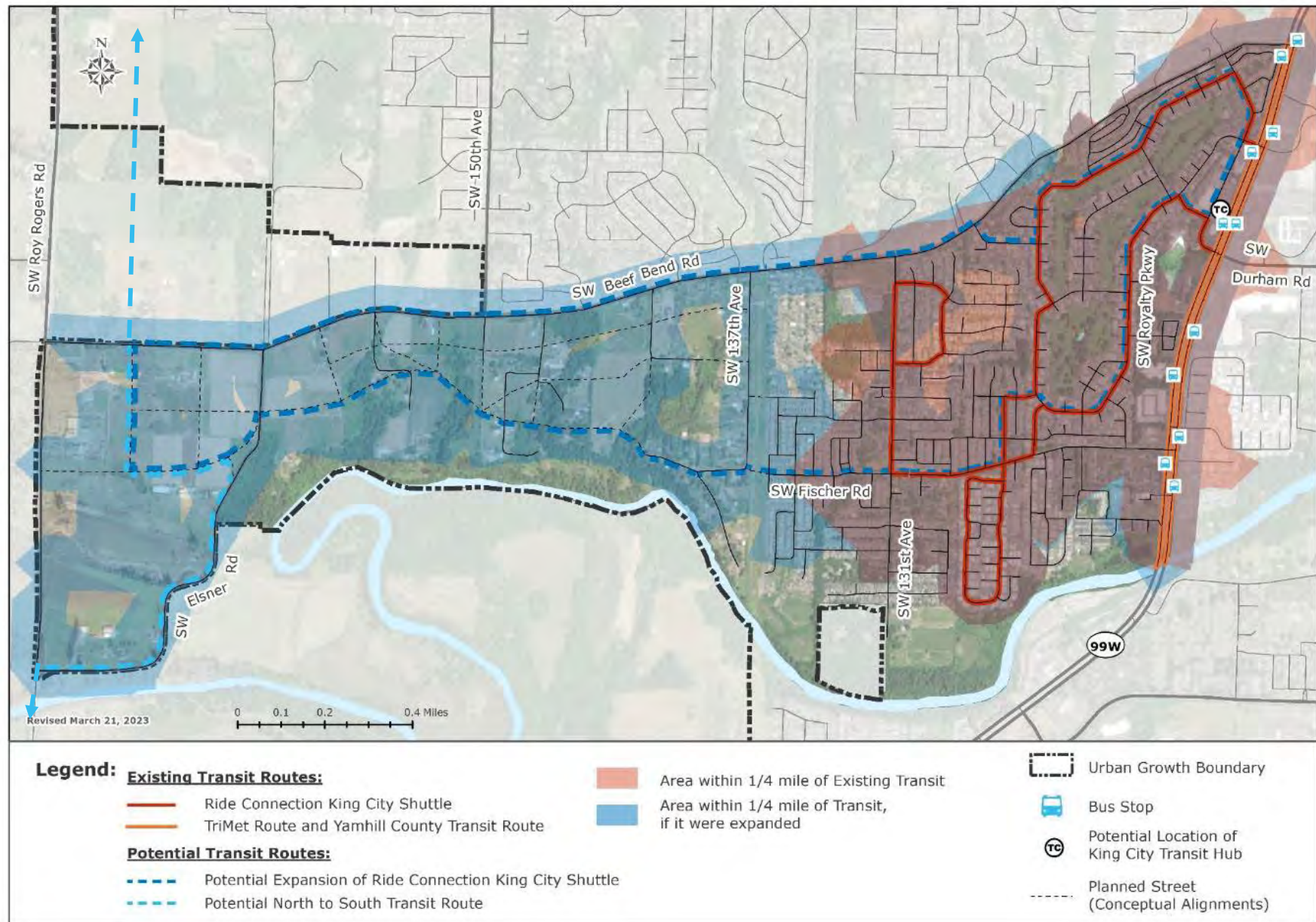
The Transit route designation (see Chapter 4) was applied to all streets along the suggested routes to ensure that adequate right-of-way, travel lane widths, and necessary infrastructure (e.g., shelter, signage) is implemented to support ridership and bus access.

ACCESS TO TRANSIT

The TSP prioritizes transit access and identifies the number and percent of households within 1/4 mile of the bus stops along the TriMet routes that currently run along OR 99W and areas of the planning area within 1/4 mile of the King City Shuttle Route. Figure 23 displays this analysis. Currently about 13 percent of the total households in the planning area have access to TriMet routes. These households are located near OR 99W in east portion of the planning area. About 77 percent of households in the current City limits have access to the King City Shuttle Route, including most households east of SW 131st Avenue and north of SW Fischer Road. No households in Kingston Terrace have transit access, although the area currently only represents a small portion of total households in the planning area.

A similar evaluation was done using the potential transit expansion routes into Kingston Terrace that were summarized earlier in this section. This evaluation also used the 2040 household growth assumptions for the planning area (summarized earlier in this chapter) and future street extensions (see Figure 39 and Table 13 in Chapter 5) to identify all households within 1/4 mile of the bus service. The analysis found that nearly all households in 2040 would be within 1/4 mile of the bus service, as shown in Figure 23. Only a few gaps exist at the far west and east ends of Kingston Terrace.

FIGURE 23: TRANSIT ACCESS FOR EXISTING AND POTENTIAL TRANSIT ROUTES



CHAPTER 4.

Facility and Performance Standards



King City applies transportation standards and regulations to the construction of new transportation facilities and to the operation of all facilities to ensure they are designed appropriately, and the system functions as intended. These standards enable consistent future actions that reflect the goals and objectives of the City.

STREET JURISDICTION

Roadway ownership and maintenance responsibilities depend on the roadway authority. In addition, required design and operation standards for each street and intersection vary by agency. Streets in the planning area are under the jurisdiction of King City, Washington County, or ODOT. OR 99W is and will remain under ODOT jurisdiction. According to the County’s TSP, streets that are expected to be under the long-term jurisdiction of Washington County include SW Roy Rogers Road and SW Beef Bend Road. All other existing or planned streets are assumed under the jurisdiction of King City. This includes portions of SW Fischer Road, SW Elsner Road, and other streets in Kingston Terrace currently under County jurisdiction that are assumed to become City streets as the area is incorporated.

NETWORK CLASSIFICATIONS AND ROUTE DESIGNATIONS

All streets in the TSP planning area include classifications and route designations to help support the movement of all people and help to ensure the transportation system is comfortable, convenient, safe and well connected for all users. These include functional classifications for vehicle travel and route designations for pedestrian, bicycle, and transit travel. The modal classifications and route designations combine to determine the minimum acceptable facility type and design requirements of different elements for each mode (see Figure 24).

Although guidance is provided for the City’s preferred classification and route designations along OR 99W, SW Roy Rogers Road, and SW Beef Bend Road, these streets are under state or Washington County jurisdiction and subject to the classifications of these agencies.

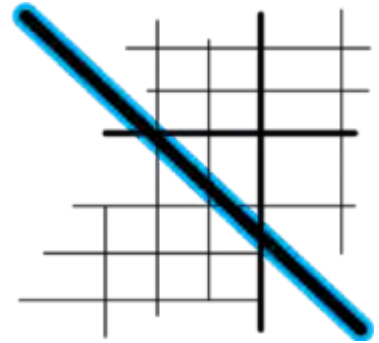
FIGURE 24: NETWORK CLASSIFICATIONS AND ROUTE DESIGNATIONS



VEHICLE FUNCTIONAL CLASSIFICATIONS

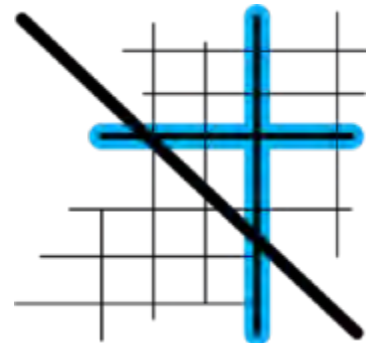
Functional classification for streets helps support the movement of vehicles and is an important tool for managing the roadway network. The street functional classification system recognizes that individual streets do not act independently of one another but instead form a network that serves travel needs on a regional, citywide, neighborhood, and local level. By designating the management and design requirements for each roadway classification, this hierarchical system supports a network of streets that perform as desired.

The street functional classification system for roadways in the City's planning area is described below. From highest to lowest intended use, the classifications are Arterial, Collector, Neighborhood Route, and Local Streets. For a street cross-section, the functional classification determines the travel lane width, median/center turn lane needs, and on-street parking requirements.



Arterial Street

Arterial Streets are primarily intended to serve regional and citywide traffic movement. Arterials provide the primary connection to other Arterial Streets or Collector Streets. They are typically spaced about one mile apart to assure accessibility and reduce the occurrence of through traffic using collectors or local streets in lieu of a well-placed arterial street. Where an Arterial Street intersects with a Neighborhood or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay, while not adversely impacting safety and convenience for other modes. They often serve high volumes of traffic (>10,000 daily vehicles) over long distances and minimize direct access to adjacent land to support the safe and efficient movement of people and goods.



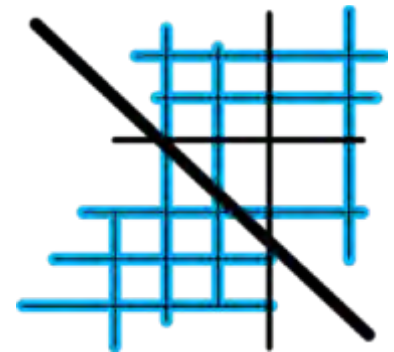
Collector Street

Collector Streets are intended to distribute traffic from Arterial Streets to streets of the same or lower classification. They provide both access and circulation within and between residential and non-residential areas. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as much access control compared to arterials, and they serve residential neighborhoods, distributing trips from the neighborhood and local street system.

Collectors generally support traffic volumes typically ranging from 5,000 to 10,000 daily vehicles and speeds often managed between 25 mph and 35 mph.

Neighborhood Route

Neighborhood routes provide connectivity between local streets and collectors or arterials. Because neighborhood routes connect local street networks with collector and arterial streets, they generally have more traffic than local streets and are typically used by residents to get into and out of the neighborhood. A neighborhood route is not intended to serve citywide/large area circulation. Neighborhood routes should maintain slow vehicle operating speeds to accommodate safe use by all modes and through vehicle traffic without an origin or destination in the immediate area should be discouraged.



Neighborhood routes generally support traffic volumes ranging from 1,500 to 5,000 daily vehicles, with vehicular speeds typically managed to no more than 25 mph.

Local Street

All streets not classified as Arterial, Collector, or Neighborhood Routes are classified as Local streets. Local streets prioritize providing immediate access to adjacent land and often function as through routes for pedestrians and bicyclists. These streets should be designed to enhance the livability of neighborhoods and can generally accommodate up to 1,500 vehicles per day. A well-connected grid system of relatively short blocks can minimize excessive volumes of motor vehicles, limit out-of-direction travel, and encourage walking and biking. They should be provided at a maximum spacing of 530 feet in most cases. Speeds are not normally posted, with a statutory 25 mph speed limit in effect. Local streets are not intended to support long distance vehicular travel and are often designed to discourage through traffic without an origin or destination in the immediate area.

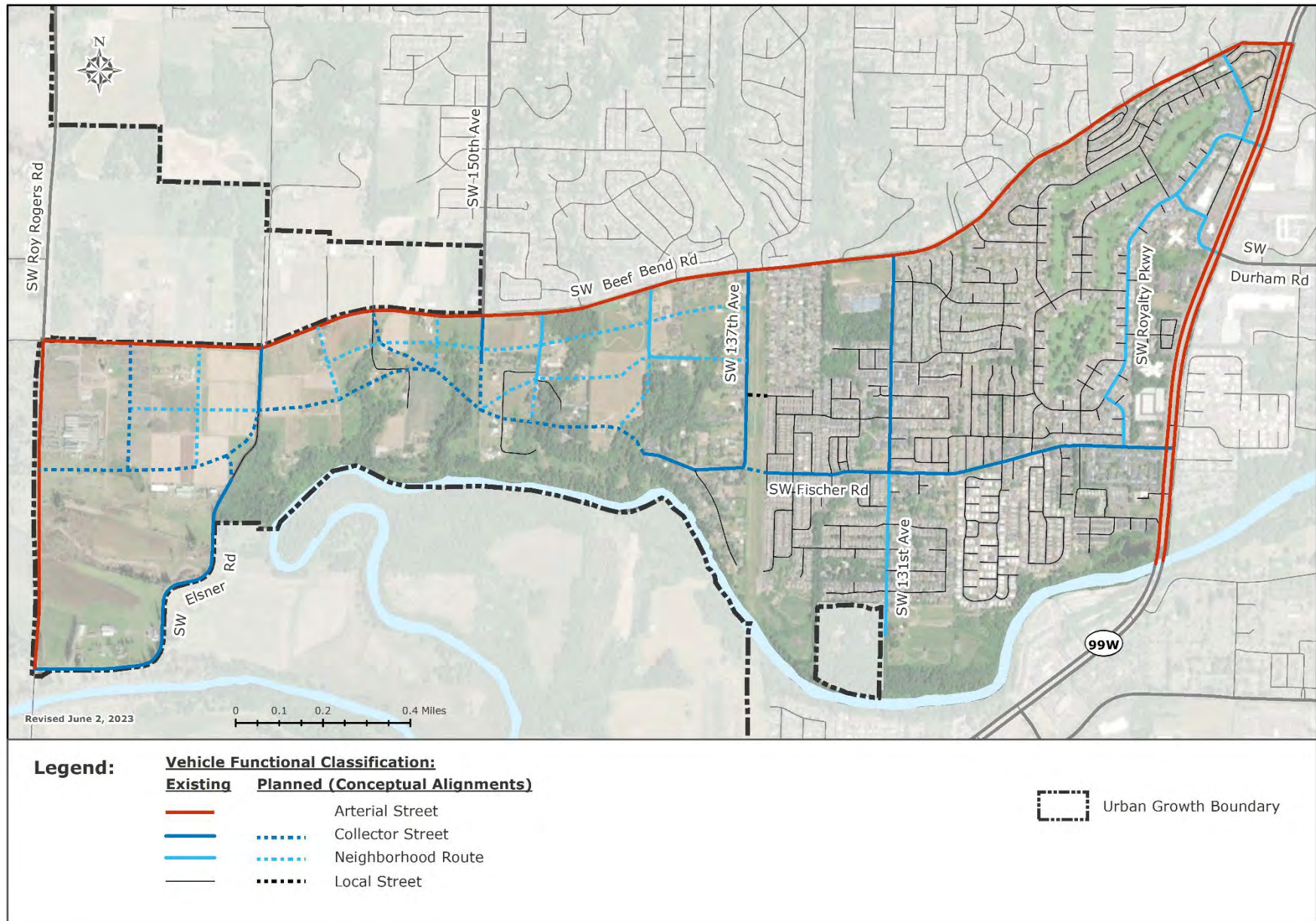
STREET FUNCTIONAL CLASSIFICATION MAP

The functional classification map (Figure 25) shows the designated classification for all roadways in the City's planning area, including new street extensions proposed as part of this plan (see Figure 39 and Table 13 in Chapter 5). These classifications are determined based on the intended function they serve for motor vehicles within the planning area, consistent with the definitions presented earlier in this chapter.

Several streets are shown on Figure 25 as potential street alignments under consideration. This evaluation process will occur through the Kingston Terrace Master Plan, and these alignments do not necessarily reflect an either/or condition. Ultimately the Kingston Terrace Master Plan evaluation process will determine their intended function in the planning area and corresponding street functional classification.

Fischer Road also has a special Minor Arterial designation for its role in the regional transportation system. Since the TSP does not have a Minor Arterial classification, the TSP Collector Street designation in this case is intended to be the same as the Minor Arterial designation in the Regional Transportation Plan.

FIGURE 25: STREET FUNCTIONAL CLASSIFICATIONS



PEDESTRIAN, BICYCLE AND TRANSIT ROUTES

To complement the street functional classifications, routes are identified for pedestrian, bicycle, and transit travel. The designations are used to determine the typical standards that apply to each street for these travel modes.

PEDESTRIAN ROUTE DESIGNATION

The pedestrian routes for streets helps support pedestrian movement and access to adjacent land use. This designation is used to determine the minimum acceptable design for pedestrian facilities along streets, including the width of throughway for pedestrians and furnishings/landscape area. A route designation is applied to a roadway based on the adjacent land use, and level of access and connectivity the route provides for pedestrian movement.

The pedestrian route designations for roadways in the City's planning area are described below. They include Multimodal Area, Major Pedestrian, Neighborhood Pedestrian, and Local Pedestrian, which apply to both existing roadways and new street extensions proposed as part of this plan.

Multimodal Area

A Multimodal Area reflects the areas where high pedestrian activity is expected or planned. All streets in the Multimodal areas shown on Figure 26 include the Multimodal Area route designation. Non-vehicle movement takes the highest priority in these areas (i.e., wider sidewalks or landscape strips are desired over wider or more travel lanes).

The Multimodal Area route designation differs in commercial and residential areas. While both must include a minimum 8-foot pedestrian throughway, commercial areas include a wider zone along the frontage of adjacent buildings for outdoor seating (i.e., 3 feet in commercial area versus 1 foot in residential area), while residential areas include a wider furnishings/ landscape zone (6 feet in residential area versus 4 feet in commercial area).

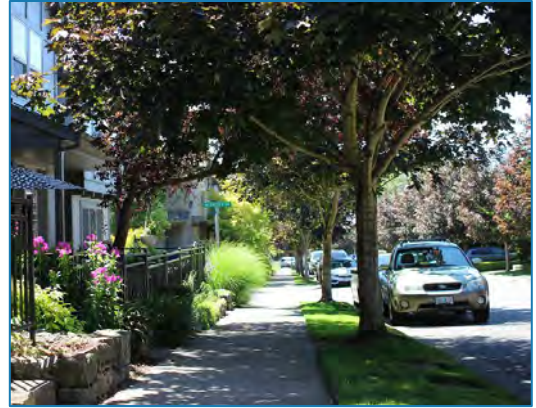


Major Pedestrian

A Major Pedestrian route designation applies to corridors linking different parts of the planning area, and those providing access to Multimodal Areas or Transit Corridors. These routes require a minimum 6-foot pedestrian throughway and 6-foot landscape area.

Neighborhood Pedestrian

A Neighborhood Pedestrian route includes those connecting to streets with a Major Pedestrian route designation and those providing access to schools, pedestrian trails, parks, open spaces, and other significant destinations. These routes also include trails or accessways along them that provide off-street shortcuts for people walking between two disconnected routes. These are typically located along streets with a low volume of traffic and requires a minimum 6-foot pedestrian thoroughway and 4-foot landscape area.



Local Pedestrian

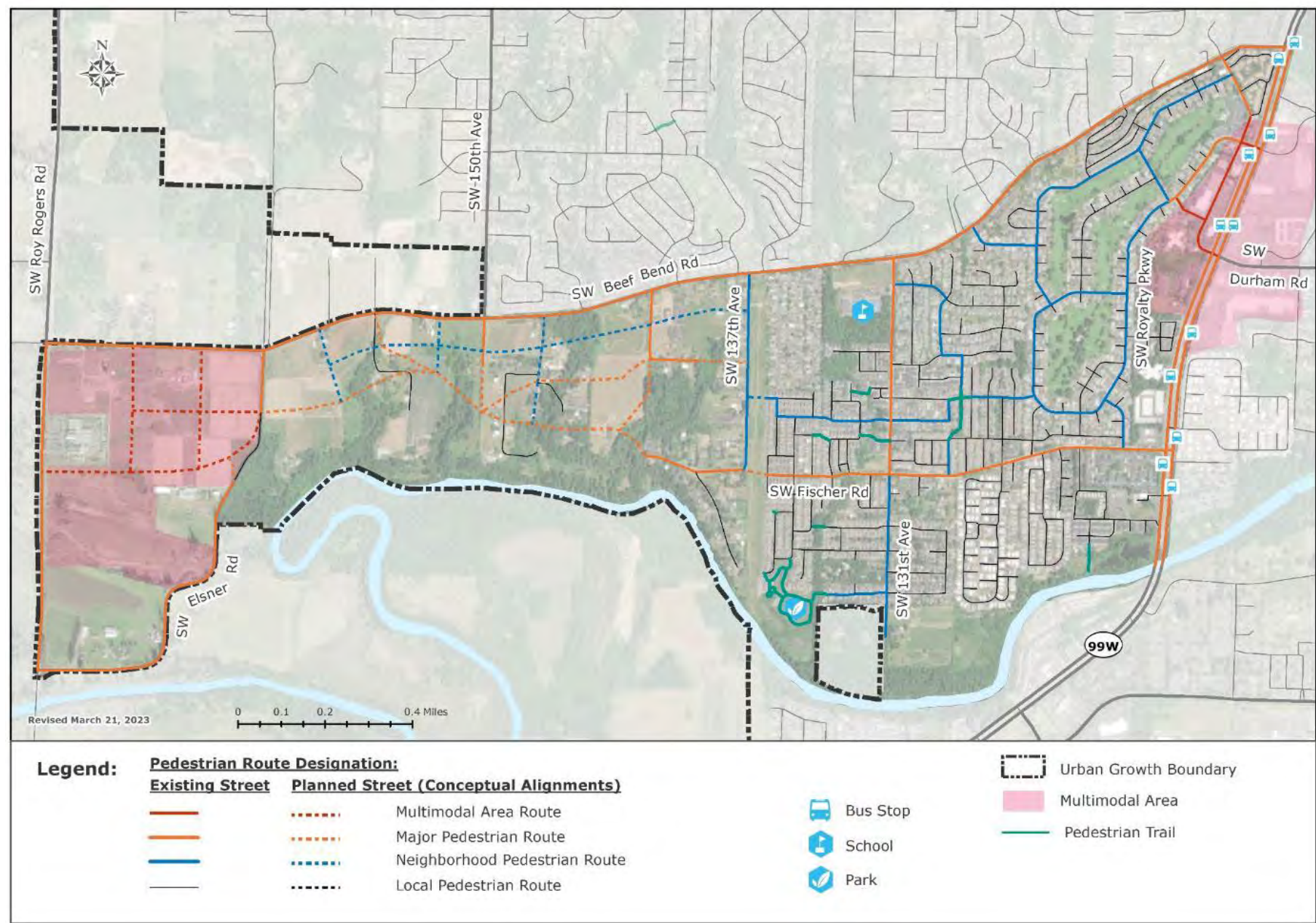
All streets without a Multimodal Area, Major Pedestrian, or Neighborhood Pedestrian route designation are Local Pedestrian routes. Local Pedestrian routes provide local access and circulation for pedestrians and must include a minimum 5-foot pedestrian thoroughway and 4-foot landscape area.

PEDESTRIAN ROUTE DESIGNATION MAP

Figure 26 shows the pedestrian route designations for all roadways in the City's planning area, including new street extensions proposed as part of this plan (see Figure 39 and Table 13 in Chapter 5). These designations are determined based on the intended function they serve for pedestrians within the planning area, consistent with the definitions presented earlier in this chapter.

Several streets are shown on Figure 26 as potential street alignments with pedestrian facilities. This evaluation process occurred through the Kingston Terrace Master Plan, and these alignments do not necessarily reflect an either/or condition. Ultimately, the Kingston Terrace Master Plan will determine their intended function for pedestrians in the planning area and corresponding pedestrian route designation.

FIGURE 26: PEDESTRIAN ROUTE DESIGNATIONS



BICYCLE ROUTE DESIGNATIONS

The bicycle route designation for streets helps support the movement of people riding bikes. This designation is used to determine the minimum acceptable bike facility design along these streets. A route designation is applied to a roadway based on the existing or expected motor vehicle volumes and travel speeds, and level of access and connectivity the route provides for bicycle movement.

The bicycle route designations for roadways in the City's planning area are described below. They include Major Bicycle, Neighborhood Bicycle, and Local Bicycle, which apply to both existing roadways, anticipated extensions, and new streets.

Major Bicycle

A Major Bicycle Street route applies to corridors linking different parts of the planning area, those providing primary access to Multimodal Areas or Transit Corridors, and those with high motor vehicle traffic volumes or speeds (i.e., traffic volumes over 5,000 per day or travel speeds over 25 miles per hour). These are typically located along Arterial or Collector Streets. The bike facilities should be high quality and emphasize safe, convenient, and comfortable bicycle travel, which are often protected or separate from the vehicle travel way. These routes are typically provided in half mile intervals, so everyone is within one quarter mile of any given point in the planning area.

Neighborhood Bicycle

A Neighborhood Bicycle route includes corridors connecting to streets with a Major Bicycle route designation, and those providing access to schools, bicycle paths, parks, open spaces, and other significant destinations. These routes also include shared-use paths or accessways along them that provide off-street shortcuts for people biking between two disconnected routes. These routes establish direct and convenient bicycle routes and are typically spaced in one quarter mile intervals to provide bicycle facility coverage at shorter intervals than streets with the Major Bicycle route designation. The bike facilities often include buffered or conventional bicycle lanes, or shared roadways with shared lane markings, bike route wayfinding, and traffic volume and speed management.

Local Bicycle

All streets without a Major Bicycle, or Neighborhood Bicycle route designation are Local Bicycle routes. Local Bicycle streets provide local access and circulation for bicyclists and typically include shared roadways (without shared lane markings).

BICYCLE ROUTE DESIGNATION MAP

Figure 27 shows the bicycle route designations for all roadways in the City's planning area, including new street extensions proposed as part of this plan (see Figure 39 and Table 13 in Chapter 5). These designations are determined based on the intended function they serve for bicycles within the planning area, consistent with the definitions presented earlier in this chapter.

Several streets and conceptual bicycle routes are shown in Figure 27 for the Kingston Terrace area. These and other potential route designations and alignments were evaluated and finalized as part of the Kingston Terrace Master Plan, and these alignments do not necessarily reflect an either/or condition. Ultimately the Kingston Terrace Master Plan will determine their intended function for bicycles in the planning area and corresponding bicycle route designation.

TRANSIT ROUTE DESIGNATIONS

The transit route designations help maintain a system of streets that support existing and potential future transit routes (i.e., the TSP provides a local circulation bus option for future consideration). Figure 28 shows streets that include the transit route designations, which apply to all current bus routes and along streets in this TSP identified as potential transit routes. The potential future transit routes include portions of SW Beef Bend Road, SW Elsner Road, the future SW River Terrace Boulevard and anticipated east-west connections through Kingston Terrace Master Plan area.

Accommodations for enhancing transit service and stop amenities should be considered and included with any improvement along an existing or future transit street. For routes with existing service, these accommodations include sheltered stops with seating, landing pads, route information, sidewalk connections (i.e., along routes and streets connecting to them), bicycle parking, and lighting. In addition, travel lanes must be maintained to a minimum of 11 feet along streets with a transit route designation.

All improvements along transit routes must be coordinated with transit service providers. Generally, bus-bulb outs should be constructed into on-street parking lanes for bus stops, and on-street parking restricted near potential bus-stop locations. Curb extensions may need to be adjusted and parking also may need to be restricted within about 15 feet of corners to allow for buses to maneuver turns along streets with the transit route designation.

TRANSIT ROUTE DESIGNATION MAP

Figure 28 shows the transit route designations for all roadways in the City's planning area, including new street extensions proposed as part of this plan (see Figure 39 and Table 13 in Chapter 5). These designations are determined based on the existing and potential transit routes discussed in Chapter 3.

Several streets are shown on Figure 28 as potential street alignments with transit. These and other east-west neighborhood connections were further evaluated during the development of the Kingston Terrace Master Plan, and these alignments do not necessarily reflect an either/or condition. Ultimately the Kingston Terrace Master Plan will determine their intended function for transit in the planning area and corresponding transit route designation.

FIGURE 27: BICYCLE ROUTE DESIGNATIONS

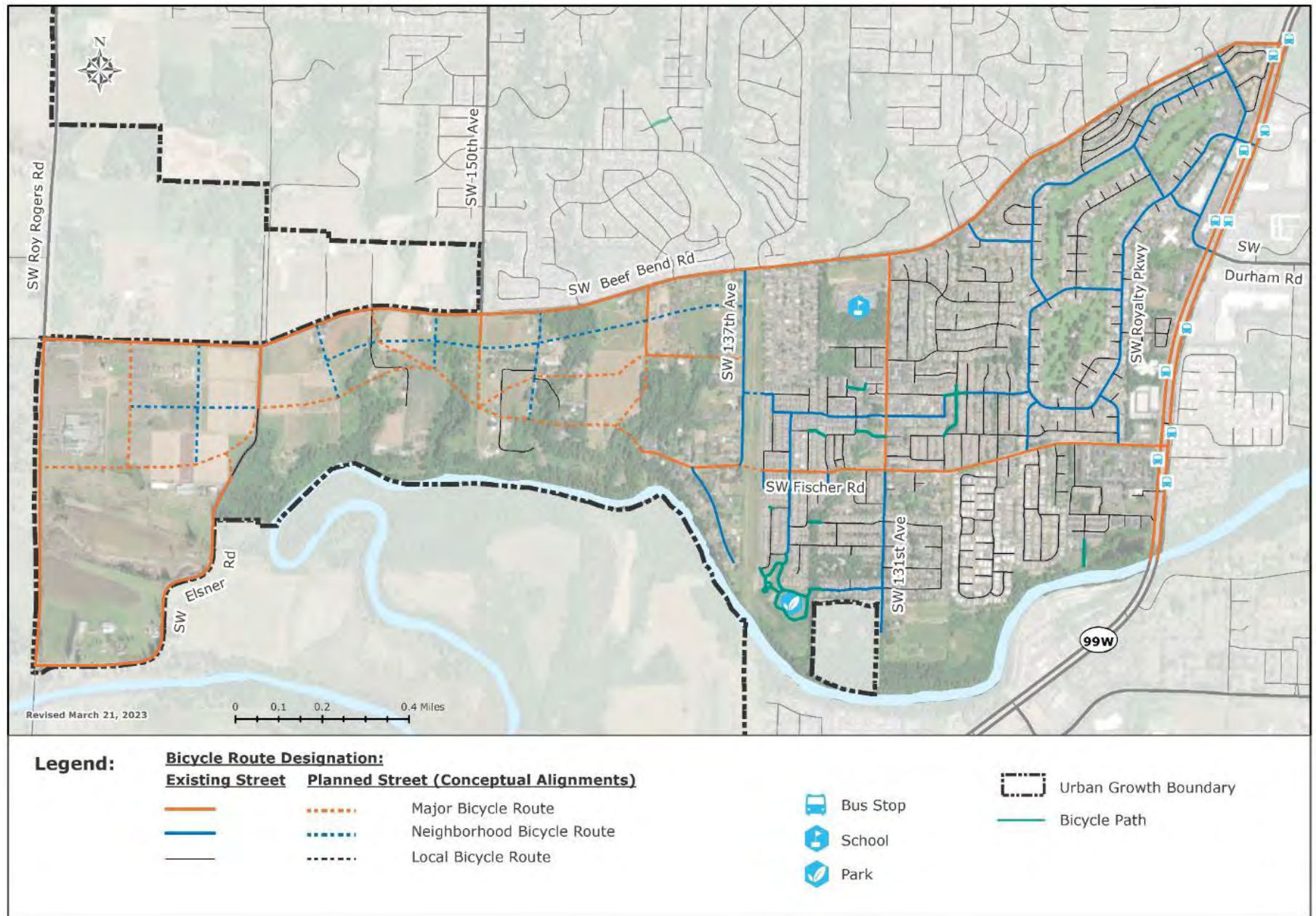
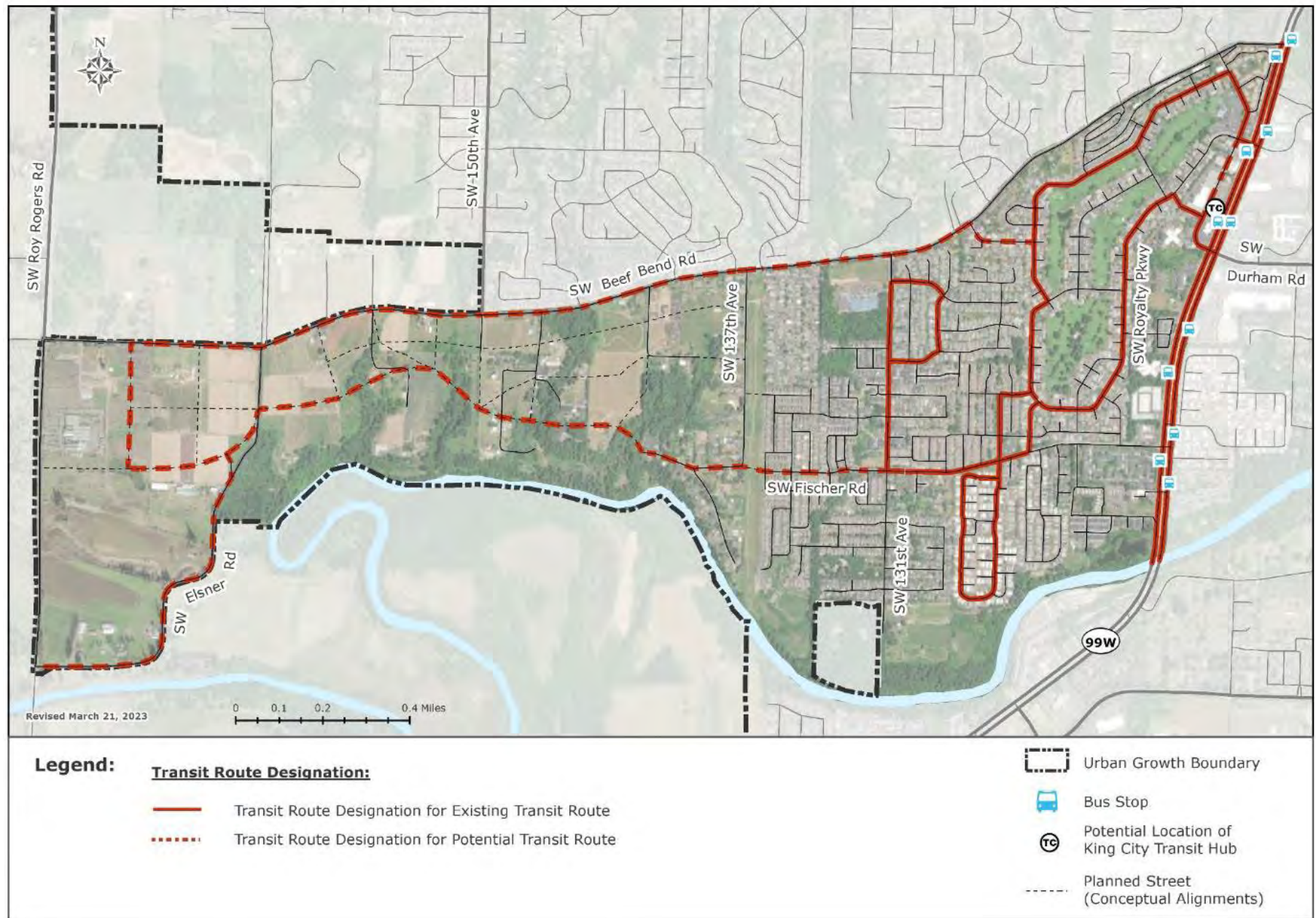


FIGURE 28: TRANSIT ROUTE DESIGNATIONS



MULTIMODAL NETWORK DESIGN

The design of the streets in the City's planning area is based on the network classifications and route designation for each mode. All streets in the planning area are multimodal and include travel lanes and on-street parking for vehicles, sidewalks for pedestrians, and on-street or separated facilities for bicyclists. Accommodating these modes varies by the functional classification and designations, these can include pedestrian and bicycle route designations, and transit route designations. For a typical street cross-section, the functional classification determines the design requirements for the vehicle travel way and on-street parking, the pedestrian route designation is used to determine the minimum acceptable design for pedestrian facilities, and the bicycle route designation is used to determine the minimum acceptable bike facility along streets. Together, these cross-section standards identify the design characteristics needed to meet the function and demand for each facility type for streets in the City's planning area. Since the actual design of a roadway can vary from segment to segment due to adjacent land uses and demands, this system allows standardization of key characteristics to provide consistency.

The following method shall be used to determine the design of new streets and the reconstruction or improvement of existing streets.

Use the following steps to determine the typical standards that apply to a roadway:

1. Confirm the functional classification, and any pedestrian, bicycle, or transit route designations that apply using Figure 25, Figure 26, Figure 27, and Figure 28.
2. Use Table 3 to determine the typical vehicle travel way and on-street parking requirements, based on the functional classification.
3. Use Table 4 to determine the typical sidewalk requirements, based on the pedestrian route designation.
4. Use Table 5 to determine the typical bike facility requirements, based on the bicycle route designation.
5. Combine the elements to determine the typical cross-section. Examples are provided in Figure 31 through Figure 37.

The typical facilities shown along Arterial streets (i.e., OR 99W, SW Roy Rogers Road, and SW Beef Bend Road) are consistent with ODOT and Washington County standards. OR 99W is under the State's jurisdiction and subject to the design criteria in the Blueprint for Urban Design (BUD). The BUD supplements existing state design manuals and provides enhanced design guidance until a full design manual update can be completed. SW Roy Rogers Road and SW Beef Bend Road will remain under Washington County jurisdiction and are subject to the County Arterial Roadway Standards.

VEHICLE TRAVEL WAY AND PARKING

The vehicle classifications, in addition to the transit route designation, determine the design parameters for the vehicle travel way of each street. This is the throughway for drivers, including cars, buses, and trucks. Table 3 provides the travel lane, median/center turn lane, and parking requirements. The vehicle classification of the street generally determines the number of through lanes, lane widths, and median and left-turn lane requirements. However, the transit route designation takes precedent when determining the appropriate lane width regardless of the vehicle classification. Streets with a transit route designation require a minimum travel lane width of 11 feet to appropriately accommodate buses. Wider lanes (over 11 feet) should only be used for short distances as needed to help buses negotiate right-turns without encroaching into adjacent or opposing travel lanes.

Streets that require a median/center turn lane should include a minimum 6-foot-wide pedestrian refuge at marked crossings, with a preferred width of 8 to 10 feet. Otherwise, the median can be reduced or eliminated at midblock locations, before widening at intersections for left-turn lanes (where required or needed).

TABLE 3: TYPICAL VEHICLE TRAVEL WAY AND ON-STREET PARKING REQUIREMENTS

VEHICLE CLASSIFICATION	ARTERIAL STREET*	COLLECTOR STREET	NEIGHBORHOOD ROUTE	LOCAL STREET
TYPICAL THROUGH LANES	2 to 4	2	2	2
MINIMUM LANE WIDTH (NO TRANSIT ROUTE DESIGNATION)	11-12 ft.	10 ft.	10 ft.	10 ft.
MINIMUM LANE WIDTH (WITH TRANSIT ROUTE DESIGNATION)		11 ft.	11 ft.	11 ft.
MEDIAN/ CENTER TURN LANE	Required 12-14 ft. median/ center turn lane **	Required 11 ft. center turn lane ***	None	None
MINIMUM ON-STREET PARKING WIDTH	None	8 ft.	8 ft.	8 ft.

Notes: * Although guidance is provided for arterial streets, they are under state or Washington County jurisdiction. Values presented in this table are consistent with the ODOT Blueprint for Urban Design (BUD) and the Washington County Arterial Roadway Standards.

** A minimum 8-foot-wide pedestrian refuge should be provided at marked crossings on Arterials, with a preferred width of 10 feet. Otherwise, a median can be reduced or eliminated at midblock locations, before widening at intersections for left-turn lanes (where required or needed).

*** Center left-turn lane required at intersections with Arterials; minimum 6-foot-wide median required where refuge is needed for pedestrian/bicycle street crossings, with a preferred width of 8–10 feet.

SIDEWALKS

Sidewalks provide for pedestrian movement and access, enhance connectivity, and promote walking. The requirements for pedestrian facilities in the City's planning area promote superior sidewalk design and encourage walking by making it more attractive. The pedestrian route designations determine pedestrian facility design treatments along streets, including the width of the throughway for pedestrians, and the buffer between the vehicle travel way.



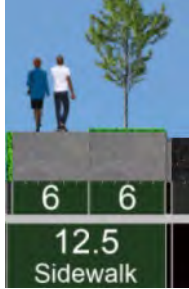


The sidewalk encompasses three zones (as shown in Figure 29), including the frontage, pedestrian throughway, and furnishings/landscape. The minimum configuration for each of these zones is provided in Table 4. Wider widths may be considered as conditions warrant. For example, if a tree requires a wider area, the width of the landscape zone may be increased. Sidewalk facilities constructed on OR 99W are subject to review and approval by ODOT based on guidance from the BUD. Likewise, facilities on SW Roy Rogers Road, SW Elsnor Road and SW Beef Bend Road are subject to County review and approval. See the notes under Table 4 for details on the current requirements for both agencies.

FIGURE 29: SIDEWALK ZONES



- The **frontage zone** describes the section where a pedestrian interacts with the adjacent buildings or private property and includes entryways and outdoor seating. This zone is typically between 1 and 3 feet wide in multimodal areas (i.e., to accommodate outdoor seating in commercial areas or building access in residential areas) and ½ foot in other areas, and it may include a concrete or natural surface depending on the adjacent land use. The adjoining development may elect to expand this zone with additional space provided outside of and adjacent to the street right-of-way.
- The **pedestrian throughway zone** is the accessible zone in which pedestrians travel. It includes a minimum eight-foot-wide clear throughway in multimodal areas, six-foot wide clear throughway along streets with a Major Pedestrian and Neighborhood Pedestrian route designation, and five-foot wide clear throughway along Local Pedestrian streets.
- The **furnishings/ landscape zone** is the sidewalk section located between the pedestrian throughway and the curb, and includes street furnishings or landscaping (e.g., benches, lighting, bicycle parking, tree wells, and/or plantings). If adjacent to on-street parking, it should also include a clearance distance between any curbside parking and the street furnishing area or landscape strip (i.e., so vehicles parking, or opening doors do not interfere with street furnishings and/or landscaping). Streets located along a street with a transit route designation should incorporate furnishings to support transit ridership, such as transit shelters and benches, into the furnishings/landscape strip. It should include a minimum width between four and six feet, depending on the pedestrian route designation.

TABLE 4: MINIMUM SIDEWALK CONFIGURATION

PEDESTRIAN ROUTE DESIGNATION	MULTIMODAL AREA		MAJOR PEDESTRIAN	NEIGHBORHOOD PEDESTRIAN	LOCAL PEDESTRIAN
	COMMERCIAL	RESIDENTIAL			
MINIMUM CONFIGURATION *					
FRONTAGE ZONE	3 ft.	1 ft.	0.5 ft.	0.5 ft.	0.5 ft.
PEDESTRIAN THROUGHWAY ZONE	8 ft.	8 ft.	6 ft.	6 ft.	5 ft.
FURNISHINGS/ LANDSCAPE ZONE (INCLUDES CURB) **	4 ft.	6 ft.	6 ft.	4 ft.	4 ft.
TOTAL SIDEWALK WIDTH	15 ft.	15 ft.	12.5 ft.	10.5 ft.	9.5 ft.

Notes: * ODOT design guidance from the BUD for OR 99W through the planning area requires a minimum 1-foot frontage zone, 5-8 foot pedestrian throughway zone and 0-5 foot buffer zone, for a total sidewalk width of 6-14 feet. A 5-foot pedestrian throughway requires a paved frontage zone and/or a paved buffer zone. Minimum "sidewalk" width is 6-feet. The desired pedestrian throughway and buffer zone widths for OR 99W are subject to review and approval by ODOT. Additional detail is provided in the BUD.

Washington County design standards for Arterial streets require a minimum 1-foot frontage zone, 5-foot pedestrian throughway zone and 4.5-foot buffer zone, for a total minimum sidewalk width of 10.5 feet.

** Furnishings/ Landscape zone may be reduced to the minimum buffer widths shown in Table 6 when protected bike facilities (i.e., cycle track) are located between the sidewalk and the vehicle travel way.

BICYCLE FACILITIES

Streets should be safe and comfortable for bicyclists of all ages and abilities to encourage ridership. Building high quality bicycle infrastructure can help the city work towards achieving transportation Goals and Objectives, including improved safety and public health, reduced congestion, and more equitable access.

The typical bicycle facilities shown in Table 5 for each bicycle route designation are determined based on a street's design and motor vehicle traffic conditions (i.e., expected vehicle speeds and volumes). When bike facilities are routed along the lowest speed and volume streets (i.e., streets with a Local Bicycle route designation), shared streets are typical. When the bike facilities are routed on busier or faster streets (i.e., streets with a Major Bicycle or Neighborhood Bicycle route designation), enhanced facilities, which are buffered or protected from the vehicle travel way, are typical. These may be separated from the vehicle travel way by a painted buffer and include vertical or horizontal protection, like bollards, planter boxes, curbs, or parked cars. These facilities include buffered bike lanes, cycle tracks, or shared-use paths.

In general, streets with motor vehicle volumes over 1,500 per day should include conventional bike lanes at a minimum. When daily motor vehicle volumes exceed 3,000, buffered bike lanes are desired, with protected bicycle facilities desired when motor vehicle volumes exceed 6,000 per day. In any case, if motor vehicle travel speeds exceed 30 miles per hour, buffered or protected bicycle facilities are desired.

Table 6 shows bicycle facility options and configurations for the minimum facilities shown in Table 5. In general, facilities that are protected or separated from the vehicle travel way include a 12-foot two-way or 6-foot one-way cycle track, 12-foot shared use path, or 8-foot buffered bike lanes. Non-separated bike lanes should be a minimum of 6-feet wide, while shared streets should include shared lane markings, with vehicle speed and volume management. Bikeway facilities constructed on OR 99W are subject to review and approval by ODOT based on guidance from the BUD. Likewise, facilities on SW Roy Rogers Road and SW Beef Bend Road are subject to County review and approval. See the notes under Table 5 for details on the current requirements for both agencies.

TABLE 5: MINIMUM BICYCLE FACILITIES

BICYCLE ROUTE DESIGNATION	MAJOR BICYCLE	NEIGHBORHOOD BICYCLE	LOCAL BICYCLE
MINIMUM BIKE FACILITY (UNCONSTRAINED CONDITIONS) **	Protected bicycle facilities separated from the vehicle travel way *	Buffered bicycle lanes *	Shared Streets (without shared lane markings) *
ACCEPTABLE BIKE FACILITY (CONSTRAINED CONDITIONS***)	Buffered bicycle lanes *	Conventional bicycle lanes or shared streets (with shared lane markings) *	N/A



Notes: * See Table 6 for options and configurations for the bicycle facility type shown.







** ODOT design guidance from the BUD for OR 99W through the planning area includes a separated bicycle facility as the preferred option (i.e., shared use paths, sidewalk level separated bicycle lanes, or buffered bicycle lanes with vertical delineation in the buffer zone). The second-tier option includes on-street bike lanes, with a buffer preferred. Minimum width for the separated bike lane is 7-8 feet (6 feet with raised buffer), minimum width for an on-street bike lane is 6 feet (5 feet allowed with buffer), and the minimum buffer width is 2-5 feet. The desired facilities and widths for OR 99W are subject to review and approval by ODOT. Additional detail is provided in the BUD.

Washington County design standards for Arterial streets require a 6-foot bike lane or paved shoulder.

*** Any modification of a standard bike facility requires justification of any constraints and approval of an acceptable deviation prior to construction.

TABLE 6: BICYCLE FACILITY OPTIONS AND TYPICAL CONFIGURATIONS

BICYCLE FACILITY TYPE	TYPICAL CONFIGURATION	TYPICAL DESIGN PARAMETERS
TWO-WAY CYCLE TRACK (PROTECTED FACILITY SEPARATED FROM THE VEHICLE TRAVEL WAY)		<p>Option: At sidewalk grade</p> <p>Minimum width: 12 ft.</p> <p>Minimum buffer: 3 ft. from vehicle travel way; 4 ft. from sidewalk</p>
		<p>Option: At roadway grade</p> <p>Minimum width: 12 ft.</p> <p>Minimum buffer: 4 ft. from vehicle travel way; 0 ft. from sidewalk</p>

BICYCLE FACILITY TYPE	TYPICAL CONFIGURATION	TYPICAL DESIGN PARAMETERS
ONE-WAY CYCLE TRACK (PROTECTED FACILITY SEPARATED FROM THE VEHICLE TRAVEL WAY)		Option: At sidewalk grade Minimum width: 6 ft.
		Option: At roadway grade Minimum width: 6 ft. Minimum buffer: 4 ft. from vehicle travel way; 0 ft. from sidewalk
SHARED USE PATH (PROTECTED FACILITY SEPARATED FROM THE VEHICLE TRAVEL WAY)		Minimum width: 12 ft. Minimum shoulder: 2 ft. on each side Minimum buffer: 6 ft. from vehicle travel way
BUFFERED BIKE LANES		Minimum width: 8 ft. (5 ft. bike lane with 3 ft. buffer)
CONVENTIONAL BIKE LANES		Minimum width: 6 ft.
SHARED STREET		Minimum treatments: Shared lane markings, with vehicle speed and volume management. Roadway Context: Motor vehicle volumes must be under 1,500 per day, and speeds under 25 miles per hour.

SEPARATED PEDESTRIAN AND BICYCLE FACILITIES

Some pedestrian and bicycle facilities may be separated from the right-of-way of a street, and include pedestrian trails, pedestrian, and bicycle accessway paths, and shared use paths. These facilities serve a variety of recreational, and transportation needs for pedestrians and bicyclists.

PEDESTRIAN TRAIL

Pedestrian trails offer recreational opportunities for pedestrians and are typically located in parks or natural areas. They should include a minimum width of 5 feet (see Figure 30) and may include a hard or soft surface.

ACCESSWAY PATH

Accessways provide short path segments between disconnected streets or localized recreational walking and biking opportunities. The King City Municipal Code currently restricts motorized or mechanical devices (e.g., electric scooters, golf carts) from using any public sidewalk, pathway or other byway designated for pedestrian use, but does not restrict the usage along pathways designated for both pedestrian and bicycle travel. Therefore, to allow for use of these devices, the accessway path must be on public easements or rights-of-way and have minimum paved surface of 10 feet, with a 1-foot shoulder on each side, and 12 feet of right-of-way. For low use segments, an accessway can be as narrow as 8 feet wide, with a 1-foot shoulder on each side and a total right-of-way of 10 feet.

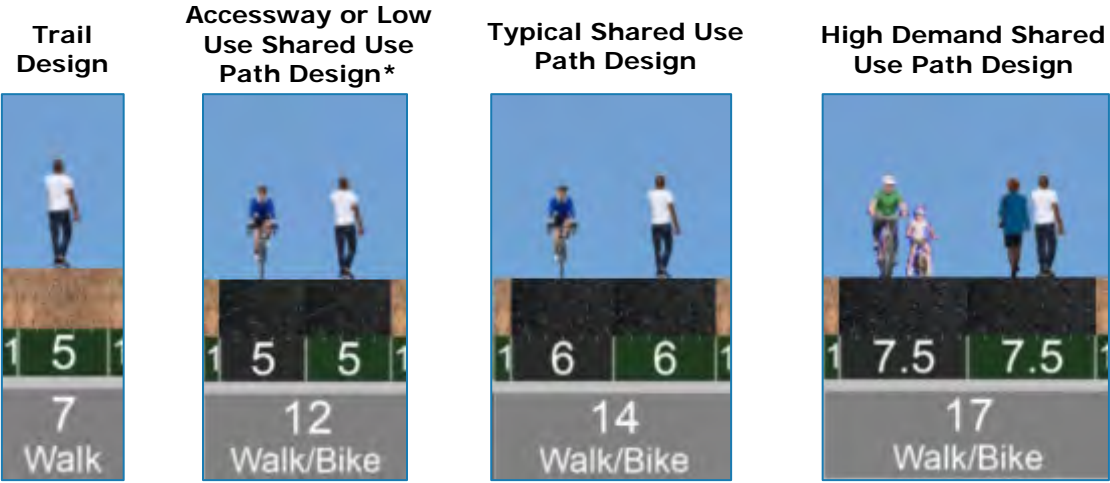
Narrower widths with a minimum paved surface of 5 feet, with a 1-foot shoulder on each side, and 7 feet of right-of-way are acceptable for an accessway serving pedestrian access only (i.e., no bicycles or motorized or mechanical devices).

SHARED USE PATH

Shared-use paths provide longer distance off-roadway facilities for walking and biking. Depending on their location, they can serve both recreational and citywide circulation 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.

Again, to allow for both pedestrian and bicycle travel, which includes devices such as electric scooters and golf carts, a shared-use path should typically be at least 12 feet wide, with a 1-foot shoulder on each side, and 14 feet of right-of-way (see Figure 30). In areas with significant walking or biking demand (e.g., regional shared use paths), that path should be 15 feet wide, with a 1-foot shoulder on each side and a total right-of-way of 17 feet (see Figure 30), while in areas with a low amount of walking or biking demand, the path can be 10 feet wide, with a 1-foot shoulder on each side and a total right-of-way of 12 feet (see Figure 30). For short segments, a low use shared use path can be as narrow as 8 feet wide, with a 1-foot shoulder on each side and a total right-of-way of 10 feet.

FIGURE 30: SEPARATED PEDESTRIAN AND BICYCLE FACILITY DESIGNS



Note: * For short segments, a low use accessway or shared use path can be as narrow as 8 feet wide, with a 1-foot shoulder on each side and a total right-of-way of 10 feet.

TYPICAL STREET CROSS-SECTIONS

As detailed earlier in this chapter, the functional classification determines the design requirements for the vehicle travel way and on-street parking, the pedestrian route designation is used to determine the minimum acceptable design for pedestrian facilities, and the bicycle route designation is used to determine the minimum acceptable bike facility along streets. However, the transit route designation takes precedent when determining the appropriate lane width regardless of the vehicle functional classification. Together, these standards determine the typical cross-section for streets in the City’s planning area. Several typical cross-sections examples have been highlighted below in Figure 31 to Figure 37. Because the vehicle travel lane widths and on-street parking requirements are identical for all City Collector streets, Neighborhood Routes, and Local streets (i.e., two 10-foot travel lanes and two 8-foot on-street parking stalls), the cross-section of these facilities vary only by the route designations. For example, a City Collector street with Major Pedestrian and Major Bicycle route designations will be identical to a City Neighborhood Route with the same route designations.

FIGURE 31: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH MULTIMODAL AREA (COMMERCIAL) AND MAJOR BICYCLE ROUTE DESIGNATION

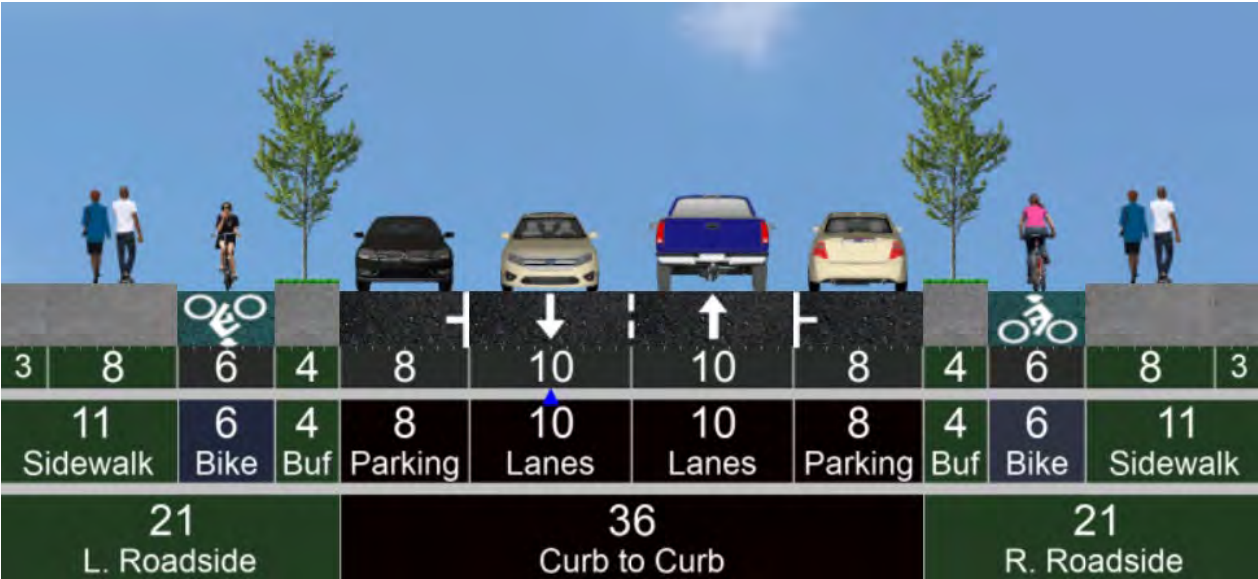


FIGURE 32: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH MULTIMODAL AREA (RESIDENTIAL) AND NEIGHBORHOOD BICYCLE ROUTE DESIGNATION



FIGURE 33: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION MAJOR PEDESTRIAN, MAJOR BICYCLE AND TRANSIT ROUTE DESIGNATION

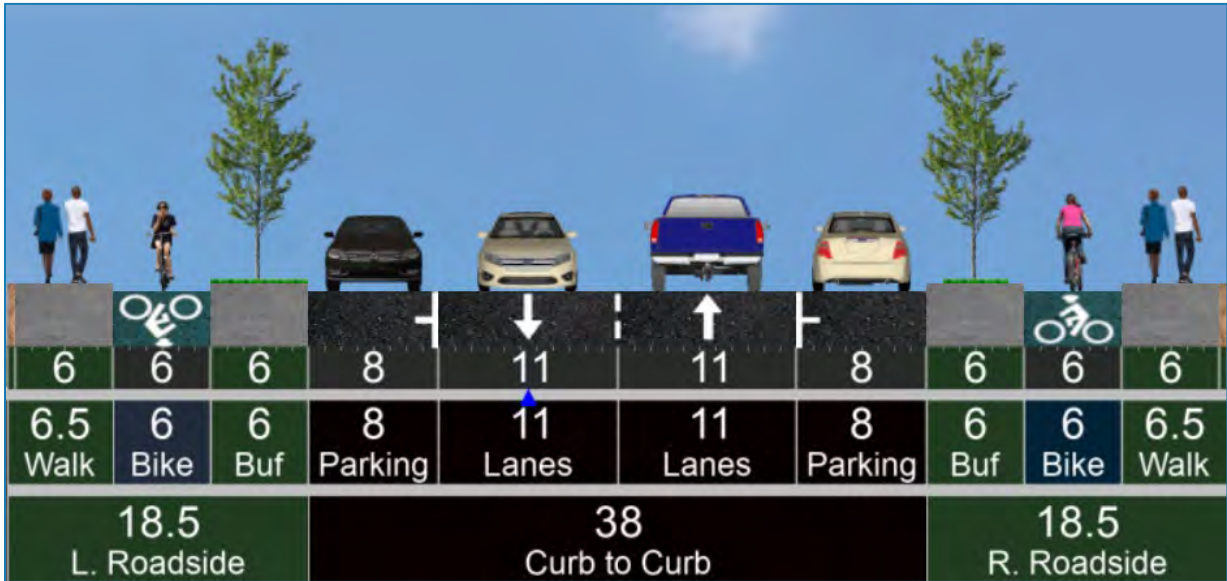


FIGURE 34: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH MAJOR PEDESTRIAN AND MAJOR BICYCLE ROUTE DESIGNATION

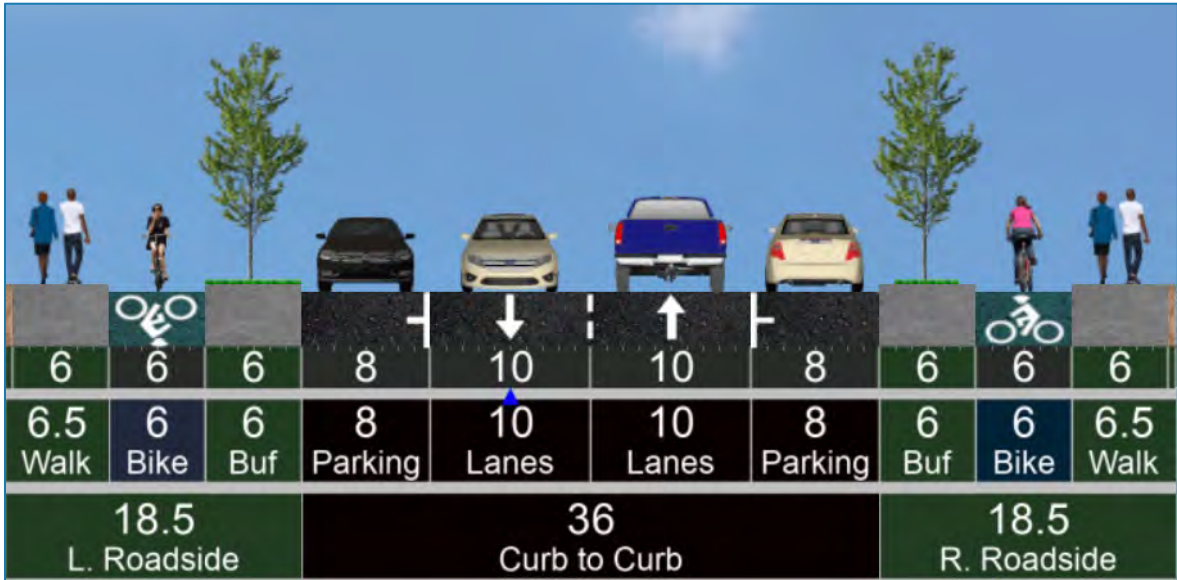


FIGURE 35: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH MAJOR PEDESTRIAN AND NEIGHBORHOOD BICYCLE ROUTE DESIGNATION

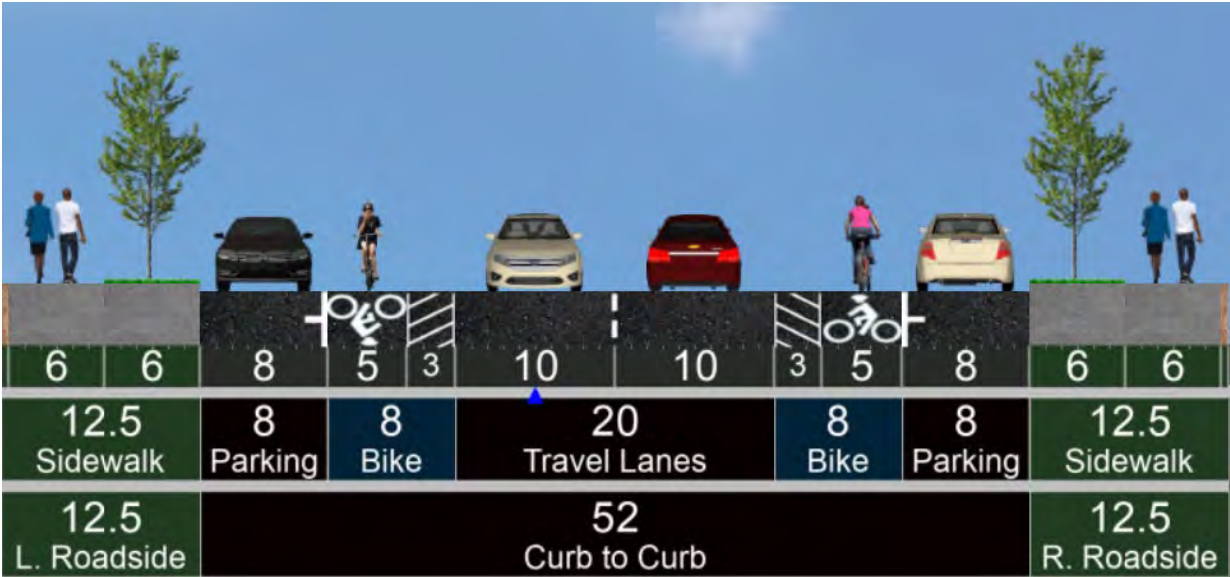


FIGURE 36: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH NEIGHBORHOOD PEDESTRIAN AND NEIGHBORHOOD BICYCLE ROUTE DESIGNATION

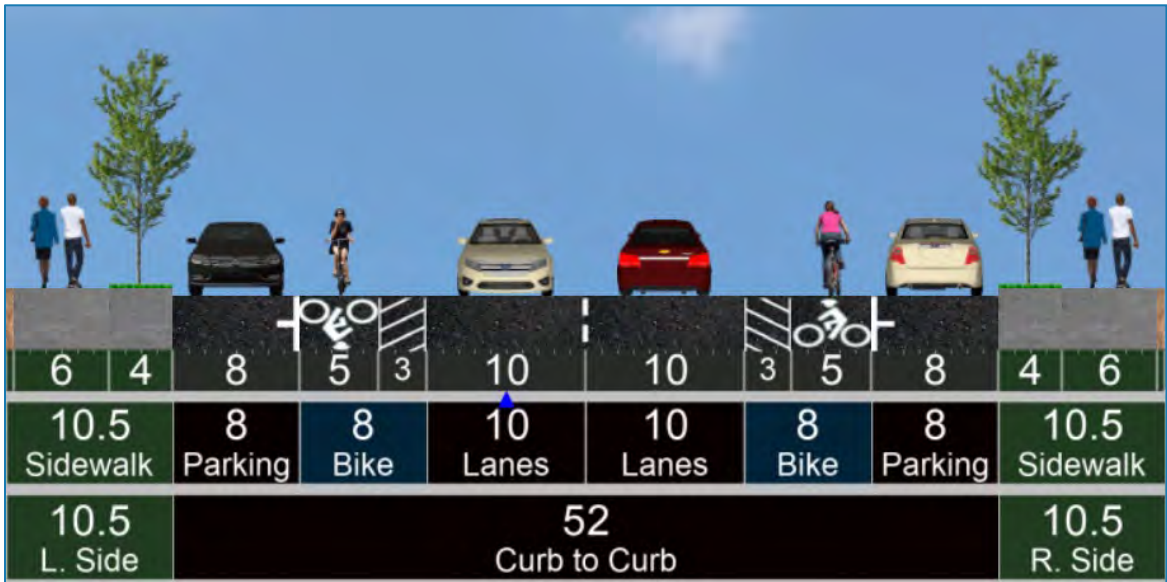
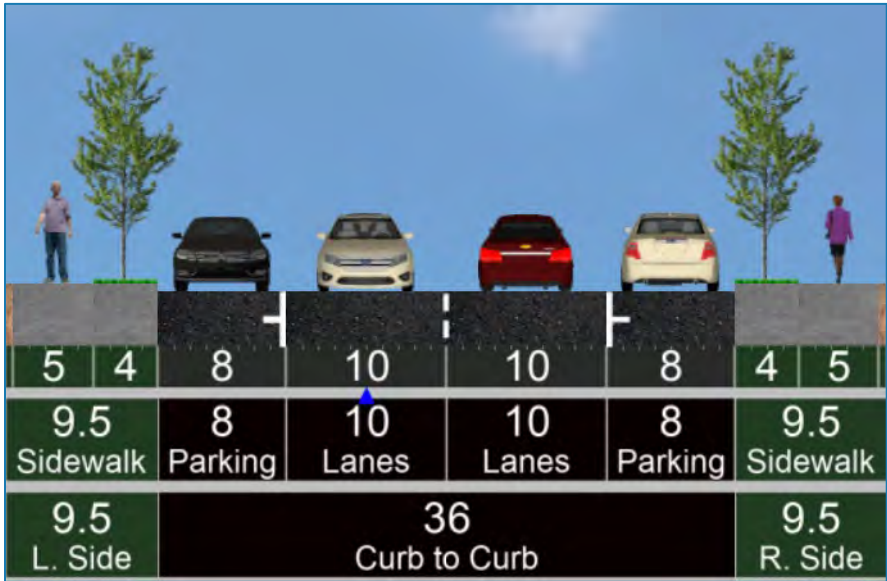


FIGURE 37: TYPICAL CITY COLLECTOR, NEIGHBORHOOD ROUTE, AND LOCAL STREET CROSS-SECTION WITH LOCAL PEDESTRIAN AND LOCAL BICYCLE ROUTE DESIGNATION



CONSTRAINED STREET CROSS-SECTIONS

The typical designs are intended to be implemented in newly developing or redeveloping areas of the City's planning area, where constrained conditions do not limit the ability to construct the typical cross-section. A variety of physical and natural constraints may prevent adherence to the multimodal network design requirements in this chapter. Typical design constraints include:

- Infill sites
- Innovative designs (e.g., roundabouts)
- Reallocation of right-of-way between modes (e.g., narrow travel lanes to accommodate wider bike lanes)
- Severe constraints presented by topography, environmental, or other resources present
- Existing developments and/or buildings that make it extremely difficult or impossible to meet the standards

A deviation to the street standards may be requested from the City Engineer or City Engineer's designee with justification of constraints to consider a constrained cross-section or other adjustments. Guidance for determining an acceptable minimum street cross-section is summarized in Table 7. The guidance shows the order in which cross-section elements should be reduced to acceptable minimum standards based on the designated pedestrian or bicycle routes shown in this chapter. The minimum acceptable sidewalk configuration is shown in Table 8, while the minimum acceptable bike facility is shown in Table 5 earlier in this chapter.

TABLE 7: PROCESS FOR DETERMINING STREET CROSS-SECTIONS IN CONSTRAINED CONDITIONS

ANY NON-ARTERIAL ¹ STREET FUNCTIONAL CLASSIFICATION WITH:	STEP 1	STEP 2	STEP 3	STEP 4
EQUAL PEDESTRIAN AND BICYCLE ROUTE DESIGNATIONS ²	Eliminate on-street parking on one or both sides	Reduce sidewalk frontage zone to acceptable width	Implement acceptable bike facility	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width
HIGHER PEDESTRIAN VS. BICYCLE ROUTE DESIGNATION ³	Eliminate on-street parking on one or both sides	Implement acceptable bike facility	Reduce sidewalk frontage zone to acceptable width	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width
HIGHER BICYCLE VS. PEDESTRIAN ROUTE DESIGNATION ⁴	Eliminate on-street parking on one or both sides	Reduce sidewalk frontage zone to acceptable width	Reduce the furnishings/ landscape zone or pedestrian throughway to acceptable width	Implement acceptable bike facility

Notes:

1. The cross-section for OR 99W is subject to review and approval by ODOT. Additional detail is provided in the BUD. The cross-sections for SW Roy Rogers Road and SW Beef Bend Road are subject to review and approval by Washington County.
2. Includes Multimodal Area/Major Pedestrian vs. Major Bicycle route, Neighborhood Pedestrian vs. Neighborhood Bicycle route, or Local Pedestrian vs. Local Bicycle route.
3. Includes Multimodal Area/Major Pedestrian vs. Neighborhood or Local Bicycle route, or Neighborhood Pedestrian vs. Local Bicycle route.
4. Includes Major Bicycle vs. Neighborhood or Local Pedestrian route, or Neighborhood Bicycle vs. Local Pedestrian route.

TABLE 8: CONSTRAINED ACCEPTABLE SIDEWALK CONFIGURATION

PEDESTRIAN ROUTE DESIGNATION	MULTIMODAL AREA		MAJOR PEDESTRIAN	NEIGHBORHOOD PEDESTRIAN	LOCAL PEDESTRIAN
	COMMERCIAL	RESIDENTIAL			
ACCEPTABLE FRONTAGE	0.5 ft.	0.5 ft.	0.5 ft.	0.5 ft.	0.5 ft.
ACCEPTABLE PEDESTRIAN THROUGHWAY	8 ft.	8 ft.	6 ft.	6 ft.	5 ft.
ACCEPTABLE FURNISHINGS/ LANDSCAPE (INCLUDES CURB)	4 ft.	4 ft.	4 ft.	0.5 ft.	0.5 ft.

PERFORMANCE STANDARDS

Performance standards are applied to the operation and design of transportation facilities to ensure that the network functions as intended. In King City, this includes performance standards for vehicles, pedestrians, bicyclists, and overall system connectivity.

VEHICLE CONGESTION THRESHOLDS

Mobility targets for streets and intersections in King City provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Two methods used to gauge operational conditions for motor vehicles include volume-to-capacity (v/c) ratios and level of service (LOS).

- **Volume-to-capacity (v/c) ratio:** A v/c ratio is 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 (generally above 0.70), congestion noticeably increases, and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.
- **Level of service (LOS):** LOS is 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 is excessive and demand exceeds capacity, typically resulting in long queues and delays.

This TSP includes new performance standards for motor vehicles. A v/c ratio of 0.99 applies to City streets and intersections during the highest one-hour period of the day⁴. At signalized, all-way stop, and roundabout controlled intersections, this standard is applied to the intersection. At two-way stop and yield controlled intersections, this standard is applied to all intersection approaches serving more than 20 vehicles during the peak hour. Mobility standards do not apply to approaches at stop-controlled intersections serving 20 vehicles or fewer during the peak hour⁵. This mobility standard allows more flexibility in the tension between larger intersection and street designs that are sometimes needed to accommodate peak vehicle demands, and the desire to maintain smaller

⁴ The City v/c ratio performance standard is consistent with the Metro Regional Transportation Plan and Washington County targets that apply to SW Roy Rogers Road and SW Beef Bend Road.

⁵ When a low number of vehicles approach a stop-controlled intersection (i.e., 20 or fewer), particularly at those with high volumes on the uncontrolled major street, long delays for vehicles often result during peak periods. This can cause the intersection to operate with a peak hour v/c ratio that exceeds the adopted intersection mobility standard and can necessitate the need to expand the intersection. Therefore, stop controlled approaches with a low volume of traffic are commonly excluded from agency mobility standards.

designs that encourage slower vehicle speeds and tend to be more accommodating to pedestrian and bicycle users.

MULTIMODAL LEVEL OF TRAFFIC STRESS TARGETS

Pedestrian and bicycle level of traffic stress (LTS) evaluations provide a metric to understand a multimodal user's perception of the safety and comfort of the transportation network. This method can be used to understand key gaps and barriers to walking and bicycling which can then be addressed through targeted improvements.

The LTS evaluation generates a ranking between 1 and 4 of the relative safety and comfort of a segment or intersection for bicyclists or pedestrians based on roadway and intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced pedestrian and bicycle facilities are needed to maintain a system that is accessible and comfortable for all users. The following summarizes the LTS rankings:

- Low Stress (LTS 1) – represents little traffic stress and requires less attention, so is suitable for all cyclists or pedestrians of all ages and abilities. Traffic speeds are low (i.e., 25 mph) and there is no more than one lane in each direction. Intersections are easily crossed by children and adults. Typical locations include residential local streets, separated bike paths/cycle tracks, and sidewalks/shared use paths with a buffer between vehicles and cyclists or pedestrians.
- Moderate Stress (LTS 2) – represents little traffic stress but requires more attention than can be expected of young children and is more suitable for teen and adult pedestrians or cyclists with adequate bike handling skills. Traffic speeds are slightly higher (i.e., up to 35 mph), but speed differentials are still low, and roadways can be up to three lanes wide. Intersections are not difficult to cross for most teenagers and adults. Typical locations include collector-level streets with bike lanes or a central business district. Sidewalks are generally in good condition with limited impediments for mobility device users (i.e., adequate sidewalk widths and ramps in most locations).
- High Stress (LTS 3) – represents moderate stress and is suitable only for the most observant adult cyclists or pedestrians. Traffic speeds are moderate (i.e., 35 to 40 mph) but can be on roadways up to five lanes wide, and there can be limited buffers between travel lanes and the sidewalk. Intersections are still perceived to be safe by most adults. Typical locations include lower-speed (i.e., 35 mph) arterials with bike lanes or moderate speed (i.e., 40 mph) collectors up to three lanes wide. Select segments of these roadways may be impassable to pedestrians who require a mobility device.
- Extreme Stress (LTS 4) – represents high stress and only marginally suitable for experienced and skilled cyclists or able-bodied adult pedestrians. Traffic speeds are moderate to high (i.e., 40 mph or more) and can be on roadways from two to over five lanes wide with limited or no pedestrian or bicycle facilities. Intersections can be complex, wide, and/or high volume/speed that can be perceived as unsafe by adults and are difficult and/or dangerous to cross. Typical locations include high-speed or multilane roadways with narrow or no bike lanes and sidewalks. Roadways without sidewalks are also included in this category.

A low stress (LTS 1) rating is the desired target along streets with a Multimodal Area and Major Pedestrian or Bicycle route designation for newly constructed or reconstructed streets, with a moderate stress (LTS 2) rating acceptable along existing streets. All streets with a Neighborhood and Local Pedestrian or Bicycle route designation should target a low to moderate stress (LTS 1 or 2) rating. While it may not be possible to achieve the target rating along all streets due to a variety of factors, these performance targets represent overall guidance in monitoring the level and quality of facility provided for pedestrian and bicycle travel and working towards the objectives of the respective pedestrian and bicycle route designations.

MULTIMODAL CONNECTIVITY

Transportation facility and access spacing standards include a broad set of techniques that balance the need to provide for efficient, safe, and timely multimodal travel with the ability to allow access to individual destinations. These standards help create a system of direct, continuous, and connected transportation facilities to minimize out-of-direction travel and decrease travel times for all users, while enhancing safety for people walking, biking, and driving by reducing conflict points.

Table 9 identifies maximum and minimum public roadway intersection, minimum private access, and maximum pedestrian and bicycle accessway spacing standards for streets in King City. New streets or redeveloping properties must comply with these standards to the extent practical, as determined by the City Engineer or City Engineer designee. As the opportunity arises through redevelopment, strategies could be implemented along streets or at driveways not complying with these standards, such as shared access points, access restrictions (using a median or channelization islands), or closure of unnecessary access points, as feasible.

All Arterial streets in the planning area are under ODOT or Washington County jurisdiction (i.e., OR 99W, SW Roy Rogers Road and SW Beef Bend Road). See the notes under Table 9 for details on the current access spacing requirements for both agencies. All other existing or planned streets are assumed under the jurisdiction of King City, as noted earlier in this chapter, Washington County assumes streets under their jurisdiction will become City streets as the area is incorporated.

TABLE 9: TRANSPORTATION FACILITY AND ACCESS SPACING STANDARDS

	VEHICLE CLASSIFICATION			
	ARTERIAL STREET *	COLLECTOR STREET	NEIGHBORHOOD STREET	LOCAL STREET
MAXIMUM BLOCK SIZE (PUBLIC STREET TO PUBLIC STREET)		530 ft.	530 ft.	530 ft.
MINIMUM BLOCK SIZE (PUBLIC STREET TO PUBLIC STREET)		265 ft.	265 ft.	150 ft.
MINIMUM DRIVEWAY SPACING (DRIVEWAY TO DRIVEWAY)				
DETACHED RESIDENTIAL AND NON-RESIDENTIAL USES		100 ft.	50 ft.	10 ft.
ATTACHED RESIDENTIAL USES	* See note	50 ft.	10 ft.	5 ft.
MINIMUM FULL-ACCESS DRIVEWAY SETBACK FROM INTERSECTION				
WITH ARTERIAL STREET		50 ft.	50 ft.	25 ft.
WITH NON-ARTERIAL STREET		25 ft.	10 ft.	5 ft.
MAXIMUM DISTANCE BETWEEN PEDESTRIAN/ BICYCLE ACCESSWAYS (PUBLIC STREET TO ACCESSWAY OR ACCESSWAY TO ACCESSWAY) **		330 ft.	330 ft.	330 ft.

Note: All distances measured from the edge of adjacent approaches. All properties are allowed one driveway, which must take access from the lowest classified street.

* All Arterial streets in the planning area are under ODOT or Washington County jurisdiction. OR 99W is subject to access spacing guidelines in the Oregon Highway Plan and the Blueprint for Urban Design. OR 99W requires 800 feet of spacing between accesses, with a targeted pedestrian crossing spacing range of 500-1,000 feet.

Current Washington County spacing standards for SW Roy Rogers Road and SW Beef Bend Road restrict direct access to Arterial streets to other Arterial or Collector streets, with spacing of at least 600 feet.

** Mid-block pedestrian and bicycle accessways on public easements or rights-of-way must be provided at spacing of no more than 330 feet if full-street connections cannot be provided, unless the connection is impractical due to topography, natural areas, inadequate sight distance, lack of supporting land use or other factors that may prevent safe connection, as determined by the City Engineer or City Engineer Designee.

Street connectivity must be reviewed with all traffic studies associated with new development in the City's planning area to comply with the Metro Regional Transportation Functional Plan and ensure that the multimodal objectives of the TSP are followed. Applicants of residential or mixed-use developments will be required to provide a proposed street map as part of the development approval process. The street map must include the following as required by Metro⁶:

⁶ Metro Regional Transportation Functional Plan, 3.08.110.E.

- Provide full street connections with spacing of no more than 530 feet between connections (see Table 9), except when prevented by barriers except if prevented by barriers such as topography, natural areas, pre-existing development, or easements.
- If full street connections are prevented, provides bike and pedestrian accessways with spacing of no more than 330 feet (see Table 9), except when prevented by barriers.
- Limit use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections or to locations where pedestrian/bike accessways are to be provided at 330 feet intervals.
- Include no cul-de-sacs and other closed-end street longer than 200 feet or having no more than 25 dwelling units. All cul-de-sacs must provide pedestrian/bike accessways at the end to allow for connectivity, except when prevented by barriers.

TRANSPORTATION IMPACT STUDY (TIS) GUIDELINES

Transportation impact studies (TIS) implement Sections 660-012-0045(2)(b) and -0045(2)(e) of the State Transportation Planning Rule (TPR), which require the City to adopt performance standards and a process to apply conditions to land use proposals in order to minimize impacts on and protect transportation facilities.

The preparation of the TIS report is the responsibility of the landowner or applicant and must be completed by a qualified professional engineer. King City assumes no liability for any costs or time delays (either direct or inconsequential) associated with the TIS report preparation and review. All TIS reports shall be reviewed by the City Engineer or City Engineer Designee. It is the responsibility of the applicant to coordinate with ODOT or Washington County for any potential impacts to their facilities.

A TIS may be required to be submitted to the City with a land use application at the request of the City Engineer or City Engineer Designee or if the proposal is expected to involve one (1) or more of the following:

1. Changes in land use designation or zoning designation that will generate more vehicle trip ends.
2. Projected increase in trip generation of 10 or more trips during either the AM or PM peak hour, or more than 100 daily trips.
3. Potential impacts to intersection operations.
4. Potential impacts to residential areas or local roadways, including any non-residential development that will generate traffic through a residential zone.
5. Potential impacts to pedestrian and bicycle routes, including, but not limited to school routes and multimodal roadway improvements identified in the TSP.
6. The location of an existing or proposed access driveway does not meet minimum spacing or sight distance requirements or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.
7. A change in internal traffic patterns that may cause safety concerns.

STREET CROSSINGS

Streets with high traffic volumes and/or speeds and in areas with trail crossings, or 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. Crossing locations with higher volumes of pedestrians (either observed or projected) are also candidate locations for rectangular rapid flashing beacons or pedestrian hybrid beacons, which increase the visibility of the crossing for drivers.

Crossing opportunities along City streets should also align, where practical, with the transportation facility spacing standards shown in earlier in this chapter to ensure pedestrian and bicycle accessways are connected and continuous across streets. Exceptions include where the connection is impractical due to topography, inadequate sight distance, high vehicle travel speeds, lack of supporting land use, or other factors that may prevent safe crossing, as determined by the City Engineer or City Engineer Designee.

All crossings on OR 99W require review and approval by ODOT and should generally be provided every 500 to 1,000 feet⁷ where practical. Crossings along SW Roy Rogers Road, SW Elser Road, and SW Beef Bend Road require review and approval by Washington County and must comply with the Washington County mid-block crossing policy⁸.

Locations of enhanced pedestrian and bicycle crossing treatments along City streets should be determined using the National Cooperative Highway Research Program (NCHRP) Report 562, Improving Pedestrian Safety at Unsignalized Intersections⁹. These guidelines for pedestrian and bicycle crossing treatments are based on vehicle speed on the major street, pedestrian crossing distance, peak hour pedestrian volume, peak hour vehicle volume, and local parameters such as motorist compliance, pedestrian walking speed, and pedestrian start-up and clearance time. NCHRP Report 562 includes worksheets for inputting the variables above and identifying the appropriate treatment type. These guidelines should be reviewed with all traffic studies for any potential street crossing associated with new development in the City's planning area. Table 10 summarizes potential crossing treatments at intersections and mid-block locations for pedestrians and bicyclists.

⁷ Table 3-9 of the ODOT Blueprint for Urban Design, based on Commercial Corridor design context.

⁸ R&O 10-107, Approval Process for New Pedestrian Crossings at Midblock and Uncontrolled Intersections. Each proposed crossing would have to be evaluated based on existing and planned roadway characteristics, observed speeds and volumes, pedestrian trip generators, proximity of existing traffic signals, sight distance, topography, and other considerations. At-grade crossings are not permitted within 300 feet of an existing signalized intersection.

⁹ <http://www.trb.org/Publications/Blurbs/157723.aspx>

TABLE 10: CROSSING TREATMENTS FOR PEDESTRIANS AND BICYCLISTS

CROSSING TREATMENTS		CROSSING LOCATION	
		Intersection	Midblock
RECTANGULAR FLASHING BEACON (RRFB)			✓
CONVENTIONAL CROSSWALK		✓	✓
BULB OUT		✓	
MEDIAN REFUGE		✓	✓
INTERSECTION CROSSING MARKINGS		✓	
BIKE BOXES		✓	
TWO STAGE QUEUE BOXES		✓	

VOLUME AND SPEED MANAGEMENT TOOLS

Volume and speed management refers to street design techniques that slow traffic and make streets safer and more pleasant for pedestrian and bicycle users and adjoining land uses without significantly changing their vehicle capacity. These design techniques encourage a more inviting environment for pedestrians and bicyclists, particularly along streets designed for shared bicycle travel.

Table 11 shows common traffic calming applications and suggests which devices may be appropriate for streets in the King City planning area. Volume and speed management measures must balance vehicle speeds and volumes with the mobility and circulation needs of service providers, such as emergency responders. Any traffic calming project should include coordination with emergency service providers to ensure the project does not impede response times. Any measures on OR 99W require review and approval by ODOT, and measures along SW Roy Rogers Road, SW Elsner Road, and SW Beef Bend Road require review and approval by Washington County.

Volume and speed management influences driver behavior through physical and psychological means, by using one or more of the following:

- **Horizontal impediments** designed to make a driver turn the wheel and reduce the sight lines of unending pavement, which usually results in slower speeds. Examples include chicanes, roundabouts, and mini roundabouts.
- **Road narrowing** via striping, parking, or curb to reduce the drive lane widths, which slightly lower speeds. These treatments have the additional benefit of shortening pedestrian crossings, which lead to a safer multi-modal environment. Examples include curb extensions or bulbouts, or mid-block pedestrian refuge islands.
- **Closing the through road partially or fully** to disrupt travel patterns. These treatments alone may not change vehicle speeds but are effective at lowering volumes along certain streets.

TABLE 11: VOLUME AND SPEED MANAGEMENT TOOLS

TOOLS *		USE BY VEHICLE FUNCTIONAL CLASSIFICATION			IMPACT	
		Arterial Street	Collector Street	Neighborhood Route or Local Street	Speed Reduction	Traffic Diversion
NARROWING TRAVEL LANES		✓	✓	✓	✓	
PLACING BUILDINGS, ON-STREET PARKING, AND LANDSCAPING CLOSER TO THE STREET		✓	✓	✓	✓	
CURB EXTENSIONS OR BULBOUTS		✓	✓	✓	✓	
ROUNDAABOUTS		✓	✓	✓	✓	
MINI-ROUNDAABOUTS			✓	✓	✓	
MEDIANS AND PEDESTRIAN ISLANDS		✓	✓	✓	✓	

TOOLS *		USE BY VEHICLE FUNCTIONAL CLASSIFICATION			IMPACT	
		Arterial Street	Collector Street	Neighborhood Route or Local Street	Speed Reduction	Traffic Diversion
PAVEMENT TEXTURE		✓	✓	✓	✓	
RAISED INTERSECTION OR CROSSWALK				✓	✓	✓
CHOKER				✓	✓	✓
CHICANES				✓	✓	✓
DIVERTERS (WITH EMERGENCY VEHICLE PASS-THROUGH)			✓	✓	✓	✓

Note: * Any traffic calming project should include coordination with emergency service providers to ensure the project does not impede response times. Any measures on OR 99W require review and approval by ODOT, and measures along SW Roy Rogers Road and SW Beef Bend Road require review and approval by Washington County.

CHAPTER 5.

Projects and Priorities



This chapter describes the transportation system improvement projects identified to address the system needs discussed in Chapter 3.

PROCESS FOR DEVELOPING PROJECTS

The project team developed the recommended transportation solutions using guidance provided by the project goals and with input from three main sources:

- Stakeholders (via committee meetings, in-person events, online open houses, and project website comments and mail-in survey responses)
- Previous Plans (such as the 2018 King City Urban Reserve Area 6D Concept Plan, the Kingston Terrace Master Plan, and the King City Town Center Plan and Implementation Strategy)
- Independent Project Team Evaluation (Existing and Future Transportation Conditions and Needs Evaluation)

The full list of projects in this TSP are referred to as Aspirational Projects. Aspirational projects include all identified projects for improving the transportation network along major streets in the City's planning area, regardless of their priority or their likelihood to be funded. This TSP focuses on streets in the planning area with a vehicle functional classification of Neighborhood Route or higher, and with a pedestrian or bicycle route designation of Neighborhood or higher. Additional improvements will occur with private development in the City's planning area, including the build out of the local street network consistent with the standards in Chapter 4.

The TSP planning process screens candidate projects to set aside those that may not be feasible due to environmental or existing development limitations. The remaining projects are a combination of new and previous ideas for the transportation system that seek to address the gaps and deficiencies in the City.

PROJECT FUNDING

Each project was reviewed to consider how it might be funded during the next 20 years. In general, the primary funding agency was assumed to be the current or future facility owner, as they are responsible to oversee construction and long-term maintenance. All projects were assigned a primary funding agency which include King City, Washington County, Metro, and ODOT. In some cases, funding partnerships were identified for projects that were expected to provide mutual benefits between agencies or where there were opportunities to accelerate projects to completion. Each project was also assigned an assumed funding source, which included the County Transportation Development Tax, New Development, City/State revenue (i.e., State Highway Trust Fund, County Vehicle Registration Fees, etc.) or partner agency funds (i.e., Regional, TriMet). It is important to note that these funding assumptions do not obligate any agency to commit to these projects or fund them in this manner.

This TSP presents the high priority City projects that are constrained to a level of funding that is expected to be available for the next 20 years. In addition, the TSP identifies priority projects that the City could use to inform its decisions for applying the Washington County Transportation

Development Tax (TDT) revenues it receives¹⁰. While there may be other partnering opportunities with ODOT, Metro, and TriMet, these decisions are ultimately up to those agencies. Private development projects will likely be built in coordination with land use actions and future development in the planning area, especially in Kingston Terrace. While projects related to property development or re-development may occur within the TSP planning horizon, no funding was assumed from current City revenue sources since these projects will not be needed until the adjoining development occurs. If the City chooses to implement a local system development charge for transportation in the future, much of the private development share will likely be included in that fee.

Approximately \$3.7 million is estimated to be available for locally funded improvements over the next 20 years. About \$16 million of the total project costs are assumed to be City responsibility (see Table 12). This TSP has identified about \$77 million worth of needed investments along TDT eligible facilities. Revenue from the County TDT will be expected to provide \$29.8 million for eligible projects over the next 20 years. The TSP has also identified projects estimated at around \$53 million for other partner agencies, and around \$94 million that is assumed to be funded through private development as a condition of approval, although only \$27 million in funding was assumed from private development as a conservative approach. Refer to the Financial Feasibility Assessment Report in the Appendix for more information on the expected transportation revenue and expenditures.

TABLE 12: ASPIRATIONAL PROJECT FUNDING (2023 DOLLARS)

FUNDING SOURCE	TOTAL FUNDING NEED	EXPECTED FUNDING AVAILABLE THROUGH 2040
KING CITY	\$15,840,000	\$3,705,000
WASHINGTON COUNTY TDT	\$77,240,000	\$29,830,000
PARTNER AGENCY	\$53,455,000	*
PRIVATE DEVELOPMENT	\$94,365,000	\$27,000,000**
Total	\$240,900,000	\$60,535,000

Notes: * While there may be partnering opportunities with other agencies to jointly fund projects, these decisions are ultimately up to those agencies.

** This is assumed to be funded through private development as a condition of approval or through a future local system development charge for transportation.

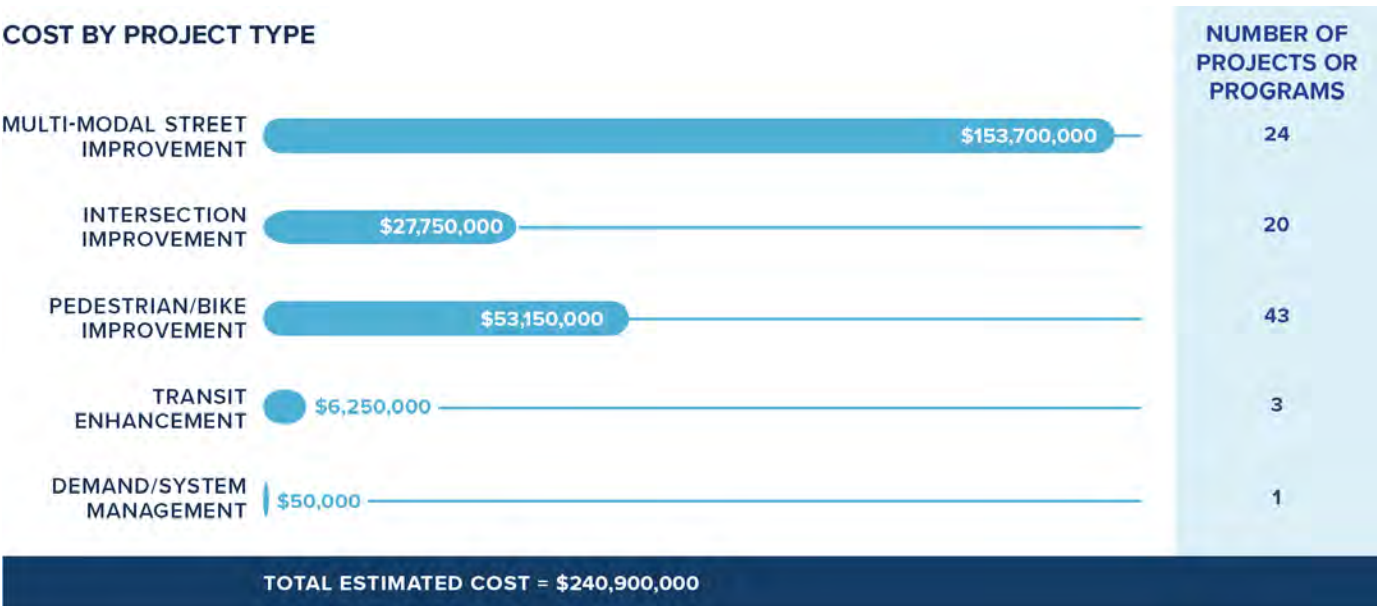
¹⁰ The only roadways currently authorized in the planning area to receive TDT funds include SW Roy Rogers Road, SW Beef Bend Road, SW Fischer Road and SW 131st Avenue. This TSP assumes that the TDT list will be modified in the future to also include projects along SW Elsner Road and the SW Fischer Road extension.

ASPIRATIONAL PROJECTS

The full aspirational list includes 91 projects totaling about \$241 million in total investments (see Figure 38). For the purposes of cost estimates, project design elements are identified, however, the actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process and are subject to City, ODOT, Washington County, and/or other partner agency approval. The Aspirational projects were assigned to one of several categories:

- **Multi-Modal Street Improvement** – these projects will improve or construct new multi-modal streets throughout the planning area, each with facilities for motorists, pedestrians, and bicyclists. A total of 24 projects are identified that, as of 2023, will cost an estimated \$154 million to complete.
- **Intersection Improvement** – these projects will improve safety and mobility at intersections throughout the planning area. A total of 20 projects were identified to construct new or improve existing intersections that, as of 2023, will cost an estimated \$28 million to complete.
- **Pedestrian/ Bike Improvement** – these projects include stand-alone sidewalk, path and roadway crossing improvements, and an integrated network of bicycle lanes, marked on-street routes and shared-use paths to facilitate safe and convenient travel citywide. A total of 43 pedestrian and bicycle projects were identified that, as of 2023, will cost an estimated \$53 million to complete.
- **Transit Enhancement** – these projects will enhance the quality and convenience for transit passengers. Three transit projects were identified that, as of 2023, will cost an estimated \$6 million.
- **Demand/ System Management** – this will encourage more efficient usage of the transportation system. One project was identified that, as of 2023, will cost an estimated \$50,000.

FIGURE 38: LEVEL OF INVESTMENT BY MODE OF TRAVEL



PRIORITIZING ASPIRATIONAL PROJECTS

Unless the City expands its funding options, many of the Aspirational projects identified are not reasonably likely to be funded by 2040 (as shown in Table 13). For this reason, projects from the Aspirational list were evaluated and ranked using a set of measurable evaluation criteria that reflect how well they achieve the transportation goals and objectives described in Chapter 2. The prioritization score was calculated for each project using the criteria associated with each TSP goal.

The projects were initially scored on the seven criteria from 1 (low) to 10 (high). The criteria were weighted equally, resulting in overall possible scores ranging from 7 to 70. An evaluation ranking of “high” was assigned for projects with the highest total scores, “medium” for the middle one-third of project scores, and “low” for projects with the lowest total scores. The methodology for calculating the scores for each criterion can be found in the Transportation Performance Measures and Project Prioritization Framework in the Appendix.

The final priority ranks listed in Table 13 were used to divide projects from the Aspirational project list into two improvement packages, referred to as Financially Constrained and Unconstrained. The project priority rankings do not create an obligation to construct projects in any order and it is recognized that these priorities may change over time. The City of King City will use the priorities listed in this TSP to guide investment decisions but will also regularly reassess local priorities to leverage new opportunities and reflect evolving community interests.

The City is not required to implement projects identified on the Financially Constrained list first. Priorities may change over time and unexpected opportunities may arise to fund particular projects. The City is free to pursue any of these opportunities at any time.

The purpose of the Financially Constrained project list is to establish reasonable expectations for the level of improvements that will occur and give the City initial direction on where funds should be allocated. During the short-term, most of the City’s investments will occur within the current City limits. As annexation occurs over time, other projects will have the potential to be funded by the City or through private development as a condition of approval.

FINANCIALLY CONSTRAINED PROJECTS

While all TSP projects will be beneficial, the Financially Constrained projects are the most valued, in terms of how they meet critical needs and how well they work to deliver on community goals. Projects in this group have a total construction budget that is similar to the reasonably available funding over the planning horizon, meaning the \$3.7 million likely to be available through existing City funding sources, \$29.8 million from the County TDT and \$27 million from private development. The projects included in the Financially Constrained list (shown in Table 13 and Figure 39) were recommended within several different priority horizons, based on the project evaluation score:

- **Tier 1:** Projects recommended for implementation within 1 to 5 years.
- **Tier 2:** Projects recommended for implementation within 5 to 10 years.
- **Tier 3:** Projects likely to be implemented beyond 10 years.

UNCONSTRAINED PROJECTS

Unconstrained projects are those remaining from the Aspirational list that likely will not receive funding by 2040. These projects (shown in Table 13 and Figure 39) are recommended within the following priority horizons, based on the project evaluation score:

- **Unconstrained Tier 1:** Projects with the highest priority for implementation beyond the projects included on the Financially Constrained list, should additional funding become available.
- **Unconstrained Tier 2:** Projects with the next highest priority for implementation beyond the projects included on the Financially Constrained list, should additional funding become available.
- **Unconstrained Tier 3:** The last phase of projects to be implemented, should additional funding become available.

FIGURE 39: ASPIRATIONAL PROJECTS

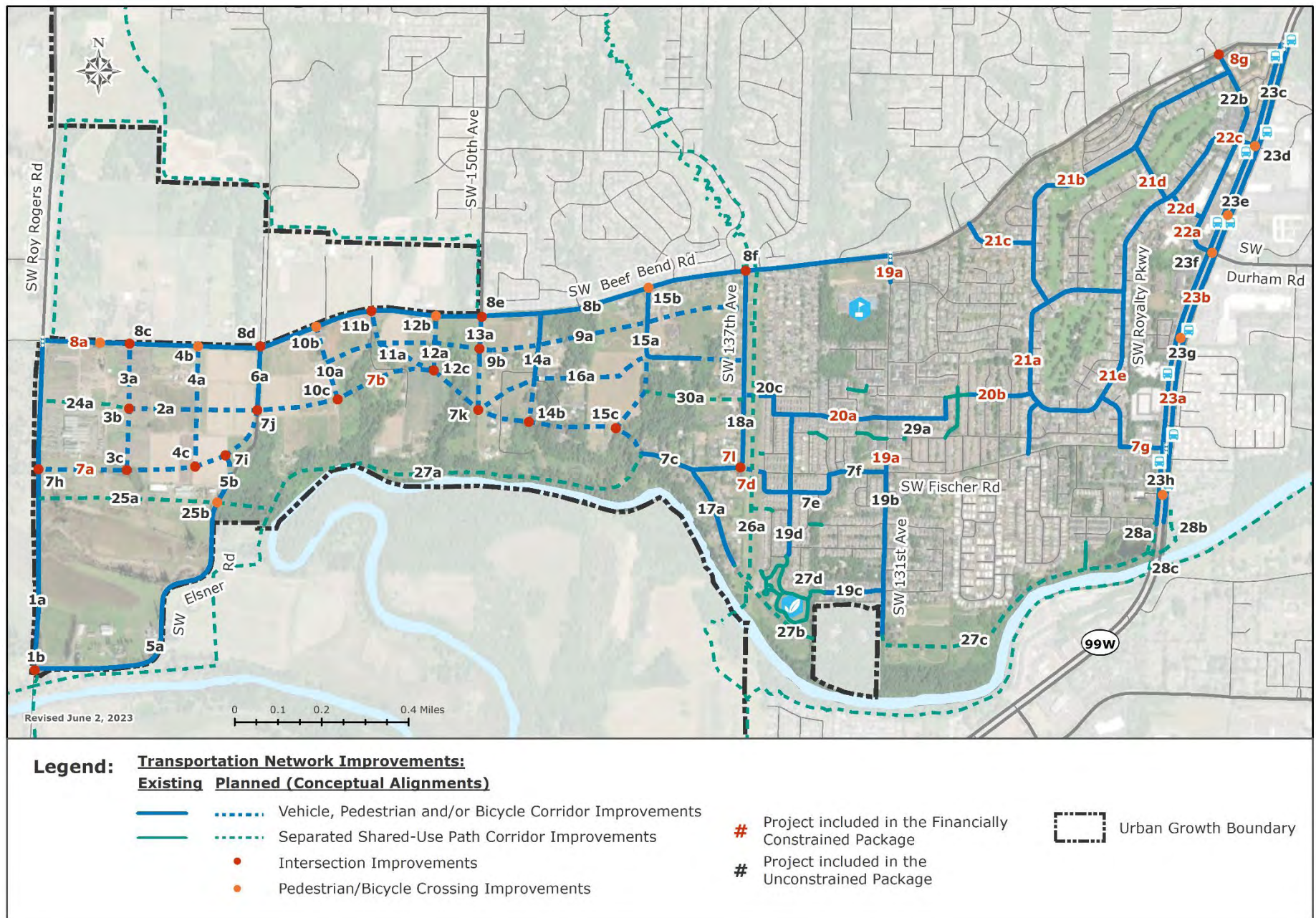


TABLE 13: ASPIRATIONAL PROJECTS

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
1	SW Roy Rogers Road Corridor (#1) Improvements from SW Elsner Road to SW Beef Bend Road.							
1a	Widen to five lanes (Arterial Street) with pedestrian (Major Pedestrian route) and bicycle facilities (Major Bicycle route). Cost assumes a shared-use path on the east side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$22,450,000	Medium	Unconstrained	Unconstrained Tier 1
1b	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$550,000	Medium	Unconstrained	Unconstrained Tier 2
2	New Corridor (#2) between SW River Terrace Boulevard Corridor (#3) extension and SW Elsner Road.							
2a	Construct a Neighborhood Route with pedestrian (Multimodal Area route) and bicycle facilities (Neighborhood Bicycle route). Cost assumes 2-lane street with parking, and sidewalks and on-street bike lanes on each side.	King City		New Development	\$5,300,000	Low	Unconstrained	Unconstrained Tier 3
3	SW River Terrace Boulevard Corridor (#3) extension between SW Beef Bend Road and the SW Fischer Road Corridor (#7) extension.							
3a	Construct a Collector Street with pedestrian (Multimodal Area route) and bike facilities (Major Bicycle route). Cost assumes a 2-lane street with parking, sidewalks and a one-way cycle track on each side, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$5,050,000	Medium	Unconstrained	Unconstrained Tier 2
3b	Improve the planned Corridor 2 intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Medium	Unconstrained	Unconstrained Tier 3
3c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$3,250,000	High	Unconstrained	Unconstrained Tier 1
4	New Corridor (#4) between SW Beef Bend Road and the SW Fischer Road Corridor (#7) extension.							
4a	Construct a Neighborhood Route with pedestrian (Multimodal Area route) and bicycle facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street with parking and sidewalks on each side, and shared lane markings for bikes, with 3-lanes at the SW Beef Bend intersection.	King City		New Development	\$3,050,000	Low	Unconstrained	Unconstrained Tier 3
4b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$100,000	Medium	Unconstrained	Unconstrained Tier 2

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
4c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Medium	Unconstrained	Unconstrained Tier 3
5	SW Elsner Road Corridor (#5) Extension/Improvements from SW Roy Rogers Road to the SW Fischer Road Corridor (#7) extension.							
5a	Improve to a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route) from SW Roy Rogers Road to the South Kingston Terrace Trail crossing (#25b). Cost assumes a 2-lane street with a shared-use path on the west side and left-turn lanes where needed.	Washington County		County Transportation Development Tax	\$7,000,000	Medium	Unconstrained	Unconstrained Tier 2
5b	Realign/Improve as a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route) from the South Kingston Terrace Trail crossing (#25b) to the SW Fischer Road Corridor (#7) extension. Cost assumes a 2-lane street with sidewalks and a one-way cycle track on each side and left-turn lanes where needed.	Washington County		County Transportation Development Tax	\$1,750,000	Medium	Unconstrained	Unconstrained Tier 2
6	SW Elsner Road Corridor (#6) Improvements from the SW Fischer Road Corridor (#7) extension to SW Beef Bend Road.							
6a	Improve to a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route). Cost assumes a 2-lane street with sidewalks and a one-way cycle track on each side and left-turn lanes where needed.	Washington County		County Transportation Development Tax	\$1,550,000	Medium	Unconstrained	Unconstrained Tier 2
7	SW Fischer Road Corridor (#7) Extension/Improvements from SW Roy Rogers Road to OR 99W.							
7a	Extend SW Fischer Road as a Collector Street with pedestrian (Multimodal Area route) and bike facilities (Major Bicycle route) from SW Roy Rogers Road to SW Elsner Road (Corridor #6). Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.	Washington County	King City	County Transportation Development Tax / New Development	\$10,250,000	Medium	Financially Constrained	Tier 1
7b	Extend/Improve SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route) from SW Elsner Road to SW River Lane. Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.	Washington County	King City	County Transportation Development Tax / New Development	\$20,600,000	Medium	Financially Constrained	Tier 2
7c	Improve SW River Lane to include pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route) from SW River Lane to SW 137 th Avenue. Cost assumes a “Rural Character Street”, to include a 2-lane street, with a shared-use path on the south side within the existing right-of-way.	Washington County	King City	County Transportation Development Tax / New Development	\$1,500,000	Medium	Unconstrained	Unconstrained Tier 3
7d	Extend SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route) from SW 137 th Avenue to SW Cordelia Terrace. Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.	Washington County	King City	County Transportation Development Tax / New Development	\$800,000	Medium	Financially Constrained	Tier 2
7e	Improve SW King Lear Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route).	King City		City Funds	\$25,000	Medium	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
7f	Reconfigure SW Fischer Road as a 2-lane street with bike lanes (Major Bicycle route) on each side from SW King Lear Way to SW 131 st Avenue.	King City		City Funds	\$15,000	Medium	Unconstrained	Unconstrained Tier 3
7g	Reconfigure SW Fischer Road from SW Queen Anne Avenue to OR 99W and improve the OR 99W intersection. Cost assumes a 3-lane street with bike lanes (Major Bicycle Overlay) on each side and two left-turn lanes and a right-turn lane on the eastbound SW Fischer Road approach to OR 99W.	King City	ODOT	City Funds / State Funds	\$1,700,000	High	Financially Constrained	Tier 1
7h	Improve the SW Roy Rogers Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City	County Transportation Development Tax / New Development	\$550,000	High	Unconstrained	Unconstrained Tier 1
7i	Improve the SW Elsner Road (Corridor #5) intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$3,250,000	Medium	Unconstrained	Unconstrained Tier 2
7j	Improve the planned Corridor #2 intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$3,250,000	Medium	Unconstrained	Unconstrained Tier 2
7k	Improve the SW 150 th Avenue intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$3,250,000	Medium	Unconstrained	Unconstrained Tier 2
7l	Improve the SW 137th Avenue intersection and provide an enhanced pedestrian/bicycle crossing. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$3,250,000	Medium	Financially Constrained	Tier 2
8	SW Beef Bend Road Corridor (#8) Improvements from SW Roy Rogers Road to OR 99W.							
8a	Widen to three lanes (Arterial Street), with pedestrian (Major Pedestrian route) and bicycle facilities (Major Bicycle route) between SW Roy Rogers Road and SW 150 th Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$15,600,000	High	Financially Constrained	Tier 2
8b	Widen to three lanes (Arterial Street), complete sidewalk gaps (Major Pedestrian route), and add separated/protected bike facilities (Major Bicycle route) between SW 150 th Avenue to SW 131 st Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$14,900,000	High	Unconstrained	Unconstrained Tier 1
8c	Improve the SW River Terrace Boulevard Corridor (#4) intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation	\$550,000	High	Unconstrained	Unconstrained Tier 1

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
				Development Tax / New Development				
8d	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$550,000	High	Unconstrained	Unconstrained Tier 1
8e	Improve the SW 150 th Avenue intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$550,000	Medium	Unconstrained	Unconstrained Tier 2
8f	Realign SW Colyer Way and SW Peachtree Drive to connect with SW 137 th Avenue and provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.	Washington County	Metro / King City	Regional Funds/ New Development	\$1,400,000	High	Unconstrained	Unconstrained Tier 1
8g	Improve the SW 116 th Avenue intersection. Cost assumes restriping the SW 116 th Avenue approach to SW Beef Bend Road to include separate left-turn and right-turn lanes and an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City		City Funds	\$100,000	High	Financially Constrained	Tier 2
9	New Corridor (#9) between new Corridor #10 and SW 137th Avenue.							
9a	Construct a Neighborhood Route with pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$17,750,000	Low	Unconstrained	Unconstrained Tier 3
9b	Improve the SW 150 th Avenue intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Low	Unconstrained	Unconstrained Tier 3
10	New Corridor (#10) between SW Beef Bend Road and the SW Fischer Road Corridor (#7) extension.							
10a	Construct a Neighborhood Route with pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$2,500,000	Low	Unconstrained	Unconstrained Tier 3
10b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$100,000	Medium	Unconstrained	Unconstrained Tier 2
10c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$100,000	Low	Unconstrained	Unconstrained Tier 3
11	SW 155th Avenue (#11) Extension from SW Beef Bend Road to the SW Fischer Road Corridor (#7) extension.							
11a	Construct a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, and sidewalks and on-street bike lanes.	King City		New Development	\$4,000,000	Medium	Unconstrained	Unconstrained Tier 2

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
11b	Improve the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.	King City	Washington County / Tigard	New Development	\$550,000	Medium	Unconstrained	Unconstrained Tier 2
12	New Corridor (#12) between SW Beef Bend Road and south of the SW Fischer Road Corridor (#7) extension.							
12a	Construct a Neighborhood Route with pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$1,800,000	Low	Unconstrained	Unconstrained Tier 3
12b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$100,000	Low	Unconstrained	Unconstrained Tier 3
12c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Low	Unconstrained	Unconstrained Tier 3
13	SW 150th Avenue Corridor (#13) Improvements from SW Beef Bend Road to the SW Fischer Road Corridor (#7) extension.							
13a	Construct a Collector Street with pedestrian (Major Pedestrian route) and bike facilities (Major Bicycle route). Cost assumes a 2-lane street with parking, a shared-use path on the west side and a sidewalk on the east side, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$3,850,000	Medium	Unconstrained	Unconstrained Tier 2
14	SW 147th Avenue Corridor (#14) Extension/Improvements from SW Beef Bend Road to the SW Fischer Road Corridor (#7) extension.							
14a	Construct a Neighborhood Route with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$2,900,000	Low	Unconstrained	Unconstrained Tier 3
14b	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Low	Unconstrained	Unconstrained Tier 3
15	SW Myrtle Avenue Corridor (#15) Extension/Improvements from SW Beef Bend Road to the SW Fischer Road Corridor (#7) extension.							
15a	Construct a Neighborhood Route with pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route) from SW Beef Bend Road to the SW Fischer Road extension. Cost assumes a 2-lane street with parking, and sidewalks and on-street bike lanes.	King City		New Development	\$5,450,000	Low	Unconstrained	Unconstrained Tier 3
15b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County	New Development	\$100,000	Medium	Unconstrained	Unconstrained Tier 2
15c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$1,100,000	Low	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
16	New Corridor (#16) between the SW Fischer Road Corridor (#7) extension and SW 137th Avenue.							
16a	Construct a Neighborhood Route with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, and sidewalks and on-street bike lanes.	King City		New Development	\$1,250,000	Low	Unconstrained	Unconstrained Tier 3
17								
17a	Improve SW River Lane to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) south of SW Watson.	King City		City Funds	\$25,000	Low	Unconstrained	Unconstrained Tier 3
18	SW 137th Avenue Corridor (#18) Improvements from SW Beef Bend Road to the SW Fischer Road Corridor (#7) extension.							
18a	Improve to include pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street, a sidewalk on the west side and shared lane markings for bikes, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$3,300,000	Low	Unconstrained	Unconstrained Tier 3
19	SW 131st Avenue/SW Bedford Street/SW 136th Avenue/SW King Lear Way Bike Route Improvements.							
19a	Improve SW 131 st Avenue to include a northbound bike lane north of SW Peachvale Street, and southbound bike lane between SW Carmel Street and SW Fischer Road.	King City		City Funds / New Development	\$750,000	High	Financially Constrained	Tier 2
19b	Improve SW 131 st Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) south of SW Fischer Road.	King City		City Funds	\$40,000	Low	Unconstrained	Unconstrained Tier 3
19c	Improve SW Bedford Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) west of SW 131 st Street.	King City		City Funds	\$15,000	Low	Unconstrained	Unconstrained Tier 3
19d	Improve SW 136 th Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route).	King City		City Funds	\$35,000	Low	Unconstrained	Unconstrained Tier 3
20	SW Cordelia Terrace to SW King Charles Avenue Improvements.							
20a	Improve SW Capulet Lane, SW Romeo Terrace, SW MacBeth Drive and SW Jordan Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW Cordelia Terrace and SW Matador Lane.	King City		City Funds	\$50,000	Medium	Financially Constrained	Tier 1
20b	Improve SW Morocco Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW Matador Lane and SW King Charles Avenue.	King City		City Funds	\$15,000	High	Financially Constrained	Tier 1
20c	Extend SW Capulet Lane as a Local Street with pedestrian (Neighborhood Pedestrian route) and bike facilities (Neighborhood Bicycle route). Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.	King City		City Funds	\$400,000	Medium	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
21	SW Fischer Road to SW Beef Bend Road Bike Route Improvements.							
21a	Improve SW 124 th Avenue and SW King Charles Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW Fischer Road and SW Royalty Parkway.	King City		City Funds	\$65,000	High	Financially Constrained	Tier 2
21b	Improve SW King George Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW King Charles Avenue and SW 116 th Avenue.	King City		City Funds	\$80,000	High	Financially Constrained	Tier 2
21c	Improve SW Prince Albert Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW King George Drive and SW Beef Bend Road.	King City		City Funds	\$20,000	High	Financially Constrained	Tier 2
21d	Improve SW Queen Elizabeth Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW King George Drive and SW Royalty Parkway.	King City		City Funds	\$15,000	High	Financially Constrained	Tier 2
21e	Improve SW Royalty Parkway and SW Queen Anne Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW Queen Elizabeth Street and SW Fischer Road.	King City		City Funds	\$70,000	High	Financially Constrained	Tier 2
22	King City Town Center Improvements from SW Beef Bend Road to OR 99W.							
22a	Improve SW 116 th Avenue to enhance the streetscape, improve ADA compliance and widen existing sidewalks, complete sidewalk gaps (Multimodal Area route) and reconfigure to include bike lanes (Neighborhood Bicycle route) between SW Queen Elizabeth Street and OR 99W.	King City	Private Development	City Funds / New Development	\$850,000	High	Financially Constrained	Tier 1
22b	Improve SW 116 th Avenue to enhance the streetscape and widen existing sidewalks, improve ADA compliance, complete sidewalk gaps (Multimodal Area route) and include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle route) between SW Queen Elizabeth Street and SW Beef Bend Road. Note a portion of this street segment is currently private.	King City		City Funds	\$3,000,000	High	Unconstrained	Unconstrained Tier 1
22c	Improve SW Royalty Parkway to include shared lane markings and route wayfinding for bikes between OR 99W and SW Queen Elizabeth Street.	King City		City Funds	\$30,000	High	Financially Constrained	Tier 1
22d	Improve SW Queen Elizabeth Street to enhance the streetscape, improve ADA compliance and widen existing sidewalks and include shared lane markings and route wayfinding for bikes between SW Royalty Parkway and SW 116 th Avenue.	King City	Private Development	City Funds / New Development	\$800,000	High	Financially Constrained	Tier 1
23	OR 99W Corridor Plan from SW Beef Bend Road to the Tualatin River.							
23a	Study the OR 99W Corridor through King City, along with Tigard and other neighboring agencies, to develop a corridor-wide improvement plan to align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical focus areas in King City are new, expanded, and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian	ODOT	Metro	State/ Regional Funds	\$250,000	High	Financially Constrained	Tier 1

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
	facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight.							
23b	Construct pedestrian facilities and buffer from the vehicle travel way. Cost assumes sidewalks and a buffer on each side between SW Beef Bend Road and SW Royalty Parkway; near SW King James Place; and near SW Versailles Road.	ODOT	Metro	State/ Regional Funds	\$3,500,000	High	Financially Constrained	Tier 1
23c	Provide expanded pedestrian facilities and buffer from the vehicle travel way and protected and separated bicycle facilities. Cost assumes widened sidewalks, a one-way cycle track, and a buffer on each side.	ODOT	Metro	State/ Regional Funds	\$10,950,000	High	Unconstrained	Unconstrained Tier 1
23d	Improve the pedestrian/bicycle crossing at the SW Royalty Parkway intersection.	ODOT		State Funds	\$200,000	High	Unconstrained	Unconstrained Tier 1
23e	Provide a new enhanced pedestrian/bicycle crossing between SW 116th Avenue and SW Royalty Parkway, near the TriMet bus stops.	ODOT		State Funds	\$300,000	High	Unconstrained	Unconstrained Tier 1
23f	Improve the pedestrian/bicycle crossing at the SW 116th Avenue and SW Durham Road intersection.	ODOT		State Funds	\$200,000	High	Unconstrained	Unconstrained Tier 1
23g	Provide a new enhanced pedestrian/bicycle crossing between SW 116th Avenue and SW Fischer Road, near the SW King James Place intersection.	ODOT		State Funds	\$300,000	High	Unconstrained	Unconstrained Tier 1
23h	Provide a new enhanced pedestrian/bicycle crossing between SW Fischer Road and SW Versailles Road, near the fire signal.	ODOT		State Funds	\$300,000	High	Unconstrained	Unconstrained Tier 1
24	North Kingston Terrace Trail from SW Roy Rogers Road to SW River Terrace Boulevard Corridor (#3) extension.							
24a	Construct a shared-use path for pedestrian and bicycle travel.	King City		New Development	\$1,250,000	High	Unconstrained	Unconstrained Tier 1
25	South Kingston Terrace Trail from SW Roy Rogers Road to the planned Tualatin River Trail.							
25a	Construct a shared-use path for pedestrian and bicycle travel.	King City		New Development	\$3,300,000	Medium	Unconstrained	Unconstrained Tier 2
25b	Provide an enhanced pedestrian/bicycle crossing at the SW Elsner Road intersection.	King City	Washington County	New Development	\$100,000	High	Unconstrained	Unconstrained Tier 1
26	Westside Trail from SW Beef Bend Road to south side of Tualatin River.							
26a	Construct a shared-use path for pedestrian and bicycle travel. Provide pedestrian and bicycle connections to adjacent streets. Includes a pedestrian and bicycle crossing of the Tualatin River.	Metro	King City	Regional/ City Funds	\$5,600,000	Medium	Unconstrained	Unconstrained Tier 2
27	Tualatin River Trail from SW River Lane to King City Community Park and SW 131st Avenue to OR 99W.							

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
27a	Construct a shared-use path for pedestrian and bicycle travel from the planned South Kingston Terrace Trail to SW River Lane.	Metro	King City	Regional Funds/ New Development	\$7,500,000	Low	Unconstrained	Unconstrained Tier 3
27b	Construct a shared-use path for pedestrian and bicycle travel through King City Community Park to SW River Lane. Provide a future connection to SW 131 st Avenue (this segment is currently outside of the Urban Growth Boundary).	Metro	King City	Regional Funds/ City Funds	\$1,350,000	Medium	Unconstrained	Unconstrained Tier 2
27c	Construct a shared-use path for pedestrian and bicycle travel from OR 99W to SW 131 st Avenue.	Metro	King City	Regional Funds/ City Funds	\$4,350,000	High	Unconstrained	Unconstrained Tier 1
27d	Widen the pathway connection between SW Bedford Street and King City Community Park to provide for shared pedestrian and bicycle travel along the planned bike route.	King City		City Funds	\$300,000	Low	Unconstrained	Unconstrained Tier 3
28	OR 99W Connector Trail from OR 99W to south side of Tualatin River.							
28a	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail to SW Versailles Road along the west side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$350,000	High	Unconstrained	Unconstrained Tier 1
28b	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail under OR 99W to the fire signal along the east side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$800,000	High	Unconstrained	Unconstrained Tier 1
28c	Construct a pedestrian and bicycle crossing of the Tualatin River along the west side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$1,800,000	High	Unconstrained	Unconstrained Tier 1
29	New Shared-Use Path from SW Fitzwilliam Court to SW King Richard Drive.							
29a	Construct a shared-use path for pedestrian and bicycle travel.	King City		City Funds	\$100,000	Low	Unconstrained	Unconstrained Tier 3
30	New Shared-Use Path from SW 137th Avenue to the SW Myrtle Avenue Corridor (#15) extension.							
30a	Construct a shared-use path for pedestrian and bicycle travel.	King City		New Development	\$1,000,000	Medium	Unconstrained	Unconstrained Tier 2
A	Transit Service Enhancements							
A1	Improve transit stop amenities as needed, to include sheltered stops with seating, landing pads, route information, sidewalk connections, bicycle parking and lighting.	TriMet	King City	TriMet / City Funds	\$1,000,000	High	Unconstrained	Unconstrained Tier 3
A2	Construct a transit hub in the King City Town Center to offer riders a spot to connect to all bus routes that serve the City.	TriMet	King City	TriMet / City Funds	\$5,000,000	High	Unconstrained	Unconstrained Tier 3
A3	Study to evaluate options to extend bus service into Kingston Terrace and ensure necessary infrastructure (e.g., shelter, signage) is implemented to support ridership.	TriMet	King City	TriMet / City Funds	\$250,000	High	Financially Constrained	Tier 1
B	Demand and System Management Enhancements							

PROJECT ID	PROJECT DESCRIPTION *	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2023 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
B1	Install new bike parking throughout the City. Standard rack parking should be provided in areas where users park for less than two hours. Long-term parking that is secure and weather-protected should be provided in areas where users park for more than two hours.	King City		City Funds	\$50,000	High	Financially Constrained	Tier 3

Notes: * For the purposes of cost estimates, project design elements are identified, however, the actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process and are subject to City, ODOT, Washington County, and/or other partner agency approval.

CHAPTER 6.

Future Strategies and Considerations



The following chapter summarizes system performance outcomes and provides transportation strategies and policy considerations around providing travel options, preparing for advancements in transportation through technology, and monitoring plan implementation. Some are emerging issues to be monitored, and others are ongoing but need greater emphasis or attention. Addressing these will take the City time to evaluate, and they may require future decisions from the City Council.

Furthermore, it is recognized that there are on-going community issues related to general transportation needs that will continue to evolve after the TSP process and outcomes. These issues are acknowledged in the final section along with a summary of their status and the expected path forward.

SYSTEM PERFORMANCE








This TSP uses system performance measures to support the City's transportation planning and decision-making process, consistent with Metro requirements¹¹. The performance measures serve as the link between TSP goals and plan implementation by enabling the City to measure the degree to which the TSP investments support regional and City-wide priorities through 2040. While the performance assessment does not represent the complete picture, it does offer a baseline against which to assess how the policies, investments, and planning decisions made in this plan may affect the future.

The nine TSP performance measures (shown in Table 14) include: 1) Miles Traveled; 2) Mode Share; 3) Multimodal Level of Traffic Stress; 4) Congestion; 5) System Completeness; 6) Access to Jobs; 7) Access to Community Amenities; 8) Access to Transit; and 9) Safety. Each performance measure includes a target to make progress towards through plan implementation (see Table 14). These targets are consistent with regional performance targets in the Metro Regional Transportation Plan and Regional Transportation Functional Plan.

The system performance evaluation process will be used during subsequent TSP updates, which typically occurs every 5 to 10 years, depending on funding availability and evolving citywide and regional transportation needs and priorities. The current TSP system performance assessment highlights changes between current conditions and the 2040 planning horizon for the transportation projects identified in the Aspirational project list (Chapter 5).

¹¹ Metro Regional Transportation Functional Plan, Section 3.08.230.D, requires local jurisdictions to include performance measures in the TSP for vehicle miles traveled per capita, walking, bicycling and transit mode shares, congestion, freight reliability and safety.

TABLE 14: SYSTEM PERFORMANCE MEASURES, TARGETS AND CONNECTION TO TSP GOALS

SYSTEM PERFORMANCE MEASURE	TSP GOALS							Expected Outcome through 2040
	 Accessibility and Connectivity	 Safety and Security	 Healthy People and Environment	 Equity	 Reliability and Efficiency	 Fiscal Responsibility	 Collaboration	
HOW DO PEOPLE TRAVEL IN THE CITY?								
VEHICLE MILES TRAVELED: System-wide number of miles traveled (total and per capita) within the King City planning area. Target: By 2040, reduce vehicle miles traveled per person by 10 percent compared to 2015.	●		●	◐	●	●	◐	■
MODE SHARE: Percent of non-drive alone trips (walking, bicycling, transit, and shared ride trips) within the King City planning area, and regionally designated Town Centers, Corridors and Neighborhoods. Target: By 2040, achieve the Metro regional non-drive alone modal targets for Town Centers and Corridors of 45 to 55 percent, and for Neighborhoods of 40 to 45 percent.	●		●	●	◐	●	◐	+
HOW EASILY, COMFORTABLY AND DIRECTLY CAN PEOPLE TRAVEL IN THE CITY?								
MULTIMODAL LEVEL OF TRAFFIC STRESS: Locations on the roadway network that operate with an extreme or high multimodal level of traffic stress. Target: Decrease the miles of facilities that operate with an extreme or high multimodal level of traffic stress through 2040.	●	●	●	●	◐	◐	◐	+
CONGESTION: Locations on the roadway network that operate above thresholds for congestion. Target: Decrease the amount of congested and severely congested lane miles through 2040.	◐	◐	◐	◐	●		◐	■
SYSTEM COMPLETENESS: Completeness of sidewalks, bikeways, and trails within the planning area. Target: Complete the sidewalk, bikeway and trail networks by 2040.	●	●	●	●	●	◐	◐	+
ACCESS TO JOBS: Number and percent change of jobs accessible within a reasonable travel time by driving, transit, bicycling, and walking. Target: Increase the number of jobs accessible within a reasonable commute.	●	◐	●	◐	◐		◐	+
ACCESS TO COMMUNITY AMENITIES: Access to community amenities (i.e., education, critical services, parks, open spaces, and natural areas) within a reasonable travel time by transit, bicycling, and walking. Target: Increase the number of community amenities accessible.	●	◐	●	◐	◐		◐	+
ACCESS TO TRANSIT: Number and share of households with access to transit within King City. Target: Increase the number of households accessible to transit.	●	◐	●	◐	◐		◐	+
HOW SAFE IS TRAVEL IN THE CITY?								
SAFETY: Transportation related collisions within King City. Target: By 2040 reduce transportation related fatalities and serious injuries for all users by 50 percent.	◐	●		◐	◐	◐	◐	+
Notes: ● = Measure highly connected with achieving goal ◐ = Measure somewhat connected with achieving goal; + = Plan meets Target ■ = Plan does not meet Target								

PERFORMANCE ASSESSMENT OUTCOMES

The performance assessment results are summarized in the following sections. More information is also provided in the Transportation Performance Measures and Project Prioritization Framework Memorandum and the Existing Conditions and Needs Report included in the Appendix. It should be noted that data and tools available at this time are not sophisticated enough to capture the strategies and efforts around walking, biking, transit, rideshare, and telecommuting that help to move the dial on these measures towards the TSP's expected target.

Data sources used for performance measures are referenced in each measure and include:

- Washington County 2015 and 2040 Westside Focus Area Travel Demand Models (and land use inputs from the land use model)
- Geographic Information System (GIS) Databases
- Field reviews and data confirmation during the year 2020

VEHICLE MILES TRAVELED

Description: This measure is used to identify how the transportation investments impact travel by motor vehicles.

Measure(s): Vehicle miles traveled (VMT) (total, per capita)

Target: By 2040, reduce vehicle miles traveled per person by 10 percent compared to 2015.

Data Source: Travel Demand Models

Findings: The TSP target is not expected to be met. Table 15 shows that in 2015 roughly 1.54 vehicle miles were traveled per day per person, for a total of over 7,900 vehicle miles traveled by all people in the planning area. By 2040, this number is estimated to increase to over 25,000 vehicle miles per day, or roughly 1.81 vehicle miles per person. This represents an 18 percent increase from 2015, meaning that people are driving more, or for longer distances. This is reflective of the high amount of housing growth expected in the planning area and most residents having to travel elsewhere for employment. As noted earlier, the data and tools available at this time are not sophisticated enough to capture the benefits expected from the significant investments the TSP provides towards improving and enhancing the viability of the pedestrian, bicycle, and transit travel modes. As reflected earlier in Table 2, person trips for these modes will be expected to increase at a higher rate through 2040 than single-occupant vehicle trips.

TABLE 15: VEHICLE MILES TRAVELED PER PERSON IN KING CITY PLANNING AREA

PM PEAK HOUR VEHICLE MILES TRAVELED	2015 BASE YEAR	2040 HORIZON YEAR	CHANGE (2015-2040)
KING CITY POPULATION	5,141	14,086	8,945
TOTAL VEHICLE MILES TRAVELED	7,911	25,657	+17,746
VEHICLE MILES TRAVELED PER PERSON	1.54	1.81	+18%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models; Based on Vehicle miles traveled (VMT) for each trip beginning or ending in a King City planning area Traffic Analysis Zone (TAZ). For per capita calculations these trip distances are divided by the planning area population.

MODE SHARE

Description: This measure is used to identify whether the transportation investments will increase non-drive alone mode share (i.e., walking, bicycling, transit, and shared ride).

Measure(s): Walking, Bicycling, Transit, and Shared Ride usage (total and share)

Target: By 2040, achieve the Metro regional non-drive alone modal targets for Town Centers and Corridors of 45 to 55 percent, and for Neighborhoods of 40 to 45 percent.

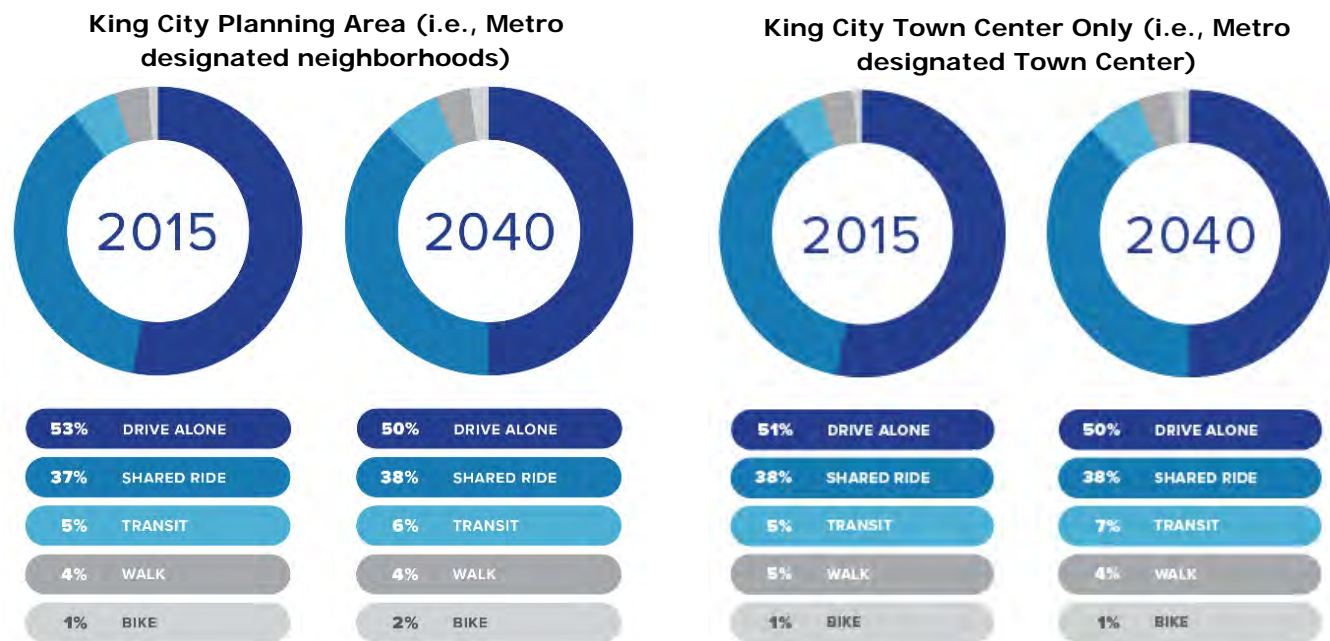
Data Sources: Travel Demand Models

Findings: The TSP non-drive alone modal targets are expected to be met. The travel mode share estimates in 2015 and 2040 for the City's planning area and King City Town Center are summarized in Figure 40. This is based on the person trip information displayed earlier in Table 2 and assumes land develops according to the land use assumptions during an average weekday. Through 2040, the non-single occupant vehicle (SOV) trip share in the planning area is expected to increase about three percent (from 47 to 50 percent). A larger share of trips in the planning area are expected to be made by shared ride, transit, and bike, with the overall share for each of these modes estimated to increase by 1 percent through 2040. Walk trips are estimated to be 4 percent of the overall trip share for both the year 2015 and 2040. The overall share of trips made by transit, walk, or bike during an average weekday is estimated to be 12 percent by 2040, with 88 percent of trips made by drive alone or shared-ride trips.

For the Metro designated King City Town Center along 99W, the non-single occupant vehicle (SOV) trip share is expected to increase about 1 percent (from 49 to 50 percent), as shown in Figure 40. A larger share of trips in the Town Center will be made by transit, with the overall share for this mode estimated to increase by 2 percent through 2040. The overall share of trips made by transit, walk, or bike during an average weekday is estimated to be 12 percent by 2040, with 88 percent of trips made by drive alone or shared-ride trips.

COVID-19 has led to an overall change in travel patterns, and whether those are temporary or permanent remains to be seen as conditions trend back towards more "normal." No data is currently available to predict how current trends might impact long term mode share projections, and it is possible the estimates used for the Portland metropolitan area in the Travel Demand Model could evolve over time based on increases in remote working or other dynamics such as decreases in transit ridership.

FIGURE 40: DAILY TRAVEL MODE SHARE



Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models; based on the King City planning area. A trip mode choice analysis step was used to project future mode choice decisions based on the future land use.

MULTIMODAL LEVEL OF TRAFFIC STRESS

Description: Pedestrian and bicycle level of traffic stress (LTS) evaluations provide a quantitative metric to understand a multimodal user’s perception of the safety and comfort of the transportation network. This method can be used to understand key gaps and barriers to walking and bicycling which can then be addressed through targeted improvements.

Measure(s): Pedestrian level of traffic stress; Bicycle level of traffic stress

Target: Decrease the miles of facilities that operate with an extreme or high multimodal level of traffic stress through 2040.

Data Sources: GIS; Field confirmation

Findings: The TSP target is expected to be met. Results of the pedestrian LTS evaluation are summarized earlier in Figure 19 and below in Table 16. Extreme or high level of stress is experienced along 22 percent of streets, mainly those with the highest speeds and traffic volumes. This includes the extent of OR 99W, SW Beef Bend Road, SW Roy Rogers Road, and SW Elsner Road.

Results of the bicycle LTS evaluation are summarized earlier in Figure 22 and below in Table 16. An extreme or high level of stress is experienced along 22 percent of streets, mainly arterial and collector streets with the highest speeds and traffic volumes. This includes the extent of OR 99W, SW Beef Bend Road, SW Roy Rogers Road, SW Elsner Road, and short segments of SW Fischer Road and SW 131st Avenue.

As TSP projects are implemented and other redevelopment and frontage improvements occur through 2040, particularly in the Kingston Terrace area, streets will be improved or built to align with the standards outlined in Chapter 4. These standards require high-quality facilities, and an emphasis on safe, convenient, and comfortable travel that will contribute towards a lower stress walking and bicycling experience.

TABLE 16: MULTIMODAL LEVEL OF TRAFFIC STRESS IN KING CITY PLANNING AREA

MULTIMODAL LEVEL OF TRAFFIC STRESS	PEDESTRIAN NETWORK (2020)		BICYCLE NETWORK (2020)	
	Total Miles	Share of total Facility Miles	Total Miles	Share of total Facility Miles
EXTREME STRESS FACILITY MILES	7.40	13%	10.25	18%
HIGH STRESS FACILITY MILES	5.02	9%	2.55	4%
MODERATE STRESS FACILITY MILES	3.13	5%	3.36	6%
LOW STRESS FACILITY MILES	41.93	73%	41.32	72%
TOTAL FACILITY MILES*	57.48	100%	57.48	100%

Source: Based on existing facilities in 2020. GIS database updated with field confirmed current year (2020) pedestrian and bicycle facilities. *Total facility miles include the length of all street segments.

CONGESTION

Description: This measure helps identify the locations along streets that do not meet applicable vehicle congestion thresholds in the weekday pm peak hour.

Measure(s): Locations on the street network that are congested or severely congested¹².

Target: Decrease the amount of congested and severely congested lane miles through 2040¹³.

Data Sources: Travel Demand Models

Findings: The TSP target is not expected to be met. The results of the congestion analysis are displayed in Table 17. About 11 lane miles, or about 15 percent of the total street network lane miles in the planning area are expected to be congested by 2040 (i.e., vehicles will experience some minor delay). This represents an increase of 13 percent from 2015. The congested segments are along OR 99W, SW Beef Bend Road, and SW Fischer Road. Of these congested lane miles, about 5 percent are expected to be severely congested by 2040 (i.e., vehicle will experience significant delay), an increase of 5 percent from 2015. The severely congested segments include OR 99W south of SW Durham Road and SW Beef Bend Road near OR 99W.

¹² For this measure, congestion is defined as streets and intersections operating with a v/c ratio between 0.90 and 0.99 during the P.M. peak hour; severe congestion is defined as streets and intersections operating with a v/c ratio of 0.99 or higher during the P.M. peak hour.

¹³ This measure also covers the Metro required freight reliability performance measure since roadway delay will directly impact overall delay for trucks.

Increased congestion in these locations will increase travel time and may influence travel decisions (destination and mode) made by travelers. As population and travel continues to grow, there are not sufficient funds/resources to address all congestion from the traditional strategy of adding lanes and capacity to existing facilities. Rather, other strategies such as improved pedestrian and bicycle facilities are included in the TSP to enhance access to all destinations in the planning area.

The TSP does include projects to widen SW Roy Rogers Road to five-lanes, SW Beef Bend Road to three-lanes, and conceptual locations of future Collector and Neighborhood Routes that will help to provide additional travel routes through Kingston Terrace and alleviate some of the local traffic from these major streets (see Figure 39 and Table 13 in Chapter 5). These improvements help reduce the congested lane miles along portions of SW Roy Rogers Road, SW Elsner Road, and SW Beef Bend Road from conditions that would be experienced without them. Another TSP project is a regional study of the OR 99W Corridor through the planning area and neighboring agencies, to develop a corridor-wide improvement plan. This plan will help develop a long-term solution for improved traffic flow for vehicles and freight along the corridor, which accounts for most of the congested lane miles in the planning area.

TABLE 17: VEHICLE CONGESTION IN KING CITY PLANNING AREA

PM PEAK CONGESTED VEHICLE LANE MILES	2015 BASE YEAR		2040 HORIZON YEAR**		CHANGE (2015- 2040)
	Total Miles	Share of total Facility Miles	Total Miles	Share of total Facility Miles	
TOTAL LANE MILES*	61.45	100%	70.68	100%	-
TOTAL CONGESTED LANE MILES (SEVERE AND CONGESTED)	1.49	2%	10.82	15%	+13%
SEVERELY CONGESTED MILES (>0.99)	0.00	0%	3.21	5%	+5%
CONGESTED MILES (0.90 ≤ V/C ≤ 0.99)	1.49	2%	7.60	10%	+8%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. The mileage calculation is based on the length of the modeled network link associated with the point of congestion. It does not include the length of the queuing that may occur as a result of the congested link.

Notes: *Total lanes miles include the length of all street segments, multiplied by the number of lanes, the 2040 horizon year includes 9.22 lane miles of planned street segments.

** The 2040 Horizon Year scenario includes the TSP Aspirational improvements.

SYSTEM COMPLETENESS

Description: This measure evaluates the completeness of the pedestrian and bicycle networks in the King City planning area.

Measure(s): Total miles and percentage of pedestrian, bicycle and trail networks completed; Percentage of pedestrian and bicycle facilities completed within ¼ mile of transit stops.

Target: Complete the sidewalk, bikeway, and trail networks by 2040.

Data Sources: GIS; Field confirmation

Findings: The TSP target is expected to be met. As shown in Table 18, sidewalks are about 57 percent complete on all streets in the planning area and 65 percent complete on streets near transit stops. Bikeways are just over 20 percent complete in the planning area, and 23 percent are complete near transit stops.

As TSP projects are implemented and other redevelopment and frontage improvements occur through 2040, particularly in the Kingston Terrace area, streets will be improved or built to align with the standards outlined in Chapter 4. These standards require high-quality sidewalk and bikeway facilities that will continue to work towards completing these networks.

TABLE 18: PEDESTRIAN AND BICYCLE NETWORK COMPLETENESS IN KING CITY PLANNING AREA

FACILITY COMPLETENESS	KING CITY PLANNING AREA	AREA OF KING CITY PLANNING AREA			
		Near all Transit Stops ***	Kingston Terrace	Between Kingston Terrace and King City Town Center	King City Town Center
SIDEWALKS (2020) *					
TOTAL MILES COMPLETE	32.69	27.04	0.55	30.60	1.54
PERCENT COMPLETE	57%	65%	5%	70%	65%
TOTAL MILES COMPLETE ALONG MAJOR PEDESTRIAN STREETS **	8.26	7.23	0.55	6.17	1.54
PERCENT COMPLETE	46%	76%	7%	79%	65%
BIKEWAYS (2020) *					
TOTAL MILES COMPLETE	5.87	4.36	1.50	3.25	1.12
PERCENT COMPLETE	21%	23%	15%	20%	47%
TOTAL MILES COMPLETE ALONG MAJOR BICYCLE STREETS **	5.87	4.36	1.50	3.25	1.12
PERCENT COMPLETE	37%	52%	19%	46%	100%

Notes: * Includes all existing sidewalks or bikeways as of 2020, regardless of quality or compliance with design standards. For sidewalks, it assumes all streets should have sidewalks on both sides; bikeways only include streets with a bicycle route designation of Major Bicycle Street and Neighborhood Bicycle Street.

** Includes streets with a pedestrian route designation of Multimodal Area Street and Major Pedestrian Street, and bicycle route designation of Major Bicycle Street.

*** Includes sidewalks within ¼ and bikeways with ½ mile of existing transit stops.

ACCESS TO JOBS

Description: This measure evaluates the number of jobs accessible by driving, bicycling, walking, and transit in the King City planning area within the specified commute times for each mode.

Measure(s): Number and percentage of jobs reached by driving in 20 minutes; number and percentage of jobs reached by bicycling in 20 minutes (using average biking speed of 10 miles per hour); number and percentage of jobs reached by walking in 15 minutes (using average walking speed of 3 miles per hour); number and percentage of jobs reached by transit (includes potential future transit corridors) in 30 minutes (including beginning and end of trip).

Target: Increase the number of jobs accessible within a reasonable commute.

Data Sources: Travel demand model; GIS

Findings: The TSP target is expected to be met. As shown in Table 19, in 2015 the average household in the King City planning area had access to about 141,000 jobs when driving, 1,000 when using transit, 37,000 via a bike ride, and about 1,700 when walking. Job accessibility by non-driving modes increases in the planning area the further east a household is located, mainly due to the better transit service and shorter distances to nearby employment.

The 2040 scenario includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace. By 2040, the average household in the planning area is expected to access to about 40,000 more jobs when driving and 250 more jobs when using transit, but slightly fewer jobs when walking or biking. This is largely a result of the high household growth forecasted for Kingston Terrace weighting the citywide average down, with future residents of this area being further than households in other areas of the planning area from nearby employment areas. However, when viewed at the neighborhood level, all households in the planning area will see an increase in jobs accessible by all modes through 2040.

TABLE 19: ACCESS TO JOBS IN KING CITY PLANNING AREA

JOBS ACCESSIBLE (BY AVERAGE HOUSEHOLD)	KING CITY PLANNING AREA	AREA OF KING CITY PLANNING AREA**		
		KINGSTON TERRACE	BETWEEN KINGSTON TERRACE AND KING CITY TOWN CENTER	KING CITY TOWN CENTER
2015 BASE YEAR				
BY MOTOR VEHICLE	141,948	122,058	135,214	159,226
BY TRANSIT	1,048	0	904	1,664
BY BIKING	36,939	6,599	33,606	49,921
BY WALKING	1,779	322	1,348	2,840
2040 HORIZON YEAR*				
BY MOTOR VEHICLE	183,162	168,843	186,889	218,092
BY TRANSIT	1,308	924	1,562	2,751
BY BIKING	33,198	10,189	47,287	69,951
BY WALKING	1,483	660	1,768	3,464
CHANGE (2040-2015)				
BY MOTOR VEHICLE	+41,214	+46,785	+51,675	+58,866
BY TRANSIT	+259	+924	+658	+1,086
BY BIKING	-3,741	+3,590	+13,681	+20,030
BY WALKING	-297	+338	+420	+624

Source: The projections and distribution of employment is based on underlying data and assumptions regarding growth for employment in the Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. The projections of travel distances are based on ArcGIS network analysis. Travel times are based on the P.M. peak hour. Household data based on Travel Demand Model land use for the planning area.

Notes: * The 2040 Horizon Year scenario includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace.

**Kingston Terrace is based on TAZ 1001, Current City limits based on TAZ 1050, 1051 and 1052, and King City Town Center based on TAZ 1050.

ACCESS TO COMMUNITY AMENITIES

Description: This measure evaluates the number of community amenities accessible by bicycling, walking, and transit in the King City planning area within the specified travel times for each mode.

Measure(s): Number and percentage of community amenities reached by bicycling in 15 mins (using average biking speed of 10 miles per hour); Number and percentage of community amenities reached by walking in 10 minutes (using average walking speed of 3 miles per hour); Number and percentage of community amenities reached by transit (includes potential future transit corridors) in 20 mins (including beginning and end of trip).

Target: Increase the number of community amenities accessible.

Data Sources: Travel demand model; GIS

Findings: The TSP target is expected to be met. As shown in Table 20 in 2015 the average household in the King City planning area had access to about 6 community amenities when using transit, 12 when biking and 2 when walking. Access to community amenities increases in the planning area the further east a household is located, mainly due to the better transit service and shorter distances to nearby services in the King City Town Center.

The 2040 scenario assumes the same amenities as the 2015 analysis, but with the planned parks in Kingston Terrace shown on the Conceptual Parks and Trails Map for the URA 6D Concept Plan. It also includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace. As shown in Table 20, the average household in Kingston Terrace will have access to more services when walking, biking, or using transit due to this assumption. The average household in the planning area will have access to more services when biking or using transit, but not when walking by 2040. This is due to the travel times to the planned parks in Kingston Terrace being outside of the walking distance, but not the biking or transit trip distance for the average household in these areas.

TABLE 20: ACCESS TO COMMUNITY AMENITIES IN KING CITY PLANNING AREA

COMMUNITY AMENITIES ACCESSIBLE (BY AVERAGE HOUSEHOLD) *	KING CITY PLANNING AREA	AREA OF KING CITY PLANNING AREA***		
		Kingston Terrace	Between Kingston Terrace and King City Town Center	King City Town Center
2015 BASE YEAR				
BY TRANSIT	6	0	5	8
BY BIKING	12	1	11	13
BY WALKING	2	0	1	4
2040 HORIZON YEAR **				
BY TRANSIT	8	7	8	12
BY BIKING	14	9	16	16
BY WALKING	2	2	1	4
CHANGE (2040-2015)				
BY TRANSIT	+2	+7	+3	+4
BY BIKING	+2	+8	+5	+3
BY WALKING	0	+2	0	0

Source: The projections of travel distances are based on ArcGIS network analysis. Travel times are based on the P.M. peak hour. Household data based on Travel Demand Model land use for the planning area.

Notes: * Existing community amenities shown in the Appendix. The 2040 Horizon Year scenario also assumes planned parks shown on the Conceptual Parks and Trails Map for the URA 6D Concept Plan.

** The 2040 Horizon Year scenario includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace.

*** Kingston Terrace is based on TAZ 1001, Current City limits based on TAZ 1050, 1051 and 1052, and King City Town Center based on TAZ 1050.

ACCESS TO TRANSIT

Description: This measure evaluates the number and percent of households with access to transit service.

Measure(s): Number and percent of households within ¼ mile of transit stops¹⁴.

Target: Increase the number of households accessible to transit.

Data Sources: Travel demand model; GIS

Findings: The TSP target is expected to be met. As shown in Table 21 about 13 percent of the total households in the planning area had access to TriMet routes in 2015. These households are located near OR 99W, including within the King City Town Center. About 77 percent of households in the planning area had access to the King City Shuttle Route, including all households in the King City Town Center, and most households east of Kingston Terrace. No households in Kingston Terrace had transit access, although the area represents a small portion of total households in the planning area.

The 2040 scenario includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace. By 2040, about 6 percent of the total households in the planning area will be expected to have access to TriMet routes, representing about half of the share of 2015. In addition, only about 68 percent of households will be expected to have access to the King City Shuttle Route, down from 77 percent today. However, by 2040, more households in the planning area overall will be within 1/4 mile of transit service, including in Kingston Terrace.

¹⁴ It includes all households within 1/4 mile of the bus stops along the TriMet routes that currently run along OR 99W and areas within 1/4 mile of the King City Shuttle Route.

TABLE 21: ACCESS TO TRANSIT IN KING CITY PLANNING AREA

TRANSIT ACCESS (BY TOTAL HOUSEHOLDS) *	KING CITY PLANNING AREA	AREA OF KING CITY PLANNING AREA**		
		KINGSTON TERRACE	BETWEEN KINGSTON TERRACE AND KING CITY TOWN CENTER	KING CITY TOWN CENTER
2015 BASE YEAR				
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	361	0	71	219
PERCENT OF HOUSEHOLDS	13%	0%	10%	25%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	2,201	0	663	874
PERCENT OF HOUSEHOLDS	77%	0%	70%	100%
2040 HORIZON YEAR *				
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	387	0	79	229
PERCENT OF HOUSEHOLDS	6%	0%	10%	25%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	4,718	1,650	1,077	915
PERCENT OF HOUSEHOLDS	68%	60%	70%	100%
CHANGE (2040-2015)				
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	+26	0	+8	+10
PERCENT OF HOUSEHOLDS	-7%	0%	0%	0%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	+2,518	+1,650	+413	+41
PERCENT OF HOUSEHOLDS	-9%	+60%	0%	0%
Source: The projections of travel distances are based on ArcGIS network analysis. Household data based on Travel Demand Model land use for the planning area.				
Notes: * The 2040 Horizon Year scenario includes the TSP Aspirational improvements, in addition to assuming the potential King City Shuttle transit expansion into Kingston Terrace.				
** Kingston Terrace is based on TAZ 1001, Current City limits based on TAZ 1050, 1051 and 1052, and King City Town Center based on TAZ 1050.				

SAFETY

Description: This measure monitors the safety of travel in the King City planning area over 5-year periods to provide trends related to total vehicle, pedestrian, and bicyclist collisions, fatal and severe injury collisions and total fatalities and severe injuries.

Measure(s): Vehicle, pedestrian, and bicyclist fatal and serious injury crashes (total, per capita and per VMT); Crashes involving a pedestrian, or bicyclist (total, and per capita).

Target: By 2040 reduce transportation related fatalities and serious injuries for all users by 50 percent.

Data Sources: Travel Demand Model; ODOT crash and crash severity data.

Findings: The TSP target is expected to be met. While future crash data is difficult to project, evaluation of recent data provides information on trends. The TSP also includes a range of projects that are expected to make streets safer in the planning area, including enhanced pedestrian and bicycle facilities, and improved street crossings and intersections.

Figure 13, presented earlier in this document, and Table 22 below, show data for the 5-year period between 2014 and 2018, with 384 collisions occurring in the City's planning area. Of these collisions, nine involved a pedestrian, two involved a bicyclist, and 373 involved a vehicle or multiple vehicles. All of the pedestrian collisions occurred along OR 99W, while the bicycle collisions occurred along SW Roy Rogers Road and SW Royalty Parkway. There were three fatalities, all pedestrians, and eight severe injuries, two of which were pedestrians. The fatalities occurred along OR 99W, near the SW Fischer Road intersection, with the pedestrian at fault in two of them, and the vehicle at fault in the third.

TABLE 22: SAFETY IN THE KING CITY PLANNING AREA

	ALL COLLISION S	COLLISIONS INVOLVING VEHICLE(S) ONLY	COLLISIONS INVOLVING PEDESTRIANS	COLLISIONS INVOLVING BICYCLISTS
TOTAL COLLISIONS (2014 TO 2018)	384	373	9	2
TOTAL COLLISIONS PER CAPITA*	0.075	0.073	0.002	0.000
TOTAL COLLISIONS PER VMT**	0.049	0.047	0.001	0.000
COLLISIONS WITH FATALITIES	3	0	3	0
TOTAL FATALITIES	3	0	3	0
COLLISIONS WITH SEVERE INJURIES	8	6	2	0
TOTAL SEVERE INJURIES	8	6	2	0

Source: ODOT Crash Analysis and Reporting Unit. Reported collision data from 2014 to 2018 for the King City planning area.

* Per capita calculations are divided by the planning area population of 5,141 for 2015 from the Travel Demand Model.

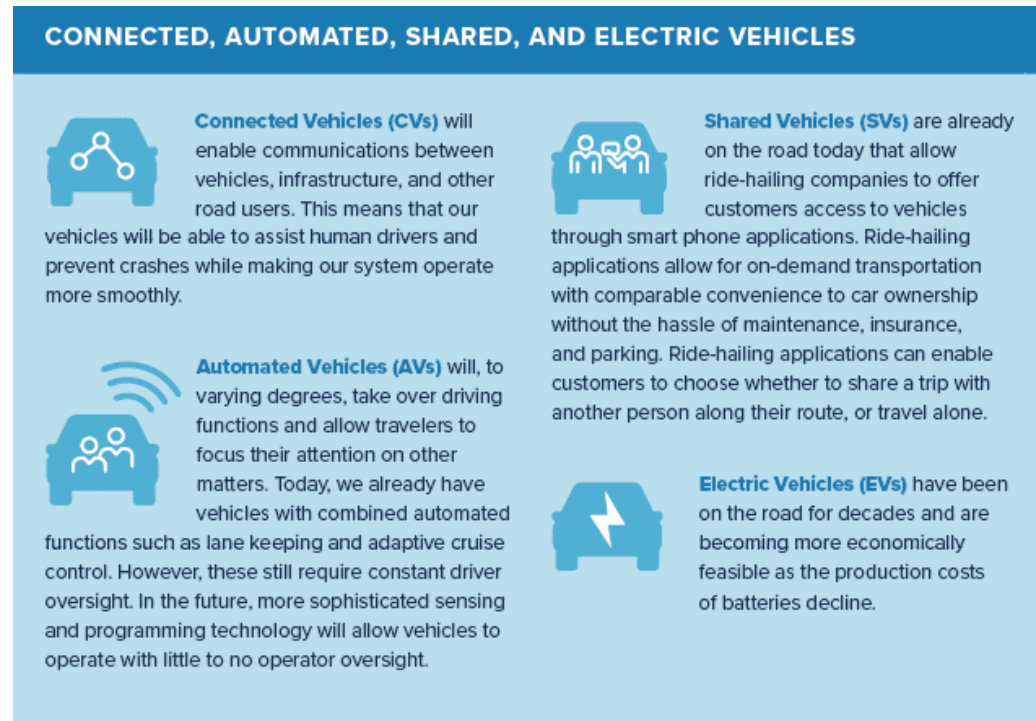
** Based on vehicle miles traveled (VMT) for each trip beginning or ending in a King City planning area Traffic Analysis Zone (TAZ), which is 7,911 in 2015.

PREPARING FOR EMERGING FORMS OF MOBILITY

Emerging technologies will continue to shape roads, communities, and daily lives for generations. Vehicles are becoming more connected, automated, shared, and electric. This future is highly uncertain, but it will have significant impacts for how the transportation system is planned, designed, built, and utilized. The following sections highlight these emerging forms of mobility.

CONNECTED, AUTOMATED, SHARED, AND ELECTRIC VEHICLES

We do not know the full impacts that connected, automated, shared, and electric (CASE) vehicles will have on the transportation system. A lot depends on how they will be regulated at the federal and state levels. Many of these vehicles will not be exclusive of the others and it is important to think of the host of implications that arise from the combination of these technologies. There are several competing forces that will unfold as CASE vehicles are deployed.



- AVs will provide a more relaxing or productive ride experience and people may have less resistance to longer commutes.
- Shared AVs are projected to have lower fuel and operating costs, making them less expensive on a per mile basis than private vehicle ownership. This may increase demand for auto-based travel in the future.
- CV technology will allow vehicles to operate safely with closer following distance, less unnecessary braking, and better coordinated traffic control. This will increase road capacity in the long run when CVs and AVs comprise most of the public and private fleet of vehicles.
- In the near term, since AVs make up a fraction of the fleet of vehicles, road capacity could decrease as AVs will operate more slowly and cautiously than regular vehicles.
- A new class of traffic – zero-occupant vehicles – will increase traffic congestion. These could include AVs making deliveries or shared AVs circulating around the City and traveling to their next rider.

- Roadways may need to be redesigned or better maintained to accommodate the needs of automated driving systems. For instance, striping may need to be wider and more consistently maintained to ensure the vehicle's sensors can recognize it.

These points raise questions about the degree to which CASE vehicles will impact road capacity, safety, and congestion. The development and use of the technologies should be monitored closely.

Congestion and Road Capacity

It is difficult to plan for the impacts of CASE vehicles on road capacity at this point in their development. Because there is a high potential that ultimately road capacity will be freed up after CASE vehicles are widely adopted, it will also cause a corresponding increase in traffic demand, and we can expect that congestion will continue to persist. However, CASE vehicles provide a much greater opportunity for effective transportation demand management solutions because the expected congestion can be used to encourage use of transit, shared vehicles, and bike share. These modes could all be encouraged through pricing mechanisms that are vastly less expensive to implement than building more road capacity. A variety of pricing mechanisms and alternatives to the State gasoline tax are enabled with CASE technology because these vehicles will be tracked geographically, and by time of day. With time/ location data, transportation system operators will be able to develop pricing mechanisms that reduce congestion at a lower cost than other roadway improvements. Larger cities will be the first to implement these strategies, but King City will follow these developments closely.

Pedestrian and Bicycle Interactions

One of the biggest challenges comes in interactions with pedestrians and bicyclists. There may be pressure to remove pedestrians and bicyclists from the street and into separate spaces, to make it easier for AVs to operate. In the City's planning area, people walking and biking on many low volume and speed streets will have to share the space with motor vehicles for the foreseeable future. Sidewalks and separated bike lanes cannot feasibly be constructed on every street in the planning area. The TSP is also working to make it easier for pedestrians and bicyclists to cross major streets in the planning area by building more enhanced crosswalks and other features. AVs that cannot adjust for pedestrians and bicyclists will result in a City built around AVs, rather than a City built around the people who inhabit it.

Transit

AVs could become cost competitive with transit and reduce transit ridership as riders prefer a more convenient alternative. However, transit will remain the most efficient way to move high volumes of people through constricted urban environments. AVs will not eliminate congestion and as discussed above, could exacerbate it – especially in the early phases of AV adoption. In addition, shared AVs may not serve all sectors of a community so many will still require access to transit to meet their daily needs.

To avoid potential equity and congestion issues, transit agencies need to work together to integrate the use of automated vehicles and transit. Transit needs to adapt to new competition in the

transportation marketplace as well as consider adopting CASE technologies to support transit operations. King City may consider:

- Partnering with ride-hailing companies to provide first and last-mile solutions.
- Working with ride-hailing companies and bike share to integrate payment platforms and enable one button purchase of a suite of transportation options for multimodal trips.
- Using fixed route autonomous shuttles to provide first and last-mile solutions.
- Using on-demand autonomous shuttles to provide first and last-mile solutions.

Parking

Because AVs will be able to park themselves, travelers will elect to get dropped off at their destination while their vehicle finds parking or its next passenger. Shared AVs will have an even greater impact on parking because parking next to the destination will no longer be a priority for the traveling public. This means that parking may be over-supplied in some areas and new opportunities to reconfigure land use will emerge. Outstanding questions related to parking include:

- How does vehicle ownership impact parking behavior?
- What portion of the AV fleet will be shared?
- How far out of the way AVs be able to park while remaining convenient and readily available?

As CASE vehicles are more widely adopted, King City should periodically review its parking standards by:

- Considering revised minimum parking requirements for new developments, especially in areas that are within 1/4 to 1/2 mile of transit.
- Exploring public/private partnerships to fund the installation of electric vehicle charging stations.
- Inventorying parking utilization and identifying areas that could be converted from parking to curbside pick-up and drop-off zones.

Intelligent Transportation Systems

An Intelligent Transportation System (ITS) utilizes technology and innovative services to promote a safer and “smarter” transportation experience where all types of users are better informed and can make more efficient use of the transportation system. King City does not currently own or operate ITS infrastructure, or even traffic signals. It is unlikely the City will invest in ITS, but it will support regional partners on larger scale efforts that would benefit King City residents. Such cooperation could range from agreements to share information and data or allow use of City right-of-way for regional ITS infrastructure.

Curb Space

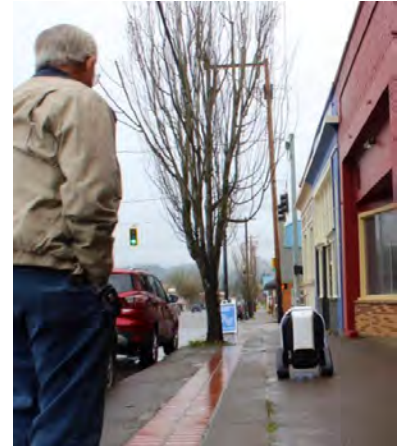
In addition to parking impacts, the ability to be dropped off at the destination will create more potential for conflicts in the right-of-way between vehicles that are dropping passengers off or

picking them up, vehicles moving through traffic, and vehicles parked on the street. This issue is already occurring in many urban areas with ride-hailing companies, where popular destinations are experiencing significant double-parking issues.

AVs will also be used to deliver packages and food. This may mean that delivery vehicles need to be accommodated in new portions of the right-of-way. For instance, if the AV parks at the curb in a neighborhood and smaller robots are used to deliver packages from door to door, new conflicts will arise between vehicles, pedestrians, robots, and bicyclists.

Package Delivery

AVs will also be used to deliver packages, food, and expanded services. This may mean that delivery vehicles will need to be accommodated in new portions of the right-of-way. For instance, if the AV parks at the curb in a neighborhood and smaller robots are used to deliver packages from door to door, new conflicts will arise between vehicles, pedestrians, and bicyclists.



Electric Vehicle Charging

To accommodate a future where electric vehicles will come to dominate the vehicle fleet, new charging capacity will need to be built. In addition to charging stations, cities, electric utilities, regions, and states will need to work together to create enough electricity to supply the significant increase in demand.



ELECTRIC SCOOTER AND BIKE SHARE

Shared-use fleets of small, fully or partially human-powered vehicles such as bikes, electric bikes (e-bikes) and electric scooters (e-scooters) are forms of micromobility transportation options (see Figure 41). These vehicles are generally rented through a mobile app or kiosk, are picked up and dropped off in the public right-of-way and are meant for short point-to-point trips. These emerging transportation options are convenient and have a low cost and make it easier for people to get around without a personal vehicle.

FIGURE 41: MICROMOBILITY TRANSPORTATION OPTIONS



Bikes



E-Bikes



E-Scooters

Public safety has been a concern in other cities as many riders do not wear helmets or they ride on sidewalks, which creates conflicts with pedestrians. In addition, many riders do not park them properly and leave them in places that obstruct pedestrian pathways.

Oregon law requires a helmet to be worn while riding an e-scooter, and riding bikes and e-scooters on the sidewalk is prohibited by the King City Municipal Code. The only time these may be on the sidewalk is if it is already parked, being parked on the curb or being walked. Both the bike and scooter should be driven with the flow of traffic in a bicycle lane or in the vehicle lane when there is no bike lane. They are also permitted on shared use pathways that are designated for shared pedestrian and bicycle travel (i.e., accessways or shared-use paths with a 10-foot width are acceptable for shared pedestrian and bicycle travel).

The rapid growth in the number of shared micromobility trips and the introduction of e-scooters has required cities to focus new attention on how best to regulate these new services in order to achieve the best public outcomes. Local government has both the authority and the responsibility to protect public health, safety, and welfare, and to ensure safe passage on and govern commerce in the public right-of-way. Cities have taken varied approaches to managing shared micromobility on their streets and chosen to exercise their authority in different ways.

Infrastructure is essential for shared micromobility to succeed as a viable transportation option. Cities must build out bike lane networks that encourage and protect riders. They must also decide where in the right-of-way shared micromobility vehicles should be parked and what locking requirements are appropriate. Some general guidelines include:

- **Parking:** In permitting shared micromobility companies to operate in the public right-of-way, cities must decide where is appropriate for companies and customers to leave their vehicles. Increasingly, cities and operators are striking a balance by encouraging customers to use “corrals” or designated shared micromobility parking zones in high volume or crowded areas, but also allowing users to drop off vehicles in the furniture zone of sidewalks. Designating locations provides cities and operators more control over the start and end location of vehicles, increases predictability for users and non-users alike, and reduces encroachment in the public right-of-way.
- **Provide Safe Place to Ride:** To fully realize the potential of shared micromobility, cities must redesign their streets so that everyone has a safe, low-stress network of places to ride. Poor or inadequate infrastructure leads to increased injuries and fatalities. In places without clearly marked, safe places to ride, riders often report feeling safer riding on the sidewalk.
- **Restrict/Limit Access:** Some cities have areas where shared micromobility services may not operate or where vehicles must move at slower speeds to ensure safety.

GOLF CARTS

Golf carts are a unique mode for the planning area. They are allowed to travel on City streets, and their usage could continue to increase and be a viable mode as the planning area grows. Golf carts are simple to operate, environmentally friendly, and low cost.

The King City Municipal Code currently restricts motorized or mechanical devices (e.g., electric scooters, golf carts) from using any public sidewalk, pathway or other byway designated for pedestrian use, but does not restrict the usage along pathways designated for both pedestrian and bicycle travel. To allow for safe shared travel between the motorized vehicles, bicyclists, and pedestrians, golf carts should only be permitted on accessways or shared-use paths with a 10-foot width.

MOBILITY HUBS

A mobility hub is a central location that serves as a multimodal connection point for transit, car share, bike share, and ride share stations (see Figure 42). This system can serve as a tool to encourage travelers to take seamless multimodal trips that are well-timed and convenient. Mobility hubs make the most sense in transit centers that are located higher density and mixed-use areas with multimodal supportive infrastructure (e.g., protected bike lanes) to maximize connectivity for first and last-mile solutions. The King City Town Center and future Kingston Terrace Town Center both present opportunities to consider incorporating mobility hub elements.

FIGURE 42: CONCEPTUAL DESIGN EXAMPLE OF A MOBILITY HUB



ON-GOING ISSUES AND AREAS OF EMPHASIS

The City's planning area includes three distinct areas: 1) the existing City limits; 2) developed unincorporated areas; 3) the UGB expansion area, referred to as Kingston Terrace, that is planned for future urban development. The TSP focuses on how to improve the existing transportation system for areas 1 and 2 noted above, and how to create a new system to serve future development in area 3. During the short-term most of the City's investments will occur within or adjacent to the current City limits. As annexation and new development occurs over time, other projects will have the potential to be funded by the City or through private development as a condition of approval, but these will largely be driven by the pace and location of the future annexation and development. The TSP assumes approximately \$150 million in new and improved Arterial streets, Collector streets, and Neighborhood Routes with pedestrian and bicycle facilities will be funded by private development as a condition of approval. In addition, private development will be fully responsible for constructing all new Local streets consistent with the standards outlined in Chapter 4.

EAST-WEST CONNECTIVITY IMPROVEMENTS

King City's concept plan identified westward extensions of SW River Lane and SW Fischer Road as the intended location for key multimodal transportation facilities serving the Kingston Terrace area¹⁵. This area to the south of SW Beef Bend Road represents one of the most critical connectivity gaps for circulation in the planning area, particularly for pedestrian and bicyclists. This

¹⁵ Concept Plan for King City Urban Reserve Area 6D. May 2018.

alignment passes through the Bankston Conservation Easement. Given the unknowns with that alignment, several potential alignments were considered through this area. These potential new east to west streets with pedestrian and bicycle facilities (see Figure 39 shown earlier in Chapter 5) will connect Kingston Terrace with the rest of the planning area at SW 137th Avenue. The subsequent evaluation process occurred through the Kingston Terrace Master Plan, and these alignments do not necessarily reflect an either/or condition. Ultimately, the Kingston Terrace Master Plan will determine their intended function for motor vehicles, pedestrians and bicycles in the planning area and corresponding functional classification and route designation.

The intent is to provide a connected network of east to west and north to south streets, and pedestrian and bicycle routes serving Kingston Terrace and linking existing streets to the planning area east of SW 137th Avenue consistent with the standards outlined in Chapter 4. These redundant routes are intended to reduce out of direction travel and distribute traffic and provide emergency services among many different streets rather than concentrating it on one. These new streets will be designed for slow motor vehicle travel speeds between 25 and 30 miles per hour and will include treatments (shown earlier in Table 11) to manage traffic volumes and travel speeds and discourage through travel, while prioritizing pedestrian and bicycle travel with high quality facilities that are convenient and comfortable.

ACTION: Design and construct the street alignments according to the Kingston Terrace Master Plan and corresponding functional classifications and route designations in the TSP.

SW BEEF BEND ROAD

SW Beef Bend Road is an important connection through the King City planning area. At the west end of the corridor, it bisects the Kingston Terrace neighborhood to the south and Tigard's River Terrace South neighborhood to the north. At the east end, it passes Deer Creek Elementary School and serves as a critical travel route for those walking and bicycling between the school, and neighborhoods in King City to the south, and Tigard to the north. Both King City and Tigard envision a redundant network of north to south Collector streets and Neighborhood Routes that intersect SW Beef Bend Road at intervals of approximately 600 feet (see Figure 39 and Table 13 in Chapter 5). Current Washington County spacing standards restrict direct access to SW Beef Bend Road to other Arterial or Collector streets, meaning the planned Neighborhood Routes are not allowed to connect to it. However, both King City and Tigard continue to work with Washington County to reach on overall agreement on the design of SW Beef Bend Road and its intersections to allow for these connections.

The TSP includes projects to widen SW Beef Bend Road to three lanes, with pedestrian and bicycle facilities between SW Roy Rogers Road and SW 131st Avenue. These improvements include sidewalks along the north side and a separated shared-use path on the south side. In addition, enhanced crossings of SW Beef Bend Road are planned at several locations, including at SW 137th Avenue, SW 150th Avenue, SW Elsner Road, and the future SW River Terrace Boulevard intersection (see Figure 39 and Table 13 in Chapter 5).

ACTION: Work with Washington County and city of Tigard to reach on overall agreement on the design of SW Beef Bend Road and its intersections.

OR 99W

Intersections along OR 99W are expected to serve a significant amount of traffic, with over 2,000 vehicles in each direction of OR 99W during the p.m. peak hour by 2040. These intersections were tested with additional turn lanes, but the improvements only had a minimal benefit to vehicular operations and are not recommended. Intersection operations for vehicles can be improved by widening OR 99W, but that requires a significant investment, and all possible options should be more extensively studied to ensure the needs of all users of the corridor are addressed. At nearly all intersections, an additional northbound and southbound travel lane would be required to significantly reduce congestion. A detailed regional corridor study is proposed as part of the Financially Constrained project list (i.e., City funding contribution towards a multi-agency corridor study) to determine what improvements can be made on OR 99W or what improvements can be made on parallel regional facilities to reduce the demand on OR 99W and align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical OR 99W focus areas in the planning area include expanded and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight. Various projects in the TSP proposed along the highway through the planning area will likely be further refined in the future corridor study.

The TSP also includes several short-term projects to improve OR 99W, specifically for pedestrians and bicyclists (see Figure 39 and Table 13 in Chapter 5). This includes a Financially Constrained project to construct missing sidewalks and a buffer on each side between SW Beef Bend Road and SW Royalty Parkway; near SW King James Place; and near SW Versailles Road.

ACTION: Work with ODOT and neighboring agencies to advance the regional corridor study for OR 99W.

SUPPLEMENTAL FUNDING OPTIONS

Providing adequate funding for capital investments and on-going maintenance of transportation systems and services is a major challenge. As reported earlier during the TSP process¹⁶, the current funding programs are expected to generate about \$33.5 million for transportation system improvements through 2040 (and an additional \$93 million that is assumed to be funded through private development as a condition of approval). This was identified as the amount that could fund higher priority projects, which were referred to as Financially Constrained projects. When compared to the full Aspirational list of improvement projects identified in the TSP, which totals \$241 million, additional funding options are needed to fund any lower priority projects.

If the City desires to add more funding opportunities, the best candidates are a local transportation system development charge, a transportation utility fee, a local fuel tax, and a short-term property tax levy. Table 23 shows some illustrative examples of possible revenues along with actions required for implementation. The City may wish to establish a system development charge for transportation facilities based on the transportation needs established in the TSP. As an example,

¹⁶ Transportation Financial Feasibility Assessment Report dated June 8, 2021 (see Appendix).

an SDC rate of \$9,000 per single-family unit, \$5,400 per multi-family unit and \$9,400 per peak hour trip for non-residential uses (based on rates used in the Beaverton South Cooper Mountain and Tigard River Terrace areas) would provide the City with approximately \$1.8 million annually or \$34.0 million through 2040. If an SDC is desired, a rate study would be required to determine appropriate fees based on capacity projects costs, growth potential, and local preferences.

The transportation utility fee is enacted by council resolution and could generate \$100,000 annually (or about \$2 million through 2040) for each \$1 charged per residential unit monthly. Other cities with such fee programs charge between \$4 and \$10 per month for a residential unit. Applying the high end in the planning area, it would provide about \$14 million through 2040.

Another notable option for the planning area is a potential local fuel tax, which will require voter approval to enact. A local fuel tax of three cents per gallon year could generate an additional \$190,000 annually or \$3.6 million through 2040. The final option listed is a limited property tax levy, which would produce around \$550,000 in additional revenue over five years.

TABLE 23: POTENTIAL SUPPLEMENTAL FUNDING OPTIONS

FUNDING OPTION	ALLOWED USE OF FUNDS	ACTION REQUIRED TO IMPLEMENT	EXAMPLE CHARGE	POTENTIAL ADDITIONAL ANNUAL REVENUE
LOCAL TRANSPORTATION SYSTEM DEVELOPMENT CHARGE	Capital improvements	City Council action	\$9,000 per single-family unit; \$5,400 per multi-family unit; \$9,400 per peak hour trip for non-residential	\$1.8 million
TRANSPORTATION UTILITY FEE	Capital improvements or maintenance	City Council action	\$1 per month for residential units and \$.01 per month per square foot for non-residential uses	\$100,000
LOCAL FUEL TAX	Capital improvements or maintenance	Voter Approval	Three cents per gallon	\$190,000
PROPERTY TAX LEVY	Capital improvements or maintenance	Voter Approval	\$0.20 per \$1,000 in assessed value (per year, for 5 years)	\$550,000

If the City wants to supplement the transportation funding beyond what is currently available to advance lesser priority project improvements, it is recommended to further consider one of the above supplemental options. In addition, the City should work with Washington County to update the Transportation Development Tax project list to include the latest projects along the roadways currently authorized in the planning area to receive TDT funds (i.e., SW Roy Rogers Road, SW Beef Bend Road, SW Fischer Road and SW 131st Avenue). This TSP assumes that the TDT list will be modified in the future to also include projects along SW Elsner Road and the SW Fischer Road extension.

ACTION: Pursue and enact supplemental local transportation funding option. Work with Washington County update Transportation Development Tax project list and

authorized roadway list to include latest projects from the TSP and add SW Elsner Road and the SW Fischer Road extension to the list.

CITY STANDARDS AND REGULATIONS

Chapter 4 of the TSP includes several new and updated transportation standards and regulations. These apply to the construction of new transportation facilities and to the operation of all facilities to ensure they are designed appropriately, and that the system functions as intended. These standards and regulations will need to be added by reference or incorporated into the City's Municipal Code and/or Development Code.

- ACTION:** Amend City Municipal Code and/or Development Code to:
- Incorporate references to vehicle functional classifications, and pedestrian, bicycle, and transit route designations, consistent with the TSP.
 - Incorporate references to minimum street cross-section and facility widths, consistent with the TSP.
 - Introduce vehicle mobility standards and pedestrian and bicycle level of traffic stress targets for City streets, consistent with the TSP.
 - Incorporate transportation facility and access spacing standards identified in Table 9 of the TSP for City streets.
 - Incorporate City transportation impact study trigger guidelines from the TSP, and develop study requirements, including a requirement to review pedestrian crossing treatments using NCHRP Report 562, as documented in Chapter 4.

City of King City

TRANSPORTATION SYSTEM PLAN – VOLUME 2 APPENDIX

JUNE 2023



TSP VOLUME 2: APPENDIX

Volume 2 of the King City Transportation System Plan includes all background memoranda, and technical data that were the basis for its development. The contents of Volume 2 represent an iterative process in the development of the TSP. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

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APPENDIX A. PUBLIC AND STAKEHOLDER INVOLVEMENT PLAN

KING CITY TRANSPORTATION SYSTEM PLAN (TSP) AND LAND USE REFINEMENT



PUBLIC INVOLVEMENT & COMMUNICATIONS PLAN

Prepared for:

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February 2020

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INTRODUCTION

This Public Involvement and Communications Plan (PICP) will guide stakeholder and public involvement during the King City Transportation System Plan (TSP) project. The PICP reflects commitments from The City of King City, the Oregon Department of Transportation (ODOT) and consultants to carry out public involvement activities designed to keep stakeholders and the broader public engaged and informed about the project and its goals. This project is an opportunity to reshape the ways people walk, bike, roll and move around King City, Oregon and public feedback is crucial for understanding both near-term and long-term transportation goals for the area.

PROJECT OVERVIEW

The King City TSP project will develop the City of King City's first transportation vision, policies, standards, network maps, and capital projects list. The TSP will include options for improving the multimodal network within the existing and newly incorporated areas of the City, with strong connections to neighboring communities in Washington County. The Project Area includes heavily-traveled arterials, including SW Beef Bend Road, SW Roy Rogers Road, and Pacific Highway West ("99W") and a major focus of the project will be to assess key intersections along these routes for safety, reliability, and congestion issues and opportunities.

A Growing City

King City is a city that has been experiencing fast growth and increased diversity of its residents over the last twenty years. While the City of King City was originally incorporated in 1966 as community for people over the age of 50, today it is home to families and a rich and diverse community that will continue to evolve as the city area doubles with the addition of the area that makes up URA 6D. A TSP will help the City to prepare for and meet the transportation needs of the current and future community of King City.

Project Objectives

The primary objectives of the Project are to:

- Create an integrated, multimodal TSP that:
 - Identifies needs, policies, and standards related to all modes of transportation, including walking, biking, transit, motor vehicles, and freight.
 - Provides safe and reliable transportation choices for people of all ages and abilities.
 - Minimizes reliance on driving to make trips within the City.
 - Supports the vision of a new main street/ town center that provides easy access for everyday needs and offers a range of employment opportunities.
 - Provides access to existing and planned recreational facilities and open spaces.
 - Minimizes potential environmental impacts of transportation infrastructure, services, and trip-making.
 - Can be built and maintained with feasible public and private investments.
- Refine the land use designations for URA 6D prior to master planning, so that the land use in the new Main Street/Town Center is compatible with vision for new developments, planned City transportation infrastructure, and adjacent major arterials needs.

Project Area

The project area includes incorporated King City and URA 6D, which is bordered by 99W to the east and south, SW Beef Bend Road to the north and SW Roy Rogers Road to the west.

Anticipated Project Timeline

This effort is anticipated to take 18 months and will conclude late summer 2021.

DEMOGRAPHIC DATA REVIEW: TITLE VI POPULATIONS

As part of the outreach to engage citizens and stakeholders in the King City TSP project, the project team will make special efforts to involve historically underrepresented groups as well as the priority populations recognized by the 1994 Executive Order (E.O.) 12898. The demographic data below compiles Census tracts within King City and its the expansion area, Tigard, and other applicable tracts as a comparison to Washington County and the state of Oregon overall. The following demographic analysis used various tables from the 2013-17 5-Year American Community Survey (ACS) estimates and population forecasts from the Population Research Center at Portland State University.

How This Information Informs Public Engagement

Demographic information can inform the best ways to engage the various community groups that live within a project area, including language translation and interpretation needs, public engagement activities that match the community's age and/ or backgrounds, and providing appropriate accommodations for disabilities.

Additionally, the following demographic data includes information about areas outside of the project area including Tigard and Washington County. As the overall population in the region grows, it is important to reflect the needs of those who may relocate to growing King City in the near future. For this reason, demographics for the other nearby areas will be considered with outreach and public engagement activities for this effort.

About the Area Analyzed

The demographic analysis for this project looked separately at the demographics for two overlapping areas. The first geographic area we looked at were the two census tracts that make up King City and the expansion area for the TSP, referred to as "King City Plus." The second area looked at broader demographic context around the proposed project area, including the city of Tigard, Bull Mountain, and three census tracts that make up King City and the expansion area; this is referred to in this report as "Tigard Plus." Both areas are compared to Washington County and the state of Oregon to understand broader regional context and demographic trends.

Total Population

The total population of the King City Plus area is estimated to be 11,281 people. The population of the larger Tigard Plus area, which includes the King City Plus area, contains 79,901 people and encompasses almost 14 % of the population of Washington County. According to forecasts done by the Population Research Center at Portland State University, the population of Washington County is expected to grow considerably in the future. By 2030 Washington County is expected to have 718,633 residents, an increase of 25.6%. By 2040, the population of Washington County is expected to increase an additional 12.8%, to 810,303 residents.

Table 1. Total Population

	Estimate
King City Plus: Total population	11,281
Census tracts	
319.07	6,190
320.01	5,091
Tigard Plus: Total population	79,901
Census tracts	
Tigard city (place)	51,355
Bull Mountain CDP (place)	9,698
319.07	6,190
319.08	7,567
320.01	5,091
Washington County: Total population	572,071
Oregon: Total population	4,025,127

Source: 2013-2017 American Community Survey 5-Year Estimates (DP05).

Note: The percentages included in this report are estimates from the American Community survey, each number comes with a margin of error, or an over/under range by which the estimate could be off. In some cases, the percentages will not add up to exactly 100% because of this margin or error.

Race & Ethnicity

The area of King City Plus is 93.4 percent residents identifying as white, while the larger area of Tigard Plus is more diverse, with 86.5 percent of its resident identifying as white. The Tigard Plus area has a slightly higher percentage of people who identify as Hispanic/Latino with a population of 10.2 percent, compared to King City Plus's 9.4 percent. That said, ***because almost 10% of the population identifies as Hispanic/ Latino, public engagement should strive to provide activities and information that reach this community in meaningful ways.***

There is a higher percentage of people who identify as Asian in Tigard Plus (11.0%) compared to King City Plus area's four percent.

The large differences in racial and ethnic makeup between King City and the proposed expansion area, and the area that surrounds it, means that the project team will need to work with community partners to reach community groups who may not be largely represented in the community today.

Table 2. Race and Ethnicity

	King City Plus	Tigard Plus	Washington County	Oregon
Total population	11,281	79,901	572,071	4,025,127
White	93.4%	86.5%	82.0%	89.1%
Black or African American	1.3%	2.3%	3.0%	2.8%
Hispanic/ Latino	9.4%	10.2%	16.4%	12.7%
American Indian and Alaska Native	1.1%	1.3%	2.0%	3.1%
Asian	4.0%	11.0%	12.3%	5.6%
Native Hawaiian and Other Pacific Islander	0.7%	1.3%	1.1%	0.8%
Some other race	2.3%	2.3%	5.5%	3.5%

Source: 2013-2017 American Community Survey 5-Year Estimates (DP05).

Age

The King City Plus area contains a significantly higher population of people aged 65 and older compared to the City of Tigard Plus area, Washington County, and the state of Oregon.

Table 3. Age

	King City Plus	Tigard Plus	Washington County	Oregon
Total population	11,281	79,901	572,071	4,025,127
Under 5 years	5.0%	6.0%	6.4%	5.8%
5-9 years	5.5%	6.0%	6.6%	6.0%
10-14 years	4.1%	6.3%	6.9%	6.0%
15-19 years	4.0%	5.8%	6.2%	6.1%
20-24 years	4.0%	5.8%	6.0%	6.6%
25-34 years	10.5%	13.7%	15.4%	13.9%
35-44 years	11.5%	14.5%	15.0%	13.1%
45-54 years	9.5%	12.5%	13.5%	12.8%
55-59 years	7.1%	7.0%	6.2%	6.7%
60-64 years	8.6%	6.0%	5.5%	6.8%
65-74 years	15.6%	9.4%	7.3%	9.8%
75-84 years	9.4%	4.6%	3.2%	4.5%
85 years and older	5.1%	2.3%	1.6%	2.1%
Median Age	51.4	40.4	36.4	39.2

Source: 2013-2017 American Community Survey 5-Year Estimates (DP05).

Sex

There is a significantly higher proportion of females in the King City Plus area (57%) than the other three comparative areas.

Table 4. Sex

	King City Plus	Tigard Plus	Washington County	Oregon
Total population	11,280	79,901	572,071	4,025,127
Male (%)	43.0%	48.6%	49.4%	49.5%
Female (%)	57.0%	51.4%	50.6%	50.5%

Source: 2013-2017 American Community Survey 5-Year Estimates (DP05).

Disability

The King City Plus area has a higher percentage of people living with a disability than Tigard Plus, Washington County, or the state of Oregon. The most common type of disability in this area is difficulty with walking (ambulatory difficulty). The area of Tigard Plus has a lower percentage of people with a disability than the state of Oregon on average, and a similar percentage to the rest of Washington County as a whole.

Per state standards, all public events will be held in ADA-accessible locations.

Table 5. Disability Characteristics

	King City Plus	Tigard Plus	Washington County	Oregon
Total population with a disability	17.2%	11.3%	10.2%	14.6%
With a hearing difficulty	6.1%	3.7%	2.9%	4.7%
With a vision difficulty	3.6%	2.1%	1.7%	2.5%
With a cognitive difficulty	5.9%	4.3%	4.6%	6.2%
With an ambulatory difficulty	10.3%	5.5%	4.9%	7.5%
With a self-care difficulty	3.4%	1.8%	2.0%	2.8%
With an independent living difficulty	7.9%	4.1%	4.6%	6.1%

Source: 2013-2017 American Community Survey 5-Year Estimates (S1810).

Limited English Proficiency

Limited English proficiency looks at the number of people who speak a language other than English and who also speak English less than “very well.” Both the King City Plus and Tigard Plus areas have percentages of people who speak only English that are similar the state of Oregon. Washington County has a lower percentage of people who speak only English. Both areas also have lower percentages of people with limited English proficiency than Washington County, with 3.1 percent for the King City Plus area and 6.7 percent for the Tigard Plus area compared to 9.1 percent in Washington County.

Of the languages spoken by people with limited English proficiency, Spanish is spoken the most in the King City Plus area, while in Tigard Plus, Spanish and Asian and Pacific Islander languages are equally common. Both Tigard Plus and King City Plus have a much higher number of languages classified as “other” by the American Community Survey than either Washington County or Oregon.

Table 6. Limited English Proficiency

Percentage of population who speak a language other than English and who speak English less than “very well”

	King City Plus	Tigard Plus	Washington County	Oregon
Population aged 5 years and over	10,717	75096	535,299	3,793,273
English only	85.5%	81.0%	75.7%	84.8%
Speaks a language other than English, speaks English less than “very well”	3.1%	6.7%	9.1%	5.9%
<i>Breakdown of those that speak a language other than English (3.1%)</i>				
<i>Spanish</i>	54.2%	35.9%	5.1%	3.6%
<i>Other Indo-European languages</i>	18.3%	13.9%	0.7%	1.1%
<i>Asian and Pacific Islander languages</i>	13.2%	37.0%	2.6%	1.4%
<i>Other languages</i>	14.4%	13.1%	0.4%	0.2%

Source: 2013-2017 American Community Survey 5-Year Estimates (DP02)

Income & Poverty Status

Overall, the population of King City Plus includes slightly more people that are experiencing poverty than in the other comparative areas. The median household income of the Tigard Plus area is higher than the King City Plus area and the median income of Oregon as a whole, but less than the median income of Washington County. The Tigard Plus area also has a significantly lower proportion of people who have lived in poverty in the past 12 months than the state of Oregon. The percentage of people living at or below the poverty level in the King City Plus area is slightly higher than Washington County as a whole.

	King City Plus	Tigard Plus	Washington County	Oregon
Total households	5,289	31,535	212,778	1,571,631
Less than \$10,000	5.8%	3.8%	3.8%	6.5%
\$10,000-\$14,999	5.9%	2.8%	3.0%	4.8%
\$15,000-\$24,999	8.5%	6.7%	7.2%	10.0%
\$25,000-\$34,999	10.8%	9.6%	7.9%	10.0%
\$35,000-\$49,999	13.0%	10.6%	11.4%	13.5%
\$50,000-\$74,999	21.7%	15.9%	17.5%	18.5%
\$75,000-\$99,000	10.7%	13.1%	14.6%	12.9%
\$100,000-\$149,000	13.0%	18.2%	18.4%	13.8%
\$150,000-\$199,999	3.4%	9.6%	8.5%	5.0%
\$200,000 or more	7.2%	8.9%	7.8%	5.0%
Median household income	\$58,427	\$70,120	\$74,033	\$56,119
Mean household income	\$77,316	\$104,441	\$93,043	\$75,851
Percentage of people whose income in the past 12 months is below the poverty level	11.8%	8.2%	10.3%	14.9%

Source: 2013-2017 American Community Survey 5-Year Estimates (DP03).

Key Considerations for this Project

The above data shows that King City has a different demographic makeup than the surrounding Tigard and Washington County areas. Overall, residents in the surrounding area are younger, more racially diverse, and have higher incomes. This is significant because this project will need to consider both the current and future transportation needs of the area. With more people moving to the Portland Metropolitan Area and its surrounding cities, King City will need to plan for different modes of transportation that serve a wider variety of needs and destinations.

PUBLIC INVOLVEMENT PURPOSE AND GOALS

The purpose of the public involvement program is to share information and gather input on the needs, issues and options of potentially affected interests living near and served by the project area, as well as other stakeholders and interested parties.

The project's public involvement and communication goals are to:

- Communicate complete, accurate, understandable and timely information to the public throughout the project.

- Specifically engage the public to help identify near- and long-term multimodal transportation needs and desires.
- Collaborate with interagency partners; support the city in working with the Planning Commission, City Council and Technical Advisory Team (TAC).
- Comply with Civil Rights Act of 1964 Title VI requirements.
- Ensure that the public involvement process is consistent with applicable state and federal laws and requirements, and is sensitive to local policies, goals and objectives.

KEY MESSAGES

Throughout the project, we'll use these key messages in public communications. We'll update them as needed to reflect the project's progress.

- Help us plan for King City's growing transportation needs – for now and the future.
 - The city and surrounding areas will keep growing, so we need your help in creating a transportation plan to address our community's needs today and 20 years from now.
 - This is our *first* formal transportation plan. Your input can truly set the tone for years to come.
 - The project will take 18 months — but it's time well spent, because it will serve a generation.
- This project is for *all* of King City and nearby — not just developing the western expansion area, but also serving our commercial core and underdeveloped areas, and planning “complete streets” everywhere in town.
- We'll look especially closely at the roads people use most, including SW Beef Bend Road, SW Roy Rogers Road, and Pacific Highway West (99W). We'll assess how to make their key intersections safer, more reliable and less congested.
- We'll plan for *all* the ways people get around in King City and neighboring parts of Washington County, whether you drive, bike, walk, roll, take the bus or use a golf-cart.
- We're committed to reaching out to people of all incomes and backgrounds, including those who use assistance to get around or who speak other languages.
- The plan will have a *whole framework* for building a safe, well connected system: policies, standards, network maps, a capital projects list and more.
- Instead of working separately, we'll mesh this project with the King City Beef Bend South Master Plan project. That will help build one consistent vision for a healthy, thriving community.

CONCURRENT EFFORTS AND COORDINATION

There are other regionally significant planning projects that have overlapping goals and activities occurring concurrently with this project. It is important to be aware of these efforts to ensure that outreach and messaging are consistent and, when possible, coordinate outreach activities to reduce public confusion and redundancies. These projects include:

- **King City Master Plan** – The Master Plan activity overlaps with the same project area and will consider the outcomes of the TSP process. While this project has not yet started, it will overlap with the TSP schedule.
- **Tigard River Terrace Project** – Part of the focus for this URA planning effort will include SW Beef Bend Road. It will be important to know how this plan may place additional demands on this corridor and how transportation system elements should be coordinated.

- **Washington County Urban Reserve Transportation Study (URTS) Project** -This study will consider possible amendments to the County's TSP and will include key projects such as the Tile Flat Road extension to Beef Bend Road.

AUDIENCES

The public involvement process will seek to inform and engage the following types of affected and interested people and organizations in the project area:

- King City and expansion area residents
- King City elected officials
- Nearby Washington County residents
- King City TSP Technical Advisory Committee
- Agency partners working on related plans or projects
- Area businesses and business organizations
- Bike and pedestrian interests
- Transit interests, including current or potential passenger transit
- Culturally specific community-based organizations serving residents of the project area
- Freight interests
- Environmental interests
- Accessibility groups
- Senior services
- Tourism and recreation interests
- Tigard-Tualatin School District
- Housing and community development interests
- Emergency services providers
- Local event organizers
- Recreational interests and recreational users
- King City Public Golf Course
- Houses of worship, including those that provide service in multiple languages

PROJECT TEAM MEMBER ROLES AND RESPONSIBILITIES FOR PUBLIC INVOLVEMENT

ODOT

- **Talia Jacobson, Region 1, Project Contract and Funding Administrator** – Talia provides project oversight to ensure that the project meets state requirements and objectives of reaching affected community members and organizations within the project area and surrounding areas.

King City

- **Mike Weston, City Manager** – Mike serves on the Project Management Team (PMT) and will provide strategy for and review of all public engagement activities and deliverables to ensure they meet City goals and align with other City planning projects.

DKS

- **Carl Springer, Consultant Project Manager** – Carl is leading the consultant team, providing oversight on the TSP and strategy and development and leading presentations with the public as needed.
- **Kevin Chewuk, Deputy Project Manager** – Kevin supports Carl in the coordination and development of the TSP and Land Use Refinement Plan.

JLA Public Involvement

- **Jessica Pickul, Public Involvement Lead** – Jessica will oversee the public involvement plan and engagement activities, including leading the in-person and online project open houses and managing public comments.
- **Jaye Cromwell, Public Involvement Coordinator** – Jaye will manage the day-to-day coordination of public engagement activities for the project.

TECHNICAL ADVISORY COMMITTEE

This project will include a Technical Advisory Committee (TAC). The TAC will be comprised of City, County and other agency partners and will provide input on transportation opportunities and prioritization of those opportunities. They will also review project deliverables and provide feedback. This project will also seek to engage the community and community groups through public events, focus groups community meetings and through online engagement. Community feedback will be presented to and considered by the TAC throughout the process.

ENGAGEMENT DURING THE COVID-19 CRISIS

COVID-19 has rapidly changed the way many community members in Washington County work, live, and interact with each other. Washington County, ODOT and the Consultant team understand that while project progress needs to continue, community safety is the top priority.

Gathering community input is central to the development of a refinement plan that is created and supported by the broad community. The current project scope outlines several engagement opportunities that require in-person public engagement which may need to be adjusted to enable community members to participate safely, yet meaningfully. Current state and federal guidelines prevent such a gathering for the foreseeable future.

The below table outlines engagement strategies that were scoped and alternative engagement ideas for the Project Management Team to consider as the project advances during the COVID pandemic.

PUBLIC INVOLVEMENT STRATEGIES AND SCHEDULE

Tool/Activity	Description	Lead	Anticipated Schedule
Public Involvement Communications Plan (PICP)	The PICP outlines public involvement goals, activities and key messages for the project. The PICP will also include a demographic analysis of the project area.	JLA	April 2020
Project Website	Consultant will develop, host and maintain Project Website suitable for hosting on the City website after project completion.	JLA	April 2020
Factsheet	The factsheet will include a description of the project purpose, its goals, the timeline, the website, and ways people can provide input.	JLA	April 2020
Overview Video	A project overview video will provide an engaging introduction to the project and will be used on the website and social media.	JLA	Early Summer 2020

Tool/Activity	Description	Lead	Anticipated Schedule
<p>Community Events</p> <p>Targeted Outreach to EJ and Title VI Communities</p>	<p>Consultant will plan and develop tabling and canvassing materials for, and lead public and stakeholder involvement at, up to eight (8) existing community events as outlined in the Public and Stakeholder Involvement Plan.</p> <p>Outreach materials will be translated into Spanish (based on demographics data).</p> <p>COVID-19 Considerations:</p> <p><i>Gathering feedback:</i></p> <p>Several of these meetings could become online community meetings with social clubs and churches that are meeting online. The project team can coordinate with group organizers to host a video call with their members to hold a brief presentation and gather early feedback.</p> <p>Paper packets of the materials could be created to provide the same information as the online event for those who an online event is not accessible. These packets could be advertised and made available for pick up at critical locations like grocery stores.</p> <p><i>Build awareness:</i></p> <p>For those who are exercising outside, we could include signage throughout the City about the project and encourage feedback through the online event.</p> <p>The project could place a large advertisement in the Regal Courier to build awareness and include a challenge to the public to provide feedback for a prize.</p>	JLA	Up to 3 in the Spring/ Summer 2020; Other meetings to be scheduled as opportunities arise

Tool/Activity	Description	Lead	Anticipated Schedule
In-Person and Online Outreach	<p>Consultant will provide up to one (1) In-Person and two (2) interactive online engagement opportunities over the course of the Project.</p> <p>Covid-19 Considerations: These events may need to resemble more robust online events that include short video presentations, partnered with interactive activities to gather feedback.</p>	JLA	At project milestones (TBD)
Contact and Comment Log	Consultant will develop and maintain a log of public and stakeholder contacts, involvement activities, participation, and major themes of input received.	JLA	February 2020; ongoing updates
Public Involvement Summary Report	Consultant will prepare a Public Involvement Summary Report summarizing outreach activities, input received, and how the input was used and responded to.	JLA	Summer 2021

COMMUNITY EVENTS

There are many community events throughout the year that the project team will consider for public outreach activities:

- Fourth of July Walk and Roll Festival
- Events at the Tualatin National Wildlife Center (including Drop In Exploration Days and Puddle Stompers)
- Downtown Tigard Street Fair & Latino Festival
- Events at Deer Creek Elementary School (including the Walk-a-thon and Carnival events)

The following organizations have many events year-round that the project could present or participate at:

- King City Civic Center Clubhouse
- King City Lions Club (including the flea market events)
- King City Dance Club
- King City Shuffleboard Club
- King City Travel Club

There are also several opportunities for the project team to hold Spanish-led focus groups or discussions. The following is an initial list of opportunities:

- ESL classes at St. Anthony Catholic Church, Tigard Senior Center and Tigard United Methodist Church
- Events hosted by Tigard Covenant Church

Note: This list will continue to grow as the Project Team conducts further outreach with stakeholders.

MEASUREMENTS AND MONITORING OUTREACH ACTIVITIES

The project team will evaluate the public involvement process on an ongoing basis to determine the effectiveness of the outreach effort.

At key milestones, the project team will assess how well the program is meeting the public involvement goals listed in this plan. While evaluation of these goals is necessarily subjective, the team will also consider the following more measurable objectives as the team assesses program effectiveness:

- Number of participants attending meetings or events.
- Number of website hits or downloads occurring during a specific time period.
- Number of people who have signed up for the project mailing list.
- Number of project comments received (phone, email, comment cards, online).
- Whether the comments are relevant to the project (indicates project understanding).
- How project decisions have been modified as a result of public input.

APPENDIX B. PUBLIC AND STAKEHOLDER INVOLVEMENT SUMMARY



King City Transportation System Plan

PUBLIC OUTREACH EXECUTIVE SUMMARY

ODOT and King City conducted public outreach between September 2020 and June 2021 to share information about the King City Transportation System Plan (TSP) project and invited community members, stakeholders, and other interested parties to share their ideas and feedback about how people currently get around in King City, what can be improved, and solicit feedback on the proposed transportation projects for the TSP

Feedback received through this outreach period helped the City and its consultants address planned growth in King City and the changing transportation needs of residents. Feedback was also used to develop a list of proposed transportation projects in the draft TSP, which will be further refined through the Kingston Terrace Master Plan project.

The **Public Engagement Plan**, developed by the project team at the beginning of the project, considered the demographic makeup of the project study area to inform outreach activities. In light of the COVID-19 pandemic, the project team adapted to provide several engagement opportunities (virtual, in-person and by mail) to enable community members to safely participate and provide meaningful input.

Approximately 350 people were engaged through a variety of outreach opportunities. These opportunities, as well as highlights from the feedback received, are summarized below.

Opportunities for engagement

- **2 Online open houses** with a total of 317 participants
 - o *Online open house #1 participation:* 169 participants provided comments
 - o *Online open house #2 participation:* 148 participants provided comments
- **1 Mail-in survey** sent to all residents within King City and the expansion area with over 237 mailed back to the project team.
- **1 Feedback map** offered in both the first online open house and the mailed-in survey, received 709 location-specific comments
- **2 In-person tabling events** with approximately 85 attendees
- **1 project website** with project updates
- The public were also given the opportunity to reach out to City staff to ask questions and share their thoughts on the project





How engagement opportunities were promoted

- Social media posts on the King City Facebook page, Nextdoor, Twitter, and Instagram
- Updates on the project websites
- Postcards mailed to residents within the project study area advertising each of the online open houses and in-person tabling events
- Emails sent to interested parties, stakeholders, and community organizations
- Press releases for the online open houses

Public Feedback Key Themes

Overall, participants expressed **overall satisfaction with the transportation network in King City**, saying that they were satisfied with the road network and walking and biking network. **Most participants indicated that they currently use a car to get around**, so many did not comment on the transit network in King City.



Overall, the public was **concerned with the following** when thinking about how they get around King City:

- **Safety of pedestrians and bicyclists.** Many expressed a desire to see more walking and biking trails throughout King City, preferable separated from vehicle traffic.
- **Traffic and potential impacts to neighborhoods** as the population increases.
- **Vehicles travelling unsafe speeds.** Many noted that speeding was already a problem and were worried it would get worse with increased cars on the road.



The topic most commented on were the proposed **East/West Connection Alternatives** intended to create road, walking, and biking connections between current King City neighborhoods and the expansion area west of the current King City boundaries.

The majority of participants were **concerned that an extension of Fischer, Macbeth, or Capulet roads would negatively impact the Edgewater and Rivermeade communities** and **suggested that Beef Bend Rd be widened** to accommodate east/west vehicle traffic.

Community members were also concerned about how an East/West Connection and other transportation improvements (be they road or multi-use paths), may **impact the Tualatin River and the surrounding natural areas within the Columbia Land Trust**. Many also cited current erosion in this area as a concern and were worried about exacerbating it.



Who we heard from

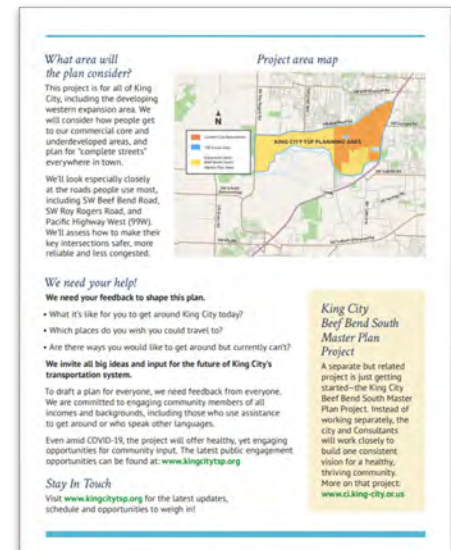
Online Open Houses: The majority of participants identified as white. The second largest racial or ethnic identity selected was Hispanic/Latino. The majority of respondents were 36 years of age or older. The majority of respondents had a household income of \$100,000 or above.

Who Supported Project Outreach

- The City of King City
- ODOT
- DKS Associates
- JLA Public Involvement

What's Next?

The City of King City and its consultants will use the feedback gathered through this process to further refine the list of proposed transportation projects in the TSP for inclusion in the Kingston Terrace Master Plan project, which is expected to be adopted by fall 2021.





King City TSP

Fall Outreach and Engagement Summary

Prepared for



The City of King City
Oregon Department of Transportation
DKS

Prepared by

JLA Public Involvement, Inc.

November 2020

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Introduction

ODOT and King City conducted outreach activities between September 14 and October 30, 2020 to solicit feedback from the community for King City's Transportation System Plan (TSP). This feedback will help the City and its consultants create a TSP that addresses planned growth in King City and help respond to the changing transportation needs of King City residents.

Outreach activities were amended to encourage community feedback during the COVID-19 pandemic and included a variety of online engagement opportunities and a mail-in survey.

Feedback received through this outreach period will be considered as King City creates an integrated, multimodal TSP.

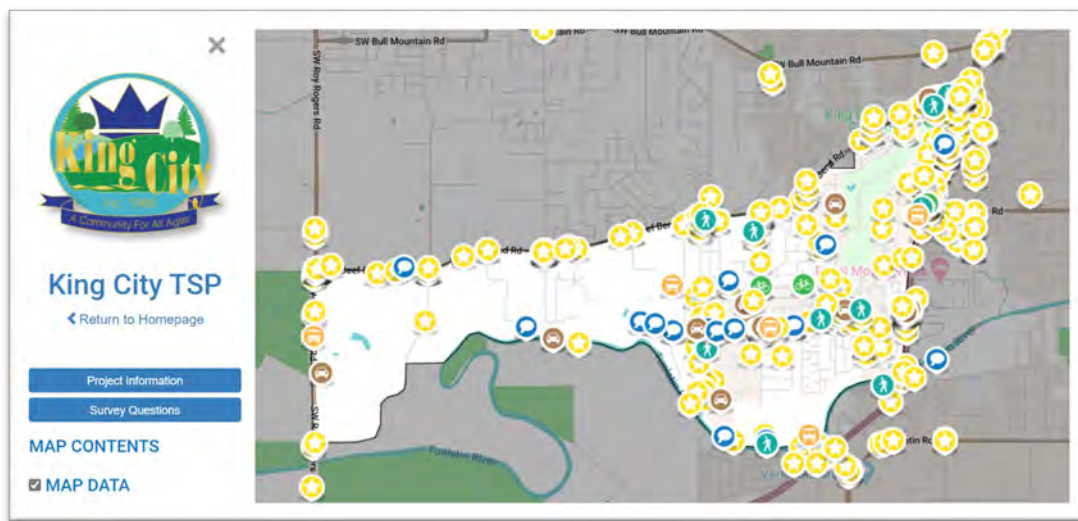
Overall Participation and Notification

To gather feedback on the proposed TSP, the project team developed an **online open house and mail-in survey** and hosted an **in-person tabling event** to gather community feedback.

Overall, the project team received **survey responses and talked with over 450 people**. Of those comments, 169 people responded to the survey in the online open house and 237 responded via the mail-in survey. Additionally, approximately 50 people attended the in-person tabling event, 709 comments were submitted with the comment map, and 3 comments were received via email and the project website.

Community members were informed about the online open house through the following:

- Newsletter with mail-in survey to residents within the City of King City boundaries
- Email to stakeholder and interested parties list
- Posts to the King City Facebook pages, Twitter, Nextdoor, and Instagram
- Posts on the project website



Outreach Opportunities

Online Open House

The online open house was intended to provide community members with information about the TSP and the opportunity to provide feedback on King City's current transportation system. This online event included a feedback map and online survey.

The online open house asked participants to use the map to tell the project team where they were experiencing transportation issues and identify important destinations (such as schools, businesses, or parks).

Tabling Event

The project team held their first in-person tabling event to gather community input about King City's Transportation System Plan (TSP) on Thursday, October 8th from 3-6 pm at the King City Community Park, near the basketball court. They talked to **approximately 50 community members**. The purpose of the tabling event was to make the community aware of the project and to solicit feedback on transportation in King City.

The event was successful, especially considering that the event was hosted during the pandemic and included several CDC recommended distancing measures. Participants shared their thoughts on potential TSP improvements and more generally about transportation in King City. People who decided to participate were able to speak with City staff and the Mayor of King City, Ken Gibson, ODOT staff, and engagement specialists from JLA Public Involvement.



Newsletter with Mail-in Survey

A newsletter was distributed to all residents within King City boundaries that included two sections: an informational section and a feedback section.

The informational section introduced residents to the project and the feedback section asked a series of questions that mirrored the online survey. Recipients could then mail this survey back to the project team.

Feedback Summary

This section summarizes the feedback received through the in-person tabling event, the survey in the online open house, the mail-in survey, and other comments sent to the City via email or the website comment form.

The graphs for each section include only the responses from the virtual workshop, the newsletter did not contain those questions.

Feedback Map

Participants in the online open house and mail-in survey were shown a map of King City and asked to provide feedback on locations needing improvements. Participants submitted a total of **709 location comments**. Comments from both forms of engagement are summarized below.

Important Destinations

Participants submitted **395 comments** that identified important destinations in King City and the surrounding areas. The following is a summary of the most commonly mentioned locations:

- **Beef Bend Road**
 - **Intersection of Beef Bend and Highway 99W** (King City Plaza and adjacent businesses)
 - **Deer Creek Elementary School**
 - **Intersection of Beef Bend and Roy Rogers** (residences and access to Hillsboro)
- **Fischer Rd**
 - **Intersection of Fischer Road and Highway 99W** (residences, businesses/shopping, and access to and from King City)
 - **Intersection of Fischer Road and 131st Avenue** (residences)
- **Intersection of Durham Road and Highway 99W** (residences, Tigard Town Square, businesses/shopping, access to Bridgeport, access to the hospital)
- **King City Community Park**
- **Intersection at Royalty Parkway and Highway 99W**
- **Intersection at Tualatin Road and 124th Avenue** (access to Fred Meyer, I-5, Tualatin, and the coast)

Challenging and/or Dangerous Locations

Participants submitted **268 comments** that identified **challenging and/or dangerous locations** in King City and the surrounding areas. The most common locations and the issues raised by participants include:

- **Beef Bend Road**
 - **Pedestrian concerns** included narrow sidewalks, sidewalk gaps, and a lack of pedestrian crossings
 - **Intersection of Beef Bend Road and Highway 99W**
 - Heavy traffic
 - Signals are too short and/or not coordinated well to support the flow of traffic
 - Lack of bike infrastructure
 - Unsafe driving behavior
 - **Intersection at Beef Bend Road and 131st Avenue**
 - Inconsistent speeds

- Lack of sidewalks
 - Speed limits are too high
 - Lack of sufficient lighting
 - Too busy
 - Unsafe driving behavior around pedestrians
 - Landscaping and streetscape restrict visibility
- **Fischer Road**
 - **Intersection at Fischer Road and Highway 99W**
 - Driveway conflicts
 - Congestion
 - Signals need better coordination
 - Lack of sidewalk access
 - Pedestrian signals are too short
 - **Intersection at Fischer Road and 131st Avenue**
 - Congestion
 - Unsafe driving behavior
 - Lack of sidewalk connectivity
- **Intersection at Durham Road and Highway 99W**
 - Signal timing is too long
 - Unsafe driving behavior and speeding
 - Perceived high frequency of collisions
 - Lack of pedestrian safety or driver awareness
 - Difficult to cross as a bike or pedestrian
- **Intersection at Royalty Parkway and Highway 99W**
 - Needs a left turn signal
- **Intersection at Tualatin Road and 124th Avenue**
 - Lane changes are dangerous
 - Signal need better coordination
- **Intersection at Bull Mountain Road and Highway 99W**

Online Open House, Mailed-in Survey Responses, and Comments Sent to King City

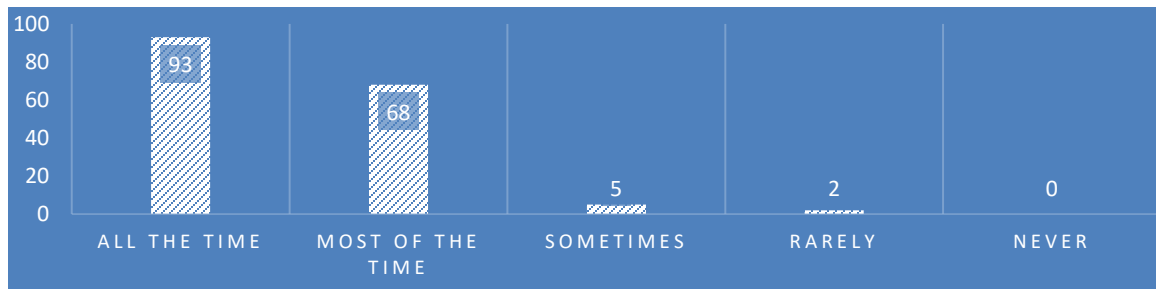
Those who participated in the online open house and sent back the mail-in survey were given the opportunity to ask a series of questions related to their perspectives and use of the transportation system in King City. Some questions were not included on the mail-in survey due to its limited space, but participants were also provided the online open house link if they wished to respond to the full survey. Participants were also able to submit comments to the City via email and the project website comment form. Feedback is summarized below.

1. *How do you usually get from one place to another?*

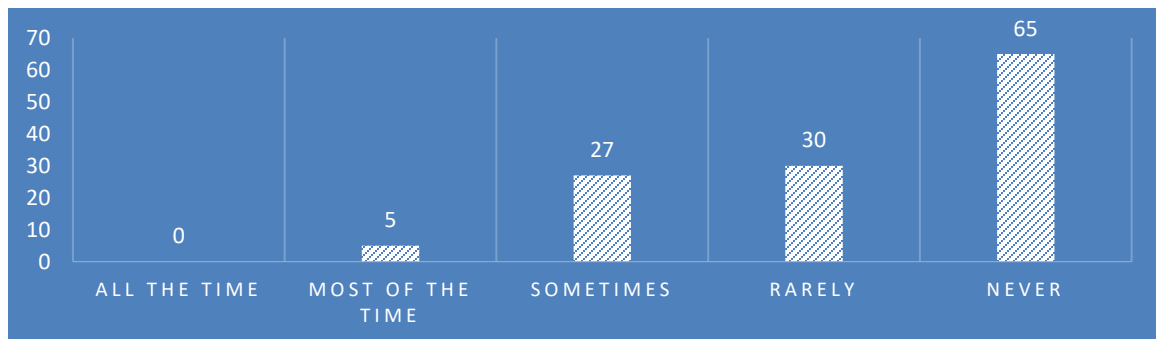
The project team wanted to know how people are currently getting around King City. **Of the people that responded to the questions related to this topic, the majority travel by car.**

Online open house participants were asked how they most commonly get around and how frequently they travel by each mode of transportation.

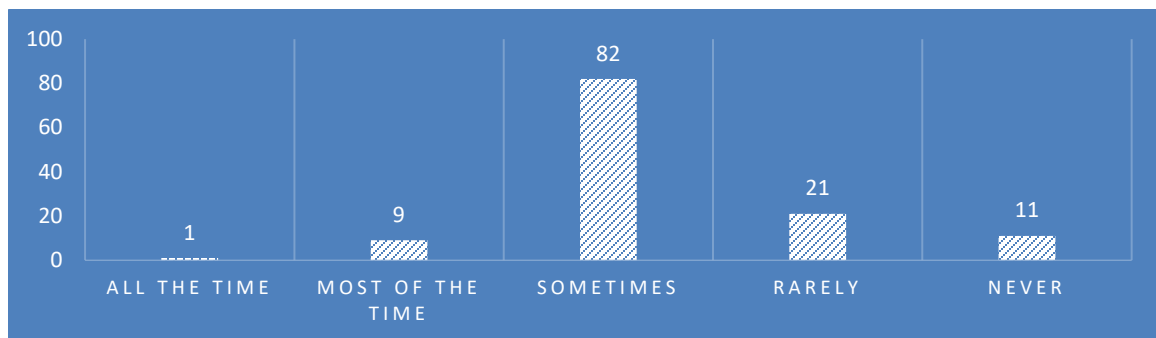
How often do you drive by car? (Online survey responses only)



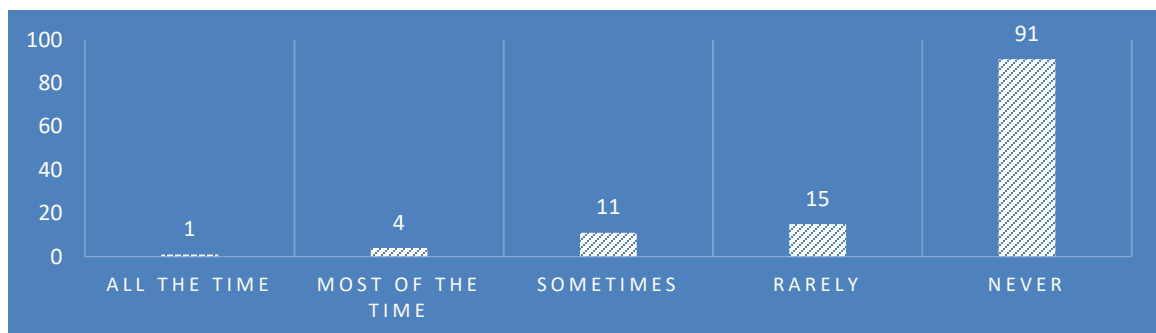
How often do you ride a bike? (Online survey)



How often do you walk? (Online survey)

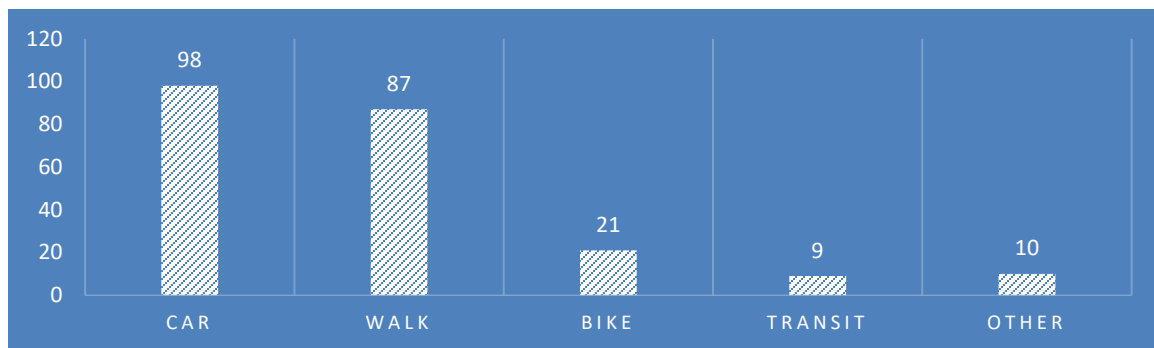


How often do you use transit? (Online survey)



What ways do you typically use to get around? (Mail-in survey)

Mail-in survey participants were asked to select all the ways they travel.

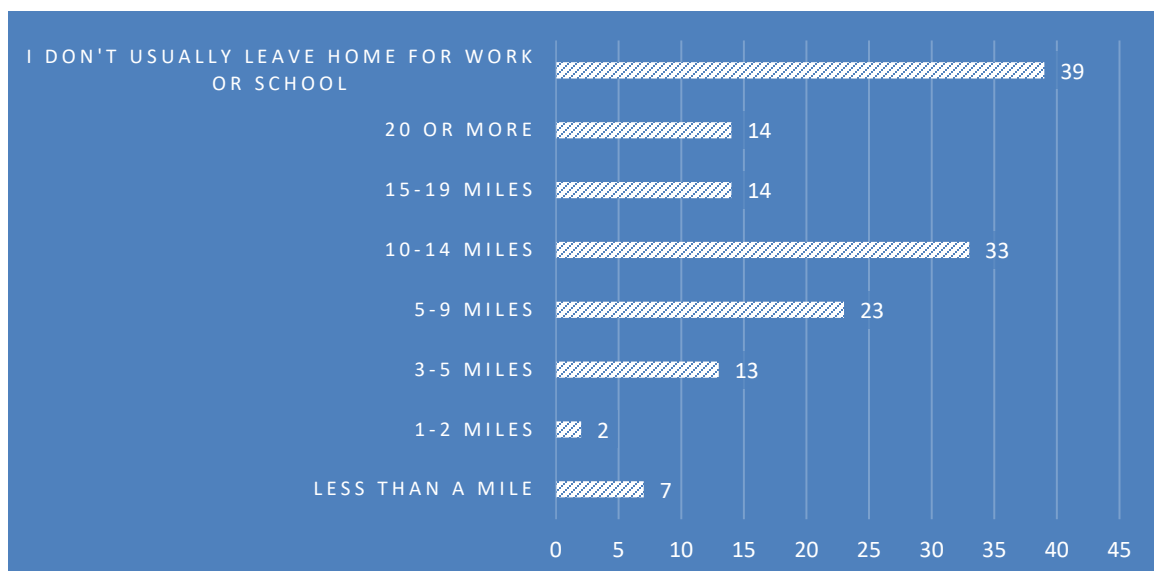


Participants from both the online survey and the mail-in survey were given the option to list other modes they use to get around. Other modes listed include:

- Golf cart
- Motorcycle
- Mobility scooter
- Rideshare (Lyft, Uber, etc.)

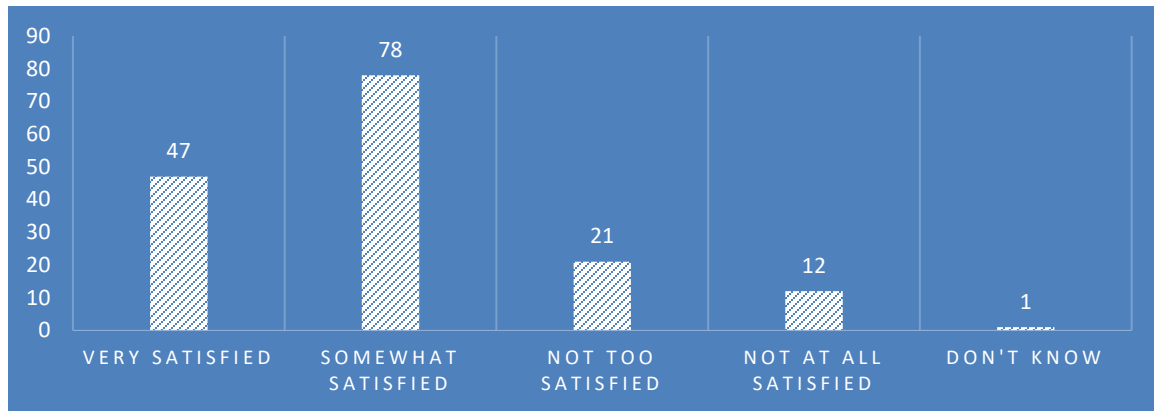
2. **How far do you typically commute for work or school?** (mail-in survey only)

Participants of the mail-in survey were asked how far they typically commute for work or school. Of the people that responded, **the largest group said they don't commute or leave home for work or school**. It is unknown how much of this response is due to stay-at-home orders during the pandemic. The second largest group of responses indicated that **people are traveling between 10 – 14 miles**, which may mean many people are traveling to nearby Portland for work.



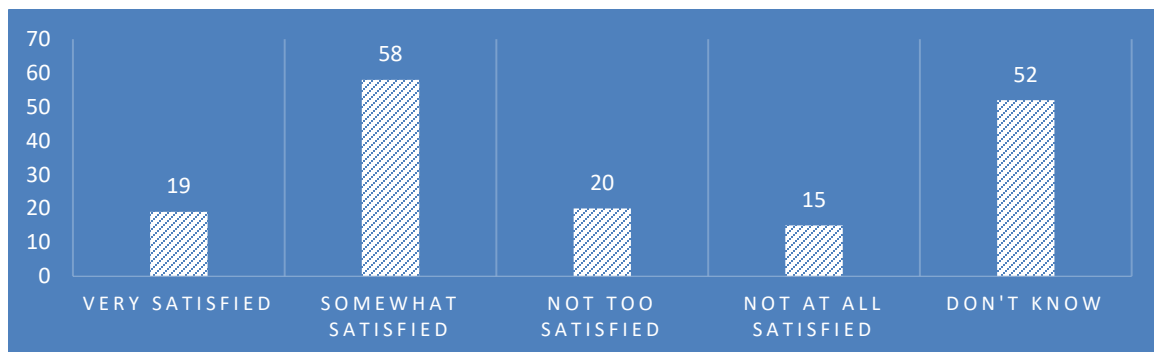
3. *How satisfied are you with the roadway network and driving conditions for cars in King City?* (online survey only)

Of the participants that responded to this question, **most people are satisfied with the current roadway network and driving conditions in King City**. This is consistent with the feedback received at the tabling event feedback.



4. *How satisfied are you with the conditions for bikes in King City?* (online open house only)

Feedback on how satisfied participants are with the current conditions for biking in King City was mixed with a large number of people saying they are somewhat satisfied and almost the same amount of people saying they don't know, which may be due to how many people said they don't currently travel by bike.



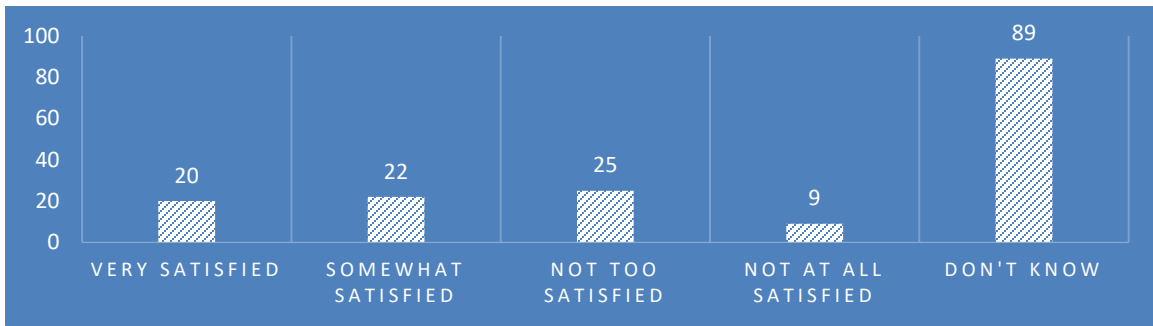
5. *How satisfied are you with the conditions for walking in King City?* (online open house only)

Of the participants that responded to this question, **most people are satisfied with the current walking conditions in King City**.



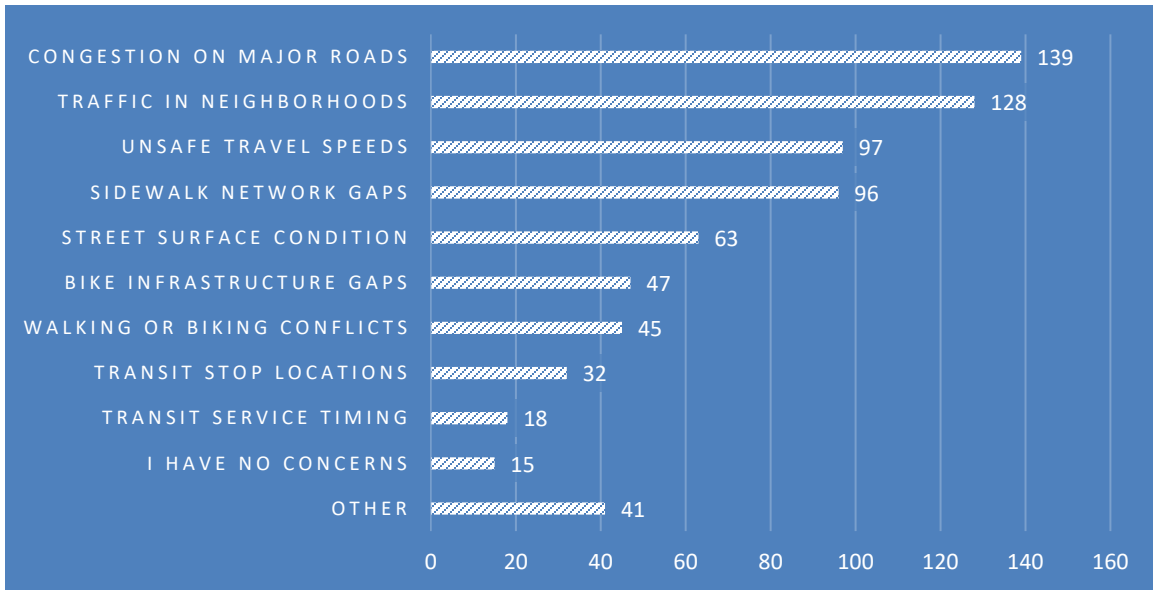
6. *How satisfied are you with the transit service and connections in King City?* (online open house only)

Feedback on how satisfied participants are with the current transit service in King City was mixed, with most people indicating that they don't know.



7. *What are your main concerns with getting around in King City?* (included with both surveys)

Participants responded that **congestion on major roads and traffic in neighborhood streets are their biggest concerns with getting around in King City today**. There were also a fair number of participants who indicated a concern about unsafe travel speeds and sidewalk network gaps.



Of those that chose the option “other,” common answers included:

- Concern about the impacts of extending Fischer Road
- Parking limitations and conflicts
- Lack of multiuse trails and paths
- Lack of general safety
- Limited infrastructure that does not support all modes
- Lack of inter-city transit options
- Golf cart mobility and access
- Increased development impacts

As there were many entries for the “other” category, individual responses are included in [Appendix B](#).

8. **How do you usually use the King City transportation system?** (online open house only)

There was almost an even split with the top response for how people usually use the King City transportation system. Today, people are using it to **reach local businesses and destinations and to access other places in nearby cities**.



For those that chose the option “other,” a majority responded with answers indicating they do not ride the bus or mainly use their car.

9. ***What should we consider as we develop this plan?*** (included with both surveys)

Below is a summary of the comments received through the mailed-in survey, the survey in the online open house, and comments sent to the city via postal service or the website comment form. Review all individual comments in [Appendix B](#), [Appendix C](#), and [Appendix D](#).

Key Themes:

- **Strong opposition to the proposed extension of Fischer Road**
- **Desire for capacity and traffic improvements on major arterials and popular roads to support new development and address connectivity issues**
 - Improved signal coordination
 - Coordinate with adjacent jurisdictions
- **Demand for less traffic on neighborhood streets**
 - Reduced traffic through neighborhoods
 - Restriction of vehicle access through neighborhoods
 - Neighborhood speed reduction measures
- **Support for increased pedestrian safety, facilities, access, and connectivity**
 - Fill gaps in the sidewalk system
 - Pedestrian crossings on major arterials and popular roads to provide access and safety while walking
 - Improved walkability and mobility options for seniors and the disabled
 - Maintenance of existing pedestrian facilities
- Support for reduced speed limits and creating consistent speed limits on roads. Multiple comments asked to prevent the need for quick braking.
- Desire for connected multiuse (bike, pedestrian, etc.) paths throughout King City
- Support for safety improvements that protect users of all modes (specifically pedestrian, bike, and student safety)
 - Address issues related to unsafe user behavior (specifically drivers)
 - Increase police enforcement
- Concern about **impact to the Tualatin River, wildlife in the area, exacerbation of erosion**
- **Concern that the traffic study** used was not sufficient and does not look at the transportation network as a system.

Tabling Event

Key Themes

Most people were generally happy with the current transportation system in King City with 99W and a lack of safe bike lands and crosswalks being common exceptions. In terms of the TSP, many were concerned about extending Fischer Rd. into the Rivermeade Community and increased traffic in neighborhoods. Many participants mentioned that they had either gotten the mailed survey and sent it or were going to mail it soon.

More details below for each key theme and specific comments from the public.

Fischer Rd Extension

- Rivermeade residents and city residents on Fischer between the power lines and 131st share concerns about the proposed extension and don't feel that the city is listening to them.
- Residents are concerned about increased traffic in their community – many describe their neighborhood as a calm and quiet neighborhood and don't want that to change. They don't want a major road going through their neighborhood.
- Many are worried that the neighborhood will change and look like Fischer between 131st and 99W.
- Some were worried about the impact to waterways and nature.
- Worried that people will speed along the extension, creating safety concerns.
- The extension may increase noise levels.
- There was general worry about over-population in the area.
- Folks are worried about “cut-through” traffic.

What to consider moving forward: We need to make a thorough explanation of the Fischer Rd. extension and have a detailed explanation of why we are doing the extension on-hand when we talk to the community. Consider creating more than one “Fischer” route west of the power lines to reduce traffic in Rivermeade. We also need to keep Washington County in the loop so that we are all on the same page.

Pedestrian and Bike Connections

- Several mentioned their interest in continuing to improve connections for pedestrians and cyclists, including trails.
- Several people mentioned that they get around by bike to do errands, but the bike paths were either dangerous or there were not enough to run all errands by bike.
- They like having biking trails and would like more.
- There are no bike paths between 150th and the 99W on Beef Bend Rd, making it dangerous for all. A designated bike path along this section of the road would be good.
- Crossing and walking along 99W is scary and dicey.
- Folks want running paths near nature; interconnected, regional trails between all the nearby cities; and, more formal trails along the river, there are informal trails right now that are dangerous.
- Someone mentioned that there are potholes in Gabriel Park and that it is not walkable.

What to consider moving forward: How can we increase the number of safe sidewalks and crosswalks?

Traffic

- Roundabouts would be nice
- Folks are worried about “cut-through” traffic
- 131st at Fischer – need speed signs for cars
- There were a lot of concerns about 99W, including:
 - People avoid 99W as much as they can
 - Many expressed their frustration with 99W – it's like the strip in Las Vegas, you can't go anywhere in King City without it, and there is no parallel route.

- Widening Beef Bend: This would require more signalized (?) intersections.

What to consider moving forward: How can we minimize traffic in neighborhoods while creating more streets and connections within King City (and to neighboring cities)?

Safe Routes to School

- One parent mentioned the importance of safe routes to school and noted the problem with Deer Creek Elementary having students on the north side of Beef Bend with no safe way to cross the street.
- One community member said that there need to be more schools as the area grows

What to consider moving forward: Existing and potential attendance areas for the schools serving King City and the master plan area.

King City Community Park

- Love what the city is doing with the park
- Stairs down to the river near the community park would be nice, as well more lighting and a boat launch
- Would be nice to have manmade paths under the electrical lines
- There needs to be better signage about how to get the King City Community Park – many people simply take the private road.

Questions / Ideas from participants:

- Could there be alternative boundaries for school districts? 150th? Halfway up to Bull Mtn?
- Could we include a wildlife preserve with the new development? Could we do a wildlife study about how much space wildlife will need?
- Could we extend Durham Rd? (instead of Fischer Rd. extension)

Other

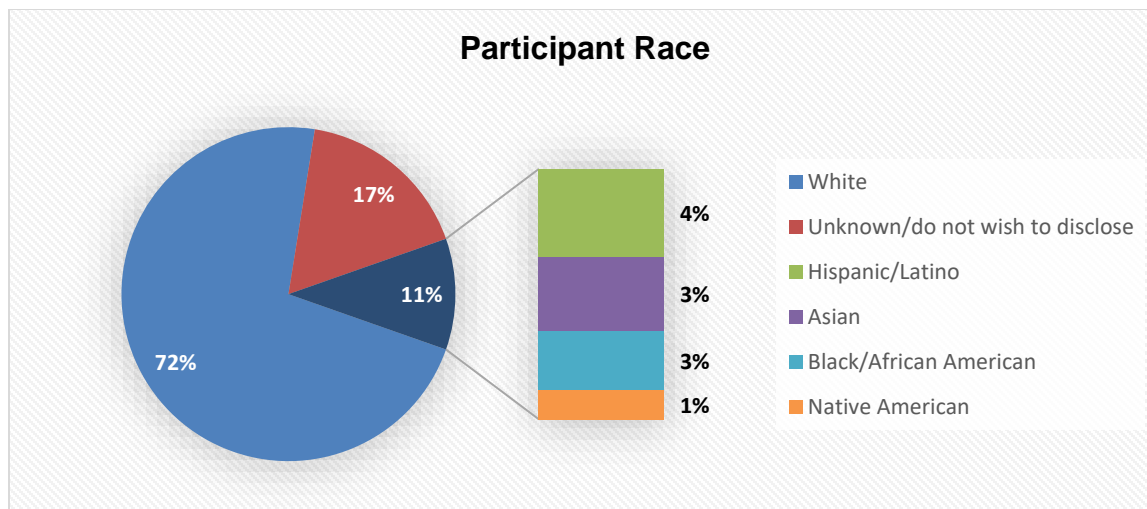
- One participant said they were excited about the Master Plan growth.

Demographic Information

Participants from the online open house were asked a series of optional demographic questions. This information is useful to compare with the city's current demographics.

Race

The majority of participants identify as white, with the second largest group of participants selecting that their race is unknown or that they do not wish to disclose it.

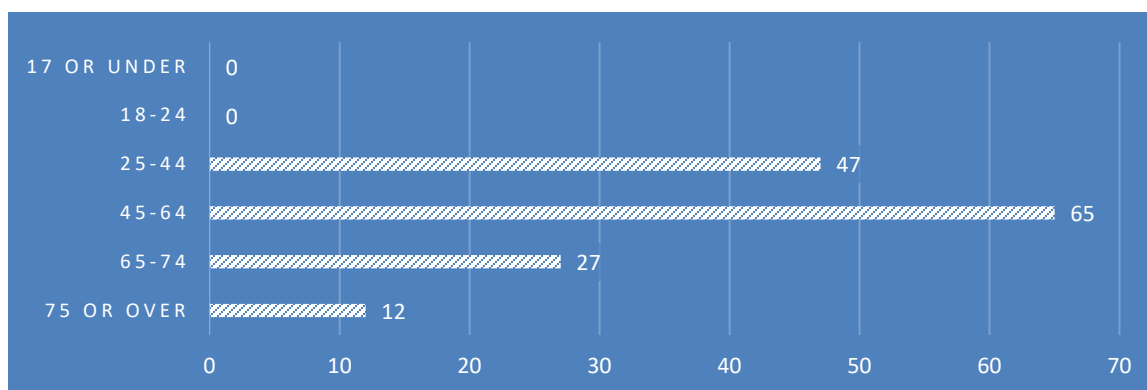


Language (other than English)

Participants were asked if they spoke any language other than English at home. **A majority did not respond indicating that they do not speak another language**, seven responded that they speak Spanish, four responded that they speak German, and three responded that they speak Bosnian. Answers that were submitted by only one participant each included: Chinese, Korean, Russian, Polish, and Tamil.

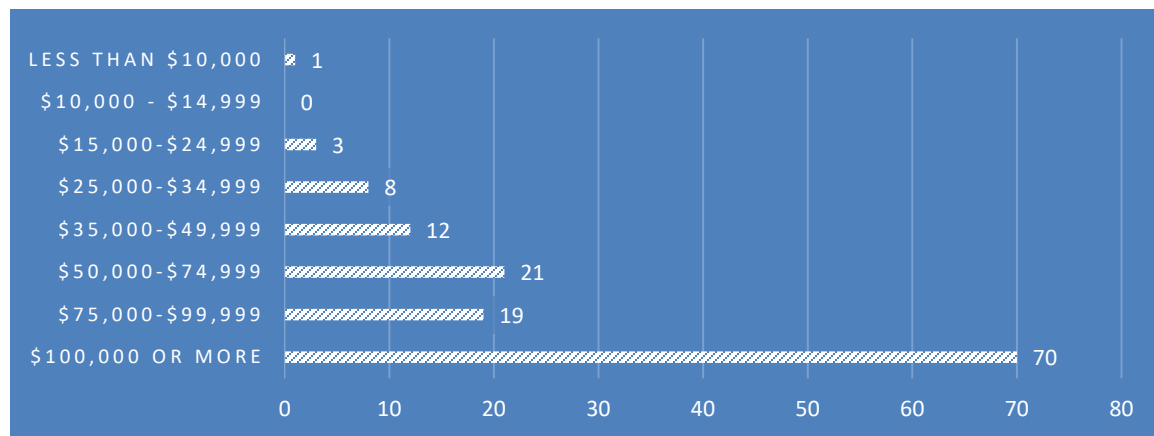
Age

Overall, the age of participants with the online survey are consistent with the average ages of community members in King City. Of those that responded, the largest group of participants are within the ages of 45 – 64. The second largest group of participants are between the ages of 25 – 44.



Household Income

The **majority of the online survey participants have a household income of \$100,000 or more** a year, which is higher than the average household income in King City.



Appendix A: Feedback Map Comments

Below are the unedited comments that were both mailed-in (denoted under the “Location Name” column) and submitted online via the feedback map in the online open house.

Location Address	Location Name	Comment
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	SW corner of Hwy 99/Beef Bend intersection	This is the place for a gateway to King City feature
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	SW corner Hwy 99/Beef Bend intersection	This is the place for a gateway to King City feature
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	SW corner of Hwy 99/Beef Bend intersection	This is a place for a gateway to King City feature
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Southwest corner of Hwy 99/ Beef Bend intersection	This is a location for a gateway to King City feature
2 SW Beef Bend Rd, Tigard, OR 97224, USA	Condo building 11535 at end of Crown Court	Residents need a safety, privacy and noise-buffering wall to protect them from Beef Bend Road.
15905 SW 116th Ave, Tigard, OR 97224, USA	Exit out of the US Bank parking lot	Dangerous left turn coming out of the exit due to speed of traffic coming from Hwy 99 intersection and curve of street limiting exiting driver's view of traffic.
14978 SW 116th Pl, Tigard, OR 97224, USA	Condo building 11535 at end of Crown Court	Residents need a safety, privacy and noise-buffering wall between their living units and Beef Bend Road traffic.
17031 Bard Way, King City, OR 97224, USA	Fischer Road	This road was not designed for the traffic that will cut through to avoid the traffic and new lights on Beef Bend after that route gets overloaded by thousand of new residents in all the thousands of new homes in the expansion areas. Roy Rogers and Beef Bend will funnel traffic through King City along any extension of Fischer Road. This would be an expensive headache to fix later, so don't create the problem in the first place. No extension, just

		connections north to an expanded Beef Bend.
13582 SW Fischer Rd, King City, OR 97224, USA	Fischer Road	The HOA says NO NO NO to extending Fischer Road
13632 SW Fischer Rd, King City, OR 97224, USA	Do NOT extend Fischer Rd	Our community is just starting to mobilize to fight this planned extension. It will NOT be allowed to happen.
13582 SW Fischer Rd, King City, OR 97224, USA	Fischer Rd	Do not extend Fischer Road. Edgewater neighborhood qualities and values would be destroyed by huge volume of traffic increased.
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - on Durham facing towards Portland. Upon crossing street as pedestrian, I have nearly been hit by vehicle. The stop light is flashing arrow. Drivers do not stop even when the pedestrian is lit. Any solutions?
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination - too much traffic
16530 SW Royalty Pkwy, Portland, OR 97224, USA	Mailed in comment - Royalty	Challenging and dangerous - through traffic on Royalty instead of using 99
11820 SW King James Pl, King City, OR 97224, USA	Mailed in comment	Important destination - Bull Mtn Dental
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - King City Plaza	Important destination - lots of crazy traffic
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous

17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous - sidewalks no continuous throughout
12350 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - 124th and Tualatin Rd	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination - the traffic light takes longer time than normal to turn green. It doesn't let parents reach the school on time for our kids.
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Important destination - The bridge doesn't provide enough space for bikes to ride. There is no signs for bikes to ride and be aware.
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Challenging and dangerous
15100 SW Crown Dr, Portland, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - Most traffic concerns are getting though Tigard
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and 124th	Challenging and dangerous - light poorly coordinated
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - lights are poorly coordinated
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - lights not well coordinated
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - lights not coordinated
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous - cars traveling on 131 don't always stop for traffic coming west on Fischer
Durham Rd. Plaza (Albertson's), Tigard, OR 97224, USA	Mailed in comment - Tigard Town Square	Important destination
15030 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Important destination

SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - Corner by the gas station
11530 SW Majestic Ln, King City, OR 97224, USA	Mailed in comment - Dominos	Challenging and dangerous - congestion on the corner
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - King City Plaza	Important destination
16043 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Elementary School	Important destination - Deer Creek Elementary
16731 SW Romeo Terrace, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination - residence
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
16962 SW 125th Place, Portland, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous
16394 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
15563 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Queen Elizabeth	Important destination
23 11th St, Tigard, OR 94941, USA	Mailed in comment - Durham and Summerfield	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and 124th	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination

Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous - Beef Bend speed change abruptly before and after the school the street is narrow with no sidewalks for walkers and cars typically tailgate anyone driving at even a slightly lower speed! There are no street lights and visibility is poor as are turn offs not visible until you are almost to them (not plainly marked to be seen from a distance to signal other cars for a turn on to the street.
16082 SW 113th Ave, Tigard, OR 97224, USA	Mailed in comment - Durham and 113th	Important destination - Bus stops
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - lights (traffic) crossing or getting onto 99 doesn't stay green long enough to accommodate the traffic.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - Fischer Rd traffic is heavy. Making it difficult to leave King City, via Fischer Rd. Many people use our streets to avoid Fischer.
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - light on fischer to turn left onto 99 does not stay green long enough to accommodate the number of cars on Fischer.
23 11th St, Tigard, OR 94941, USA	Mailed in comment - Durham and Summerfield	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
12053 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - Tualatin Rd	Important destination
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and 124th	Challenging and dangerous

21155 SW Baler Way, Sherwood, OR 97140, USA	Mailed in comment - Tualatin Sherwood and Balor	Important destination
21003 SW Pacific Hwy, Sherwood, OR 97140, USA	Mailed in comment - 99 and Borchers	Challenging and dangerous
20945 SW Pacific Hwy, Sherwood, OR 97140, USA	Mailed in comment - 99 and Borchers	Important destination
16574 SW Sidney Ln, Sherwood, OR 97140, USA	Mailed in comment - Roy Rogers and Borchers	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
16980 SW 129th Ave, King City, OR 97224, USA	Mailed in comment - Fischer and 129th	Challenging and dangerous
16278 SW 113th Ave, Portland, OR 97224, USA	Mailed in comment - Dollar Store	Important destination
15355 SW Royalty Pkwy, King City, OR 97224, USA	Mailed in comment - McCanns	Important destination - McCanns
15161 SW Royalty Pkwy, Portland, OR 97224, USA	Mailed in comment - Safeway	Important destination - Safeway
16055 SW Tualatin- Sherwood Rd, Sherwood, OR 97140, USA	Mailed in comment - 99 and Roy Rogers	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16043 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous - Whose stupid idea was it to plant trees and landscape in the middle of 131st?? It is impossible to see pedestrians or oncoming traffic when turning onto 131 from any of the side streets. This was supposed to be a safety measure, but its result is just the opposite. That whole project was a waste of tax dollars and not necessary. Center turn lane was much better.
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous
16325 SW 113th Ave, Portland, OR 97224, USA	Mailed in comment - 113 and Gabrielle	Important destination

Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
15371 SW 114th Ct, Tigard, OR 97224, USA	Mailed in comment - Royalty and Naeve	Important destination
15030 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
17001 SW Eldorado Dr, Tigard, OR 97224, USA	Mailed in comment - Fischer and 124th	Challenging and dangerous
16605 SW King Charles Ave, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous
16324 SW 126th Terrace, Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
16401 SW Roy Rogers Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
16401 SW Roy Rogers Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Challenging and dangerous - narrow road no sidewalks and bike lanes
16003 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Elsner	Challenging and dangerous
15540 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend	Challenging and dangerous - narrow road, no sidewalks and bike lanes
SW Pacific Hwy & Fischer, Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous

SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - using city plaza: Shari's, McCann's
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Challenging and dangerous - the most dangerous is where Beef Bend Rd meets SW Roy Rogers
14445 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - 150th and Bull Mtn	Challenging and dangerous
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Important destination - i frequently drive here
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination - drive here often
20718 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - 99 and Roy Rogers	Challenging and dangerous
20718 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - 99 and Roy Rogers	Important destination
12350 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - 124th and Tualatin Rd	Challenging and dangerous
12350 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - Tualatin and 124th	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16980 SW 129th Ave, King City, OR 97224, USA	Mailed in comment - Fischer and 129th	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
16285 SW Royalty Pkwy, King City, OR 97224, USA	Mailed in comment - Royalty and King Charles	Challenging and dangerous
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous

Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging and dangerous
Tigard - EB Hwy 99W & Durham (TriMet Stop 8792), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - to safeway
16629 SW Jordan Way, Tigard, OR 97224, USA	Mailed in comment - 131 and Jordan	Important destination
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - there are a lot of cars that take Beef Bend as a throughway from Roy Rogers. Traffic has definitely increased on this road making it loud and congested. People drive fast which has led cars to hit local deer on Beef Bend.
12700 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Beef Bend and Prince Albert	Important destination - this is my home
12775 SW Prince Albert St, King City, OR 97224, USA	Mailed in comment - Beef Bend and Prince Albert	Important destination - golf carts without turn signals, brake lights, without or not being used and Beef Bend too narrow.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination - cars going through pedestrian light turning from 99 (northbound) turning onto Fischer.
13226 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 124th	Important destination - Speeding on Fischer Rd - all the time.
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous
Deer Creek Elementary School, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Important destination

16388 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
16388 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination - So much increasing traffic from new home construction
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - Safeway	Important destination - Safeway and Bull Mtn Rd
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - King City Plaza	Important destination - KC Plaza and onto Safeway
11500 Quakenbush Ln, Tualatin, OR 97062, USA	Mailed in comment - Tualatin and 115	Important destination
12035 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - Tualatin Rd	Important destination - Tualatin and Wilsonville
11297 SW Gabriel St, Tigard, OR 97224, USA	Mailed in comment - 113 and Gabrielle	Important destination
23 11th St, Tigard, OR 94941, USA	Mailed in comment - Durham and Summerfield	Important destination - Tualatin
15525 SW 114th Ct, Tigard, OR 97224, USA	Mailed in comment - Safeway	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - Tigard
16950 SW Meyer Ln, Tigard, OR 97224, USA	Mailed in comment - Tualatin River	Challenging and dangerous - proposed commuter route to Roy Rogers that will make me move out of KC
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - Heavy traffic through traffic, disruption of 99 and Barbur if MAX is congested there.
15555 SW Tualatin-Sherwood Rd, Sherwood, OR 97140, USA	Mailed in comment - Tualatin Sherwood and Langer Farms	Important destination - route to veterinarian and target
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin	Important destination - route to Tualatin Fred Meyers and I5
15900 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - route to OHSU, Freddie's and Tigard library
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin	Important destination

15383 SW 122nd Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 122nd	Challenging and dangerous
12072 SW Royal Ct, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Important destination - turn onto Prince Albert from Beef Bend Rd
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - access to businesses across Durham/99
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination - space age, DQ
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - no bike lanes - dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - King City Plaza
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - long wait at signal
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - long wait at signal
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - long wait at signal

11500 Quakenbush Ln, Tualatin, OR 97062, USA	Mailed in comment - Tualatin and 115	Important destination - route to shopping
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - route to shopping
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination - residence
16001 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Elsner	Challenging and dangerous
23 11th St, Tigard, OR 94941, USA	Mailed in comment - Tigard Town Square	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
136 West St, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Peachtree	Challenging and dangerous - No continuous sidewalks on north side of Beef Bend from 131st to Peachtree
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous - drivers not aware of pedestrians
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous - Drivers not aware of pedestrians
11540 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - Planet Fitness	Important destination - planet fitness
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - shopping
17445 SW 135th Pl, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
20705 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination - Access to coast
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination - Access to Tualatin
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination - Access to Tualatin
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Important destination Access to coast
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination - access to Hillsboro
10717 SW Versailles Ln, King City, OR 97224, USA	Mailed in comment - Fischer Rd	Challenging and dangerous

16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - Home
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Hazelbrook	Important destination
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Beef Bend and Peachtree	Important destination
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination
20703 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination
16082 SW 113th Ave, Tigard, OR 97224, USA	Mailed in comment - Durham and 113th	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
King City Community Park, 17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination

Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment - 99 and Durham	Signal is too short for more than three or four cars.
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination - light too short
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - too much short cut traffic from 116 - too fast!
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment - Tualatin and 124th	Getting south to I5 south
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Errands North on 99
15532 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment - Safeway	Important destination - Safeway shopping center
14200 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Myrtle	Challenging and dangerous - sidewalks are missing in several sections of Beef Bend, making it difficult to walk and cross since there is only one safe crosswalk on that street.
136 West St, Portland, OR 97224, USA	Mailed in comment - Beef Bend and West	Challenging and dangerous - sidewalks are missing in several sections of Beef Bend, making it difficult to walk and cross since there is only one safe crosswalk on that street.
Deer Creek Elementary School, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging and dangerous
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination - McCann's

1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination - Kaddy Car Wash
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Safeway	Important destination - Safeway
15371 SW 114th Ct, Tigard, OR 97224, USA	Mailed in comment	Important destination
11495 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - King City Plaza	Challenging and dangerous
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging and dangerous
12281 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer Rd	Challenging and dangerous
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination Challenging and dangerous
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
15280 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment - 99 and Naeve	Challenging and dangerous
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - to bridgeport
17723 OR-99W, Tualatin, OR 97062, USA	Mailed in comment - 99 and Hazelbrook	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination

SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - Safeway	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
17471 SW 135th Pl, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - With the massive increase in new home construction around the intersection of Scholl's Fy Road and Roy Rogers Rd, there has been a large increase in traffic on Beef Bend Rd. It often necessitates two to three "light changes" to make left turn from Beef Bend onto 99. Where Beef Bend meets 99: there should be two left turn lanes instead of the current on left turn.
11505 SW Majestic Ln, Portland, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - cars doing U-turns in front of Pizza P and Liquor Store
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - cars parking or backing out of parking lot in front of strip mall
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - lots cutting through KC from 99 and Beef Bend
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - strip mall
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous - 131st and Fischer is getting really congested for a just a stop sign.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - The traffic flow at 99 and Fischer is terrible with the first driveway

		to the gas station so close to the intersection.
18308 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment - Roy Rogers and Elsner	Challenging and dangerous - A traffic light would be nice here if there isn't one between here and Beef Bend
20705 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - Royalty Pkwy and 99	Important destination - Sherwood Walmart/Target area
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous - the stop sign at 150th and beef bend is an iffy spot as people still run through it.
3620 East St, Portland, OR 97224, USA	Mailed in comment - Beef Bend	Important destination - our home in Mtn View Mobile Estates
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - King City Plaza
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
16642 SW 134th Terrace, Tigard, OR 97224, USA	Mailed in comment	Important destination
16642 SW 134th Terrace, Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous
Deer Creek Elementary School, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination
12072 SW Royal Ct, King City, OR 97224, USA	Mailed in comment - Beef Bend	Challenging and dangerous - sidewalk gaps and lack of safe crossing spots along Beef Bend
15540 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend	Challenging and dangerous - sidewalk gaps and lack of safe crossing spots along Beef Bend
11685 SW Nicolai Pl, Tigard, OR 97224, USA	Mailed in comment - Beef Bend	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
13560 SW Willow Top Ln, Tigard, OR 97224, USA	Mailed in comment	Important destination
13750 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend 137th	Challenging and dangerous

14730 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and 147th	Challenging and dangerous
16801 SW Elsner Rd, Sherwood, OR 97140, USA	Mailed in comment - Beef Bend and April	Challenging and dangerous
16388 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
16388 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Challenging and dangerous
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous
13656 SW Capulet Ln, Portland, OR 97224, USA	Mailed in comment	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
15270 SW Crown Dr, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Important destination
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment - 124th and Tualatin Rd	Challenging and dangerous - Lane changes at last minute by through traffic - dangerous.
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - most dangerous intersection - even worse since cameras force drivers to slam on their brakes to avoid a ticket. Close call on rear end collision number of times!!
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - my apartment

SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Challenging and dangerous - always a bottleneck!! Gridlock!!
11321 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - Safeway and eye doctor location
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - shop most at the plaza including hair salon and bank
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous
11870 SW King George Dr, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous
11870 SW King George Dr, King City, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
12438 SW King George Dr, King City, OR 97224, USA	Mailed in comment - King George	Challenging and dangerous - We live on King George Dr in the apartments. There are two speed bumps, but we need one between the two. People drive very fast in front of our apartment. 11777 SW King George Dr
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous - we really need a red light at Beef Bend and 99. Cars and big trucks run that light all the time.
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Signal at 131st and Beef Bend in later afternoon when school lets out and 5-6 traffic
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - cars pulling out of gas station and onto Fischer
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - Safeway	Challenging and dangerous - Going south on 99 left turn into safeway shopping area.

15785 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Important destination
11788 SW Royal Villa Dr, Portland, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Fischer, Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - New road from Fischer Rd to Roy Rogers - stop this - if need be, widen Beef Bend or Bull Mtn. Timing of lights. Please stop building houses on good farm land - too close together and too mant!! Keep farming alive so we have food in our future - and wildlife too. Keep trees and vegetation to control global warming.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - during the afternoon rush hour, the left turn lanes on the 99 as one turns into Fischer always overflow. This causes traffic to back up down the 99. This can be dangerous as cars are sometimes at a complete stand still. I would recommend changing the left turn light timing on the 99 to prevent traffic build up.
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
12780 SW Prince Albert St, King City, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and dangerous - busy traffic especially at rush hour by our house
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Challenging and dangerous - Bridge construction
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Challenging and dangerous - tricky intersection with split traffic

12035 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment	Important destination - more shopping
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - shopping in the area
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - Entrance to the gas station is dangerous - so is the exit.
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	This intersection is too much of a bottleneck leading into King City
18205 SW Pacific Hwy, Tualatin, OR 97062, USA	Mailed in comment	Challenging and dangerous - we need a walking path/sidewalk that is safe from Pony Ridge to King City!
16082 SW 113th Ave, Tigard, OR 97224, USA	Mailed in comment - Durham Rd	Challenging and dangerous - Durham has no transit from 99 to Hall it is incredibly inefficient for those coming from Tualatin to circumvent all the way to the transit center. Something that would be a 5 minute drive becomes a 40 minute to an hour commute.
13030 SW Bull Mountain Rd, Tigard, OR 97224, USA	Mailed in comment - Alberta Rider Elementary	Challenging and dangerous
15685 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - Grocery Outlet	Important destination - grocery outlet
13030 SW Bull Mountain Rd, Tigard, OR 97224, USA	Mailed in comment - Alberta Rider Elementary	Important destination - Alberta Rider Elementary
12207 SW Pond Ln, King City, OR 97224, USA	Mailed in comment	Important destination - my place of residence
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	Important destination
12018 SW Pond Ln, King City, OR 97224, USA	Mailed in comment	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
14385 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment - 99 and Bull Mtn	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous

11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment - 99 and Tualatin Bridge	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
12053 SW Tualatin Rd, Tualatin, OR 97062, USA	Mailed in comment - Tualatin Sherwood	Important destination
3155 SW Pacific Hwy, Portland, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
13597 SW King Lear Way, King City, OR 97224, USA	Mailed in comment - Fischer and 136th	Challenging and dangerous
17057 SW 130th Pl, King City, OR 97224, USA	Mailed in comment	Important destination
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous
15100 SW Crown Dr, Portland, OR 97224, USA	Mailed in comment	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin Sherwood	Challenging and dangerous
SW Pacific Hwy & Fischer, Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
23 11th St, Tigard, OR 94941, USA	Mailed in comment	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
12700 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment	Important destination
23 11th St, Tigard, OR 94941, USA	Mailed in comment	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
15599 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous

11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
12072 SW Royal Ct, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Important destination
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	Important destination
23 11th St, Tigard, OR 94941, USA	Mailed in comment	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
11692 SW King John Pl, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Challenging and dangerous - turning left onto Beef Bend from 116th
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination
11795 SW Graven St, Portland, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination
17025 SW 131st Ave, King City, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination

SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - Plaza
16388 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination - Traffic in neighborhoods
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Important destination - Street surface condition
17040 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Important destination - Congestion
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - traffic light
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - Traffic light
13680 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 136th	Challenging and dangerous - roundabout
11692 SW King John Pl, King City, OR 97224, USA	Mailed in comment - Beef Bend	Important destination - Food for less
14590 SW McFarland Blvd, Tigard, OR 97224, USA	Mailed in comment - Bull Mtn	Important destination - Shell service station
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - safeway
20718 OR-99W, Sherwood, OR 97140, USA	Mailed in comment - 99 and Tualatin Sherwood	Important destination
16200 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Important destination
16080 SW Royalty Pkwy, King City, OR 97224, USA	Mailed in comment	Important destination
11617 SW King George Dr, King City, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Royalty Pkwy and 99	Challenging and dangerous
15350 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous - left turn by fire station onto Fischer (still not enough during peak hours)
15290 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous - King City shopping Center
Durham Rd. Plaza (Albertson's), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - McDonalds

15563 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Important destination - car wash
12499 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer Rd	Important destination - crown jr. indoor pool
16015 SW Tualatin-Sherwood Rd, Sherwood, OR 97140, USA	Mailed in comment	Important destination - hardware, home goods, DMV, medical care, nature trails
11663 SW Royal Villa Dr, Tigard, OR 97224, USA	Mailed in comment	Important destination - shopping, drug store
15280 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment	Important destination - grocery stores
12241 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Queen Anne	Needs speed bump at rush hour people cut through to avoid signals.
16230 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous - right turn from 116th onto 99
15200 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging and dangerous
11655 SW King George Dr, King City, OR 97224, USA	Mailed in comment - Beef Bend and 116th	Challenging and dangerous
16920 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment - Al's Garden	Important destination - Al's Garden
16035 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - US Bank
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination - Safeway
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Google maps sends people this was as a "fastest route. People drive 131st and Fischer that do not live here and drive 35-50 mph on 25mph roads. I am concerned this will be worse when it extends to Roy Rogers. I want speed humps and roundabouts to keep drivers at 25 mph and discourage those that use it as a cut through.

12450 King Village, King City, OR 97224, USA	Mailed in comment	Google maps sends people this was as a "fastest route. People drive 131st and Fischer that do not live here and drive 35-50 mph on 25mph roads. I am concerned this will be worse when it extends to Roy Rogers. I want speed humps and roundabouts to keep drivers at 25 mph and discourage those that use it as a cut through.
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16280 SW 126th Terrace, Portland, OR 97224, USA	Mailed in comment	Important destination
3155 SW Pacific Hwy, Portland, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous
16805 SW 124th Ave, King City, OR 97224, USA	Mailed in comment	Important destination
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and Tualatin Sherwood	Challenging and dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
20703 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Important destination
SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
17000 Block SW Pacific Hwy, Metzger, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - this is right by my apartment. We have no safe entrance to the sidewalk, I would like a sidewalk entrance from within the community.
15336 SW Pacific Hwy, Tigard, OR 97124, USA	Mailed in comment	Challenging and dangerous - this crossing makes me nervous.

15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging and dangerous - This is where my boyfriend was hit crossing 99. He was heading to the bank before I woke up and next thing he knows a car hit him. His lawyers last case was someone who was also hit there. Something could surely be done there to increase safety.
15100 SW Crown Dr, King City, OR 97224, USA	Mailed in comment	Important destination - shopping centers
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Important destination - my home
16145 SW Barrington Pl, Portland, OR 97224, USA	Mailed in comment	Challenging and dangerous
16825 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging and dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous - Intersection of Beef Bend and 99 light needs to be longer other than morning commute. Taking away the extra left turn onto Beef Bend from 99 would greatly help traffic all the way around. Light would allow southbound traffic a longer light and a shorter wait time or at least the same for Beef Bend traffic.
15100 SW Crown Dr, King City, OR 97224, USA	Mailed in comment	Dentist
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Bank

16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging and difficult - it feels like a fair amount of traffic flows through SW 131st to Fischer. My guess is people think it's faster for folks coming from SW 150th and farther to get to 99. My impression from walking by SW 131st and Fischer is the majority of traffic goes from SW 131st to Fischer and vis versa. As more homes built in Beaverton. I believe more traffic will com through 131st and Fischer.
17211 SW Montague Way, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous - intersection of Fischer and 131st
3620 East St, Portland, OR 97224, USA	Mailed in comment	Challenging and dangerous - conflicting center lane arrows when driving from 99 and waiting to turn south (L) into KC (not 131st but before suicide lane) arrows for left turn painted too early on road before a turn to the right, so high potential for head on collision.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
15550 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Challenging and dangerous - bank entrance and exit wit people also exiting and entering on right 99 side of curve in road when entering KC from SW Durham
15550 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Important destination - bank entrance and exit wit people also exiting and entering on right 99 side of curve in road when entering KC from SW Durham
15550 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Important destination - shopping center
12942 SW Timara Ln, Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment - Bull Run and 99	Important destination

15900 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Important destination
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous
Tigard - EB Hwy 99W & Durham (TriMet Stop 8792), Tigard, OR 97224, USA	Mailed in comment	Challenging and dangerous
17025 SW 131st Ave, King City, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging and dangerous
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment	Important destination
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Durham, Tigard, OR 97224, USA	Mailed in comment	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous - Royalty Parkway on 99
15820 SW Highland Ct, Tigard, OR 97224, USA	Mailed in comment	Durham to Tualatin
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	KC Safeway
13228 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment	Home
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging or dangerous
16980 SW 129th Ave, King City, OR 97224, USA	Mailed in comment - Fischer and 129th	Challenging or dangerous
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous
20718 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Challenging or dangerous
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous

Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - Fischer/99 has too much traffic. Need to reduce the number of cars that travel on Fischer Rd, especially the number of cars turning from 99 onto Fischer. Very dangerous.
18255 SW 124th Ave, Tualatin, OR 97062, USA	Mailed in comment	Important destination
17311 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	King City Community Park
16933 SW Monterey Ln, King City, OR 97224, USA	Mailed in comment - Fischer Rd	All along fischer
15695 SW 114th Ct, Tigard, OR 97224, USA	Mailed in comment - Planet fitness, shopping center	Planet Fitness, shopping center
15280 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous - Safeway
20190 SW 112th Ave, Tualatin, OR 97062, USA	Mailed in comment - News Seasons	New Seasons
17755 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment	Important destination
12218 SW Versailles Rd, King City, OR 97224, USA	Mailed in comment	Important destination
13660 SW Blue Spruce Ct, Portland, OR 97224, USA	Mailed in comment - Elementary School	Challenging or dangerous
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	Challenging or dangerous
King City Community Park, 17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	Important destination
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
11470 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
12760 SW Prince Albert St, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous
16973 SW 123rd Ave, Tigard, OR 97224, USA	Mailed in comment	Important destination

13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Elementary School	Challenging or dangerous - Insufficient left turn lanes into school
12765 SW Prince Albert St, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous - no bike lanes - dangerous for running
20711 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Challenging or difficult
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 131st	Challenging or dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
11470 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - King City Plaza	King City Plaza
King City Community Park, 17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - King City Community Park	King City Community Park
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Challenging or dangerous
16888 SW Elsner Rd, Sherwood, OR 97140, USA	Mailed in comment	Important destination
16920 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment	Important destination
20705 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Challenging or difficult - marking lanes turning left onto 99 or going through to Roy Rogers (need to know a little earlier if one or two lanes turn left) especially at night.
11970 SW Fischer Rd, Portland, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - A new traffic light at Fischer and Queen Anne to ease turning left out of King City to 99

16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment	Not wide enough.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Light does not leave enough time to cross 99 or take a left to 99
16035 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important to get to Meridian Park Hospital. I don't like to drive on I5. Too many speeding vehicles and rude drivers.
18081 SW Pacific Hwy, Tualatin, OR 97062, USA	Mailed in comment	Challenging or difficult
16180 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment	Challenging or difficult
3155 SW Pacific Hwy, Portland, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous
12274 SW Adina Ct, Tigard, OR 97224, USA	Mailed in comment	Important destination
16035 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16055 SW Tualatin- Sherwood Rd, Sherwood, OR 97140, USA	Mailed in comment	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - too congestive by the gas station
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous - turning by Durham Rd can be tricky.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous - light doesn't let very many cars through at one time
16398 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Elementary School	Important destination
16230 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Speed on Beef Bend at 116th intersection.
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Congestion at Beef Bend and 99 and Durham and 99

15805 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Unsafe conditions for pedestrians crossing 99W from Plaza to businesses on other side and back.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	I live on Fischer and travel usually to 99 via 131st to Beef Bend and then north or down Fischer to 99. Speeders on both of these routes is a concern (especially on Fischer) from 131st to 99!
2106 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	I live on Fischer Rd and usually travel to 99 via 131st to Beef Bend and then north or down Fischer to 99. Speeders on both of these routes is a concern (especially on Fischer) from 131st for 99!
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Crosswalk too short
12283 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous - too fast drivers and too busy for two lanes
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous - Walk signal too short. cars turning from 99 to Fischer, back up due to gas station. Move entry. Crosswalk signal too short.
15100 SW Crown Dr, Portland, OR 97224, USA	Mailed in comment	Signal too short from Safeway across too short!
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - 99 and Royalty	Challenging or dangerous - Royalty and 99 needs a proper left turn signal.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - SW Fischer Rd and 99 - backed up from gas station and Dairy Queen
11525 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous - 116th to Beef Bend completely blocked at rush hour.

15280 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous - double intersection - royalty parkway and 116th and 99 and people backing out of weed shop....severe congestion/danger
Unnamed Road, Tigard, OR 97224, USA	Mailed in comment - Planet Fitness/Mall	Important destination
11545 SW Majestic Ln, King City, OR 97224, USA	Mailed in comment - clubhouse pool	Important destination
11321 SW Naeve St, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Safeway
15450 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous - all difficult to cross on foot or bike
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - all difficult to cross on foot or on bike
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous - all difficult to cross on foot or bike
11725 SW Queen Elizabeth, Portland, OR 97224, USA	Mailed in comment - grocery outlet, drug store	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment - Safeway	Safeway
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Fitness center, hardware, drug store
16394 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Will need traffic light
12218 SW Versailles Rd, King City, OR 97224, USA	Mailed in comment	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
15238 SW Harvey's View Ave, Portland, OR 97224, USA	Mailed in comment	Important destination - Police patrol. Enforce handicap parking. City needs money from not enforcement as current. No priority for police to protect neighborhoods or handicap.
12078 SW Turnagain Dr, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination

11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
14796 SW Mulberry Dr, Portland, OR 97224, USA	Mailed in comment	Challenging or dangerous
16401 SW Roy Rogers Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Proposed the development of a fire lane Beef Bend Rd to 150th to Roy Rogers. Cut back on number of proposed homes to reduce number of cars, congested population centers, increase acres of parks, wild areas and community gardens. Rapid growth is not necessary.
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Proposed the development of a fire lane Beef Bend Rd to 150th to Roy Rogers. Cut back on number of proposed homes to reduce number of cars, congested population centers, increase acres of parks, wild areas and community gardens. Rapid growth is not necessary.
12450 King Village, King City, OR 97224, USA	Mailed in comment	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
14390 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment	Important destination
18465 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment	Important destination
15800 SW Beef Bend Rd, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous
16004 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Elsner	Challenging or dangerous
16065 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment	Important destination
11545 SW Majestic Ln, King City, OR 97224, USA	Mailed in comment	Important destination
16980 SW 129th Ave, King City, OR 97224, USA	Mailed in comment - 131st and Fischer	We need street lights on 131st between Timara and Bedford
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Walk to shopping
15885 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - 99 and Durham	99 by car

12719 SW Bexley Ln, Tigard, OR 97224, USA	Mailed in comment - King City Senior Villa	King City Senior Villa
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Fischer Rd light left turn lane light is too short, Fischer Rd light is too long. Royalty Parkway people are running the light through caution and red lights. Traffic on 99 is very heavy.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous
20705 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Important destination
14978 SW 116th Pl, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Safeway
17180 SW Lasich Ln, Sherwood, OR 97140, USA	Mailed in comment	Challenging or dangerous
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
14590 SW McFarland Blvd, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Durham, Tigard, OR 97224, USA	Mailed in comment	Important destination
12700 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment	Important destination
14978 SW 116th Pl, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 116th	The turn from Beef Bend to 116th (teaching a teen driver this one gave me gray hair and gripping seat moments).
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
11860 SW King George Dr, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous
11495 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - King City Plaza	People walking on the street
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment	Important destination
15785 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Important destination
15440 SW Royalty Pkwy, King City, OR 97224, USA	Mailed in comment	Important destination

SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Crossing 99 to get to Safeway and then walking through the parking lot to get to the store can be intimidating for an elderly person. Perhaps a longer time for people to cross at the light? And maybe a sidewalk along the parking lot so it's safer to get to the grocery store?
15166 SW 119th Ave, Tigard, OR 97224, USA	Mailed in comment	Important destination
15371 SW 114th Ct, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
18315 SW Pacific Hwy, Tualatin, OR 97062, USA	Mailed in comment	Local shopping
16180 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment	Small coffee shops - bakery
16006 SW Refectory Pl, Portland, OR 97224, USA	Mailed in comment - grocery store	grocery store - we need more choices!
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Gateway treatment at 99 Beef Bend corner
15182 SW 116th Ave, King City, OR 97224, USA	Mailed in comment	Gateway treatment at 99 and Beef Bend corner
16035 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Unsafe left turn exit from US Bank lot
16660 SW King Charles Ave, King City, OR 97224, USA	Mailed in comment - KCCA Pool	Important destination
15805 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - Grocery Outlet	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Safeway	Safeway
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment	Need flashing crosswalk from northside of Beef Bend to Deer Creek side. Note: kids and adults cannot cross Beef Bend safely to get to Deer Creek. Sidewalk gap makes this even more dangerous especially for grade school kids.

12390 SW King Richard Dr, King City, OR 97224, USA	Mailed in comment	It is dangerous to turn onto Fischer, you can't tell if cars are speeding there should be a 4-way stop sign on 126th and Fischer.
20721 OR-99W, Sherwood, OR 97140, USA	Mailed in comment	Important destination
14389 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Important destination
17585 SW Pacific Hwy, Tualatin, OR 97062, USA	Mailed in comment	It would be so great to have a sidewalk along the west side of 99W to get to the wildlife refuge.
11605 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	This would be greatly improved with better parking for kayak launching.
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	The lack of sidewalk on SW 116th is a problem.
11675 SW Hazelbrook Rd, Tualatin, OR 97062, USA	Mailed in comment	Kayak launching
13311 SW Ute St, Tualatin, OR 97062, USA	Mailed in comment	I walk and run here
17020 SW 131st Ave, Tigard, OR 97224, USA	Mailed in comment - 131st and Fischer	Home - Fischer Rd has become a shortcut for hundreds of cars on a daily basis. If Fischer is put through to Roy Rogers, we won't be able to get out of our own neighborhood!! Whoever thinks this is a good idea needs to come stand on this corner for 10 minutes to view the already high volume of traffic.
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Traffic light is too short.
17180 SW Lasich Ln, Sherwood, OR 97140, USA	Mailed in comment	Important destination - getting to Scholl's Ferry to my son
15100 SW Crown Dr, King City, OR 97224, USA	Mailed in comment - grocery outlet	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment	Challenging or difficult
16760 SW Monaco Ln, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous

16585 SW King Charles Ave, King City, OR 97224, USA	Mailed in comment	Challenging or dangerous
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Royalty Parkway, Tigard, OR 97224, USA	Mailed in comment	Important destination
14325 SW Pacific Hwy, Portland, OR 97224, USA	Mailed in comment	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	The green planet - congestion, parking and cars pulling out onto street.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Intersection of 116th and Beef Bend
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Traffic noise - Beef Bend and 99 - awful!
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging and dangerous
18301 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment = Roy Rogers and Elsner	Challenging and dangerous
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	challenging and dangerous
13620 SW Beef Bend Rd, King City, OR 97224, USA	Mailed in comment - Elementary School	Challenging and dangerous
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment - 99 and 124th	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous
Tigard - EB Hwy 99W & Durham (TriMet Stop 8792), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258),	Mailed in comment - Fischer and 99	Challenging and dangerous

Bull Mountain, OR 97224, USA		
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Please reconsider "green blvd" aka Fischer Rd...
15536 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Important destination
16892 SW Romeo Terrace, King City, OR 97224, USA	Mailed in comment	Important destination
13199 SW Timara Ln, King City, OR 97224, USA	Mailed in comment	Important destination
15745 SW 116th Ave, Portland, OR 97224, USA	Mailed in comment - Victoria PI	Challenging and dangerous - Straight stretch on Victoria PI beginning from Elizabeth speeders honk at elderly drivers and pass them as they zoom by/past. This danger was created by the City needs resolution in the community. Created by making Victoria speedway between two parallel streets with bumps - very poor planning.
15745 SW 116th Ave, Portland, OR 97224, USA	Mailed in comment - Victoria PI	Important destination
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination - I normally drive to 99 to get where I need to go. I turn left from Beef Bend onto 99, go straight across 99 to Safeway shopping center, or go south on 99 from our southern entrance. I don't want to have more development so close to King City.
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - the immediate turn available into the gas station to Fischer Rd from 99 is problematic back up traffic and clogs up the ability to turn left onto Fischer and creates an unsafe situation. I feel the first driveway should be closed.
16200 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Important destination

SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous - Lack of sidewalk on Beef Bend (south side) east of 131st.
16396 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment - Beef Bend and Roy Rogers	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
Tigard - EB Hwy 99W & Durham (TriMet Stop 8792), Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Challenging or dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Challenging or dangerous
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Traffic light on 99W north turning left onto Fischer is wildly long at evening hours, needs time adjustment during PM commute time.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 99	Light at Beef Bend onto 99 is too long.
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Beef Bend 131st	Important destination
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment	Important destination
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	Important destination
16043 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous
SW Pacific Hwy & Durham, Tigard, OR 97224, USA	Mailed in comment	Important destination
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous

269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment - Fischer and 99	Important destination
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment	Important destination
16195 SW Taylor Ln, Portland, OR 97224, USA	Mailed in comment	Challenging or difficult - plan for new school with a blind corner
16255 SW 150th Ave, Tigard, OR 97224, USA	Mailed in comment - Beef Bend and 150th	Challenging and dangerous - crosswalk at Peach Tree and Beef Bend for easy/safe access to the school for families that live on the north side of Beef Bend.
14808 SW Mulberry Dr, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous - 45 mph is too fast in a residential area.
17470 SW Montague Way, King City, OR 97224, USA	Mailed in comment - Community Park	No comment
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	No comment
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment - Deer Creek Elementary	No comment
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 99	Challenging or dangerous - high traffic volume. People turning into space age creates back up onto 99W
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment - Fischer and 99	entries and exits from King City
16021 SW 130th Terrace, Tigard, OR 97224, USA	Mailed in comment	Entries and exits from King City
13124 SW Deergrove Ln, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous location - speeding going south on 131st Ave - speed sign sort of useless where it is located near the top of the hill.
Tigard / Tualatin (McDonalds), Tigard, OR 97224, USA	Mailed in comment	Important destination
18200 SW 126th Pl, Tualatin, OR 97062, USA	Mailed in comment	Challenging or dangerous
16357 SW Beef Bend Rd, Portland, OR 97224, USA	Mailed in comment	Important destination
13600 SW Blue Spruce Ct, Tigard, OR 97224, USA	Mailed in comment	Important destination

15675 SW Greenfield Dr, Tigard, OR 97224, USA	Mailed in comment	Important destination
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment	Important destination - stores
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Safeway	Important destination
14295 SW Pacific Hwy, Portland, OR 97224, USA	Mailed in comment	Important destination
14385 SW Pacific Hwy, Tigard, OR 97224, USA	Mailed in comment	Challenging or dangerous
SW Pacific Hwy & Bull Mtn, Tigard, OR 97224, USA	Mailed in comment	Important destination
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment	Challenging or dangerous
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment	Challenging or dangerous
Tigard - EB Hwy 99W & Durham (TriMet Stop 8792), Tigard, OR 97224, USA	Mailed in comment	No comment
16346 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Mailed in comment	No comment
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	Mailed in comment - Fischer and 99	There is a lot of traffic using Fischer Rd to avoid 99 traffic.
16325 SW 113th Ave, Portland, OR 97224, USA	Mailed in comment	No comment
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment - Beef Bend	Beef Bend could be expanded to help carry traffic to Roy Rogers. Don't complicate the situation by running more traffic through neighborhoods.
11555 SW Durham Rd, Tigard, OR 97224, USA	Mailed in comment - 99 and Durham	99 and Durham is a major problem.
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment	No comment
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment	No comment
269 SW Fischer Rd, King City, OR 97224, USA	Mailed in comment	No comment

1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment - Royalty and Durham 99W	Lights at Royalty, Durham and 99W are much longer for cars traveling west than for those traveling east - congestion on King City side perhaps traffic counters.
15805 SW 116th Ave, King City, OR 97224, USA	Mailed in comment - Royalty and Durham 99W	Lights at Royalty, Durham, and 99W are much longer for cars traveling west than for those traveling east
Tualatin - WB Hwy 99W & 124th (TriMet Stop 4316), Sherwood - Tualatin North, OR 97224, USA	Mailed in comment	No comment
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Mailed in comment	No comment
SW Pacific Hwy & Beef Bend, Tigard, OR 97224, USA	Mailed in comment	No comment
1427 SW Pacific Hwy, King City, OR 97224, USA	Mailed in comment	Groceries, etc.
15905 SW 116th Ave, Tigard, OR 97224, USA	Mailed in comment	US Bank
17016 SW 130th Pl, King City, OR 97224, USA	Mailed in comment	MI - 16570 SW Monaco LN
20000 SW Pacific Hwy, Sherwood, OR 97140, USA	Mailed in comment	MI - If you were genuinely concerned with dangerous or challenging areas, this map would be as large as this page. My "x" on this map would take up an entire neighborhood. Yet another box checking effort by King City that is lacking effort. You don't care about your citizens, you only care about money. You don't care about our input or thoughts. You've already made those decisions on behalf of us.

13443 SW Ute St, Tualatin, OR 97062, USA	Tualatin River	Development along the river has created major erosion and land slides. This has occurred on both sides, for example the south side near the new apartment development and the north side from the additional runoff and other impacts of the newer Edgewater community, The TSP but understand how the new runoff from hard surfaces of the new roads and dense development will only increase the already problematic erosion issues in the expansion area along the Tualatin River. Roads must be moved back from the river and runoff must be captured and collected for slow release well uphill. It is not acceptable to continue to destroy the river and the streams that flow into it near King City, as we can see it has already caused huge issues for those of us who live here.
16385 SW Myrtle Ave, Portland, OR 97224, USA	Columbia Land Trust, Bankston property	Do not build a road through the Columbia Land Trust wetlands. Other alternatives are available that will be less costly and will not destroy this critically important preserve. Other alternatives must be used instead, as directed by Metro and requested by other organizations.
15570 SW Pacific Hwy, Tigard, OR 97224, USA	Safeway	We often buy groceries at Safeway
15705 SW 116th Ave, King City, OR 97224, USA	Grocery Outlet	Grocery Outlet is a frequent stop for groceries
11725 SW Queen Elizabeth St, King City, OR 97224, USA	King City Barber Shop	I get my hair cut here, every 6weeks
11725 SW Queen Elizabeth Ave, Portland, OR 97224, USA	Jejo's Jewelry	I get my watch fixed here
15685 SW 116th Ave, King City, OR 97224, USA	McCann's	Frequently shop at McCanns

16588 SW Matador Ln, King City, OR 97224, USA	Morocco and Matador	The stop sign here should be either on all three legs or just the north and south legs. Traffic from the east already has to slow significantly to turn. The north and south have no reason to stop. The foliage and other obstructions on all quadrants of this intersection restrict the intersection sight distance for bicycle traffic heading E/W.
13493 SW Shakespeare St, King City, OR 97224, USA	Tualatin River at transmission easement	1 - would be nice to have a formal boat launch 2 - would be better to have a non-motorized crossing of the river here to allow for the extension of the westside trail.
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Durham at 99W	The split phased signal at this location adds to the inefficiency of this signal. The congestion at this intersection is the root cause of cut through traffic around the Royalty Parkway Loop as well as the Fischer to 131st to Beef Bend connection. The type of intersection also creates a long E/W pedestrian crossing that requires an excessive pedestrian clearance time that further congests this intersection.
Tigard - WB Hwy 99W & Durham (TriMet Stop 8644), King City, OR 97224, USA	Durham at 99W west side	Lack of bicycle accommodations creates dangerous situation for westbound through bikes. Need at least a bike box on the east stop bar and a bike lane leading to that stop bar due to excessive queuing in the middle lane of the westbound approach.
16621 SW Jordan Way, King City, OR 97224, USA	Jordan Way at 131, east side	Line of sight from Jordan blocked to SB conflicting traffic by lack of clear zone in SE quadrant.

17020 SW 131st Ave, Tigard, OR 97224, USA	131st at Fischer	Minor existing congestion during PM peak hour almost completely resulting from cut through traffic NB to Beef Bend Road.
17755 SW 131st Ave, Tigard, OR 97224, USA	River	Make it easier to access the river.
12220 SW King Richard Dr, King City, OR 97224, USA	Intersection Flscher and Versailles	Also a driving issue. It is near impossible to see pedestrians cross the road at Fischer and Versailles due to the bend in the road. Even a simple crosswalk, like that at Fischer and 126th, would not help. For the safety of pedestrians a crosswalk with safety lights need to be installed.
17001 SW Eldorado Dr, Tigard, OR 97224, USA	Crosswalk Fischer and 126th	This crosswalk needs a safety light. We have been crossing Fischer using this crosswalk and drivers will not stop or stop just before running us over. A speed trap would give insights on how fast people drive on Fischer. It is definitely not the speed limit.
11795 SW Graven St, Portland, OR 97224, USA	Traffic Light Highway 99 and Fischer	This intersection has been an issue for a while now. It takes three to four lights to get a chance to turn into Fischer. Coming from Fischer onto the Highway is also a nightmare. At the very minimum, there needs to be an adjustment to the traffic lights and SENSORS!

13305 SW Fitzwilliam Dr, King City, OR 97224, USA	133rd Terrace between Fitzwilliam and MacBeth	Remove this route as a thoroughfare. Heading south on 133rd to Fitzwilliam is a blind corner and most people drive too fast. There are so many kids out playing and it is a safety concern. There is a natural divide between the two developments just north of the bike path. You could close the road with large beautiful planters or equivalent instead of the typical orange and white road barriers. This would create two more private streets for the people that live on them driving the home values up and keeping the neighborhood kids safe.
13660 SW Fischer Rd, King City, OR 97224, USA	Fischer Road Exentions	DO NOT EXTEND FISHER ROAD. HOME VALUES WILL DROP. OUR KIDS SAFETY WOULD BE IN JEOPARDY. POLLUTION WOULD GO UP.
17213 SW 136th Ave, King City, OR 97224, USA	Sidewalk and Tree Issues	<p>King City elected to have trees removed that did not pose sidewalk hazards and left trees that clearly left sidewalk hazards. They also did not put in the appropriate types of slips to prevent this root issue from happening again.</p> <p>For the people who walk the neighborhood on a regular basis we now have identified tripping hazards all over the neighborhood, and the city has chosen to look the other way. The city has chosen to remove trees in which the sidewalks were not lifted.</p> <p>Please take an IQ test next time you spend our tax dollars.</p>

16995 SW 134th Terrace, King City, OR 97224, USA	Fisher Road	Speed through a residential area is a HUGE concern. Turning Fisher Road into a through road to Roy Rogers would cause major safety concerns in the neighborhood(s). Do NOT push through to Roy Rogers
15390 SW 116th Ave, Tigard, OR 97224, USA	Entire expansion plan	Oct. 21, 2020: Provide a well publicized opportunity to put the entire UGB planned expansion and King City proposals to public vote on whether to drop the project entirely or continue planning. There does not seem to be any information in the public domain indicating anyone ever asked for King City to expand.
13997 SW River Ln, Portland, OR 97224, USA	Fischer Road (DO NOT) Extension	Do not extend Fischer Road along the Tualatin River. Save this as recreational area that can be used by the community.
13997 SW River Ln, Portland, OR 97224, USA	Fischer Road (DO NOT) Extension	Do not extend Fischer Road along the Tualatin River. Save this as recreational area that can be used by the community.
13472 SW Fischer Rd, King City, OR 97224, USA	No Fischer Rd extension.	.
13472 SW Fischer Rd, King City, OR 97224, USA	No Fischer Rd extension.	.

16925 SW Meyer Ln, Portland, OR 97224, USA	Ravine	There are 3 or 4 ravines that need to be crossed or skirted around for any road or trail that travels along the Tualatin River. The each of the ravines have a very nice natural environment with a small stream great park potential. It would be very expensive and probably destroy the wetland environment of the ravines if road bridges were built to cross them. Roads should skirt around the ravines but it might be possible to build walking or bike trails that go into the ravens and use small (less impactful) bridges to cross the streams.
16925 SW Meyer Ln, Portland, OR 97224, USA	Ravine	There are 3 or 4 ravines that need to be crossed or skirted around for any road or trail that travels along the Tualatin River. The each of the ravines have a very nice natural environment with a small stream great park potential. It would be very expensive and probably destroy the wetland environment of the ravines if road bridges were built to cross them. Roads should skirt around the ravines but it might be possible to build walking or bike trails that go into the ravens and use small (less impactful) bridges to cross the streams.

16862 SW 136th Ave, King City, OR 97224, USA	Fischer and tempest way	Kids travel up and down these roads on bikes, boards, scooters and foot. The ravel to the park and along the power lines playing all day and everyday. Our HOA has been tasked with rescuing the turn about to make the area more safe for kids when cars are travel wing around the four about. Putting in a road that will increase traffic by 20x plus more traffic will make the roads crossing over to the park and back extremely dangerous. This is a peaceful neighborhood that doesnâ€™t need to become a thoroughfare for speeding cars.
11795 SW Graven St, Portland, OR 97224, USA	99 & Fischer	Extending Fischer will make this intersection a nightmare. Donâ€™t do it!
269 SW Fischer Rd, King City, OR 97224, USA	FISCHER	DO NOT EXTEND FISCHER RD TO ROY ROGERS. THIS IS A TERRIBLE DECISION THAT WILL CAUSE MORE HARM THAN BENEFIT.
13621 SW Fischer Rd, King City, OR 97224, USA	Fischer Rd	Do not make Fischer Rd a through street. This is a terrible idea that will devalue homes and hurt the community.
13685 SW Fischer Rd, King City, OR 97224, USA	Fischer Road Extension	Cancel the Fischer Road extension plan. Extending Fischer Road will add significant traffic to a residential area. This will certainly prove to be dangerous for individuals, especially children, in the neighborhood. Please reconsider this project in the interest of public safety.

18205 SW Pacific Hwy, Tualatin, OR 97062, USA	extending 124th Ave to King City	It would be great to extend 124th Ave to Roy Rogers St via King City. It would decrease transition and traffic on 99W, Fischer Rd and 131st as well. It would require building a bridge, but It is well worth to consider the option.
Error:ERROR	Fisher Rd Extension	Extending Fisher Rd to Roy Rogers would disrupt the Edgewater Community & well as the farms & land between the two roads. Beef Bend works for commuters needing to get between those two destinations. If there are concerns with that road's efficiency, then improving the existing road would be a much better use of money & time for King City.
269 SW Fischer Rd, King City, OR 97224, USA	Fischer & 99W	Numerous cars making a left turn from 99W on to Fischer - some slowing to enter gas station. Can be dangerous as well as cause congestion
16715 SW 137th Ave, Tigard, OR 97224, USA	Fisher Road extension	Would the Fisher Road extension running through this area be better than extending River Ln/137th so that you can take into consideration the large culvert (no bridge will be needed) and also preserve the land along the river for public use and not a road?
Deer Creek Elementary School, King City, OR 97224, USA	Deer Creek School	Children should have safe walking access from all the current neighborhoods. Current gaps in the sidewalk system, and narrow sidewalks right next to the street are unsafe. We need to teach our kids to walk, not depend on cars.
18321 SW Pacific Hwy, Tualatin, OR 97062, USA	131st extension to Tualatin River	It would be very nice to have a canoe/ kayak ramp here connected by trail to the community park.

15905 SW 116th Ave, Tigard, OR 97224, USA	Intersection of 99W and Durham Rd	It is a boring and hazardous half mile walk from Fisher Rd to this intersection. Going through the neighborhood is indirect and longer for the residents who live directly on 99W.
17009 SW 130th Pl, King City, OR 97224, USA	intersection of 131st and Fisher Rd	There used to be a bus stop here. We've grown since then and could use one now. I see many people walking the mile to 99W.
15082 SW 116th Ave, Portland, OR 97224, USA	Sidewalk at Beef Bend and SW 116th ave	Please consider finishing the sidewalks. Folks are walking in the street.
13620 SW Beef Bend Rd, King City, OR 97224, USA	Crosswalk on Beef Bend, where the sidewalk ends	Deer Creek students walking from the unincorporated part of Bull Mountain need a pedestrian crossing over Beef Bend, as the sidewalk abruptly ends right here. It would be very beneficial for pedestrians, runners, bikers and dog walkers too. Community members have tried FOR YEARS to get this on a planning list . . . but which one?
Tigard - WB Hwy 99W & Fischer (TriMet Stop 4258), Bull Mountain, OR 97224, USA	99W & Fischer	U-turn at Fischer/99W is costly in many ways, light does not recognize vehicles so they just sit even when this is no other traffic in any direction or side streets. This causes excess emissions and prohibits the flow of traffic. Left-hand turns between Durham and Fischer would eliminate unnecessary CO2 emissions and increase traffic flow.
269 SW Fischer Rd, King City, OR 97224, USA	Fisher and 99	This is in an important intersection where access needs to be prioritized.
13350 SW King Lear Way, King City, OR 97224, USA	Fischer Road	Please consider not extending Fischer Road to Roy Rodgers. The Edgewater community is not in favor of this expansion.

16603 SW 134th Terrace, Tigard, OR 97224, USA	Throughout KC TSP Plan area	Please develop a realistically achievable TSP. I've worked on many master planning and TSP plans that are beautifully designed with curving roads that don't consider the reality of eventual development. The West Bull Mountain concept plans had very aesthetic roadway designs that ignored property lines and ultimately were/unachievable thus developers using common grids. Please think about a balance between ideal design ideas and realistic planning that can be accomplished.
16700 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Expansion Area Transit Access	I'm. hoping the KC TSP will include a level of specificity for transit access in the expansion area, including walk/bike routes that minimize out-of-route access to planned transit facility. Between KC and City of Sherwood residential expansion, I'm hoping there will be enhanced transit along Roy Rogers Road and the KC TSP considers that potential.
16035 SW Pacific Hwy, Tigard, OR 97224, USA	KC Business area transit parking	Can the TSP consider how to increase transit parking? No idea what ridership is from KC transit stops or what the typical travel distance is (is there a high percentage to Tigard Transit Center?) Bus frequency seems pretty good, but transit stops typically see 1 or 2 riders which seems low given the residential density. I'm guessing transit on Beef Bend Road is years away, if ever but potential ridership density within a 1 mile walkshed seems good for Pacific Hwy use.

13128 SW MacBeth Dr, Tigard, OR 97224, USA	Throughout KC TSP Plan area	Please consider how alternative forms of travel can be accomplished such as golf carts gaining access through neighborhoods to King City businesses in existing and expansion areas. Currently limited to no connections west of KCCA much less any suggested routes. TSP could include route-finding signage requirements?
16700 SW Roy Rogers Rd, Sherwood, OR 97140, USA	Roy Rogers Road access for future development	Given the limited distance between the southern edge of the expansion area and Beef Bend Road, how many access roads will be allowed and will they require additional traffic signals? Does that agree with the Washington County TSP expectations?
14075 SW River Ln, Portland, OR 97224, USA	Extension of Fischer Road as multi-modal	Having listened to Rivermeade Community members object to extension of a public road, how does one community's input influence the long-term larger community benefit of a thru multi-modal roadway?

<p>16075 SW Beef Bend Rd, Sherwood, OR 97140, USA</p>	<p>Beef Bend Road multi-modal expansion</p>	<p>How will BBR expansion occur to accommodate expansion into new growth area? That section of road is not with the UGB (and won't be until Tigard seeks expansion through the Metro process - maybe 2028?). The section from 150th Avenue west can't be expanded - so is the expectation that KC will seek additional ROW from developers to accommodate capacity? And how will that get paid for? The section from 150th east to Pacific Hwy is on the County's TSP as "very long term" and in the millions in 2014 costs - this is a really low priority for County funding - if the KC TSP identifies the capacity needs for the next 25 years how will that get accomplished. Please don't just say "it needs expansion" without some realistic considerations of how.</p> <p>I would assume it would be a multi-modal system (walk/bike and maybe golf carts?) but this is a narrow, constrained roadway. ROW comes from???</p>
<p>12539 SW Overgaard St, Tigard, OR 97224, USA</p>	<p>transition between HOAs/Planned Developments</p>	<p>Currently there are 1960s - 1990s cul-de-sac development with no connectivity for walking/biking or perhaps even golf carts. Please look across the existing neighborhoods and determine opportunities to make through connections. Current walk score for many of these areas is very low with only right-of-way acquisition opportunities to improve dramatically</p>

16535 SW 150th Ave, Portland, OR 97224, USA	major riparian/water conveyance areas in expansion area	Little to no discussion on bridging a parallel connector/arterial to Beef Bend Road regarding how those drainage areas will be accomplished and how they will be paid for. With the envisioned growth, Beef Bend Road will reach an "F" capacity rating very quickly.
12421 SW Prince Albert St, King City, OR 97224, USA	SW Pince Albert and King George	People drive too fast at this intersection and often don't stop for stop sign (especially a right turn off of King George onto Prince Albert
17474 SW 135th Pl, King City, OR 97224, USA	Pacific Highway (99W) & Fischer Rd	Turning left from 99W onto Fischer Rd creates significant back-ups on 99W during peak hours. It takes several signal cycles to get through the left turn and cars making the left and then turning into the service station on the right and the apartments on the left add to the back-up and create traffic and pedestrian hazards.

Appendix B: Open Text Comments from Survey in Online Open House

Below are the unedited comments from the open text questions in the survey on the online open house.

1	There is going to be an increase in through traffic, due to all the new home construction nearby.
2	1) Lowering the speed limit on Hwy 99 to 35mph. 2) Painting a crosswalk from 116 across Beef Bend Rd.
3	adding 2 left hand turn lanes to hwy 99 at beef bend or another street to turn onto 99 from King City neighborhoods
4	As King City expands and the surrounding areas by Roy Rogers Rd and Scholls Ferry Rd have seen massive new housing construction, the traffic and noise from Beef Bend Rd has increased tremendously. Would the city or the county consider a sound barrier wall from 99W along Beef Bend Road, covering the length of the King City Condominium boundaries? Also a flashing yellow/red light is needed on Beef Bend Rd/116th Ave. since it is sometimes very difficult to make a left turn from 116th onto Beef Bend Rd. It is an accident waiting to happen. Thank you for your consideration.

5	Be aware of increased traffic turning left onto Fischer from 99W. The question to be answered is why are these cars traveling through neighborhoods? Would it be wise to update 99W and/or Beef Bend Road to create more east to west capacity? We also need to consider the environment as we look to future expansion of the King City boundary
6	Beef Bend Rd. should be approved and started before the western expansion is phased in.
7	Better walking/bike paths throughout. We don't need more roads. Less roads, more safe walking/bike paths!
8	Bike and pedestrian safety, I was hit very bad in bike lane 10/07/2019 by City bus In front of fire station on 99 and also knocked down in Durham cross walk from left turn traffic out of king city shopping ctr.
9	Blocking a few streets into King City off Fisher on North???but Leave bike and walking way open!!! Add speed bump cross walks at four way intersection on Royalty and 116th??? Beef bend needs more speed bumps and lights for turning into community. Fisher and 135th intersection needs work.....wider so traffic flows from Beef bend and 135th.
10	Bringing traffic down fisher through edgewater would be a nightmare. Beef bend should be evaluated.
11	building an additional roads (124th Ave to Roy Rogers) or expanding capacity existing ones (Beef Bend) instead of extending an existing ones (Fischer Rd).
12	Bus stop that comes down to 131st and Fischer.
13	Bus stops within King City! I don't understand why they don't right now.
14	Cancel this effort along with the entire King City expansion effort. Or, at minimum, put it to a well publicized public vote for all landowners and residents in all areas that would be affected if the expansion is ultimately properly developed.
15	Comfort and safety for pedestrians and bicyclists as we encourage the health of humans and the planet. For example, street trees were vital shade this summer while we all tried to get some exercise. I saw many gaps as people take them down over the years and their replacement is not enforced. Sidewalks are not wide enough for more than two people so two parents can't walk with a child between them (Mom always follows alone, at least that was my experience). Passing someone or encountering someone during this pandemic time often forced one out into the street. Green planting strips create safety between pedestrians and the street. Bicyclists often encounter hazards in tree branches, leaves or storm drains. To avoid them, they must veer into the automobile lane, sometimes suddenly with a car coming. (BUt I do believe that bicycles belong on the street). It is half a mile between Fisher Rd and Durham. There is no way to cross 99W; in fact, the crossing is made farther because of the locations of the crosswalks on the far sides of the intersections. I have seen people with walkers navigating the green divider between north and southbound lanes of 99W. Also, the apartment dwellers on Fisher often cross to the SpaceAge mini-mart at the driveway. It's convenient and they're going to do that. Let's acknowledge that and put in a crosswalk? There used to be bus service at the corner of Fisher and 131st. That was before anyone lived to the west of 131st, so of course it wasn't frequently used. Now I see many transit riders walking the mile to 99W, in rain, shine, heat and cold. Local residents should be acknowledged when putting Fisher Rd. through. When I lived in Eugene with small children, it was impossible to find a place to live without lots of cars driving by because of their through-street policies. Fisher Rd going through there would cut that community in half.

16	Connecting Roy Rogers to Fischer will only create MORE traffic and unsafe traffic for our neighborhood community. Drivers already (who live in the community) drive WAY TOO fast on fisher. Imagine people commuting from Roy Rogers. It would become a speedway and extremely dangerous for our walkers, bikers, children and families who enjoy the quiet and peaceful neighborhood. Fix the speeding around the neighborhood (speed bumps?!) then consider expanding. But you can't expand to an even less safe driving system if the one we have now is already damaged.
17	Connectivity, walk ability and protecting the neighborhood feel of the various neighborhoods
18	Consider that the primary mode of transport is the car. Don't oander to bike and pedestrians, who don't pay for the roads.
19	Consider that walkers and bikes are important but NOT any more so than cars. A system that works for everyone is needed. It i bad enough that bikes don't have to stop and go to front of the line which scares drivers.
20	Consistency as much as possible between the various, diverse neighborhoods
21	Could you please remove the reflective barrier at the end of 130th Avenue. It was supposed to be temporary and is not serving any purpose. There are several similar dead end streets in King City that do not have these barriers.
22	Do not expand Fischer road. Edgewater community is not in favor.
23	Do not extend Fischer rd
24	Do not extend Fischer Rd to Roy Rogers as it would increase safety concerns with volume of traffic as well as devalue the Edgewater community. It would be more beneficial to expand beef bend first.
25	Do not extend Fischer road and make it a through street. This will add significant traffic through a residential area and make it dangerous for many children.
26	Do not extend Fischer Road! Please look for other options and do not extend Fischer Road.
27	Do not extend Fisher Rd. To Roy Rogers
28	Do not extend Fisher to Roy Rogers. that is absolutely nonsense. You have Beef Bend and Bull Mt you can widen.
29	Do not use Fischer Rd as a through or connecting street to Beef bend rd!! The streets in Edgewater on the Tualatin which would be effected are narrow due to the planned high density neighborhood. The neighborhood already has no parking on some side streets just to get fire emergency vehicles around. Children playing in the neighborhood would also be at high risk if there was increased traffic! This would be a very unsafe and poor decision!!!
30	Do not use Fischer road as a bypass for Beef Bend Road.
31	Don't expand Fisher Rd. to Roy Rodgers. Beef Bend Rd. is close enough for the purpose
32	Don't get too crazy, maintenance is important, but remember there our tax dollars. Being fiscally responsible is just as important as many of the other issues here .
33	DONT OVER BUILD HOMES!!!!
34	Drop it. Don't need special bond \$ like Sherwood did with water and schools - growth. Will drive out the 55+ community.
35	Drop it. We moved from Sherwood because of the rapid increase in property taxes due to the growth bonding. KC isn't and shouldn't be Sherwood. You'll drop many people out of KC for your expansion plans.
36	Ensure that the KC roads don't provide a shortcut for impatient commuters avoiding 99W or Beef Bend congestion. We must maintain safety for our children.

37	Evening and weekend transportation.
38	Extend Fischer Road!!!
39	Filling in the gaps for sidewalk networks.
40	<p>First of all, this is essentially the same survey that was done two years ago. I'd like to know what was done with the results of that survey and why we're doing the same thing again. The definition of failure is doing the same thing over and over and expecting a different result each time. As far as things to consider, 1. THINK OUTSIDE THE BOX. I don't think the existing King City transportation system has any major problems as far as getting from one place to another within the city. It's when you try to go someplace OUTSIDE King City that you start running into colossal bottlenecks at 99W (Beef Bend, Royalty Parkway, Durham Rd., and Fischer Rd.) and at Roy Rogers where it intersects Beef Bend. You don't have to be a traffic engineer to look at a map and see that, from the beginning, King City had no realistic chance of expanding beyond its original footprint. It was painted into a corner from the get-go. With the proposed expansion area, you still have the major constraints of major roads, the river, and now additional constraints of topography. You have more land to work with, but you're still painted into a corner. All of the east-west connector streets you've talked about won't solve the bottleneck problems, it will only make them worse. You should be asking questions like where do people go, and how often. You should be looking at access and egress possibilities not for now, but for 50 years from now, but you need to build it now. If you don't have adequate access and egress to and from the city - in all directions - any development within is futile and will end up being a huge mess. This is going to require a lot of collaboration with other cities - Tigard, Tualatin, Sherwood - and other entities - WashCo, ODOT, DEQ, EPA, Metro, and so on. The infrastructure OUTSIDE King City is more important than what's inside. THINK OUTSIDE THE BOX. 2. You ask questions about mass transit. However, Tri-Met has no service to King City other than a couple of stops on 99W and has no interest in expanding service to other points in King City until AFTER development is complete and a population base is in place. The light rail extension to Bridgeport is all but dead and was a poppycock idea in the first place. You should be asking whether IF Tri-Met had service throughout King City, how many people would use it and base your plans for discussion with Tri-Met on that information; what routes, what frequency, and what would they require in terms of development. 3. You have from the beginning touted as a major part of your plan the "green boulevard" (i.e. the extension of Fischer Rd. from 131st westward to Roy Rogers. Since that is not mentioned as part of this survey, is that still a major part of your plan? If so, then what impact will that have on the Edgewater and Rivermeade neighborhoods? I assure you, it will be a MAJOR impact, even if you can successfully overcome the environmental and topographic challenges between 137th and 150th. I don't see the effort to overcome those challenges to be economically feasible. Consider this - if you throw out the Fischer Rd. extension as a part of your transportation plan, I guarantee you will have much more cooperation from Edgewater and Rivermeade residents than if you pursue it. 4. From the outset I have heard a lot about what "we" need to do and what "we" should consider. And I've attended several meetings and town hall discussions and have even made pleas before the city council, but have never heard anything except YOUR plans for moving forward. This is a huge undertaking and you have spent a lot of money on "experts" (much of which was wasted, in my opinion), but you have never really listened to your citizens who will be most impacted by your proposals. If this is really a "WE" effort, then it's high time you paid attention to our ideas and concerns. As citizens, we demand transparency and accountability to what</p>

	is happening to our community. This cannot be an "us" and "them" project. THINK OUTSIDE THE BOX!
41	Fischer road should not be put through to Roy Rodgers. I would no longer feel comfortable walking my own neighborhood with that much traffic running through it every day.
42	Fisher road expansion and the families that live in the Edgewater community. We moved to Edgewater due to the walking conditions and being able to safely travel on the streets to the park and play in the neighborhood. If a main road comes throughs our neighborhood, I am afraid that our kids will not be able to play outside as Fisher road will become just like Beef Bend. On Beef Bend there are not front doors on the roadway, however this is how it is in Edgewater. The Edgewater community was not designed to be a major roadway!
43	Fix 99w and widen Beef Bend. Get the traffic off neighborhood streets and onto these major roads. Neighborhood roads need to feed these major roads. No new long roads or extension of Fischer Rd to carry traffic through neighborhoods. That just causes HUGE problems later. Short roads that feed expanded and improved Beef Bend and 99w are the only way to build a safe road system and safe neighborhoods for King City.
44	Fix 99W or Pacific Highway at Fischer, Durham and Beef Bend Rd. instead of traffic going through established neighborhoods. Expand Beef Bend Rd. to five lanes Avoid any new streets or extensions along the Tualatin River Strive to maintain and enhance the livability of existing neighborhoods
45	Fixing the major traffic issues on 99w, including the intersections at Durham Road and SW Beef Bend Rd, which needs to be widened to at least 4 lanes to safely and effectively handle the increase in traffic due to the heavy concentration of new development around the Mountain View HS.
46	Fixing the major traffic issues on 99w, including the intersections at Durham Road and SW Beef Bend Rd, which needs to be widened to at least 4 lanes to safely and effectively handle the increase in traffic due to the heavy concentration of new development around the Mountain View HS.
47	I am a big walker and find it very difficult to access any trails or areas without breaks in sidewalks unless I trespass into the 55 and over walking trails. Would love to see some plans for a great improved walking/hiking/biking area along the river that would stretch all the way through King City and the river. It would be really cool to King City stay unique and keep the legal golf cart access in the entire span of town. Could help alleviate traffic and give it a unique vibe.
48	I am not in favor of the Fischer Rd. Extension. It will impact the Edgewater Community unfavorably and will forever change the Rivermeade Community and surrounding area.
49	I feel very strongly that Beef Bend Road should be widened to be used as the main thoroughfare between 99 and Roy Rogers, rather than using Fisher as a through-road. I believe if Fisher Rd. were expanded it would be very detrimental to the neighborhood by increasing noise and decreasing home values, safety and the enjoyment of residents. As many homes don't have yards there are a lot of children and adults who can currently ride bikes and walk throughout the neighborhood safely and we would lose that sense of community if people no longer felt comfortable or enjoyed doing this. Please also consider using round-a-bouts where possible to keep the traffic flow moving steadily.
50	I object the plan to extend Fischer Rd as it will bring significant destruction to the community and its safety. The crimes will increase as a result of this expansion, the street will no longer be safe for my child, or elderly parent, and will contribute to a

	<p>reduced home value due to being considered a high traffic neighborhood if this expansion occurs. This also impacts the appeal and draw of the Edgewater community as potential buyers will be deterred from buying homes as the once safe space and quiet community will be destroyed. The increased traffic will cause more fatalities to all age groups. The plans have not been transparently communicated and the community has not been listened to. Please consider alternate routes such as Bull Mountain, as it has more potential for expansion and the neighborhoods are not immediately off of a main street (i.e. my front door won't open immediately to a highly trafficked area). Lastly, please take into consideration the number of protected natural land and all the animals that will be left without a safe space to inhabit. This destruction will be detrimental to its beauty and inhibit our ability to do our due diligence in protecting animals, many of them that are federally protected. Thank you for listening to our community. There has been a survey of the Edgewater community owners that has also been AGAINST this expansion to Fischer Rd. This should have been filed to you by our HOA. Thank you for your time.</p>
51	<p>I think that we need to recognize that traffic studies should incorporate the impacts of new development outside of our city limits and how it will impact our roads. We need to think of Beef Bend as a regional street and not just a street serving only the citizens of King City. I am not sure about who is responsible for the ultimate development of Bull Mountain but as this hill gets developed from the top down to Beef Bend, Beef Bend is going to have to be large enough to accommodate this increased vehicle load as well as increased traffic from new King City residents. I don't think that Bull Mountain road will be able to accommodate the extra traffic as Bull Mountain develops towards Beef Bend. Envisioning King City homes with front and back yards facing towards Beef Bend and pretending that there will be a low traffic column and a quiet residential environment is very unrealistic.</p>
52	<p>I'd like to better understand how the UGB expansion will change the use and functional class of existing roadways.</p>
53	<p>I'm an avid cyclist, my route is from my home (150th and Beef Bend) to downtown King City and then to Cook Park. Beef Bend needs the most attention as I see pedestrians, joggers and cyclists frequently challenging motor vehicles at the pinch points. As we all know, not all vehicles use caution when they need to yield to peds and bikes. If we are trying to get more people out of cars and onto the road to recreation areas and businesses we need to improve the safety of the main arteries like Beef Bend. Thank You!</p>
54	<p>Increased traffic in neighborhoods. Have you had a traffic engineer look at various options? Why not widen existing Beef Bend as a main through street - not Fischer.</p>
55	<p>Keep Edgewater community as is, do not extend Fischer roads to connect with Roy Rodgers.</p>
56	<p>King City and surrounding areas are not equipped to deal with added traffic. As is, getting into the community is already an issue due to high traffic and horrible traffic light situation. In addition, speeding through the neighborhood is a daily occurrence, putting pedestrians, especially those trying to cross Beef Bend and Fischer Rd in danger.</p>
57	<p>King City has become overcrowded and overdeveloped. Your plans to continue building and developing the area doesn't make sense. It's because of a few people on city and the KC mayor that have ruined our community and we suffer. Stop trying to make this something it's not. We aren't equipped for more people and confession. People who drive will continue to drive and light rail is waste of our money.</p>

58	King City has been an area where kids can play freely. I worry about Fisher road becoming a road like beef bend-busy and a higher speed limit right through our neighborhoods.
59	Less traffic in the neighborhoods and do not disrupt farmland
60	Longer LH turn lane on HWY 99 W at Fischer Rd.
61	Look at widening Beef Bend Road if further expansion between 99W and Roy Rogers Rd is needed. This should reduce the traffic within King City. Also adding road humps may cut down any unnecessary cut through traffic within King City.
62	Lots or walking paths so people and golf carts can go from King City central all the way to Roy Rogers road
63	Make sure money is not wasted.do not go over budget
64	Making sure traffic not is not directed into the neighborhoods
65	More places dedicated for bikes. Kill the plan to extend Fischer to Roy Rogers. Enhance Beef Bend road instead.
66	Moving the traffic efficiently and safely.
67	My biggest concern is if Fischer Rd is made into a major road we are causing a very high increase in traffic in our neighborhoods. Downsize of changing Fischer Rd into a major street would include: louder streets, more traffic accessing a neighborhood that wasn't intentionally made to be a major access road, increase car traffic in a very highly foot trafficked area and the speed and volume of cars traveling on this road.
68	My problem is the amount extra traffic in our senior roads, rush hour and late at night from the Duram rd , to king George , up to Prince Albert . Taking a short cut up to beef bend rd. Stops sign are ignored, speed bumps are a waste of money have one outside my bedroom window the noise wakes us up. How about a "right turn only at the top of Prince Albert" except for emergency vehicles. Big problem solver for our community. Or don't the senior community really count?
69	Narrowness of streets in the senior area - not enough room for 2 cars to pass if there is parking on both sides of the street. Consider changing streets to one way or IF they have to be 2 way then limit parking to one side of the street only.
70	Need to be multi-modal, walk, bike, golf cart, car. Where possible cars should be separated. The trail system isn't just a way to move around, it is also an exercise system and we need to appreciate this aspect in the design.
71	neighborhood congestions
72	No major roads / traffic through Edgewater neighborhood
73	No more building houses or apartments. There is to much traffic on Fisher. Most days take several minutes to get off Versailles onto Fisher and then returning there is so much congestion at the entrance to the gas station. I want to move out of King City due to the traffic conditions. It shouldn't take me 5-10 minutes to get across 99 from the time I leave my house on 119th Pl.
74	Not cutting through Fischer - will increase traffic to much in a quiet residential area. Widen beef bend and fix the lights on 99W.
75	Not expanding Fisher Rd, due to enviromental and neighborhood impacts.
76	NOT extending either Fischer Road or Capulet Ln under the power lines to the west. Definitely not Capulet Ln.
77	Not increasing ease of "comuter traffic shortcutong through the length of Fischer Rd and the 131st. Not wanting to support a traffic light at that intersection, or the continuation of Fischer Rd to Beef Nend Rd. A better solution is for widening Beef Bend Rd that would not affect a more condensed neighborhood; I.e Edgewater on the Tualatin.

78	Not opening up Fischer road for thru traffic
79	Not to create a high speed drive through on Fischer road to Roy Rogers. This will increase unsafe conditions for the kids in the neighborhood.
80	Our family enjoys the ability to feel safe while walking around the neighborhood. Another part of why we love living in the Edgewater community in King City is how quiet it is and the only traffic is local to people living in the community or visiting family & friends.
81	People do not stop at stop sign at fisher and 131st coming from beef bend. They use it as a cut through and are impatient. Wish only local traffic allowed on fisher.
82	Plant trees
83	Please avoid spoiling residential neighborhoods and the charm of King City with new, major connectors.
84	Please consider a stop closer to the Deer creek school
85	Please consider NOT extending Fischer Road into Roy Rodgers. The Edgewater community is not designed for high level traffic that would be created through such an extension. Edgewater is a family-friendly, walkable community. Children are constantly at play and people are walking their dogs and interacting with their neighbors. Such an extension would destroy this community, the home valuables and the desirability of living in King City.
86	Please do not make fischer a through street!
87	Please do not make SW Fisher Road busier. Develop Beef Bend Road more so our neighborhood is not ruined.
88	Please do not open Fischer to Roy Rodgers or Beef Bend. We have a larger community of 55+Living amongst some kids and families in the Greater Edgewater/ Castle Oaks/ Highlands area that are always walking and biking this area. By creating a through street to Roy Rogers your plan would actually limit walking and safe biking by increasing traffic on Fischer. We already have a route by using BeefBend since it's already a through street. Maybe consider widening BeefBend to have safe walking and biking along with space for bus transit pick ups. By widening Beef Bend you would already have a road with through traffic use and it would cost less to widen than creating another road which would impact neighborhoods and homes already in that path.
89	Please do not push Fischer Road through to Roy Rogers. That would destroy multiple homes and neighborhoods as well as destroy fragile natural lands, and be very expensive due to river and ravine crossings, etc.
90	Please do not push through Fischer Road. This is an unnecessary expansion that will cost too much with little to no benefit...even detriment the neighborhoods.
91	Please don't extend SW Fischer, there is already too much traffic on this road.
92	Please keep in mind extending and/or running new roads through existing neighborhoods. This will have a negative impact on the feel of the community and likely reduce property values for houses that would be on these new busy through streets, and would benefit people only passing through in their cars.
93	Prioritize improving accessing to Highway 99
94	Private property disruptions. It appears that Beef Bend or Bull Mountain would be better routes to connect to Roy Rogers rather than extending Fischer Road.
95	Refer to item 7 for my comments.
96	Safe places for bicycles on what used to be rural roads without shoulders. e.g. Beef Bend Road
97	Safe quiet neighborhood

98	Safety for children and pedestrians
99	Safety for drivers, bicyclists, and pedestrians including sufficient street lighting, road shoulders, dedicated clearly marked cross-walks by incorporating traffic signals with motion-sensors and/or timers for periods of high volume traffic.
100	Safety for local community, traffic congestion; public transportation options and safe routes to school; pedestrian safety.
101	safety for pedestrians ~ many are seniors who move at different walking speeds. The intersection of Hwy 99 & Durham has a crosswalk that seems as if it could be modified to create a more safe situation for pedestrians. Many drivers do not wait for the walker who is in the portion of crosswalk on 99 heading East.
102	Safety in neighborhoods- reduce traffic of people using neighborhoods as thoroughfares, reduce traffic speeds/enforce traffic speed limits, create safe sidewalk/bike route systems through neighborhoods that can link to bigger systems that have access to retail/business centers.
103	School Overflow, traffic concerns over Fisher Rd. Being expanded through Edgewater neighborhood.
104	Stay
105	Stay on budget.do not come back a year later and claim you do not have enough money
106	Stops and schedules
107	streamline systems for efficiency. Having cars sitting at unnecessary points (such as u-turns) and stop lights that do not recognize cars so they just sit forever waiting on the timed cycle, increases CO2 emissions and decreases efficiency of all other cars on the road, adding more unnecessary CO2 emissions. KC's road systems need to concern themselves with efficiency strategies to minimum emissions.
108	Take care of the major problems on 99W to reduce the traffic in neighborhoods!
109	The added traffic in our neighborhood. The danger for the kids. More crime in our neighborhood. Our property value will go down
110	The continuation of sidewalks
111	the future of transportation and aging people who can't or don't want to drive
112	The increased traffic load on Beef Bend from development on Roy Rogers. People taking short cuts through our neighborhoods to avoid the lights on Hwy 99 and pot holes on Crown Drive and Majestic. Uneven sidewalks also create a hazard.
113	There should be another way for 99W traffic to reach Roy Rogers and public transportation access along that new road, Bull Mtn, and Beef Bend.
114	This is a residential neighborhood with lots of car, walkers, and biking transportation. It contains a tremendous amount of school age children and senior citizens. If Fischer Road is extended through to Roy Rogers Rd, it will create a thoroughfare which will then travel directly through the Edgewater on the Tualatin housing development. This will create unsafe commuting conditions by not only increasing the speed of drivers driving on Fischer Rd, but also, increase the amount of traffic driving through the neighborhood. It will create an extreme safety hazard to all drivers, walkers and bikers. Do not extend Fisher Rd.
115	This neighborhood began in 1958 when a group came together and saw the need to develop a community that met the needs of others like themselves who were over 55 years young. Any transportation plan must consider the needs of senior citizens, who make up a significant portion of the King City population. Those considerations must address those citizens' current transportation experiences, not what you would like to plan for them.

116	Thoroughfare from 99w to Roy Rogers...NOT BULL MOUNTAIN!!!
117	Those of us that live 1 block away from Fischer Road detest this plan. My quiet neighborhood needs to stay the way it is.....PLEASE!
118	Time of day and frequency of availability of transportation (if/when I cannot drive any more). I would imagine wheelchairs and folks with walkers would be high users IF times were convenient.
119	Too much traffic back up at 99/Fischer Look at a regional approach to traffic so people are not cutting through our neighborhoods making it unsafe for our kids & elderly out walking/biking. Expand Beef Bend Rd to better connect to Roy Rogers. Avoid new waterway crossings
120	Traffic signals from side streets to Highway 99 need to allow for more cars to get through a cycle. Fischer Road should not be extended through to Roy Rogers! There is nothing you could possibly do to keep the Edgewater neighborhood safe. The additional traffic through the neighborhood would make it dangerous for children walking to the park and playing outside. You'd be destroying one of the greatest neighborhoods in King City.
121	Travel patterns within the study area are heavily influenced by the failure of segments and nodes of the regional network. The traffic forecasting methodology used to assess the impacts of different options of providing E/W capacity between 99W and Roy Rogers Road must factor in the latent demand on the shortest path and account for the diversion that occurs because the shortest path is well over capacity. When comparing alternatives, breaking the continuity of existing communities should be a scoring criteria. Look at origin-destination patterns for all modes and look at way to address the root of the demand, not just the problems created by it. One example is a desire to cross 99W by bicycle to use the Tualatin River Greenway. You could focus on doing something at the high volume Durham intersection, or you could enhance a path on the west side of 99W and snake a path under 99W on the north side of the river.
122	We want easier access for King City residents we don't want it to be easier for people to get to other cities through King City.
123	Well connected and well landscaped residential streets
124	Widen Beef Ben road and put up some lights. Let that be the thoroughfare. Do not create high traffic roads through neighborhoods that make them unsafe and undesirable.
125	Widen Beef Bend Rd to four lanes with a center turn lane with a wide and protected bike lane. Widen 99W and put in a protected bike lane.

Appendix C: Mailed-In Open Ended Comments

Below are the unedited comments from the mailed-in survey.

1	1. People who walk on streets wearing earphones and not aware of traffic 2. Please provide a driv-by mailbox at many post offices, so stamped mail can be ported from a car - esp. now that the McCann's PO closed.
2	99 - increase lanes in both directions to handle increased traffic due to increasing housing density.
3	A lot of people use King City (to cut through Royalty Prkwy) to 99W and get to Fischer. More gentle speed bumps?

4	Allow golf carts to cross 99W to go to Safeway.
5	As I no longer drive, I walk. Most areas are fine, however I don't feel like I can safely cross 99 to go to Safeway and other shops there. How walkers can safely cross 99 to go to shopping areas.
6	Beef Bend is used as a highway, dangerous for many kids in area, bikes and near the school. No signals or sidewalks. Need another route to Roy Rogers and back to 99 because Bull Mountain Rd gets too congested. The corner of 99 and Fischer is dangerous for walkers and bikes because light is timed poorly. If Roy Rogers and Beef Bend will have more commercial and apartments one day, will need another access road.
7	Cannot walk on sidewalks and too old and narrow (must walk in road) - lot of vegetation overhang. Speed bumps - hurt me at 5 mph
8	Cars parked on the street on both sides of garage care in street
9	Cars speed down 99 and don't pay attention to "yellow" lights. Try to make safe turn from Fischer to 99 is difficult due to drivers not paying attention. Traffic extremely heavy on SW Tualatin - Sherwood Rd - hard to get through stop lights safely. Would like to bike but traffic is too heavy. Thank you for trying to improve our lives! I stay off 99 as much as possible.
10	City refuses to pass ORD/laws to guide police or protect residents. Running stop signs, some speeding (lack of police patrols during the day) police could stop crimes! Have been retaliated by KCCA for complaints (major and council - members KCCA) No police protection!
11	Commuters only cut through neighborhoods whe major streets are poorly planned. Beef Bend needs to be developed with two lanes in both directions.
12	Connect the walking paths - King City - highlands all the way through with directionals and signage
13	Cost
14	Crossing 99 while walking is challenging. Driving from 116th onto Beef Bend turning left because of the curve to the right. It is hard to see someone coming. At 131st and Beef Bend there are two lanes, one to left one to right, there are three lights, two to left and one to right. Could cause an accident. Pave Crown Drive and Majestic Lane.
15	Do not allow the expansion of Fischer Rd
16	Do not extend Fischer Rd through the quiet Edgewater community. Priority should be given to preserve open and green spaces.
17	Easier for seniors who no longer drive to get to downtown Tigard shops. Sidewalk on Beef Bend could be better. Transit stop at or near the Highlands Senior Community.
18	Easier walkability for elderly people.
19	East/west multi-use path from Roy Rogers to 131st and connecting north to River Terrace.
20	Expanding Beef Bend rather than Fischer Rd to access Roy Rogers Rd from 99.
21	Fischer Rd runs through a family-oriented neighborhood - do not put through Roy Roger!
22	Fix regional problem, people are cutting through neighborhoods to avoid 99 problems. Expand Beef Bend to avoid traffic in neighborhoods. Avoid any new crossings of waterways to avoid problems for the river. Dangerous for senior citizens and children for neighborhood congestion.
23	Future changes to Beef Bend (three lanes/four lanes) ADA requirements.
24	I believe Beef Bend needs to be widened significantly including bike lanes.

25	I don't think King City can do transportation in isolation. Needs to involve tigard and ODOT.
26	If construction on Beef Bend, do not direct traffic through KC neighborhood.
27	Intersection at Royalty Pkwy and 99 is very congested. Royalty Pkwy is used as a throughway to Bull Mtn and other areas. Cars drive too fast. Re-route traffic to Bull Mtn and the King City expansion to some streets other than Royalty Pkwy
28	It would be so great if there were a safe way to cross Hwy. 99 at either Durham or Royalty Parkway. In my old neighborhood in SE Portland, I biked everywhere. I just don't here, because I fear I am taking my life in my hands everytime I cross 99.
29	Light at 99 and Durham road only allows 3-4 cars to go through - should be longer. Walk light at 99 and Durham is too short to get across before changing
30	Livability and sense of community. We need more community gathering places. Please do not extend Fischer Rd through the Edgewater Community.
31	Maintain and enhance the livability of existing neighborhoods (Edgewater and Rivermade) do not propose Green Blvd to Roy Rogers Rd.
32	Make King City a nice walkable city with lots of green spaces.
33	Many vehicles don't stop at the 4-way stop on Royalty Pkwy and 116th. Being on foot is very scary.
34	MI - not having a major thoroughfare through a neighborhood
35	MI - People walk the streets with their dogs.
36	More through streets out onto Beef Bend Rd. The sheer volume of traffic on 131st and on Fischer Rd is too much.
37	My main concern is unsafe traffic using the surface streets and create difficult situation for our senior pedestrians. Far too often I see cars driving too fast through the education often obviously not residents of King City.
38	Need major grocery store due to growth.
39	Need stop lights/signals at Beef Bend and Eisner and 150th. Need more lanes on Beef Bend. Need more police officers/patrols.
40	Needs to be another route from 99W to Roy ROgers past/south of SW Tualatin Rd. No new traffic on Fischer Rd
41	No construction to join Fischer to Roy Rogers.
42	No new property taxes!
43	Noise on 99. I live at Royal Villas MHP - noise is loud!
44	Noise, pollution, congestion, livability
45	None of my destination are on the map. More transit, do not push through Fischer.
46	Not wasting money on things people rarely if ever use - bike lanes! Not interfering with the current urban growth boundary! Stop expansion!
47	Please consider those of us who live on Fischer in the quiet Edgewater neighborhood. The only visitor parking we have is in front of our homes. It is a safe place for us to walk. Would hate to have to sell if all this is going to be taken away.
48	Please do not make SW Fischer Rd a connection to Roy Rogers!! It will ruin the quiet and safe neighborhood feel (and the reason I moved here).
49	Please do not open Fischer Rd to Roy Rogers. Not only would it take people's property, but also destroy the quietness and neighborhood feeling of the Edgewater community.
50	Please do something to increase pedestrian safety crossing 99 and Durham.
51	Please keep King City friendly for 55+ folks - thank you!
52	Putting in a dog park.

53	Safety/privacy/noise wall for residents of king condos building at end of Crown Court to buffer them from Beef Bend Rd.
54	School buses should be part of transportation discussion. Tigard High School would serve the area better an intern from Tigard at King City underscores this.
55	Sidewalk maintenance walking all over Jordon Way! Widening Beed Bend to at least three lanes - middle for turning should have done this on 131st
56	Sidewalks in KC area are very poor for senior walkers. A dedicated walk path tied into Highlands walking path and going through to KC Park would be fantastic. Need to look at traffic using KC roads as a short cut from Beef Bend 99W. Sidewalk and bike lanes on 131st south of SW Fischer Rd going to back entrance to KC community park would be nice.
57	Something needs to be done with the house at the top of 131st and Beef Bend. The house looks scary across the street from a school and the strange people who sit in the sport court and watch. Sidewalks are needed on Beef Bend. Too many gaps. Garbage on roads needs to be taken care of. Unsafe! More walking paths connecting neighborhoods. If you do a bus line, make sure the bus doesn't have to stop on already busy roads. No light at Fischer and 131st .
58	Sound reduction walls - Kings City condo area. Quality of roads/pavement in Kings City.
59	Speed bumps on straight, long stretch on Victoria from Elizabeth, not only to restrict speeders and also as both streets running parallel above and below have speed bumps. And to ensure traffic is not consequentially diverted to Victoria.
60	Speeds along Beef Bend are posted at 35 and 45, but there are people who are going faster and do not slow to 35
61	Stop the extension of Fischer Rd. It will create an unsafe amount of traffic through a residential neighborhood.
62	The speed limit on 99 between Roy Rogers and Tualatin Rd is terrible! Safety should be number 1. The speed limits between King City and Sherwood and 99 are too high and dangerous.
63	The streets west of 126th need handicap ramps. A lot of us have to use walkers or canes
64	The traffic pattern as it is now makes very well the obstructions [sic] be caused by expanding Fischer are too horrible to consider. The destruction of our neighborhood is at stake. Big is not better. Allow King City to keep it's charm and comfort - of safety and a sense of community. I am vigorously opposed to your ideas to lengthen Fischer Rd through our area to Roy Rogers.
65	There is not transit within walking distance. No other transit to Roy Rogers other than Beef Bend. Fischer Road has low visibility for traffic.
66	This development needs to keep a neighborhood feel not just a cut through from Tigard to Sherwood.
67	Traffic speeds are horrendous and not enforced (due to limited resources). We watch cars go 40+ mph towards 99 on Fischer.
68	Transit should be more readily available!
69	Uniform speed limits - there are three in King City
70	Very concerned about Fischer Rd extension. Not clear it even makes sense. Beef Bend Rd is a great alternative.
71	Very concerning with traffic flow and travel times. Pedestrian and bike safety is a major concern. Flow to capacity ratio at major intersections like 99W-Beef Bend, 99W to Durham, 99W to Fischer Rd.
72	Walking trails

73	We are not in favor of further urbanization of our once quiet environs. We would not use public transit.
74	We could have serious issues. These are what I have marked above.
75	We live in Edgewater and I am deeply concerned about the expansion of Fischer; it will ruin the neighborhood cohesion and erode property values in our currently very walkable area.
76	We need more paved walking paths on trails like in the highlands. Returning right turn just before bridge over River from Backroad to go north on 99.
77	We want to keep our neighborhood streets free from major traffic and congestion.
78	Widen 99W, other roads if traffic increases there due to development.
79	Sensitivity to the Tualatin River + Natural Resources. Pushing through Fischer threatens the above.
80	<p>Please include our names for any future consideration or access as we are without any transportation and have lived in King City for 8 years now! Natalie.</p> <p>King City:</p> <p>Swimming pool (indoor)</p> <p>Library</p> <p>Clubhouse close-in</p> <p>Foot dr., dentist, bank</p> <p>Safeway across Hwy 99</p> <p>Swimming Pool</p> <p>Crown Royal</p> <p>We carry 1-2 full-ish shopping bags for groceries. Neither of us (67 and 92) have any transportation. We are totally dependent on rides.</p> <p>Cars turn too fast onto Q. Elizabeth.</p> <p>Broken sidewalks and uneven pavement, the sidewalks are very narrow and tilt. Easy to lose balance! I use adult 3-wheel bicycle in good weather only.</p>

Appendix D: Comments Received by City

Below are the unedited comments sent to the City via the website comment form or by mail.

1	Could I please get the name of someone who my neighbors could speak to if we have comments on the proposed changes? We did not receive a mailer and would like a chance to add our voice. Thank you!
2	<p>Tualatin Riverkeepers (TRK) is a community-based organization that protects and restores the Tualatin River watershed. We build watershed stewardship through engagement, advocacy, restoration, access, and education. We appreciate the opportunity to provide our thoughts on additional things to consider when undertaking the King City Transportation System Plan. We feel it is important to weigh in at this time to ensure that the planning process is relying on good data and good analyses. We address our concerns by topic below.</p> <p>I. Avoid Environmental Impacts to the Maximum Extent Possible</p> <p>In the concept plan submitted to Metro for URA 6D, there is a Fischer Road extension contemplated to add needed east to west capacity and would potentially create 4-5 new creek crossings which would harm the Tualatin River and its tributaries. Most of these creeks in the planning area are already impaired from legacy stormwater pollution that was legal at the time. These massive erosion sites are complex and are continuing to worsen as time goes on. One example is the wooded trail along the river at King City Community Park. The erosion site looks like a cavern or sink hole with a waterfall in the</p>

rainy season. It is worth noting that not too far in the distant past one could step over from one side of the creek bank to another. Now at the river's edge the creek banks are approximately 15 feet from each other and there is approximately a 20-foot drop to the creek bed from the bank. This is just one of several sites in the King City area. It is vitally important that any additional development not make these erosion issues worse. At the time when the existing developments occurred in King City and on Bull Mountain, developers and regulators were treating stormwater quality, but not offsetting increases in stormwater volume and velocity.

Although new hydromodification standards are now in place, these are new standards and only time will tell if they adequately protect against the damage caused by increased volume and velocity of stormwater. Given these factors, caution is necessary, and impacts should be avoided to the maximum extent possible.

Additionally, past impacts should be retrofitted for to ensure these erosion sites do not continue to worsen. If we guess wrong, it is important to remember that these failures are not cheap. Each of the legacy erosion sites we have mentioned here will be multi-million-dollar fixes. King City cannot afford to under protect the creeks in their planning efforts. It is also worth noting that in Tigard these types of erosion sites have impacted infrastructure and homes, which is another cost King City cannot afford.

Therefore, any environmental impacts should be thoroughly and accurately studied. We also ask that any new creek crossings be avoided to the maximum extent possible.¹ It is also important for the quality of life of King Cities' residents that natural areas be preserved and integrated into planning efforts. Additionally, efforts should guard against habitat fragmentation and create and preserve wildlife corridors when possible. Wildlife corridors are going to be especially important for allowing species to migrate to deal with the impacts of climate change. Therefore, we ask that the road network maximize wildlife corridors throughout King City when drafting the Transportation System Plan. TRK notes that the most obvious way to preserve some wildlife corridors in the transportation planning efforts are to avoid creek crossings altogether and preserve large vegetative buffers along the creeks.

II. Serious Flaws in the Traffic Study Need to be Addressed

TRK believes in the importance of good data and strong analysis. Therefore, we want to address the Traffic Study done for the Concept Planning around URA 6D. This study was based on faulty assumptions and if relied on, will drive the development of an inadequate transportation system. In general, the analysis completed was not sophisticated enough and made assumptions which are not true. To truly be effective King City must take a regional approach and recognize that much of the existing traffic problems are due to people cutting through neighborhoods to avoid the failing intersections on 99W. The report does not take these factors into consideration and therefore any conclusions it draws are invalid.

We have identified several serious flaws with the analysis and modeling and will raise them below in more detail. First, we acknowledge that the traffic report assumes that ODOT will not make anything but minor changes to 99W. All our comments and concerns are made with these 99W improvement constraints in mind. Now we will discuss a few specific problems with the Traffic Study:

TRK would like to note if any creek crossings must be done, we urge that those crossings to be as far north as possible. The further north the crossings are placed the shorter the distance they need to span and the less impactful the construction and runoff issues will most likely be. Additionally, the further north the crossings, the more intact the wildlife corridor will be.

1. The analysis south bound at Fischer and north bound at Beef Bend are faulty. The calculations performed in the traffic analysis heavily modified variables such as "upstream

filtering” and overstated the quality of traffic progression leading to a significant underestimation of delay. In other words, the analysis made assumptions such as every car would get a green light as soon as they reach the intersection, which anyone who has driven 99W between the Tualatin River and Bull Mountain knows is not the case most of the time.

2. The storage analysis is incorrect and does not account for access starvation resulting from through queues blocking entrances to turn bays. In other words, the analysis assumes that all cars who want to get in the turn lane on 99W at Fischer Road, Durham, Royalty, or Beef Bend can access the turn lane right away. Again, anyone who has tried to make these turns knows that sometimes you have to wait for cars trying to go north on 99W to move before you can access the turn lane.

These calculations regarding storage length were used to support the idea that minor mitigation would be sufficient to correct any problems. Given that known existing problems were not

identified in the modeling means minor mitigation will not be enough.

3. No field observations of existing conditions were documented. It would be clear to any observer in the field that the results shown of the operational delay and queuing in the report do not match existing conditions. For example, see the descriptions in 1. and 2. above and 4. below regarding TRK’s observations of the intersections on 99W including Fischer, Durham, and Beef Bend.

4. Forecast volumes do not consider likely diversion away from 99W due to congestion on 99W. The analysis underestimates the amount of traffic that would shift to Fischer should it be connected to Roy Rogers. Instead, a simple growth rate calculation was applied to existing conditions and does not account for the diversion caused by the failure of the Durham intersection.

Today, the only roads west of 99W are Fischer, Beef Bend, and Bull Mountain. All of them are single left turns that do not operate well currently. Fischer, in particular, is the worst of the three with northbound left turns often taking multiple cycles before a driver is able to make the turn. The backup on 99W through Durham means people are willing to wait to turn left on Fischer just to avoid 99 north at Durham and northward. This will get worse and the traffic forecast that was performed does not account for this self-diversion.

Additionally, there is anecdotal evidence that this self-diversion is the main cause of the congestion. The stop sign at 131st and Fischer Road is only an issue in the PM rush hour with a majority of the traffic coming from 99W and turning to head north to Beef Bend Road. If the volume were strictly local then you would expect to see an issue in the AM rush hour going the opposite direction, but that does not happen. Because 99W is not severely congested in the AM and it is easy for eastbound traffic to turn right onto 99W directly from Beef Bend Road, this lack of mirroring makes sense. The afternoon congestion at 131st and Fischer is therefore from people trying to avoid a going northbound through the congested Durham intersection and then turning left from 99W onto Beef Bend. Therefore, current congestion on Fischer is mostly from drivers trying to avoid congestion on 99W. Again, the analysis does not take this into account in the modeling or variable selection.

In summary, the analysis looked at each intersection individually instead of as a system. As anyone who has driven that section of 99W knows, those intersections are very dependent on each other. This lack of a system wide analysis created serious flaws in the traffic study and lead to misleading conclusions. By not looking at the system as a whole we see flaws like failing to account for queue spillback from other intersections in the analysis. For example, the analysis did not account for cars having to wait to advance

	<p>beyond Durham. In other words, backups caused by the Durham intersection on 99W was not accounted for when studying how the system would work in the future.</p> <p>These serious flaws with the analysis mean that the Transportation System Plan cannot rely on the Traffic Study in their planning efforts if King City wants to create a functioning traffic system. A regional approach must be used to study the traffic needs for King City. This also means that a viable alternative to the Fischer Road extension should be considered moving forward. One such alternative could be expanding Beef Bend Road to four lanes and fixing the problems on 99W by adding a double left turn somewhere and making other minor improvements.</p> <p>III. Conclusion</p> <p>In conclusion, we encourage the consultants and committee members to look critically at all analysis and data presented to them, especially the flawed traffic study. If possible, we also encourage the City to commission a regional traffic study that examines the system as a whole before moving forward with any planning efforts. Without an accurate study the plans will likely provide inadequate traffic solutions for the future of King City. That would mean 4-5 new creek crossings would possibly be created for a traffic network that would not function properly. TRK asks that any plans which would include impacts to creeks be thoroughly studied and rely on good data.</p> <p>Finally, in addition to requesting good data, we also ask that road crossings of creeks be avoided to the maximum extent possible and that wildlife corridors be preserved when planning the transportation system.</p> <p>Thank you for your time and consideration.</p>
3	<p>I submitted a PDF letter to Michael Weston via email with our comments and response to the survey. That letter is dated October 29th. I have requested that he forward that letter to the project team. I am commenting here today to request an email response confirming that the project team received our letter.</p> <p>Thank you for your time,</p>

King City TSP

Spring 2021 Online Open House Summary

Prepared for



The City of King City
Oregon Department of Transportation
DKS

Prepared by

JLA Public Involvement, Inc.

June 2021

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Introduction

ODOT and King City conducted outreach activities between June 9-21, 2021, to share the final draft of the project list for the draft King City Transportation System Plan (TSP) with the community and solicit feedback. This feedback will help the City and its consultants refine the draft TSP so that it adequately addresses planned growth in King City and responds to the changing transportation needs of King City residents.

Outreach activities were amended to encourage community feedback during the COVID-19 pandemic and included an online survey and outdoor tabling event.

Feedback received through this outreach period will be considered as King City refines the draft TSP, which will be further refined during the Kingston Terrace Master Plan effort.

Overall Participation and Notification

To gather feedback on the proposed transportation projects in the draft TSP, the project team developed an **online open house** and hosted an **in-person tabling event** to gather community feedback.

Overall, the project team received **survey responses and feedback from 148 people**. Of those, 107 people responded to the survey in the online open house and approximately 35 people attended the in-person tabling event, and 6 comments were received via email and the project website comment form.

Community members were informed about the online open house and tabling event through the following:

- Postcard to residents within the City of King City boundaries
- Email to stakeholder and interested parties list
- Posts to the King City Facebook pages, Twitter, Nextdoor, and Instagram
- Posts on the project website

Of those who shared how they found out about the online open house, the **majority (38%) said they learned about it through social media**, followed by 31% saying they found out about via email. Four people said that they found out about the online open house through the postcard. Other ways people found about the open house included word of mouth, neighborhood homeowner's association, the tabling event, and the website.

Outreach Opportunities

Online Open House

The online open house was intended to provide community members with information about the final list of proposed transportation projects in the draft King City TSP and the opportunity to provide feedback through an online survey.

Tabling Event

The City of King City held the second in-person tabling event to gather community input about the city's first Transportation System Plan (TSP) on Wednesday, June 9, 2021 from 4-6pm. This informal tabling event at King City Community Park invited park users and residents within the project study area to learn more about the project and the proposed transportation project list and to provide input.

People who participated were able to speak with City staff, the Mayor of King City (Ken Gibson), City Council members, consultants from DKS, and engagement specialists from JLA Public Involvement. Participants were also able to submit comments through a written questionnaire.

The event included one informational table and displays for the proposed transportation projects. Kingston Terrace Master Plan project staff were also in attendance and hosted their own table.

Feedback Summary

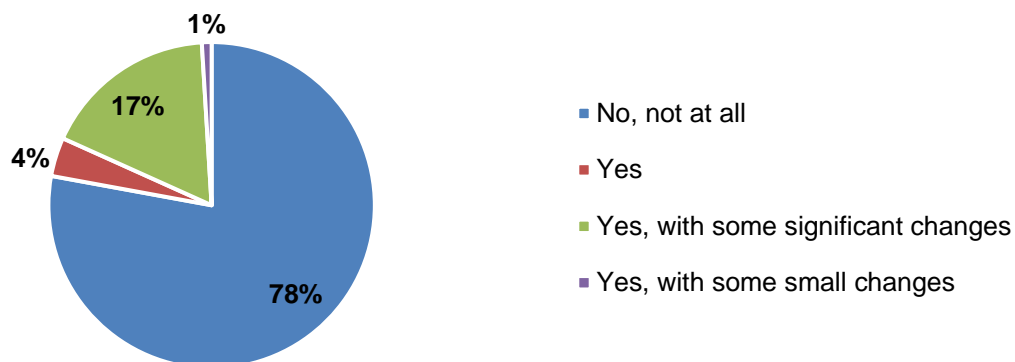
This section summarizes the feedback received through the in-person tabling event, the survey in the online open house, and other comments sent to the City via email or the website comment form. Review individual comments in [Appendix A](#) and [Appendix C](#).

Online Open House Responses and Comments Sent to King City

Participants from the online open house were given the opportunity to answer a series of questions about proposed projects for motor-vehicles, pedestrians, bicycles, and transit. Feedback is summarized below.

1. Do you support the motor-vehicle projects included?

Of the 104 people who responded to this question, the **majority of respondents (78%) said that they do not support** the proposed motor-vehicle projects.



2. Is there anything else we should consider with motor-vehicle improvements?

Below is a summary of the 83 comments received through the open text box. Review all individual comments in [Appendix A](#) and [Appendix C](#).

East/West Connection Alternatives

The majority of comments were related to the East/West Connection Alternatives.

- Of those who submitted comments for this question, **more than half (68%) expressed their concerns and opposition to extending Fischer Rd** to create a connection for east-west traffic. Below is a summary of comments relating to the Fischer Rd Extension:
 - **People had the following concerns:**
 - **Impact to neighborhood:** Believe that it would negatively impact the character of the neighborhood and reduce quality of life of those living there.
 - **Increase in traffic:** Fischer Rd is already too busy – the extension would increase traffic, more people would speed through the area, and the smell of exhaust and noise would increase.
 - **Impact to private property:** People were concerned about the use of eminent domain to build the extension and possible impact on property value.
 - **Environmental impact:** Concern about the Columbia Land Trust conservation area, habitat, and wildlife in the area. Someone brought up Metro's ordinance in connection to the land trust and the Bankston Property. Desire to have fewer creek and river crossings.
 - **Safety:** Pedestrian and bicyclist safety, especially that of children crossing the street to go to school.
 - **Unsuitable area for extension:** Several people stated that the geography, topography, and ecology of the surrounding area is not suitable for a road to be constructed. It will need bridges, which will be costly.
 - **Erosion and landslides** along the banks of the Tualatin River will worsen.
 - **Parking:** Potential elimination of on-street parking.
 - Some suggested that a **multi-use path for pedestrians and bicyclists** would suffice for an east/west connection, whereas a road for vehicles is not needed.
 - Of those opposed to extending Fischer Rd, many mentioned that **improvements (such as adding more traffic lanes) should be made to Beef Bend Rd.** to facilitate East/West traffic across King City.
 - Someone **suggested extending Elsner Rd to Kummrow Rd**, which they believe would impact less property owners and would be safer than Fischer Rd Extension.
 - Some expressed a **dislike for roundabouts** because they take up more space and are difficult for large vehicles to navigate.
- Concern that both the **Capulet and Macbeth alternatives would increase traffic** and make these streets unsafe for children and drivers.
- A few people expressed that they would not like to see a street extended across the **power line field**, either on Fischer Rd or Capulet Lane.

- Several people said that they felt that there is **no need for an east/west connection** street. Many mentioned that they heard that neither **Metro or Washington County required such a connection** and questioned why King City was proposing it.
- **Desire for more public engagement:** Several people expressed that this plan had not been adequately discussed with those in the community and a few said that their Homeowners Association had voted to not support the Fischer Rd Extension. Many expressed that they felt ignored by the City.

General Comments Related to Motor-Vehicle Improvement

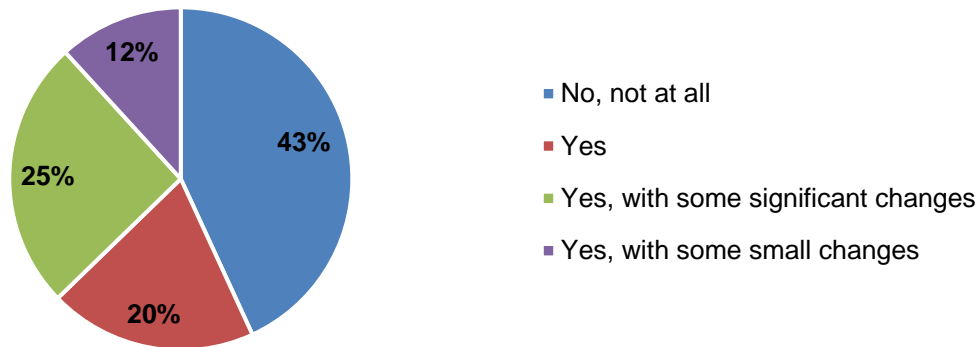
- People were concerned about **increased traffic** throughout King City as a result of motor-vehicle improvements.
- Concern that there is **not enough parking** in the area.
- **Specific suggestions:**
 - **SW 137th Ave and River Ln** should have sidewalks, bike paths, and a light at Beef Bend like SW 131st Ave.
 - **Project ID 15a:** Someone said that a 3-way stop sign is needed, not a traffic circle, which might make accessing their property difficult and cause a safety issue.
 - **Project ID 15** should be designated as a neighborhood collector.
 - There was a request to **improve the efficiency of traffic lights** in King City.
- There was **conflicting feedback about roundabouts**. Some felt that certain intersections (River Ln, Watson, SW 137th) and Roy Rogers should be considered for roundabouts, while others felt that they were not needed and would create safety issues and/or make it more difficult to access private property (Project 15a).
- Someone said that the plan **relies too heavily on vehicles**.

General comments unrelated to motor-vehicle improvement

- **Placement of new town center:** The new town center should not be placed in the new expansion area as some felt it was too far away from the original center of King City.
- Questions about how King City's TSP **compares to the County's TSP**.
- A few people expressed concern and/or **opposition to the King City expansion**.
- Someone was **concerned about pollutants** getting into river and streams.

3. Do you support the pedestrian projects included?

Of the 102 people who responded to this question, **over half of respondents (57%) said they do support** the proposed pedestrian projects with either no changes, some small changes, or some significant changes.



4. Is there anything else we should consider with pedestrian improvements?

Below is a summary of the 46 comments received through the open text box. Review all individual comments in [Appendix A](#) and [Appendix C](#).

General comments

- A few people expressed a general **desire to see more pedestrian and bike paths** throughout the plan.
- **Environmental concerns:** People would like to see pedestrian paths along the perimeter of natural spaces, rather than through these spaces. There were also concerns about erosion and a desire to place walking trails in such a way so that erosion is not exacerbated (perhaps even mitigated)/
- **Sidewalk improvements:** A few respondents noted that there are several places where sidewalks end without transition and that should be fixed.
- **East/West Walking Trail**
 - Suggestion that Fischer Rd and Capulet Ln extensions should be **bike and walking paths only** and should have adequate lighting.
 - Several people stated their concern that a pathway from the southern end of River Ln to King City Park would **negatively impact private property** in the Rivermeade Community.
 - Would like the East/West trail to **connect from 99W to Roy Rogers Rd.**
- **Safety:** Several people were concerned about pedestrian safety and would like there to be separation between cars and pedestrians along arterial roads, lighted pathways, more law enforcement, etc. Many were concerned about speeding cars and the safety risks to pedestrians without improvements.
- Walking paths should be located to the north and **run parallel to Beef Bend Rd.**
- Some people noted that the **area west of Fischer Rd does not need more walking paths** because it is rural.
- Someone stated that the **plan overlooks a large part of the population that will continue using cars** and that do not want to use walking trails.
- Suggestion that **River Ln be improved like the SW 137th**
- **Accessibility:** All walking paths should be level (not tilted) so that manual wheelchairs and strollers can be used.

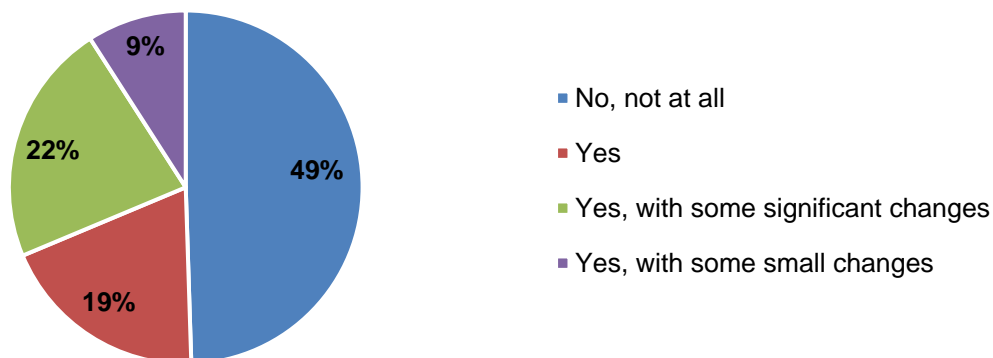
- Someone asked about how the **enhanced bicycle and pedestrian crossings on 99W** will be implemented without impacting traffic flow.

Comments unrelated to pedestrian improvements

- Adding a **bus route along Fischer Rd** would not outweigh perceived negative impacts to the community.
- A few people expressed **dislike for the plan** in its entirety.
- Several people repeated their comments from the previous question in this space.

5. Do you support the bicycle projects included?

Of the 99 people who responded to this question, **roughly half of respondents (51%) said that they do support** the proposed bicycle projects with either no changes, some small changes, or some significant changes.



6. Is there anything else we should consider with bicycle improvements?

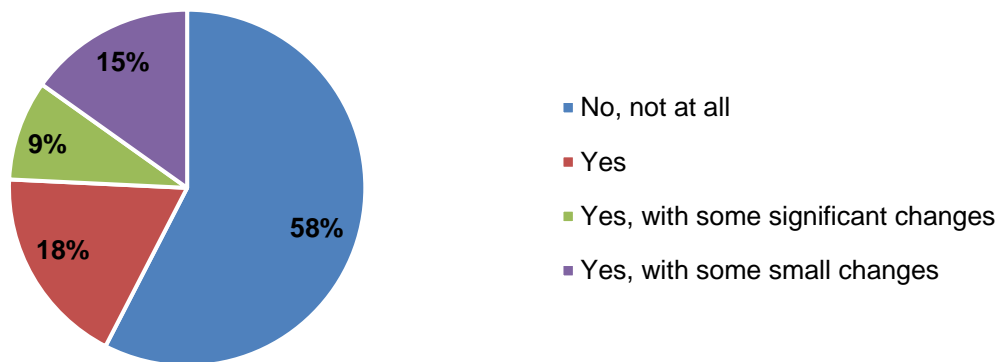
Below is a summary of the 38 comments received through the open text box. Review all individual comments in [Appendix A](#) and [Appendix C](#).

- Suggestion that Fischer Rd and Capulet Ln extensions should be **bike and walking paths only** and should have adequate lighting.
- There was **opposition to bike facility through the Columbia Land Trust** conservation area.
- **Roundabouts:** Someone expressed a dislike for biking through roundabouts.
- **Impacts to private property:** Concern that bike lanes would infringe on private property.
- **Safety:**
 - People would like to see **separated bike lanes**, with some parts of the path off the road.
 - **Increased traffic** will exacerbate feeling of being unsafe.
 - **On-street parking** will affect bike lanes and bicyclists.
 - There's a need for improved **visibility** and **lighting improvements** for bicyclists.

- Some respondents felt that there are **not enough people who bike** in this area to warrant these improvements. Some also felt that the area west of Fischer Rd did not need any bike paths.
- Preference for improvements to go up **131st to Beef Bend Rd** rather than on Fischer Rd.
- Desire to see bicycle paths **parallel Beef Bend Rd.**, cross the BPA field, and run behind Deer Creek Elementary.
- Someone recommended **RCUT-type bike facility treatments**.
- Concern about **connectivity for pedestrians and bicyclists in the Highlands community to goods and services to the east**, suggestion of creating access across Pacific Highway at SW Royalty.

7. Do you support the transit projects included?

Of the 99 people who responded to this question, **the majority of respondents (58%) said that they do not support** the proposed transit projects.



8. Is there anything else we should consider with transit improvements?

Below is a summary of the 34 comments received through the open text box. Review all individual comments in [Appendix A](#) and [Appendix C](#).

- **Suggestions**
 - Bus service along Beef Bend Rd. to 99W
 - Bus service along Roy Rogers
 - Creation of a free parking zone
 - Add a transit center at the new town center
 - Bus shelters that have real time bus arrival information and bike lockers
 - Keep bus service north of (and avoid) natural areas, like the Bankston property, and be placed on major streets
- **Safety:** Someone said that they equate more public transportation with more crime and feeling unsafe, while others felt that buses will increase safety and help people get to public services.

- Concern that there will not be **transit stops in the interior of King City** until there is a large population. This related to another comment that there are **not enough people who will use the buses**.
- Someone expressed a desire to create communities that are **not dependent on vehicles**.
- Some said that there need to be **more transit improvements along Beef Bend**.
- Many said that they would **not like transit to run through quiet neighborhoods**.
- There was general support for buses as they **will help reduce car traffic and emissions**. However, some said they do not want bus service along a Fischer Rd Extension (if it occurred).

In-Person Tabling Event

Participants in the tabling event were given the opportunity to talk with City staff, City Council members, the mayor, and project staff to learn more about the proposed projects included in the draft TSP.

The majority of participants expressed concern about extending Fischer Road and were interested in discussing the East/West Connection Alternatives.

Key themes and feedback from the questionnaire and conversations with community members is summarized below. Review all individual comments from the questionnaire in [Appendix B](#).

Key Themes

Motor Vehicle Improvements and Traffic

- Some participants mentioned that people are already upset about the **cut through on SW 131st St.**
- Some mentioned that the **99W and Beef Bend improvements** weren't well received.
- Some were worried about how street improvements and new streets would **impact waterways, riverbank erosion, nature, and wildlife**.
- Participants would like to see traffic calming measures implemented on streets – especially the east/west connection.
- Many were curious about the **east/west connection alternatives** to the **Fischer Road Extension**. Edgewater and City residents share strong concerns about the proposed Fisher Road extension and don't feel that the city is listening to them. Feedback and concerns include:
 - Feedback related to **Fischer Rd**:
 - Residents are concerned about **increased traffic in their community** – many describe their neighborhood as calm and quiet and don't want that to change. They don't want a major road going through their neighborhood.
 - There was concern about the potential for **increased noise** (someone suggested that a sound barrier be put in place), and that **people will speed** along the extension, creating safety concerns for all ages.

- **Home fronts will be negatively impacted** as houses are already close to the street.
- Kids have to cross Fischer Rd to get to the park, with this extension, **kids won't be able to walk to the park safely.**
- Some said that it is **already hard to get out of the neighborhood** and the Fischer Road Extension will make that harder, as traffic will increase.
- Feedback related to other east/west connection alternatives:
 - One person said that **SW Capulet Ln would be a better alternative** because of the ecological concerns with the Fischer Rd Extension.
 - **Roy Rogers to 150th is a better alternative** than Fischer Rd. Extension
 - Someone said that a connector street make sense, but not an arterial street.
- **Questions:**
 - Will a speed limit be put in place on the east/west connection?
 - Where are the bike and pedestrian improvements on Fischer Rd going to go? This is important as some houses don't have driveways, there are age-based accessibility concerns, and the vistas have no parking.
 - How much of Beef Bend Rd. is buildable?
 - Why is widening Beef Bend not a good alternative? *Isolating factor is the neighborhood to the north.*
 - How are red light and roundabouts chosen for intersections?
 - How is [traffic] forecasting done?

Pedestrian and Bicyclist Improvements

- Southern walking trail along the river: Participants were concerned about impacts to private property and imminent domain. There were also concerns about how access to the river will be impacted. Some participants mentioned that it makes sense to have a shared use path, with a bike path, only on the King City side.
- There was a suggestion of having shared use paths on SW Elsner Ave. There is a steep embankment around SE Elsner Rd. Would like the trail to be along the river.
- Participants would like there to be better visibility for street crossings and were concerned that an east/west connection would negatively impact pedestrian safety due to increased traffic.

Neighborhood and City Expansion

- Some expressed shock that the community will be expanded and that there will be more people in the area.
- **Questions:**
 - When will homes be built in this new, annexed area? *Could be 20-25 years, depends on the developers. Will start at Roy Rogers or Beef Bend.*

Impact On Natural Areas

- There was some discussion around a bridge over the river and how it would or would not be impacted by erosion. Some said that stormwater drainage is getting much worse and the banks of the river are eroding.
- Someone mentioned that they liked what Ashley Short from Tualatin River Keeper's idea as it relates to the river.
- Participants said that they need larger parks and that parks should be different from the wildlife refuge area. (*Comment relates to Kingston Terrace Master Plan*)

Concerns about Public Outreach Process

- Many expressed that they either had not been aware of the project until very recently and/or that they had not received an email in a long time from the project team. Several participants expressed frustrations with the public outreach process for not feeling heard and for not having enough input opportunities.
- Some expressed confusion about where the project is at in the process of being finalized and adopted. Some feel that the timeline is rushed.
- Some said that City Council is not responding to neighborhood feedback and that they feel that the City does not care about the existing community.
- **Questions:**
 - When will the TSP be brought to City Council?
 - When are planning commission meetings? *Once a month.*
 - When are dates posted? *Planning commission meeting dates are currently posted on the City website.*

Other

- Some participants expressed general concern about campers.
- Some participants expressed concerns about privacy by having a trail along the river and close to homes located near the river.
- Questions:
 - What is Kingston South?
 - Questions about the southern area on the map that is METRO owned
 - Will there be access to a MAX Station?
 - Are motor sizes capped on the river?
 - Who are the developers?

Questionnaire

In addition to being able to speak directly to project staff, participants were able to fill out a questionnaire about the proposed transportation projects. The questions on the questionnaire mirrored those in the online open house. **10 people filled out a questionnaire**, not all questionnaires were completely filled out.

Below is a summary of the feedback captured in the questionnaire for the “Yes/No” questions. Feedback for the open-ended questions is captured above in the “Key Themes” section. Review all individual comments from the questionnaire in [Appendix B](#).

Motor Vehicle Improvements

Most respondents generally supported the motor vehicle projects in the TSP but would like to see changes made. Five participants selected “Yes, with significant changes”, one selected “Yes, with small changes” and two selected “No, not at all.”

Bicycle Improvements

Most supported bicycle improvement projects in the TSP. Two participants selected “Yes”, three selected “Yes, with some significant changes”, one selected “Yes, with some small changes” and one selected “No, not at all.”

Pedestrian Improvements

Most supported pedestrian improvement projects in the TSP. Three participants selected “Yes”, three selected “Yes, with small changes”, one selected “Yes, with some significant changes” and one selected “No, not at all.”

Transit Improvements

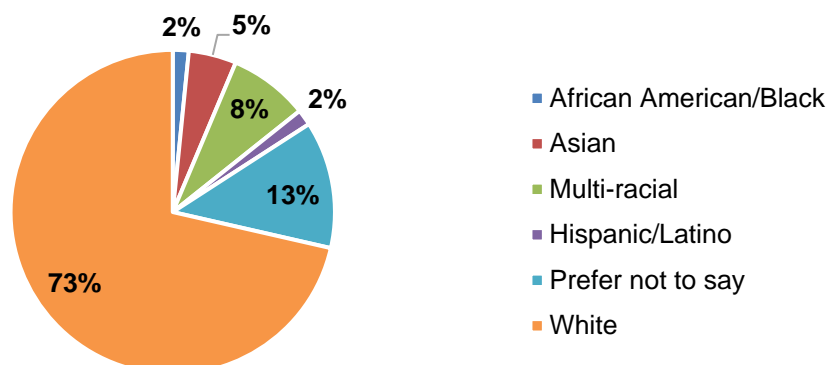
Most supported transit improvement projects in the TSP. Two participants selected “Yes”, one selected “Yes, with some significant changes”, and two selected “No, not at all.”

Demographic Information

Participants from the online open house were asked a series of optional demographic questions. This information is useful to compare with the city’s current demographics.

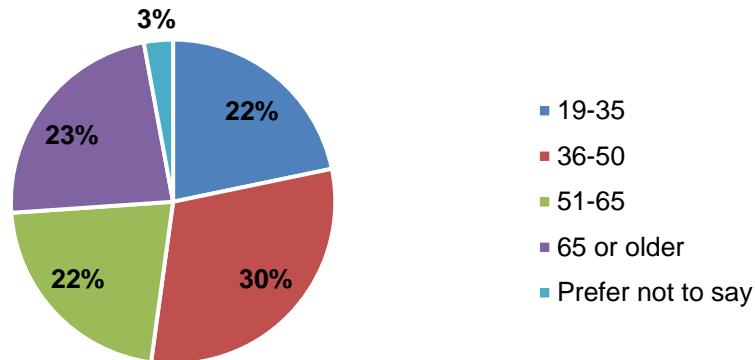
Racial or Ethnic Identity

The majority of participants identify as white, with the second largest group of participants selecting that their race is unknown or that they do not wish to disclose it.



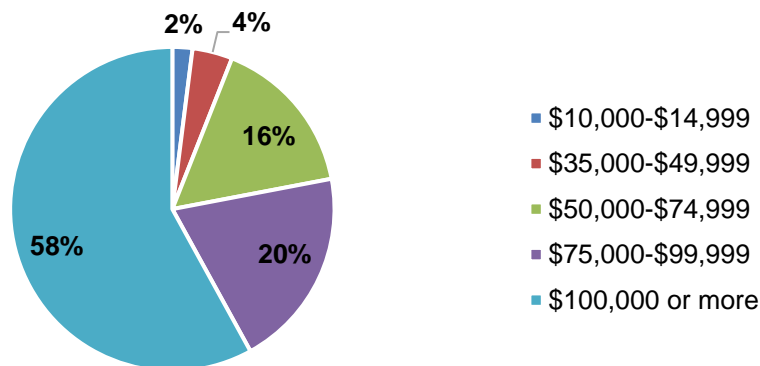
Age

Of those that responded, **the largest group of participants is within the ages of 36-50**. The next largest group of participants is 65 or older.



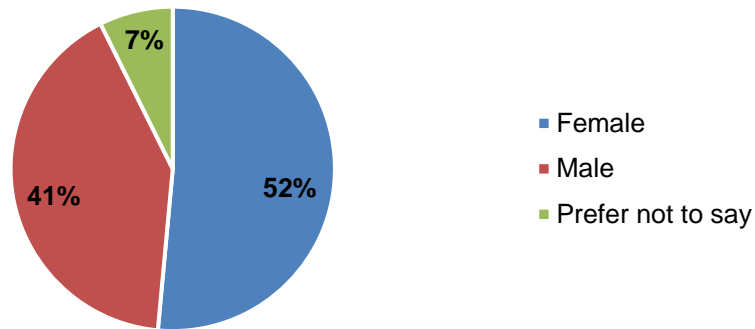
Household Income

The **majority of the online survey participants have a household income of \$100,000 or more** a year, which is higher than the average household income in King City.



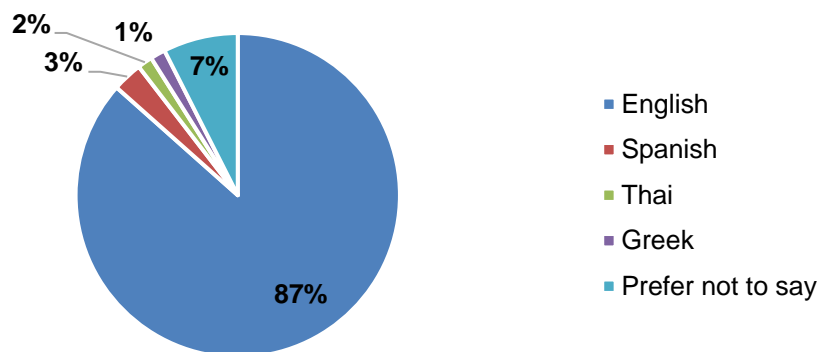
Gender Identity

Half of participants identify as female, with a little less than half identifying as male.



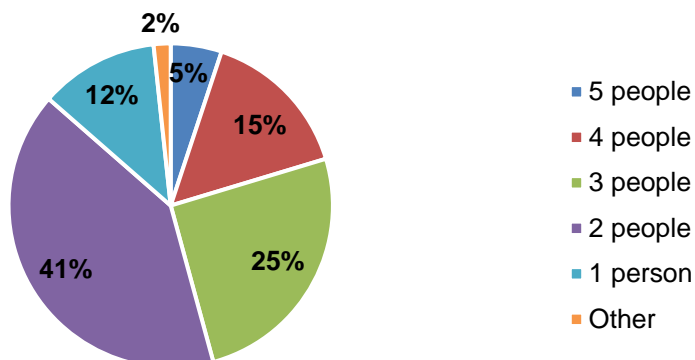
Languages spoken at home

The majority of respondents **(87%) indicated that they speak English at home**. A few respondents said they speak Spanish, Thai, and/or Greek.



People living in household

The majority of respondents **(41%) indicated that 2 people live in their household**, followed by 25% who said they live with 3 people.



ZIP Code

The majority of participants (96%) selected 97224 as their ZIP code, and 2% selected either 97062 or 97223. Through this question, 11 people indicated that they would like City staff to follow-up on a specific comment.

Appendix A: Online Open House Open Text Questions

Below are the comments respondents submitted for the open text questions in the open house.

Question 2: Is there anything else we should consider with motor-vehicle improvements?

1	A 20-yr forward looking TSP that continues relying on today's vehicles. What about alternative transportation types (electric carts, golf carts, and others considered in the County's Transportation Futures report)? One stated purpose of the TSP is to provide safe, convenient access to goods/services - yet the proposed system relies on the same premise we live with today. How much effort has been put into discussions with partners such as the County. The proposal includes 3 additional signals on a proposed 5-lane arterial, all within a very short distance - would these warrant signals? I can't imagine the congestion signals that close would entail - what does the County say about that proposal - in addition to where on the County's TSP is the proposal to expand Roy Rogers past the current cut-off?
2	Add capacity to Beef Bend from 137th to 99W instead of extending Fischer across the powerlines.
3	At the Community Park event on Wednesday, June 9th, Mike Weston repeatedly stated there were alternatives to extending Fischer Road. It is clear on this website that he was lying. Glad I called you out on that at the park! We will continue to spread the word about your deceit. See you next time.
4	Avoidance/minimization of stream/wetland impacts and crossings, particularly in those areas with steep terrain and along the Tualatin River where slopes are susceptible to erosion, failure, and/or landslides.
5	Do not expand Fischer Road. Do not change Fischer Road to accommodate King City expansion plan.
6	Do not extend Fischer rd. Only widen Beef Bend.
7	Do NOT extend Fischer Road!!
8	DO NOT extend Fisher Road through Edgewater!!!!
9	Do not push Fischer through. You will destroy the rivermeade community and wildlife
10	Don't destroy the character of the Rivermeade neighborhood by connecting Fisher Rd to SW 137th and River Lane, with the sole purpose of making it easier to reach the westernmost reaches of the planned development. perhaps more forethought should have gone into the concept of trying to create a "new" town center so far from the original center of King City.
11	Don't do it! Its too costly!!
12	don't put the road so close to the river
13	Edgewater all rejects a Fischer extension.
14	Edgewater is united in our opposition to this plan and extension of Fischer Rd.
15	Edgewater needs to leave King City. We need a new mayor and city manager.
16	Everyone in Edgewater that I have talked to hates this plan if they have looked at it. We need better involvement and a better plan.

17	Expand Beef Bend, leave existing neighborhoods uninterrupted.
18	Extending Fischer Rd. is NOT practical. It is narrow from Cordelia to King Lear and can't handle more traffic than it now has. Eliminating parking would be a hardship due to no drive ways for visitor parking.
19	Extending Fischer through the Columbia Land Trust conservation area is not acceptable. Use of eminent domain by King City would be a huge political mistake that would result in the Council and the City Manager losing their jobs. Jaimie Fender would never be elected mayor if this occurs since the backlash would be severe.
20	Extending Fisher is a mistake. There are far too many houses very close to the road on that street to make it a they-way.
21	Few suggestions: 1. Capulet Ln getting extended is a public safety hazard due to increased traffic on a single lane Capulet Ln to 131st 2. The Fischer and Capulet Ln extensions should be bike/walking paths (with lights) instead of roads connection the east and west sides. 3. Make the effort and widen Beef Bend instead of extending Fischer and Capulet. 4. Please improve the efficiency of the traffic lights going through King City.
22	Fischer extension causes all kinds of problems for us.
23	Fischer extension causes too much environmental damage.
24	Fischer Rd and the community were not built to be a through street. Turning Fischer Rd into a through street will disrupt the neighborhood, endanger children, and devalue homes. The role of city officials is to serve those in the city, not those passing through. Please cancel this plan.
25	Fischer RD in the edgewater neighborhood cannot be neglected. Speed controls and improvements need to be made if it is going to connect to Roy Rodgers. The safety of pedestrians and families is more important than expansion. Small roundabouts do not reduce speed, there needs to be more. Improvements to beef bend should be made all the way through to 99W.
26	Fischer Road already is really busy. It doesn't need another feeder from Roy Rogers.
27	Fischer road extension brings too much traffic into the edgewater neighborhood. The houses and roads are too close to the road from ~131st to the end of the development to support arterial extension. These homeowners on Fischer road there will now have multiple cars coming through fast and nothing can be done to help them. No room for road width expansion, sound blocking walls, etc. This will negatively affect their ~500k homes that are very close to the road. Plus this extra traffic will be a hazard to children who currently play freely in the neighborhood.
28	Fischer road is already too busy. Thousands of new speeding cars is not acceptable since my house backs to Fischer and I cross it on my daily walks. There does not need to be a east to west shortcut. I was told Washington county did not even require it. So stop the stupid plan for Fischer road.
29	Highway 99 will divert cars through the middle of all our houses on our narrow streets never designed for this. It just destroys why I moved here.

30	I adamantly oppose the cut through from Cordelia to 137th. It will harm the livability and safety of our Edgewater Community and is unnecessary for the King City Expansion.
31	I am COMPLETELY opposed to the Fisher Road extension through Edgewater on the Tualatin and am ready to do whatever I can to stop this
32	I don't see how you can extended Fischer Rd to Roy Rogers. Trying to turn off of hwy 99 to Fischer already backs up to the fire station light and to the bridge. I have sat through the turn light up to 4-5 times before being able to turn. How do you plan to fix that?
33	I don't support the expansion of Fischer Road at all, but would support the expansion of Beef Bend as I and many neighbors all agree that's much more logical and doesn't destroy our quiet neighborhoods and wildlife preserve/tualatin river. I don't like the idea of having two busy roads flanking SW 131st. I've lived on SW Jordan Way for 23 years now, and don't want yet another busy road and lack of safety for children. In my opinion no other street in our community should even be considered an option because it's not as efficient as Beef Bend, and would mean some families are displaced.
34	I was told this was the mayor's plan to create a road connection from Roy Roger to 99. There is no requirement like that anywhere. Start over and make connections that carry traffic to Beef Bend and only walking paths and bike paths going all the way through the middle of King City. Traffic should go along the city edge and not cut it in half.
35	If you are going to extend Fischer Road, it should be bicycles and pedestrians only. No new car traffic!
36	Keep motor vehicles away from natural areas.
37	Leave the traffic to Beef Bend rd. Not through 5 ravines that wi;; erode and need constant replacement.
38	Light timing on 99w
39	Macbeth is already incredibly dangerous to get in and out of. With increased traffic it would be SUCH a safety hazard for kids (many of whom play and ride bikes between Capulet and Macbeth) and drivers alike. That is not an appropriate point at which to push through a connector road. The sheer amount of parking that is done on Macbeth makes it impossible. It is already, essentially, a one way street.
40	No alternatives have been presented for the East side. Alternatives have been suggested but there has been no dialogue at the SAC, TAC, Planning Commission or City Council meetings. Your plan punches through a conservation easement. Your plan draws vehicles to a collector toward the river instead of drawing vehicles South to North. Your plan ignores the topography and crosses the ravines at their widest points. Your plan needs to shift collectors North, one crossing for vehicles and another, if two are necessary, for pedestrians and bikes. You need to communicate with the community about this and your reasons behind it because I for one am not buying it. Why was this map not presented at the tabling event on 6/9? Many want to know.
41	No extension to Fischer Rd. This would greatly increase speed and motor vehicle traffic in an area with many elderly residents that use the area for walking and

	many school age students walking to school. Existing Beef Bend road is easy access for vehicle transportation to and from Roy Rogers.
42	No Fischer extension!
43	No Fischer Road extension
44	No Fisher Rd. Going through
45	No roundabouts & too many traffic lights along Beef Bend. Roy Rogers could use them though since the speed limit seems too high along there until you get to the traffic light before Sherwood. Hard to turn in and get out of Al's sometimes.
46	No, you are continuing to insist on extending Fischer Road. We in this area do not want the traffic coming through our quiet neighborhood
47	Not sure why you think this is needed. You are about to ruin a very quiet neighborhood for what gain? There is zero economic gain to be had with this plan other than ruining a neighborhood. Next time a city manager wants to do things like this, he should not live in Lake Oswego and should live on the streets and neighborhood to be effected!!! I bet there would be a different plan!!!!!!!!!!!!!! We have lived in this neighborhood for over 20 years, and NEVER, repeat NEVER had we had an issue getting from point A to B on Beef Bend road or driving ALL THE WAY AROUND to Fisher Road!! Wow, what a horrible thing that is..... what a mile!!!! REALLY. I hope all are happy about absolutely destroying a neighborhood for what??? And spending what \$150M to do that!!!!!!!!!!!!!! Again, all those who want to support this, please as a show of faith, buy a home on the roads you plan to build on. I dare you!!! But you don't care because none of this affects you. It very much affects all of us! Very negatively. Not ONE SINGLE ADVANTAGE!!!!!!!!!!!!!!!!!!!!
48	Object to extending Fischer Road which is primarily a residential road for accessing Edgewater community homes. This will create additional traffic thru the neighborhood and thereby reducing the attractiveness and value of the homes as well as endangering youth and adults who use this road for walking, riding bikes, etc. Suggest you re-evaluate expanding Beef Bend Road even more than proposed, which is already used as a thoroughfare which does not split any neighborhoods.
49	Pay attention to where school are and the facts kids will be out
50	People already drive too fast in the area. Expanding Fisher and Cordelia Roads will bring in more traffic and cause safety issues for the current residents (especially young children and the elderly). My niece was almost hit twice because of people driving too fast. One of the incidents was on Sebastian St. And the other on Cordelia. We have too many families with young children as well as the elderly that need to be protected.
51	Plan causes too much environmental damage.
52	Please do not extend fisher road. A multi use path (bike/per) would suffice
53	Please do not extend Fisher Road. It puts many families at risk. There are many children, seniors and pets in this beautiful neighborhood. I urge the committee to take another look at other expansion options. I do support expansion just not by destroying existing neighborhoods with unnecessary traffic!!!!
54	Road changes would create Highway traffic in a true and confined residential area. Children, pest, bicycle riders for enjoyment - not a commuter type. Put a

	major rick to the people and impact parking and reduce property value..... what are you guys thinking. Would you like to live on Fisher???
55	Stop a Fischer extension or stop the King City expansion plan.
56	STOP THE FISCHER ROAD EXPANSION... enhance Beef Bend road instead. The price is tooo much in disrupting a family oriented neighborhood, dessimating river mead homes and wildlife and old growth trees..
57	Strongly oppose extending Fischer road. This will significantly impact the existing neighborhoods. Improvements should instead be made to Beef Bend road.
58	The amount of traffic that this will bring to our area by extending fisher will ruin our communities. The appeal that we have here is quiet and safe neighborhoods. With the extension of Fisher it will not be safe for our children, it will bring more crime, accidents and noise. I do not believe that you are thinking what is best for our community. Don't turn us into a California community. We like our quiet quaint neighborhoods. just the way they are.
59	<p>The best option would be for King City to build the roadway much closer to the northern side of Beef Bend Rd.</p> <p>The Tualatin River is a busy wildlife corridor, and we frequently see groups of deer, eagles, coyotes, beavers, and nutria. The roadway should be built with minimal impact to wildlife.</p> <p>Why not make Beef Bend Rd. a 4-lane roadway from Roy Rogers to 150th, and a 2-lane roadway from Capulet to 137th? As part of that plan Cordelia could be enlarged by taking part of the field.</p> <p>A Fischer Rd. extension doesn't make sense from ecological and financial standpoints. The topography, with large ravines and landslide vulnerabilities, is a disaster waiting to happen. Was the state of Oregon's map with orange coloration showing actual landslides been considered when the Fisher extension proposal to River Lane was made?</p>
60	The east - west alignment should be further to the north to minimize impact on creeks.
61	<p>The extension to the west is not thought out, not researched, and not feasible. These "concept plans" are pie in the sky ideas that are so far from reality. You have no idea what the actual terrain is beyond the tiny scope of what is now king city.</p> <p>This extension is showing a road through the conservation easement. Can't do that. It also shows a road that goes south right into the floodplain which will be covered by water for many months each year. Once again, you have no idea the terrain. Shift everything majorly north or just use existing beef bend. You're completely ignoring the topography and therefore will cause environmental and ecological damage to the area and existing wildlife.</p>
62	The Fischer Road extension will change the dynamics of the neighbor hoods and the local governments have a prioritized responsibility to existing citizens before considering future citizens. There is no benefit to the existing infrastructure. It will

	only decrease property values and increase traffic and exposure to "out of neighborhood" influences.
63	The HOA voted against Fischer extension. Why is this still happening? Is anyone listening to us?
64	The motor vehicle project and road expansions i do not support at all. First of all you plan to take out large green spaces that are home to many wild life like deer, eagles, beavers etc. Also they fact that these roads go right through people person homes and property is disgusting to me I can believe King City thinks its ok to take people homes from them!
65	The plans are fine for Beef Bend and west of Elsner Road. Ruining the neighborhoods and natural areas in the west part of the area, which your own documents identify as a rural character neighborhood, Rivermeade was a neighborhood for almost 20 years before King City was incorporated. That entire area currently has entirely sufficient roads to serve them. Rural areas by definition do not have grids of streets. There is not a need for a 3rd east-west street south of the Capulet line.
66	The power line field should no be breached to extend Fischer lane abs Capulet lane. This will add increased, unnecessary traffic to both neighborhoods on either side. Keep our neighborhoods safe!
67	There are already roads that go thru to RoyRogers. Ruining our neighborhoods will be the result of the waste of money. Who's paying you off? We'll find out.
68	There is no rationale included to indicate why a vehicle route was chosen. In some cases the proposed route would put a roadway within 10 feet of an existing resident's home. In many cases the proposed route would cut a current resident's land in half, rendering it useless and unsellable. There appears to have been no thought to terrain restrictions or environmental issues; it's merely a squiggle of lines on a flat surface that might have been drawn by a two year old. The extensive use of roundabouts is preposterous - they take up more land than a straight-on intersection, make it difficult for large vehicles (garbage trucks, fire trucks, large recreational vehicles) to navigate, and are no safer than a normal intersection. I believe current residents want a plan that works well for everyone, not something that forces many residents to give up their homes where they have lived for generations. To have worked on this for over two years and to spring a result like this on existing residents at the last moments of the project is more than unacceptable. In my way of thinking, King City has been sold a worthless bill of goods.
69	There is TOO MUCH NEW TRAFFIC proposed to go through existing neighborhoods. This isn't progress, it's little government trying to bully its way into neighborhoods. It's one thing to purchase vacant land and put in roads; it's another to carve up existing neighborhoods and scar it with connector roads. Take out the Fischer Road extension!
70	This is an unsafe proposal for all those families and communities on Fisher Rd and River Lane. Thereis no benefit to extending Fischer Rd when a main thoroughfare of Beed Bend can be expanded and already exists. There is no community support for this whatsoever

71	<p>This plan completely cuts up a thriving community that has been in place since the 50's, with second and third generation property holders. It eliminates existing homes like a tornado, devastating one home while leaving the neighboring home intact. Those homes remaining will just be homes, the community will be lost. But that's what King City wants. Rivermeade is in the way of their big city dreams. If your going to bulldoze our neighborhood like you did 131st then do it right! 137th should look like 131st. Sidewalks, bike paths, pretty, and a light at beef bend.</p> <p>The "Y" intersection on 137th (river on, Watson, and new collector segment) should be considered for a tragic circle.</p> <p>River Ln should be improved just like 131st. Parking isn't listed anywhere on the maps. This community uses street parking for private events. The park has some parking space, but making it public it will need official parking areas. With more homes going in, all streets listed in this map need to address street parking. King City has a reputation for not planning for appropriate parking leaving streets unsafe to drive as a 2 lane road. That is unacceptable!</p> <p>I own the property at 15a. A 3 way stop sign is all that is needed, a traffic circle is not necessary! A circle would make entering/exiting my home more difficult and a safety concern.</p>
72	<p>This plans major problem was created by King Coy council before the TSP even started. Making a requirement for a straight connection from 99W to Roy Rogers Rd created this monster that will destroy the Edgewater neighborhood.</p>
73	<p>This will cut us in half if Fischer is extended as it was never designed to take all this new traffic from 99 and Roy Rodgers off of Beef Bend Road.</p>
74	<p>Too much traffic will cut through the heart of the city to get away from overcrowded highway 99 under this plan. Start again, and listen to current residents next time. I heard the mayor shut down our HOA elwhen we tried to get involved and that is just dead wrong.</p>
75	<p>Use Beef Bend - forget about Fischer Road extension and all roads in the proposed transportation study that disrupt existing residents.</p>
76	<p>We do NOT need the Fischer extension!</p>
77	<p>We do not want our neighborhood destroyed by 10000 cars a day short cutting from Roy Rogers to 99w. This plan was NOT adequately discussed with my Edgewater development neighbors. FAIL! Shame on you, the mayor, and council!!!!</p>
78	<p>We live on Fischer. I have 17 windows facing Fischer. We have a cement wall surrounding our backyard. King city has done NOTHING in environmental impact to the people of Edge water our home the smell of exhaust in our kitchen and front rooms. The sounds of vehicles racing down Fischer and right in front of our house. They do no policing. We have 4 cameras on our house. The speeding in so crazy. The city looks the other way. They want no issues on Fischer because they want the expansion. We need help!!!! They have done nothing but ignore us. This is our only life our only home. This Fischer ext will destroy our HOA our neighborhood and our house. We wont be able to live here. The smell alone is crazy. HELP!!!!!!!!!!!!!!</p>

79	Yes, how about walking my children to and from Deer Creek and having to cross a busy new street that was not needed. This is craziness and will destroy the neighborhood we moved here for, to start and raise a family.
80	Yes. You obviously aren't concerned by metro's ordinance that states King City shall protect, to the maximum extent possible, the land trust acreage at the end of River Ln. Considering the location of the northeast corner of said acreage, the Fischer Rd. extension would have to cut straight across the entire property. Not very minimal.
81	<p>Yes.</p> <p>First, regarding Project ID 7, educate yourselves on the Bankston property location and Metro Ordinance No. 18-1427 which states that "The Columbia Land Trust holds a conservation easement over portions of the Bankston property, which King City's concept plan identifies as the intended location for a key transportation facility serving the expansion area. King City shall work with the Columbia Land Trust to protect, to the maximum extent possible, the portion of the Bankston property covered by the conservation easement." Your map fails even to simply identify the location of the Bankston property and your draft TSP fails to discuss the Metro Ordinance requirement or even attempt to justify ignoring Metro and the local community interest in continuing protection of the area from development impacts. Then you unbelievably continue the error from the Concept Plan by again routing an east-west alignment through the middle of the protected Bankston property. Stubbornness or arrogance, I'm just not sure how I would classify this failure.</p> <p>Second, regarding Project ID 15, 137th is located within the rural character neighborhood with lower housing densities and should not be designated as a collector. It should be designated a neighborhood collector, similar to Royalty Parkway.</p>
82	Your plan shows no understanding of neighborhoods or topography of the area. These suggested roads will require the engineering of massive bridges and other extremely expensive projects. This plan needs to be revisited.
83	<p>Your survey is lacking relevant information is that pertinent to everyone filling out the survey.</p> <p>First, there is no mention of the Columbia Land Trust easement (12.82 acres) that has been set aside along the Tualatin River. A Fischer Rd. extension that completely ignores the unstable landslides along the five ravines is not only irresponsible but reckless.</p> <p>Alternatives of the roadway, including both bicycle and pedestrian pathways should be focus north toward Beef Bend Rd. and not the lower southern route recommended.</p> <p>So many different recommendations have been given by qualified experts (traffic engineers, civil engineers) for alternatives but they have not been addressed. There is no requirement for an east/west roadway by Metro, Washington Co. or the state of Oregon.</p> <p>Clearly, there is large public opinion against this proposed Fischer Rd. extension along with the Tualatin Riverkeepers.</p>

Question 4: Is there anything else we should consider with pedestrian improvements?

1	1. The Fischer Rd and Capulet Ln extensions should be bike/walking paths instead of roads. These paths should include lights as well.
2	A new pathway from the southern end of River Lane to King City Park is not acceptable. The Rivermeade Community owns this private land and would never allow a public pathway through their private park.
3	Adding a bus route to Fischer Rd would not add enough benefit to counteract the negative impact to the community.
4	Any additional pedestrian projects associated with the expansion of Fischer road.
5	As a handicapped person that uses a mobility scooter, I encounter several places where sidewalks end without a transition to the road. Sidewalks that severely raised or blocked.
6	At the Community Park event on Wednesday, June 9th, Mike Weston repeatedly stated there were alternatives to extending Fischer Road. It is clear on this website that he was lying. Glad I called you out on that at the park! We will continue to spread the word about your deceit. See you next time.
7	Connect the king city phases with per/bike path not cars/roads. This will increase the value of our neighborhoods and put our city on the map! Do not extend fisher road.
8	don't put paths in areas next to river that flood every winter.
9	Fischer extension causes too much environmental damage.
10	For both ped/bike a key input point was separated access from motor vehicles, instead most of the neighborhood/local streets simply have sharrows - nice job! Again going back to a basic tenet of making safe, convenient (and attractive) alternative access to goods/services let's only include a couple of shared use paths. I don't see any discussion of nature trails either. Is this the most innovative design we can come up with?
11	Geography makes no sense for pedestrian projects. The entire concept would give King City the shape of a dumbbell - King City and the cluster of buildings at Roy Rogers. Plus, the river floods every year and there is no way to build there.
12	I dont think this is needed in the areas shown on the map, the roads are rural and do not need paths and sidewalks. By doing this you would again be taking property away from home owners.
13	I hate the whole plan.
14	I realize you're looking to a future where everyone walks from one place to another, but that isn't the case now, and you're ignoring a vast and vocal segment of the existing population here. I know of very few people who are going to spend their time and energy walking from one end of Kingston Terrace to another. Like the roads, some of your proposed pedestrian routes run right through existing residents' yards. If this is 'progress', I want no part of it.
15	I said NO to the road changes and that would then apply to all else.
16	I'd like to know what safety precautions will be taken with these improvements such as lighted pathways, law enforcement access, etc.
17	If you are going to extend Fischer Road, it should be bicycles and pedestrians only. No new car traffic!
18	Just make places for people to travel on the main arteries safely.
19	Low impact natural areas
20	Make the cut through from Cordelia to 137th a bike and pedestrian only (no vehicles.) This will link the areas with out harming Edgewater.

21	Most
22	Move the pedestrian crossing further north toward Beef Bend Rd. and align it with the alternative crossing off of 137th.
23	No Fischer extension!
24	No Fischer extension.
25	No need for pedestrian projects beyond current stretch of Fisher Road
26	No, it moves on Fischer Road.
27	Nothing works if there is a Fischer extension.
28	Nothing wrong with the walkways we have now. Do not see a need for these 'so-called improvements'!
29	Older residents in the area. Too many speeding cars to be safe
30	See above.
31	Stop a Fischer extension or stop the King City expansion plan.
32	STOP THE FISCHER ROAD EXPANSION. There are other less destructive options.
33	Strongly oppose extending Capulet st. I believe currently there are enough pedestrian walkways.
34	Take advantage of existing natural greenspace features (wetlands, streams, rivers, steep terrain, naturally vegetated areas) and locate pedestrian paths along the perimeter of these where possible rather than crossing through them.
35	The east west trail should be connected from 99W to Roy Rogers Road. The trail over highly eroded areas should be planned so as not to make erosion worse and should be retrofitted to mitigate existing erosion.
36	The HOA voted against Fischer extension. Why is this still happening? Is anyone listening to us?
37	The pedestrian projects although nice, should be scaled according to the above street improvements.
38	The pedestrian walkway should parallel the northern route along Beef Bend Rd.
39	The plans are fine for Beef Bend and west of Elsner Road. Ruining the neighborhoods and natural areas in the west part of the area, which your own documents identify as a rural character neighborhood, Rivermeade was a neighborhood for almost 20 years before King City was incorporated. That entire area currently has entirely sufficient roads to serve them. Rural areas by definition do not have grids of streets. There is not a need for a 3rd east-west street south of the Capulet line.
40	The private community park showing a public trail can not happen unless you make the whole park public and to do that you'll need to buy the whole property from the residents at a fair market price. Again parking will need to be addressed. Without designated parking, bike lanes get blocked, home owners have to deal with being blocked and property damage. Also River In will need to be improved like the rest of 137th.
41	There are too many problems and too much traffic to be safe with this TSP plan.
42	To much traffic off 99 and Roy Rodgers.
43	Too many busy streets for outsiders to drive fast down our streets.
44	Visibility for pedestrians should be a priority. Crossing streets with increased traffic needs to be easy and safe. Safety needs to be the priority.
45	When installing pedestrian walks, trails, pathways, please make them level from side to side. It is very difficult to use a manual wheelchair or even some strollers when the walkways are tilted. Thank you.

46	<p>Would prefer to see a multi-use path system connecting 131st and Roy Rogers. What are the "enhanced bike/ped" crossings of 99W that are proposed and how will that occur without further impacting traffic flow?</p> <p>It seems like the most natural path for peds from King City Plaza to the town center is Royalty to Morocco to Jordan to MacBeth to Capulet and then due west from there. The more extensive ped improvements should account for that shortest path.</p>
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Question 6: Is there anything else we should consider with bicycle improvements?

1	<p>1. Instead of Fischer Rd and Capulet Ln getting extended. They should become bike/walking paths (with lights) connecting the east and west sides.</p> <p>2. There should be a bike path that goes from Roy Rogers all the way to HWY 99</p>
2	A bike facility with or without a new roadway through the Columbia Land Trust conservation area is not acceptable.
3	A couple of shared-use paths, the rest of the system in-street with vehicles? Then add round-abouts (mini or major) how many of these have you ridden through? As a bike commuter for much of the last 15 years - please go out and see how much fun round-abouts are. I haven't seen the TSP public input summary, but the Kingston Terrace input included a key request for separated access.
4	Again, parking will affect bike lanes. Westside trail will need to be built out and I don't see the pedestrian/bike bridge across the Tualatatin river listed in the map. This will bring in more traffic, plus Beef Bend already sees lots of bikers as it's in the scenic hwy maps for bikes. More homes more bikes, plus lots and lots of kids. My son walked and road his bike to school at deer creek. Families should be able to safely get to school walking and riding bikes with the road improvements.
5	Any additional bicycle projects associated with the expansion of Fischer road.
6	At the Community Park event on Wednesday, June 9th, Mike Weston repeatedly stated there were alternatives to extending Fischer Road. It is clear on this website that he was lying. Glad I called you out on that at the park! We will continue to spread the word about your deceit. See you next time.
7	bike paths are good to have but not infringing on private property
8	Clear visibility for bikes and crossings.
9	Do NOT extend Fischer Road.
10	Fischer extension causes too much environmental damage.
11	For the amount of people that would use them is not worth the money spent. I very rarely see anyone using the ones already on Fischer rd.
12	I dont even like the bike improvements because all the cars off Roger's and 99w will make it all unsafe.
13	I'd like to know what safety precautions will be taken with these improvements such as lighted pathways, law enforcement access, etc.
14	If it travels somewhere else besides Fischer Road. Going up 131st to Beef Bend makes sense
15	If you are going to extend Fischer Road, it should be bicycles and pedestrians only. No new car traffic!

16	It's not safe for bikes to be on the road.
17	Just make places for people to travel on the main arteries safely.
18	More bike paths to connect the new construction phases. Do not extend fisher road!
19	Need bike lanes
20	No Fischer extension!
21	No need to extend bicycle projects beyond current stretch of Fisher Road
22	Not enough users at the moment and too costly!
23	Not safe enough
24	Not safe. Too much traffic.
25	Nothing works if there is a Fischer extension.
26	On the proposed Cordelia to 137th cut through, I suggest a bike and passenger cut out only, no vehicles. Making Fischer a through way down the middle of Edgewater will hurt the existing neighborhood.
27	Same answer as above.
28	Same as above
29	See above! Move the bicycle crossing north toward the roadway paralleling Beef Bend Rd.
30	See above.
31	Stop a Fischer extension or stop the King City expansion plan.
32	STOP THE FISCHER ROAD EXPANSION. STOP. Listen to and respect the homeowners who will be affected. Reconsider your position.
33	The bicycle path should also parallel Beef Bend Rd., cross the BPA field, and run behind Deer Creek Elementary.
34	The HOA voted against Fischer extension. Why is this still happening? Is anyone listening to us?
35	The plans are fine for Beef Bend and west of Elsner Road. Ruining the neighborhoods and natural areas in the west part of the area, which your own documents identify as a rural character neighborhood, Rivermeade was a neighborhood for almost 20 years before King City was incorporated. That entire area currently has entirely sufficient roads to serve them. Rural areas by definition do not have grids of streets. There is not a need for a 3rd east-west street south of the Capulet line, or for pedestrian and bicycle traffic to go through private property.
36	The same holds true for bicycle projects as pedestrian projects, since most follow the same routes.
37	Trails should be connected east to west and should have some sections off the roads.
38	Would prefer to see a multi-use path system connecting 131st and Roy Rogers. Given that this is all new construction/planning, would prefer bike treatments are dedicated instead of shared.

	What are the "enhanced bike/ped" crossings of 99W that are proposed and how will that occur without further impacting traffic flow? Would recommend RCUT-type treatments.
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Question 8: Is there anything else we should consider with transit improvements?

1	Add a transit center at the new Town Center, and bus service along Beef Bend Rd. to 99W. Why not create neighborhoods with no vehicles and have a free parking zone instead?
2	Again. People's safety. I chose to live in King City for the quiet neighborhood that it is and the fact that it didn't have public transportation in the neighborhood. Expanding public transportation brings more crime and homeless people, which often comes with drug use and unsanitary conditions.
3	All of your proposed transit stops are on the periphery of the area. That means anyone dependent on mass transit will have to walk, bicycle, or drive somewhere to catch a ride. Tri-Met has stated in the past that they have no intention of providing service to an area until there is significant population to make it profitable. How can you possibly plan for transit stops when no service exists, and likely won't exist for another twenty years?
4	At the Community Park event on Wednesday, June 9th, Mike Weston repeatedly stated there were alternatives to extending Fischer Road. It is clear on this website that he was lying. Glad I called you out on that at the park! We will continue to spread the word about your deceit. See you next time.
5	Buses are great and are going to help reduce cars/emissions, increase safety and allow community members to get to services. Do not extend fisher road.
6	Busses are never full and a lot to empty even now. Not worth the money on this one. There a lot of elderly in the community and this brings unwanted strangers into their communities. The situation is getting worse already without more transit
7	Expansion of transit to the Terrace area...assuming this means up and down Roy Rogers not E/W connectivity, right? That seems to be a missing link. Shelters with real time bus arrival information would be nice along with perhaps bike lockers?
8	I do not support any transit projects associated with the expansion of Fischer Road.
9	I would like for the people who need to take the bus to have nice bus stops with shelter from rain.
10	If you are going to extend Fischer Road, it should be bicycles and pedestrians only. No new car traffic!
11	improving transit on public roads is good
12	Keep the buses on the major streets. Seriously, the plan involves disrupting neighborhoods and taking people's land. This is criminal. HEAR people's opinions and have a conscience about your decisions.
13	Keep VERY NORTH of natural areas and wildlife.
14	More transit, less traffic.
15	No Fischer extension!
16	No Fischer extension! We need a better and safer plan for our neighborhood.
17	Not coming through Fischer, but traveling to KT down Beef Bend.

18	Not enough transit improvements along Beef Bend.
19	Nothing works if there is a Fischer extension.
20	Poor plan, not enough.
21	See above
22	Stop a Fischer extension or stop the King City expansion plan.
23	STOP THE FISCHER ROAD EXPANSION. Stop, stop, stop.
24	The bus lines should run through the Capulet road, not further south.
25	The HOA voted against Fischer extension. Why is this still happening? Is anyone listening to us?
26	Transit hubs should avoid wooded areas, creeks and sensitive habitats.
27	TriMet will dictate major transit hubs once a sufficient number of rooftops are available. What I don't see is any last-mile considerations to potential stops. How do you envision direct ped/bike access?
28	We live on Fischer. I have 17 windows facing Fischer. We have a cement wall surrounding our backyard. King city has done NOTHING in environmental impact to the people of Edge water our home the smell of exhaust in our kitchen and front rooms. The sounds of vehicles racing down Fischer and right in front of our house. They do no policing. We have 4 cameras on our house. The speeding in so crazy. The city looks the other way. They want no issues on Fischer because they want the expansion. We need help!!!! They have done nothing but ignore us. This is our only life our only home. This Fischer ext will destroy our HOA our neighborhood and our house. We wont be able to live here. The smell alone is crazy. HELP!!!!!!!!!!!!!!
29	What entity has stated (in writing) that a new east-west road is required? Leave the existing residents alone. No one wants new roads going through their neighborhoods. Use allotted finds to widen and improve Beef Bend Road.
30	Yes bus routes need to be extended and safe to access along Beef Bend road. The main road needs the most work to handle the heavy traffic for all users. It can't be a pretty family road, its the heavy lifter the semi truck while all the new side roads are the family sedans.
31	Yes. Further insulting local interest regarding the Bankston property and Metro Ordinance No. 18-1427, you identify a potential transit route through the middle of the protected Bankston property.
32	you are planning to destroy green spaces, animals land and an amazing neighborhood and I do not agree with this at all. hundreds of wildlife animals will be displaced if you do this.and you will be taking homes and property from people that do not want that to happen, people that have lived in this neighborhood for over 50 years.
33	You can call it whatever you choose, but it's still RIVERMEADE, and we will continue to oppose with every means possible any plans that would effectively destroy the character and integrity of the neighborhood for the sake of an ill-conceived, under-funded and overly ambitious plan of development.
34	Your street grid system is 600 feet from one street to another is certainly an overkill. Focus should be less on automobiles and more on parks, green ways, wildlife corridors, and open spaces instead of 36 feet wide roadways. Do not make an asphalt, concrete environment!!

Appendix B: Tabling Questionnaire Comments

Below are the unedited comments participants submitted through the questionnaire.

Is there anything else we should consider with motor-vehicle improvements?

- The fisher road extension is going to severely impact the homes in Edgewater that live on 131st to the end Fisher. The road is too small to handle the large amount of traffic through there. There is no room to widen, build sound blocking walls, etc.
- Fischer should not be the main connector. Nothing you could possibly do would keep the neighborhood safe.
- There are better ways to control traffic. Mini roundabouts are not enough. Speed isn't controlled now, none of the improvements are encouraging lower speeds.
- I do not support extending fisher beyond the current boundary of the Edgewater neighborhood.
- I need more information.
- To use traffic calming to keep speed low. Have it friendly enough to support new city center.
- It's perfect just the way it is.

Is there anything else we should consider with bicycle improvements?

- Proposed bicycle options seem ok.
- It's perfect just the way it is.

Is there anything else we should consider with pedestrian improvements?

- Edgewater cannot handle the amount of through traffic, people and cars on Fisher Road if extended.
- Must be built with pedestrian safety in mind.
- Better visibility for street crossings.
- Increasing traffic on Fisher will erode pedestrian safety. Edgewater is currently walkable, increased traffic will harm that.
- It's perfect just the way it is.

Is there anything else we should consider with transit improvements?

- It's perfect just the way it is.

Is there anything else you would like to add?






- I like the improvements overall, but we are really not considering those houses with my neighbors who live so close to the road in Edgewater. That part of Fisher simply cannot handle large amounts of cars and people without affecting those people greatly.
- No Fisher Road extension
- Fisher Road speed isn't controlled now even with the addition of a speed flasher. There needs to be significant changes to that if you want it to be a through street. Safety is more important than expansion.
- My main concern is pushing Fisher beyond Edgewater. It will destroy our neighborhood with increased traffic. I support widening Beef Bend with feeders into King City.
- I purchased a home (my first home) in Edgewater after two years of careful consideration of dozens of criteria to meet the needs and desires of living in an area/neighborhood to be comfortable in. I'm not speaking for anyone else, but if I want to travel to a different area or town, I take the best route that is available. I don't wake up and decide one day that I want to PLOW THROUGH someone else's home/area/comfortable place to live and make things "better" for others while making things worse for the folks that were there first. Where is the consideration for the existing homeowner? First, we survive a global pandemic, then our livelihoods are swept out from under us. Unreal. Pretty sure there are SEVERAL alternative routes to explore before condemning/mutilating the beautiful community which is Edgewater at Fisher Road. Whoever you folks are, ask yourselves, how you would feel if this unnecessary expansion were happening in your front yard? I beg you to examine options that affect the very least amount of people and families. There's an awful lot of green space out there...how about looking into choosing a better path.

Appendix C: Comments Received by City

Below are the unedited comments community members submitted through the website comment form or emailed directly to City staff.

1	i thought King city was a 55 and over community. what happens with all these new people moving in. also since we had to pay an assessment fee to move to King city when we bought our house are these new people going to pay the same assessment. if not why. that would be discrimanatory to single out us folks who already had to pay. peace. have a nice day
2	Just to voice my great concern- I live in the Edgewater community that will be impacted by this extension. This is a community of FAMILIES. We have a life style the includes - walking, animals ,chidden and Bikes, all sharing the sidewalks and streets. A major highway going straight through this community would be a disaster. The streets were never created for this use, the houses too close to the streets , and the life style does not allow for this use of streets. Please stop this insanity. No through street for Fischer. Thank You M. Liserani - 17211 SW Montague Way 97224

3	<p>'ve been a King City resident for 7 years. We were attracted here due to the somewhat secluded nature of the community. There's really no reason to be on our roads unless you live here. Making Fisher Rd a throughway is a terrible idea. #1, it's not necessary; Bull Mountain, Beef Bend and Roy Rogers provide plenty of access. #2 the cost of running a road through a number of private properties would be substantial due in no small part to the lawsuits filed by long time homeowners who would be displaced. Presently I see children walking and biking to Deer Creek elementary. Having Fisher Rd as the thoroughfare would hamper the idea of this being safe. I just don't see a reason for it. The existing roads provide ample access and Beef Bend could be widened.</p> <p>Extending Elsner Rd to Kummrow Rd to would affect less property owners, be far less disruptive to the established communities and likely much less expensive while providing and equally if not better and safer routing.</p>
4	<p>How about adding how long the online survey will be open on the front page? Had to go to Events to find out.</p> <p>When you use transportation terms of art "Complete Streets" - maybe explain what that means - most , I'm guessing, don't have a clue.</p> <p>I realize DKS's memo is to the project team, but since you've made it public - who in the community can explain "financially constrained.."? along with several other transportation terminology.</p> <p>I understand the Highlands community is just one of many, but to deny 300+ property owners access to goods/services to the east other than the Morroco Land goatpath - could you consider slightly better connectivity to KCCA streets for peds/bikes/golf carts? How about access across Pacific Highway to goods/services at Royalty/Hwy 99 for bikes/electric carts - presumably we're all trying to move away from single-occupant vehicles - we can do better can't we?</p>
5	<p>Good Afternoon Michael,</p> <p>I attended the June 9 Open House in the park, hoping to get some answers about the Fischer extension from Cordelia to 137th.</p> <p>The only answers I got were vague, not really answers.</p> <p>I did get a list of the Draft Aspirational Project list and it does list that exact area; 7;7e.</p> <p>Although the other improvements in Edgewater along Fischer are fine, I am very much opposed to this cut through from Cordelia to 137th.</p> <p>It will seriously demean the livability of our neighborhood in Edgewater as it will only encourage more pass-through traffic.</p> <p>We bought into this neighborhood as is. I do support planned growth, it's a must. But that growth can happen without harming our existing Edgewater community.</p> <p>I hope you are taking neighbor feedback into consideration.</p> <p>Thank you for your attention,</p>
6	<p>I took a quick look at the information provided and the survey questions. I am supportive of fewer creek and river crossings. I feel at this time I cannot give the survey/feedback the time required.</p>

	<p>I do feel we all need to be aware of the pollutants added to our creeks and surface water in addition to the degradation of the surrounding land.</p> <p>https://en.wikipedia.org/wiki/Rubber_pollution</p>
7	<p>King City Park. Something to consider allocating funds to or coordinating with other agencies. The erosion will continue until rectified.</p> <div> <div>  Mike Meyer 2 days ago </div> <div> <p>King City Park. Something to consider allocating funds to or coordinating with other agencies. The erosion will continue until rectified.</p>  <div>  Like </div> <div>1 Reply</div> <div> <div>  Rachael 1 day ago </div> <div> <p>Another reason not to plan a road along the river bank!</p> <div> 1 Like  Like Reply </div> </div> <div>Write a reply...</div> </div> </div> </div>

APPENDIX C. FRAMEWORK DOCUMENT



FRAMEWORK DOCUMENT

DATE: May 13, 2020

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement
Framework Document (Deliverable 3A)

Project #20020-002

This memorandum summarizes planning documents, policies, and regulations that will apply to the King City Transportation System Plan (TSP) as it is developed through this process. The primary documents that guide TSP development, and updates within the Portland Metro area are:

- The Transportation Planning Rule (TPR) (Oregon Administrative Rule (OAR) 660-012),
- The Oregon Transportation Plan and State Modal Plans,
- The Regional Transportation Plan (RTP) and Regional Transportation Function Plan (RTFP), and
- Local TSPs (the Washington County TSP will provide guidance to King City)

In particular, the RTFP lays out a process that draws on information from a technical system analysis and from stakeholder input to address transportation needs through the year 2040. As solutions and strategies for addressing transportation needs in King City are proposed in later work tasks, a cross-check will be required to ensure compliance and coordination with the state and regional plans, policies, and regulations.

TRANSPORTATION SYSTEM PLANNING IN OREGON

Transportation system planning in Oregon is required by Statewide Planning Goal 12 – Transportation¹. The Transportation Planning Rule (TPR), OAR 660-012, describes how to implement Statewide Planning Goal 12 ².

¹ Statewide Planning Goals: <https://www.oregon.gov/lcd/OP/Pages/Goals.aspx>

² Transportation Planning Rule:
<https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3062>

By implementing Statewide Planning Goal 12 (Transportation), the TPR promotes the development of safe, convenient, and economic transportation systems that are designed to reduce reliance on the automobile. Key elements include direction for preparing TSPs under OAR 660-012-0015 through 0040.

OAR 660-012-0035 describes the evaluation and selection of transportation system alternatives in the TSP. 660-012-0035(2) allows jurisdictions to evaluate alternative land use designations, densities, and design standards to meet local and regional transportation needs.

OAR 660-012-0045 describes implementation of the TSP. It includes the requirement for each local government to amend its land use regulations to implement the TSP. It also requires local government to adopt land use or subdivision ordinance regulations consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. This policy is achieved through a variety of measures, including access control measures, standards to protect future operations of roads, and expanded notice requirements and coordinated review procedures for land use applications. Measures also include a process to apply conditions of approval to development proposals, and regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP.

Specifically, the TPR requires:

- The state to prepare a TSP, referred to as the Oregon Transportation Plan (OTP);
- Metropolitan Planning Organizations (MPOs) to prepare a Regional Transportation Plan (RTP) that is consistent with the OTP (the Metro RTP³ applies to King City); and
- Counties and Cities to prepare local TSPs that are consistent with the OTP and RTP.

As the guiding document for local TSPs, the OTP⁴ establishes goals, policies, strategies and initiatives that address the core challenges and opportunities facing transportation in Oregon. The goals and

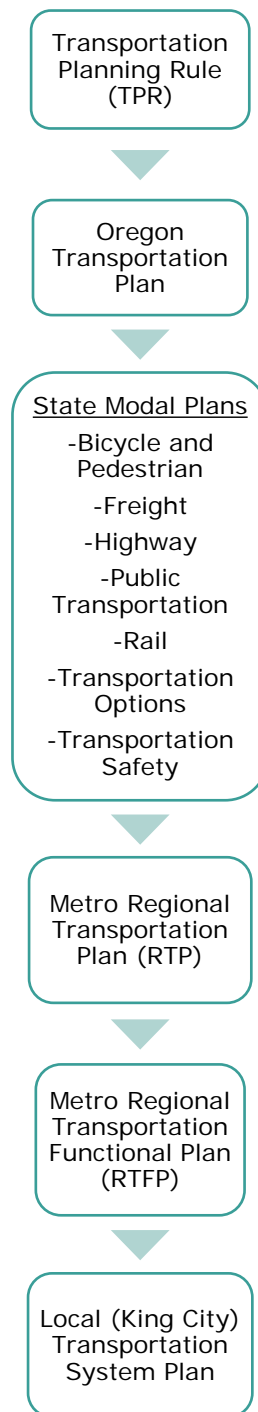


FIGURE 1: GUIDING DOCUMENTS FOR THE TSP

³ Metro Regional Transportation Plan: <http://www.oregonmetro.gov/index.cfm/go/by.web/id=25038>

⁴ Oregon Transportation Plan: <http://www.oregon.gov/ODOT/TD/TP/OTP.shtml>

policies are further implemented by various modal plans, including the Bicycle and Pedestrian Plan, Freight Plan, Highway Plan, Public Transportation Plan, Rail Plan, Transportation Options Plan, and the Transportation Safety Action Plan. Each of the OTP's seven goals are defined by more specific policies and strategies.

MPOs are established to address federal planning requirements. A primary work product of an MPO is the RTP. In addition, the TPR requires local agencies within the MPO to adopt Regional Transportation System Plans (RTSP) to address State transportation planning requirements. For most Oregon MPOs, the RTP serves as the RTSP. The TPR also directs local agencies within the MPO area to have adopted local TSPs that are consistent with the regional plan.

What this means for the King City TSP:

The TSP must address the policy and regulatory requirements included in the OTP, State Modal Plans, TPR and RTP, as described in the ODOT TSP Guidelines and the specific policy documents.

METRO REGIONAL TRANSPORTATION FUNCTIONAL PLAN

Metro's Regional Transportation Functional Plan⁵ (RTFP) directs how King City should implement the RTP through the TSP and other land use regulations (as shown in Figure 1). The RTFP codifies transportation planning and implementation requirements that local plans must comply with to be consistent with the RTP. If a TSP is consistent with the RTFP, Metro will find it to be consistent with the RTP⁶.

The RTFP provides guidance on several areas including transportation design for various modal facilities, system plans, regional parking management plans and amendments to comprehensive plans. The following directives specifically pertain to local TSPs:

- Regional and state transportation needs identified in the 2040 RTP should be included in local plans
- Local needs must be consistent with RTP in terms of land use, system maps and non-single occupancy vehicle (SOV) modal targets
- When developing solutions, local jurisdictions must consider a variety of strategies, in the following order:
 - TSMO (Transportation System Management Operations) including localized Transportation Demand Management, safety, operational and access management improvements
 - Transit, bicycle and pedestrian projects

⁵ Metro Regional Transportation Functional Plan: <http://www.oregonmetro.gov/index.cfm/go/by.web/id=274>

⁶ The 2012 RTFP does not reflect the most recent Regional Transportation Plan.

- Traffic calming
- Land use strategies in OAR 660-012-0035(2)⁷
- Roadway connectivity that include pedestrian and bicycle facilities
- Motor vehicle capacity projects
- Local jurisdictions can propose regional projects as part of the RTP process
- Local jurisdictions can propose alternate performance and mobility standards, however, changes must be consistent with regional and statewide planning goals
- Local jurisdictions must include performance measures for safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit mode shares
- Local parking regulations must be consistent with the RTFP

What this means for the King City TSP:

The TSP will address the policy and regulatory requirements in the RTFP, as described above, to ensure that the TSP is consistent with Metro's RTP.

DEFINING THE TRANSPORTATION SYSTEM

The following sections summarize roadway classifications and land use designations for areas of King City derived from the identified documents. This information ultimately informs the adopted standards, regulations, and policies that apply to the multi-modal transportation system in King City.

KING CITY AND WASHINGTON COUNTY ROADWAY CLASSIFICATIONS

To manage the roadway network, the roadways are classified based on a hierarchy according to the intended purpose of each road. From highest to lowest intended usage, the classifications are typically arterials, collectors, neighborhood routes and local streets. Roadways with a higher intended usage generally provide more efficient traffic movement (or mobility), while roadways with lower intended usage provide greater access for shorter trips to local destinations such as businesses or residences.

⁷ This section of the Transportation Planning Rule requires Metro area jurisdictions to evaluate land use designations, densities, and design standards to meet local and regional transportation needs.

The existing classification of streets in King City depends on jurisdiction and is either defined in Washington County's TSP or the City's Comprehensive Plan. The following classifications apply to King City:

- **Arterial roadways** are intended to serve as the main travel route through the City. These roadways serve the highest volume of motor vehicle traffic and are primarily utilized for longer distance regional trips. In King City, the County has classified SW Roy Rogers Road and SW Beef Bend Road as arterials.
- **Collector roadways** often connect the neighborhoods to the arterial roadways. These roadways generally provide more direct property access than arterial roadways, while providing efficient through movement for local traffic. In King City, the County has classified portions of SW 131st Avenue, SW Fischer Road and SW Elsner Road as collectors.
- **Neighborhood Routes** (or sometimes referred to as Neighborhood Collector or Minor Collector roadways) are similar to collector streets in that they provide greater accessibility to neighborhoods and provide efficient through movement for local traffic. While some may interpret the term "neighborhood" to imply residential land use, this classification refers to a level of connectivity for any land use type, including commercial and/or industrial land uses. Neighborhood routes are not required to provide bicycle facilities. Therefore, routes with relatively low traffic volumes, where bikes could travel comfortably in a shared lane environment, would be designated neighborhood routes. In King City, portions of SW 131st Avenue (south of SW Fischer Road), SW Fischer Road (west of SW 131st Avenue), SW 116th Avenue and SW Royalty Parkway are neighborhood routes.
- **Local streets** provide more direct access to residences without serving through travel. These roadways are often lined with residences and are designed to serve lower volumes of traffic at slower speeds. In King City, any street not designated as either an arterial, collector, or neighborhood route is considered a local street.

What this means for the King City TSP:

The functional classification system for the City will be revisited and revised, if necessary.

ODOT CLASSIFICATIONS FOR OR 99W

Oregon Highway Plan (OHP) Goal 1, Policy 1A (State Highway Classification System)

categorizes state highways for planning and management decisions. Through King City, OR 99W is classified as a Statewide Highway. Statewide Highways typically provide inter-urban and inter-regional mobility and provide connections to larger urban areas, ports, and major recreation areas that are not directly served by Interstate Highways. A secondary function is to provide connections for intra-urban and intra-regional trips. The management objective is to provide safe and efficient, high-speed, continuous-flow operation. In constrained and urban areas, interruptions to flow should be minimal.

What this means for the King City TSP:

While this policy places importance on the efficient travel of through motor vehicle trips on OR 99W, the policy must still be balanced with other goals and objectives of the Oregon Transportation Plan to ensure its multi-modal intentions are addressed.

State Highway Freight System: OHP Goal 1, Policy 1C addresses the need to balance the movement of goods and services with other uses. It states that the timeliness of freight movements should be considered when developing and implementing plans and projects on freight routes. Through King City, OR 99W is classified as an Oregon Freight Route and Federal Truck Route.

What this means for the King City TSP:

Transportation solutions must be accommodating to the Truck Route designation. Federal Truck Routes require 12' travel lanes.

Reduction Review Routes: ORS 366.215 requires review of all potential actions that will alter, relocate, change or realign a Reduction Review Route that could result in permanent reductions in vehicle-carrying capacity. Reduction of vehicle-carrying capacity means a permanent reduction in the horizontal or vertical clearance of a highway section, by a permanent physical obstruction to motor vehicles located on useable right-of-way subject to Commission jurisdiction, unless such changes are supported by the Stakeholder Forum. If ODOT identifies that an action may result in a reduction of vehicle-carrying capacity, a Stakeholder Forum (consisting of at a minimum, a bicycle representative, pedestrian representative, a trucking industry representative, a mobile home manufacturing representative, an oversize load freight representative, a representative of automobile users, and a representative from any affected city, county or Metropolitan Planning Organization) will be convened to help advise ODOT regarding the effect of the proposed action on the ability to move motor vehicles through a section of highway. Through King City, OR 99W is classified as a Reduction Review Route.

What this means for the King City TSP:

Transportation improvements recommended on OR 99W must include a record of the proposed roadway dimensions and enough detail to allow for a review of Vehicle-Carrying Capacity during future design.

Lifeline Routes: OHP Goal 1, Policy 1E designates routes for emergency response in the event of an earthquake, categorized as Tier 1, 2 and 3. The routes identified as Tier 1 are considered to be the most significant and necessary to ensure a functioning statewide transportation network. A functioning Tier 1 lifeline system provides traffic flow through the state and to each region. The

Tier 2 lifeline routes provide additional connectivity and redundancy to the Tier 1 lifeline system. The Tier 2 system allows for direct access to more locations and increased traffic volume capacity, and it provides alternate routes in high-population regions in the event of outages on the Tier 1 system. The Tier 3 lifeline routes provide additional connectivity and redundancy to the lifeline systems provided by Tiers 1 and 2. Through King City, OR 99W is classified as a Tier 1 lifeline route.

What this means for the King City TSP:

The City could use the TSP to designate local lifeline routes, if necessary, to ensure their intended function is considered in system investment and management decisions.

SUMMARY OF ODOT CLASSIFICATIONS FOR OR 99W

The TSP will support the existing classifications of OR 99W and will enhance its ability to serve the defined functions. The following summarizes the classifications:

- OR 99W (Pacific Highway West, No. 091) is classified as a Statewide Highway, part of the National Highway System (NHS), a Freight Route, Truck Route and a Reduction Review Route and is a Tier 1 lifeline route.

REGIONAL CLASSIFICATIONS FOR KING CITY

Within the King City area, Beef Bend Road, OR 99W and Roy Rogers Road have special designations for their role in the regional transportation system, as detailed in the following section.

TABLE 1: REGIONAL CLASSIFICATIONS

ROADWAY	PEDESTRIAN	BICYCLE	TRANSIT	MOTOR VEHICLE	FREIGHT
OR 99W	Pedestrian Parkway	Bicycle Parkway	Frequent Bus / Future High Capacity Transit	Major Arterial	Main Roadway Route
BEEF BEND ROAD	Regional Pedestrian Corridor	Regional Bikeway (between SW 137 th Avenue and SW 150 th Avenue)	No special designation	Minor Arterial	No special designation
ROY ROGERS ROAD	No special designation	Regional Bikeway	No special designation	Arterial outside UGB	Roadway Connector

WHAT DO THE REGIONAL CLASSIFICATIONS MEAN FOR KING CITY?

- **Regional Pedestrian Network:** OR 99W is a Pedestrian Parkway, which are generally major urban streets that provide frequent transit service (existing and planned). Beef Bend Road is a

Regional Pedestrian Corridor, which are any major or minor arterial on the regional urban arterial network that is not a Pedestrian Parkway.

In addition, the designated Town Center adjacent to OR 99W is classified as a Pedestrian District, which is an area where high levels of walking exist or are planned. All streets and trails within the Pedestrian District are part of the regional system.

- **Regional Bicycle Network:** OR 99W is a Bicycle Parkway, which currently serve or will serve higher volumes of bicyclists and provide important connections to destinations. Roy Rogers Road and the segment of Beef Bend Road between SW 137th Avenue and SW 150th Avenue (the future alignment of the River Terrace Trail) are Regional Bikeways. These provide for travel to and within Centers. On-street Bicycle Parkways or Regional Bikeways should be designed using a flexible “toolbox” of bikeway designs, including bike lanes, cycle tracks (physically separated bicycle lanes) or shoulder bikeways.

In addition, the designated Town Center adjacent to OR 99W is classified as a Bicyclist District, which is an area where high levels of bicycle activity exist or are planned. All bicycle routes within bicycle districts are considered regional and are eligible for federal funding.

- **Regional Transit Network:** OR 99W is part of the regional transit network, with Frequent Bus and Future High Capacity Transit designations.
- **Regional Motor Vehicle Network:** Within King City, the Arterial classification applies to Beef Bend Road, OR 99W and Roy Rogers Road. Arterial streets are intended to provide general mobility for travel within the region and provide important connections to the throughway network. Major arterial streets accommodate longer-distance through trips and serve more of a regional traffic function. Minor arterial streets serve shorter trips that are localized within a community. As a result, major arterial streets usually carry more traffic than minor arterial streets.
- **Regional Freight Network:** OR 99W is a Main Roadway Route, which connect major activity centers in the region to other areas in Oregon. Roy Rogers Road is a Roadway Connector, which connects other freight facilities, industrial areas, and 2040 centers to a main roadway route.

What this means for the King City TSP:

Management decisions and potential improvements to Beef Bend Road, OR 99W and Roy Rogers Road must be consistent with the Regional Network Classifications.

METRO LAND USE DESIGNATIONS

Metro’s 2040 Growth Concept⁸ in the Regional Transportation Plan applies land use designations to the Portland region. The 2040 Growth Concept is the region’s long-range plan for managing growth by integrating land use and transportation. The concept concentrates mixed use and higher density development in areas of the region designated as “Centers”, “Station Communities”, and “Main Streets”. The 2040 Growth Concept land uses are arranged in a hierarchy, with the primary and secondary land uses, referred to as 2040 Target Areas, as the focus of Regional Transportation

⁸ Metro 2040 Growth Concept: <http://www.oregonmetro.gov/index.cfm/go/by.web/id=29882>

Plan investments. King City includes one Regional primary Town Center designation along OR 99W, generally east of SW Royalty Parkway between SW Crown Drive and SW King James Place and one secondary “Corridor” designation for OR 99W outside of the Town Center (north of SW Crown Drive and south of SW King James Place). Town Centers provide services to people within a two- to three-mile radius, have a strong sense of community identity and are well served by transit. Corridors are major streets that serve as key transportation routes for people and goods and are typically served extensively by transit.

The remaining areas of King City, including the URA 6D expansion area, are designated as Neighborhood land uses. These areas have the lowest priority for Regional Transportation Plan investments.

What this means for the King City TSP:

The TSP should ensure the intended function of these areas are considered in system investment and management decisions. Metro, as part of the Conditions of Approval, designated the URA 6D expansion area as a Neighborhood on the 2040 Growth Concept map.

MANAGING AND MONITORING THE TRANSPORTATION SYSTEM

To ensure that the transportation system maintains acceptable quality, it is monitored with a variety of measures. These measures are typically defined by the agency with maintenance responsibilities, which includes King City, Washington County and ODOT in the area. OR 99W is under jurisdiction of ODOT. Streets that are expected to be under the jurisdiction of Washington County include SW Roy Rogers Road and SW Beef Bend Road. All other existing or planned streets will be assumed under the jurisdiction of King City (portions of SW Fischer Road and SW Elsner Road currently under County jurisdiction are desired to become City streets in the future). Each responsible jurisdiction sets various standards for the streets to maintain its designated classifications.

MOTOR VEHICLE MOBILITY TARGETS

The state and region have adopted vehicle mobility targets to ensure that the transportation system will have adequate capacity to support planned growth. If changes made in the TSP or King City Comprehensive plan would cause study intersections to exceed adopted performance measures, mitigation could be necessary before plans are approved. The intersection mobility targets vary by jurisdiction of the roadways. ODOT standards are consistent with the regional standards. For streets designated on the Regional Motor Vehicle Network, local Transportation System Plans are required to adopt the regional targets or alternative targets that are no lower

than those adopted by the region⁹. Designated streets in the area include OR 99W, Roy Rogers Road and Beef Bend Road. Regional standards require a volume to capacity (v/c) ratio of 1.10 during the peak first hour, and 0.99 during the peak second hour¹⁰ in designated Town Centers and 0.99 during the highest two consecutive hours of the day along designated “Corridors,” including OR 99W outside of the Town Center and within designated “Neighborhoods,” including Beef Bend Road.

Washington County mobility targets will be applied to streets under their jurisdiction that are not designated on the Regional Motor Vehicle Network, including SW Fischer Road and SW Elsner Road. County mobility targets are based on the area designations in the Metro Regional Transportation Plan. Intersections along SW Fischer Road and SW Elsner Road must maintain a v/c ratio of 0.90 during the highest two consecutive hours of the day, with a v/c ratio of 0.99 acceptable during the first hour in urban areas¹¹. All remaining Washington County streets in the area, including Roy Rogers Road and Beef Bend Road, are designated on the Regional Motor Vehicle Network and subject to the regional targets.

King City does not currently have adopted performance standards for motor vehicles. For comparison purposes, the regional mobility target for “Neighborhoods,” a v/c ratio of 0.99 during the peak hour, could be applied as an interim performance measure for City streets.

What this means for the King City TSP:

System performance will be measured, in part, using the adopted mobility targets. The TSP can establish mobility targets for City streets to evaluate performance. For comparison purposes, the Regional mobility target for “Neighborhoods,” a v/c ratio of 0.99 during the peak hour, could be applied as an interim performance measure.

MULTI-MODAL PERFORMANCE MEASURES

The Metro Regional Transportation Functional Plan requires local transportation system plans to employ a performance-based approach, focusing on measurable outcomes of investments to the transportation system¹². It requires that each local plan include performance measures for safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit

⁹ Metro Regional Transportation Functional Plan, Section 3.08.230, Subsection A and B, Performance Targets and Standards

¹⁰ Second hour defined as the single 60-minute period either before or after the peak 60-minute period, whichever is highest

¹¹ Washington County Transportation System Plan, Part 3 – Transportation Modal Elements. Effective September 26, 2019.

¹² Metro Regional Transportation Functional Plan, Section 3.08.230, Subsection D, Performance Targets and Standards.

mode shares to measure the degree to which its investments support regional and potentially City-wide priorities. In this manner, investment decisions could be tracked and compared to a set of performance objectives, offering a baseline against which to assess how the investments and planning decisions made may affect the future. King City does not currently have adopted multi-modal performance measures.

What this means for the King City TSP:

The traditional approach to mobility standards has changed in response to many evolving conditions such as transportation funding for projects, economic viability, livability, and funding priorities. The TSP could explore measures to evaluate multi-modal performance and offer a baseline to compare during future Transportation System Plan updates.

STREET AND DRIVEWAY SPACING STANDARDS

Access spacing along streets in the King City area will be managed through 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. Proper implementation of access management techniques will promote reduced congestion and accident rates and may lessen the need for additional street capacity.

To improve connectivity of the region's arterial system and support walking, bicycling and access to transit, the Metro Regional Transportation Functional Plan requires that, to the extent possible, major arterial streets be spaced at one-mile intervals, and minor arterial or collector streets to be spaced at half-mile intervals¹³.

In addition, to improve local access and circulation, and preserve capacity on the region's arterial system, each local Transportation System Plan must include a conceptual map of new streets for all contiguous areas of vacant and redevelopable lots and parcels of five or more acres that are zoned to allow residential or mixed-use development. Full street connections should be provided at least every 530 feet (or 1/10th of a mile) or pedestrian and bicycle connections every 330 feet if a full-street connection is not possible. Cul-de-sac or other closed-end street designs are also restricted to circumstances in which barriers prevent full street extensions and such streets are limited in length to 200 feet and the number of dwellings along the street to no more than 25.

¹³ Metro Regional Transportation Functional Plan, Section 3.08.110 Street System Design Requirements

The King City roadway spacing standards are consistent with the Metro Regional Transportation Functional Plan, requiring full street connections every 530 feet¹⁴ and pedestrian and bicycle accessways every 330 feet¹⁵ in instances where spacing exceeds 530 feet.

The City does not have a spacing standard for driveways along streets under its jurisdiction. Streets under County jurisdiction, including Roy Rogers Road, Beef Bend Road, SW Fischer Road and SW Elsner Road, must comply with Washington County spacing standards.

Washington County restricts direct access to arterial streets to other arterial or collector streets, with spacing of at least 600 feet¹⁶. In King City, local street or driveway access to Roy Rogers Road and Beef Bend Road would be restricted.

Access to County collector streets in King City, including SW Fischer Road and SW Elsner Road, would be limited to neighborhood routes or local streets. Commercial, industrial and institutional uses with 150 feet or more of frontage will be permitted direct access to a Collector, spaced at least 100 feet from intersections or other driveways. Approaches to SW Fischer Road and SW Elsner Road would also be restricted by the County in areas where vehicle queues commonly form approaching intersections or in areas where adequate left turn refuge cannot be provided.

OR 99W SPACING STANDARD

The Oregon Access Management Rule¹⁷ (OAR 734-051) attempts to balance the safety and mobility needs of travelers along state highways with the access needs of property and business owners. ODOT's rules manage access to the state's highway facilities in order to maintain highway function, operations, safety, and the preservation of public investment consistent with the policies of the 1999 OHP. Access management rules allow ODOT to control the issuing of permits for access to state highways, state highway rights of way and other properties under the State's jurisdiction. In addition, it sets access spacing standards, identifies the ability to close existing approaches and establishes a formal appeals process in relation to access issues. These rules enable the State to direct location and spacing of intersections and approaches on state highways, ensuring the relevance of the functional classification system and preserving the efficient operation of state routes.

OHP Goal 3, Policy 3A and OAR 734-051 set access spacing standards for driveways and approaches to the state highway system¹⁸. The standards are based on state highway classification

¹⁴ City of King City Municipal Code, Section 16.212.050

¹⁵ Ibid

¹⁶ Washington County Community Development Code, Article V Public Facilities and Services, Section 501-8.5

¹⁷ Access Management Rule:

<https://secure.sos.state.or.us/oard/displayDivisionRules.action?selectedDivision=3317>

¹⁸ ODOT Access Management Standards (Appendix C): www.oregon.gov/ODOT/TD/TP/OHP_AM.shtml

and differ based on posted speed. OR 99W in King City requires 800 feet of spacing between accesses.

What this means for the King City TSP:

The functional classifications of transportation routes in the King City will be reviewed to determine the appropriateness of the classification and connectivity. New streets, including in the URA 6D expansion area, may be proposed consistent with the Regional and standards to improve street connectivity. In addition, pedestrian and bicycle connections will need to be provided every 330 feet if a full-street connection is not possible.

REGIONAL PERFORMANCE TARGETS

The Regional Transportation Plan includes nine system performance measures with aspirational targets to provide a basis for measuring expected performance of the plan in the long-term. All regional performance targets are for the year 2040, unless otherwise specified. The performance targets are regional measures that the King City TSP should work toward achieving.



FIGURE 2: RTP PERFORMANCE TARGETS

What this means for the King City TSP:

The TSP should work toward achieving the performance targets identified in Figure 2 by recommending safety improvements, infrastructure improvements (e.g. connectivity, sidewalks, bicycle facilities), congestion mitigation, etc.

REGIONAL MODAL TARGETS

The Regional Transportation Plan established regional mode share targets that are intended to be goals for cities and counties to work toward during implementation of the 2040 Growth Concept at the local level. Increases in walking, bicycling, ridesharing and transit mode shares will be used to demonstrate compliance with per capita travel reductions required by the State Transportation Planning Rule. The following modal targets apply to Regional Transportation Plan land uses in King City:

- Town Centers and Corridors: Non-drive alone modal target of 45 to 55 percent
- Neighborhoods: Non-drive alone modal target of 40 to 45 percent

As required by the Regional Transportation Plan and the Transportation Planning Rule, jurisdictions within the Metro region must adopt policies and actions that encourage a shift towards non-single occupancy vehicle modes.

What this means for the King City TSP:

The TSP should adopt policies and actions that encourage a shift towards non-single occupancy vehicle modes.

GUIDING THE TRANSPORTATION SYSTEM

The following sections summarize additional background information or guidance documents for development of the King City TSP.

BICYCLE AND PEDESTRIAN

The Oregon Bicycle and Pedestrian Plan provides a decision-making framework for walking and biking efforts in the State within the context of the overall transportation system. The Plan is an element of the Oregon Transportation Plan and provides local plans guidance in its implementation. The policies and strategies in the Plan impact transportation decisions of local jurisdictions through their transportation system plans and other planning efforts, which must be consistent with statewide policy plan direction. The nine goals of the plan, described below, reflect statewide values and desired accomplishments, and refine and expand upon the broad goals of the OTP.

- **Safety-** The safety goal is written to align with “Vision Zero” and other federal and local initiatives that target the elimination of the most serious safety issues. Policies and strategies call for a multimodal look at roadway cross-sections, updating design guidance to identify the most appropriate walking or biking facility depending on context (such as physical separation), more visible pedestrian crossings, and examination and consideration of lower speeds where appropriate. They also focus on safe operations on the walking and biking system through

education and encouragement, comfort and security help to encourage more users to the system by increasing their sense of safety, and an assessment of the system to determine safety issues.

- **Accessibility and Connectivity-** This goal targets making walking and biking accessible in areas where it currently is not, filling in gaps, and connecting to other modes. Policies and strategies call for such things as system inventories to identify gaps and prioritize walking and biking needs, retrofitting existing facilities to accommodate pedestrians and cyclists, wayfinding signage, bike share, and enhancing connections to other modes, especially public transportation.
- **Mobility and Efficiency-** This focuses on assuring that pedestrians and cyclists can move freely and easily on the existing system. Policies and strategies seek to reduce physical barriers that may impede movement, address maintenance practices, seek to assure movement through or around construction zones, and reference design elements such as signal timing and bicycle detection, among other issues.
- **Community and Economic Vitality-** Both land use and tourism are included under this goal area. Specifically, the land use policy framework identifies the need for model code assistance, siting schools and government buildings so they are accessible to walking and biking, considering land use attractors to assure safe connections, bicycle parking, and prioritizing employment centers and main streets as critical connection points that serve the community and economy. Tourism policies and strategies focus on partnerships, collaboration opportunities, and disseminating information as ways to encourage pedestrian and bicycle recreational travel.
- **Equity-** This goal focuses on making walking and biking options equally available to all. Assuring access for underserved areas and transportation disadvantaged populations is called out. The policies and strategies under this goal are designed to address issues that may prevent certain portions of the population from walking and biking, such as looking at census data, conducting research, and doing network gap analysis that looks at demographics. They also focus on integrating equity criteria and considerations into decision making, locating and prioritizing transportation disadvantaged populations, and helping to close the gap between areas served and not served.
- **Health-** This goal highlights the link between personal and public health. Policies and strategies call out such things as integrating health criteria in transportation decision making, engaging health professionals and strengthening partnerships, and improving data collection and sharing.
- **Sustainability-** This goal highlights the impacts that zero emission modes can have on helping the state reduce Greenhouse Gas emissions, have cleaner air and water, and reduce impacts to the environment. Strategies promote encouragement, and innovations such as electric bikes or scooters, which may attract more people to use those modes.
- **Strategic Investment-** This goal highlights the contribution that walking and bicycling facilities make to the entire transportation system. A strategic approach is needed to spend existing resources on the highest need and greatest value investments, leverage what is available, and to identify additional funding sources. An investment prioritization framework lays out priorities as follows: protect the existing system (e.g. maintenance and preservation) and address significant safety issues; add critical connections; complete the system (e.g. separation, and bicycle parking); and elaborate the system.
- **Coordination, Cooperation, and Collaboration-** With an interest in creating an integrated and seamless system, this coordination, cooperation, and collaboration goal assures communication between entities in decision making. Policies and strategies call for a checklist of communication needs, and guidance for coordinating.

The Plan includes performance measures to track and monitor implementation progress. The performance measures indicate whether safety is improving, use of the system is increasing (assumed through overall improvements to the network), and that data needs are being understood and data collected for more robust performance measures in the future:

- Number of pedestrian and bicycle fatalities (five-year average)
- Number of pedestrian and bicycle serious injuries (five-year average)
- Perceived safety of walking and biking
- Utilization of walking or biking for short trips
- Identifying data needs for pedestrian and bicycle performance measures
- Pedestrian access to transit

What this means for the King City TSP:

This Plan serves as the guiding policy for bicycle and pedestrian planning. The TSP should work to incorporate the goals and performance measures of the Plan.

OREGON TRANSPORTATION OPTIONS PLAN

The Oregon Transportation Options Plan is an element of the Oregon Transportation Plan and provides policy guidance for state and local partners to enhance and expand transportation access for all while ensuring that transportation investments are efficient and support broader community goals. The Oregon Transportation Options Plan:

- Identifies opportunities to expand transportation choices.
- Looks to increase funding opportunities for transportation options programs and investments.
- Provides information to better integrate transportation options into local, regional, and state transportation planning.

Policies, strategies, and programs described in the Oregon Transportation Options Plan promote efficient use of existing transportation system investments, reducing reliance on the single-occupancy vehicle and facilitating use of walking, biking, transit, and rideshare. While transportation infrastructure and operations are critical to the success of a balanced transportation system, this Plan focuses on the programs, strategies, and investments that support the efficient use of transportation infrastructure.

The Transportation Options Plan process identifies a critical need to establish responsive and reliable funding for transportation options programs. Opportunities exist to expand funding by integrating transportation options into existing transportation planning processes and identifying and leveraging new sources of funding.

What this means for the King City TSP:

The policies, strategies, and programs of this plan provide guidance for the TSP to support the efficient use of existing and future transportation infrastructure.

TRANSPORTATION SAFETY

OREGON TRANSPORTATION SAFETY ACTION PLAN

The Oregon Transportation Safety Action Plan is an element of the Oregon Transportation Plan and provides long-term goals, policies and strategies and near-term actions to eliminate deaths and life-changing injuries on Oregon's transportation system by 2035. The goals, policies, and strategies in the Plan are focused on changing safety culture and proactively planning, designing, operating and maintaining a transportation system that eliminates fatalities and serious injuries.

The Plan includes emphasis areas to provide a framework for the near-term component. Emphasis areas are focus areas directly related to the long-term goals, policies, and strategies. The emphasis areas include:

- **Risky Behaviors-** Reductions in fatalities and serious injuries can be accomplished by deterring unsafe or risky behaviors made by drivers and other transportation users. For this emphasis area, actions are identified to minimize impaired, unbelted, speeding and distracted driving crashes.
- **Infrastructure-** Transportation facilities can be constructed or retrofitted to reduce fatal and serious injury crashes. Opportunities to do this include implementing safety treatments on a site-specific basis or implementing low-cost treatments system-wide. Actions are identified to minimize intersection and roadway departure crashes.
- **Vulnerable Users-** Vulnerable road users can be characterized by the amount of protection they have when using the transportation system – pedestrians, bicyclists and motorcyclists are more exposed than people in vehicles, making them more susceptible to injury in the event of an incident. Older drivers and pedestrians can also be more vulnerable to severe injuries in the event of a crash because of increasing fragility and potentially longer healing times. Actions are identified to minimize pedestrian, bicycle, motorcycle, and older road user crashes.
- **Improved Systems-** Opportunities to address and improve transportation safety come in several forms. Actions have been identified to continually improve data, train and educate transportation and safety staff, support law enforcement and emergency responders, and minimize commercial vehicle crashes.

WASHINGTON COUNTY TRANSPORTATION SAFETY ACTION PLAN

The Washington County Transportation Safety Action Plan documents the current state of transportation safety in the County, outlines potential strategies to address transportation safety issues and identifies ways to implement these strategies. While the aim is to reduce the number of crashes overall, the focus of the action plan is to develop strategies that will reduce severe injuries (where the victim's normal life functions are severely impacted) and fatalities.

What this means for the King City TSP:

The goals, policies and strategies and near-term actions of these plans provide guidance for the TSP to support the changing of safety culture and proactively planning, designing, operating and maintaining a transportation system that eliminates fatalities and serious injuries.

PUBLIC TRANSPORTATION

OREGON PUBLIC TRANSPORTATION PLAN

The Oregon Public Transportation Plan is an element of the Oregon Transportation Plan and strives to create a statewide public transportation network, and help communities develop transit options that best meet their need. The Plan sets a path forward for maintaining and improving the public transportation system across the state. It calls for further integrating public transportation with the transportation system and for making its use a convenient, easy and reliable choice.

SOUTHWEST SERVICE ENHANCEMENT PLAN

The Southwest Service Enhancement Plan outlines a long-term vision to improve transit service in the southwestern portion of the Portland Metropolitan Area. The plan includes the following recommendations related to King City:

- Realigning bus routes to provide more connections between suburban residential communities and suburban employment centers and streamline routes and fill service gaps. This includes extending the South Shore Boulevard line (Line 36) from the Tualatin Park & Ride to King City via 72nd Avenue and Durham to improve east-west connections between Lake Oswego, Tualatin, Tigard, and King City, and add trips.
- Suggesting areas where TriMet could pass through federal funding to serve low income residents or low paying, entry-level jobs and where fixed route transit service is lacking due to the street network or population size, including the King City-Tigard-Beaverton area, to connect senior and low income residents in King City with jobs and services in Progress Ridge, Murrayhill, and the future River Terrace and South Cooper Mountain areas.

SOUTHWEST CORRIDOR PLAN

The Southwest Corridor Plan is a comprehensive vision for the investments needed to keep the area moving and support the people who live here today as the area grows. The corridor includes King City and all the surrounding area from Tualatin and Sherwood to Tigard and Southwest Portland. The Plan includes priority projects to invest in roadways and active transportation. The following relate to King City:

- Pedestrian improvements in the King City Town Center
- Pedestrian improvements on OR 99W to serve transit stops in King City.

What this means for the King City TSP:

The goals, policies and strategies on these plans will be supported by the TSP to make public transit a convenient, easy and reliable choice.

EMERGING TECHNOLOGY STRATEGY

Technology is already transforming the region's transportation system. The Emerging Technology Strategy identifies steps to take to harness new developments in transportation technology—including automated, connected and electric vehicles; new mobility services like car share, bike or scooter share and ride-hailing services like Uber and Lyft; and the increasing amount of data available to both travelers and planners—to create a more equitable and livable greater Portland region and meet the goals in the 2018 Regional Transportation Plan.

Policies focus on the key issues that need to be addressed over the next decade in order to stay on track to meet regional goals as technology and mobility continue to evolve. The strategy identifies implementation actions to consider in implementing these policies.

- Policy 1: Equity: Make emerging technology accessible, available and affordable to all, and use technology to create more equitable communities.
- Policy 2: Choices: Use emerging technology to improve transit service, provide shared travel options throughout the region and support transit, bicycling and walking.
- Policy 3: Information: Use the best data available to empower travelers to make travel choices and to plan and manage the transportation system.
- Policy 4: Innovation: Advance the public interest by anticipating, learning from and adapting to new developments in technology.

What this means for the King City TSP:

The policies and implementation actions of this plan provide guidance for the TSP to help meet regional goals as technology and mobility continue to evolve.

CONCEPT PLANS

KING CITY URBAN RESERVE AREA 6D CONCEPT PLAN

The King City Urban Reserve Area 6D Concept Plan serves as a guide for the future development of the 528-acre Urban Reserve Area. The plan identifies an internal system of street and paths, including improvements to SW Roy Rogers Road and SW Beef Bend Road. Improvements would include a planted median, bike lanes, street trees, and separated sidewalks or multi-use paths. A collector street is planned to run east-to-west through the area, connecting SW Roy Rogers Road east to SW Fisher Road. Other improvements include an east-to-west neighborhood route between

SW Beef Bend Road and the planned collector, and north-to-south routes connecting these proposed east-to-west facilities with SW Beef Bend Road and future street extensions in the River Terrace area. Additionally, a series of trails will run through the site to enhance pedestrian connectivity throughout the area.

CONDITIONS OF APPROVAL FOR URA 6D

The Metro Urban Growth Boundary was amended to add four UGB expansion areas, including the King City Urban Reserve Area 6D Concept Plan area. The following Conditions of Approval are applicable to King City:

A. Comprehensive planning in the four UGB expansion areas:

1. Within four years after the date of this ordinance, the four cities shall complete comprehensive planning consistent with Metro code section 3.07.1120 (Planning for Areas Added to the UGB).
2. The four cities shall allow, at a minimum, single family attached housing, including townhomes, duplexes, triplexes, and fourplexes, in all zones that permit single family housing in the expansion areas.
3. The four cities shall explore ways to encourage the construction of ADUs in the expansion areas.
4. As the four cities conduct comprehensive planning for the expansion areas, they shall address how their plans implement relevant policies adopted by Metro in the 2014 regional Climate Smart Strategy regarding: (a) concentrating mixed-use and higher density development in existing or planned centers; (b) increasing use of transit; and (c) increasing active transportation options. The cities shall coordinate with the appropriate county and transit provider regarding identification and adoption of transportation strategies.
5. As the four cities conduct comprehensive planning for the expansion areas, they shall regularly consult with Metro Planning and Development staff regarding compliance with these conditions, compliance with the Urban Growth Management Functional Plan, compliance with the state Metropolitan Housing Rule, and use of best practices in planning and development, and community engagement. To those ends, cities shall include Metro staff in advisory groups as appropriate.
6. At the beginning of comprehensive planning, the four cities shall develop – in consultation with Metro – a public engagement plan that encourages broad-based, early and continuing opportunity for public involvement. Throughout the planning process, focused efforts shall be made to engage historically marginalized populations, including people of color, people with limited English proficiency and people with low income, as well as people with disabilities, older adults and youth.

B. Citywide requirements (for the four cities):

1. Within one year after the date this ordinance is acknowledged by LCDC (excluding any subsequent appeals), the four cities shall demonstrate compliance with Metro code section 3.07.120(g) and ORS 197.312(5) regarding accessory dwelling units. In addition to the specific requirements cited in Metro code and state law, cities shall not require that accessory dwelling units be owner occupied and shall not require off street parking when street parking is available.
2. Before amending their comprehensive plans to include the expansion areas, the four cities shall amend their codes to ensure that any future homeowners associations will not regulate housing types, including accessory dwelling units, or impose any standards that would have the effect of prohibiting or limiting the type or density of housing that would otherwise be allowable under city zoning.
3. Before amending their comprehensive plans to include the expansion areas, the four cities shall amend their codes to ensure that any future homeowners associations will not require owner occupancy of homes that have accessory dwelling units.
4. The four cities shall continue making progress toward the actions described in Metro Code section 3.07.620 (Actions and Investments in Centers, Corridors, Station Communities, and Main Streets).
5. Cities shall engage with service providers to consider adoption of variable system development charges designed to reduce the costs of building smaller homes in order to make them more affordable to purchasers and renters.
6. For at least six years after this UGB expansion, the four cities shall provide Metro with a written annual update on compliance with these conditions as well as planning and development progress in the expansion areas. These reports will be due to the Metro Chief Operating Officer by December 31 of each year, beginning December 31, 2019.

E. King City:

1. King City shall coordinate with Washington County and the City of Tigard as it engages in its work on a Transportation System Plan, other infrastructure planning, and comprehensive planning.
2. Before amending the King City comprehensive plan to include the expansion area, King City shall conduct additional market analysis to better understand the feasibility of creating a new mixed-use town center.
3. Pending the results of the market analysis of a new town center, King City shall plan for at least 3,300 homes in the Beef Bend South expansion area. If the market analysis indicates that this housing target is infeasible, King City shall work with Metro to determine an appropriate housing target for the expansion area.
4. The expansion area shall be designated Neighborhood on the 2040 Growth Concept map.

5. Pending the results of the market analysis of a new town center, Metro will work with King City to make necessary changes to the 2040 Growth Concept map.

6. Prior to amending the King City comprehensive plan to include the expansion area, King City shall complete a Transportation System Plan for the city.

7. Prior to amending the King City comprehensive plan to include the expansion area, King City shall amend its code to remove barriers to the construction of accessory dwelling units, including:

a. Remove the requirement that accessory dwelling units can only be built on lots that are at least 7,500 square feet, which effectively prohibits construction of accessory dwelling units in the city.

b. Remove or increase the requirement that accessory dwelling units be no bigger than 33 percent of the square footage of the primary home so that an accessory dwelling unit of at least 800 square feet would be allowable.

8. The Columbia Land Trust holds a conservation easement over portions of the Bankston property, which King City's concept plan identifies as the intended location for a key transportation facility serving the expansion area. King City shall work with the Columbia Land Trust to protect, to the maximum extent possible, the portion of the Bankston property covered by the conservation easement.

9. To reduce housing costs, King City shall, in its comprehensive planning, explore ways to encourage the use of manufactured housing in the expansion area.

TIGARD RIVER TERRACE CONCEPT PLAN

The Tigard River Terrace Concept Plan area is located just north of the King City URA 6D expansion area. The transportation system proposed for Tigard's River Terrace development to the north provides structure and guidance to the system proposed for King City's URA 6D expansion area. North/south internal roads and access locations onto SW Beef Bend Road proposed in the River Terrace Plan will need to be coordinated with the planning of this area. This includes the extensions of River Terrace Boulevard, SW 161st Avenue and the River Terrace Trail (along Beef Bend Road) into the area.

What this means for the King City TSP:

The TSP will incorporate the recommendations of the King City Urban Reserve Area 6D Concept Plan and will link the planned transportation system with that of the River Terrace area.

FACILITY DESIGN

ODOT BLUEPRINT FOR URBAN DESIGN

The ODOT Blueprint for Urban Design documents the urban design practices and guidance for ODOT facilities and projects. The purpose of the Blueprint for Urban Design is to highlight opportunities for flexibility in ODOT's current design criteria. This allows practitioners to determine the effective outcomes for each facility based on the urban context and to identify ways in which design flexibility can accommodate individual community needs. ODOT has created a set of six urban land use contexts to describe the variety of urban areas and unincorporated communities in Oregon.

The Blueprint for Urban Design builds from ODOT existing manuals and existing plans and serves as interim guidance until the principles and guidance can be incorporated during the next update to the Highway Design Manual, Analysis Procedure Manual, Traffic Manual, and other guiding documents.

METRO DESIGNING LIVABLE STREETS AND TRAILS DESIGN GUIDE

The purpose of the Designing Livable Streets and Trails Design Guide is to support implementation of the 2040 Growth Concept. This guide is a resource for designing, constructing and maintaining the region's transportation system. The design guidance is intended to assist in designing new and reconstructed streets and trails but may also be applied to maintenance projects that preserve and extend the service life of existing streets and structures when minor retrofits are needed.

What this means for the King City TSP:

The TSP should follow these design guides when designing, constructing and maintaining existing or future transportation facilities.

SCHOOL ACCESS

WASHINGTON COUNTY SCHOOL ACCESS IMPROVEMENT STUDY

The Washington County school access improvement study, a part of the County's Safe Routes to School Program, provides a comprehensive look at the extent of traffic infrastructure barriers that prevent or limit students' ability to walk to school safely. Traffic safety improvements identified in the study vary by school and include sidewalks, bike lanes, crosswalk treatments and trails.

For Deer Creek Elementary School in King City, the following improvements were identified on County roadways:

DESCRIPTION		LOCATION
①	Sidewalk on North Side of Street	Beef Bend Rd: 146th Ave to Westminster Dr
②	Sidewalks	Beef Bend Rd: Coyer Wy to 131st Ave
③	Sidewalks	131st Ave: Fischer Rd to Timara Ln
●	Westside Trail	
●	Enhanced Crossing	131st Ave: Between Peachvale St/MacBeth Dr
●	Enhanced Crossing	Beef Bend Rd: Between Coyer Wy/Peachtree Dr

TIGARD-TUALATIN SCHOOL DISTRICT LONG RANGE FACILITIES PLAN

The Tigard-Tualatin School District Long Range Facilities Plan presents a long-term vision for facilities development to accommodate District operations and educational programs. The Plan discusses the new Art Rutkin Elementary School in River Terrace to relieve existing and projected overcrowding at area schools, including Deer Creek Elementary in King City.

What this means for the King City TSP:

The TSP should incorporate the findings and recommendations of these studies into the future needs of the transportation system. The TSP should work towards reducing the impact of traffic infrastructure barriers that prevent or limit students' ability to walk to current or future schools safely.

APPENDIX D. LAND USE EXISTING CONDITIONS AND FUTURE BASELINE REPORT

DATE: April 16, 2020
TO: Michael Weston, City of King City
FROM: Sadie DiNatale and Matt Craigie, ECONorthwest
SUBJECT: Existing Land Use Conditions and Future Baseline Report – REVISED DRAFT

The City of King City contracted DKS, and several subconsultants including ECONorthwest, to develop a Transportation System Plan and Land Use Refinement. This memorandum is one of several deliverables for the project. This document addresses Task 4A in the project's Scope of Work—the “Land Use Existing Conditions and Future Baseline Report.”

URA 6D: Existing Land Use Conditions

Purpose of the Memorandum

The purpose of this memorandum is to provide land use context for King City's Transportation System Plan and Land Use Refinement project. Specifically, it aims to explain the historic, present, and likely future land use conditions of King City's urban expansion area (URA 6D) and its immediate vicinity to inform the market analysis component of the TSP project. To do so, it summarizes previous analyses, reports and studies; it does not present new analysis.

Ultimately, the data summarized in this memorandum will serve as a baseline for the area's future Master Plan. The Master Plan would include Comprehensive Plan and Zoning Code Amendments.

This memorandum acknowledges that cities adjacent to King City are similarly planning for growth by developing Town Center and Neighborhood Center plans. This memorandum describes those plans to provide background on nearby areas that may influence development in URA 6D.

Background

King City is a small city located inside Metro's Urban Growth Boundary (UGB). The City sits along Oregon Route 99W, between the cities of Tigard and Sherwood. Consistent with regional trends, in the last two decades King City's population more than doubled, adding 2,245 residents between 2000 and 2019.¹

The challenge of a limited land supply has become a pressing problem as the City seeks to accommodate growth. To better plan for the community's long-term needs, the City initiated steps to expand into Urban Reserve Area 6D (Exhibit 1). Urban Reserve Areas (URAs) are lands suitable for accommodating urban development over 50 years after their designation. URA 6D,

¹ Portland State University, Population Research Center (2000 and 2019). Population Estimates.

located just west of the current King City city limits line, was designated as an URA in 2011. In a technical sense, URA 6D is expected to accommodate urban development through 2061.

To explain its long-term plans to Metro and key stakeholders for URA 6D, the City sponsored a concept plan for the area. While the concept plan was developed in May 2018, more analysis is needed to evaluate the suitability of the land use mix and development types proposed for the Area.

Exhibit 1. Urban Reserve Area 6D

Source: City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.



Methodology

This memorandum summarizes previously conducted studies. It is informed by content and analysis from several land use planning documents and reports developed by, or for, the City of King City in the last few years. The following list describes each of the documents that were reviewed for this report.

- **URA 6D Concept Plan (2018).**² With the assistance of several consultants, the City of King City developed a concept plan for URA 6D. The Concept Plan, submitted to Metro, served as a request to expand King City's geography so that it would include URA 6D. The Plan proposed land use designations, four neighborhoods (including a Main Street/Town Center), a residential buildout program, transportation routes, and needed infrastructure (and costs) to support development. The Plan concluded that the mix of proposed uses would help address the city's residential land deficit and create a mix of amenities, employment, and educational opportunities to serve the area.
- **Housing Needs Analysis (2018).**³ ECONorthwest developed a Housing Needs Analysis for King City in 2018. The analysis documented national and state housing trends and analyzed local housing, demographic, and housing affordability trends. In addition, the analysis inventoried the suitability of residential lands, forecasted housing needs, and determined the sufficiency of residential lands to accommodate the housing forecast.
- **Market Analysis (2017).**⁴ Leland Consulting Group developed a market analysis for URA 6D. Leland defined a 525-acre study area to understand existing and likely future site conditions, economic and demographic indicators, and residential/commercial development trends including pipeline activities. The analysis concluded that (1) there is increased demand for walkable, in-town neighborhoods with cultural amenities and proximity to jobs; (2) millennial household formation will drive starter home demand in the near-term; (3) seniors will drive active senior and assisted living demand; and (4) the URA 6D area could absorb 500-900 dwelling units and 54,000 to 85,000 square feet of retail.
- **King City Comprehensive Plan.**⁵ Adopted in 1995, King City's Comprehensive Plan guides the long-term use of land in the City. In 2013, the City amended its Comprehensive Plan to include the King City Town Center Planning Area as a special planning district.
- **King City Municipal Code.**⁶ Title 16 of King City's Municipal Code describes community development and zoning requirements. It presents procedures, land use

² City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.

³ ECONorthwest. (February 2018). City of King City Housing Needs Analysis.

⁴ Leland Consulting Group. (March 2017). King City Market Analysis.

⁵ City of King City. (1995). City of King City Comprehensive Plan.

⁶ City of King City. (Codified 1990, Revised 1999). King City Municipal Code, A Codification of the General Ordinances of the City of King City, Oregon.

districts, development standards, development review, land division standards, and public facility and service requirements.

- **Washington County Community Development Code.**⁷ Washington County's Community Development Code describes procedures, land use districts, development standards, public facility and service requirements, land division and property line adjustments procedures, and public transportation facility.

Existing Conditions

This document concerns the entire city, but it specifically focuses on URA 6D. Therefore, we provide some applicable city-level information/statistics throughout this memorandum but generally apply that knowledge to URA 6D.

Land Use Conditions in King City

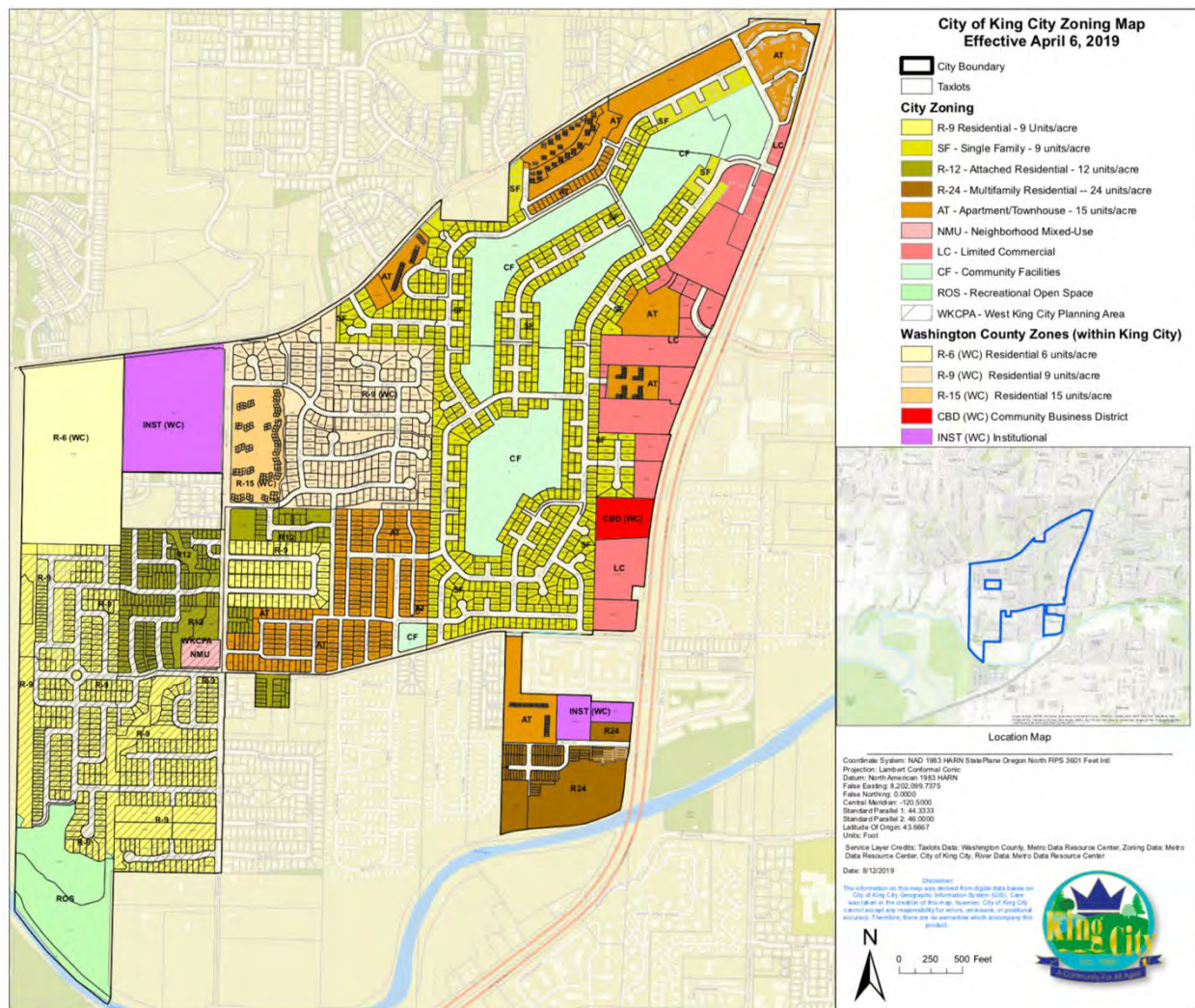
The city of King City is bounded by SW Beef Bend Rd to the north, SW 137th Avenue to the west, the Tualatin River and local neighborhood streets to the south, and Oregon Route 99W to the east.

As illustrated in Exhibit 2, most of the city's land area is zoned for residential uses with a narrow portion along the eastern boundary of King City that is zoned for commercial and neighborhood mixed-use uses. In 2013, the eastern portion of the city (comprising the commercially designated uses) was codified in King City's comprehensive plan as a special planning district. Importantly, this area, which is just shy of 50 acres, "was designated as a town center and corridor in the Metro 2040 Growth Concept."⁸

⁷ Washington County. Community Development Code.

⁸ City of King City. King City Town Center Plan and Implementation Strategy, Comprehensive Plan.

Exhibit 2. Zoning Districts Map, King City, 2019
Source: City of King City.



Land Use Conditions in URA 6D

URA 6D, which is about 600 acres, is largely undeveloped. The area is bounded by SW Beef Bend Rd to the north, SW Roy Rogers Rd to the west, the Tualatin River to the south, and King City's city limits to the east. The 2018 Concept Plan summarized the area's existing land uses and limited development types as:

The current land use in the planning area generally ranges from home sites of 1/2 to 4 acres on the east, larger rural residential and small agricultural properties in the central portion (1.2 to 10+ acres), and larger agricultural properties (up to 40+ acres) on the west. Non-residential and non-farm uses include a small airstrip (Meyer's Riverside Airport) and a commercial garden and landscaping supply business (Al's Garden and Home) on SW Roy Rogers Road.

The area's existing plan designations are outlined below with a characterization of each designation using language from Washington County's Community Development Code.

- **RR-5 Rural Residential (5-acre minimum):** intended to designate rural areas which qualify for an exception to LCDC Goals 3 and 4 and which have been committed or developed for suburban residential use with minimum farm and forest uses and to provide for rural residential uses.
- **AF-10 Agriculture and Forest District (10-acre minimum):** intended to retain an area's rural character and conserve the natural resources while providing for rural residential use.
- **AF-5 Agriculture and Forest District (5-acre minimum):** intended to retain an area's rural character and conserve the natural resources while providing for rural residential use.
- **EFU Exclusive Farm Use:** intended to preserve and maintain commercial agricultural land within the county.
- **Private Use Airport Overlay:** intended to recognize the locations of certain private-use and privately-owned, public-use airports and heliports and to provide for their continued operation and vitality consistent with state law.

Despite urban levels of development surrounding the northeast quadrant of URA 6D, existing zoning and development standards in the area ensured the development pattern remained highly rural and grounded in agriculture and natural resources.

Planned Uses

This section identifies planned uses (1) within and surrounding URA 6D, (2) in nearby urban and rural reserves, and (3) in recent UGB expansion areas.

Planned Uses within and Surrounding the Project Area

The 2018 Concept Plan for URA 6D envisioned four, distinct neighborhoods (Exhibit 4) and several plan designations for the study area (Exhibit 5). Each neighborhood was proposed at different intensities to ensure a deliberate development pattern that transitioned from urban to rural. The following provides a high-level summary of the land use framework for each proposed neighborhood:

- **Rural Character Neighborhood:** The eastern portion of URA 6D would comprise low-density residential uses, some redevelopment opportunities, low-volume traffic, and prominent natural areas.
- **Central Neighborhood:** The central portion of URA 6D would comprise single-family attached/detached residential neighborhoods and neighborhood parks and natural areas along the ravine and river, connected by a trail system.

- **Beef Bend Neighborhood:** The northern portion of URA 6D would comprise higher-density, single-family attached/detached residential neighborhoods, neighborhood-scale commercial uses, live/work units, and potentially some mixed-use development (residential above retail).
- **Main Street / Town Center:** The western portion of URA 6D would comprise the highest intensity uses of commercial and mixed-use residential uses (three to five stories); civic uses (e.g., new city hall, school, and library); and public plazas, parks, or community gathering sites.

Per the Concept Plan, the estimated amount of housing achievable for URA 6D at full build out was roughly 3,500 units. Exhibit 3 presents a more detailed housing mix proposal by neighborhood.

Exhibit 3. Planned Housing Mix by Neighborhood Type

Source: City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.

Where Appropriate	Main Street Apartment over Retail	Main Street Apartment	Boulevard Apartment	Live-work Rowhouse	Rowhouse	Duplex	Cottage Cluster	Detached dwelling with accessory dwelling unit (ADU)	Detached dwelling
Main Street / Town Center									
Central Neighborhood									
Beef Bend Neighborhood									
Rural Character Neighborhood									

Exhibit 4. Proposed Neighborhoods, URA 6D

Source: City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.

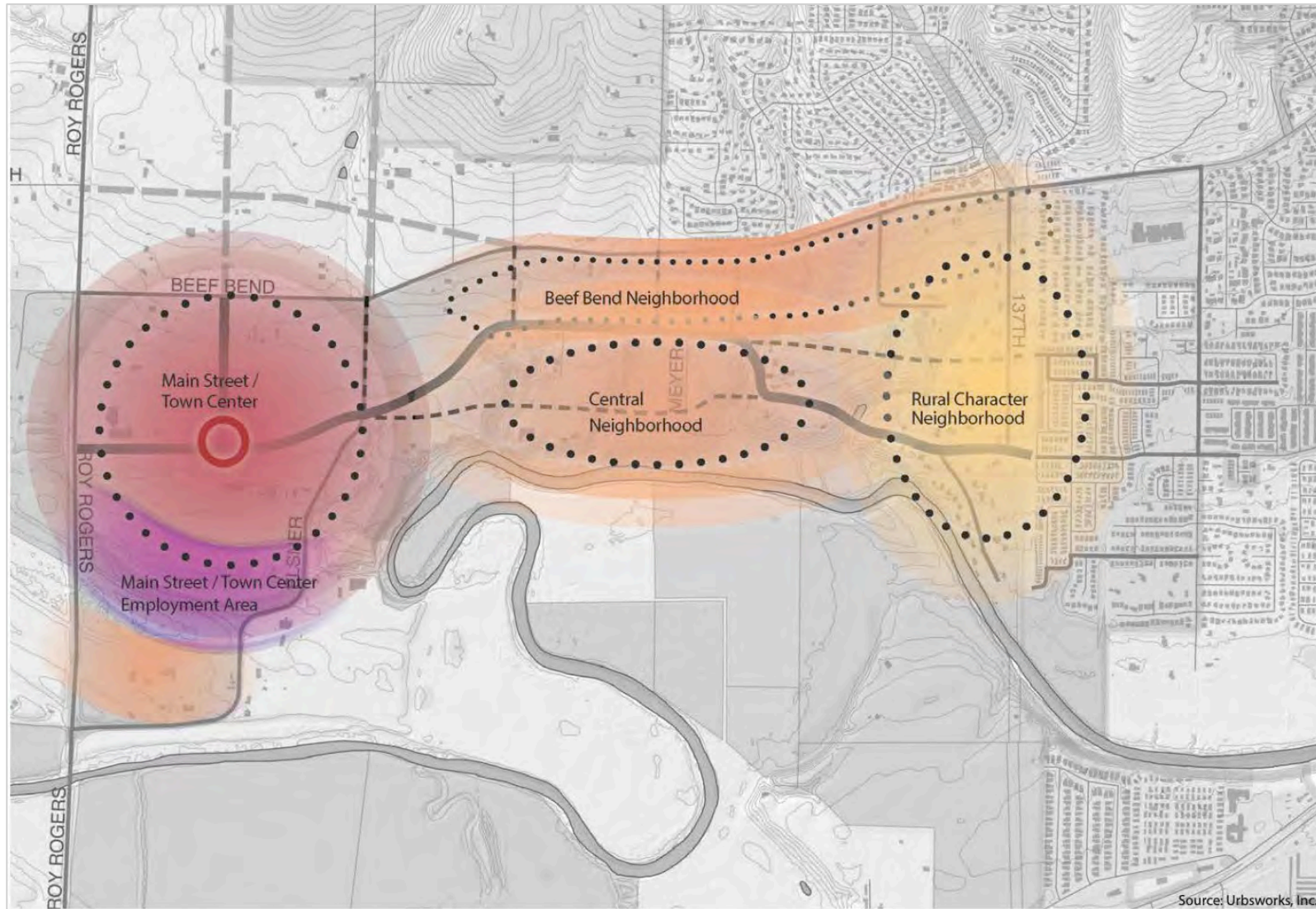
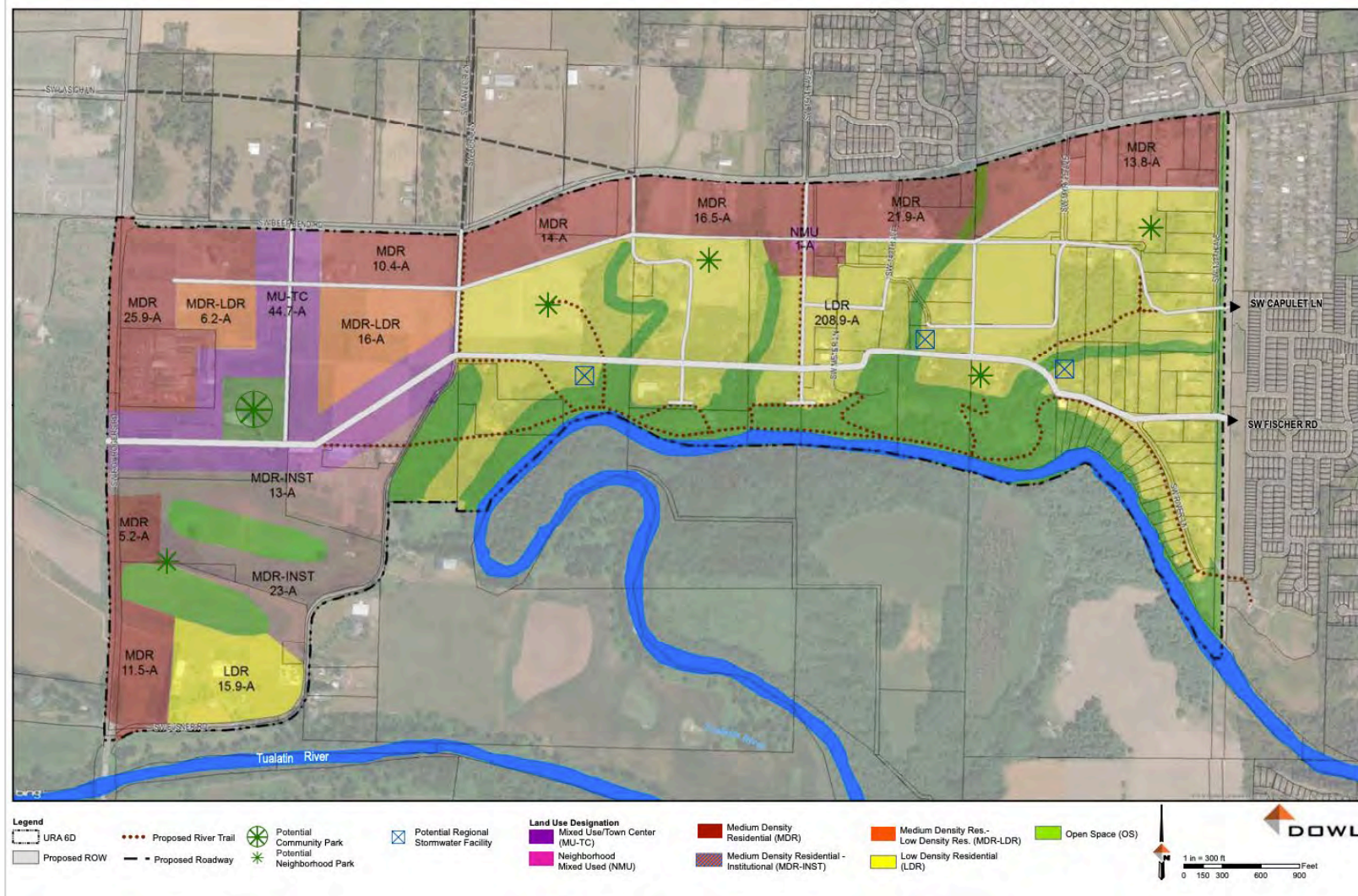


Exhibit 5. Proposed Plan Designations, URA 6D

Source: City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.



Further, within URA 6D, the Concept Plan envisioned several unique park types: (1) open space, (2) trail, (3) linear park (i.e., a greenway), (4) community agriculture park, (5) community park, (6) neighborhood park, (7) private park, (8) pocket park, and (9) urban park. While the plan identified approximate sizes, ultimately these details would be developed in a later master planning stage.

Planned Uses in Nearby Urban and Rural Reserves

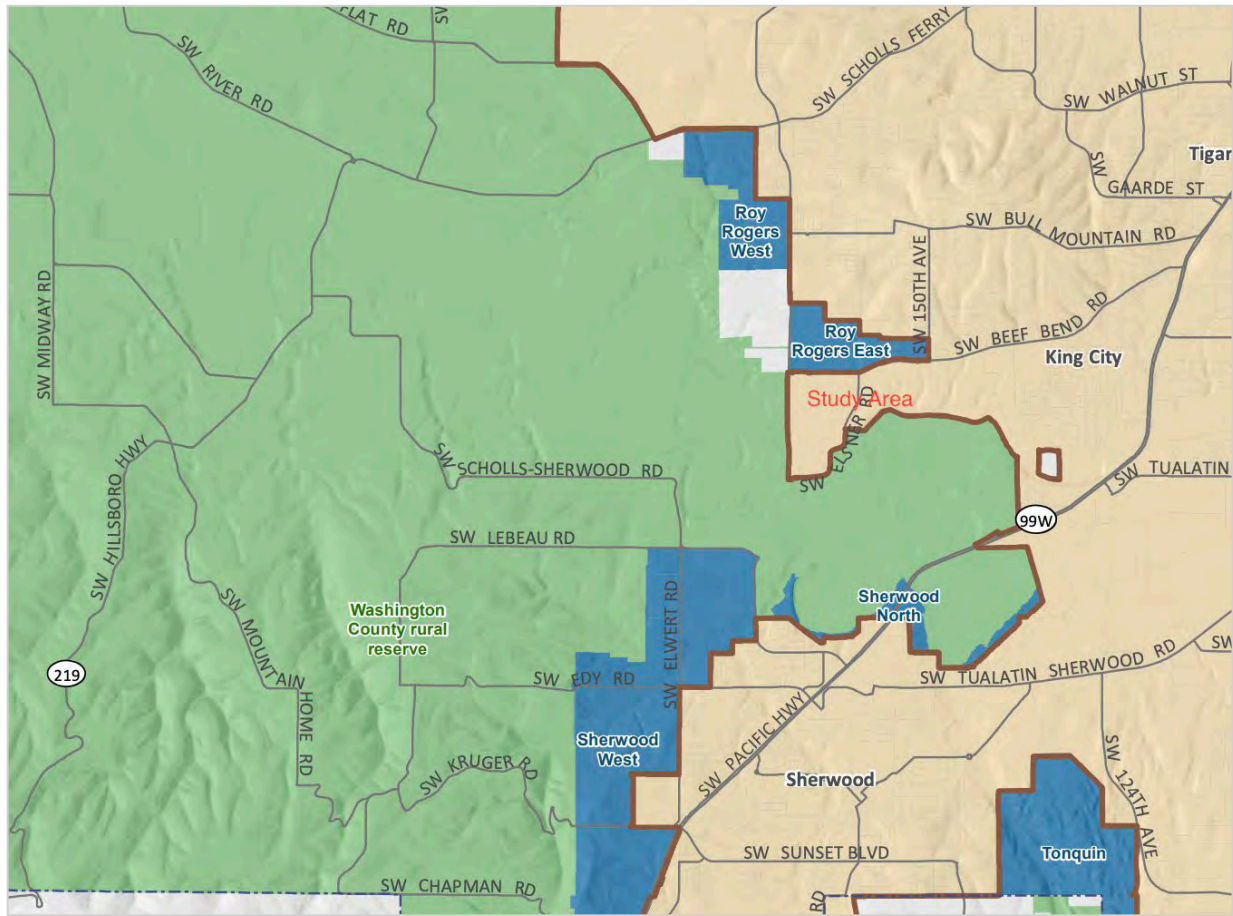
Exhibit 6 displays existing urban (URA) and rural reserve areas (RRA) in Washington County that are in proximity to URA 6D. The identified areas in Exhibit 6 are further discussed below.

- Directly adjacent and to the north of URA 6D sits **Roy Rogers East URA**, with **Roy Rogers West URA** further north. Both of these URAs are adjacent to Tigard's River Terrace, which is an existing expansion area currently being built-out. Roy Rogers West is a 303-acre area and Roy Rogers East is 205-acre area. In March of 2020,⁹ the City approved a motion to enter into an intergovernmental agreement with Metro and accept a \$300,000 grant targeted for a Title-11 compliant, concept planning project for these areas.
- Adjacent to Roy Rogers West and Roy Rogers East are two undesignated areas. These areas are technically unincorporated Washington County (i.e., the portion outside of Metro's Urban Growth Boundary). These areas may develop consistent with Washington County's zoning and development standards.
- Southwest of URA 6D sits **Sherwood West URA**. In 2016, the City developed a preliminary concept plan for the 1,291-acre area and in 2018, the City submitted a request to Metro to include this land in their Urban Growth Boundary as an expansion area. The City's preliminary concept plan for Sherwood West,¹⁰ indicated that the area will have four, distinct districts. The north district and west district will function as mixed housing neighborhoods centered around a new school, park, and mixed-use node. The far west district will form a mixed residential neighborhood on more steep terrain, and the southwest district will feature residential development and include a "Gateway to Wine Country" node. Overall, the plan highlights district and infrastructure connections, phasing, and funding needs, but it does not yet quantify development scales and amounts. Metro is collecting information for their next urban growth report, which will inform the decision about converting Sherwood West into an expansion area.
- Surrounding URA 6D to the south and west is **Washington County RRA**. Unlike typical unincorporated areas, RRAs are protected from urbanization for the next 50 years because of their natural features and their suitability for high value farms and forests.

⁹ City of Tigard. (March 3, 2020). Business Meeting One, Informational Memo. https://agendas.tigard-or.gov/agenda_publish.cfm?id=0&mt=ALL&get_month=3&get_year=2020&dsp=agm&seq=4097&rev=0&ag=1691&ln=28650&nseq=4103&nrev=0&pseq=&prev=#ReturnTo28650

¹⁰ City of Sherwood. (February 4, 2016). Sherwood West Preliminary Concept Plan, A long range look at our future.

Exhibit 6. Nearby Urban and Rural Reserve Areas, Washington County
Source: Metro.



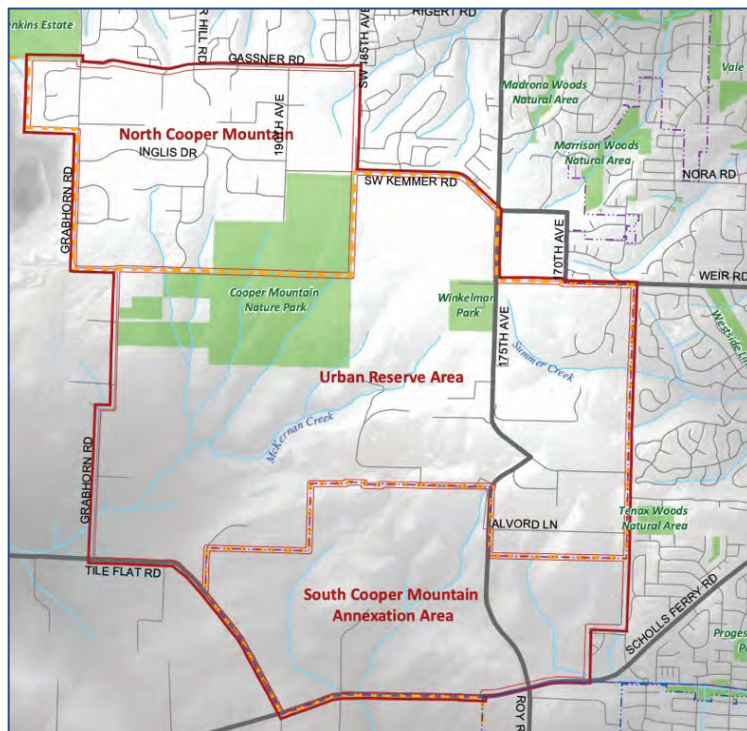
Planned Uses in Recent UGB Expansion Areas

Cooper Mountain Area in Beaverton is located roughly seven miles northwest of King City. The Area has three subareas: (1) South Cooper Mountain, (2) North Cooper Mountain, and an (3) Urban Reserve Area (Exhibit 7). The City of Beaverton annexed South Cooper Mountain¹¹ into the City in 2013. Per the South Cooper Mountain Concept Plan, the 544-acre area was proposed to comprise natural areas, trails, and parks; a 10-acre Main Street with neighborhood-scale commercial uses; a variety of housing types; and a well-connected transportation network that emphasizes walkability. The area is expected to have a capacity of 3,430 housing units at an average net density of 14.5 units/net acre.

North Cooper Mountain (510 acres) and the “Urban Reserve Area” are both within Washington County’s jurisdiction. Washington County will take over planning efforts for North Cooper Mountain, per a 2014 intergovernmental agreement with the City of Beaverton. In January 2020, Metro approved the Cooper Mountain “urban reserve area” as an expansion area and the City of Beaverton hired a consultant team to begin addressing zoning, transportation, natural resource protection, housing, infrastructure and funding for this area. Efforts are underway as of February 2020 and the project is expected to take three years to complete.

Exhibit 7. Cooper Mountain Expansion Area

Source: City of Beaverton. (December 2014). South Cooper Mountain Concept Plan.



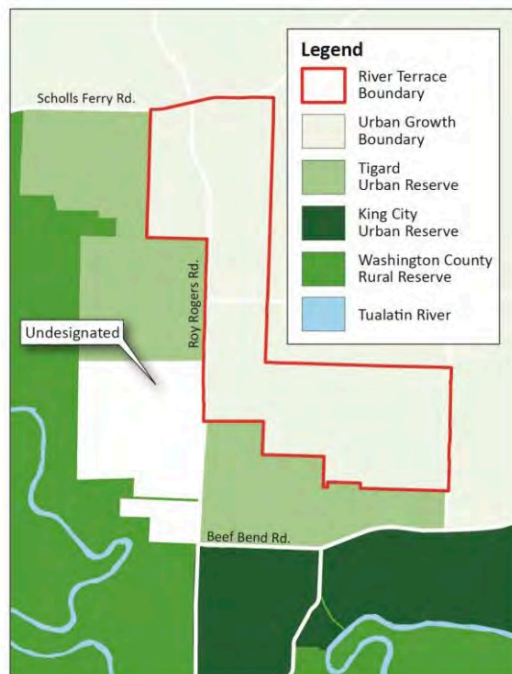
¹¹ City of Beaverton. (December 2014). South Cooper Mountain Concept Plan.

River Terrace in Tigard is located about two miles west of King City. The area is about 490 acres, of which 440 acres were added to Tigard’s UGB in 2002 and 50 acres were added to the UGB in 2011. The City developed the Community Plan for the area in 2014, in tandem with five infrastructure master plans.

The area is envisioned with residential uses at various densities, primarily. The areas added to the city in 2002 are expected to accommodate a minimum of 10 dwelling units per acre. The area added in 2011 is expected to accommodate a minimum of 479 dwelling units, pursuant to Metro policy. Supporting uses include neighborhood-scale commercial to provide neighborhood residents with access to goods and services. Parks and trails will be distributed throughout the area and a mixed-use node will be centrally located.

Exhibit 8. River Terrace Expansion Area

Source: River Terrace 2014 Community Plan.



South Hillsboro in Hillsboro is located about 12 miles northwest of King City. The area is roughly 1,400 acres and has three sub-areas: (1) Reed’s Crossing, (2) Butternut Creek, and (3) Vendage. South Hillsboro has capacity for 8,000 residential units. The area is also planned with both a Town and Village Center – each of which offers a range of services and shopping options. The master planning for this area took nearly two decades, with construction of the first homes beginning in 2018.

Source: South Hillsboro 2014 Community Plan.



Metro's 2040 distributed forecast¹² predicted that King City (city limits) would grow by 1,885 people from 3,425 people in 2015 to 5,310 people in 2040. In that same time period, King City (city limits) would grow by 434 employees, from 709 employees in 2015 to 1,143 employees in 2040.

The Housing Needs Analysis also established a housing forecast for the 20-year period. It used the extrapolated household growth forecast as a basis, concluding that King City would need 980 new dwelling units between 2018 and 2038. Key attributes of the housing forecast were:

- **Housing mix:** 50% single-family detached units, 15% single-family attached units, and 35% multifamily units (490, 147, and 343 units, respectively).

¹² Metro. (July 12, 2016). Exhibit A: 2040 Household Distributed Forecast, 2040 Population Distributed Forecast, and 2040 Employment Distributed Forecast.

-
- **Housing affordability:**¹³ 16% affordable to ELI, 32% affordable to VLI, 16% affordable to LI, 16% to MI, and 20% affordable to HI households (158, 312, 161, 153, 197 units, respectively).

The analysis did allocate these units to residential plan designations, however, it noted that “the allocation of new units will likely change when the City identifies land to bring into the city limits and the King City Comprehensive Plan designations are applied to the land.”

Development Capacity in Project Area

King City’s 2017 Market Analysis found that the URA 6D area could accommodate 54,000 to 85,000 sq. ft. of retail demand in 10 years. Opportunities for retail cited in the analysis included a grocery store (16,000 to 25,000 sq. ft.), restaurant and drinking establishments (10,000 to 15,000 sq. ft.), and more general office / commercial uses. Acreage required to accommodate this retail demand was 4.6 to 5.5 acres. In addition, another 4.6 to 5.5 acres would be required to accommodate demand for roughly 40,000 to 60,000 sq. ft. of wine country lodging (with 70 rooms), event space, and dining.

In 2018, the King City’s Housing Needs Analysis determined that the city had a deficit of housing capacity in most of its plan designations that allow housing outright. These were: Single-Family (SF) Plan Designation, Residential (R-9) Plan Designation, and MF Plan Designations (R-12, R-24, and AT). All told, citywide residential land deficits in 2018 were attributed to a deficit of future housing capacity of approximately 940 dwelling units. Analysis in King City’s 2018 Concept Plan found that URA 6A could accommodate 3,576 dwelling units. As such, the estimated buildout program presented in the Concept Plan suggests that the area could *more than* accommodate the city’s entire household/dwelling unit forecast (2018-2038), with surplus of 2,596 dwelling units. Capacity is consistent with the purpose of URA’s generally (i.e. they are purposed to accommodate 50-years of growth).

¹³ Refers to the share and number of forecasted housing units affordable to households in different income categories. The income categories are defined as: extremely low-income (ELI) households who earn less than 30% of MFI, very low income (VLI) households who earn 30-50% of MFI, low-income (LI) households who earn 50-80% of MFI, moderate income (MI) households who earn 80-120% of MFI, and high-income (HI) households who earn 120% of MFI or more. MFI is median family income.

APPENDIX E. URA 6D MARKET ANALYSIS

King City Market Analysis: Urban Reserve Area 6D

May 14, 2020

Prepared for: City of King City

Revised Report

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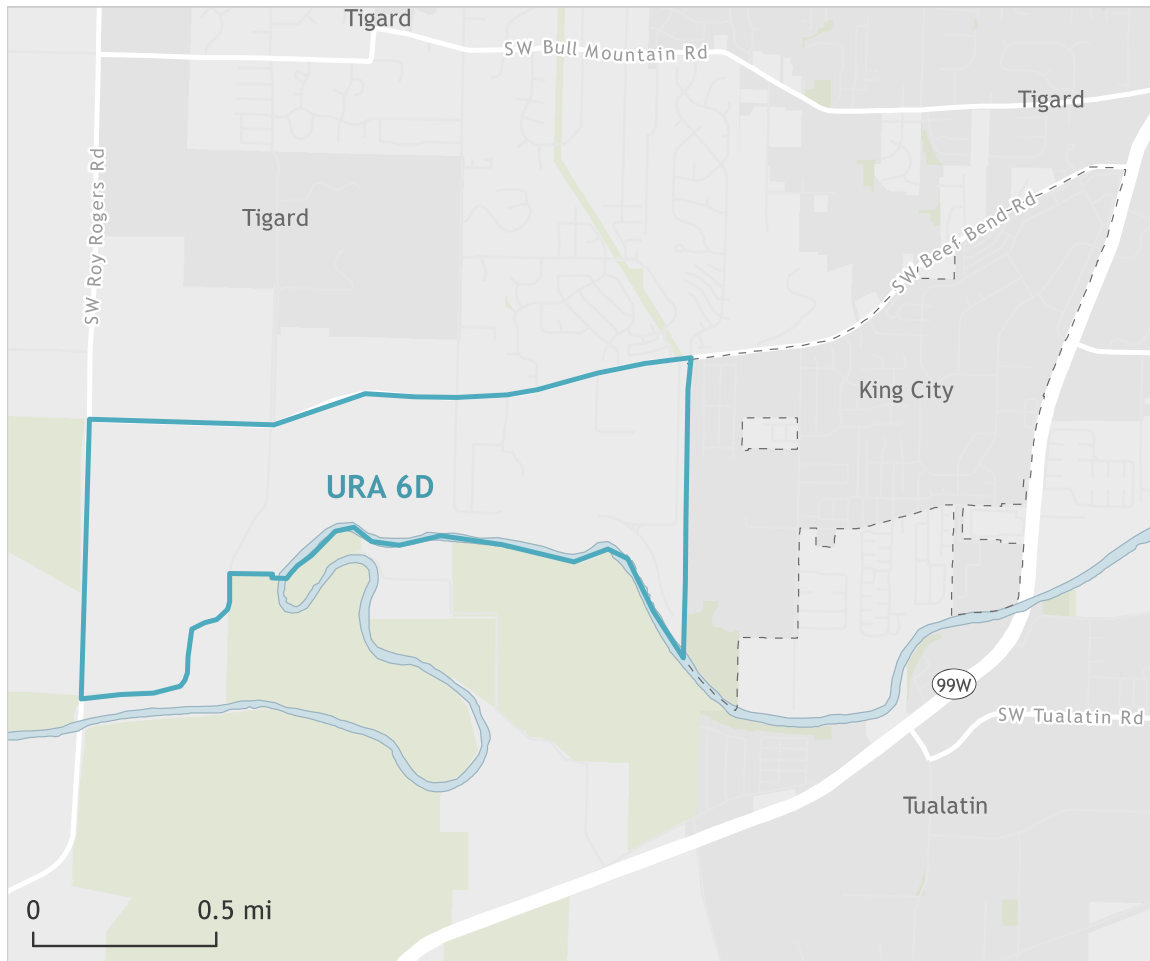
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1. Introduction

This report presents King City's Market Analysis for Urban Reserve Area 6D (URA 6D) and its surrounding vicinity (Exhibit 1). This study generally pulls from recent work conducted for URA 6D (study area), modifying and adding to this work as necessary to further evaluate the market potential of the study area.

Exhibit 1. URA 6D Study Area

Source: ECONorthwest.



Purpose

The purpose of the report is to assess and refine the findings of the 2018 Concept Plan and 2017 Market Analysis for URA 6D by determining the market demand for commercial and residential uses in the study area. The analysis evaluates the market demand for various types of land uses as well as compatible businesses within the study area given current and projected future growth. Findings are measured against the community's vision for URA 6D, as described in the 2018 Concept Plan.

Ultimately, this report concludes with recommendations for an appropriate mix of housing types and densities and an evaluation of the type of businesses and services that are likely achievable given the area's locational advantages and disadvantages.

Background

A market analysis was produced for URA 6D in 2017¹. The analysis defined a 525-acre study area to understand existing and likely future site conditions, economic and demographic indicators, and residential/commercial development trends, including pipeline activities. The analysis came to several determinations, such as:

- The hottest residential markets are walkable, in-town neighborhoods with cultural amenities and proximity to jobs.
- Millennial household formation should drive starter home demand.
- Seniors will drive active senior and assisted living demand.
- The URA 6D area could absorb 500-900 dwelling units and at least 54,000–85,000 sq. ft. of commercial retail space.

Opportunities for retail cited in the analysis were: grocery store (16,000 to 25,000 sq. ft.), restaurant and drinking establishments (10,000 to 15,000 sq. ft.), and more general office/commercial uses. Acreage required to accommodate this retail demand was 4.6 to 5.5 acres. In addition, another 4.6 to 5.5 acres would be required to accommodate demand for roughly 40,000 to 60,000 sq. ft. of wine country lodging (with 70 rooms), event space, and dining.

Then, with the assistance of several consultants, the City of King City developed a concept plan for URA 6D in 2018. The Concept Plan² was developed along the same timeline as King City's Housing Needs Analysis (2018). The Concept Plan, submitted to Metro, served as a request to expand King City's UGB so that it would include URA 6D. The Plan proposed land use designations, four neighborhoods (including a Main Street/Town Center), a residential buildout

¹http://cms6.revize.com/revize/kingcityor/document_center/URA/Concept%20Plan%20Index/D.%20Market%20Analysis/20170307%20King%20City%20Market%20Analysis%20Memorandum,%20March%202017.pdf

² City of King City. (May 2018). King City Urban Reserve Area 6D Concept Plan.

program, transportation routes, and needed infrastructure (and costs) to support development. The Plan concluded that the mix of proposed uses would help address the city's residential land deficit and create a mix of amenities, employment, and educational opportunities to serve the area.

The King City's Housing Needs Analysis determined that the city had a deficit of housing capacity in most of its plan designations that allow housing outright. These plan designations were: Single-Family (SF) Plan Designation, Residential (R-9) Plan Designation, and MF Plan Designations (R-12, R-24, and AT). All told, citywide residential land deficits in 2018 were attributed to a deficit of future housing capacity of approximately 940 dwelling units.

The deficit of housing capacity further demonstrated the importance of URA 6D to accommodate growth in King City. Analysis in King City's 2018 Concept Plan found that URA 6D could accommodate 3,576 dwelling units. As such, the estimated buildout program presented in the Concept Plan suggests that the area could *more than* accommodate the city's entire household/dwelling unit forecast (2018–2038), with a surplus of 2,596 dwelling units. Capacity is consistent with the purpose of URA's generally (i.e., they are purposed to accommodate 50-years of growth).

Approach and Methods

The approach for this analysis was to build on past work (conducted as part of the concept planning process), while updating and including new, key data analyses where appropriate. We also use case studies and comparative analysis to understand the factors that influence expansion areas and commercial centers. We supplemented data analysis through interviews with local developers, City officials, and representatives at Metro.

Data Sources

Unless otherwise noted, we used the following data sources to inform this study:

- **US Decennial Census:** Completed every ten years, it is a survey of all households in the U.S. which is considered the best available data for information such as demographics, household characteristics, and housing occupancy characteristics. The analysis uses the 2000 and 2010 Decennial Census to better understand the socio-economic factors influencing King City and the larger region.
- **American Community Survey (ACS):** Completed every year, it is a sample of households in the U.S. The ACS collects detailed information about households, including demographics, household characteristics, housing, income and housing costs, and other characteristics. The analysis uses the 2014–2018 ACS to better understand the socio-economic factors influencing King City and the larger region.
- **Portland State University's (PSU) Population Research Center (PRC):** The PRC prepares population forecasts for cities and counties outside of Metro's UGB and

population estimates for all cities and counties across the state. The analysis uses PSU's official population estimates for King City and larger regions.

- **Metro 2040 Distributed Forecast:** This is the Metro region's official population, household, and employment forecast for cities and portions of counties within the Metro Urban Growth Boundary. We use Metro's projections where applicable to describe growth expectations in King City and the region.
- **ESRI Business Analyst:** A GIS-enabled program that provides market data for site-specific trade areas. We use Business Analyst to inform our case study analysis and commercial retail trends analysis for URA 6D.
- **CoStar:** An online platform that provides real estate data. We use Costar data to analyze commercial retail and multifamily residential market trends.

How does the COVID-19 Pandemic affect our analysis?

This report was drafted in the Spring of 2020. As of this draft, the COVID-19 virus has created a global pandemic that has resulted in entire sectors of the economy being put on pause. Short- to intermediate-term impacts on the economy remain uncertain, although disruptions in commercial and housing market fundamentals are expected. Over the long-term horizon, as the study area is built out, prevailing demographic and economic trajectories will have greater influence than cyclical variations or economic shocks. As such, in this analysis we assume a return to long-term economic stabilization.

Organization of the Report

The remainder of this document is organized as follows:

- **Chapter 2. Socio-Economic Analysis of Market Area** describes demographic and economic trends in King City and larger regions.
- **Chapter 3. Residential Real Estate Analysis of Market Area** presents information about the local, residential housing market. It presents residential real estate market trends that will likely influence development in URA 6D's primary, residential trade area.
- **Chapter 4. Commercial Real Estate Analysis of Market Area** summarizes the factors that influence commercial development and the competitive retail landscape for the primary, commercial trade area. It also summarizes several comparative analyses about commercial centers to assess the relationship between the scale of retail development to catchment areas.
- **Chapter 5. Market Potential in the Project Area** reflects on the King City's 2018 Concept Plan for URA 6D, summarizes URA 6D's competitive advantages and disadvantages, and presents findings about an appropriate mix of land use and development types in URA 6D.

In addition to these chapters, a series of appendices present additional details of our case study analysis.

- **Appendix A.** Villebois in Wilsonville, Oregon
- **Appendix B.** Northwest Crossing in Bend, Oregon
- **Appendix C.** Bethany in Washington County
- **Appendix D.** Progress Ridge in Beaverton, Oregon

2. Socio-Economic Analysis of Market Area

Chapter two provides analysis of demographic and economic trends in King City to better understand the makeup of, and factors that affect, the King City community. For some exhibits, we compare city trends to larger regional trends. In this analysis, King City refers to King City city limits.

Community Demographic Trends

King City's demographic makeup is different from the greater region. King City has a larger share of older residents and a relatively small share of younger people under 20 years of age. About 40 percent of the city is in retirement/at retirement age, compared to 13 percent for Washington County. King City's age distribution is largely due to the fact that it developed as a retirement community that strictly forbade homeowners under the age of 55.

Over the last two decades, King City's population more than doubled and as the city grew, its residents became more diverse. The community grew younger on average and gained a greater share of large households and family households with children. In addition, inflation-adjusted household incomes grew across the city, likely because more working-aged residents moved into the city. Given these changes, it is expected that the King City community will more closely resemble the Portland Region, as the city continues to grow and evolve.

The following subsections present and summarize the demographic data for King City and its comparative regions.

POPULATION . . . King City is growing at a faster rate than the region.

King City's population grew by 115 percent between 2000 and 2019, adding 2,245 new residents. Over this period, King City's population grew at an average annual growth rate of 4.1 percent, which is a rate faster than both the tri-county Portland Metro Region (1.3 percent) and Oregon (1.1 percent).

Based on Metro's forecast for future growth, King City's population is forecast to reach 5,310 people by 2040 (an increase of 1,120 new people between 2019 and 2040). Population growth will continue to drive future demand for housing in the city.

Exhibit 2. Historical Population Growth, King City (city limits), Portland Region (tri-county), and Oregon, 1990, 2000, 2010, and 2019

Source: Portland State University, Population Research Center Estimates.

					Change 2000 to 2019		
	1990	2000	2010	2019	Number	Percent	AAGR
Oregon	2,842,337	3,421,399	3,844,195	4,236,400	815,001	24%	1.1%
Portland Region	1,174,291	1,444,219	1,644,535	1,858,560	414,341	29%	1.3%
King City	2,060	1,945	2,800	4,190	2,245	115%	4.1%

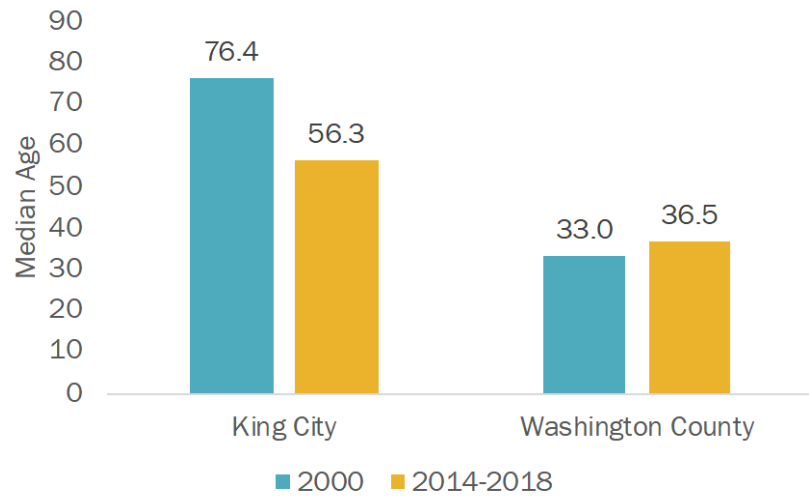
AGE . . . Residents of King City are typically older - but getting younger on average.

From 2000 to 2014–2018, King City’s median age decreased by 20 years.

Despite this trend, King City’s median age in 2018, was still 20 years older than the median age of Washington County residents.

Exhibit 3. Median Age, King City (city limits), Washington County, 2000 and 2014–2018

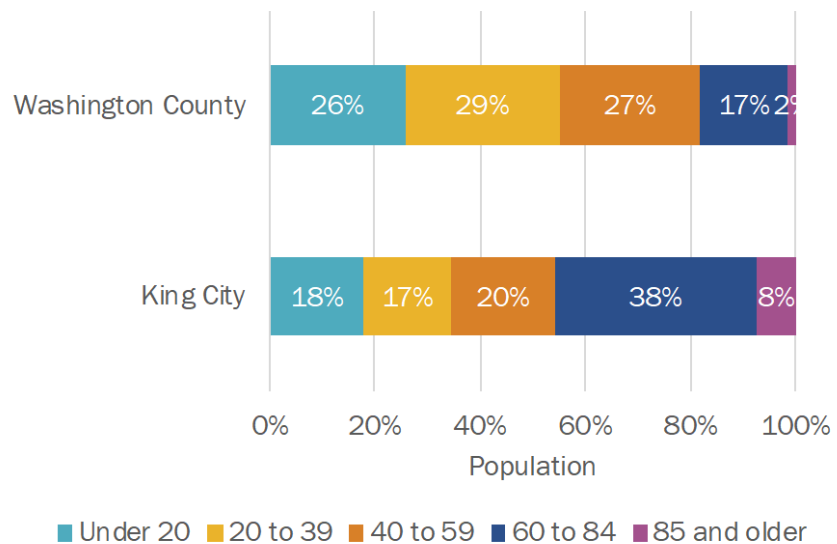
Source: U.S. Census Bureau, 2000 Census Table P013 and 2014–2018 ACS Table B01002.



In the 2014–2018 period, 46 percent of King City’s population was aged 60 or older, compared to 18 percent of Washington County’s population.

Exhibit 4. Age Distribution, King City (city limits), Washington Co., 2014–2018

Source: U.S. Census Bureau, 2014–2018 ACS Table S0101.



HOUSEHOLDS . . . Most of King City's households contain one or two people.

From 2010 to the 2014–2018 period, King City added 165 new households.

From 2018 to 2040, King City is forecast to grow by 1,322 households.

King City's average household size was smaller than both the county's and state's average.

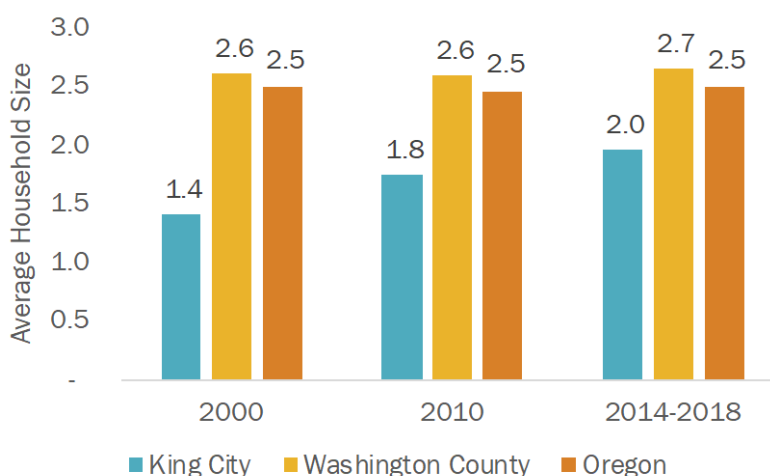
Exhibit 5. Household Formation, King City (city limits), 2010, 2014–2018, and 2040

Source: U.S. Census Bureau, 2010 Census Table P20, 2014–2018 ACS Table DP02. Metro 2040 Distributed Forecast.



Exhibit 6. Average Household Size, King City (city limits), Washington County, and Oregon, 2000, 2010, and 2014–2018

Source: U.S. Census Bureau, 2000 Census Table H012, 2010 Census Table H12, and 2014–2018 ACS Table B25010.



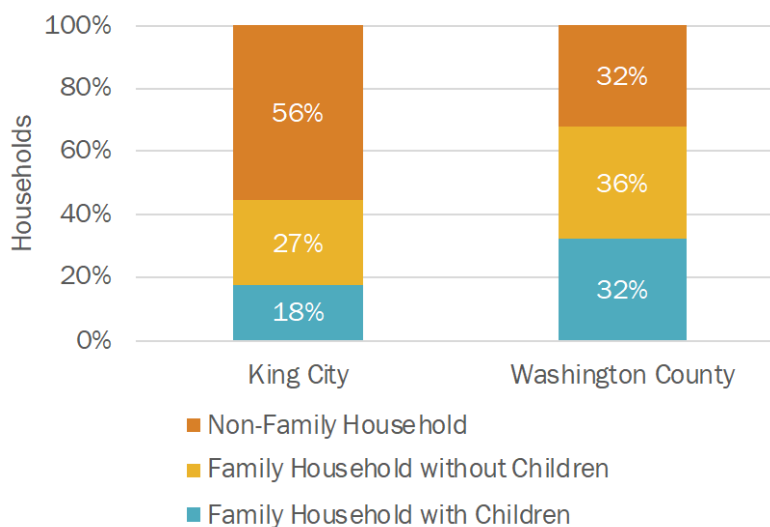
Over half of King City's households were non-family households (e.g., one-person households and unrelated roommates).

King City has a smaller share of family households (with and without children) than Washington County.

In 2010, 58 percent of King City's households were nonfamily households, 30 percent were family households without children, and 12 percent were family households with children.

Exhibit 7. Household Composition, King City (city limits), Washington County, and Oregon, 2014–2018

Source: U.S. Census Bureau, 2014–2018 ACS 5-year estimate, Table DP02.



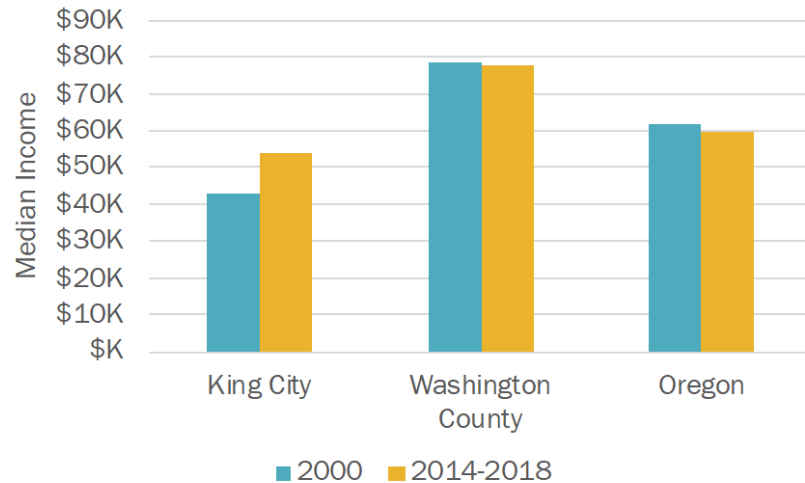
INCOME . . . The gap between King City's and regional income levels is closing.

After adjusting for inflation, King City's median household income (MHI) increased by \$10,994 (26 percent) from 2000 to 2014–2018.

In contrast, over the same period, Washington County and Oregon's inflation adjusted MHI declined by 1 and 4 percent, respectively.

Exhibit 8. Change in Median Household Income, King City (city limits), Washington County, Oregon, 2000 to 2014–2018, Inflation-adjusted

Source: U.S. Census Bureau, 2000 Decennial Census, Table HCT012; 2014–2018 ACS 5-year estimate, Table B25119.

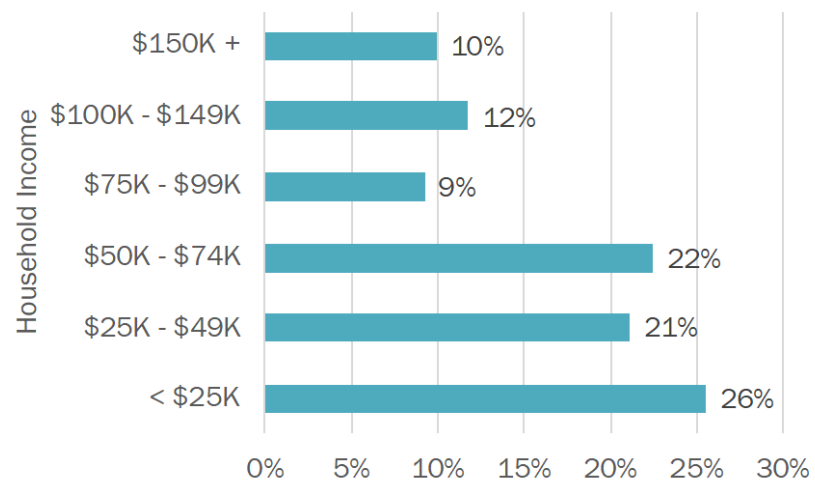


Almost half of King City's households earned less than \$50,000.

The likely reason for the lower incomes is King City's older population, with more retirees in King City than the region.

Exhibit 9. Median Household Income by Household Size, King City (city limits), 2014–2018

Source: U.S. Census Bureau, 2014–2018 ACS 5-year estimate, Table B19001.



Community Economic Trends

King City exists as part of an interconnected economy in the Portland Region. However, King City's demographics include an above average concentration of retirees. In 2017 King City's labor force participation rate was 47.5 percent, compared to 66 percent regionally. Among King City's residents that do work, most (about 99 percent) commute outside of King City for work, most notably to Tigard, Portland, and Beaverton.³

Recent data shows that the unemployment rate for King City residents is relatively low, compared to Washington County.

The sectors that have primarily led to employment growth in King City, over the last decade, were professional and business services (adding 210 jobs); private education, health care, and social assistance services (adding 176 jobs); and retail trade (adding 151 jobs). In part, these same sectors are also expected to contribute to regional employment growth trajectories—adding 65,300 new jobs in the Portland Region between 2017 and 2027.⁴

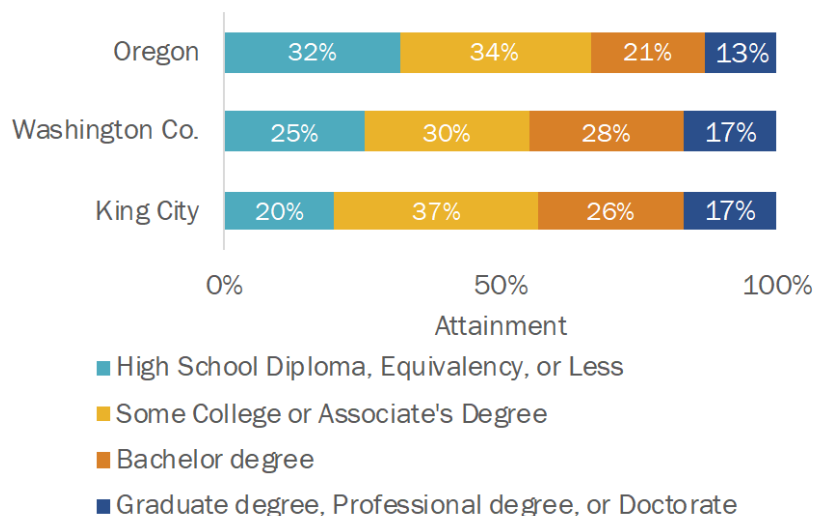
The following subsections present data about characteristics of King city's economy.

EDUCATIONAL ATTAINMENT . . . Less than half of residents have higher ed. degrees.

King City's population over 25 years of age is similarly educated relative to the county.

About 43 percent of King City's residents over the age of 25 attained a bachelor's degree or higher form of education, compared to 45 percent of Washington County's residents.

Exhibit 10. Educational Attainment, Population 25 Years or Older, King City (city limits), Washington County, and Oregon, 2014–2018
Source: U.S. Census Bureau, 2014–2018 ACS 5-year estimate, Table B15003.



³ Census on the Map, primary jobs in 2017.

⁴ Oregon Employment Department. Employment Projections by Industry 2017–2027 (Clackamas, Multnomah, and Washington County).

EMPLOYMENT · · · Employment in professional, service, and retail industries grew.

In the 2014–2018 period, King City's unemployment rate, for the civilian population 16 years and older was 2.9 percent.

Exhibit 11. Unemployment Rate, King City (city limits) and Washington County, 2014-2018

Source: U.S. Census Bureau, 2014–2018 ACS Table S2301.

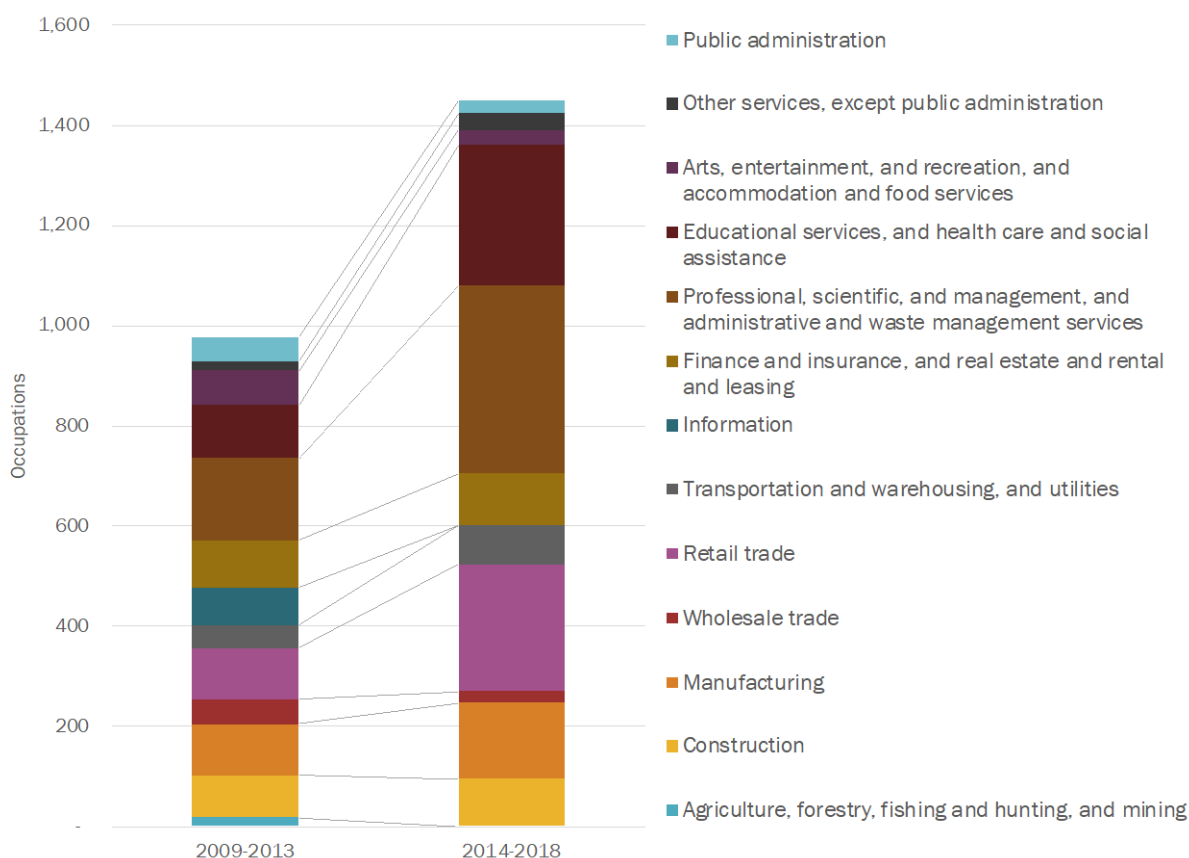


Exhibit 12 shows that the total number of occupations in King City has grown. From the 2009–2013 to the 2014–2018 period, King City gained 471 jobs (a 48 percent change). The industries with the most employment growth in this time were:

- Professional, scientific, and management, administrative, and waste management services (210 new employees, 127 percent change)
- Educational services, and health care and social assistance (176 new employees, 168 percent change)
- Retail Trade (151 new employees, 147 percent change)

Exhibit 12. Change in Industry by Occupation for the civilian employed population 16 years and over, King City (city limits), 2009–2013 to 2014–2018

Source: U.S. Decennial Census, ACS 2009–2013 and 2014–2018, Table S2405.



King City is forecast to add 434 employees from 2015 to 2040.

The 434 new employees would account for less than one percent of the employment growth expected in all of Washington County (portion inside Metro's UGB) in that same time.

Exhibit 13. Employee Growth Forecast, King City (city limits), 2015–2040

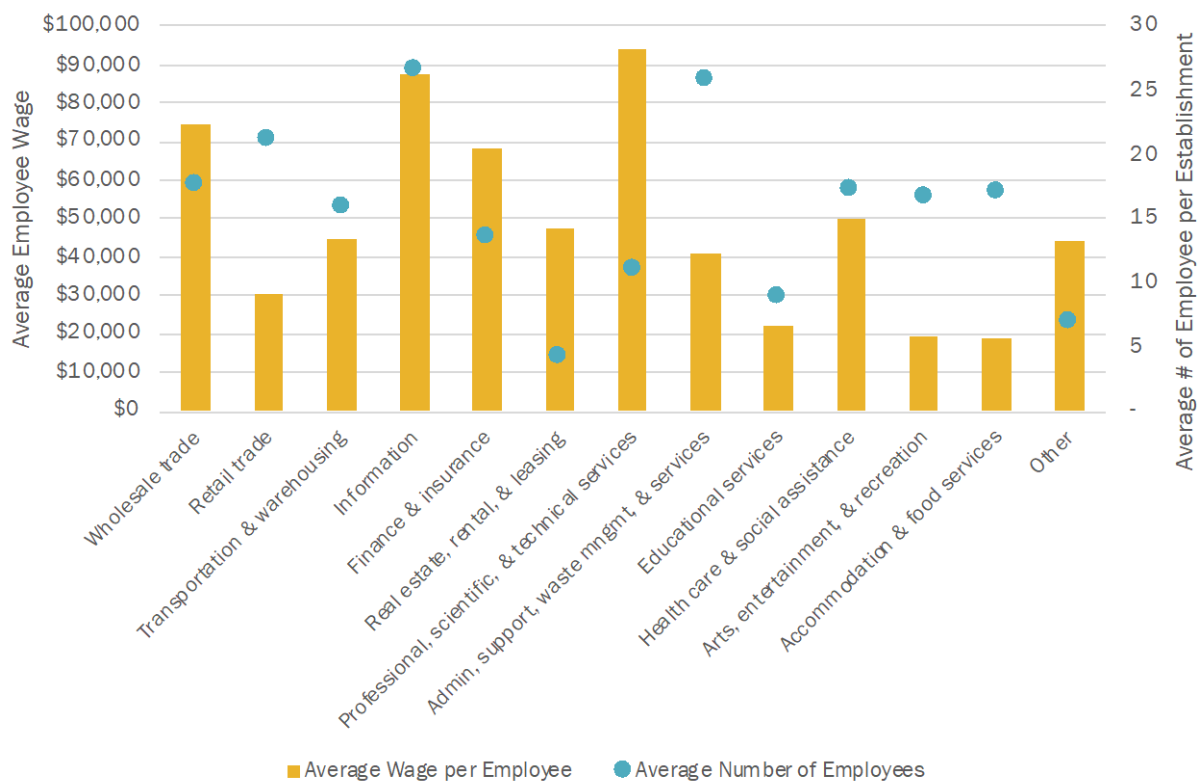
Source: Metro 2040 Employment Distributed Forecast, created July 12, 2016.

	KING CITY	WASHINGTON COUNTY (INSIDE METRO UGB)
2015	709	266,600
2040	1,143	398,484
Change (2015–2040)		
Number	434	131,884
Percent	61%	49%
Rate	1.9%	1.6%

On average, across Washington County and for all sectors, the average number of employees per business was 16 employees and the average wage was \$49,600 (2017).

Exhibit 14. Business Size Distribution, Washington County, 2017

Source: U.S. Census Bureau, Economic Census 2017, Table EC1700BASIC.



3. Residential Real Estate Market Analysis

Chapter 3 presents ECONorthwest's analysis of the residential real estate market in the URA 6D market area.

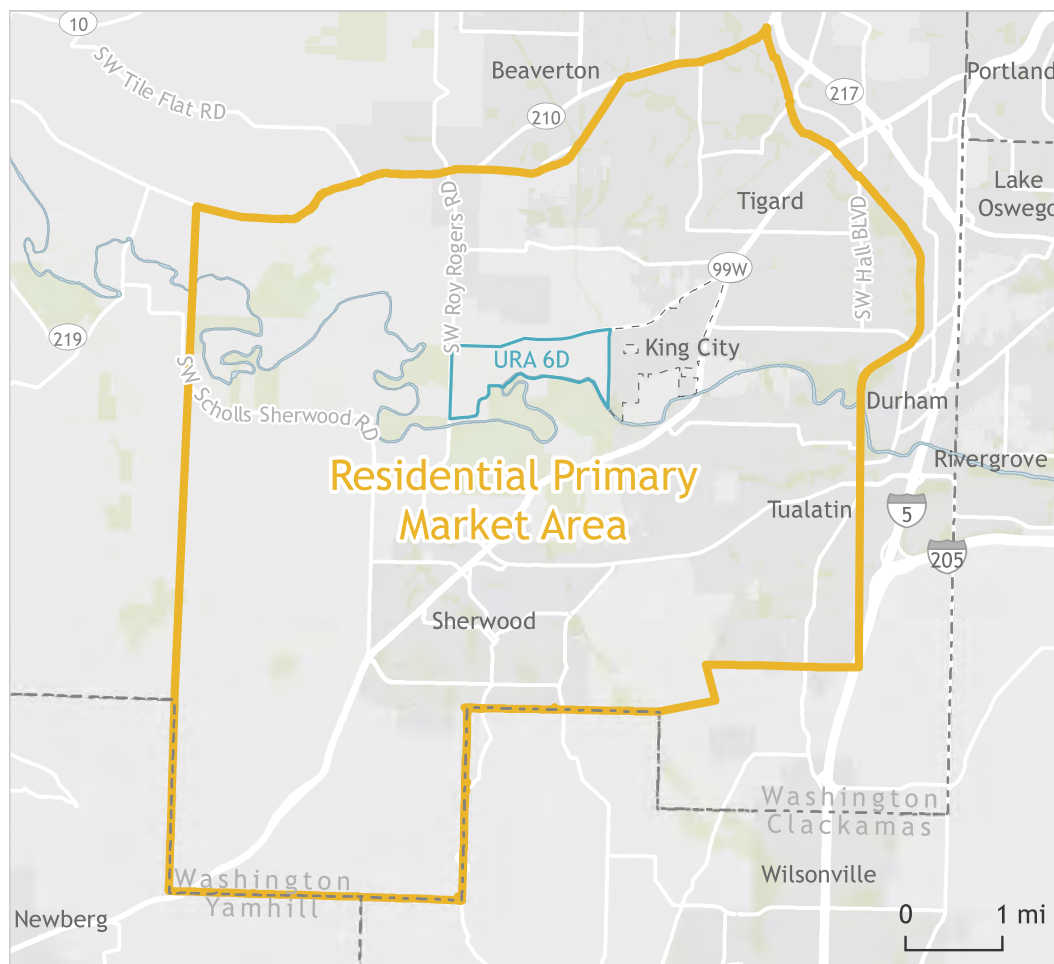
Primary Market Area

A primary market area (PMA) for residential real estate is defined as the geographic region from which the majority of market support can be expected to originate. Total market depth for housing is a product of two components, net-new household growth, and turnover. Net-growth is an estimate of the number of new households that will move into an area over a specified period of time. An example of a net-new household would be a young couple moving out of an apartment in Portland and purchasing (or renting) a starter home in the market area. By contrast, turnover demand is the shuffling of existing households within the market area. An example of turnover would be a retired couple currently living in the market area selling their home and moving into a condominium also located within the market area. Turnover is a source of demand for new housing development capturing market share and it has an influence on the delineation of market areas.

In residential markets, physical factors influence the delineation of a market area, but to a lesser degree than other types of real estate. Factors such as housing choice, proximity to employment centers, tax structure, schools, and other factors play a larger role in the cross-shopping decisions of households. Our assessment of the 2017 Market Study is that the market area used for residential remains suitable. This study will continue to use this market area delineation, as summarized in Exhibit 15.

Exhibit 15. Residential Market Analysis Trade Area for King City URA 6D

Source: Leland Consulting. (March 2017). King City Market Analysis. Figure 2: Market Area for Competing Development and Retail Development, page 5.



Summary of Existing Housing Market Fundamentals

The Market Analysis completed for the King City URA 6D Concept Plan included an assessment of demographic factors influencing housing preferences and housing market fundamentals. Structural shifts in these factors tend to move slowly across larger geographies. For this reason, we are not duplicative in our efforts, and assume these findings continue to influence market conditions. Where appropriate, this analysis will add to and interpret previous efforts. In other areas, data is updated to reflect current market conditions. Original research on for-sale market conditions is also presented.

Population and Household Growth

Population growth was rapid from 2000 to 2019 at a rate of 2.1 percent, double the national growth rate. Growth dissipated in the period after 2010 to match the national rate of 0.9 percent. In 2016, 97,000 residents across 37,000 households were estimated to reside in the PMA. Over

the long-term, 1.7 percent annualized compound household growth is forecasted by Metro's Transportation Analysis Zone (TAZ) based model. The model indicates that the PMA will gain regional market share over the next 20 years.

Housing Preferences

Psychographic analysis is a market segmentation tool used to interpret consumer behavior across social and demographic cohorts. It is a commonly used method in establishing consumer preferences in market analyses. Psychographic data is produced and sold by consumer and demographic research companies. Qualitative insights are combined with demographic and proprietary consumer spending data to organize households into profiles based on shared traits and characteristics. The 2017 Market Analysis used psychographic profiles from ESRI called "Tapestry." Tapestry psychographics classify all households in the nation into one of 67 unique segments. The 2017 Market Analysis included this data as an input to help estimate housing preferences. Because changes in consumer behavior move slowly, we only revisit and interpret the data from the 2017 Market Analysis to confirm that preference assumptions remain valid.

Data in the 2017 Market Analysis found that over 73 percent of households in the PMA are represented by just seven Tapestry cohorts. While not fully comprehensive, these cohorts represent a large cross-section of the market, and for that reason, reasonably reflect housing choice in the market.

A brief summary of key socioeconomic characteristics for each Tapestry cohort is summarized below, followed by our insights into how these characteristics will influence housing choice in the study area. The concentration of local households relative to the national average is presented in parentheses.

A note about the ESRI Tapestry data:

Full demographic profiles for each Tapestry cohort with expanded qualitative narrative from ESRI can be found on their website linked [here](#). We recognize that the labels used here are not particularly sensitive to some populations. We repeat them here to maintain consistency with the 2017 Market Analysis. For their part, ESRI has also tried to update their Tapestry descriptions to be more inclusive. Their latest Tapestry version has labels that are different than those presented here.

Soccer Moms - (8.0x U.S.)

This is the largest segment of the study area and represents eight times the proportion seen across the U.S. This group is affluent and includes a high composition of family households⁵. They prefer new housing located in the periphery of metropolitan areas with access to

⁵ A Family is defined by the Census Bureau as a group of two people or more (one of whom is the householder) related by birth, marriage, or adoption and residing together.

professional job centers. More than 85 percent live in owner-occupied single-family homes with a median value of \$226,000.

Bright Young Professionals - (5.5x U.S.)

This group is five and a half times more representative of the study area than the U.S. Members of this segment favor the urban outskirts of large metropolitan areas. One in three are under the age of 35. Roughly 56 percent are renters with an average monthly rent of \$1,000. Over a third live in buildings with 5 or more units, while two-fifths live in single-family homes.

Professional Pride - (6.0x U.S.)

The third-largest segment of the study area is six times more represented here compared to the rest of the U.S. Members of the segment commute far and work long hours. They are about 41 years old. More than 80 percent are married, many with kids. They prefer newer neighborhoods with a median home value of \$433,400. About 92 percent live in owner-occupied single-family homes.

Savvy Suburbanites - (2.9x U.S.)

This segment is highly educated, with more than 50 percent holding a college degree. About 91 percent live in owner-occupied single-family homes valued above \$360,000.

The Elders - (10.1x U.S.)

This segment is also highly represented in the study area by more than 10 times the national average. Members are largely retirees, with only 21 percent still actively employed. They favor communities designed for senior living, which is congruent with their median age of 72. This group lives in a variety of housing types ranging from mobile homes to high-rise apartments. Still, more than 82 percent own their homes with a median value of \$153,000.

Middleburg - (2.3x U.S.)

This segment is made up of young couples with children who live semirural lifestyles within metropolitan areas. Their neighborhoods rapidly transformed from country to subdivisions over the last decade. More than 74 percent own homes with median values of \$158,000. These range from mobile homes to single-family houses.

Boomburbs - (4.1x U.S.)

This segment includes married couples with established wealth. Roughly 84 percent are homeowners with a median home value of \$350,000.

Exhibit 16. Summary of Psychographic Segments, Primary Market Area, 2017

Source: 2017 King City URA 6D Market Analysis (from ESRI data)

Segment	Market Share	Homeownership Rate	Predominate Housing Preference
Soccer Moms	22.4%	84.9%	Single Family
Bright Young Professionals	12.2%	42.8%	Multi Family
Professional Pride	10.7%	91.6%	Single Family
Savvy Suburbanites	8.7%	90.6%	Single Family
The Elders	7.1%	81.4%	Mixed
Middleburg	6.5%	73.4%	Single Family
Boomburbs	6.1%	84.0%	Single Family

ESRI Tapestry Cohort Summary

- The large majority of households are expected to live in owner-occupied housing, with many expressing a preference for newer construction. Collectively, these seven cohorts have an average homeownership rate of 78 percent.
- All but Bright Young Professionals (12.1 percent) and The Elders (7.1 percent) are expected to consume single-family homes ranging in value from \$153,000 to \$433,000 plus.
- These two groups, that coincide with Millennial and Boomer age ranges, have a greater preference for higher density multifamily buildings. Only the Bright Young Professional segment lives in primarily rental housing.
- The ESRI data does not differentiate between single-family detached and single-family attached housing types. We expect both market and regulatory forces to lead to more single-family attached development than in previous cycles. Elevated housing costs have made homeownership for middle-income households prohibitive. Attached housing products can be constructed at a lower comparative price point and for that reason, they are more accessible to a wider range of households. Additional market support for attached housing comes from retirees downsizing to newer, lower maintenance homes. In other words, in recent years preferences among multiple market segments have become more accommodative to single-family attached housing products. Locally, this has been observed in development outcomes at River Terrace where well over 150 attached units have been purchased, most at price points between \$280,000 and \$350,000 per unit.

From a regulatory perspective, the State of Oregon's new legislation—HB2001—removes some regulatory barriers to the development of attached housing. Where it is common for the return-on-investment for attached housing product to exceed detached development, developers will also prefer this product segment.

- The ESRI Tapestry psychographic segmentation points to a higher need for single-family neighborhoods—with detached and attached housing products—with some residual demand for multifamily rental units coming from Millennials and downsizing Boomers.

Household Size and Type

While the average household size in King City was 2.0 persons, in the more broadly defined PMA it is 2.61 persons. The PMA's smaller concentration of single-person households (25 percent) coupled with a larger share of family households with children (28 percent) drives this differential.

Multigenerational Households

Nationally, a growing family typology is the multigenerational household⁶. Estimates from the Pew Research Center suggest this market segment grew by 21.6 million households between 2000 and 2016.⁷ The same research found Asian and Hispanic/Latino⁸ households to be 35 percent to 45 percent more likely than average to be multigenerational. In Washington County, the Hispanic/Latino share of the population is roughly on par with the national average but the Asian population share is 83 percent higher.

To approximate multigenerational households in Washington County, we evaluated two metrics from the American Community Survey:

- The share of households with at least one grandparent and grandchild (4.5 percent).⁹
- The share of the population in family households with non-spouse, non-child relative (5.3 percent).¹⁰

Despite a proportionately small share of multigenerational households in the area currently, we expect this household typology to grow. Demographic, cultural, and economic forces will make multigenerational housing a necessary housing option for some, and a more attractive housing option for others.

Commuting Patterns

The 2017 Market Analysis reported that 26,000 workers commute into the market area each day, while more than 40,000 travel in the opposite direction from homes in the market area to a

⁶ Defined by the Pew Research Center as households that include at least two adult generations or grandparents and grandchildren younger than 25.

⁷ Pew Research Center (2018). Multigenerational Household Analysis. Retrieved from: <https://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/>

⁸ When in reference to Census data, race classifications use terminology currently defined by the Census Bureau.

⁹ Source: U.S. Census Bureau, 2014–2018 ACS 5-year estimate, Table S1002

¹⁰ Source: U.S. Census Bureau, 2017 ACS 1-year estimate, Table DP02

workplace outside the area. The majority of these trips are to Portland, followed by “other” places, Tigard, and various nearby suburbs. Only 5,700 workers live and work within the market area, most of whom represent the manufacturing sector. The high proportion of workers traveling outside the market area is indicative of King City’s role as a bedroom community.

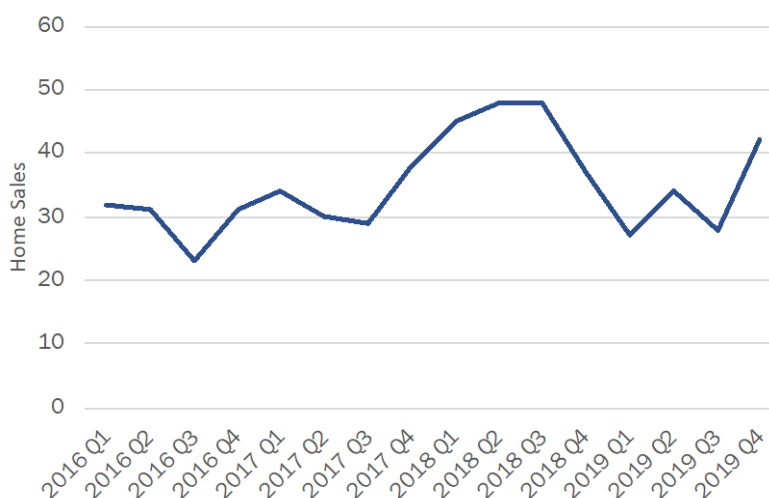
Residential Trends Analysis

The following exhibits demonstrate recent residential market trends in King City, the PMA, and in Washington County. Varying geographies were used in this analysis based on the availability of data, consistency with updating the 2017 market study, and the relative impact on local market conditions.

HOME SALES VELOCITY · · · Seasonal variance with a modest upward trend.

Home sales peaked at 50 per quarter in 2018, only to dip in the beginning of 2019. Sales increased in the final quarter of 2019.

Exhibit 17. Quarterly Home Sales (#) in King City, 2016–2019
Source: Zillow.

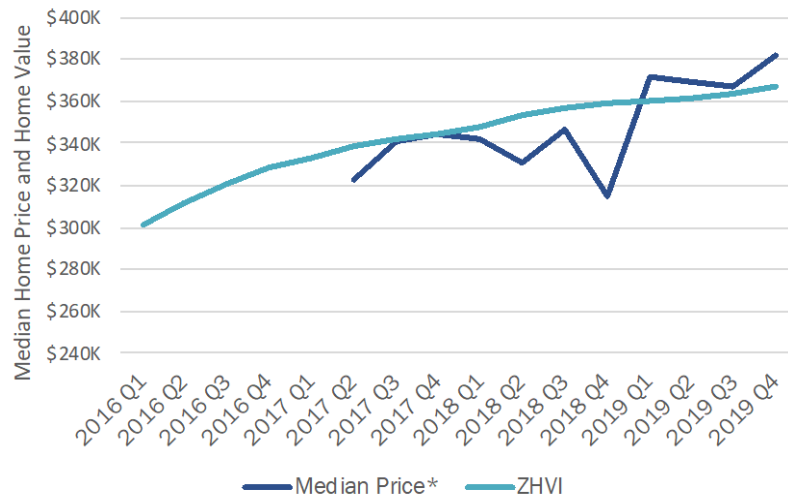


MEDIAN PRICE . . . Price appreciation beginning to level off.

Between 2016 and 2019, median home prices have grown from \$300,000 to over \$366,000.

Exhibit 18. Median Home Price and Zillow Home Value Index (ZHVI) in King City, 2016–2019

Source: Zillow.

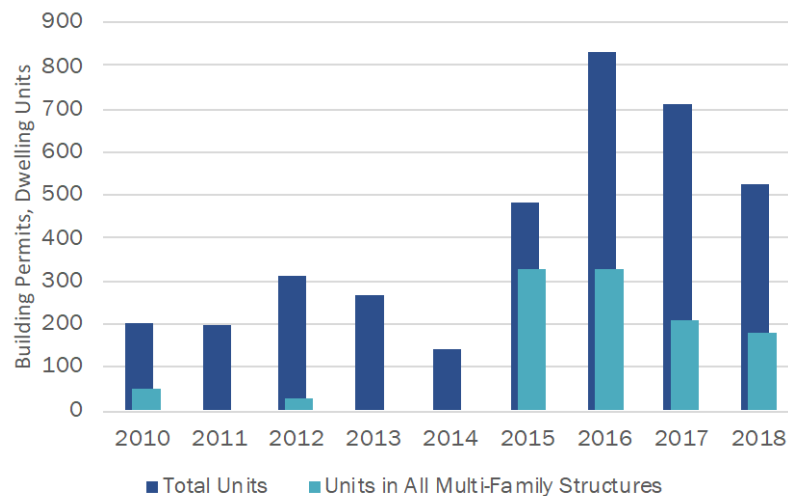


MARKET AREA CONSTRUCTION . . . Multifamily cycle begins in 2015.

Construction has accelerated over the last five years, peaking in 2016 with the delivery of 833 units. Multifamily units represent 41% of the market since 2015.

Exhibit 19. Residential Building Permits (Total and Multifamily Units), Market Area, 2010–2018

Source: HUD SOCDS Data.

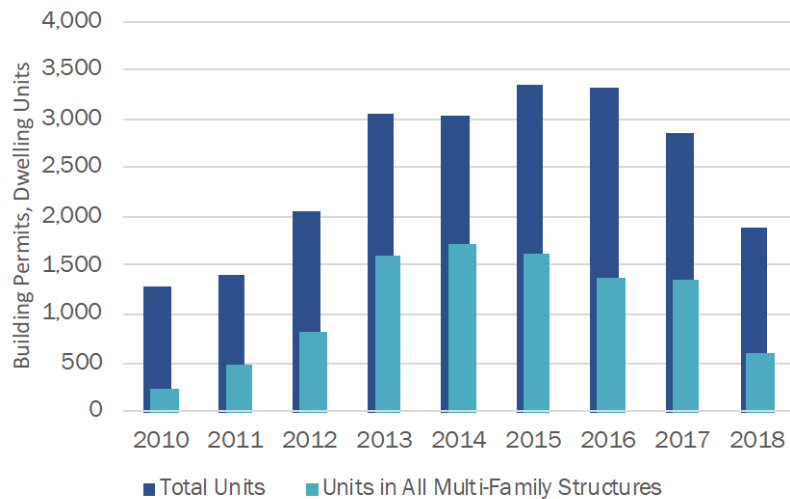


WASHINGTON COUNTY CONSTRUCTION . . . Development activity moderating, supply constraints likely a factor.

Since 2010 over 22,200 units have been delivered in Washington County. Construction peaked in 2015, with 2018 development representing a 44% drop from the peak of the cycle.

Exhibit 20. Residential Building Permits (Total and Multifamily Units), Washington County, 2010–2018

Source: Zillow.



Rental Market Conditions

Exhibit 21 outlines rental apartment market conditions in the PMA. Ideally, this section would represent an apples-to-apples update to the 2017 Market Analysis. However, recent acquisitions and methodological shifts by CoStar, the data analytics company that supplies this information, have resulted in significant changes in data output. As such, the data presented in Exhibit 21 is reflective of current market conditions, which are not necessarily directly comparable to 2017 findings. Results from our overview of current data indicate:

- Robust construction activity underway with 78 properties in the construction pipeline.
- Higher than expected vacancy rates (6.5 percent) may be indicative of recent deliveries in the market.
- Rent escalation has been strong over the past two-years. Current rents average \$1.71 per-square-foot.

Exhibit 21. Sub Regional Apartment Supply, Portland, King City, Tigard, Tualatin, Sherwood 2019
Source: Costar.

	Total
Properties	3,888
Unit Inventory	121,981
Under Construction Properties	78
Under Construction Units	7,518
Vacant Units	7,980
Vacancy Rate (%)	6.5%
Median Asking Rent	\$1,313
Median Rent/sf	\$1.71

Residential development considerations

All of these factors will continue to influence development patterns; however, it is important to note how patterns among groups have deviated in recent times. Previous age-based projections saw demand for apartments among those in their early 20s, starter homes for small families in their 30s, and “move-up” homes for higher-income families in their 40s and 50s. Older adults were expected to either remain in their homes or downsize for reduced maintenance. This is all in-line with the expectations laid out in the ESRI Tapestry psychographic segments.

Millennials, expected to seek starter single-family homes, were delayed due to the Great Recession, rent escalation, and increased debt burdens. Economic conditions drove a preference for preserving mobility. Their continued demand for apartments and rentals should sustain that higher-density industry for a few more years as they slowly begin to form households. The extent that economic repercussions of the COVID-19 crisis influences the timing of the Millennials’ transition to ownership housing remains to be seen.

Boomers, often predicted to downsize, have also been slow to do so. This could be the result of several possible factors including: the need to house millennial children affected by the Great Recession, high housing costs, low vacancies, increased life expectancy, or delayed retirement. In any case, we can expect an increase in demand for assisted living, active senior multifamily, and multifamily over time.

Gen X is thought to have led the urban regeneration and will continue to show a preference for urban walkability. Some Gen X and Boomers may seek “move-up” single-family homes. Even as each of these generations reveal an openness to suburban locales, we can expect them to bring their fondness for cultural amenities and walkability. A propensity for these features above and beyond average create additional need for density.

A large share of King City’s population is 60 years or older. In general, most retirees prefer to age in place by continuing to live in their current home and/or community as long as possible. This may result in lower than average turnover demand. As more Boomers and Retirees age in

Developer Interview Findings:
Insights from horizontal developers and homebuilders with active projects in nearby areas, like South Hillsboro and North Bethany.

- The area directly west of the Town Center should have high-medium density component that is more dense than rural
- 8–10 units per acre with 5,000–6,000 sq. ft. lots as you approach east. Furthest west should have largest lots of 5,000–7,000 sq. ft.
- Live/work units could be possible in Mixed Employment zones
- Overall, agree with existing plan
- Seeing demand for more dense housing – closer to 15 units per acre
- Lots of townhomes and small lot detached
- Transportation and infrastructure could pose challenges – Beef Bends alignment will dictate viability – funding infrastructure upfront through LID is essential.

place—and become a large share of growth in the household base, demand for housing unique to this segment will accelerate. A share of elderly households, with healthy physical and financial conditions, will continue to downsize and choose to live on their own for as long as possible. This segment will support small cottage homes and age-restricted active adult multifamily. For households where independent living is not feasible, the market will continue to see growth in assisted living and multigenerational households. The long-term impact of the COVID-19 pandemic on assisted living facilities remains to be seen. We can see a plausible scenario where—in the intermediate-term, households become more averse to assisted living formats, shifting demand to multigenerational formats and/or home health care. We currently estimate that five percent of households in Washington County are multigenerational. This is likely to increase two to three-fold over the next 20 years. Developers have already begun to plan for this market segment. For example, national homebuilders Lennar and DR Horton both have branded multigenerational floorplans. This market will also drive demand for attached and detached accessory dwelling units (ADUs).

The percentage of young people and Millennials is likely to grow in King City over the next 20 years, consistent with trends across the Portland Region. King City’s ability to attract people in this age group will depend, in large part, on whether the city has opportunities for housing that both appeals to—and is affordable to—Millennials. Surveys show that Millennials prefer single-family detached housing, housing in an urban neighborhood or town center, and opportunities for both ownership and rental housing.

4. Commercial Real Estate Market Analysis

Chapter 4 presents our analysis of the commercial real estate market in the URA 6D market area.

Primary Trade Area

For retail development, we define a primary trade area (PTA) as the geographic region from which a retail development generates the majority of its customers (Exhibit 22). As a general rule-of-thumb, 75 percent of market support is derived from the PTA. Many variables factor into the delineation of a PTA, including:

- **Proximity and Access to Household Concentrations.** The study area is a new urban area on the periphery of the existing metropolitan region. Household concentrations will not exist to the immediate west and south of the study area in the foreseeable future. In the near-term, retail market support will be reliant on existing housing concentrations to the northeast. Over time, residential development within the study area will offer marginal growth in market support.
- **Planned/Zoned Retail Development Form.** The 2018 Concept Plan envisions retail development in the study area as a main street or town center format. This scale of development is classically defined as neighborhood or convenience retail. Tenants in this category generally serve local populations as opposed to regionally drawing retail formats. The neighborhood serving retail generally draws from a five- to ten-minute drive-time.
- **Size, Location, and Retail Mix of Competing Locations.** The theory of retail gravity asserts that time and distance are primary determinants of shoppers' willingness to patronize a particular center. *Households are not generally willing to travel past (or further than) a comparable or superior center.* Where competitive alternative centers exist, the ability to draw from a progressively larger geography is a function of tenant differentiation. For the study area, major arterials to the north, east, and south offer well-established retail concentrations. We would expect these centers to continue to draw their fair share of market support and will serve as primary competition for any retail that is developed in the study area.
- **Presence of Pass-through or Daytime Employment.** Although the Concept Plan includes some planned employment uses in the southwest portion of the study area, the study area is not envisioned or planned as a primary employment center. Therefore, the influence of daytime employment will be limited. Located on the periphery of the UGB, the study area is not positioned between housing concentrations or multiple employment centers. As housing concentrations continue to build-out, we would expect the commute flow south (along Roy Rodgers Road) to the Tualatin-Sherwood Corridor and east (along Beef Bend Road) toward Highway 99 to increase.

- **Presence of Physical or Manmade Barriers.** Physical barriers will have a significant impact on the study area's PTA, specifically the Tualatin River. Topography influences the road network and presence of through arterials north of Bull Mountain Road up to SW Barrows and SW Walnut Street. Highway 99 is a highly congested arterial that represents a considerable manmade barrier.

Defining URA 6D's Primary Trade Area

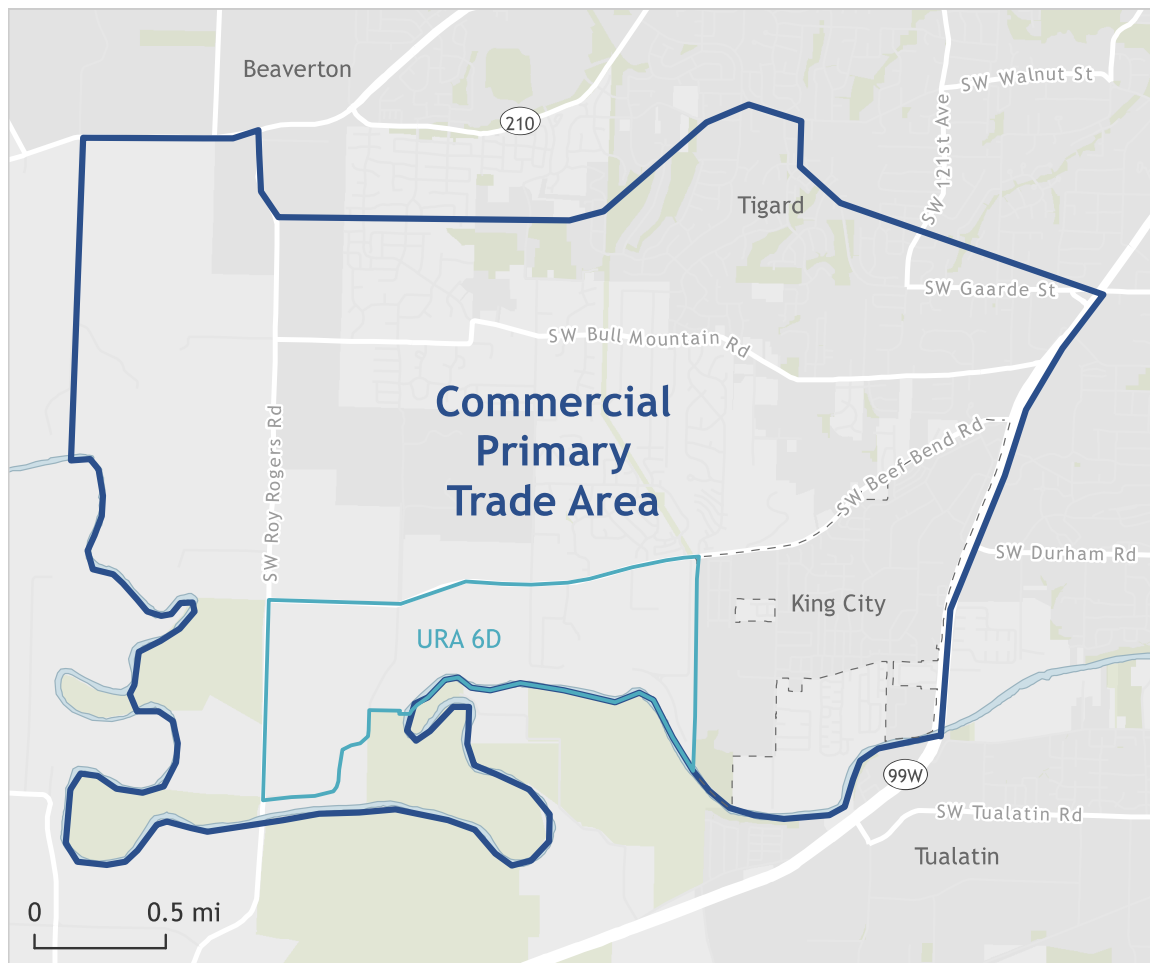
With consideration of the aforementioned factors and influences, we draw the following conclusions with respect to the PTA.

- **The Tualatin River will truncate the PTA to the south/southwest.** Households south and west of the river are more likely to gravitate toward retail concentrations in Sherwood and Tualatin.
- **Existing retail concentrations exist along Highway 99 from Main Street Tigard south to SW Durham Road.** These centers will continue to draw their fair share of retail patronage from households up to and including the project study area. However, the character of the Highway 99 tenant mix differs from what would be expected in the study area, allowing the PTA to extend up to Highway 99. Households east of Highway 99 are more likely to gravitate to retail concentrations in Tualatin (Nyberg Rivers) and Bridgeport Village.
- **To the north, development in the study area will compete directly with retail concentrations at the Murray Scholls and Progress Ridge Shopping Centers.** Both centers offer a competitive mix of specialty grocery, food and beverage, personal services, and other neighborhood convenience tenants. The topographical nature of the area will continue to support the diversion of households to these areas. These influences will limit the extent of the northern boundary of the PTA. Households north of SW Gaarde Street and roughly halfway between SW Bull Mountain Road and SW Barrows Road will most likely continue to gravitate north.

Divergence from the 2018 Concept Plan

The PTA delineation proposed for this analysis differs from what was utilized in the Concept Plan market study (completed in 2017). That market area was considerably larger and more reflective of a community or regionally serving retail center. It encompassed the City of Sherwood in its entirety, in addition to large swaths of Tigard and Tualatin. This larger geographic region is consistent with an area we consider appropriate to model housing market fundamentals, as it was also utilized in the market study. However, the factors influencing market choice for retail and housing are decidedly different. It is our opinion that a more compact trade area is more reflective of the locational and competitive dynamics present in the commercial real estate market for retail developments.

Exhibit 22. Commercial Market Analysis Trade Area for King City URA 6D, including Locations of Competitive Commercial Centers
Source: ECONorthwest.



Competitive Retail Landscape

The ability of the study area to attract commercial retail uses will be a function of the competitive landscape. Households in the PTA will cross-shop competitive alternatives, while market fundamentals will drive developer interest.

A backward look at how a commercial retail market has performed offers some indication of how it might perform in the near-term future. The following exhibits show the aggregate average rent, vacancy, and absorption and delivery trends for King City, Tigard, Tualatin, and Sherwood's retail real estate markets.

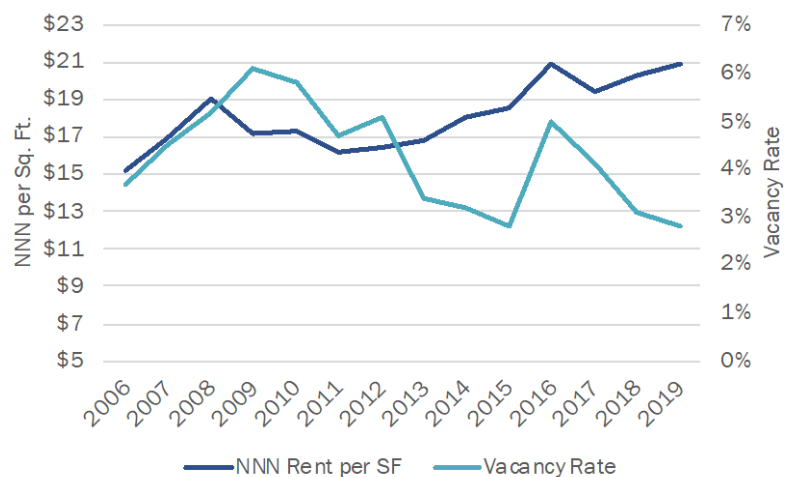
RETAIL RENT AND VACANCY . . . Falling vacancy rates creating rent pressure.

Retail rents per square foot were \$21 in 2019, up from \$17 a decade prior.

The retail vacancy rate was 3 percent in 2019, down from 6 percent in 2009.

Exhibit 23. Retail Rent per Sq. Ft. and Vacancy Rate, Market Area (King City, Tigard, Tualatin, Sherwood), 2006 to 2019

Source: Costar.

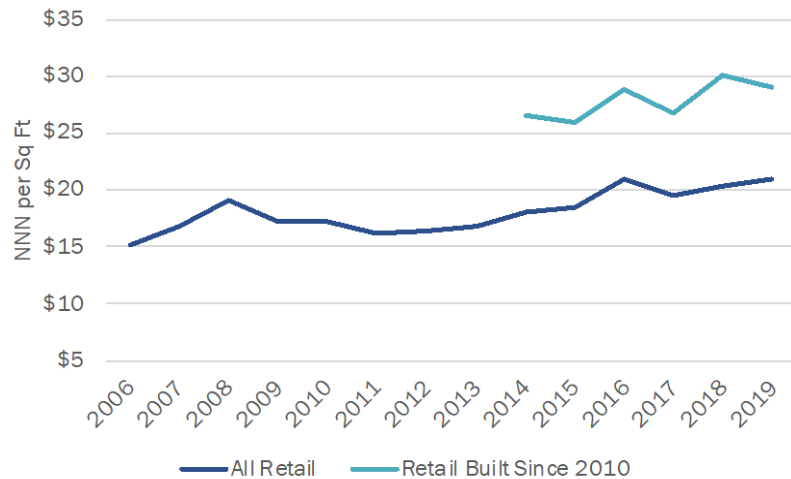


PER SQ. FT. RENTS . . . New space commands a 40 to 50 percent premium.

Between 2014 and 2019, newer buildings (built in 2010 or later) rented at a premium—\$7 to \$10 higher per square foot than the market average.

Exhibit 24. Retail Rent per SF, Newer Buildings versus All Buildings, Market Area (King City, Tigard, Tualatin, Sherwood), 2006–2019

Source: Costar.



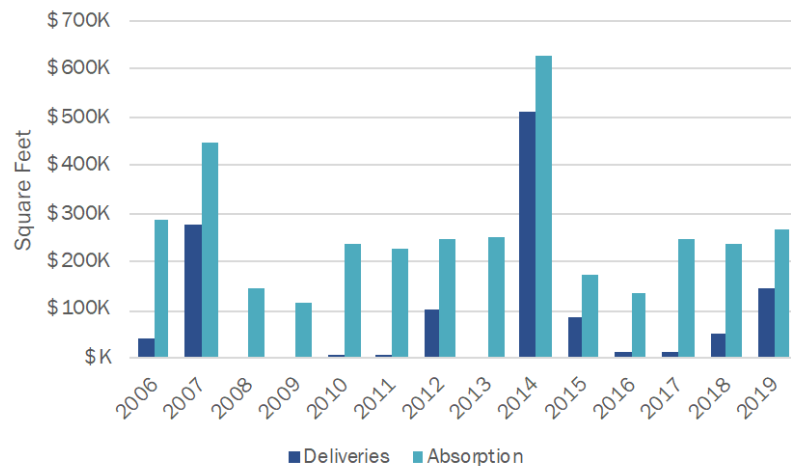
ABSORPTION AND DELIVERIES . . . Absorption is steady, deliveries not keeping pace.

From 2015 to 2019, about 813,505 sq. ft. of retail space was delivered in the market area. This accounts for about 66 percent of all retail space deliveries (sq. ft.) since 2006.

In this same time (2015–2019), about 1.7m sq. ft. of retail space was absorbed in the market area. This accounts for about 46 percent of all retail space absorptions (sq. ft.) since 2006.

Exhibit 25. Retail Deliveries and Absorption (SF), Market Area (King City, Tigard, Tualatin, Sherwood), 2006–2019

Source: CoStar.



Competitive Retail Centers

Exhibit 26 identifies some characteristics of URA 6D's primary competitive centers. Areas were selected for their proximity to URA 6D.

Taken together, the centers identified in Exhibit 26 total over 900,000 sq. ft. of commercial space. With the exception of Progress Ridge and Sherwood Parkway Village, retail centers with the greatest competitive influence on the study area were constructed pre-2005. Auto-centric formats, dated structures, and physical limitations will limit the marketability of these centers moving forward. This is evidenced in tenant positioning and achievable lease rates. Given strong demographics in the trade area, we would expect future commercial development in the study area to out-perform the competitive market.

Exhibit 26. Characteristics of Primary Competitive Centers

Source: Public info and Costar.

Center	Year Built	Anchor Tenants	Typical Lease Rate per Sq. Ft. (NNN)
Progress Ridge TownSquare	2008-2011	New Season, Ace Hardware, AMC, Big Al's	\$11 - \$47
Sherwood Market Center/Sherwood Crossroads/Parkway Village	1996-2014	Target, Safeway, Regal, Walmart	\$15 - \$34
Tigard Towne Square	1988	Marshalls, Dollar Tree, Rite Aid, Anytime Fitness	\$17 - \$31
Tigard Promenade	1995	Safeway, Petco	\$19 - \$34
King City Plaza	1978	Grocery Outlet	\$17 - \$26

Competitiveness with Alternative UGB Expansion Areas

Along with Beaverton's South Cooper Mountain and Tigard's River Terrace, King City's URA 6D is one of three new, major urban expansion areas in Washington County.¹¹ South Cooper Mountain and River Terrace are both located in direct proximity URA 6D. How and when these areas develop will directly impact the market in the study area. Both areas have commercial components in their concept plans that will directly compete with the study area. Along with an

¹¹ A fourth is located in South Hillsboro that is less likely to compete directly with King City.

assessment of relative competitiveness, Exhibit 27 summarizes the scale of planned development in each of these expansion areas.

Exhibit 27. Commercial Areas in UGB Expansion Areas: Competitive Advantages and Disadvantages
Source: River Terrace Community Plan (2014) and Funding Strategy (2014). South Cooper Mountain Community Plan (2014).

UGB Expansion Area	Planned Commercial Area	Advantages	Disadvantages
River Terrace, Tigard	40,000 Gross Sq. Ft. (developed space)	Residential Development currently underway, ability to draw from Bull Mountain Neighborhood and planned development to the north and south. Commercial area is located at the intersection of two collector streets.	No future development to the west.
South Cooper Mountain, Beaverton	10 Acres (of land to accommodate future developed space)	Residential Development currently underway, existing high school, future development at North Cooper Mountain. Limited competition.	Proximity to Murray Scholls competition, no future development to the west.
URA 6D King City	80,000 to 120,000 Sq. Ft. (developed space)	Presumed potential for tourism, limited immediate competition, ability to draw from River Terrace household growth.	Limited existing household support, physical barriers limit market area, last urban area to begin development.

Future commercial development in both River Terrace and South Cooper Mountain will compete for market support with the URA 6D Study Area. However, both competitive areas will provide new household growth that will support the collective sub regional commercial market. Both areas are planned for neighborhood scale commercial development. From a market perspective¹², River Terrace is best positioned for development in the near-term, with the ability to draw from existing household concentrations while facing limited competition.

As the “last area in,” the URA 6D Study Area will be influenced by both the scale and tenant mix of competing expansion areas. The Study Area’s strongest competition is likely to come from River Terrace. However, if properly scaled and with a differentiated tenant mix, URA 6D could offer a competitive alternative commercial area to those across its trade area. Collectively,

¹² Potential physical constraints are not considered here.

both areas could provide the synergies and scale to capture a greater share of resident spending than each area would on its own.

Commercial Retail Leakage

The 2017 Market Analysis provided an analysis of retail market supply and demand for a trade area surrounding URA 6D (i.e., the trade area consistent with the area delineated in Exhibit 15). Across several major categories of retail (General Merchandise, Foodservice and Drinking Places, Clothing and Accessories, Food and Beverage (grocery), Health and Personal Care, Sporting Goods/Hobby/Book/Music, Misc. Store Retailers, and Electronics and Appliances), the analysis found that the approximate retail leakage was roughly \$520.2 million¹³. Retail leakage occurs when locals spend a larger amount of money on goods than the amount of sales reported by local businesses. Retail leakage implies that locals are traveling outside of the local market area to buy retail goods – suggesting unsatisfied demand within the PTA.

We remind the reader that the PTA used in the 2017 analysis (Exhibit 15) is different than the PTA used in this report's commercial real estate analysis (Exhibit 22). This report relies on a trade area that is more narrowly defined to consider the characteristics of neighborhood serving retail demand. Leakage rates in this case will be considerably higher as a calculation, because the PTA does not include as much competitive supply. For the PTA's nearly 9,000 households, leakage rates are likely across all retail categories, with an estimated \$0.73 for every \$1.00 spent outside the PTA.¹⁴ From this data, we can assume that leakage recapture has the ability to provide market support in the PTA.

¹³ Leland Consulting Group. (March 2017). King City Market Analysis. Figure 20, Page 31.

¹⁴ ESRI Retail MarketPlace Profile (2017).

Factors Influencing Commercial Retail Demand

The demand for commercial retail space, and ultimately land that needs to be planned for future development is a function of many interrelated factors. Here we summarize these factors as they relate to the study area.

Existing Consumer Base

There are currently 8,964 households residing within the PTA, 67 percent of which are family households. These households will provide early market support for commercial development in the study area. Existing housing concentrations are located north and east of where commercial development is planned to go. Considering the distance of these housing concentrations from the planned commercial development, we would not expect this existing household base to provide sufficient market support for early-phase commercial development. Moreover, commercial development in the study area is only likely to see demand sufficient for its creation once a foundation of new households has formed in the study area.

Future Consumer Base

Building upon the existing household base, net-new household growth in the PTA will further influence commercial demand. Taken together, the Study Area and Tigard's River Terrace have a planned capacity for 7,320 housing units. The 2017 Market Study estimated 500 to 950 housing units could be absorbed within the first 10 years. It also assumed a 1.66 percent average annual household growth rate based on Metroscope data consolidated at the traffic analysis zone (TAZ) level.

Purchasing Power

Households with higher incomes generally have more disposable income, and by extension, consume more retail goods and services. In the PTA, the average household income is \$119,298, well above the local and regional rates. Beyond a supportable scale, income levels will influence the mix and character of future commercial tenancing. For example, analysis of psychographics for the PTA finds that "buying American" was important to 40 percent of households and that 34 percent of households were likely to buy "brands that support charity." Commercial centers geared toward the existing market are more likely to absorb the purchasing power of the existing consumer base.

Consumer Behavior and Preferences

The historical shift in retail businesses, starting in the early 1960s, was the movement from one-off, 'mom and pop shops' toward superstores and the clustering of retail into centers or hubs. Notably, we still see this trend persist; for example, in 1997, the 50 largest retail firms accounted

for about 26 percent of retail sales, and by 2007, they accounted for about 33 percent.¹⁵ The more recent shift in retail began in the late 1990s, where technological advances gave consumers the option to buy goods through e-commerce channels.

The trend toward e-commerce has become increasingly preferential to millennials and Generation X, who are easier to reach online and are more responsive to digital ads than older generations.¹⁶ Since 2000, e-commerce sales grew from 0.9 percent to 6.4 percent (2014) and was forecast to reach 12 percent by 2020. It is reasonable to expect this trend to continue. With it has come closures of retail stores. By 2027 for example, an estimated 15 percent of about 1,050 U.S. malls in smaller markets will close, impacting local employment levels, local government revenue streams (tax dollars), and neighborhood character.

The draft 2018 Metro Urban Growth Report¹⁷ describes the uneven impact on retail from e-commerce. Overall, e-commerce accounts for 9 percent of national retail sales, with online sales growing at a faster rate than retail sales growth overall. Nationally, non-store retailers are negatively affecting furniture stores, electronics, clothing, and recreational goods (e.g., sporting goods, hobby supplies, and books and music). The retail types that grew strongly in the Portland Region between 2007 and 2017 were grocery stores, general merchandise stores, and miscellaneous specialty retailers.

It seems probable that e-commerce sales will continue to grow, shifting business away from some types of retail. Over the next decades, communities must begin considering how to redevelop retail buildings and reimagine shopping centers, commercial corridors, and urban centers.

Commercial Retail Space Utilization

Structural shifts in the retail industry are reducing the physical space that retail stores occupy. For institutional retailers, advances in logistics are allowing for less on-site inventory. For all users, even independent retailers, the ability to sell goods through e-commerce is making brick-and-mortar retail more “experiential,” further reinforcing lower on-site inventory needs. Even in the restaurant business, the proliferation of food delivery services is driving an increasing share of restaurant sales outside of restaurants. Because restaurants operate on thin margins and delivery services command 20 percent or more of top-line sales, this trend is driving reductions in brick-and-mortar overhead among independent restaurants.

¹⁵ Hortaçsu, Ali and Syverson, Chad. (2015). The Ongoing Evolution of US Retail: A Format Tug-of-War. *Journal of Economic Perspectives*, Volume 29, Number 4, Fall 2015, Pages 89-112.

¹⁶ Pew Research Center (2010b). *Generations 2010*. Retrieved from: <http://www.pewinternet.org/Reports/2010/Generations-2010.aspx>.

¹⁷ *Urban Growth Report*, Discussion Draft, Metro, July 3, 2018, Appendix 4.

From the perspective of land utilization, walkable neighborhoods combined with fewer trips, rideshare, and alternative transportation modes are allowing retail to develop at lower parking ratios than previous cycles.

Access and Visibility

All firms are heavily dependent upon surface transportation for efficient movement of goods, customers, and workers. Access to an adequate highway and arterial roadway network is needed for all industries. Close proximity to a highway or arterial roadway is critical for businesses that generate a large volume of truck/auto trips. It's also critical for businesses that rely on visibility from passing traffic to help generate business. Locations visible from the highway or major streets, or that receive a lot of foot traffic, are highly sought after; many retailers will pay a premium for these locations. In some instances, rent premiums are also associated with right-in, right-out access during the evening commute.

Literature and previous research conducted by ECONorthwest provide insight into the extent to which access to bus service is an important factor in successful commercial development. We find that low capacity transit (i.e., conventional bus, dial-a-ride, or shuttle bus services) has a negligible impact on commercial and residential marketability. Commercial properties near *rail transit* (LRT), (e.g., medium-capacity), have land value premiums, but those premiums diminish almost entirely for properties more than a quarter-mile away from rail stations.¹⁸ Employment in some sectors (e.g., transportation and arts, entertainment, and recreation) does increase substantially between 0.25 and 0.50 miles of *bus rapid transit* (BRT) stations (160 percent and 130 percent) – as does retail, but then begins to decline outside of those distance bands.¹⁹

Commercial Centers in Oregon

As is the case with urban reserve areas in Portland's metropolitan region, URA 6D is essentially a blank slate for new development. A rural "greenfield," URA 6D will be, over the course of years, transformed into a suburban landscape.

The recent Concept Plan for the area indicated the area could accommodate the construction of 3,576 new homes—of various types and of ranging densities. It also presented a vision for a Main Street/Town Center style urban village. The Main Street/Town Center included proposed uses such as neighborhood retail (e.g., grocery store, restaurants, shops), a hospitality component (e.g., a 70-room lodge or event space), and campus-style mixed employment/institutional uses (e.g., education facilities or primary school, business incubator, health and wellness center, etc.).

¹⁸ Cervero, Robert, and Michael Duncan. "Transit's Value-Added Effects: Light and Commuter Rail Services and Commercial Land Values." *Transportation Research Record: Journal of the Transportation Research Board*, No. 1805. Washington, D.C.: Transportation Research Board, 2002.

¹⁹ Nelson, Arthur C., et al. "Bus Rapid Transit and Economic Development Case Study of the Eugene-Springfield BRT System." *Journal of Public Transportation* 16, no. 3 (2013): 41-57.

But how does one know that this vision is possible?

We sought to answer this question by evaluating a series of commercial centers in Oregon, using the factors that influence commercial retail demand documented in the previous section. We evaluated retail centers that are similar in scope to King City’s vision for URA 6D. We used the findings to help determine a viable scale of commercial development—particularly retail development—that may be possible in URA 6D.

To understand how URA 6D’s proposed commercial center may perform, and how policy can support it, it is essential to understand the nature of retail centers’—their similarities and differences. The case study approach allowed us to identify the characteristics/market realities that made each of the selected four centers successful.

The areas of study selected are Villebois,²⁰ Northwest Crossing,²¹ Bethany,²² and Progress Ridge.²³ The following pages present a summary and comparative analysis of the factors that affect retail demand using the four case study areas. Additional information is presented in a series of appendices.

Criteria for Selected the Areas of Study:

To conduct the analysis and draw comparisons to URA 6D, we selected areas that met the following criteria:

- Greenfield development with commercial center.
- Completed in the past two decades
- Newly developing residential area
- Similar in scale (relative to other selected areas)
- Similar locational characteristics (relation to urban core)

In addition, we selected areas that comprise varying magnitudes of retail, so that we could evaluate the relationships between retail scale to catchment area.

- Villebois and NW Crossing share similar trade area characteristics (roughly 35,000 people within a 10-minute drive) and support limited retail uses. Bethany and Murray Scholls share similarities (each with roughly 107,000 people within a 10-minute trade area) and support a more robust retail market. In each of these areas, housing was/will be the catalyst to development, and for that reason, population and household counts, including family household counts, are a clear indicator of retail scale and success.
- Neighboring areas will influence development. For example, in Villebois, retail uses have yet come to fruition as it does not draw from a broad residential base. Villebois will likely rely on Wilsonville’s Town Center for retail support. In contrast, the commercial center in Murray Scholls (Progress Ridge TownSquare), has ample commercial options as it is located on the urban periphery with less commercial competition and surrounded by many established residential neighborhoods. In Northwest Crossing, commercial uses are limited, but residential occupancies are growing and development of a new residential neighborhood, just west of Northwest Crossing, is underway

²⁰ <http://villebois.com/>

²¹ <https://www.northwestcrossing.com/>

²² <http://www.bethanyvillage.com/>

²³ <https://progressridgetownsquare.com/>

(master planned in 2018). Northwest Crossing's expanded residential base has catalyzed nearly 64,000 sq. ft. of commercial space (including a market hall) and a 22,000 sq. ft. mixed-use building with office tenants above retail (expected delivery: end of 2020).

- Public transportation connections have a negligible influence on commercial development in these areas. With the exception of Bethany, these study areas have no transit connections within a quarter-mile of the primary retail center. Bethany's primary retail center is served by bus route 67, which only provides local weekday service.
- Existing ownership conditions may influence the timing of development. A key pillar of success for Northwest Crossing was that a single developer was willing to absorb early development costs. Further, the expansion of three public schools in Northwest Crossing helped to reduce typical infrastructure barriers. In general, greater parcelization (more property/landowners) will increase the complexity of development, introducing the risk that development will be piecemeal or intermittent.
- The timing of commercial development will be influenced by an area's ability to draw from existing household concentrations. Early development with phasing that is not adjacent to existing household concentrations will exhibit a delay in commercial development support.

Exhibit 28. Demographic Characteristics within a 5- and 10-minute Drive²⁴ of Villebois, Northwest Crossing, Bethany, and Progress Ridge

Source: ESRI Business Analyst.

	Villebois	NW Crossing	Bethany	Murray Scholls	URA 6D
Within a 5-minute drive					
Population	7,773	10,207	42,949	28,348	16,578
Households (HH)	3,150	4,223	15,020	11,420	6,207
Family HH Share	64%	60%	75%	64%	70%
Tenure Split	75% owner, 25% renter	63% owner, 37% renter	75% owner, 25% renter	61% owner, 39% renter	83% owner, 17% renter
Median HH Income	\$103,956	\$82,865	\$116,241	\$92,389	\$100,550
Share of Population 65 Years and Older	11%	15%	11%	11%	17%
Within a 10-minute drive					
Population	36,311	31,037	106,984	106,911	99,661
Households (HH)	13,668	13,102	41,415	41,478	39,197
Family HH Share	66%	58%	66%	65%	65%
Tenure Split	62% owner, 38% renter	58% owner, 42% renter	60% owner, 40% renter	64% owner, 36% renter	66% owner, 34% renter
Median HH Income	\$92,019	\$75,656	\$99,064	\$86,926	\$88,301
Share of Population 65 Years and Older	13%	16%	12%	14%	15%

²⁴ ECONorthwest conducted this analysis using the centroid of the commercial center for each case study area, for five-and ten-minute drive-times.

Exhibit 29. Retail Characteristics Villebois, Northwest Crossing, Bethany, and Murray Scholls

Source: Costar.

	Villebois	NW Crossing	Bethany	Murray Scholls
RETAIL CHARACTERISTICS				
Study Area	500 acres	486 acres	1,936 acres	N/A
Total Leasable Retail Space (sq. ft.)	N/A	55,431	525,032	330,407
Available Leasable Retail Space (sq. ft. ²⁵)	N/A	0	93,196	17,865
Number of Retail Tenants	N/A	28	93	68
Commercial Anchors	N/A	La Rosa, Roundabout Books, The Grove (proposed)	QFC, Walgreens, Bethany Library, Bethany Athletic Club	New Seasons, Ace Hardware, AMC, Petco Unleashed, Gentle Dental
Transportation Connections ²⁶	None	None	Bus (Route 67) ²⁷	None
Number of Surface Parking Spaces	N/A	73	958	250

²⁵ As of April 1, 2020.

²⁶ Transit connection within a quarter mile of the primary retail center.

²⁷ Average weekday ridership in Fall 2019: 4.5 rides per hour.

[https://trimet.org/about/pdf/route/2019fall/route_ridership_report_\(sorted_by_route\)_weekday.pdf](https://trimet.org/about/pdf/route/2019fall/route_ridership_report_(sorted_by_route)_weekday.pdf)

Commercial Office and Employment Uses

The 2017 Market Analysis identified that, “lack of nearby office employment will make new office development on the site highly unlikely during the buildout period.” We agree with this assessment that higher density employment uses in sectors outside of personal services is not likely in the study area. This is further reinforced in our case study analysis above. With the exception of NW Crossing, which has unique cultural and market fundamentals, non-retail uses in these areas have been generally limited to personal service industries. The greatest opportunities for non-retail commercial development are summarized in Exhibit 30.

Exhibit 30. Opportunities for Non-Retail Commercial Development

Source: Summarized by ECONorthwest.

Non-retail Sector	Potential Uses	Typical Form
Medical/Health Services	Dental Office, Neighborhood Clinic, Optometrist, Veterinary Clinic	Standalone Pad, Retail/Mixed-Use Tenant, Single/Multi-story Medical Office Building, Medical Campus
Financial Services	Neighborhood Bank/Credit Union, Financial Advisory Services, Real Estate Brokerage, Insurance	Standalone Pad, Retail/Mixed-Use Tenant, low-rise campus
Personal Care	Salons, Fitness Centers	Standalone Pad, Retail/Mixed Use Tenant
Household Services/Other	Childcare Facilities, Education, Co-working Spaces	Standalone Pad, Retail/Mixed Use Tenant

5. Market Potential in the Project Area

The purpose of the market analysis was to assess and refine the findings of the 2018 Concept Plan and 2017 Market Analysis for URA 6D by determining the market demand for commercial and residential uses in the study area. This section presents the conclusions of market demand for various types of land uses, as well as compatible businesses within the study area given current and projected future growth. Findings were assessed against the community's vision for URA 6D, as described in the 2018 Concept Plan.

Reflection on the Concept Plan

The Concept Plan for URA 6D identified four distinct neighborhoods. The Concept Plan purposed two of the neighborhoods for lower density residential uses and one neighborhood for higher density residential with some mixed-use/neighborhood-scale commercial uses. The Concept Plan purposed a final neighborhood as a Main Street/Town Center, which could accommodate high-intensity commercial and mixed-use residential uses. Overall, the URA 6D Concept Plan proposed the following quantitative development targets:

- 3,576 residential units²⁸
- 54,000 to 85,000 sq. ft. of retail (10-year demand), with opportunities to include: 16,000-25,000 sq. ft. grocery store and 10,000–15,000 sq. ft. restaurant/drinking establishments,
- 40,000 to 60,000 sq. ft. of wine country lodging, event space, and dining

The Metro 2040 Growth Concept has previously defined center types to include a characterization of both a Main Street and Town Center. For context, and to encourage consistent use of vocabulary, these centers are defined here:²⁹

- **Regional Centers** are hubs of commerce and local government services serving hundreds of thousands of people. They are characterized by two- to four-story, compact employment and housing development served by high-quality transit.
- **Town Centers** provide services to tens of thousands within a two-to-three-mile radius. One- to three-story buildings for employment and housing are characteristic. Town centers have a strong sense of community identity and are well served by transit. Town Centers may include small city centers such as in Lake Oswego or Tualatin, or larger neighborhood centers such as in St. Johns or Hillsdale.

²⁸ Note: Per King City's Housing Needs Analysis, the 2018-2038 forecast for new dwelling units is 980.

²⁹ Definitions/descriptions are copied from Oregon Metro's 2040 Growth Concept: <https://www.oregonmetro.gov/2040-growth-concept>

- **Main Streets** are similar to town centers in that they encompass a traditional commercial identity, but on a smaller scale to tie better with the immediate neighborhood. Main Streets feature “good” access to transit.
- **Station Communities** are centered on a light-rail or high-capacity transit station that features a variety of shops and services. These communities are accessible to all modes of transportation.
- **Neighborhoods** include existing neighborhoods, where some redevelopment can occur to better use vacant land or under-used buildings, and new neighborhoods. New neighborhoods are likely to have smaller single-family lots, mixed uses, and a mix of housing types (such as row houses and accessory dwelling units). The growth concept distinguishes between slightly more compact inner neighborhoods and outer neighborhoods with slightly larger lots and fewer street connections.

Competitive Advantages and Disadvantages

This section is informed by the analysis presented in this report as well as the existing conditions research presented in the Land Use Refinement Memo (developed as part of this project). Relative to other UGB expansion areas nearby where Main Streets, Town Centers, and commercial hubs are planned, URA 6D’s advantages are:

- **Location.** King City is located along a major transportation corridor (HWY 99W) and is 12 miles from downtown Portland. King City is not a large city, but it is in close proximity to the kinds of urban amenities and services one expects in a large metropolitan area. Residents of King City have access to cultural activities, employment centers, and outdoor recreational activities which are locational aspects that are attractive to prospective residents and businesses who prioritize quality of life.
- **Household Base.** URA 6D is proposed to have a Main Street/Town Center, which as defined by Metro, should accommodate a trade area of tens of thousands of people within a two-to-three-mile radius. As presented in this report, URA 6D is surrounded by 99,661 people within a 10-minute drive. This is more people than Villebois and Northwest Crossing has in their respective drive-time distances bands. In addition, within both a 5- and 10-minute drive of URA 6D, the existing household base maintains relatively high incomes; incomes are consistent with the median incomes in all four master planned case study communities evaluated in this analysis (Exhibit 28). Planned development in the study and development underway in River Terrace will provide growing market support.
- **Labor Market.** Prospective businesses that may locate in URA 6D in the future will need access to labor. At present, most of King City’s residents who work commute outside of the city for employment. However, consistent with other cities in the region, King City has access to a regional labor pool, which presents opportunities for new/expanding businesses.

- **Greenfield Development.** Despite lack of infrastructure today, URA 6D is a blank canvas that developers often prefer to brownfield, infill, and redevelopment sites.
- **Retail Demand.** While existing commercial hubs near URA 6D (see Exhibit 26) do absorb some of the areas' needs, metrics suggest there is demand for retail space in the greater area. In looking at the competitive retail landscape of a four-city trade area (King City, Tigard, Tualatin, Sherwood), this analysis finds that absorption of retail sq. ft. has surpassed retail sq. ft. deliveries every year since 2006. Further, retail vacancies have declined since 2016 as retail rents per sq. ft. rise (Exhibit 23).

The area's disadvantages are:

- **Relative Competition and Timing.** Many nearby cities are going through similar planning efforts to accommodate growth in their respective expansion areas and urban reserve areas. Some of these plans present conceptually similar development intentions to what is proposed in the URA 6D Concept Plan. These alternatives have overlapping market areas, drawing from the same market as the URA 6D Concept Area. Competitive areas are also further along in the process, with development well underway or commencing. In this context, the market risks saturation within discrete development types.

To better explain the relative competition that adds to URA 6D's locational disadvantages, this assessment compares key details of URA 6D's proposed development to competing expansion area positioning. For example, URA 6D proposes to have a "non-residential component, based on a "gateway to wine country" positioning [which] could add another 40–60,000 sq. ft. of campus-style employment or institutional uses." Meanwhile, the Preliminary Concept Plan for Sherwood West, an Urban Reserve Area southwest of URA 6D, proposes a "Gateway to Wine Country" node that is envisioned to capitalize on Sherwood's location and proximity to the surrounding wineries by providing opportunities for lodging, restaurants, tourism, and agriculture-related businesses.

Market Potential Findings and Conclusions

The demographic makeup of the area indicates that URA 6D will most closely compare with the smaller commercial area case studies, particularly Northwest Crossing. Based on the case study analysis and our assessment of supply and demand dynamics, URA 6D's commercial center is likely to function and look more like a Main Street and less like a Town Center.

Northwest Crossing zoning allows a variety of employment uses, "community commercial"³⁰ opportunities, and small-scale businesses in select locations to foster mixed-use residential neighborhoods. The area also permits live/work apartments, which provides distinct

³⁰ Community Commercial means establishments not exceeding 2,000 sq. ft. for retail, service, office, and food/beverage establishments, excluding drive-through.

opportunities for small, local businesses and sole proprietors. While commercial development is growing in Northwest Crossing, the area is currently served by 55,400 sq. ft. of commercial space, which includes both commercial retail and office tenants. This leasable area is slightly less than commercial targets proposed in the URA 6D Concept Plan.

Market conditions have been improving at both the local and regional level. Structural demographic trends, in terms of growth and composition, are supportive of development densities in the URA 6D Concept Plan. Recent development trends at River Terrace are indicative of market potential. However, limited differentiation at River Terrace, South Cooper Mountain, and URA 6D risks market saturation.

In the near- to intermediate-term, development is likely to be owner-occupied, consistent with patterns exhibited in the demographic analysis and ongoing development patterns in surrounding areas. Opportunities for multi-story attached housing will be limited to the for-sale market in the near-term. Apartment rents in the market area are not likely to support densities beyond surface parked, garden walk-ups.

Commercial establishments in Northwest Crossing's commercial area include various restaurants, an independent bookstore, a salon, and a Pilates studio. A certified accounting business, family dentist office, a law office, a community bank, an engineer office, and a cat clinic have also located in this area. These types of small-scale businesses have the potential for success in URA 6D's commercial hub.

We would characterize the URA 6D Concept Plan's estimation of 54,000–85,000 sq. ft. of supportable resident-driven commercial retail space to be an optimistic upper bound of likely outcomes. Approaching this upper bound of market support will be influenced by; 1) the extent that personal services and non-retail uses provide market support; and 2) if or where a neighborhood scaled grocer (approx. 20,000–25,000 sq. ft.) locates in the market. For example, if a grocer locates in River Terrace first, there is not likely to be support for a second grocer in the local market area.

At this time, dense retail is not likely achievable in URA 6D. In later phases of development dense retail is possible—once developers build enough housing to generate a critical mass of households to support greater scales of retail. As such, phasing is a critical factor for URA 6D's development trajectory over its build-out period. We note that this is not uncommon; Villebois took upwards of 13 years to build out, and to date, it has highly limited commercial and retail. Villebois remains on the periphery of urban development and does not draw from a broad residential base outside of the community. This limits the number of “rooftops” to support commercial development (there are only 3,150 households within a five-minute drive of the Villebois' Village Center).

Additional market support of 40,000–60,000 sq. ft. of tourism/wine-related commercial support was not supported by technical analysis in the 2017 Market Analysis and requires further study to be validated. From a competitiveness perspective, we do not find an inherent advantage of

the study area vis-à-vis alternatives. In our view, the study area is too close to the metro area and too removed from wine country to be considered a “destination.” Some localized branding and tenancing are plausible, but market support for a thematic development at the scale proposed has not been established.

Recommendations

To conclude this analysis, a set of recommendations are offered to address URA 6D’s market demand that the area can reasonably deliver.

- **Plan for 500 to 950 new residential units in URA 6D over the next 10 to 20 years.** This recommendation is partially aligned with residential demand projections in the 2017 Market Analysis (which found that URA 6D could accommodate 500 to 900 units in 10-years). Our analysis does deviate slightly in the time horizon in that King City’s Housing Needs Analysis found that King City will need 980 new dwelling units to accommodate 20-years’ worth of growth (2018 and 2038).
- **Plan for the mix of housing types and average density ranges as designated in the Concept Plan.** We agree with the suggestion made in the 2017 Market Analysis—that there is an opportunity to provide an amenity-rich, walkable neighborhood/main street area. This node will attract housing consumers that are priced out of the urban core, or housing consumers who simply prefer to raise a family outside of the city while remaining in proximity to urban services and amenities. Our analysis finds that the previously proposed residential development scheme is appropriate for URA 6D.
- **Plan for commercial development slightly below the scale planned in the URA 6D’s Concept Plan.** A development scheme consistent with the form, scale, and type of commercial development in Northwest Crossing is advised. From a market perspective, Northwest Crossing is the most analogous case study area to the future realities of URA 6D. Accordingly, the development pattern in the commercial core should be concentrated along corridor(s), be neighborhood-serving, and smaller in scale.
- **Conduct further analysis to validate non-resident tourism/wine related market support.** Roughly half of the URA 6D Concept Plan’s commercial market support was assumed to originate from this source. Limited technical analysis to substantiate this demand exists.
- **Establish a proactive economic development strategy** to encourage growth of business and service types in URA 6D consistent with the kinds of uses permitted in Northwest Crossing. These businesses and services are likely achievable given the area’s locational advantages and disadvantages, but their development—especially in the near and mid-term—is likely contingent on thoughtful planning and proactive support from the public sector. The type of support offered could be determined through the development of an action-oriented economic development strategy, with input from the community and stakeholders. Examples focused on the needs of URA 6D may include: prioritize infrastructure projects that are necessary to support employment growth, evaluate

offering economic development incentives to support the Study Area’s vision, and/or work with partners to resolve potential barriers to small business growth and expansion.

- **Consider deviating from phasing recommendations as presented in the URA 6D Concept Plan.** We find, consistent with the 2017 Market Analysis, that commercial development will require the build-out of rooftops in the market area to be viable. Moreover, a market for mixed-use development in the commercial core is not likely to materialize early on. Phasing strategies that encourage near-term growth of new homes (and the households that come with them) will improve the viability of commercial development in the mid to long-term.

Disclaimer

In this report, we rely on third-party data sources known to be reputable and industry-leading. ECONorthwest does not independently verify this data. Similarly, we draw conclusions from existing research and analysis as directed in our scope of work. We specifically leverage data produced in the 2017 Market Analysis that we assume to be reputable and accurate.

Appendix A: Villebois Case Study

Villebois is a European village-styled, master-planned neighborhood in Wilsonville, Oregon. It was conceptualized to “include residential neighborhoods with more than 2,300 homes, a viable commercial and employment core, an interconnected series of roads and trails, and a strong commitment to natural spaces and the environment.”³¹ Its primary locational advantages are that it is 16 miles from Portland and it is connected to I-5 and the commuter rail.

Villebois is approximately 500-acres, including 160-acres of parks and open space and a Village Center of approximately 48-acres. The community has three neighborhoods within a quarter-mile radius of Villebois’ Village Center (Exhibit 32). Each neighborhood has a Neighborhood Commons which provides convenient retail uses that are small in scale. The Villebois Master Plan was adopted in 2006, timing that was ill-fated in retrospect. Early phases of the development struggled through tough market conditions in the aftermath of the Great Recession. Today, the residential components of Villebois are mostly built-out, and the community functions as a complete community.

Villebois falls within the City of Wilsonville’s comprehensive plan designation “Village.” It is also zoned “Village,” with a small, centralized area zoned “Public Facility (PF).” The Village zoning code permits most housing types outright. Many commercial uses, subject to standards, are also permitted outright. These include sales and servicing of consumer goods (e.g. bicycle shop, clothing or book stores, florists), food and sundries (e.g. bakery, butcher, drugstore, hardware store), lifestyle and recreation (e.g., art gallery, hair salon, restaurants and pubs), service commercial (banking, child care, dry cleaner), and general office (e.g. health services, professional services, real estate offices, insurance agencies).

The Village zoning allows single-family and duplexes up to 35 feet in height, multifamily buildings up to 45 feet in height, and mixed-use buildings up to 60 feet in height. Retail in the Neighborhood Commons may be no more than 3,500 sq. ft. in area. Larger retail development is permitted in the Village Center; commercial lots may be greater than 8,000 sq. ft. in area with an 80 percent maximum lot coverage ratio and commercial buildings may be up to 60 feet in height.

While residential development has succeeded in Villebois, commercial elements have struggled to gain critical mass. Villebois remains on the periphery of urban development and does not draw from a broad residential base outside of the community. This limits the number of “rooftops” to support commercial development. There are only 3,150 households within a five-minute drive of the Village Center. High construction costs coupled with low rents, parking restrictions, and small lot sizes that prohibit scale have further contributed to a challenging environment for commercial development.

³¹ Villebois Concept Plan (2003).

Perhaps the greatest impediment to commercial development in Villebois is the proximity and access to viable commercial alternatives. Wilsonville Old Town Square is a Fred Meyer anchored community center located less than a five-minute drive-time from Villebois. Just beyond Old Town Square, Wilsonville Town Center even greater commercial diversity. Wilsonville Town Center is currently being planned for considerable redevelopment. The Wilsonville Town Center Plan, developed in 2019, is purposed to guide development and redevelopment of the subarea. The Plan's vision is to provide for a mix of uses, entertainment and community gathering opportunities, consolidated parking, walkability, and support for local businesses. Taken together, we suspect that the majority Villebois residents' commercial needs are being met by these commercial centers.

Exhibit 31. Villebois Community

Source: <https://villebois.com> and google maps.





Exhibit 32. Villebois Original Land Use Map, Wilsonville
Source: Villebois Master Plan, 2013, Figure 2.

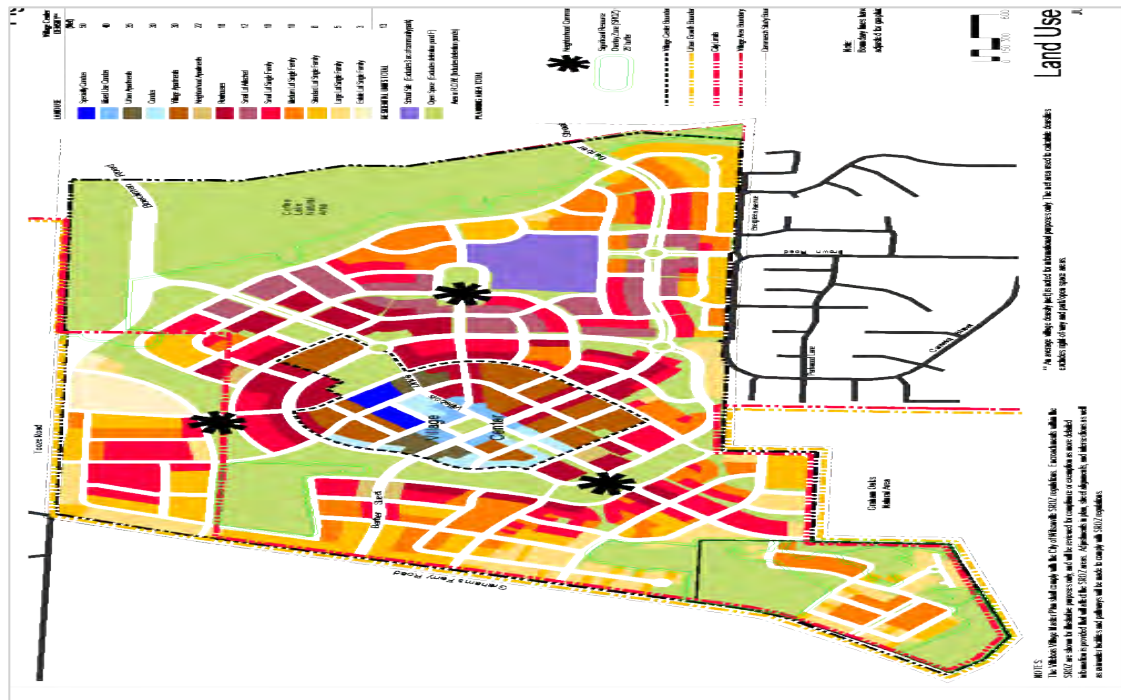
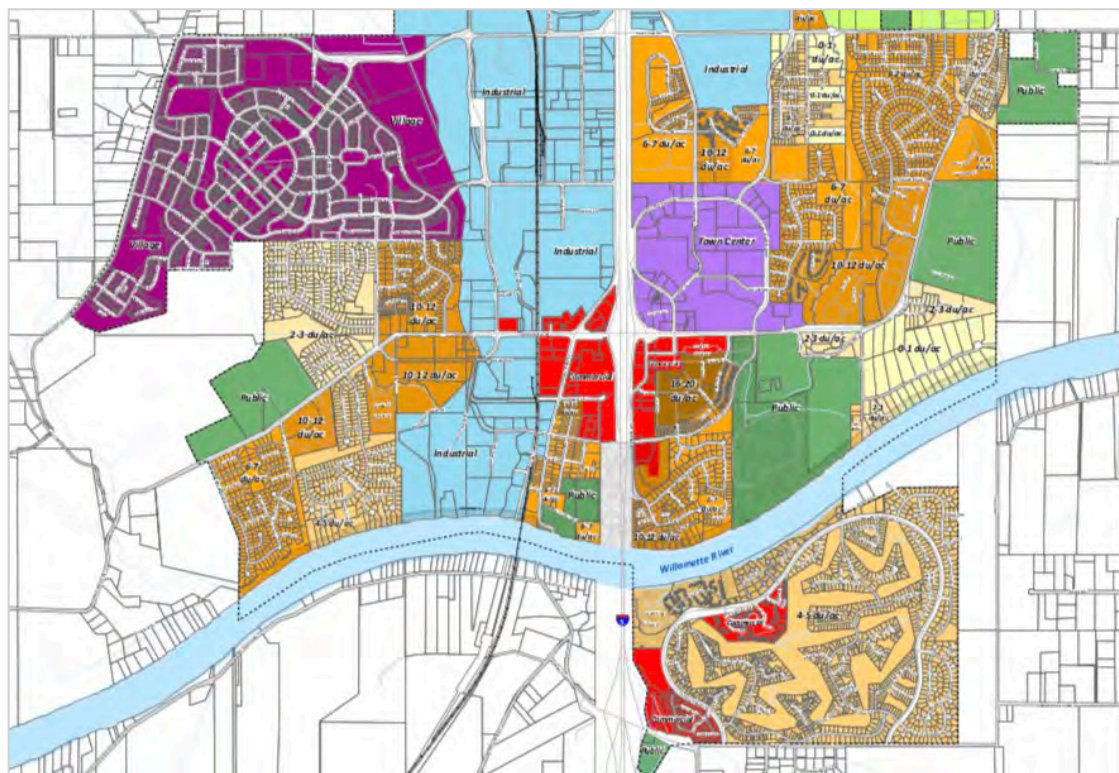


Exhibit 33. Subset of Wilsonville Zoning Map to include Villebois Plan Designation
Source: City of Wilsonville.



Appendix B: Northwest Crossing Case Study

Northwest Crossing is a master planned neighborhood in Bend, Oregon. The neighborhood is about 1.5 miles west of downtown Bend and caters to the “Central Oregon” aesthetic. It is composed of various residential uses (single family, cottages, townhomes, and apartments) and over 80 businesses representing a range of industries (manufacturing, medical, professional services, retail).

The community is roughly 486 acres with 32 acres of parks and an interconnected street and trail network. All of the area’s open spaces (including parks and rights-of-way) were dedicated to the City of Bend and are now under public ownership. A majority of Northwest Crossing is purposed for residential use and there is an elementary, middle, and high school that support students in the area (Exhibit 35). Commercial uses primarily center around the high school in the southwest quadrant of Northwest Crossing, however, at this time the commercial/retail uses are not fully built out.

Ultimately, the area is composed of several zoning districts,³² which are superseded or supplemented by the Northwest Crossing Overlay Zone. The overlay zone enables “compact, mixed-use development, along with areas of commercial and employment uses surrounded by higher density residential... [of] 7.2 to 19 units per acre, depending on the intended character of the particular subarea.”³³

In particular, the overlay zone on top of the Mixed Employment (ME) zoned areas enable consolidated parking areas and special setbacks to create a pedestrian-oriented environment. ME and the overlay zone both allow several uses outright including auto-oriented retail sales and services, restaurants, offices and clinics, lodging, and entertainment – at no more than 45 ft in height. The overlay zone on top of the Industrial Light (IL) zoned area limits the kinds of industrial uses typically permitted in that district to *compatible* light manufacturing. It further ensures industrial uses are delivered in a park-like setting at reduced heights of no more than 45 ft.

Current activity in Northwest Crossing is focused on development of the “Grove” – a new mixed-use development, on a 1.8-acre vacant site in the neighborhood’s commercial core. The Grove will accommodate up to 64,000 sq. ft. offering a public market hall and commercial building; a 22,000 sq. ft. mixed-use building with a suite of office spaces (ranging from 500 to

³² Underlying zoning includes RS – Residential Urban Standard Density, CL - Commercial Limited, PF – Public Facilities, and ME – Mixed Employment, and IL – Industrial Light.

³³ ODOT (n.d.). Oregon Greenhouse Gas Reduction Toolkit: Case Study, Northwest Crossing. Oregon Sustainable Transportation Initiative.

4,000 sq. ft.) above ground floor retail; and 33 new condominiums.³⁴ The development team will deliver the condominiums as a *second* phase, once the commercial uses are delivered.

The success of Northwest Crossing has encouraged Northwest Crossings' development team to set their sights on a 10- to 15-year build-out of a new neighborhood west of Northwest Crossing. The new neighborhood is called "Discovery West." This area is expected to accommodate an additional 40 acres of park and a mix of missing middle residential uses including single-family homes, townhomes, cottages, and apartments. The additional residential volume will continue to catalyze commercial development envisioned in Northwest Crossing's core.

Northwest Crossing has benefited from strong market positioning. Commercial development accelerated in the current economic cycle that has brought an influx of new higher-income households to the region. Northwest Crossing has a strong geographic location. With commercial development limited on the westside, the commercial area likely draws from an atypically large market area that includes most of West Bend. Demographic growth in Bend remains robust, translating into strong demand for housing development to support scale in commercial development. A primary developer willing to absorb early development costs, coupled with three schools has lowered typical infrastructure barriers in developing new urban areas.

Outside of commercial retail, Northwest Crossing has had relative success in attracting employment uses beyond personal services. Capitalizing on Bend's quality of life characteristics, concentration in outdoor recreation and "maker" industries, and emerging start-up culture, Northwest Crossing has been able to attract several small manufacturing and mid-size headquarters to its employment area.

³⁴ Northwest Crossing. <https://www.northwestcrossing.com/2019/09/plans-for-grove/>

Exhibit 34. Northwest Crossing Community

Source: <https://www.northwestcrossing.com/>



RESIDENTIAL BUILDING

COMMERCIAL BUILDING

PARKING CANOPY

MARKET HALL BUILDING



BIRDSEYE VIEW GROVE_NW CROSSING

RESIDENTIAL BUILDING

COMMERCIAL BUILDING

PARKING CANOPY

MARKET HALL BUILDING



BIRDSEYE VIEW GROVE_NW CROSSING

Exhibit 35. Northwest Crossing Property Map, Bend
Source: Harcourts The Garner Group Real Estate, 2017.

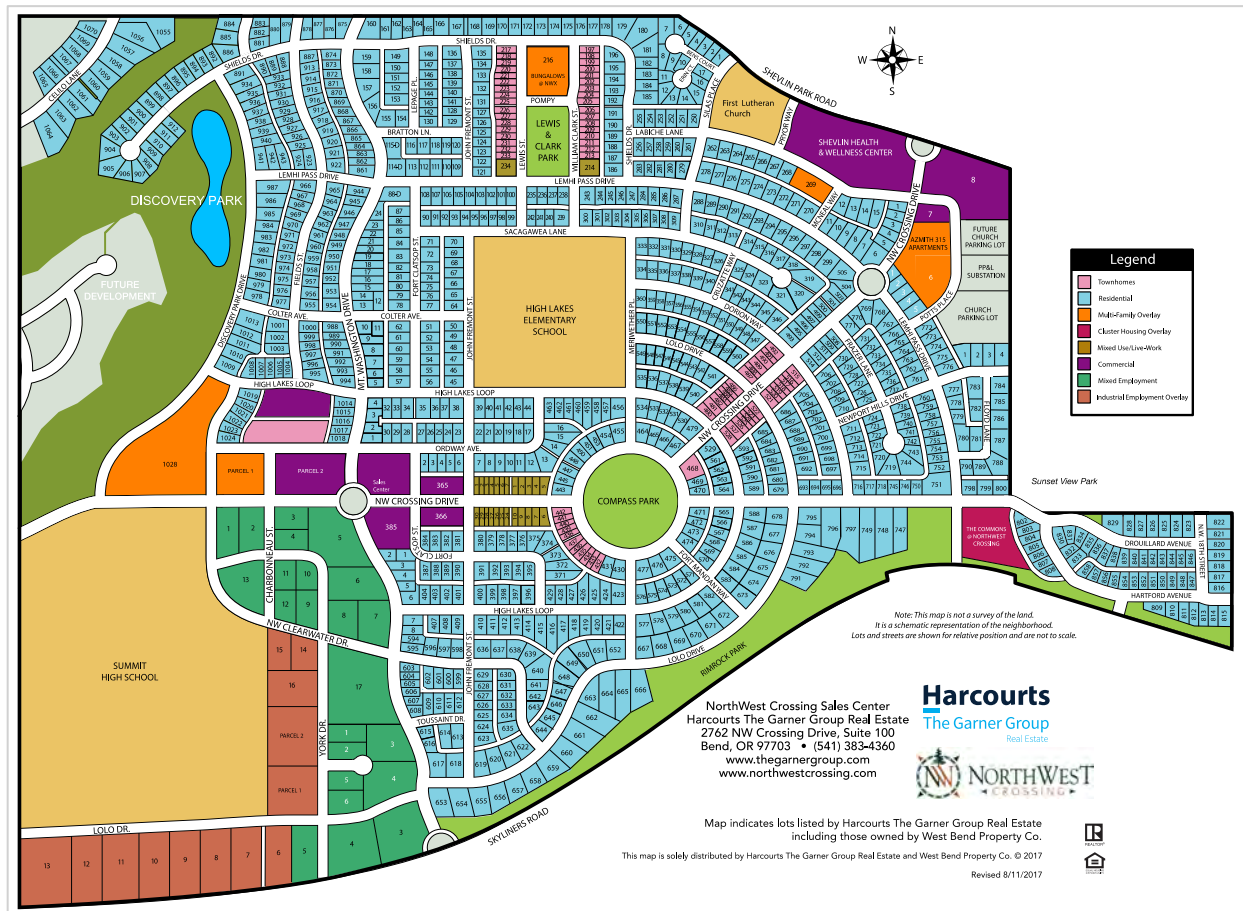
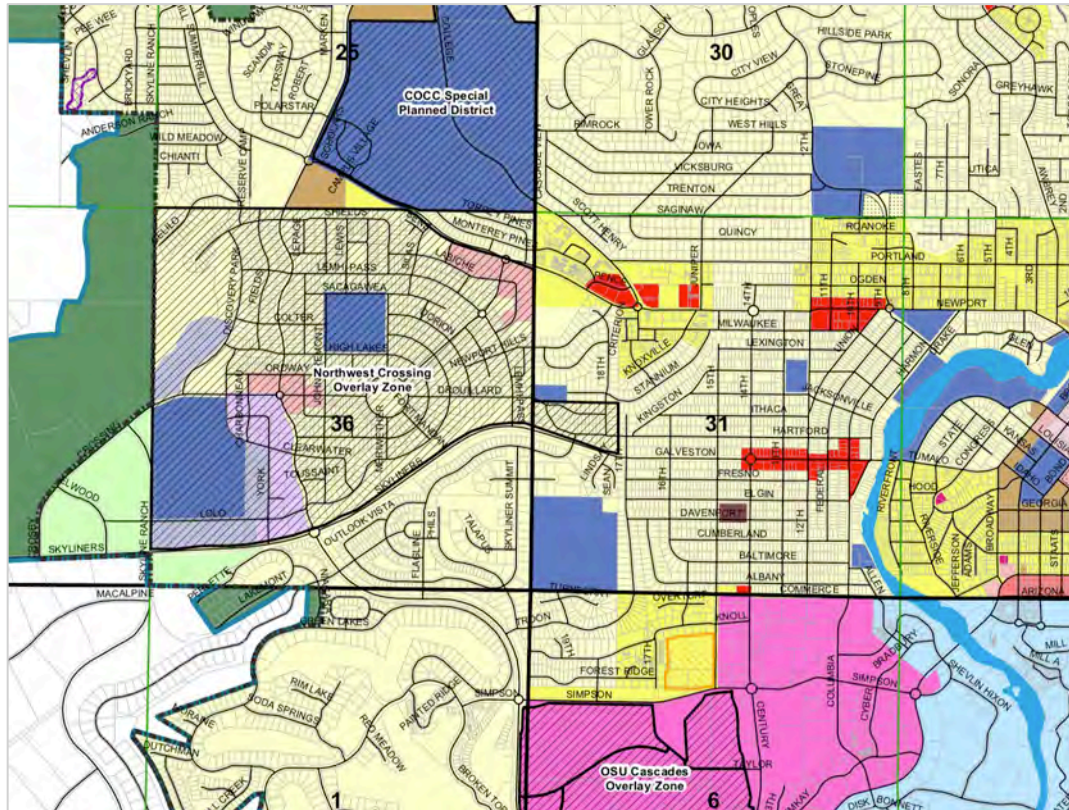


Exhibit 36. Subset of Bend Zoning Map to display Northwest Crossing Zoning
Source: City of Bend.



Appendix C: Bethany Case Study

Bethany is a master-planned development in unincorporated Washington County. The area is north of U.S. Route 26 and is located within 10 miles of downtown Portland, Hillsboro, and Beaverton. The area is composed of six subareas: North Bethany, West Bethany, Central Bethany, Arbor Oaks, Springville, and Thompson (Exhibit 38). Initial planning of Bethany began in the 1980s with the adoption of the Bethany Community Plan. Then, planning efforts in 2006–2010 resulted in the adoption of updated plan language and maps for the North Bethany Subarea Plan.

Despite Bethany's location in unincorporated county, the area is a relatively dense suburb. The area has a central commercial core surrounded by residential subdivisions. Portland Community College is located in the North Bethany subarea. Several parks, including a golf course, comprise the area and an open space/bicycle pathway provides connectivity between subareas.

Several land use districts comprise the study area to accommodate a community business district, a range of residential densities (from six to 24 dwelling units per acre), institutional uses, and commercial uses. The commercial core zoned as the Community Business District (CBD) was envisioned to provide a community-village atmosphere. Metro and Washington County formally designated this area as the Bethany Town Center.

Accordingly, the Bethany Town Center, or CBD, allows a mix of retail, service, and business establishments (e.g. grocery; restaurant; financial, real estate, institutional services; offices; entertainment; etc.) at medium-to-large-scales. The CBD also permits residential uses, in conjunction with commercial uses, of 20 to 40 units per acre. In some cases, when additional open space standards are met, residential densities are permitted up to 100 units per acre. The minimum lot area for uses in the CBD is 8,500 sq. ft. and the maximum height is 100 ft.

Areas designed for neighborhood commercial use, outside of the Bethany's CBD, allow many of the same uses as the CBD, but at small-to-medium-scales. In these areas, residential uses above ground floor retail are allowed, but at densities of 15 units per acre or less. The minimum lot area remains 8,500 sq. ft., but maximum heights are reduced to 35 ft. for all structures.

Bethany's principal commercial hub, Bethany Village Centre, was developed in 2002, only after the community had reached a critical mass of rooftops to sufficient to support commercial development. Today over 15,000 households are located within a five-minute drive of the center. Central Bethany benefits from very limited competition as the only retail center within a 1.5-mile radius. In real estate terms, Central Bethany is characterized as a community center, with over 225,000 sq. ft. and a trade area that extend beyond a ten-minute drive-time. Strong income demographics, limited competition, and land use allowing appropriate scale have all contributed to the success of commercial development in Central Bethany.

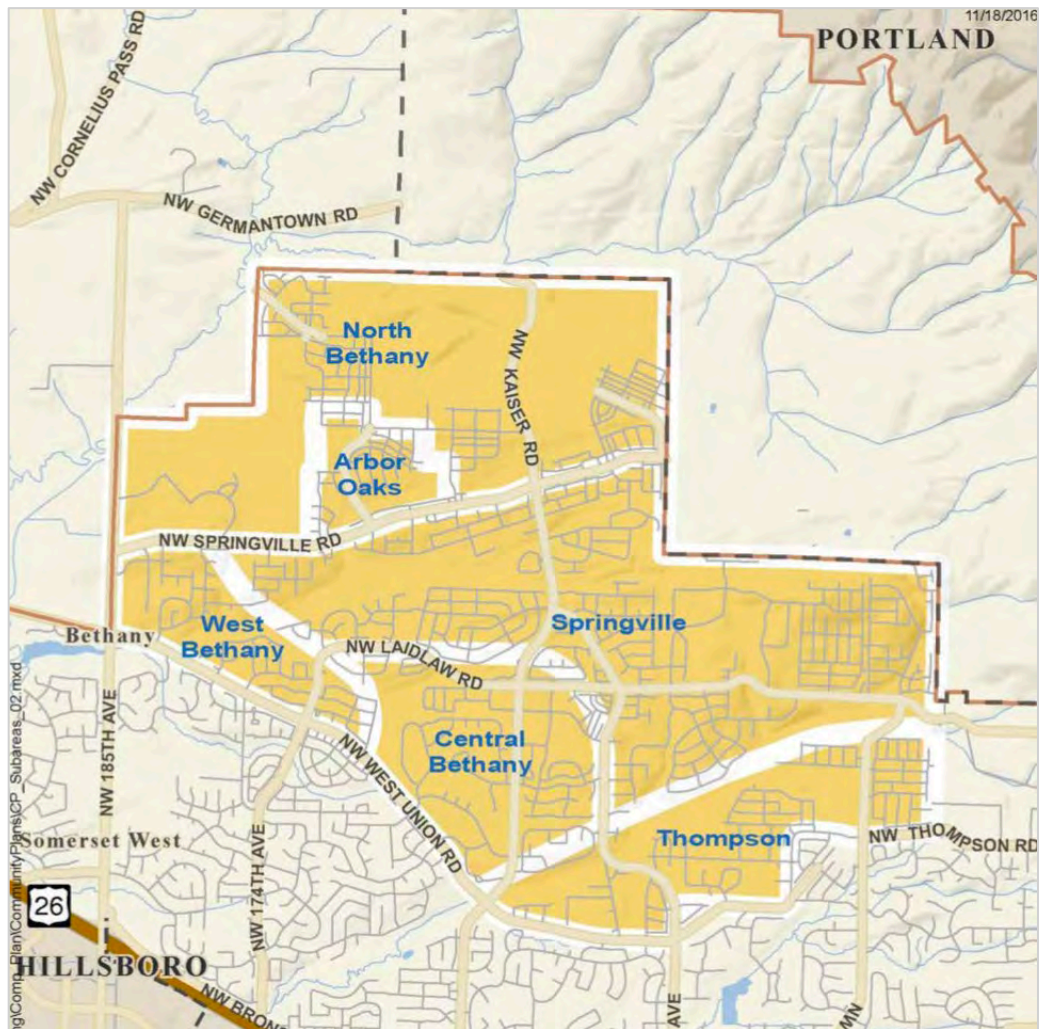
Exhibit 37. Bethany Community Business District

Source: <https://www.portlandonthemarket.com/bethany-oregon-homes/> and https://www.facebook.com/pg/bethanyvillagecentre/photos/?ref=page_internal.





Exhibit 38. Bethany Subarea Vicinity Map, Washington County
 Source: Washington County Comprehensive Plan, Bethany Community Plan.



Appendix D: Murray Scholls Case Study

Murray Scholls neighborhood is zoned Town Center – High Density Residential (TC-HDR) and Town Center – Multiple Use (TC-MU). *TC-HDR* permits residential uses (24 to 36 dwelling units per acre); it also permits commercial uses, parks, (small) free-standing offices, and limited retail in mixed-use buildings. In this zone, structures are permitted up to 50 ft in height. *TC-MU* allows office, retail, and service uses as well as light manufacturing uses. Residential uses (of 24 to 40 units per acre) are also allowed in mixed-use structures. In this this zone, the maximum building height is 60 ft.

The Community Plan for the Town Center was developed in adopted in 2005. Policies in that plan established residential targets – a minimum of 1,050 units and a maximum of 2,500 units (more units when improved public infrastructure can accommodate more households).

The primary commercial hub in the Town Center is Progress Ridge TownSquare. Developed in 2008, Progress Ridge was envisioned to be a pedestrian-oriented, civic hub offering a variety of commercial and employment uses to serve the growing region. Today it operates as somewhat auto-centric boutique, destination shopping center providing roughly 280,000 sq. ft. of shopping, dining, beauty and healthy, entertainment, and service options. It is anchored by a New Seasons Market and an AMC Theater.

Significant rooftop support outside of the Murray Scholls Town Center pre-existed development of Progress Ridge. Over 100,000 people live within a ten-minute drive of the center. Drawing in part from established neighborhoods, competitive commercial development exists in close proximity. From a competitiveness perspective, the success of Progress Ridge can be attributed to product differentiation and the recruitment of regionally drawing tenants. The most proximate commercial center at the time, ironically named Murray Scholls Town Center (but not located within the Murray Scholls Town Center Plan area), was owned and developed by Gramor, the same developers as Progress Ridge. Gramor had a deep understanding of the market, and their experience in the area led them to identify demand for premium tenants and existing voids in the market. Regionally drawing entertainment users Cinetopia (now AMC theaters) and Big Al's extended Progress Ridge's market support.

Exhibit 39. Progress Ridge TownSquare
Source <https://progressridgetownsquare.com/>



Exhibit 40. Murray Scholls Vicinity Map

Source: Murray Scholls Town Center Community Plan, Index Map.

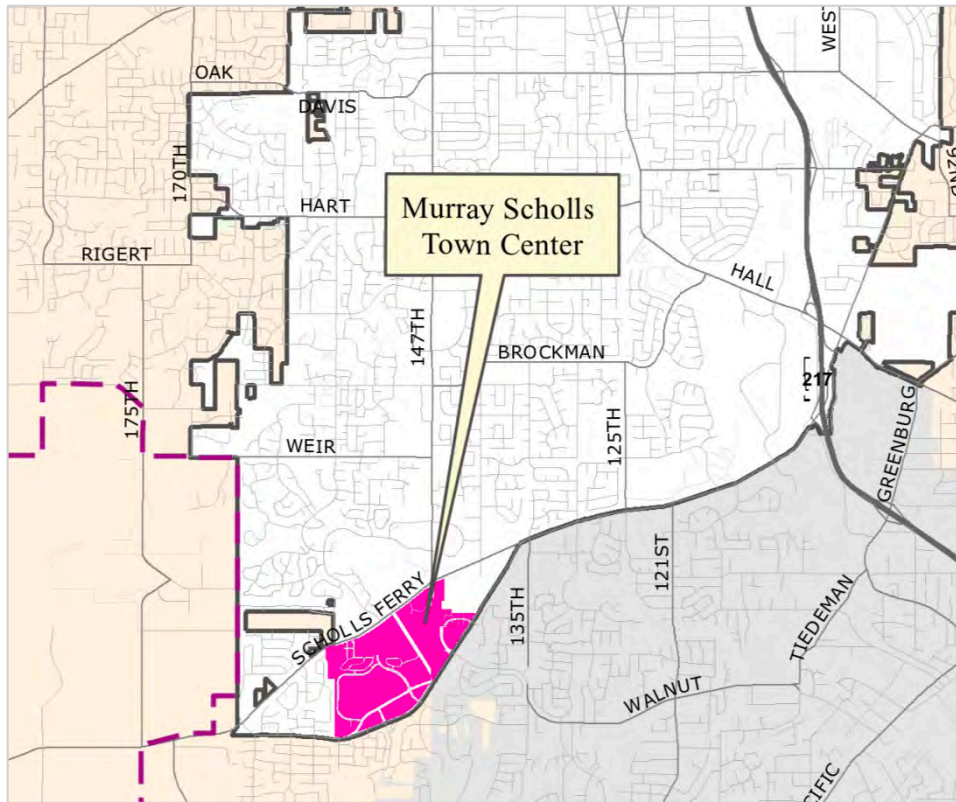


Exhibit 41. Commercial Directory and Layout, Progress Ridge TownSquare

Source: <https://progressridgetownsquare.com/>



APPENDIX F. URBAN DESIGN GUIDEBOOK AND ACTION PLAN



Urban Design Guidebook

Beef Bend South | King City, Oregon

November 2020

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Introduction

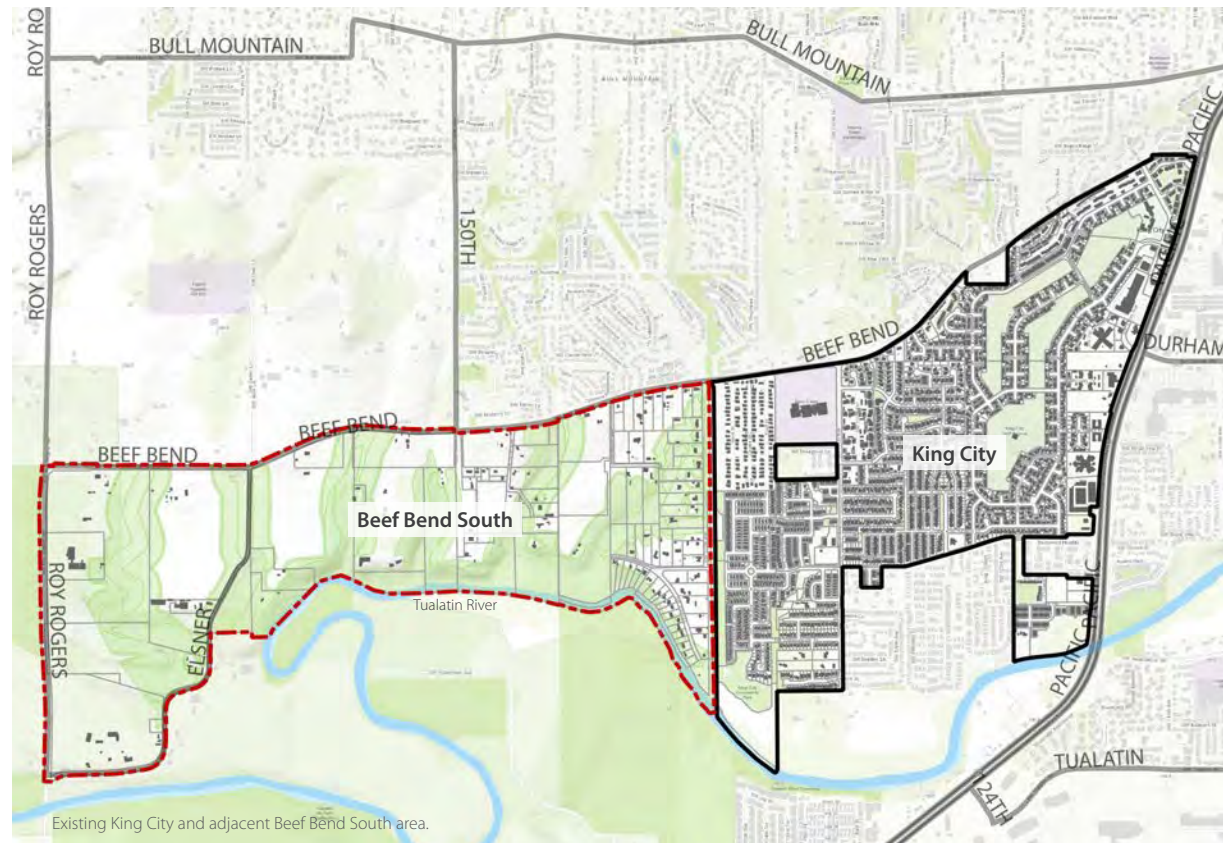
Purpose of the guidebook

This guidebook is part of the King City Transportation System Planning process. It is intended to serve as a bridge between the URA 6D Concept Plan, the City's first Transportation System Plan, and the forthcoming Beef Bend South Master Plan. It builds on comparable developments (case studies) evaluated as part of the 2020 Market Analysis report to understand details around land use, transportation, urban design, and implementation. The case studies provide lessons learned and recommended actions for King City.

King City Beef Bend South Vision

The 2018 Concept Plan for King City articulated a community vision for the area called Urban Reserve Area 6D (URA 6D). In 2019, based on its review of the Concept Plan, the Portland Metro Regional Government approved King City's application for an expansion to the Urban Growth Boundary (UGB) to create an extension of King City.

URA 6D, also known as Beef Bend South, is 528 acres located to the west of King City, at the foot of Bull Mountain, on the north shore of the Tualatin River. For this new area, King City envisions a community of distinct neighborhoods tucked between the five stream corridors that carry water from the mountain to the river. The highest density neighborhood with the greatest mix of uses will be located closest to Roy Rogers Road, at the western edge of the city (and the UGB). This neighborhood is envisioned to be home to a new town center with a main street, which will include commercial and civic uses, and employment uses.



The other three neighborhoods will vary in density but all will accommodate a full range of middle housing types, offering a variety of sizes and affordability intermixed within small urban-scaled blocks. Just north of Beef Bend Road, the City of Tigard is planning a series of new neighborhoods (South River Terrace) with a similar vision for mixed housing neighborhoods. In the future, several streets running north-south—River Terrace Boulevard in Tigard and Elsner Road in Beef Bend South—could connect these two communities to each other.

At its narrowest, the area between Beef Bend Road and the Tualatin River is about 3,000 feet and interrupted by streams. Creating an east-west street connection is

necessary but it will be challenging. The purpose of this east-west street will be to accommodate local traffic and to provide a link between the four neighborhoods. It will be a King City signature street that changes character from east to west, reflecting the personality of each neighborhood it serves, while protecting each stream it traverses or crosses.

The street and path network will be a fine-grained network of local streets, green streets, alleys, and paths. The network will provide seamless connections for community, accessing services, shopping, recreating, and experiencing nature; it will do so in a way that works for people on foot, in a car, on a bike, or in small electric-powered vehicles.

Relationship of this document to the TSP

This document flags several design strategies that are important for the Beef Bend South Master Plan to follow up on in order to achieve the goals and vision of the community and to fulfill earlier planning efforts such as the URA 6D Concept Plan. Detailing specific design approaches within the context of the King City Transportation System Plan will help ensure that the TSP does not preclude these actions or strategies from being implemented in the future; it may in fact promote some of these concepts.

Relationship of this document to other documents

2020 King City Market Analysis

The 2020 King City Market Analysis for Urban Reserve Area 6D was conducted in an earlier TSP task. For the three case studies—Villebois, NorthWest Crossing, and Bethany—the market analysis quantified the amount of existing residential development and commercial and industrial square footage. As a complement to the market analysis, this document details *where and how* the residential, commercial, and industrial development are arranged and configured. It also details other aspects of the development, such as the integration of open space, walkability, street network, access, and visibility of commercial uses. It analyzes how all these characteristics work together and how well each case study performs when compared with goals for Beef Bend South.

Metro's State of the Centers 2011 Report

In 1995 Metro adopted the 2040 Growth Concept to guide growth and development in the Portland metropolitan area. It designates regional and town centers, in addition to downtown Portland, as the focus for redevelopment and concentration of homes and jobs. The Metro 2040 system categorizes these mixed use areas as main streets, town centers, regional centers, and station communities. In 2011 Metro updated their State of the Centers report with analysis measuring the performance of more

than 40 of these centers in terms of vibrancy, economic prosperity, and equity, among other measures (<https://www.oregonmetro.gov/state-centers-report>).

Together these metrics indicate development patterns that combine households, jobs, walkability, and transit supportive development. Similar performance metrics were selected to evaluate the case studies for this document and allow the reader to compare the case study communities with each other.

It is interesting to compare the case studies with Metro-designated activity centers, which use similar performance metrics. For example, the table to the right compares the dwelling densities for two Metro activity centers (Hillsdale and Northwest Portland Nob Hill), with the three case studies.

Dwelling Density Comparison Table

Metro-designated activity center	
Activity center	Dwelling units per acre (average density)
Hillsdale	6
Northwest Portland Nob Hill	27
Case Study planned dwelling unit density	
Case Study	Dwelling units per acre (average density)
Villebois	4.6
NorthWest Crossing	3
North Bethany	4.6

"A city is not an accident but the result of coherent visions and aims."

Leon Krier, "Architecture of Community"

Why these case studies

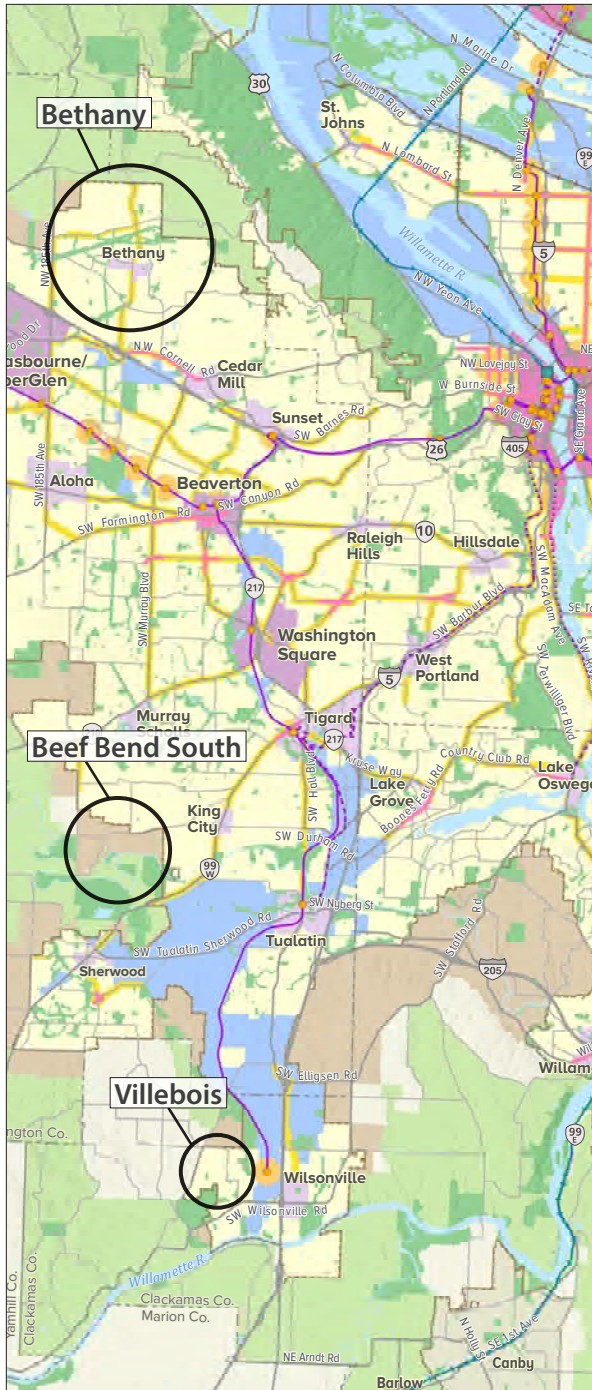
Three case studies similarly-scaled, master-planned communities were used for a comparative analysis of land use, urban design, transportation networks, and implementation strategies. The objective in studying these case studies was to identify characteristics that made them successful. The three case studies examined were Bethany and Villebois in the Portland metro area and NorthWest Crossing in Bend, Oregon.

Each case study represents a planned community that employed one or more specific planning or urban design techniques. These planning techniques are derived from timeless urban design principles and traditional town planning and were established in reaction to suburban sprawl and to mitigate the domination of the automobile.

The planning and design of each of the case studies required applying alternative planning techniques to large areas of land (500 - 875 acres). Given the scale of these planned areas compared to smaller projects, the traditional tools of default Euclidean zoning (addressing land use) and county or rural highway standards (addressing street network and streetscape) were not preferred. Instead alternative techniques, including zoning overlays, zoning districts, and/or other zoning mechanisms such as new rules and alternative rules, were used to replace or augment the typical planning and regulatory approach.

Two case studies—Villebois and NorthWest Crossing—are on land owned by a single property owner, and the master plan was executed by a single developer. North Bethany was rural land under multiple ownerships that was brought into the county through an urban growth boundary expansion. The county has overseen master planning, and development has been executed by different developers. It is more similar to what is expected to occur in King City Beef Bend South (formerly Urban Reserve Area 6D).

In each case, however, the same master planning design principles have been used. Together the case studies represent a number of exemplary approaches to planning a new community, from the layout of neighborhoods, to the design of streets, blocks, and lots; from mixing land uses and housing types to the integration of natural areas.



Terms and concepts referred to in this document

- » Urban design metrics
- » Ecological site planning and design
- » New urbanism
- » Context sensitive design
- » Master Plan

Urban design metrics

Urban design metrics are measurements used to characterize the built environment, e.g. the qualities that make one street more inviting than another or one mixed-use center more economically vibrant than another. A useful reference is “Measuring Urban Design: Metrics for Livable Places,” written by Reid Ewing and Otto Clemente, and published by Island Press in 2013.

Ecological site planning and design

Ecological site planning and design is the practice of planning for cities in collaboration with nature in order to avoid overloading the limits of land, air, and water resources. This a very broad and evolving practice incorporating the mid-century work of landscape architect Ian L. McHarg (author of *Design with Nature* originally published in 1969) and continuing today with efforts to incorporate more recent definitions of environmental sustainability into urban development. One such effort is LEED-ND (Leadership in Energy and Environmental Design for Neighborhood Development).

New urbanism

New Urbanism is an urban design movement that promotes walkable environments, mixed-use communities, middle housing, and the use of form based codes. The main organizing body for the movement is the Congress for the New Urbanism (CNU) founded in 1993 (<https://www.cnu.org>). In the early 2000s, the CNU joined forces with the Institute of Transportation Engineers (ITE) and drafted the first document devoted to reforming engineering practice and standards so that federal highway standards could be customized within urban areas. This document (*Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*) initiated a new movement picked up by other organizations such as NACTO (National Association for City Transportation Officials). New approaches allow cities to give equal or greater priority to transit serviceability, walking, and biking while engineering major streets with federal highway funding. (See also: Context sensitive design.)

Context sensitive design

Functional Classification of “roads,” or streets, was a system established in the 1960s and ’70s, through the Federal-Aid Highway Act. It required the classification of all roads in the country in order to establish funding priorities. Functional Classification tells planners and engineers what types of roads to design and how they should or should not connect, e.g. that Collectors can only connect to Arterials for example. Functional Classification is based on the philosophy of “mobility,” which is prioritized for motor vehicle drivers. Highways have limited access, arterial roads have fewer intersections, and local roads are considered optimal when they are cul-de-sacs.

In 2006, CNU worked with ITE to create the manual “*Designing Walkable Urban Thoroughfares: A Context Sensitive Approach*.” In contrast with the Functional Classification system, the CNU ITE manual emphasizes connectivity and placemaking; intersections are encouraged; narrow traffic lanes and on-street parking are permitted; and walkable, multimodal streets are favored over maintaining high-grade Level of Service (LOS), which rewards the free flow of the automobile.

Download and read about the CNU ITE document at <https://www.ite.org/pub/?id=E1CFF43C-2354-D714-51D9-D82B39D4DBAD>, and <https://www.cnu.org/our-projects/cnu-ite-manual>. Another helpful reference is *Street Design, The Secret to Great Cities and Towns*, by Victor Dover and John Massengale, (Wiley, 2014).

Master Plan

A master plan is both a planning process and a document that provide comprehensive guidance on policies and design actions that can be taken over time to lead to a particular, physical outcome.

DOCUMENT ORGANIZATION

Each case study gives an overview of the history of the development and provides maps and metrics that can be compared across case studies. Key design and implementation features are highlighted along with lessons learned.



1 | Case Study: Villebois

Section 1 is a case study of the Villebois development in Wilsonville, Oregon.



2 | Case Study: NorthWest Crossing

Section 2 is a case study of the NorthWest Crossing development in Bend, Oregon.

DOCUMENT ORGANIZATION



3 | Case Study: Bethany

Section 3 is a case study of the Bethany development in unincorporated Washington County, Oregon.



4 | Critical Success Factors

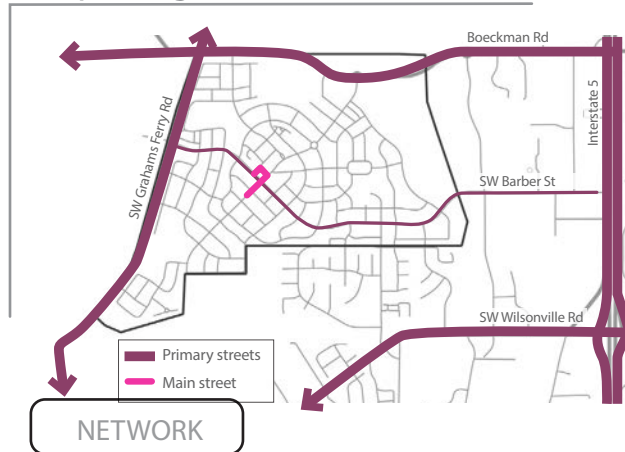
Section 4 builds upon lessons learned from the case studies and details urban vitality elements that work together to create a successful community, neighborhood, and main street or town center.

Critical success factors are organized around four major categories— whole community design, planning at the neighborhood scale, neighborhood design, and main street and town center design—each with a checklist of primary success factors.

INTRODUCTION TO CASE STUDY METRICS

Case studies by the numbers. A successful, vibrant center needs a critical mass of people, both residents and workers to sustain local business and support efficient transit and other services. For each case study several common metrics demonstrating urban vibrancy have been assembled.

Sample Page



INTERSECTIONS PER ACRE
35

ALLEYS, THROUGH CONNECTIONS, OR PATHS
16 - 18 foot alleys throughout; pocket parks and linear paths throughout

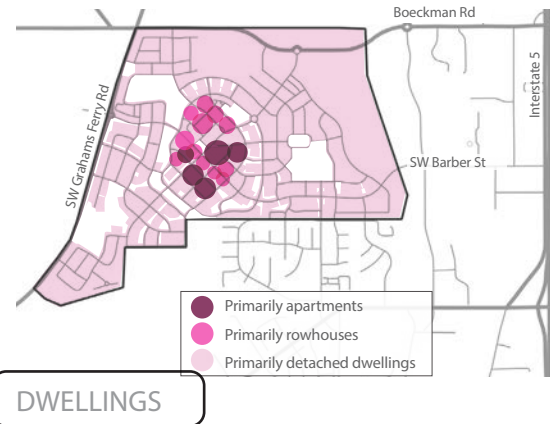
Street network metrics

More compact and **connected street networks** tend to have significantly higher levels of people walking and biking and fewer vehicle miles traveled as compared to sparser, tree-like designs, such as those dictated by functional classification hierarchy.

Intersection density is commonly measured by number per square mile, as in Reid Ewing and Robert Cervero's studies for transit and walkability.

American street network intersection densities typically range from as little as 60 intersections per square mile (as in downtown Salt Lake City) to more than 500 (such as the network in downtown Portland, Oregon).

For more information, see <https://www.cnu.org/our-projects/street-networks/street-networks-101>



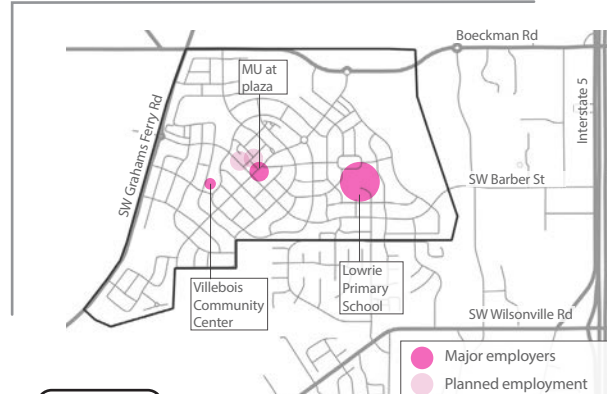
PLANNED DWELLINGS
2,300 minimum

Dwelling metrics

Dwelling density, or the number of dwelling units per acre, is helpful in understanding both the number of households that can support commercial and civic uses and the potential activity level of public amenities, such as parks and schools.

For reference, Metro's approval of the URA 6D urban expansion area stipulated that the new Metro designated neighborhood would ultimately be home to 3,300 dwelling units, at a minimum.

Sample Page



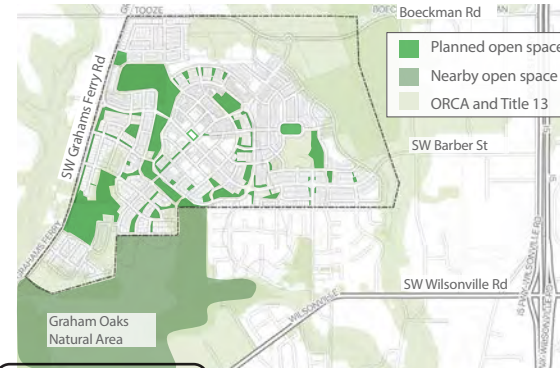
JOBS

COMMERCIAL
15,000 square feet

LIGHT INDUSTRIAL
15,000 square feet

Jobs metrics

The **number and distribution of jobs** is a measure of economic prosperity and urban vibrancy. For reference, the 2017 King City market analysis projected that 54,000 to 85,000 square feet of commercial uses were possible within 10 years as part of a neighborhood retail center. The 2020 market analysis identified about 55,000 square feet as more realistic, and recommended a “development scheme consistent with the form, scale, and type of commercial development in Northwest Crossing is advised. From a market perspective, Northwest Crossing is the most analogous case study area to the future realities of URA 6D.”



OPEN SPACES

PLANNED OPEN SPACE
60.5

OPEN SPACE TYPES
Trail, linear, community, neighborhood, private, pocket

Open space metrics

The URA 6D Concept Plan and King City community vision prioritize the **integration of open spaces** and a variety of open spaces throughout the Beef Bend South area. Programming, variety and physical distribution of open space and natural resource areas is a major differentiating characteristic in each case study, and these metrics and diagrams are intended for comparison purposes.

Villebois

Location: Wilsonville, Oregon

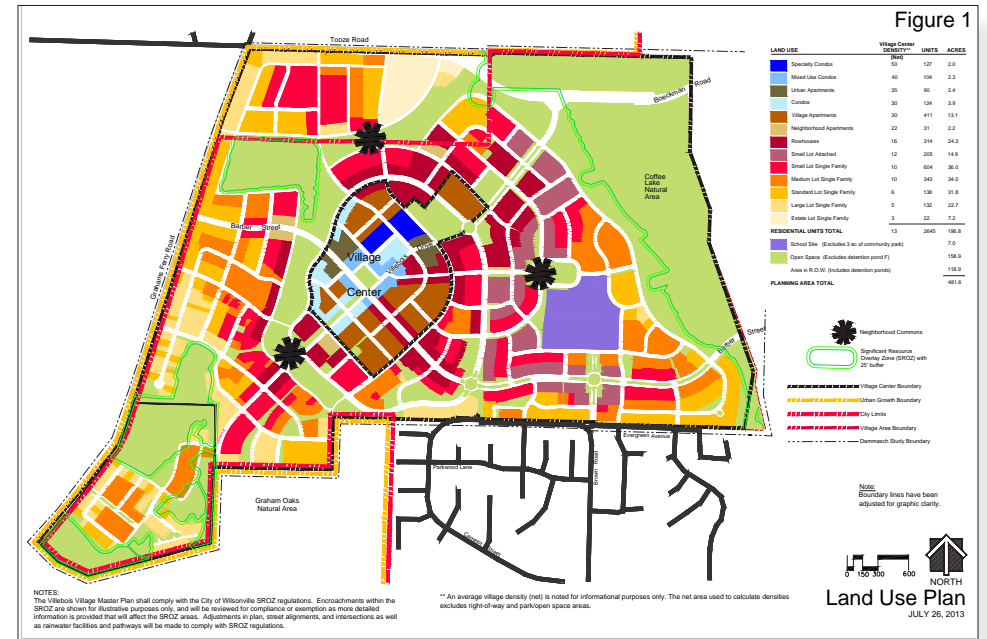
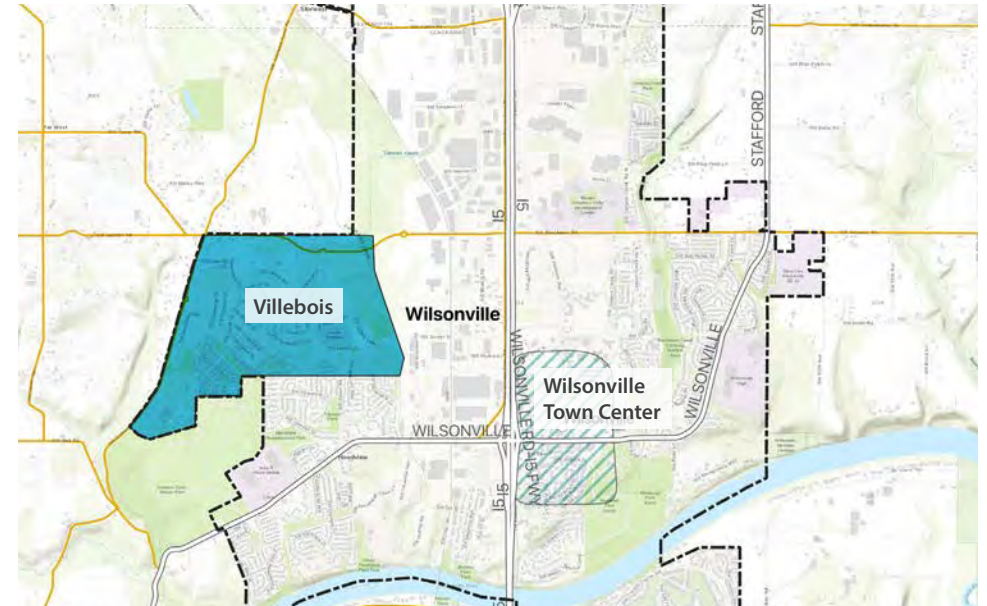
Size: 500 Acres

Context: Geographically separated from major streets and employment areas. Surrounding areas are rural or natural in character.

Housing mix: Main street apartment over retail, apartment, boulevard apartment, rowhouse, detached dwelling

Neighborhood design: Interconnected roads and trails link range of housing styles with ample open spaces, protected natural resources, and commercial/employment core

Character of main street / town center: Limited mixed use commercial and higher density residential surrounding an urban plaza.



Introduction

Initial Planning

The Villebois development was the result of city and community advocacy to re-appropriate land slated for a new prison as a planned residential development with small scale commercial. Villebois sits on the site of the former Dammasch State Hospital, which was in operation from 1961 to the mid-90s. After the closure of the hospital the site was identified by the state as the site of a new prison. After pushback from the community due to its close proximity to existing residential neighborhoods and Wilsonville's town center, the prison's location was moved north to what is now the Coffee Creek Correctional Facility. In its place a vision emerged for a mixed-use development integrated into the existing natural areas that surround the site. As part of an inter-governmental agreement with the state, 10 acres were reserved for community housing for people with mental illness.

From the beginning, urban renewal was a major driver of funding and development of Villebois. In 2003, voters overwhelmingly approved the new urban renewal district created by the city. The new district, called the West Side Plan, integrated the majority of the Villebois site and helped fund development and infrastructure improvements. Costa Pacific, the sole developer, had a vision for a mixed-use community with diverse housing types that was well connected to nature and open space. Modeled after designs of European villages, Villebois was planned with a central plaza with commercial uses and dense residential living at the core, surrounded by larger lots towards the edges.

Concept Plan

The planning of Villebois began in 2003 when Costa Pacific produced the concept plan. Shortly after the master plan and architectural pattern book, which specifies architectural styles and suitable site and building designs, were produced. These documents built on the initial vision and detailed a diverse community with a mix of housing types at different income levels and the incorporation of nature throughout. A mixed use, dense village center with ground floor commercial spaces surrounding an urban-style plaza was to be the heart of the community. The integration of nature and a connected system of trails and paths was baked into the development concept from the beginning. Villebois sits just north of Graham Oaks Nature Park, a 250-acre regional park with miles of trails which was purchased by Metro just before development of Villebois began. Within Villebois there are a variety of types of open spaces, from pocket parks that help preserve mature trees to a linear park and, most recently, a skate park with linkages to Graham Oaks.

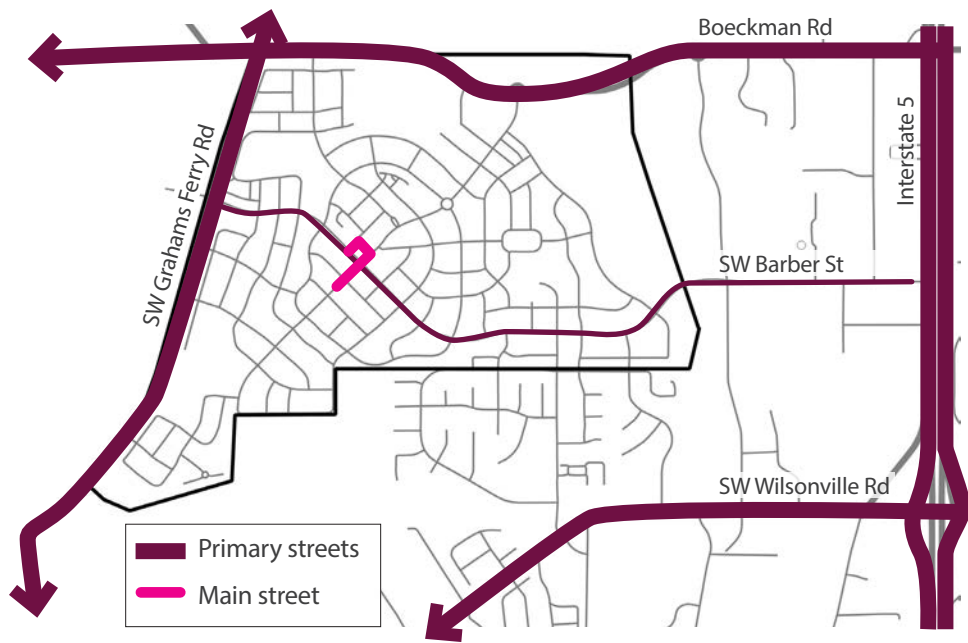
Villebois is mostly built-out, though mixed use commercial development at the Village Center has never been fully realized. By 2010, 700 homes had been built. Though there was some slowing during the 2008 recession, the development has been largely built-out to 2,600 homes.

While residential development succeeded, commercial development has been slow. Villebois has struggled to attract mixed use development in part because the

Village center is disconnected from main arterials and lacks visibility from any major street.

To help incentivize development around the plaza, the City of Wilsonville is considering adopting a Vertical Housing Development Zone program which would provide developers with a 10-year partial property tax exemption for mixed use developments. Costa Pacific is hoping to build three mixed use buildings that include ground floor retail and affordable housing above. Villebois has struggled to attract mixed use development in part because the Village center is disconnected from main arterials and lacks visibility from any major street.

Despite the undeveloped commercial areas, Villebois is seen as a desirable place to live. The combination of well-designed streets and homes, and the preservation and incorporation of trees and natural areas have made for a successful development.



NETWORK

INTERSECTIONS PER
SQUARE MILE (APPROX.)

200

BLOCK LENGTH

240 x 300 feet
average

BLOCK PERIMETER

1,080 feet

WALK SCORE*

36

*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS

16 - 18 foot alleys throughout; pocket
parks and linear paths throughout

ARTERIALS

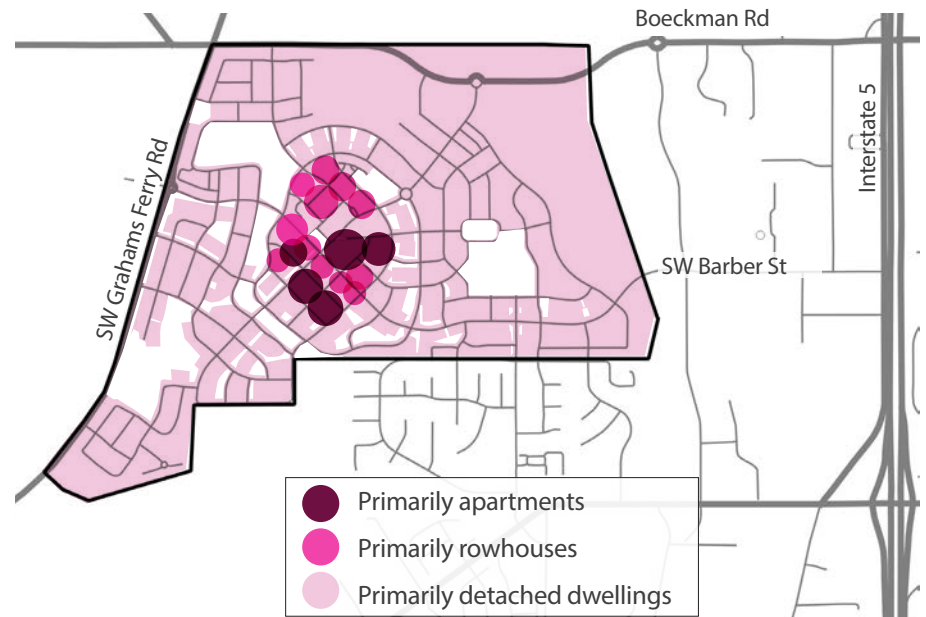
SW Grahams Ferry Road (west boundary);
Boeckman Road (north boundary)

ARTERIAL CHARACTER

One lane in each direction with
intermittent median. Roundabouts and
bike lanes on Boeckman Road.

TRANSIT SERVICE

South Metro Area Regional Transit
(SMART); one bus line with frequent AM/
PM weekday service to transit center



DWELLINGS

PLANNED DWELLINGS

2,300 minimum

DWELLING DENSITY PLANNED

4.6 dwelling units per acre

HIGHEST DENSITY PLANNED

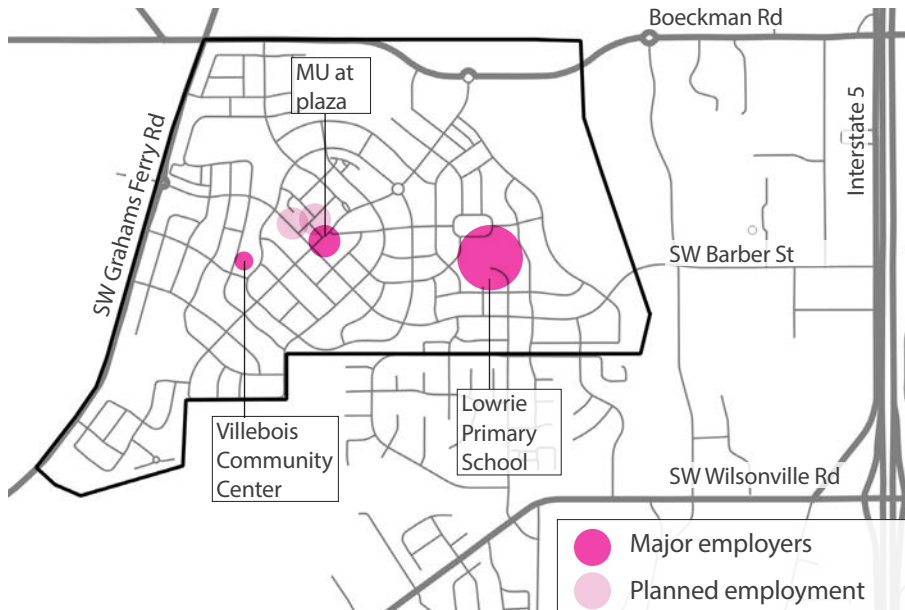
50 dwelling units per acre

LOWEST DENSITY PLANNED

5 dwelling units per acre

HOUSING MIX

Main street apartment over retail, apartment,
boulevard apartment, rowhouse, detached
dwelling



JOBS

COMMERCIAL

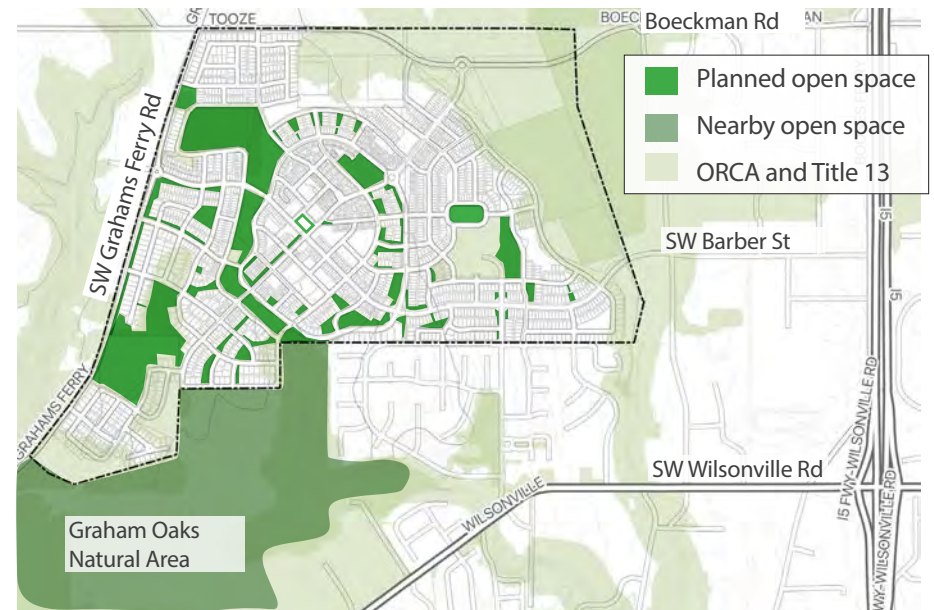
15,000 square feet

LIGHT INDUSTRIAL

0 square feet

CIVIC USES AND MAJOR EMPLOYERS

Lowrie Primary School (10 acre site)



OPEN SPACES

PLANNED OPEN SPACE

60.5

OPEN SPACE TYPES

Trail, linear, community, neighborhood, private, pocket, and urban parks

MUNICIPAL CONTROL

City of Wilsonville, Wilsonville School District, Homeowner's Associations

NEARBY OPEN SPACE

Graham Oaks Natural Area, Tonquin Regional Trail, and Coffee Creek Wetlands

Design



Incorporation of natural areas

Open space is a critical element and defining aspect of vision. Linear parks surround the village center and connect significant open spaces within and adjacent to plan area. Open spaces range from urban style parks to wooded natural areas.



Connectivity to surrounding areas

The Villebois Greenway connects regionally significant open spaces in Coffee Creek Wetlands and Graham Oaks Natural Area, forming the Tonquin Regional Trail. The entire development has 130-acres of trails and open green spaces that function as a linked network.



Diversity of housing

A broad range of homes are permitted to offer residents choice in housing type, style, and price. Housing types include single dwellings of various sizes, attached/cottage dwellings, rowhouses, and neighborhood, village, and urban apartments. High-quality of designs stem from architectural pattern book.



Varied housing design

Homes have compatible yet varied designs. An architectural pattern book details design features and standards establish elements of architectural styles. All buildings are reviewed by the Planning Director. The Pattern Book addresses the appearance of dwellings from the street and open spaces and includes rules on the scale and proportions for adjacent land uses.



Rigorous streetscape standards

Multiple sources contribute to attractive and functional streets including city zoning regulations, the Villebois Pattern Book and the Community Elements book. The Community Elements book provides the most fine-grained detail by establishing type and location of elements including lighting, street trees, site furnishings, and tree protection standards. Arterial designs include roundabouts, bike lanes, sidewalks, and on-street parking to slow traffic and prioritize a range of users. Neighborhood streets are alley-loaded, allowing for a continuous green strip with regular street trees and on-street parking.



Festival street at the town center

A festival (curbless) street surrounds a central plaza and can serve as a seamless gathering space. During special events the street can be closed to car traffic, allowing activity to spill into the street. This special street is delineated by bollards and pavers to set it apart from nearby streets.



Town Center

A central urban-style plaza sits at the heart of the town center. The plaza functions as the social center of the village with an inviting festival street (described on previous page). Large canopied trees provide shade and desirable places to gather, complete with benches, a fountain, and bocce ball court. In the summer concerts and other small community festivals bring larger groups. A mixed use development with ground floor retail and apartments above creates an enclosure on one side of the plaza. Two blocks of diagonal parking allow for easy access to the site while pedestrian-scaled lighting and ample street trees create a walkable urban environment. Housing is most dense at the village center, with a combination of stacked flats and townhomes in the blocks surrounding the center.



The mixed use development at the plaza.

Higher density apartments are a block from the plaza.

Modern rowhouses leading to the town center and plaza.

Implementation

Urban Renewal

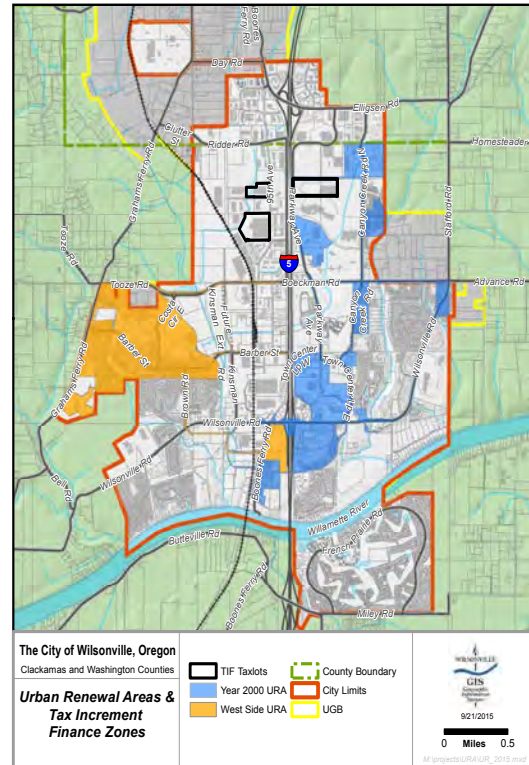
From the beginning, urban renewal was an integral tool for the development of Villebois, making it possible to pay for infrastructure improvements. The West Side Urban Renewal Plan which encompasses almost all of Villebois, was created in 2003 after voters approved the development of the community. Primary goals of the West Side Plan included creating a robust transportation network that was internally connected and connected to rest of the city; supporting diverse housing types; and robust natural areas and parks. The district was so successful that in 2016 the area was expanded to include additional lands.

This public/private partnership model added substantial value with the assessed value of the area increasing 22-fold in its first thirteen years. The city anticipates that the West Side Urban Renewal Area will close by 2024.

Development and Design

Villebois has its own zoning designation in Wilsonville's development code. Zone "V" permits many housing types including cottage clusters, row houses, duplex, accessory dwelling units, community housing, apartments, and single dwellings. Commercial uses are permitted in the village center, and more limited commercial uses are permitted in "neighborhood centers".

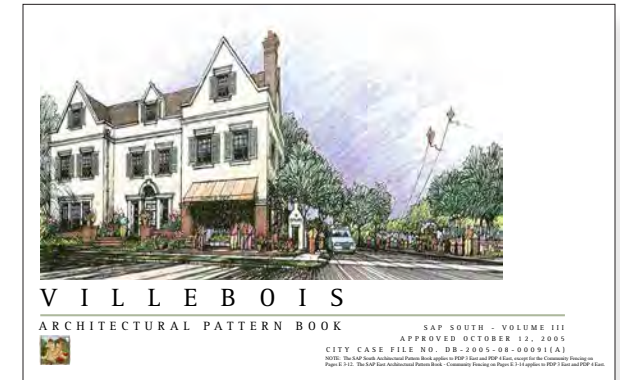
Neighborhood and building design is seen as a success in Villebois, in part because of the cohesive



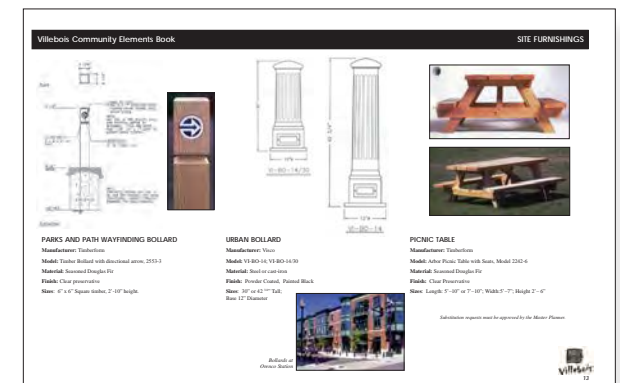
Wilsonville's urban renewal map showing the West Side URA in gold.

design elements. Two design manuals help ensure high-quality design that meets the goals and vision for Villebois: the Architectural Pattern Book and Community Elements book.

The Architectural Pattern Book includes guidance on site design, how buildings face the street, scale and proportions, as well as a list of appropriate architectural styles. The land use patterns chapter covers land use types and specifies setbacks and building placement by land use type. The architectural styles section illustrates examples from a range of historical and modern styles including French Revival to American Modern. It has detailed imagery of specific exemplary buildings that



Villebois Architectural Pattern Book



Community Elements Book detailing streetscape furnishings.

show how to achieve the required diversity established for the development. A compliance checklist is included to help builders and city officials determine if the building meets all required standards.

The Community Elements Book is created for each Specific Area Plan, of which there are four total. It serves as the plan for neighborhood design by addressing elements such as street trees, tree preservation, site furnishings and play structures, curb extensions and lighting. These elements establish a cohesive identity and fulfill the goals of diversity, connectivity, and sustainability set forth in Villebois' Master Plan.



Incentivizing Commercial Development

While the Villebois Master Plan intended for dense mixed use development surrounding the central plaza, it has yet to take off. High construction costs, low foot-traffic, and lack of visibility from any major arterials are factors that have made mixed use development difficult. The city is still strategizing about ways to realize the initial vision for the Village Center. As part of the Equitable Housing Strategic Plan released in June 2020, the city is considering tax abatement programs that would incentives developers to build affordable housing. A Vertical Housing Development Zone is recommended for the Villebois Village Center to create affordable housing and ground floor retail all at once.

LESSONS LEARNED

- » A broad range of natural areas, parks, and trails increases livability, mobility, and home values.
- » Connect trails and open spaces to surrounding trails and open spaces to integrate new development with existing region.
- » Alleys improve walkability, create opportunities for more street trees, give residents front yards, and allow for more on-street parking for residents and visitors.

- » The commercial portion of a development needs to be easily visible and accessible from a major arterial to attract users beyond residents or supported with additional users from nearby employers.
- » Consider adaptability of retail spaces so they don't sit vacant. For example, design retail spaces so they can be subdivided (or enlarged) to meet the needs of retailers or office tenants over time. Common service areas, e.g. restrooms, can serve multiple tenants, lower improvement costs, and enable small or startup businesses to establish a presence. Don't preclude office uses in early phases; encourage low or no rent pop-up businesses; occupy storefront spaces with city offices or civic uses (like a library), or developer showrooms.
- » Achieving higher density mixed use development at the center may require developer incentives.
- » Rigorous tree preservation standards lead to pocket parks that homes can front. These pocket parks provide shade, places to recreate, and increase the overall desirability of the development.
- » Urban renewal is a powerful tool that secures funding for regionally significant infrastructure such as street improvements and utilities without burdening developers or homeowners with these costs.

NorthWest Crossing

Location: Bend, Oregon

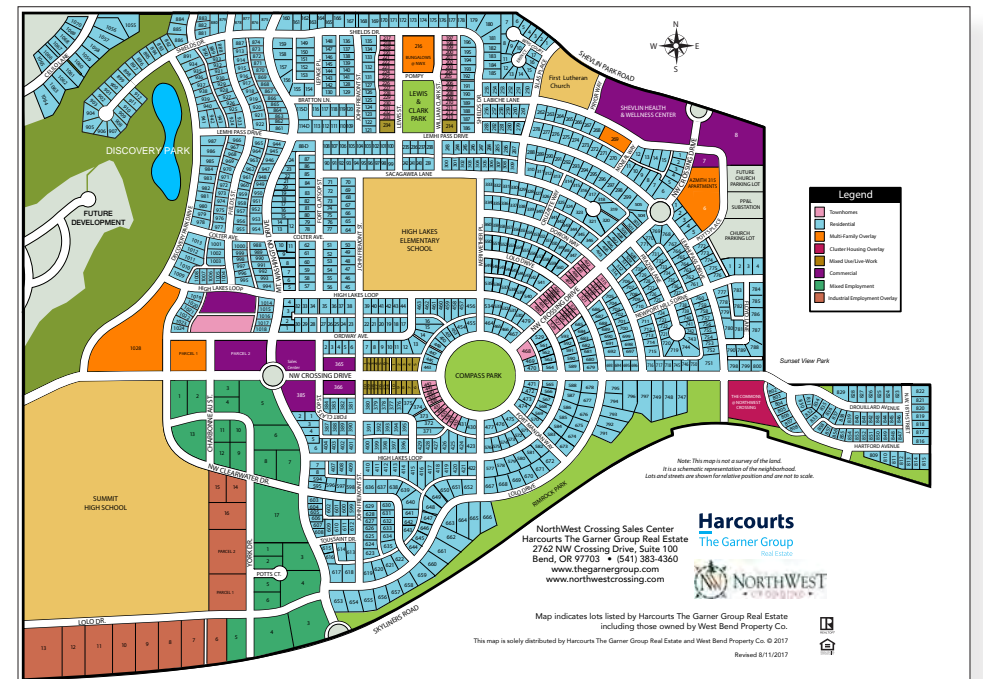
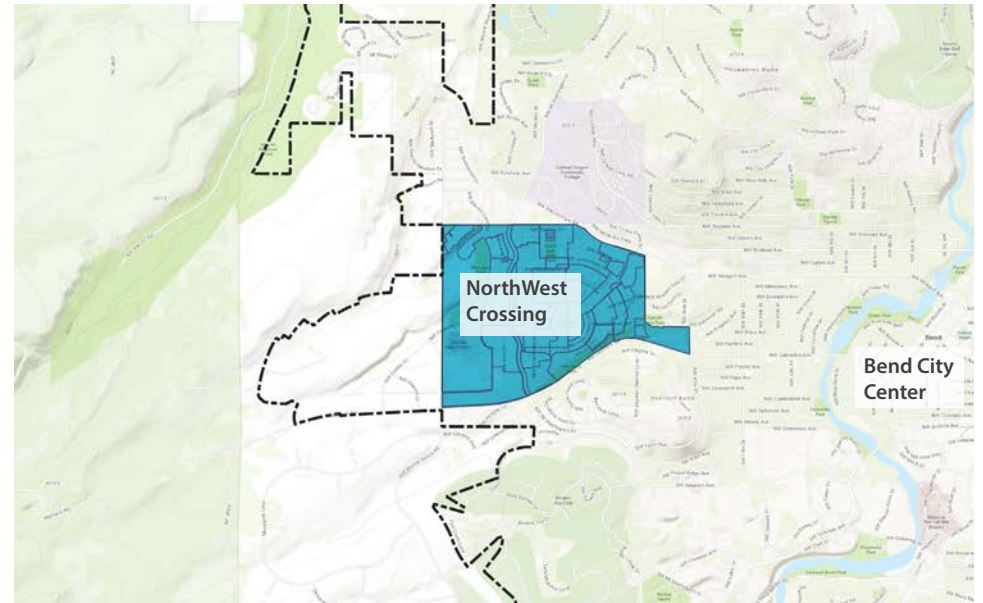
Size: 486 acres

Context: Connected to adjacent residential areas and the commercial/employment areas of west Bend.

Housing mix: Detached dwellings, cottages, cottage cluster, duplexes, live/work units, main street apartment over retail, boulevard apartment, apartment

Neighborhood design: Large range of dwelling types spread throughout connected network of preserved high desert landscapes with town center and employment/light manufacturing uses and neighborhood schools.

Character of main street / town center: Limited mixed use commercial and higher density residential.



Introduction

As private landowners closed the last of their timber mills, they looked to capitalize on the large population growth underway in Bend, Oregon to retain value for their land. Beginning in 1998 the West Bend Property Group (West Bend PC) advocated for a new neighborhood as development extended outward from Bend. They engaged consultants to develop a concept plan and began conversations with the city and community. In the early stages the developer identified the need to design a community of the highest quality to not only differentiate their product in a highly competitive residential market but also to ensure approval from the city and the community. Facing initial stiff resistance to perceived “suburban sprawl,” West Bend PC sponsored lectures by national speakers on smart growth topics and a public charrette to gather input.

Design Vision

A design vision emerged for a concept building off the existing character of the high desert landscape. A mixed-use neighborhood was laid out based on the mapping of large ponderosa pines and outcroppings of rimrock with the locations of roads, lots, and sidewalks determined by these preserved natural elements. Another defining feature is its radial layout. In response to concerns over the speed and character of large regional connectors linking NorthWest Crossing to Bend, the developer worked with city engineers to design roundabouts. Three roundabouts control the flow and speed of traffic into and out of NorthWest Crossing; there are no stop lights in the development, and even the largest streets have parallel parking, street trees, and bike lanes.

The overall vision for NorthWest Crossing is a mixed-use community that looks and functions like a complete community. A broad range of uses including two schools, open spaces, employment uses, commercial spaces, and a mixed-use town center are connected with a mile and a half of paved trails that also link in to surrounding regional open spaces and trails. All roads (including alleys and mid block crossings) and parks were developed by West Bend PC and dedicated to the City of Bend. An overlay zone was approved by the city to permit a broader range of uses, special street standards, and consolidated parking for employment uses.

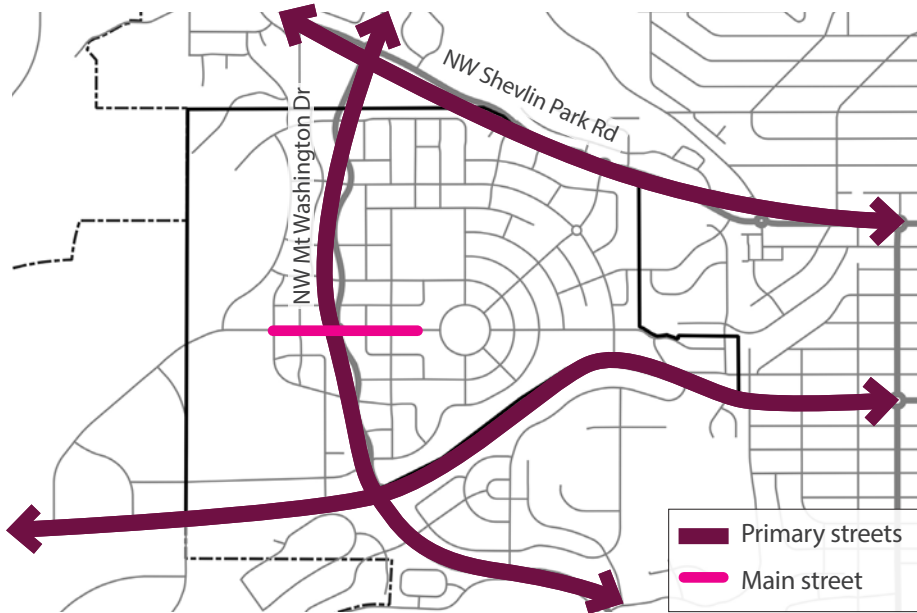
Master Planning

Fundamental to the vision was the desire to have a development that did not look like it was built by one builder. The master plan arrayed different housing types using a transect concept that arrays housing types from most dense in and adjacent to the town center to least dense along the edges of the rural surrounding land. Lots were auctioned off in small phases to pre-approved builders in a lottery system. Detailed development guidelines and design standards for residential and commercial uses and a prototype book based on historic catalog plans guide builders’ designs. An architectural review committee designated by West Bend PC reviews all designs. The building quality and diversity is a key feature of NorthWest Crossing.

The town center with main street surrounded by employment uses, commercial buildings, two-story mixed-use buildings with ground floor retail, and attached dwellings at higher densities. Fundamental

to its success are the design of its streetscapes and the large number of adjacent office uses. West Bend PC sold several lots to another developer who built office spaces and marketed them based on the lifestyle of NorthWest Crossing. Several high profile light industrial and software companies have located there, including the head quarters of HydroFlask and Ruffwear. Other commercial development includes a communal office space targeted to the high rate of people working from home in Bend, professional offices within and adjacent to the town center, and a large medical campus at the NE entry to the neighborhood.

The last phases of construction at NorthWest Crossing are being developed this year with construction spanning from 2001 to 2021. The final phase of the town center is being constructed with a public market hall, mixed-use commercial building, and 33-unit building. This is on the heels of the development of 132 apartment units, a cottage cluster, and other narrower-lot detached dwellings. Building off the success of NorthWest Crossing, the West Bend Property Co. is planning to develop an additional 1,750 housing units to the west as a second development. The development has been very successful with homes retaining high values even during the height of the recession.



NETWORK

INTERSECTIONS PER
SQUARE MILE (APPROX.)

225

BLOCK LENGTH

230 x 320 feet
average

BLOCK PERIMETER

1,100 feet

WALK SCORE*

47

*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS

14 - 16 foot alleys throughout; pocket
parks and linear paths throughout

ARTERIALS

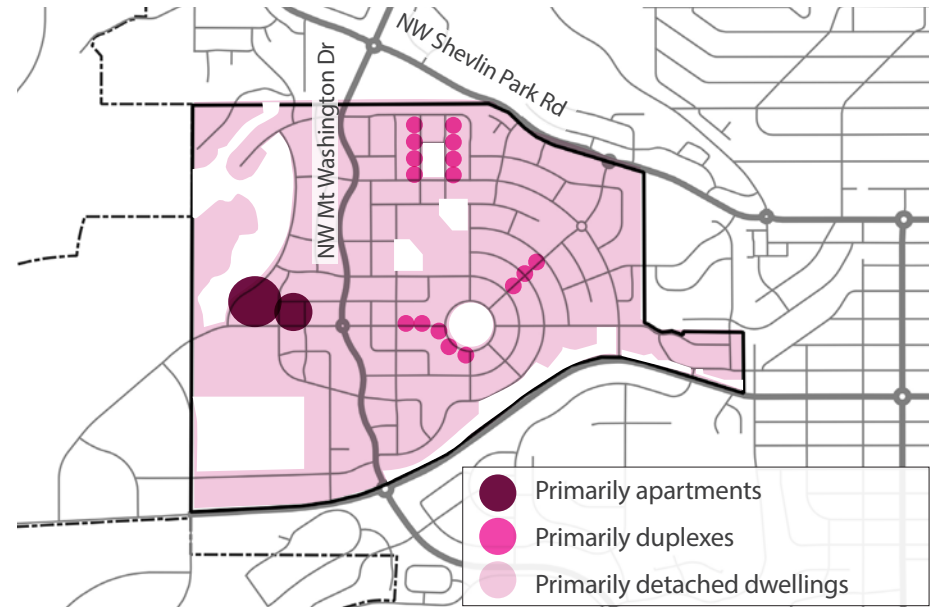
NW Shevlin Park Rd (partial north
boundary); Skyliners Rd (south boundary);
NW Mount Washington Drive (bisect)

ARTERIAL CHARACTER

Roundabouts throughout. Bike lanes
and on-street parking on NW Mount
Washington Drive.

TRANSIT SERVICE

Cascades East Transit (CET); one bus
line along Shevlin Park Rd with frequent
service to transit center.



DWELLINGS

PLANNED DWELLINGS

1,500

DWELLING DENSITY PLANNED

3 dwelling units per acre

HIGHEST DENSITY PLANNED

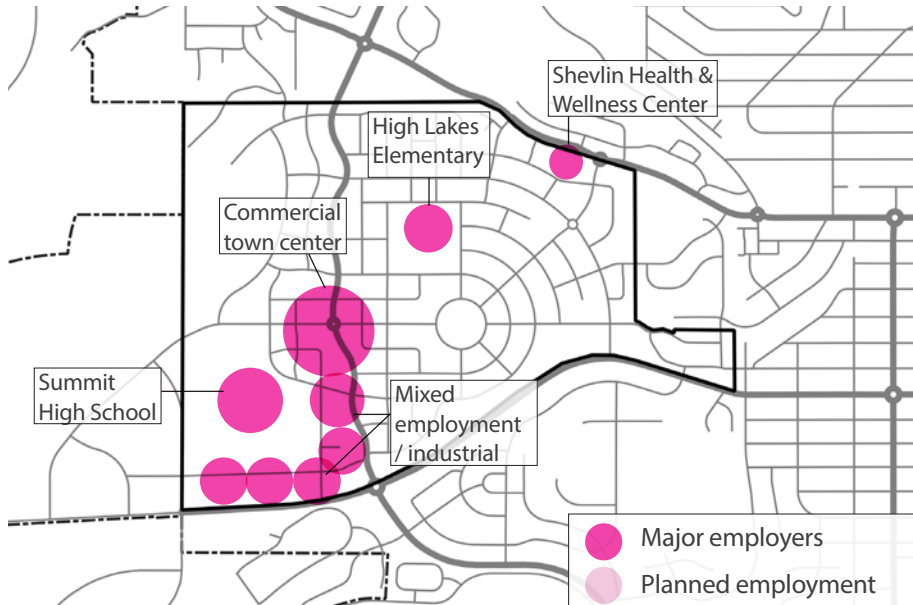
19 dwelling units per acre

LOWEST DENSITY PLANNED

7.2 dwelling units per acre

HOUSING MIX

Main Street apartment over retail, boulevard
apartment, apartment, live/work units, duplex,
cottages, cottage cluster, detached dwelling



JOB

COMMERCIAL

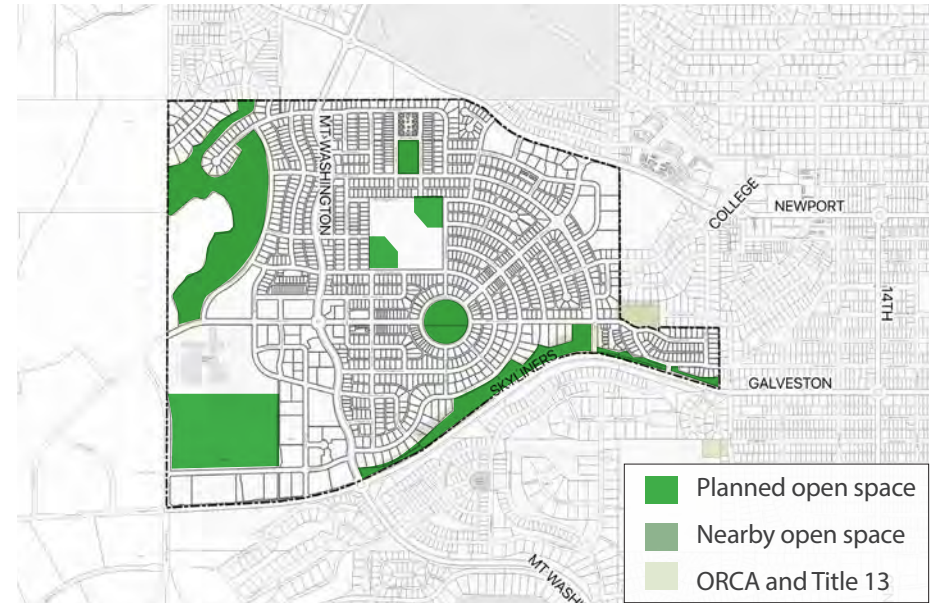
55,400 square feet

LIGHT INDUSTRIAL

43,000 square feet

CIVIC USES AND MAJOR EMPLOYERS

Summit High School (48 acres), High Lakes Elementary School (15 acres)



OPEN SPACES

PLANNED OPEN SPACE

75 acres

OPEN SPACE TYPES

Trail, linear, community, neighborhood

MUNICIPAL CONTROL

City of Bend, Bend School District

NEARBY OPEN SPACE

Shevlin Park, Deschutes National Forest, Phil's Complex

Design



Varied housing design

By pre-approving builders and distributing lots through a lottery system, the developers dispersed building styles throughout the community. Widely varying housing styles make NorthWest Crossing look and feel like an established neighborhood rather than a subdivision. This approach also increased competition among builders to differentiate their product to increase sales. Builders submit individual designs to an Architectural Review Committee that reviews designs using the Residential and Commercial Architectural Standards.



Preserved high desert landscape

The design started with detailed mapping of natural resources and significant trees. Streets, sidewalks, and lots were laid out to preserve and showcase these elements as resources. The high desert landscape is a defining attribute of the design of NorthWest Crossing.



Diversity of housing

A broad range of housing types are dispersed throughout the neighborhood using a transect of established prototypes. Higher density housing is located near the two commercial centers or adjacent to parks. Detached housing has varying lot sizes with different prototypes intermixed throughout the district in subdistricts based on setbacks and lot widths. The range in housing types translates into choice, a range of price points, and the ability to age in place.



Mix of uses

The neighborhood was designed with a full range of uses, 15-acres of mixed-use employment, 40-acres of industrial uses, and the high school are clustered south of the town center. The added activity of people who work and go to school in NorthWest Crossing translates into a viable town center that is a functional center of gravity for the community.



Circulation/Roundabouts

Four roundabouts define the layout of streets and blocks in NorthWest Crossing. There are no streetlights needed in the neighborhood. The roundabouts slow down cars while handling traffic safely and efficiently. Their design and use were critical in winning public support for the project, and the city has subsequently adopted their use in other neighborhoods. Additionally blocks were designed to be small with frequent intersections including mid-block crossings and alleys. The block size in neighborhoods ranges from 300 to 500 feet with block sizes decreasing to roughly 275 feet in the town center.



Network of connections

The neighborhood is designed with a dense network of intersections and narrow neighborhood streets with curb extensions, sidewalks, street trees, and on-street parking. All blocks are alley-loaded. Mid-block pedestrian crossings and a mile and a half of paved trails offer alternate ways to connect through the neighborhood and are linked to surrounding regional trails/resources and a network of mountain bike trails. Slower traffic speeds and attractive streetscapes with street trees, grates, seating, and lighting reinforce the pedestrian orientation of streets.



Town Center

A four-block concentrated mixed-use center of retail, commercial, and second floor residences and offices is located on the western edge of the neighborhood. Wide sidewalks with attractive streetscapes frame a narrow main street lined with 2-3 story buildings. More dense types of housing including apartments and live/work units surround and support activity in the town center. Buildings form a streetwall with mid-block pedestrian passageways. Outdoor dining and plazas are located in setback areas. The intersection frequency, mid-block passageways, and appealing streetscapes translate into high levels of activity within and leading to the town center. Parking is available on-street and in shared lots behind buildings that are managed collectively. The focus of retail uses is on community-serving uses, with no large anchors. Main Street hosts a weekly farmers market and other events throughout the year and functions as a heart of the neighborhood.



Buildings in town center form street wall or are set back for plazas/outdoor dining



Employment uses adjacent to the town center have attracted a range of tenants including anchor tenants such as HydroFlask.



Higher density apartment and mixed-use projects in the town center were built in later phases.

Implementation

Public engagement

The developer sponsored public charrettes to present concepts and solicit feedback. There was significant opposition to perceived suburban sprawl of new development. The developer responded to these concerns by engaging in conversations and sponsoring lectures by national leaders in Smart Growth to educate about design concepts. A turning point was the design of roundabouts to lessen traffic speeds and avoid large, regional connector roads. The developer partnered with city engineers to design a solution that would meet dual objectives. The roundabouts in NorthWest Crossing were the first roundabouts constructed in Oregon.

Overlay zone

The master plan was adopted and codified in an overlay zone. The NorthWest Crossing Overlay Zone permits different densities and a mix of uses. It also permits consolidated parking (particularly for employment uses) and limits industrial uses to light manufacturing. Smaller lots were permitted to increase density levels and additional types of housing were allowed.

Use of prototypes

The master plan is zoned according to four prototypes that determine scale, character, use, and construction type along a transect from urban to less urban.

- » Town Prototype – 2-3 story façade built to sidewalk line; attached commercial, mixed-use, apartment or townhome; 12 - 19 dua
- » Village Prototype – 2-3 story façade permits 10-foot landscaped dooryard setback; ; attached commercial, mixed-use, apartment, townhome, duplex or cottage; 12 - 19 dua
- » Neighborhood Prototype – detached dwellings with range of lot sizes (4,000 – 8,000 SF) mixed throughout the district in subdistrict with alley-loaded parking; permits ADUs; 7.3 max dua
- » Edge Prototype – irregular or extra deep lots or near designated natural areas; detached residential or industrial; max 2 dua

A Prototype Handbook provides detailed development standards for both residential and commercial development. These development standards are codified in the City's overlay zone. Architectural standards for residential and commercial uses address topics including decks and porches, driveways, duplication of building designs, exterior colors and design treatments, lighting, walls and trims, fences, garages, landscaping, and tree preservation. A pattern

book of preferred architectural styles based on historic catalog of plans helps builders interpret traditional styles while meeting the design standards. Together, these regulatory tools establish a rhythm and scale for buildings while promoting both overall harmony and distinction between individual buildings.

Street types

The neighborhood was designed with small blocks and frequent intersections. Street types from the master plan were codified as Special Street Standards in the Overlay Zone. Street types tentative locations and alignments were mapped with standards corresponding to street types. Alternate standards are permitted through an approval process. Language permits the use of any lesser street standards adopted later. Street tree guidelines apply to designated areas defined by distinct types of trees.

Employment and light industrial

Commercial development includes a communal office space targeted to the high rate of people working from home in Bend, professional offices within and adjacent to the town center, and a large medical campus at the NE entry to the neighborhood.



LESSONS LEARNED

- » Excellence in the overall neighborhood design and design of open spaces and streetscapes and range of housing types has translated into market value. Sales have remained strong, even during the 2008 recession, with steady home values.
- » Compared to Villebois, the town center has succeeded due to high visibility from a primary arterial and roundabout, limited number of commercial spaces phased over time, and close proximity of employment uses.
- » All parks and streets (including alleys) were developed by the developer but transferred to the City of Bend for public ownership. There is no homeowners association.
- » More intensive mixed-use development and higher density residential uses were not developed until the final phases. This minimized the amount of time spaces sat empty.
- » Using roundabouts to reduce the traffic speed on arterials allowed design that emphasizes other modes and avoids the use of street lights and regional connector lane widths. Even arterials have a pedestrian-oriented character with street trees, green strip, bike lane, and on-street parking. Frequent intersections and shorter block lengths improve walkability and prioritize pedestrians over vehicles.
- » Shared parking district for commercial uses reduces the amount of area needed for off-street parking. Community commercial uses limited to 5 parking spaces.
- » Architectural Review Committee established to review and approve all development for consistency with residential architectural standards.
- » Lottery system for allocating lots to builders promoted authentic variety in building forms and promoted competition for higher quality products.
- » Phases were small and discrete so construction zones were confined. Any inconveniences to residents was reduced. Potential buyers could see how development would look and feel given incremental progress toward achieving the vision.
- » Affordable housing was not identified as a critical need in early stages of development. As a result, there is a limited amount of affordable housing. Average home prices for single dwellings range from \$465,000 - \$895,00. A recent workforce housing project attempts to address this lack with 50 new apartment units. The developer has also donated eight lots to a local land trust and developed 53-unit senior apartment building.
- » Planning for two schools (elementary and high school) improved marketability of development.
- » Design for transit even if transit service does not yet exist. Densities in NorthWest Crossing are between 10 and 20 dwelling units per acre. Over the years a few transit service agencies have provided fixed route service to NorthWest Crossing. In early 2020, the OSU-Cascades Microtransit Pilot Project started serving the portion of NorthWest Crossing east of Mt Washington Drive on an app-driven, on-demand basis. When the region permanently addresses transit service, NorthWest Crossing will continue to accommodate transit.

Bethany

Location: Unincorporated Washington County, Oregon

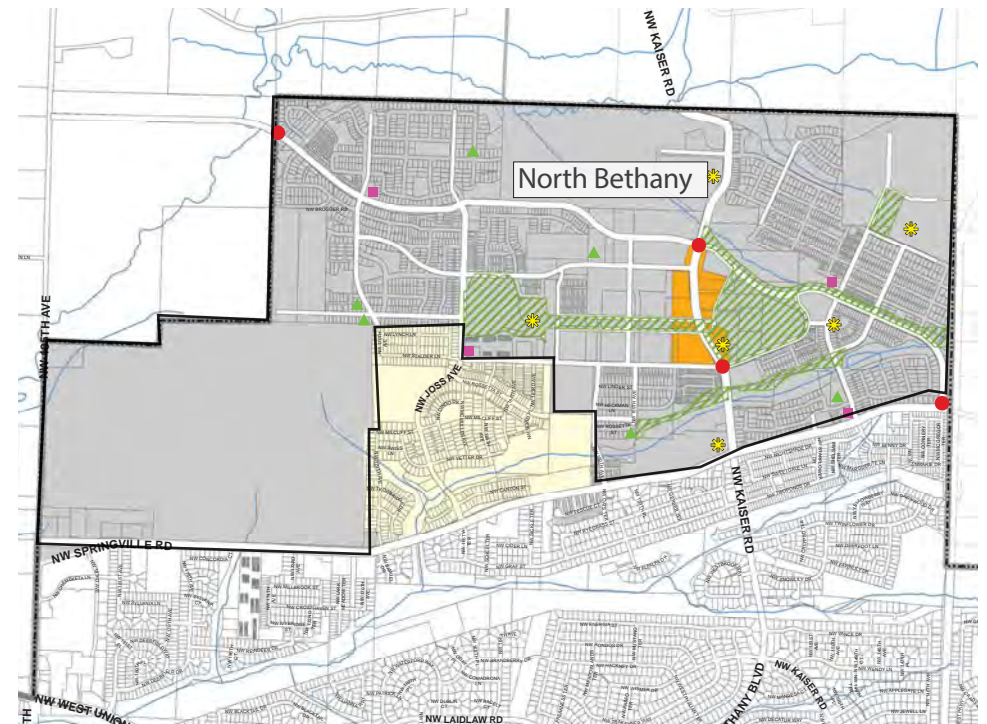
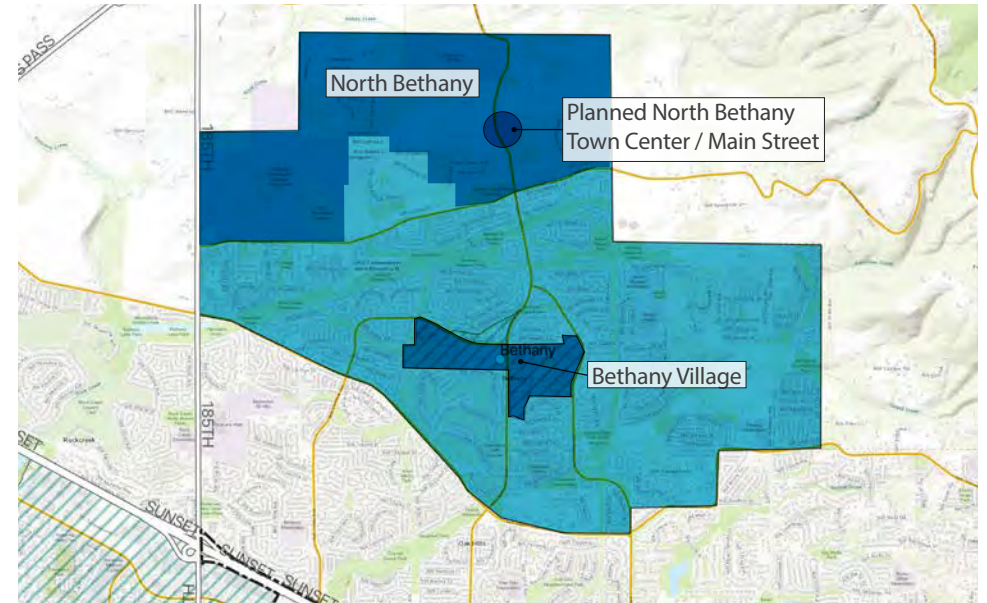
Size: 1,936 acres (875 acre North Bethany subarea)

Context: Geographically separated from Bethany Village. Surrounding areas to the north, east, and west are undeveloped and rural in character.

Housing mix: Detached dwellings, duplexes, rowhouses, main street apartment over retail, apartments

Neighborhood design: Different housing types centered around neighborhood town centers with focal points of civic uses and large natural stormwater treatment areas and powerline corridors.

Character of main street / town center: Limited mixed-use retail with apartments above surrounded by larger retail uses. North Bethany planned for mixed-use retail/commercial linking higher-density housing with parks/park block.



Introduction

Bethany Community Plan

The 1,936-acre Bethany subarea was added to the UGB in several installments to address the need for more housing in Washington County. The initial Bethany Community Plan identified five subareas within Bethany and designated a town center. The Community Plan designated comprehensive plan policies with maps and land uses for each of the five areas. Adopted in 1983, the Community Plan served as the basis for UGB expansions in 1992, 2000, and 2002. The County subsequently adopted a Unified Capital Improvement Plan to direct investments in public facilities and services to support new growth. A second community planning effort for the 875-acre North Bethany Subarea took place between 2006 – 2010 and was adopted as an additional chapter to the Bethany Community Plan in an effort to update the original vision and planning practices.

The vision for development identified residential neighborhoods set in the context of a few key natural features (Rock Creek, Bronson Creek, and Bales Pond). Primarily detached residential uses were spread throughout subareas, with a smaller concentration of commercial and retail uses and higher density attached dwelling units in the town center. Broad guidelines called for pedestrian and bicycle pathways allowing public access through neighborhoods. Individual design elements for each subarea articulated aspects of the vision.

Construction began in the 1990s. Since then the area has gone from 554 residents to roughly 22,350 residents. Washington County is the approval body,

using Comprehensive Plan land use designations, the Community Development Code, and the Community Plan vision to guide development. As part of their projects, developers funded and constructed needed road improvements. Land was annexed by the Beaverton School District and Tualatin Parks and Recreation District to provide services to new residents.

Bethany Village Town Center

The 16.46-acre town center was developed in 2002 by Central Bethany Development Company. Construction has continued until 2016 with one vacant lot remaining at a prime corner. The core of the town center is a block and a half main street lined with 3-story mixed-use buildings and a plaza with a fountain and tiered seating. The vision was of a walkable center with an urban lifestyle in a small-town atmosphere. The anchor tenant is the public library with a cluster of supportive educational and after-school uses in adjacent commercial spaces. Surrounding the main street are commercial and retail uses, including large format retail spaces and small commercial spaces. Higher density projects surround the main street, bridging NW Bethany Boulevard. The Town Center is served by one bus line offering weekday service. While the Bethany Village Town Center does serve as the civic core of the larger subarea, its prime function is as a regional shopping and service destination.

North Bethany Subarea Plan

Given that several different private developers built parts of Bethany with limited design guidance, the primary form of development has been isolated suburban neighborhoods. In response to these limitations, Metro sponsored the North Bethany Subarea Plan. Given the state of urban design practice, we have focused our analysis primarily on North Bethany.

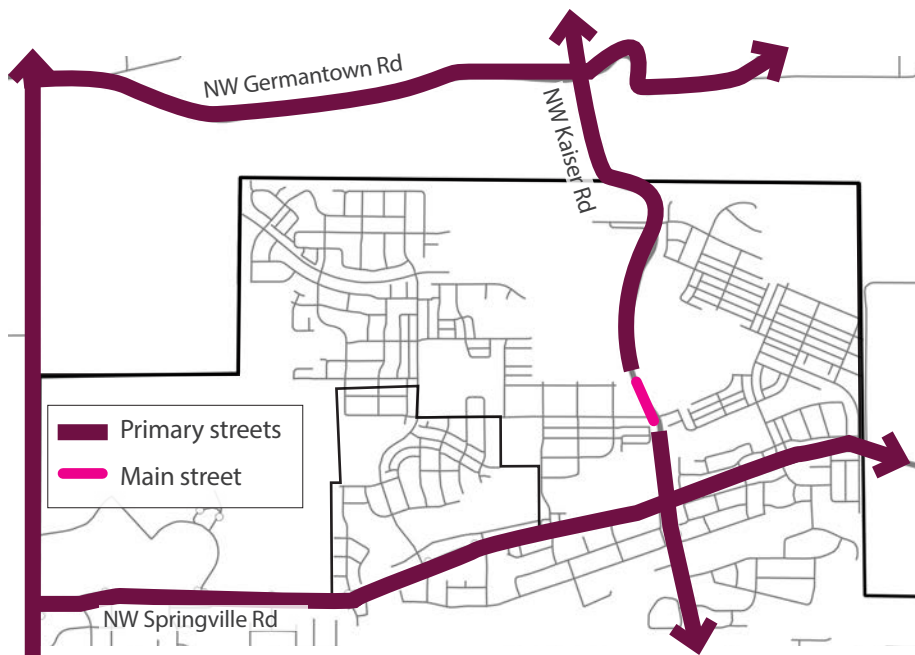
Located in the NE corner of Bethany, the vision for North Bethany is a more densely developed complete community with urban services. This includes several neighborhoods arrayed based on landforms (primarily

hilltop ridges) organized around two community parks and a neighborhood center. The design takes advantage of natural features and integrates stormwater treatment areas as defining open spaces that connect residents and users.

Key to the vision for North Bethany is a neighborhood center as a center of gravity along NW Kaiser Road. This 4-block long node is envisioned as a dense commercial district. The main street will be lined with mixed-use and high-density residential buildings. Prominent corner design elements will frame gateways, and a planned park block leading to a large community park will link residents through the neighborhood to the center. Given the importance of the center to the vision and its location on a high-speed regional arterial, the county led an urban design plan for the main street. Through several public charrettes the county developed detailed guidance that was amended to the North Bethany Plan. No retail has been constructed yet. It is anticipated that construction will begin in the next several years. Any new development will need to meet design standards for the main street area.

The vision is for 10,000 residents living in 4,000 dwellings. A range of housing types are permitted in base zones with minimum and maximum densities that include a bonus in the main street area of up to 32-40 units per acre. Development and design standards address building location and design. Standards are limited in scope though and no pattern books or typologies are used to implement the vision for a broad range of housing types and price points.

Construction began in 2013, with the first subdivisions beginning construction in 2015 and 2017. New street cross sections were adopted as part of the North Bethany Plan to introduce additional streetscape amenities while still meeting the minimum width of County Road Standards. Some developments have private streets however. The majority of neighborhoods are alley loaded with parallel parking on all roads but arterials. Bike lanes are limited to a few areas.



NETWORK

INTERSECTIONS PER
SQUARE MILE (APPROX)

NA

BLOCK LENGTH

220 x 400 feet
average

BLOCK PERIMETER

1,240 feet

WALK SCORE*

NA

*walkscore.com

ALLEYS, THROUGH CONNECTIONS, OR PATHS

18 - 20 foot alleys throughout; pocket
parks and linear paths throughout

ARTERIALS

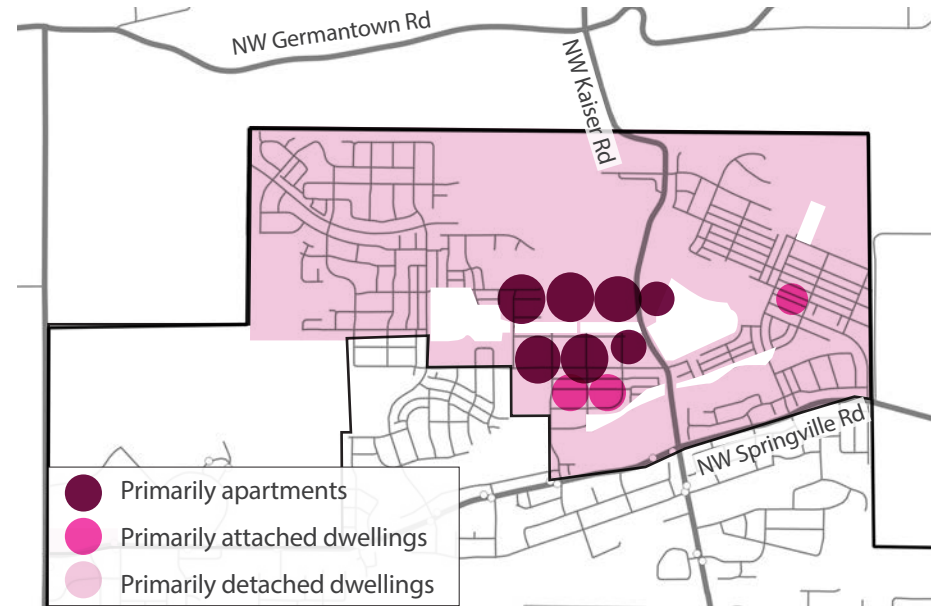
NW 185th Avenue (west boundary); NW
Springville Road (south boundary); NW
Kaiser Rd (bisect)

ARTERIAL CHARACTER

One lane in each direction with no
shoulder. Bike lanes on NW Springville
Road

TRANSIT SERVICE

Trimet Service Line 67 with frequent
service to PCC along NW Springville Rd



DWELLINGS

PLANNED DWELLINGS

4,000

DWELLING DENSITY PLANNED

4.6 dwelling units per acre

HIGHEST DENSITY PLANNED

24 dwelling units per acre

LOWEST DENSITY PLANNED

5 dwelling units per acre

HOUSING MIX

Apartment, boulevard apartment, rowhouse,
detached dwelling



JOBS

COMMERCIAL

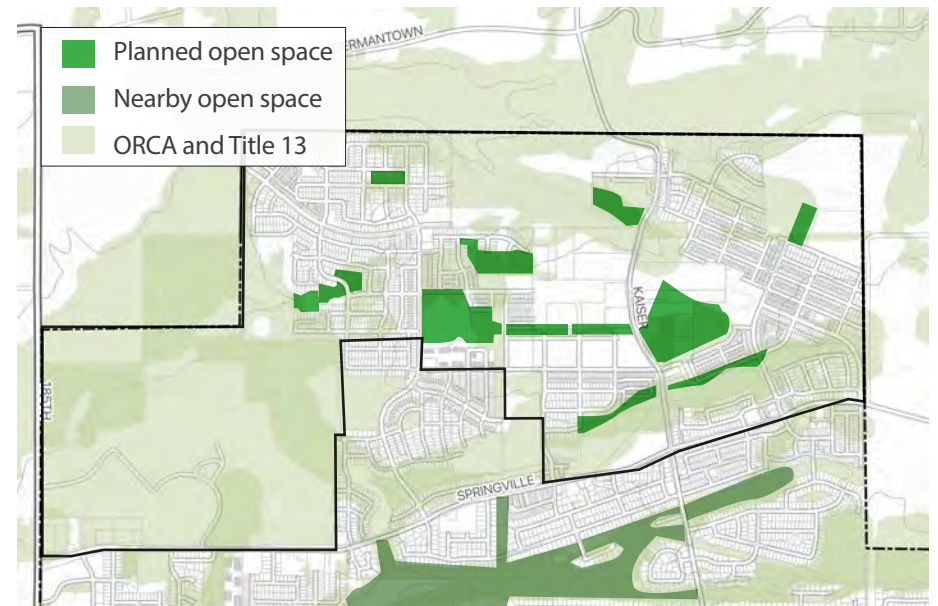
0 square feet

LIGHT INDUSTRIAL

0 square feet

CIVIC USES AND MAJOR EMPLOYERS

PCC Rock Creek (260 acres), Sato Elementary School (9.5 acres)



OPEN SPACES

PLANNED OPEN SPACE

29 acres minimum

OPEN SPACE TYPES

Open space, trail, linear, community, neighborhood

MUNICIPAL CONTROL

THPRD

NEARBY OPEN SPACE

Forest Park, Rock Creek, Bethany Lake Park

Design



Incorporation of natural areas

Critical to the design vision is the integration of “natural” open areas and parks and trail corridors. These pre-planned elements are two-fold - treating stormwater and offering open space areas. Large stormwater facilities buffer neighborhoods from one another while also functioning as secondary pathways. Links across arterials are limited however, as are connections to other regional trails and natural areas.



Diversity of housing

A broad range of housing types offer residents choice. Different types are designated through different land use zones with minimum and maximum densities. Density bonuses are available in the North Bethany neighborhood center. Housing types include detached homes (including narrow lots), duplexes, triplexes, quadplexes, rowhouses, and apartments. Variations in the placement and design of different types is primarily dictated by private developers.



Walkable, pedestrian-oriented streets

Streets are planned in a connected network. Neighborhood streets are alley-loaded with a continuous green strip, street trees, and parallel parking buffering the sidewalk. Adopted street design cross sections identify how to meet pedestrian and bicycle needs while still meeting county standards around travel width.



Focused community points of activity

Civic uses including the library, elementary schools, and parks serve as nodes. They define the center of activity in different neighborhoods while also serving as points where different areas are connected to make a larger community.



Connecting trail corridors

Multi-use trail corridors provide a secondary way for residents to connect between different neighborhoods east/west. They also offer a valuable recreational asset. New development in North Bethany will add additional trails, although connections to the existing system are limited given development patterns.



Parking design and amount

Parking for new higher density developments is located behind buildings. Development standards require separated pedestrian pathways that connect to entries. Parking standards are 1 per detached unit and 1.5 spaces per 2 or more bedroom units. Parallel parking is provided on all neighborhood streets.



Bethany

Town Center

The Bethany Town Center is a Metro-designated Town Center with retail and commercial uses serving the entire community of 22,000+ residents as well as the larger region. Large anchors include QFC and Walgreens. The town center was envisioned as a walkable village with a small town character. The core is a block-long main street lined with 3-story mixed use buildings with Main Street apartments over retail spaces. The town center serves as a civic heart with the library and plaza and fountain as gathering places. The development bridges both sides of NW Bethany Boulevard with commercial, retail, and residential spaces. Additional open spaces are planned for the west side of the town center. A wide range of housing types are provided. Roughly 1,500 residents live in the town center while 1,125 people work there. Despite its main street design, the primary function of the town center is as a retail destination.

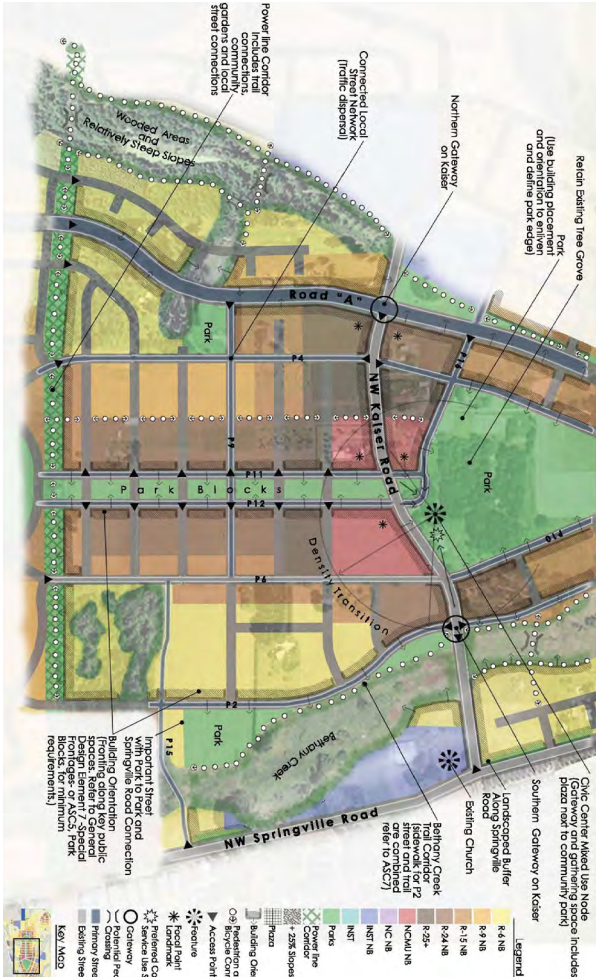
In contrast, the North Bethany Neighborhood Center is envisioned as a community-serving center connected to the surrounding neighborhoods. Community destinations include a park block, civic spaces/buildings, and high-quality pedestrian environment. The commercial center will be located in a highly visible spot along the arterial NW Kaiser Road. Smaller retail and office uses will fill mixed-use buildings and apartment buildings in a density range of 19 – 50 DUA. Key to implementation are adopted street sections for the main street area with wide sidewalks, bike lanes, and attractive streetscapes to mitigate the 102-foot width of NW Kaiser Road and facilitate crossing. A transit service plaza has been identified for future development if TriMet extends service.



Mixed-use buildings form a limited dense core in Bethany Town Center.



The plaza serves as a civic gathering space. Paths of all users cross, sometimes in competition with one another.



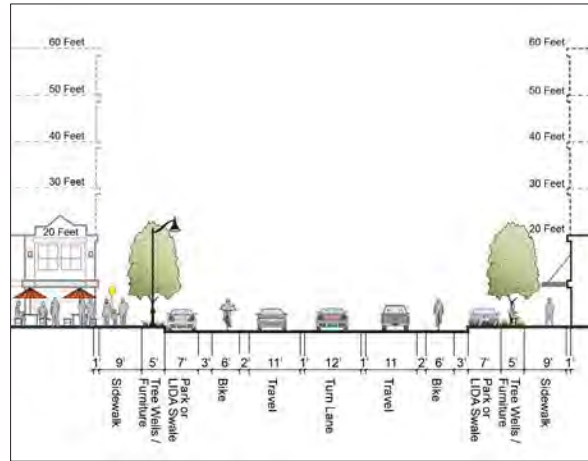
Plans for North Bethany's neighborhood center include linear park blocks and a revised cross section for the arterial serving as its spine.

Implementation

Adopted Street Cross Sections

The vision for North Bethany is a highly walkable and bikeable neighborhood with wide sidewalks, bike lanes, and attractive streetscapes. The plan balanced accommodating vehicles by targeting priority streets for the most pedestrian friendly design. These include the main street spine along NW Kaiser Road, the east-west streets running through the park blocks, NW Brugger Rd, and two future roads adjacent to the planned community park. A street design plan keys planned streets to specific design cross section types that were approved for the entire subarea. These cross sections meet the dual goals of the design vision for North Bethany and Washington County engineering concerns about public streets. They incorporate Low Impact Development Approaches (LIDA) to emphasize the role of stormwater treatment and green spaces throughout the subarea. A street tree program was also developed for all streets in the subarea with street trees classified based upon each neighborhood.

Fundamental to the success of the main street is a cross section that humanizes and bridges the large regional arterial. Cross sections for NW Kaiser Rd show a total right-of-way width of 102 feet. Different cross sections in the core of the neighborhood center, at the park, and on the periphery show variations in minimum building



Adopted Main Street cross section

height to frame the space. Setbacks to accommodate plazas and building entrances to stacked apartments are also shown.

Main Street Urban Design Plan

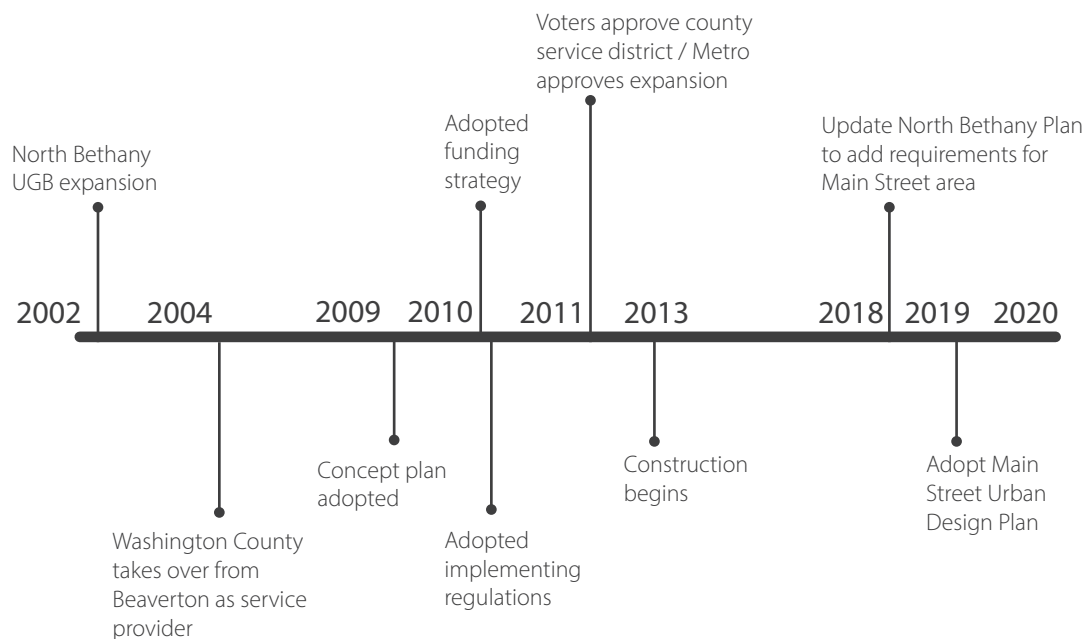
Through a planning effort that included several public charrettes, the county led an urban design plan for the North Bethany Main Street area. The intent was to guide how future development in this mixed-use area will look, feel, and function. As an outcome of this planning process, an urban design plan was adopted to amend the North Bethany Subarea Plan. Clear and objective design standards support zoned areas of Neighborhood Commercial Mixed Use (NCMU NB) and multi-dwelling zones (R-25+ and R-24) along designated priority streets. Development and design standards require buildings more urban in character that frame the street and encourage pedestrian



Land use zones and designated priority streets subject to design standards

activity. Buildings must have minimal setbacks, meet street frontage requirements, locate parking behind the building, have high levels of transparency, and driveways are limited or prohibited.

Urban design guidance recommends street design elements including a street furnishing palette, gateway treatments, and trail and park design. Cross sections (discussed above) illustrate what development could look like and include design guidelines. All development within the Main Street area will be reviewed at a public hearing and require at least one public design workshop.



Funding Strategy

Given the enormous increase in residents in North Bethany, the County faced the challenge of how to fund new infrastructure and services such as upgrading rural roads and extending water and sewer lines. According to an economic study, the estimated capital costs for North Bethany are \$520 - \$540 million in capital costs. After using bonds, grants, SDCs, and dedications by developers, a \$320 million gap remained. The County adopted a funding strategy establishing four revenue sources: 1) a county service district; 2) System Development Charges (SDCs); 3) a transportation development tax; and 4) a countywide property tax. This strategy splits the responsibility for costs across the county government, new residents, and private developers. The County subsequently adopted a Unified Capital Improvement Plan to direct investments.

THPRD waives SDC fees for developers building public park and trail facilities at their cost. The County likewise waives SDC fees for transportation upgrades. There has been some dissatisfaction expressed by developers that they are not reimbursed adequately. Developers and lenders have perceived this lack of certainty negatively and argue that SDC fees have been quite high per housing unit. Initial estimates by ECONorthwest put the cost at \$93,000 in SDC fees per house compared to average SDC fees in Washington County of \$14,600. These increases in costs to developers, along with higher property taxes for owners, have driven up the cost of individual homes and impacted affordability.

LESSONS LEARNED

- » If affordable housing is a desired outcome; targets and funding strategies must be identified and implemented to support its development.
- » Zoning for different densities does not ensure a range of housing types spread throughout a district. More specificity may be required by using prototypes or another tool.
- » A network of trails and paths needs to be connected throughout an entire development and to adjacent existing neighborhoods in order to successfully offer an alternative means to traveling by car.
- » Despite rigorous guidelines and development standards, it is challenging to create a main street spine along a regional connector given its width and traffic speeds.
- » Lacking more frequent intersection spacing, private development will continue to turn inward away from regional connectors.
- » Critical to town center success is a knowledgeable partner who has developed mixed-use centers
- » If parking for retail and commercial uses is not centrally managed and used as a shared resource, off-street parking may exceed the actual need and define the built form as auto-centric.
- » Stormwater management facilities can function as natural open areas and linear connections if integrated with trail system. Such a design not only provides a high quality public realm but also a distinctive identity for development.

Critical Success Factors

Purpose of this section

All of the case studies are examples of critical success factors at work. This section details several critical success factors and how they improve the performance of the case studies.

Whole community design

When planning the entire community and connecting it to the surrounding context, there are a number of larger networks or patterns to consider. The three most commonly considered ones are the street network, the natural systems network, and the scale of nearby or historic patterns of development. Connecting to the adjacent network, whatever it is, is key to having the planned development look, feel, and function as an extension of what is already there. This is key to creating a new development that is rooted to the location and feels like a place, not a project.

Planning at the neighborhood scale

When neighborhood blocks are smaller and woven together with a fine-grained network of streets, alleys, and paths, the walkability quotient goes up. This is a “metric for livability” that has been quantified by Walkscore and real estate professionals for the value that it adds to development. It has been codified by others, such as LEED for Neighborhood Development (a sustainability rating system managed by the US Green Building Council). Walkability is often measured by the number of intersections per square mile. Beyond the quantifiable value it adds to development, it also makes it possible to achieve a number of other goals such as: incorporating a wide variety of housing types, serving neighborhoods with transit, and increasing the number of street trees and citywide tree canopy. When jobs, housing, and open spaces are arranged within a walkable block-street structure, other urban vibrancy measures increase as well.

Neighborhood design

A critical success factor realized by all three case studies, but exemplified in Villebois and NorthWest Crossing, is the harmony achieved when there is an intentional relationship between buildings and nature, and when cars are present, but don’t dominate. There are a number of building, site, and urban design moves that can make a neighborhood feel more timeless. One is varied housing designs. Likewise preserving trees can make a new neighborhood feel like it has always been there. The value of mature trees has been measured by data experts in a wide variety of disciplines, from those in health and equity to real estate experts.

Main Street and Town Center design

As with neighborhood design, there are a number of building, site, and urban design moves that can make a main street or town center feel more timeless. These include traditional storefront design, pedestrian-oriented street design, care about where parking is located, and coordinated streetscape and street furniture. The importance of managing parking in a town center or main street cannot be overstated. Every extra place for a car means less space for people. In a town center the majority of public space should be dedicated to use by people, or the level of urban vitality goes down. More people attract more people. Managing parking means housing can be more affordable, as can retail spaces, and mixed-use development becomes financially feasible. As cities have discovered through the COVID-19 pandemic, flexible street space that can be converted from use by automobiles to use by people and businesses can help the local economy while keeping people healthy.

Whole community design

- » Bringing nature in
- » Integration of open space
- » Feathering of edges
- » Neighborhood units
- » The way housing faces major streets (doesn't turn its back)
- » Context sensitive design of major streets
- » Variety of street types and a context sensitive design approach
- » A complete street and path network
- » Prioritizing non-auto modes of travel
- » Accommodating regional transit

Main Street and Town Center design

- » Main street character
- » Managing parking
- » Signage, lighting, street furniture and town center identity

Neighborhood design

- » Varied designs of housing
- » Preserving older trees
- » Alleys
- » Universal block (to accommodate all forms of middle housing)
- » Feels like a neighborhood not a subdivision
- » Natural environment reflected in the materials and design of the public realm

Planning at the neighborhood scale

- » Block size, block permeability
- » Walkability (and universal design)
- » Arrangement of land uses
- » Vital uses in proximity
- » Mix of housing / housing choice
- » Considering the entire tree canopy

Critical success factors:

- » Main street character
- » Block size, block permeability
- » Walkability (and universal design)
- » The way housing faces major streets (doesn't turn its back)
- » Context sensitive design of major streets
- » Variety of street types and a context sensitive design approach
- » A complete street and path network
- » Prioritizing non-auto modes of travel
- » Accommodating regional transit

Variety of street types and a context sensitive design approach

Each of the case studies employs the technique of creating a network of new streets and paths within the planned development that are not subject to the state or county regulations. State and county regulations tend to prioritize auto and transit travel on regional arterials and highways. They are often at odds with local goals for walkability; bikeability; small block size; use of curb space for parking; and sidewalks for retail, outdoor dining, or merchandising. Since internal street types are not subject to the same rules which apply to arterials, they are able to accommodate frequent intersections, frequent pedestrian crossings, continuous plant strips and streets trees, and even on-street parking.

In each Case Study one of these interior streets functions as a community oriented “main street.” In North Bethany it is NW Kaiser Rd; in NorthWest Crossing it is NW Crossing Drive; and in Villebois it is Villebois Drive.

Typically the main street design looks and feels like a traditional small town downtown street, and everything about the scale of the streetscape is designed with the pedestrian in mind. The Villebois main street goes further and employs a curbless street design where the plaza and the street blend seamlessly, and bollards, not curbs, mark off the area for cars. The exception to this practice is North Bethany, where the “main street” is roughly a quarter mile-long segment of NW Kaiser Road, which is a Washington County Arterial.

When a street is subject to county or state regulations, strive to make the street a connection rather than a barrier. In NorthWest Crossing, Mt Washington Drive is a good example of a major region-serving thoroughfare that has a human scale and is walkable and attractive. High value real estate addresses Mt. Washington rather than backing on to it. In King City, SW Beef Bend Road may never be a “main street,” and it may serve high volumes of traffic, however it can still be designed to connect Tigard River Terrace South and King City rather than separate them.

Keep vehicle speeds low through design measures, not by posting speed limits. Provide frequent protected crossings for pedestrians and bicyclists, create an environment that development is interested in facing, rather than turning away from, and provide generous landscape buffers, including street trees. Separate and buffer the walking and bicycle lanes from the vehicle lanes. Where there is a center turn lane, minimize the lane length at intersections. Landscape or eliminate the center lane when there is no need for turning movements. When crossing a slope, separate and terrace paved lanes to minimize cut and fill. The URA 6D Concept Plan promoted a number of context sensitive design strategies for SW Beef Bend Road. These are equally applicable to SW Roy Rogers Road within the vicinity of King City and Tigard future urban areas.

Critical success factors:

- » Integration of open space
- » Feathering of edges

Bringing nature in

Each of the case studies incorporates natural areas into the planned development. North Bethany, with its promenade park along the stormwater facility, is an especially good example of making natural systems a focus of the community. However, the best example of full integration of natural areas is Villebois. The development is designed around a flowing series of open spaces that connect to the larger regional natural areas such as Coffee Creek and Coffee Lake wetlands. Of all the green space that has been incorporated into the community, the greatest share is in natural areas.

“While restoring the historic drainage pattern of the predevelopment site, the plan also adapts the form and organization of the landscape and urban design elements (e.g., parks, street medians, and planting strips) and natural areas to serve stormwater management functions, including conveyance, infiltration and detention.”

(Skinny Streets & Green Neighborhoods, Design for Environment and Community, Cynthia Girling and Ronald Kellett, 2005)

One of the key features of Villebois are the common greens. Homes front onto and share a green space rather than a street. This was considered a highly unusual design at the time of development in the mid-2000's. Homebuilders overcame their skepticism and common greens are now found in many new subdivisions and neighborhoods, and cities have amended land division requirements to permit them.



NorthWest Crossing



NorthWest Crossing

Bringing nature in



Villebois



Bethany



Bethany



NorthWest Crossing

Critical success factors:

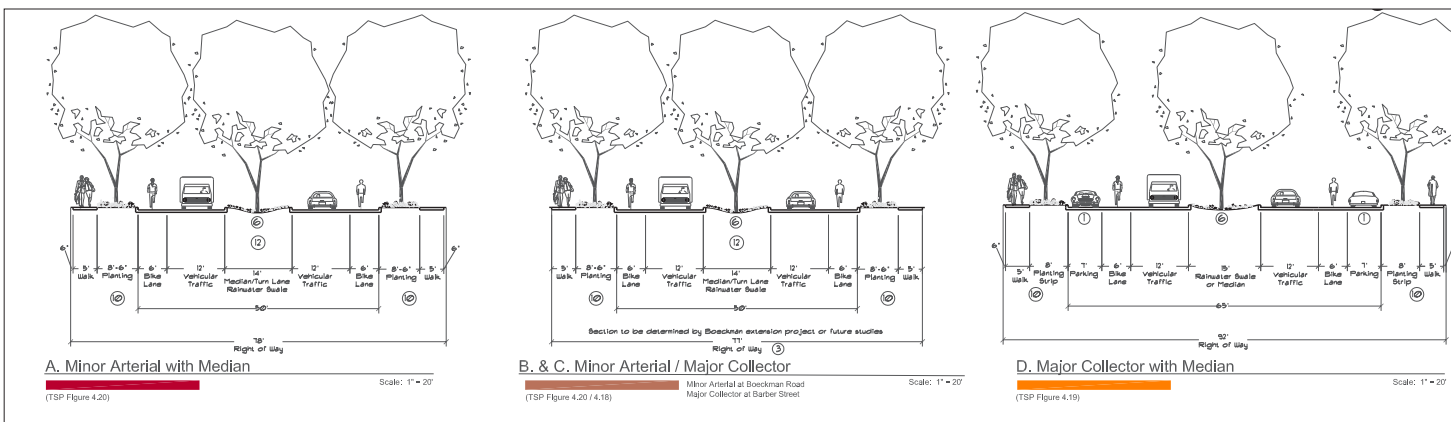
- » Context sensitive design of major streets
- » The way housing faces major streets (doesn't turn its back)

Major streets are attractors not barriers

In each Case Study, communities' major streets — where they run along or within the planned development — are designed like streets rather than highways. They become a contributing part of the neighborhood and city rather than an impassible barrier or border. Housing and active retail front on and are oriented toward the street, instead of turning away.

A major region-serving street in Bend, Mt Washington Drive, runs north-south through NorthWest Crossing. The design of the street makes it possible for homes to front on the arterial. Enfronting blocks have alleys rather than driveways. Each block face on Mt Washington has a parking pocket that allows limited on-street parking. In addition, regular intersections and pedestrian crossings are essential in preventing this major street from acting as a barrier. Intersections are every 300 - 500 feet and mid block crossings with protected places to stand at the median create safe options for pedestrians.

Arterials and collectors in Villebois have a planted median, full sidewalks, plant strips, and bike lanes. In certain areas the street design trades the planted median for on-street parking. In both Villebois and NorthWest Crossing where major streets intersect, roundabouts are used to manage auto traffic instead of signalized intersections.



Arterial and collector street sections, Villebois.



Houses fronting on Mt. Washington Drive, NorthWest Crossing.

Street variety

Variety of street types and
context sensitive design
approach



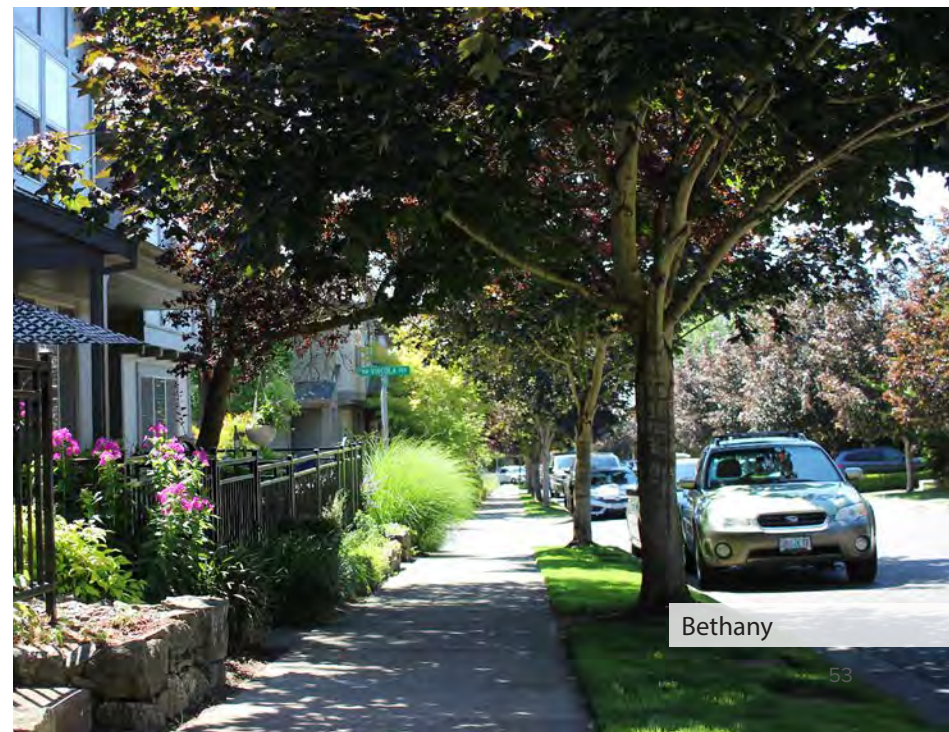
Villebois



NorthWest Crossing



NorthWest Crossing



Bethany

Town Center identity



Signage, lighting, street furniture and town center identity





NorthWest Crossing



Villebois



Villebois



NorthWest Crossing

Housing variety



A mix of housing types and varied designs of housing



NorthWest Crossing



NorthWest Crossing

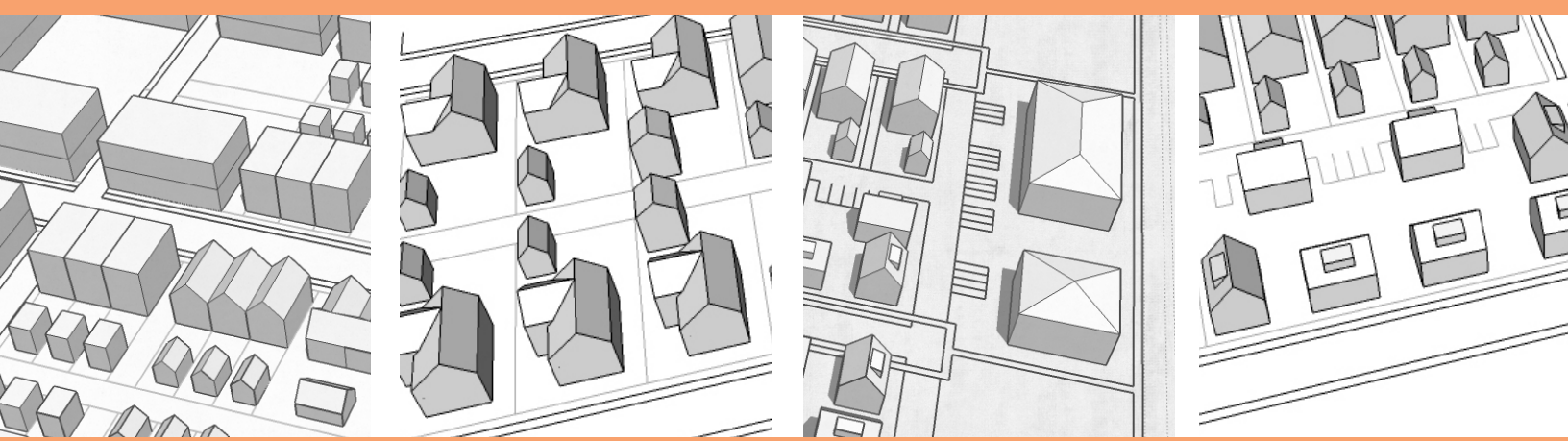


NorthWest Crossing

APPENDIX G. URA 6D LAND USE ASSUMPTIONS REPORT

Land Use Assumptions Report

King City Beef Bend South



September 2020

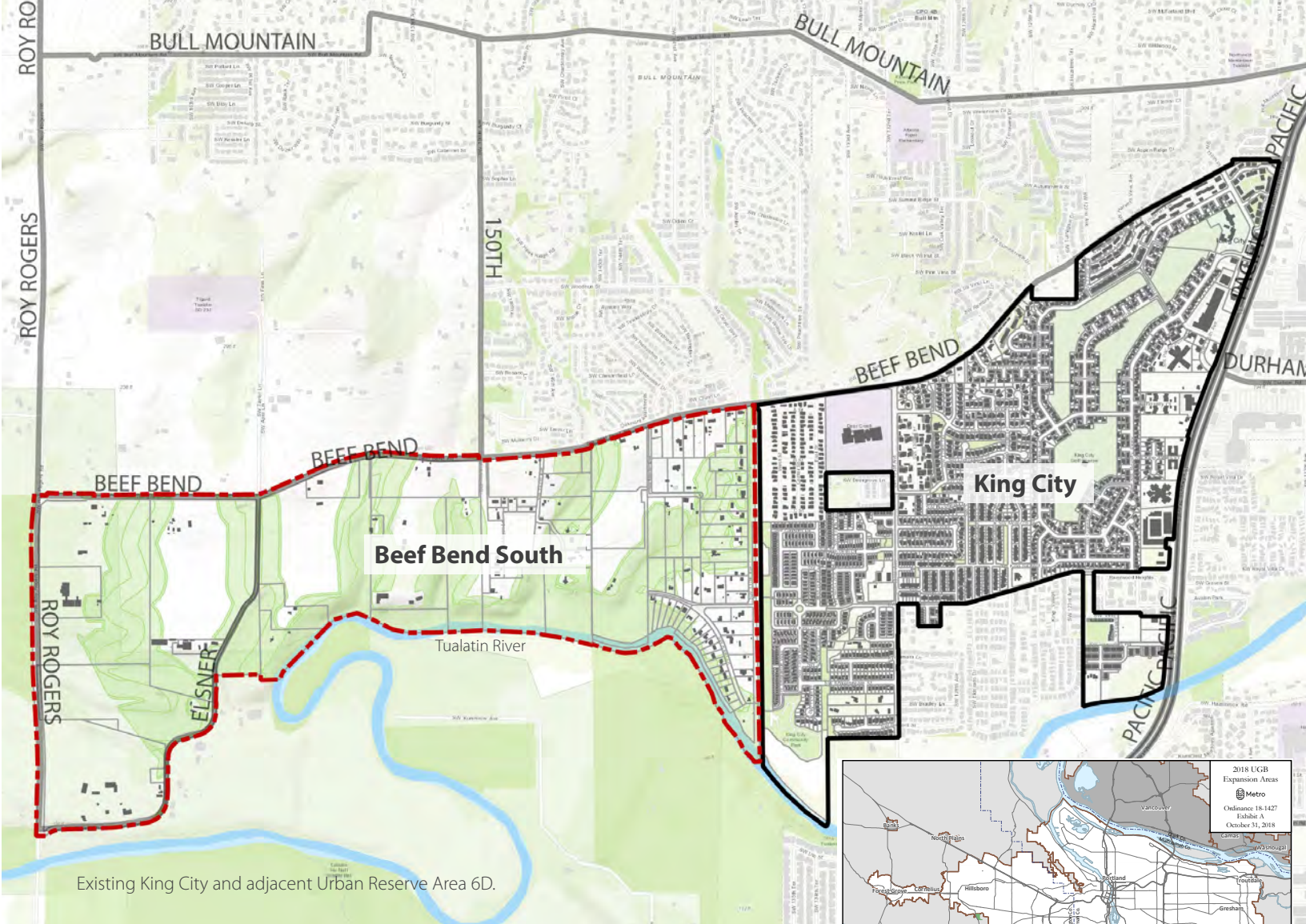
Prepared as part of the King City
Transportation System Plan

u r b s w o r k s

Purpose of this memorandum

Task description from the scope of work for Task 4.4 – URA 6D Land Use Assumptions Report:

Based on the results of ~~Task 4.2A and 4.2B~~, previous tasks (4.1 and 4.2), TAC input, and PMT direction, Consultant shall recommend land use typologies and an associated refined map for URA 6D consistent with Metro conditions for the UGB amendment. These land use typologies must reflect the overall land use vision of the 2018 Concept Plan and build upon URA 6D Market Analysis and Financial Feasibility Report to include densities, uses, and development types that are reasonably attainable. Consultant shall collaborate with City, Metro, County, and Department of Land Conservation and Development to translate land use typologies into zoning assumptions suitable for use in subsequent modeling and analysis tasks. Zoning Assumptions will be used as the planned land use for URA 6D for the remainder of Project.

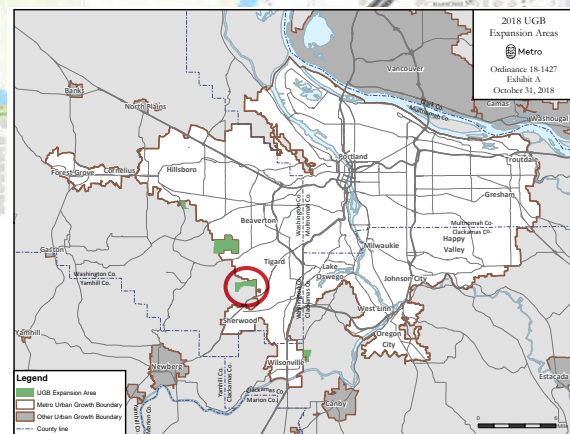


1. Introduction

Physical description of the area

Beef Bend South (formerly URA 6D) is a 528-acre area to the west of existing King City. It is bounded by SW Beef Bend Road to the north, SW Roy Rogers Road to the west, SW Elsnor Road and the Tualatin River to the south, and SW 137th Avenue to the east. The Tualatin River Wildlife refuge sits directly south, on the opposite side of the Tualatin River.

Beef Bend South is a mix of relatively flat farmlands and deep ravines and riparian areas that serve as drainages from Bull Mountain to the north. These wooded areas are sensitive natural resources that are critical to the overall ecosystem of the region and, as such, help to define where and how development should occur.



2018 Urban Growth Boundary (UGB) Expansion Areas Map, Metro. King City's expansion area is circled.

Previous planning work

In 2017 the City of King City sponsored concept planning for the area called Urban Reserve Area 6D (URA 6D). In 2009 this area had been identified by Metro as a suitable for future urbanization, and the region's cities and counties began a planning and public engagement process involving Washington County, cities, Metro, and the Oregon Land Conservation and Development Commission. It was determined that the existing UGB could not accommodate all of the anticipated future urban development and that additional land would be necessary for homes, businesses, and public facilities. Because of its overall suitability to support urban development, URA 6D was designated as an Urban Reserve Area in 2011.

URA 6D Concept Planning took place between in 2017 and 2018. In September 2018, King City presented an application to Metro Council for inclusion of URA 6D into the Urban Growth Boundary. King City's application was approved by Metro Council in December 2018, along with applications from Wilsonville, Hillsboro, and Beaverton.

Previous tasks completed for this project

Task 4.1 – Existing Land Use Conditions

Provides land use context for King City's Transportation System Plan (TSP), and explains the historic, present, and likely future land use conditions of King City's urban expansion area (Beef Bend South) and its immediate vicinity to inform the market analysis component of the TSP project. It is a summary of previous analyses, reports and studies; it does not present new analysis.

Task 4.2 – King City Market Analysis

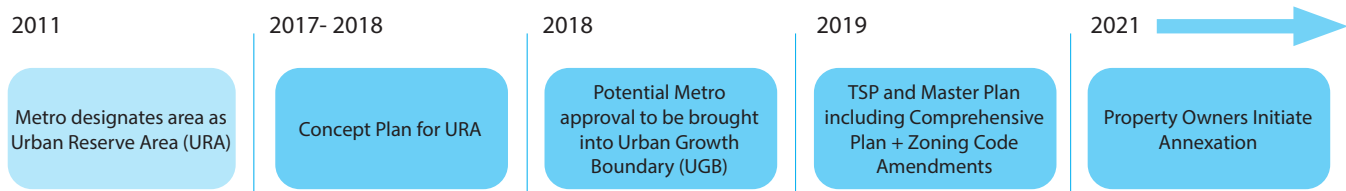
Presents King City's Market Analysis for Beef Bend South and its surrounding vicinity. It generally pulls from the concept planning effort, modifying and adding to it as necessary to further evaluate the market potential of the study area.

* This document

Task 4.4 – Land Use Assumptions for the TSP

Summarizes previous planning efforts, refers to previous tasks conducted as part of the TSP work to date, and makes recommendations for the land use assumptions that should be used to inform the Transportation System Plan.

Overall Planning Time Line



Planning timeline as depicted in Concept Planning documents.

Summary of Metro direction based on the approval of the Concept Plan

Metro placed a number of conditions on the King City UGB expansion. Those that affect land use assumptions task 4.4 are excerpted below.

For the purpose of expanding the urban growth boundary to provide capacity for housing to the year 2038, King City shall:

- » Conduct additional market analysis to better understand the feasibility of creating a new mixed-use town center.
- » Pending the results of the market analysis of a new town center, King City shall plan for at least 3,300 homes in the Beef Bend South expansion area. If the market analysis indicates that this housing target is infeasible, King City shall work with Metro to determine an appropriate housing target for the expansion area.
- » The expansion area shall be designated Neighborhood on the 2040 Growth Concept map.
- » Pending the results of the market analysis of a new town center, Metro will work with King City to make necessary changes to the 2040 Growth Concept map.

There were two additional conditions related specifically to housing types. One requires King City to explore ways to encourage the construction of accessory dwelling units, and the other requires the city to explore ways to encourage the use of manufactured housing in the expansion area.



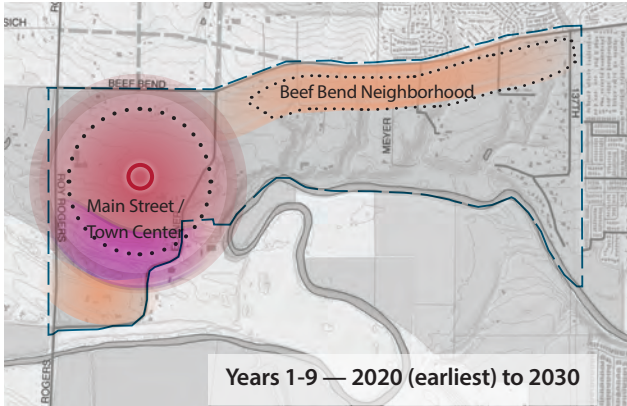
King City Town Center

The current King City Town Center is located on the east side of King City on OR-99W and adjacent to the City of Tigard. The area is a Metro-designated Town Center, and is served by high frequency transit on OR-99W. Together with the Tigard commercial malls on the opposite side of OR-99W, the area provides a significant amount of region-serving commercial services. There is room for some city functions (City Hall, Library) but the area is challenged by the nature of OR-99W, and a general lack of space for civic uses to expand. There are no residential uses within the town center area, and there is very little land available for new development. The area dates from King City's inception in the 1960's and was set up around the automobile. Walkability is difficult to establish in an area that is dominated by parking lots and where the property owners are not interested in redevelopment or neighborhood improvement. Improvements are beginning to strengthen walkability in the area, however, OR-99W remains an issue.

In 2014, King City conducted a Town Center Charrette with the community and identified a number of actions to improve the area for town center look, feel and function. To date, Fischer

Road improvements including continuous sidewalks and bike lanes have been completed. Modest improvements have been made to add sidewalks to OR-99W, but safer crossings and other improvements have been gradual. The City Hall was recently remodeled within its original footprint.

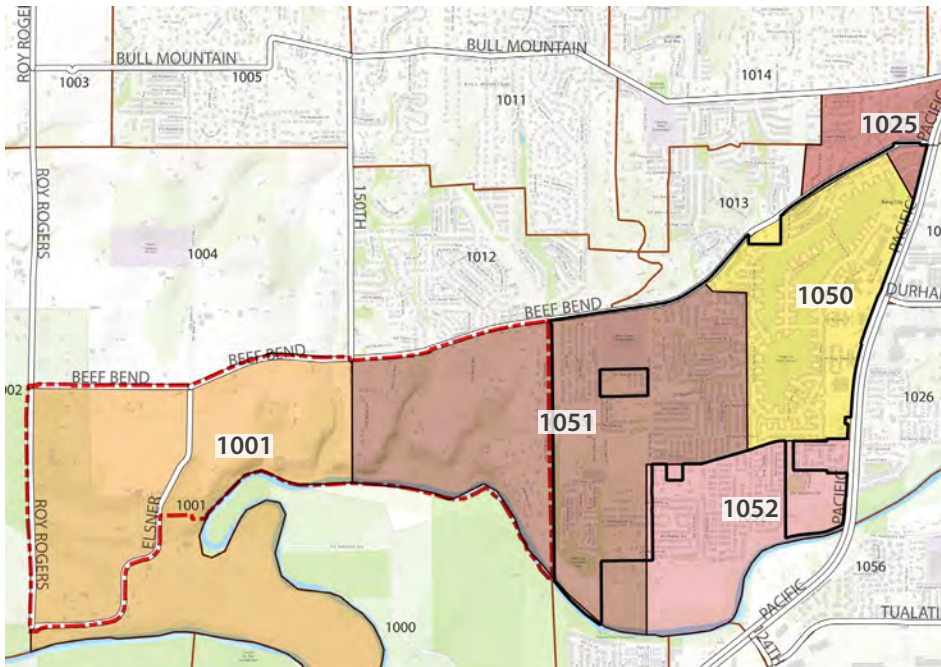
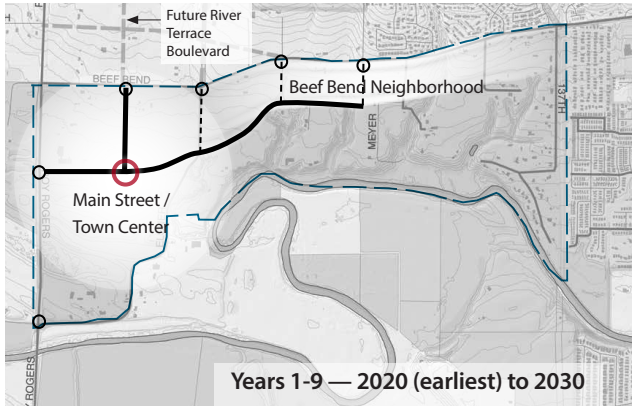
There is no question that a more functional Town Center could be accommodated on greenfield development within the Beef Bend South area, one that would be more consistent with the Metro growth designation, with a complete mix of land uses, including housing, parks, and room for more civic facilities to co-locate and expand. Compared to what is possible in the existing town center, it is easier to build new development in the greenfield, and to meet walkability and transit oriented design objectives for the city and the region. And TriMet is expanding service to this part of the region: high frequency transit service is slated for SW Scholls Ferry Road from Portland to SW 175th, as early as 2022. There is also great potential for this town center area to complement and be strengthened by the planned development north of SW Beef Bend Road, in the River Terrace area.



2018 Concept Traffic Analysis

The traffic analysis that was conducted for Beef Bend South, in tandem with the 2018 Concept Plan, modeled land uses in a first phase (through future 2035 traffic conditions). Consistent with the Concept Plan, the analysis assumed that Fischer Road would serve the first phase of development only to SW 150th. After the Meyer Airfield and Fischer Road extension through the east side of Beef Bend South (Rivermeade) are resolved, in a future phase, Fischer Road would continue eastward to connect with the existing eastern segment of Fischer Road at 137th.

SW 150th is also the boundary between Metro TAZ 1001 and Metro TAZ 1051.



TAZ boundaries for King City, Beef Bend South, and the surrounding area.

Metro Transportation Analysis Zones

Metro uses Transportation Analysis Zones (TAZ) as a way to break down regional growth forecasts into smaller geographic areas. Data from each TAZ is entered into Metro's real estate and land use allocation model (MetroScope).

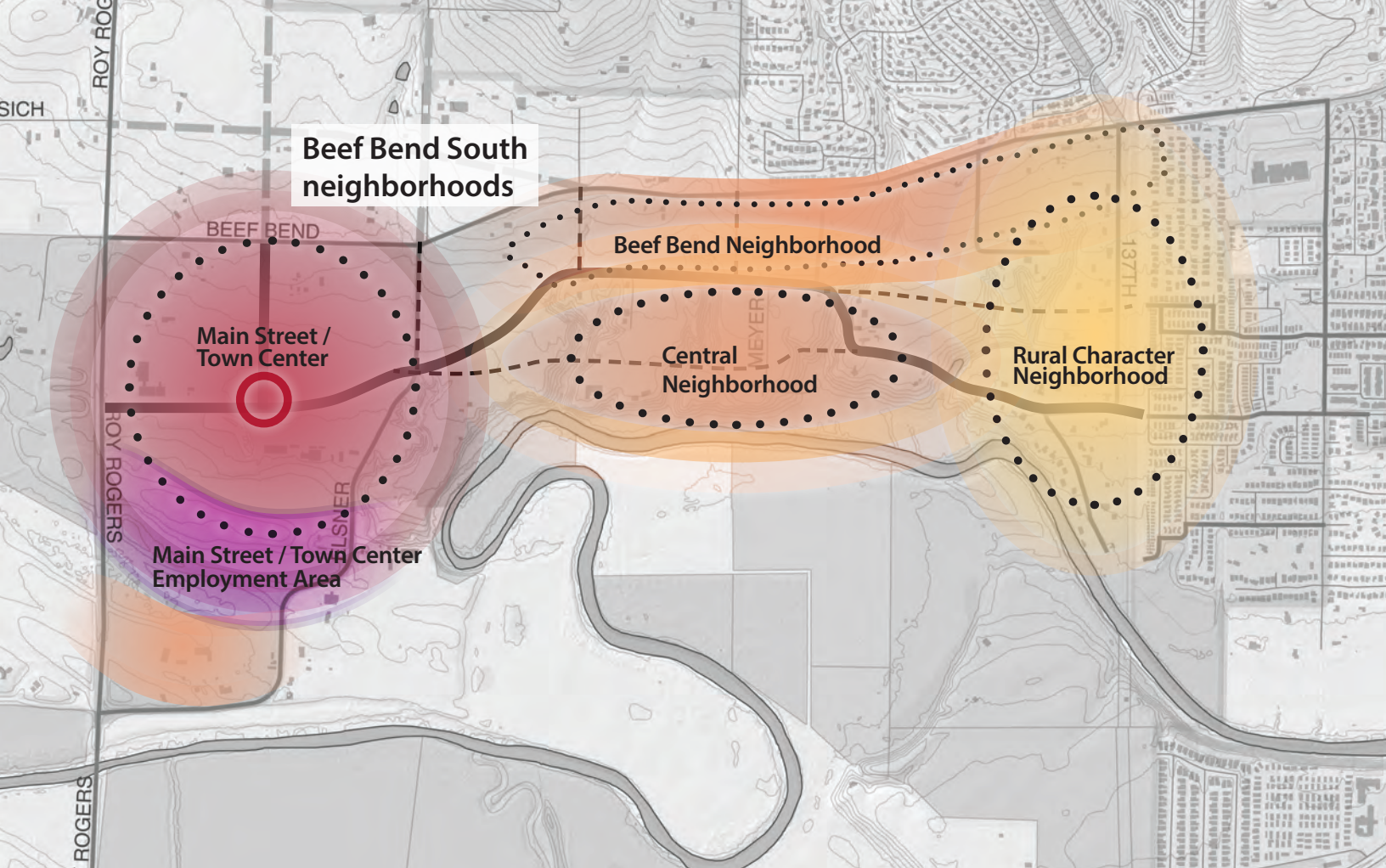


Diagram from the King City Concept Plan showing location of neighborhoods in Beef Bend South.

2. Land Use Assumptions

Land use assumptions for Beef Bend South

Land use assumptions for the Transportation System Plan draw from two main planning efforts: The 2017-2018 Concept Plan with its associated Market Analysis, and the 2020 Market Analysis completed for the TSP earlier in 2020.

Both planning efforts generally agree on the amount of commercial and housing potential. The market analyses agree that upwards of 50,000 square feet of commercial could be accommodated within a 10- to 20-year horizon as part of a new neighborhood retail center. Both market analyses agree that about 500-950 dwelling units could be accommodated within the same time horizon.

The Concept Plan identifies dwelling units beyond the 10- to 20-year horizon and proposes that an overall total of 3,576 dwelling units could be accommodated on Beef Bend South land. These numbers were tested and confirmed through conceptual, mapped designs of typical neighborhood layouts or master planning prototypes. Four neighborhood master planning prototypes were developed for each of the neighborhood areas:

- » Main Street / Town Center
- » Beef Bend Neighborhood
- » Central Neighborhood
- » Rural Character Neighborhood

The residential program or specific mix of housing types for each neighborhood was developed to demonstrate how Beef Bend South could meet city, regional, and state goals. These are:

- » Accommodate needed housing as identified in King City's 2018 Housing Needs Analysis
- » Evenly distribute affordable housing in each neighborhood
- » Provide a range of housing choices in each neighborhood
- » In anticipation of Oregon House Bill 2001 for middle housing, ensure that each of the required housing types could be accommodated in each neighborhood.

Through these studies, it was determined that the entire Beef Bend South area could more than accommodate the city's entire household/ dwelling unit forecast (2018–2038), and could accommodate 50-years of growth, in a way that is consistent with the King City vision detailed in the 2018 Concept Plan.

Comparison of market analysis findings

As described above, two market analyses have been conducted for the King City Beef Bend South area (formerly URA 6D). The 2017 Market Analysis was authored by Leland Consulting Group as part of the Concept Plan. The most recent market analysis was prepared by ECONorthwest in 2020 as part of this TSP effort.

Commercial uses

The two reports have slightly different recommendations for commercial development. The 2017 report found that 54,000 to 85,000 square feet of commercial uses were possible within 10 years as part of a neighborhood retail center. The 2020 report found that commercial was possible within 10 years without citing an exact square footage; rather, it stated “plan for commercial development slightly below the scale planned in the URA 6D's Concept Plan.”

The 2020 market analysis recommended that an analogous development could be seen in Bend's Northwest Crossing, which has retail square footage of 55,431 (Exhibit 29, page 43). Further, the 2020 report says “A development scheme consistent with the form, scale, and type of commercial development in Northwest Crossing is advised. From a market perspective, Northwest Crossing is the most analogous case study area to the future realities of URA 6D. Accordingly, the development pattern in the commercial core should be concentrated along

corridor(s), be neighborhood-serving, and smaller in scale.” Also “URA 6D's commercial center is likely to function and look more like a Main Street and less like a Town Center.”

The 2017 report proposed that a non-residential “gateway to wine country” might result in an additional 40-60,000 square feet of commercial space; however, technical analysis to validate the proposal was not part of the study. Regarding the “gateway to wine country” concept, the 2020 report adds that Sherwood may provide a more competitive location, noting that the Preliminary Concept Plan for Sherwood West includes the idea.

Dwelling units

The 2017 and 2020 market analyses agree that 500 to 950 new residential units are possible but differ on the timing, with the 2017 report projecting housing growth in 10 years, while the 2020 report says it will take 20 years.

Phasing

The 2020 report cites the importance of residential development in early phases in order to support the Main Street / Town Center commercial: “We find, consistent with the 2017 Market Analysis, that commercial development will require the build-out of rooftops in the market area to be viable. Moreover, a market for mixed-use development in the commercial core is not likely to materialize early on. Phasing strategies that encourage near-term growth of new homes (and the households that come with them) will improve the viability of commercial development in the mid to long-term.”

It should be noted that the Concept Plan envisioned that a significant amount of early development within the Main Street / Town Center would be standalone residential, representing a wide range of dwelling types (including stacked flats or apartments, duplexes, and other “plex” housing). This was in anticipation of state mandated Middle Housing legislation (HB 2001). It also assumed that vertical mixed use development would lag behind early-phase market-driven development.

Land Use Assumptions for the TSP and the role of market analysis projections

The market analyses have been particularly useful in validating the Concept Plan land use assumptions regarding commercial uses in the Main Street / Town Center. Regarding the number of dwelling units, this document relies on the development capacity analysis completed as part of the Concept Plan—not on the market analysis projections.

Master planning prototypes

As described above the four neighborhood master planning prototypes were developed to test and illustrate the land use densities, uses, and development types that are reasonably attainable on land within Beef Bend South. The exercise detailed land use typologies in scaled, 3D models, using recognizable regional development or precedents. The four master planning prototypes are summarized below.

	Main Street / Town Center	Beef Bend	Central	Rural Character
Approximate acreage (net)	150	60	60	50
Commercial, employment, and institutional uses				
	» Residential over retail » Single-story retail and restaurant » Civic uses, such as library, city hall, school » Campus-style employment or institutional uses	» Potential neighborhood commercial activity	» None	» None
Residential uses				
Reasonably attainable # of units	2,120	666	558	232
Average density (dwelling units per acre)	40	18	18	15
Density range	8 - 100**	12 - 24	8 - 20	8 - 18
Percent multidwellings*	50%	30%	25%	0%
Housing types	Main street apartment over retail, apartments (standalone), live-work, rowhouse, duplex	Boulevard apartment, cottage cluster, detached narrow lot single dwelling	Live-work, rowhouse, duplex, cottage cluster, detached single dwelling with accessory dwelling unit (ADU)	Duplexes, cottage clusters, detached dwelling with or without accessory dwelling units, mid-sized lot detached dwellings

• Metro RLIS (metroscope) has revised the way that it counts dwelling units to be consistent with housing types required by HB 2001. During the master planning process, the number of multidwellings in this row will be revised to reflect the new definition of multidwelling (or multifamily) as “multiple dwellings on a common taxlot.”

** The wide range of density is the result of the variety of housing types envisioned for the Main Street / Town Center neighborhood, from stacked flats in standalone residential building (i.e. an apartment building) to duplexes.

Summary of Dwelling Unit Type and Density by Neighborhood

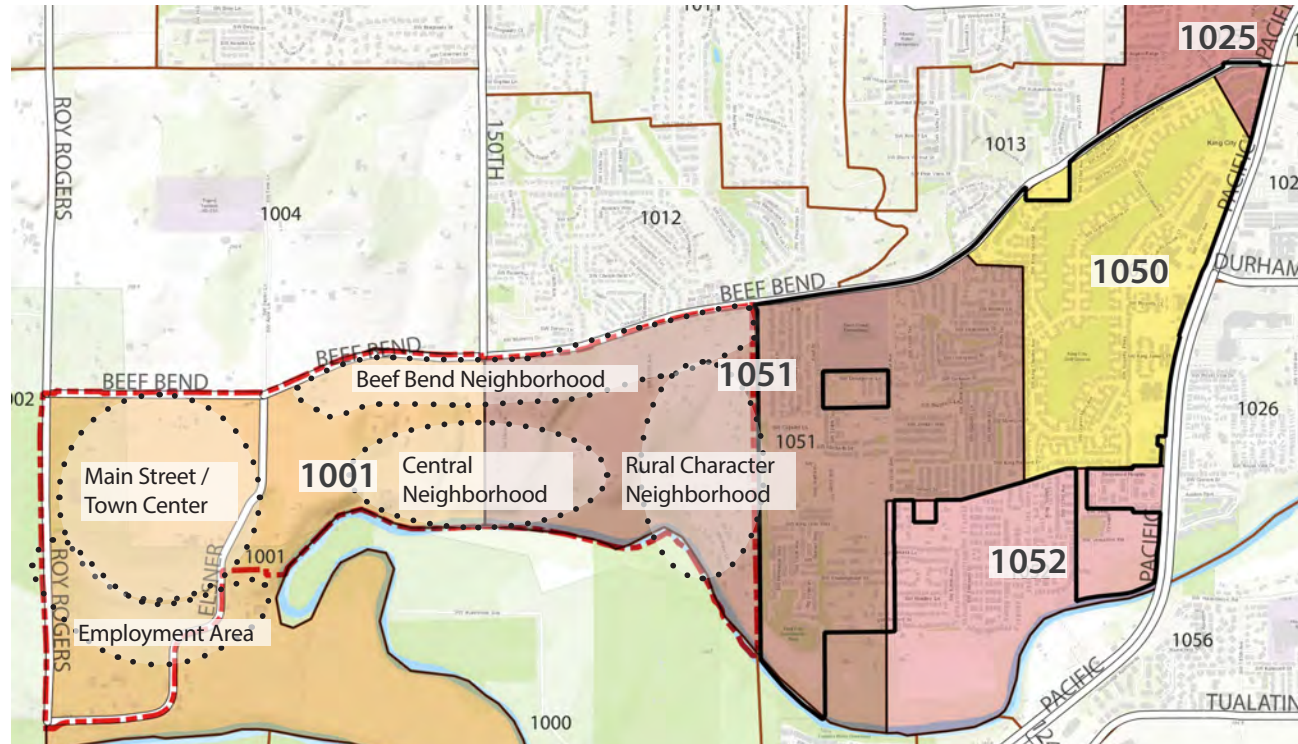
Dwelling Type Category	Dwelling Type	Main Street /Town Center		Beef Bend		Central Neighborhood		Rural Character		Totals	
		Subtotal by dwelling type	Subtotal by dwelling category	Subtotal by dwelling type	Subtotal by dwelling category	Subtotal by dwelling type	Subtotal by dwelling category	Subtotal by dwelling type	Subtotal by dwelling category	Subtotal by dwelling type	Subtotal by dwelling category
Multidwelling	Flats over retail	400	1,000	0	222	0	0	0	0	400	1,222
	Flats in standalone building (Main Street)	500		0		0		0		500	
	Flats in standalone building (Boulevard)	100		222		0		0		322	
Single dwelling, attached	Live-work or rowhouse	300	500	0	0	30	60	0	0	330	560
	Duplex	200		0		30		0		230	
Single dwelling, detached	Cottage cluster	66	620	50	444	24	498	50	232	190	1,794
	Narrow lot	199		250		30		0		479	
	Mid lot with ADU	249		144		144		82		619	
	Mid lot, no ADU	106		0		300		100		506	
Totals		2,120		666		558		232		3,576	

The amount of housing in the plan area at full build out has been estimated by Urbsworks to be approximately 3,500 units. During the Concept Plan phase, Urbsworks calculated 3,816 units were achievable. As Main Street/Town Center planning progressed, 20 acres of employment were added to the development program. This caused a reduction of housing numbers, to 3,576 total units. Traffic analysis (in a separate report) is based on a lower residential build out.

Table of dwelling unit type and density by neighborhood, King City Concept Plan.

3. Recommendations

The following numbers have been compiled for use in the TSP. They align with the 2018 Concept Plan projections for land use and development build out, are consistent with the 2017 and 2020 market analyses for commercial uses, and will be reflected in Metro's Transportation Analysis Zones for the year 2045.



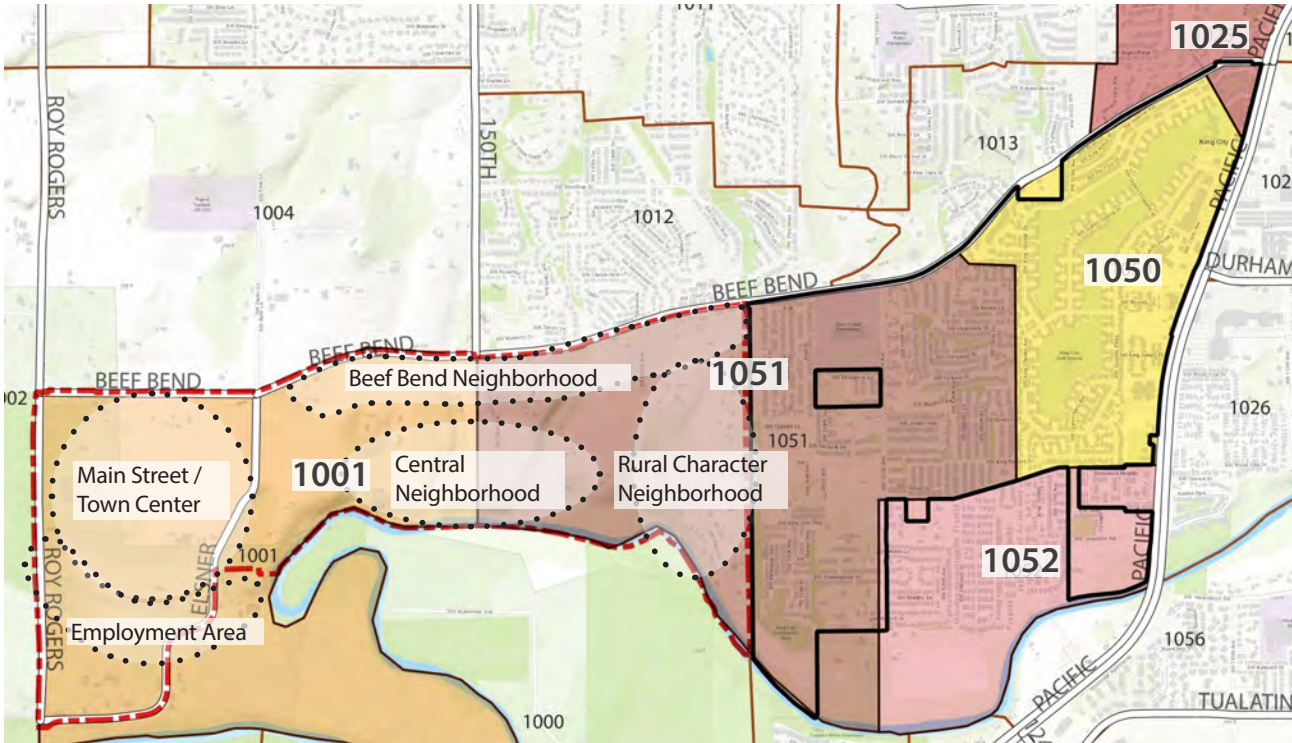
Recommended land use counts (employees and households) for all King City Transportation Analysis Zones (TAZs) for 2045

TAZ Number	TAZs within King City Beef Bend South			TAZs within King City (current city limit)					All King City total
	1001	1051 (West)	All BB South	1051 (East)	1052	1050	1025	All current King City	
Employees	265	10	275	162	49	671	0	882	1,157
Dwellings (households)	2,295	796	3,091	1,440	147	1,072	92	2,751	5,842
Total employees and households per TAZ	2,560	806	3,366	1,602	196	1,743	92	3,633	6,999

Based on direction from the Technical Advisory Committee, the TAC recommended applying the full development capacity for housing units for the TSP, since they are not significantly more than the 2045 dwelling unit estimate.

The TAC thinks this assumption will align better with the Washington County Urban Reserve Transportation Study and Tigard River Terrace concept planning work.

Below are the recommended land use counts for 2050.



Recommended land use counts (employees and households) for all King City Transportation Analysis Zones (TAZs) for 2050

TAZ Number	TAZs within King City Beef Bend South			TAZs within King City (current city limit)					All King City total
	1001	1051 (West)	All BB South	1051 (East)	1052	1050	1025	All current King City	
Employees	265	10	275	165	50	718	0	933	1,208
Dwellings (households)	2,750	931	3,681	1,440	147	1,072	92	2,751	6,432
Total employees and households per TAZ	3,015	941	3,956	1,605	197	1,790	92	3,684	7,640

APPENDIX H. TRANSPORTATION VISION AND GOALS



TRANSPORTATION VISION AND GOALS

DATE: December 4, 2020

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement

Transportation Vision and Goals (Task 5.1; Deliverable 5A)

#20020-002

This memorandum provides a recommended transportation vision and set of goals. The recommended vision and goals may be modified, removed, or added to through the planning process, shaped by input received from the project team, advisory committees, and the general public. This feedback process will be used to develop a final vision and set of goals for the TSP. After this process is complete, the vision and goals will be tied into the performance-based planning and programming framework, including Task 5.2 Transportation Objectives (Deliverable 5B), Task 5.3 Transportation Infrastructure Standards (Deliverable 5C), and 5.4 Transportation Performance Measures (Deliverable 5D).

SETTING DIRECTION FOR TRANSPORTATION PLANNING

Collectively, the transportation-related goals, objectives, and performance measures describe what the community wants the transportation system to do in the future, as summarized by a **vision statement**. A vision statement generally consists of an imaginative description of the desired condition in the future. It is important that the vision statement for transportation align with the community's core values.

Goals and objectives create manageable stepping stones through which the broad vision statement can be achieved. **Goals** are the first step down from the broader vision. They are broad statements that should focus on outcomes, describing a desired end state. Goals should be challenging, but not unreasonable.

Each goal must be supported by more finite **objectives**. In contrast to goals, objectives should be specific and measurable. Where feasible, providing a targeted time period helps with objective prioritization and achievement. When developing objectives, it is helpful to identify key issues or concerns that are related to the attainment of the goal.



The solutions recommended through the TSP must be consistent with the goals and objectives. To accomplish this, **performance measures** are based on the goals and objectives will be developed. For the King City TSP, they will be used to inform the selection and prioritization of projects and policies for the plan by describing how well the alternatives considered support goal areas.

RECOMMENDED TRANSPORTATION VISION

By 2040, we envision a city with a smart and efficient transportation system that supports healthy and active citizens of all ages and abilities. People travel in a safe, accessible, and convenient manner, using transportation options that allows all users to meet daily needs. The transportation system supports a competitive economy that increases affordability and provides for an enhanced natural and cultural environment.

RECOMMENDED TRANSPORTATION GOALS AND OBJECTIVES

ACCESSIBILITY AND CONNECTIVITY

The transportation system is convenient and accessible and connects people to destinations throughout the city and beyond.

SAFETY AND SECURITY

The transportation system is safe and secure for people of all ages and abilities.

HEALTHY PEOPLE AND ENVIRONMENT

The transportation system protects the natural, cultural, and developed environments and encourages healthy and active living for all through comfortable and convenient lower-polluting transportation alternatives.

EQUITY

The transportation system eliminates transportation related disparities and barriers and is affordable for all users.

RELIABILITY AND EFFICIENCY

Manage and optimize the transportation system to ease congestion so people and goods can affordably, reliably, and efficiently reach their destinations.

FISCAL RESPONSIBILITY



Strategically design, operate and maintain the transportation system to maximize assets, minimize costs, and enhance the surrounding community through right sized infrastructure.

COLLABORATION

The transportation system decisions are made in a transparent and collaborative manner, and the benefits and burdens of investments are distributed equally along all users.

APPENDIX I. TRANSPORTATION OBJECTIVES



TRANSPORTATION OBJECTIVES

DATE: December 4, 2020

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement

Transportation Objectives (Task 5.2; Deliverable 5B)

#20020-002

This memorandum provides recommended transportation objectives, and also incorporates the recommended transportation vision and goals from Deliverable 5A. The recommended vision, goals, and objectives may be modified, removed, or added to through the planning process, shaped by input received from the project team, advisory committees, and the general public. This feedback process will be used to develop a final vision, and set of goals and objectives for the TSP. The vision, goals, and objectives will be tied into the performance-based planning and programming framework, including Task 5.3 Transportation Infrastructure Standards (Deliverable 5C), and 5.4 Transportation Performance Measures (Deliverable 5D).

SETTING DIRECTION FOR TRANSPORTATION PLANNING

Collectively, the transportation-related goals, objectives, and performance measures describe what the community wants the transportation system to do in the future, as summarized by a **vision statement**. A vision statement generally consists of an imaginative description of the desired condition in the future. It is important that the vision statement for transportation align with the community's core values.

Goals and objectives create manageable stepping stones through which the broad vision statement can be achieved. **Goals** are the first step down from the broader vision. They are broad statements that should focus on outcomes, describing a desired end state. Goals should be challenging, but not unreasonable.

Each goal must be supported by more finite **objectives**. In contrast to goals, objectives should be specific and measurable. Where feasible, providing a targeted time period helps with objective prioritization and achievement. When developing objectives, it is helpful to identify key issues or concerns that are related to the attainment of the goal.



The solutions recommended through the TSP must be consistent with the goals and objectives. To accomplish this, **performance measures** based on the goals and objectives will be developed. For the King City TSP, they will be used to inform the selection and prioritization of projects and policies for the plan by describing how well the alternatives considered support goal areas.

RECOMMENDED TRANSPORTATION VISION

By 2040, we envision a city with a smart and efficient transportation system that supports healthy and active citizens of all ages and abilities. People travel in a safe, accessible, and convenient manner, using transportation options that allows all users to meet daily needs. The transportation system supports a competitive economy that increases affordability and provides for an enhanced natural and cultural environment.

RECOMMENDED TRANSPORTATION GOALS AND OBJECTIVES

ACCESSIBILITY AND CONNECTIVITY

The transportation system is convenient and accessible and connects people to destinations throughout the city and beyond.

OBJECTIVES FOR CONSIDERATION

- Provide direct, continuous, and connected transportation facilities to minimize out-of-direction travel and decrease travel times for all users.
- Increase the proportion of trips made by walking, bicycling, transit and carpooling.
- Complete all gaps in the bicycle and pedestrian networks, including trails.
- Increase household and job access to transit.
- Increase household and job access to low stress bike and walk networks.
- Increase travel options that serve popular destinations, such as schools, services and parks.
- Increase the number of jobs that households can reach within a reasonable travel time.

SAFETY AND SECURITY

The transportation system is safe and secure for people of all ages and abilities.

OBJECTIVES FOR CONSIDERATION

- Reduce fatal and serious injury crashes for all modes of travel.
- Reduce crashes involving pedestrians and bicyclists by improving conditions along and across streets and at other conflict points with motor vehicles.
- Ensure the pedestrian and bike throughways are well maintained and clear of debris, obstacles and obstructions.
- Provide attractive streetscapes that encourage active transportation, appropriate traffic volumes, vehicle speeds, and safety for all users.

- Reduce the transportation system's vulnerability to natural disasters and climate change.

HEALTHY PEOPLE AND ENVIRONMENT

The transportation system protects the natural, cultural, and developed environments and encourages healthy and active living for all through comfortable and convenient lower-polluting transportation alternatives.

OBJECTIVES FOR CONSIDERATION

- Reduce vehicle miles traveled per capita.
- Improve public health by promoting and providing safe, comfortable, and convenient active transportation options to meet daily needs and access services.
- Design all transportation facilities to be welcoming and attractive for all people walking and bicycling.
- Increase household access to parks, open spaces and natural areas.
- Use sensitive design and mitigation approaches to natural, cultural, and developed resources.
- Reduce transportation-related air pollutants.

EQUITY

The transportation system eliminates transportation related disparities and barriers and is affordable for all users.

OBJECTIVES FOR CONSIDERATION

- Reduce household transportation costs by providing walkable neighborhoods, active transportation options, and reduced reliance on motor vehicle travel.
- Develop a multimodal transportation system that allows all users to access employment, education and services.
- Develop a low stress bike and walk network for users of all ages and abilities.
- Promote transportation investments that offer system connectivity and efficiency benefits and avoid, minimize, and mitigate negative impacts.
- Prioritize infrastructure investments that serve those with the least access to transportation resources and with the greatest mobility needs.

RELIABILITY AND EFFICIENCY

Manage and optimize the transportation system to ease congestion so people and goods can affordably, reliably, and efficiently reach their destinations.

OBJECTIVES FOR CONSIDERATION

- Build an integrated and connected system of roadways, freight routes, transit and bicycle and pedestrian facilities.
- Build infrastructure and capacity to support electric vehicles and other emerging technologies to increase travel options.
- Leverage technological advances to increase efficiency of travel across all modes for all road users.

- Increase the number of people and businesses with access to travel information.
- Increase the number of households and businesses with access to outreach, education, incentives and other tools that increase shared trips and use of travel options.

FISCAL RESPONSIBILITY

Strategically design, operate and maintain the transportation system to maximize assets, minimize costs, and enhance the surrounding community through right sized infrastructure.

OBJECTIVES FOR CONSIDERATION

- Preserve and maintain transportation system assets to maximize their useful life and minimize project construction and maintenance costs.
- Build transportation infrastructure that is sized appropriately and that encourages economical operation and maintenance.
- Align the function of transportation facilities with evolving character and design of the cross-section to enhance the adjacent land uses through right sized infrastructure.
- Develop new revenue sources to prepare for increased travel demand, that balance fairness and equity across the community.

COLLABORATION

The transportation system decisions are made in a transparent and collaborative manner, and the benefits and burdens of investments are distributed equally along all users.

OBJECTIVES FOR CONSIDERATION

- Create a multimodal transportation system that seamlessly connects to existing and planned infrastructure in surrounding communities.
- Make transportation investment decisions using a performance-based planning and programming framework that is aligned with the local and regional goals and supported by meaningful public engagement, multimodal data and analysis.
- Improve coordination and cooperation among the owners and operators of the transportation system to enhance the efficiency of roadways and multimodal facilities and encourage improved transit service.
- Engage a wider diversity of people to provide input at all stages of developing and maintaining the transportation system and services.

APPENDIX J. TRANSPORTATION PERFORMANCE MEASURES AND PROJECT PRIORITIZATION FRAMEWORK



TRANSPORTATION PERFORMANCE MEASURES AND PROJECT PRIORITIZATION FRAMEWORK

DATE: December 6, 2020

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement

Transportation Performance Measures and Project Prioritization
Framework (Task 5.4; Deliverable 5D and 5E)

#20020-002

This memorandum details the performance-based planning and programming framework for King City. It summarizes how the performance of the transportation system investments will be evaluated and monitored towards attainment of the long-term goals and objectives of the city and region and provides a framework for prioritizing transportation projects.

RECOMMENDED PERFORMANCE MEASURES

The King City TSP employs a performance-based approach, focusing on measurable outcomes of the investments the City chooses to make to the transportation system. The approach allows the City to measure the degree to which its investments support City-wide and regional priorities. In this manner, the City is able to track how its investment decisions impact a set of performance measures through 2040. While the performance measures do not represent the complete picture, they do offer a baseline against which to assess how the policies, investments and planning decisions made in this plan may affect the future. The measures help translate investment decisions to the community priorities of the TSP and also allow the City to show progress towards meeting the regional performance measures in the Metro Regional Transportation Plan and Regional Transportation Functional Plan.

Table 1 provides recommended performance measures for the TSP. The performance measures will be used in different ways to support the City's transportation planning and decision-making process, including to assess performance as part of the evaluation process at the system level, and to provide a basis for on-going monitoring of transportation investments.

In addition, the performance measures are intended to assess the transportation system in a more holistic way by:

- Reviewing access to essential services and destinations that play important roles in the physical and economic health of an individual,
- Focusing on the movement of people over vehicles, and
- Focusing on equal investments throughout the plan, particularly in areas with greater barriers

TABLE 1: RECOMMENDED PERFORMANCE MEASURES

PERFORMANCE MEASURE	MILES TRAVELED
Description	System-wide number of miles traveled (total and share of overall travel) within King City
Sample Measures	<ul style="list-style-type: none"> • Vehicle miles traveled (VMT) (total, per capita)
Potential Target	<ul style="list-style-type: none"> • By 2040, reduce vehicle miles traveled per person by 10 percent compared to 2020
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Accessibility and Connectivity; Healthy People and Environment; Reliability and Efficiency; Fiscal Responsibility • RTP/RTFP Performance Measure(s): Multimodal Travel; Climate Change; Clean Air
PERFORMANCE MEASURE	MULTIMODAL LEVEL OF TRAFFIC STRESS
Description	Locations on the roadway network that operate above thresholds for multimodal level of traffic stress
Sample Measures	<ul style="list-style-type: none"> • Pedestrian level of traffic stress • Bicycle level of traffic stress
Potential Target	Meet the local thresholds for multimodal level of traffic stress
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Accessibility and Connectivity; Safety and Security; Healthy People and Environment; Equity • RTP Performance Measure(s): Multimodal Travel; Mode Share
PERFORMANCE MEASURE	CONGESTION
Description	Locations on the roadway network that operate above thresholds for congestion
Sample Measures	<ul style="list-style-type: none"> • Vehicle volume to capacity ratios
Potential Target	Meet the local and regional thresholds for congestion; Reduce vehicle hours of delay per truck by 10% by 2040
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Reliability and Efficiency • RTP/RTFP Performance Measure(s): Congestion; Freight Delay

PERFORMANCE MEASURE	MODE SHARE
Description	Percent of non-drive alone trips (walking, bicycling, transit and shared ride trips) within King City, and regionally designated Town Centers, Corridors and Neighborhoods
Sample Measures	<ul style="list-style-type: none"> Walking, Bicycling, Transit and Shared Ride usage (total and share)
Potential Target	<ul style="list-style-type: none"> By 2040, achieve regional non-drive alone modal targets for Town Centers and Corridors of 45 to 55 percent, and for Neighborhoods of 40 to 45 percent
Local /Regional Connection	<ul style="list-style-type: none"> TSP Goal(s): Accessibility and Connectivity; Healthy People and Environment; Equity RTP Performance Measure(s): Affordability; Multimodal Travel; Mode Share; Climate Change; Clean Air
PERFORMANCE MEASURE	SYSTEM COMPLETENESS
Description	Completeness of sidewalks, bikeways and trails within the city
Sample Measures	<ul style="list-style-type: none"> Total miles and percentage of pedestrian, bicycle and trail networks completed Percentage of pedestrian and bicycle facilities completed within ¼ mile of transit stops
Potential Target	Complete the sidewalk, bikeway and trail networks by 2040
Local /Regional Connection	<ul style="list-style-type: none"> TSP Goal(s): Accessibility and Connectivity; Safety and Security; Healthy People and Environment; Equity; Reliability and Efficiency RTP Performance Measure(s): Affordability; Multimodal Travel; Mode Share; System Completion; Climate Change
PERFORMANCE MEASURE	ACCESS TO JOBS
Description	Number and percent change of jobs accessible within a reasonable travel time by driving, transit, bicycling, and walking
Sample Measures	<ul style="list-style-type: none"> Number and percentage of jobs reached by driving in 20 mins Number and percentage of jobs reached by bicycling in 20 mins (using average biking speed of 10 miles per hour) Number and percentage of jobs reached by walking in 15 minutes (using average walking speed of 3 miles per hour) Number and percentage of jobs reached by transit (includes potential future transit corridors) in 30 mins (including beginning and end of trip)
Potential Target	Desired direction is to increase the number of jobs accessible within a reasonable commute
Local /Regional Connection	<ul style="list-style-type: none"> TSP Goal(s): Accessibility and Connectivity; Healthy People and Environment; Equity RTP Performance Measure(s): Affordability; Multimodal Travel; Mode Share

PERFORMANCE MEASURE	ACCESS TO COMMUNITY AMENITIES
Description	Access to community amenities (i.e., education, critical services, parks, open spaces and natural areas) within a reasonable travel time by transit, bicycling, and walking
Sample Measures	<ul style="list-style-type: none"> • Number and percentage of community amenities reached by bicycling in 15 mins (using average biking speed of 10 miles per hour) • Number and percentage of community amenities reached by walking in 10 minutes (using average walking speed of 3 miles per hour) • Number and percentage of community amenities reached by transit (includes potential future transit corridors) in 20 mins (including beginning and end of trip)
Potential Target	Desired direction is to increase the number of community amenities accessible
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Accessibility and Connectivity; Healthy People and Environment; Equity • RTP Performance Measure(s): Affordability; Multimodal Travel; Mode Share
PERFORMANCE MEASURE	ACCESS TO TRANSIT
Description	Number and share of households with access to transit within King City
Sample Measures	<ul style="list-style-type: none"> • Number and percent of households within ¼ mile of transit stops
Potential Target	Desired direction is to increase the number of households accessible to transit
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Accessibility and Connectivity; Healthy People and Environment; Equity • RTP Performance Measure(s): Affordability; Multimodal Travel; Mode Share
PERFORMANCE MEASURE	SAFETY
Description	Transportation related collisions (total, per capita and per VMT) within King City, and pedestrian districts (i.e., King City Town Center and URA 6D Town Center)
Sample Measures	<ul style="list-style-type: none"> • Vehicle, pedestrian, and bicyclist fatal and serious injury crashes (total, per capita and per VMT) • Crashes involving a pedestrian, or bicyclist (total, and per capita)
Potential Target	By 2040 eliminate transportation related fatalities and serious injuries for all users
Local /Regional Connection	<ul style="list-style-type: none"> • TSP Goal(s): Safety and Security • RTP/RTFP Performance Measure(s): Safety

PROJECT PRIORITIZATION FRAMEWORK

Contrary to the performance measures which assess the system wide impact of plan investments, the proposed approach to prioritize individual transportation projects in King City will be based on criteria associated with each TSP goal. A prioritization score will be calculated for each project using the following seven criteria (i.e., each TSP goal):

- Accessibility and Connectivity
- Safety and Security
- Healthy People and Environment
- Equity
- Reliability and Efficiency
- Fiscal Responsibility
- Collaboration

The projects will be scored on each criterion from 1 (low) to 10 (high). The criteria will be weighted equally, resulting in overall possible scores ranging from 7 to 70. The following sections describe the methodology for calculating the scores for each criterion.

ACCESSIBILITY AND CONNECTIVITY

Pedestrian, bicycle and transit demand serves as the basis for this criterion. Projects along Major Pedestrian or Bicycle Streets, or Transit Corridors, and Neighborhood Pedestrian or Bicycle Streets will be assigned the scores shown in Table 2. Projects located in a Pedestrian or Bicycle District have three points added to their respective scores.

TABLE 2: PROPOSED PRIORITIZATION APPROACH FOR ACCESSIBILITY AND CONNECTIVITY CRITERIA

NETWORK CLASSIFICATION	SCORE IN PEDESTRIAN OR BICYCLE DISTRICT	SCORE OUTSIDE OF PEDESTRIAN OR BICYCLE DISTRICT
Major Pedestrian Street, Major Bicycle Street, or Transit Corridor	10	7
Neighborhood Pedestrian Street or Neighborhood Bicycle Street	7	4
Other Street	4	1

SAFETY AND SECURITY

This criterion is intended to account for both crash history and crash risk factors. The following factors will be scored for prioritization as shown in Table 3:

- Locations along the low stress pedestrian and bicycle network.

- Locations with a high density of pedestrian or bicyclist collisions.
- Streets with three or more travel lanes.
- Locations with posted speeds of 30 mph or higher.

TABLE 3: PROPOSED PRIORITIZATION APPROACH FOR SAFETY AND SECURITY CRITERIA

CONDITION	SCORE
Locations along the low stress pedestrian and bicycle network	4
Locations with a high density of pedestrian or bicyclist collisions	2
Locations with three or more travel lanes	2
Locations with posted speeds of 30 mph or higher	2
None	1

HEALTHY PEOPLE AND ENVIRONMENT

A projects distance from community amenities (i.e., education, critical services, parks, open spaces and natural areas) serves as the basis for this criterion. Scores will be assigned based on the location of a project as shown in Table 4.

TABLE 4: PROPOSED PRIORITIZATION APPROACH FOR HEALTHY PEOPLE AND ENVIRONMENT CRITERIA

LOCATION	SCORE
Located within 1/4 mile from a school	4
Located within 1/4 mile of a pedestrian district or commercial corridor	4
Located within 1/4 mile from a park, open space or natural area	2
None	1

EQUITY

The demographic variables of income and age will be used to evaluate the equity implications of project needs. The scoring also considers race, but it was not included in score due to its relative equal distribution among the block groups in the city. To calculate the scores, Census Block Groups in King City will be given scores for income and age from 1 to 5. For each demographic variable, '5' equals the top grouping in the city (i.e., lowest median income or highest median age), '3' the

citywide average, and '1' the bottom grouping in the city (i.e., highest median income or lowest median age). The scores for each demographic variable will be totaled and applied for each project in that block group. The block group with the lowest total will receive a score of '1', regardless of the total.

RELIABILITY AND EFFICIENCY

A projects impact on the movement of people and goods serves as the basis for this criterion. Scores will be assigned based on the location of projects as shown in Table 5.

TABLE 5: PROPOSED PRIORITIZATION APPROACH FOR RELIABILITY AND EFFICIENCY CRITERIA

LOCATION	SCORE
Location of significant delay for people	4
Location along a freight route	4
Location along the arterial and collector roadway network	2
None	1

FISCAL RESPONSIBILITY

The total estimated construction and maintenance cost will be used to evaluate the fiscal responsibility of projects. To calculate the scores, each project will be given scores for construction and maintenance costs from 1 to 5. For each cost variable, '5' equals the lowest cost, '3' the average cost, and '1' the highest cost. The scores for each cost variable will be totaled and applied for each project. Any project with a total cost variable score of '2' will receive a score of '1', regardless of the total.

COLLABORATION

This criterion is intended to capture how well a project is aligned with the nine regional performance measures. Each project will be given a value from 1 to 10 for how well it is perceived to work towards the outcome of each regional performance measure. For each regional performance measure, '10' equals significant progress towards the outcome, '5' indicates some progress towards the outcome, and '1' indicates no progress towards the outcome. The values for each project will be totaled and compared to the highest possible value of '90'. That ratio will be applied to the highest criterion score of '10' to determine the final project score, ranging from 1 to 10.

APPENDIX K. TSP EVALUATION METHODOLOGY MEMO



TSP EVALUATION METHODOLOGY

DATE: September 28, 2020

TO: Project Management Team

FROM: Carl Springer, Kevin Chewuk and Rochelle Starrett | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement

TSP Evaluation Methodology Memo (Task 5.5; Deliverable 5F)

#20020-002

The following memorandum establishes the methods and assumptions that will be used to develop the existing and future conditions transportation analysis for the King City Transportation System Plan (TSP). This memorandum summarizes the study intersections, describes the proposed methodology to calculate the peak hour, 2020 30th highest annual hour of traffic (30 HV), forecasted 2040 volumes, and the safety analysis.

STUDY INTERSECTIONS

Study intersections were identified for the King City TSP with input from the project team. Since travel patterns have been impacted by COVID-19, precluding the collection of new count data, historical counts were obtained. Identified study intersections and characteristics of each count are summarized below in Table 1 and summarized in Figure 1.

TABLE 1: IDENTIFIED STUDY INTERSECTIONS

#	STUDY INTERSECTION	CONTROL	HISTORICAL COUNT DATES	SOURCE
1	SW Roy Rogers Road/SW Beef Bend Road	Signal	4/11/2013, 2/13/2018, 10/22/2019	River Terrace Community Plan, King City URA 6D Study, Urban Reserve Transportation Study
2	SW Roy Rogers Road/SW Scholls-Sherwood Road	Signal	4/11/2013	River Terrace Community Plan
3	SW Elsner Road/SW Beef Bend Road	Two-Way Stop Control	11/19/2013, 2/13/2018	River Terrace Community Plan, King City URA 6D Study
4	SW 150 th Avenue/SW Beef Bend Road	All-Way Stop Control	11/19/2013, 2/13/2018	River Terrace Community Plan, King City URA 6D Study

5	SW 137 th Avenue/SW Beef Bend Road	Two-Way Stop Control	2/13/2018	King City URA 6D Study
6	SW 131 st Avenue/SW Beef Bend Road	Signal	2/13/2018	King City URA 6D Study
7	SW Roy Rogers Road/SW Elsner Road	Two-Way Stop Control	2/13/2018	King City URA 6D Study
8	SW 131 st Avenue/SW Fischer Road	All-Way Stop Control	2/13/2018	King City URA 6D Study
9	OR 99W/SW Beef Bend Road	Signal	11/19/2013, 2/13/2018	River Terrace Community Plan, King City URA 6D Study
10	OR 99W/SW Bull Mountain Road	Signal	2017	Traffic Impact Studies
11	OR 99W/SW Royalty Parkway	Signal	3/9/2016	Historical Data
12	OR 99W/SW 116 th Avenue/SW Durham Road	Signal	11/19/2013, 2/13/2018	River Terrace Community Plan, King City URA 6D Study
13	OR 99W/SW Fischer Road	Signal	2/13/2018	King City URA 6D Study
14	OR 99W/SW 124 th Avenue	Signal	2/13/2018	King City URA 6D Study
15	OR 99W/SW Roy Rogers Road	Signal	2/13/2018	King City URA 6D Study



FIGURE 1: IDENTIFIED STUDY INTERSECTIONS (SOURCE: GOOGLE MAPS)

VOLUME DEVELOPMENT

Historical counts must be adjusted to a common count year and month to represent typical 30th highest hour (30 HV) traffic conditions. These adjustments include seasonal adjustments to a common month and historical adjustments to a common year (2020).

PEAK HOUR SELECTION

The historical count data was taken over a range of different dates at distinct study intersection locations. The individual intersection peak hour will be used at each study intersection to capture

the distinct traffic conditions that could have occurred on each count date and to capture citywide variation in traffic volumes over the PM peak.

SEASONAL FACTORS

King City is located within Metro's urban growth boundary (UGB), so typical PM peak traffic conditions follow a commuter seasonal trend. Seasonal adjustments, summarized below in Table 2, will be applied to the counts for highway to highway movements on OR 99W.

TABLE 2: RECOMMENDED SEASONAL FACTORS

COUNT MONTH	SEASONAL FACTOR ¹
February	1.13
March	1.08
April	1.04
November	1.08

HISTORICAL ADJUSTMENTS

Counts taken in different years prior to 2020 will require adjustment to the common base year (2020) prior to analysis. A range of methods can be used to develop factors for historical adjustments, including ODOT's Future Volume Tables², Washington County's Traffic Count Program³, historical counts, and the Washington County Westside Regional Travel Demand Model.

The recommended annual growth rate and the applicable movements is summarized below in Table 3 along with the source used to develop the growth rate. Growth rates developed from historical counts, where applicable, ODOT's Future Volume Tables, and from Washington County's Westside travel demand models were compared for their consistency and applicability to the counts. Generally, historic growth rates were consistent with or lower than model growth rates. Using historic growth rates better represents the existing change in traffic volumes on these corridors since the 2040 financially constrained travel demand model includes a five-lane cross section for SW Roy Rogers Road. This widening project will contribute to higher traffic volumes on this corridor or adjacent roadways in the future and overestimate growth in the short-term.

¹ ODOT. *Seasonal Trend Table*. 2018.

² ODOT. *Future Volume Table*. 2018.

³ Washington County. *Traffic Counts*. 2017.

<https://www.co.washington.or.us/LUT/Divisions/TrafficEngineering/Programs/traffic-counts.cfm>

Traffic counts at each study intersection will be forecast from the most recent count date to 2020 using linear growth as noted in Table 3. More recent counts from 2019 are available at the intersection of SW Roy Rogers Road and SW Beef Bend Road. However, the 2019 count recorded a lower total entering traffic volume, so the 2018 count will be used at this location to be more conservative.

TABLE 3: RECOMMENDED ANNUAL PERCENT GROWTH RATES

CORRIDOR	ANNUAL PERCENT GROWTH	APPLICATION	SOURCE
SW Roy Rogers Road	2%	All movements from SW Roy Rogers Road	Washington County Traffic Count Program ¹
OR 99W	1%	All movements from OR 99W	ODOT Future Volume Tables
SW Beef Bend Road	3%	All movements from SW Beef Bend Road	Washington County Traffic Count Program
Other Local Roads	5%	All movements from other roads not specified	Washington County Traffic Count Program ²

1. Annual percent growth rate based on the average of three count locations on Roy Rogers Road: 3500 ft. south of Scholls Ferry Road, 2000 ft. north of Scholls-Sherwood Road, and 500 ft. south of Scholls-Sherwood Road
2. Annual percent growth rate based on the average of two count locations: Fischer Road, 500 ft. west of OR 99W, and 131st Avenue, 750 ft. south of Beef Bend Road

TRAFFIC ANALYSIS

Traffic operations (delay, LOS, and v/c) will be analyzed for all study intersections under existing (2020) and future (2040) conditions. The Highway Capacity Manual (HCM) 6th Edition methodology will be used for signalized and unsignalized intersection analyses, where possible; signalized intersection v/c ratios will be post-processed to obtain intersection v/c ratios. If HCM 6th Edition results cannot be reported due to intersection geometry or other limitations, the capacity results will be based on HCM 2000. Washington County's version of Metro's Regional Travel Demand Forecast Model will be used to evaluate future conditions.

INTERSECTION MOBILITY TARGETS

The state and region have adopted vehicle mobility targets to ensure that the transportation system will have adequate capacity to support planned growth (see Table 4). ODOT standards are consistent with the regional standards. Regional standards require a volume to capacity (v/c) ratio of 1.10 during the peak first hour, and 0.99 during the peak second hour⁴ in designated Town

⁴ Second hour defined as the single 60-minute period either before or after the peak 60-minute period, whichever is highest

Centers and 0.99 during the highest two consecutive hours of the day along designated "Corridors," including OR 99W outside of the Town Center and within designated "Neighborhoods," including Beef Bend Road.

All Washington County streets in the area, including Roy Rogers Road and Beef Bend Road, are designated on the Regional Motor Vehicle Network and subject to the regional targets. King City does not currently have adopted performance standards for motor vehicles. For comparison purposes, the regional mobility target for "Neighborhoods," a v/c ratio of 0.99 during the peak hour, will be applied as an interim performance measure for City streets.

TABLE 4: STUDY INTERSECTION MOBILITY TARGETS

#	STUDY INTERSECTION	JURISDICTION	CONTROL	PERFORMANCE MEASURE ¹
1	SW Roy Rogers Road/SW Beef Bend Road	County	Signal	0.99
2	SW Roy Rogers Road/SW Scholls-Sherwood Road	County	Signal	0.99
3	SW Elsner Road/SW Beef Bend Road	County	Two-Way Stop Control	0.99
4	SW 150 th Avenue/SW Beef Bend Road	County	All-Way Stop Control	0.99
5	SW 137 th Avenue/SW Beef Bend Road	County	Two-Way Stop Control	0.99
6	SW 131 st Avenue/SW Beef Bend Road	County	Signal	0.99
7	SW Roy Rogers Road/SW Elsner Road	County	Two-Way Stop Control	0.99
8	SW 131 st Avenue/SW Fischer Road	King City	All-Way Stop Control	0.99
9	OR 99W/SW Beef Bend Road	ODOT	Signal	0.99
10	OR 99W/SW Royalty Parkway	ODOT	Signal	1.10
11	OR 99W/SW 116 th Avenue/SW Durham Road	ODOT	Signal	1.10
12	OR 99W/SW Fischer Road	ODOT	Signal	0.99
13	OR 99W/SW 124 th Avenue	ODOT	Signal	0.99
14	OR 99W/SW Roy Rogers Road	ODOT	Signal	0.99
15	OR 99W/SW Bull Mountain Road	ODOT	Signal	0.99

SAFETY ANALYSIS

Collision trends will be identified by analyzing the most recent five years of available crash data (2014-2018) for roadways within King City. Analysis will include calculation of critical crash rates and excess proportion of specific crash types at all study intersections, as outlined in Chapter 4 of ODOT's Analysis Procedures Manual (APM)⁵. For reference populations with less than 5 intersections, intersection crash rates will be compared to the published 90th percentile crash rates

⁵ Analysis Procedures Manual Version 2, Oregon Department of Transportation, March 2016.

in Table 4-1 of the APM. Any intersection with a collision rate that exceeds its critical rate or the 90th percentile crash rate will be flagged for further review. Special consideration will be given to potential causes of collisions at locations with high bicycle/pedestrian crash frequencies.

ODOT's State Highway Crash Rate Tables will be reviewed and used to identify highway segments experiencing crash rates greater than the statewide average for similar facilities. Top 10% ODOT Safety Priority Index System (SPIS) sites will also be identified.

The collision analysis shall be used to identify crash patterns and suggest potential countermeasures at locations that exceed the published intersection or segment crash rates, or the calculated critical crash rate, and identify low cost systemic safety measures that could be considered later in Task 6 to reduce fatal and serious injury crashes.

MULTIMODAL ANALYSIS

Pedestrian and bicycle volumes from the historical traffic data will be analyzed to identify areas with high multimodal activity. Transit service characteristics, including TriMet's routes, stops, and usage will also be reviewed. The OR 99W corridor and other major roadways surrounding King City (*e.g.* Beef Bend Road) will receive a special emphasis to identify potential crossing improvements for multimodal users.

APPENDIX L. EXISTING CONDITIONS AND NEEDS REPORT



TRANSPORTATION EXISTING CONDITIONS AND NEEDS REPORT

DATE: February 18, 2021

TO: Project Management Team

FROM: Carl Springer, Kevin Chewuk, and Rochelle Starrett | DKS

SUBJECT: King City Transportation System Plan

Transportation Existing Conditions and Needs Report (Task 6.1;
Deliverable 6A)

#20020-002

This memorandum summarizes King City's existing and future transportation system needs as identified through the transportation performance evaluation. A review of the existing transportation facilities for each travel mode is also included.

TRANSPORTATION SYSTEM INVENTORY

To address changing transportation needs within the City through 2040, we must first look at the existing and future travel conditions. The transportation system review documented the existing pedestrian, bicycle, transit, and motor vehicle infrastructure. It also identified shortfalls and limitations into how people can travel within the City (such as lack of bike lanes or sidewalks). Solutions for the transportation infrastructure that are determined to not maintain acceptable service levels for residents will be considered later in the process.

PEDESTRIAN NETWORK

Walking plays a key role in King City's transportation network and planning for pedestrians helps the City provide a complete multi-modal transportation system. It also supports healthy lifestyles and addresses a social equity issue ensuring that the young, the elderly, and those not financially able to afford motorized transport have access to goods, services, employment, and education.

Approximately two percent of commuters in the city walk to work, with one percent utilizing public transportation, which often includes walking at the beginning or end of the trip¹. In addition to the work commute trips, walking trips are made to and from recreational areas, shopping areas, schools, or other activity generators. Continuous and direct sidewalk connections to all activity generators and along all streets, in addition to safe crossing opportunities along major roadways, are desirable to encourage non-motorized travel options.

The existing pedestrian network in King City, shown in Figure 1, is composed of sidewalks and pedestrian trails, and is fairly well developed.

- **Sidewalks** provide for pedestrian movement and access and enhance connectivity and promote walking. A large part of the eastern portion of King City was developed with sidewalks incorporated into the design of neighborhoods and streets. Although many areas have sidewalk coverage, a few do not have complete sidewalks on one side of the street, or even on both sides. These gaps are most significant along OR 99W, SW Beef Bend Road, neighborhoods just to the east of SW 131st Avenue, and on roadway segments in the undeveloped areas west of SW 137th Avenue.
- **Pedestrian Trails** can serve both recreational and transportation needs for pedestrians. Some are considered shared use paths and are well suited for citywide pedestrian and bicycle travel, and others offer only recreational opportunities for pedestrians. They can be separated or adjacent to the streets right-of-way and provide linear park facilities for pedestrian travel. Pedestrian trails exist within King City Community Park and scattered throughout the residential neighborhoods providing accessways between disconnected streets or localized recreational walking and biking opportunities.

STREET CROSSINGS

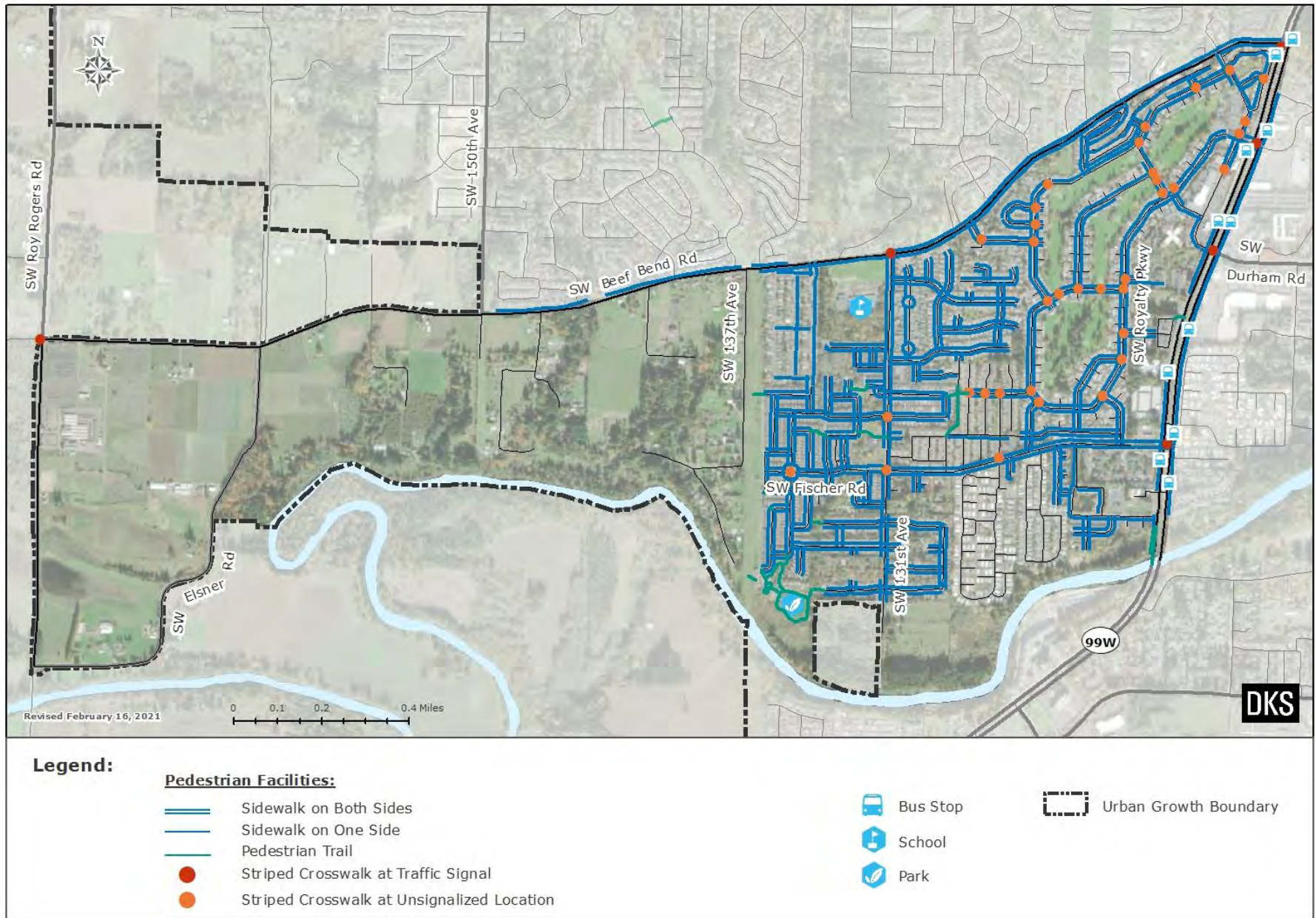
Marked crosswalks are located at the four traffic signals along OR 99W through King City, although they are spaced at intervals of at least 0.25 miles. This is greater than the typical distance a pedestrian will walk and could result in out of direction travel for pedestrians wishing to cross OR 99W. Only one marked crossing is currently available along SW Beef Bend Road between OR 99W and SW Roy Rogers Road, at the SW 131st Avenue signalized intersection near Deer Creek Elementary School. Additional marked crosswalks are available throughout King City at unsignalized intersections.

Curb Ramps

Many intersections in older parts of the City lack ADA-compliant ramps, which provide important connections between sidewalks, making it easier to cross streets and handle the vertical drop at curbs. However, new curb ramps have been installed recently in many of these locations. The presence of curb ramps is fairly consistent along streets near the King City Town Center, and in the newer neighborhoods in the City.

¹ US Census Bureau, 2015-2019 American Community Survey

FIGURE 1: PEDESTRIAN FACILITIES



PEDESTRIAN CLASSIFICATIONS

The recommended pedestrian classifications for King City are shown in Figure 2. For more information, see the Transportation Infrastructure Standards Memorandum- Deliverable 5C. The pedestrian classifications for streets helps support pedestrian movement and access to adjacent land use. It is recommended to determine the pedestrian facilities along streets, including the width of the throughway for pedestrians, and the buffer between the vehicle travel way. The recommended classifications in King City, including Multimodal Area, Major Pedestrian, Neighborhood Pedestrian and Local Pedestrian Streets, and Pedestrian Trails.

MULTIMODAL AREA STREET

A Multimodal Area Street reflects the areas of the city where high pedestrian and bicycle activity is expected or planned. All streets in the Multimodal areas shown on Figure 2 are Multimodal Area Streets. Non-vehicle movement takes the highest priority in these areas. Multimodal Area Streets must include a high-quality pedestrian environment, with wide sidewalks and a pedestrian realm that can accommodate high volumes of pedestrian activity.

MAJOR PEDESTRIAN STREET

A Major Pedestrian Street includes corridors linking different parts of the city, and those providing access to Multimodal Areas or Transit Corridors. These are typically located along Arterial or Collector Streets and must include safe, convenient, and attractive facilities for pedestrians.

NEIGHBORHOOD PEDESTRIAN STREET

A Neighborhood Pedestrian Street includes those connecting to Major Pedestrian Streets and those providing access to schools, pedestrian trails, parks, open spaces, and other significant destinations. These are typically located along streets with a low volume of traffic and must include safe and convenient facilities for pedestrians.

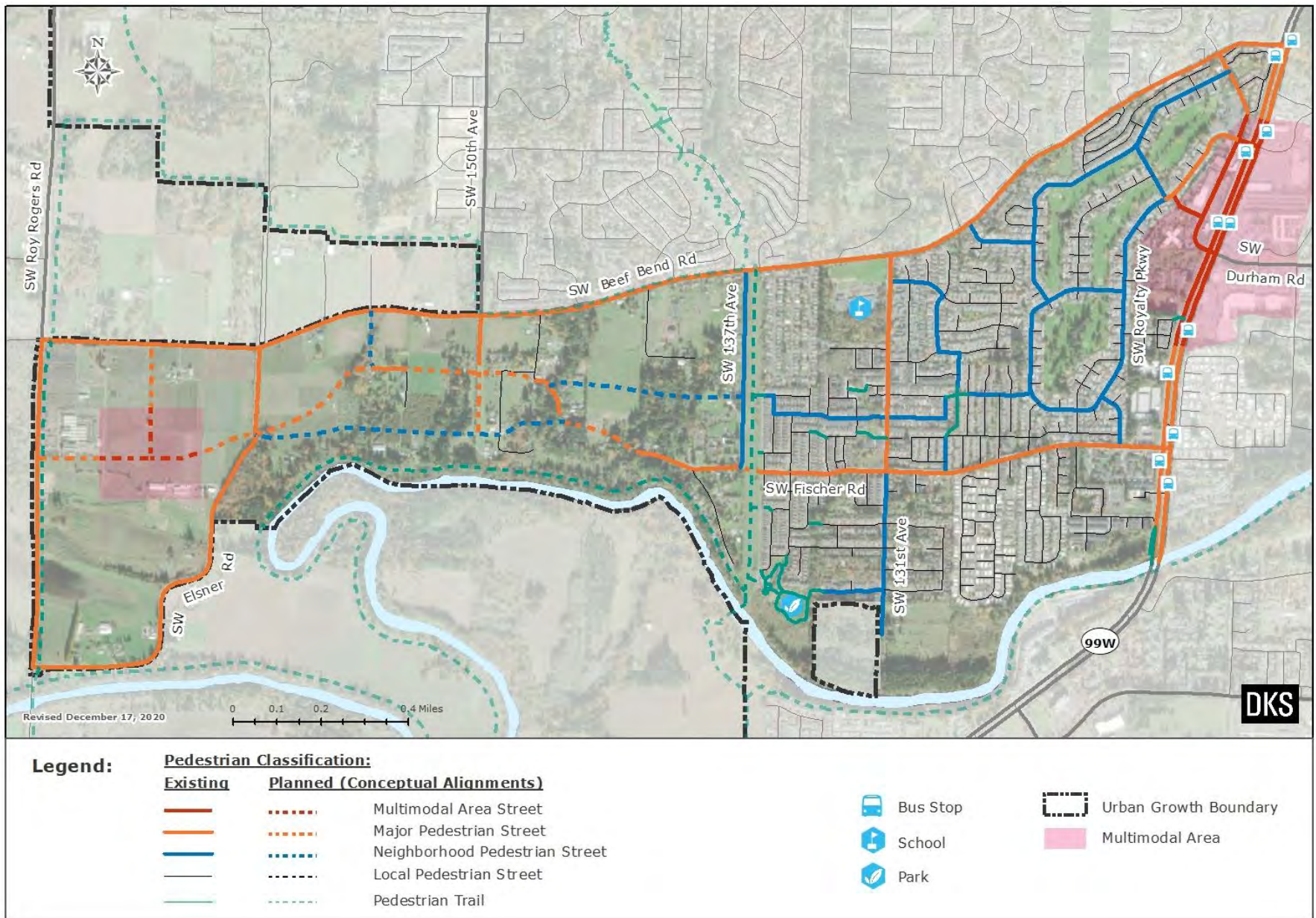
LOCAL PEDESTRIAN STREET

All streets not classified as Multimodal Area, Major Pedestrian, or Neighborhood Pedestrian Streets are classified as Local Pedestrian Streets. Local Pedestrian Streets provide local access and circulation for pedestrians and must include safe and convenient facilities for pedestrians.

PEDESTRIAN TRAIL

Pedestrian Trails can serve both recreational and transportation needs for pedestrians. Some are considered shared use paths and are well suited for citywide pedestrian and bicycle travel, and others offer only recreational opportunities for pedestrians. They can be separated or adjacent to the streets right-of-way and provide linear park facilities for pedestrian travel. Figure 2 shows several planned and conceptual trails around King City, including the Westside, Tualatin River Greenway, Roy Rogers Road and River Terrace Trails.

FIGURE 1: PEDESTRIAN CLASSIFICATIONS



BICYCLE NETWORK

Riding bicycles also plays a key role in the transportation system's ability to support healthy and active lifestyles and provide alternative travel choices to the automobile. While walking tends to be a competitive choice for trips under half a mile, bicycling tends to be suited for longer trips. Bicycle trips can often work well for distances between a half mile and three miles. King City's relatively compact size makes biking a great choice for many trips, with local jobs and housing typically in bikeable proximity. Despite this, only about one percent of King City's commuters currently travel by bicycle². In addition to the work commute trips, bicycle trips are made to and from recreational or shopping areas, schools, or other activity generators. Continuous bicycle connections between all activity generators and arterial/collector roadways are desirable to allow for safe and attractive non-motorized travel options.

The bicycle network in King City, shown in Figure 3, is composed of bike lanes, roadway shoulders, shared roadways, and bicycle paths.

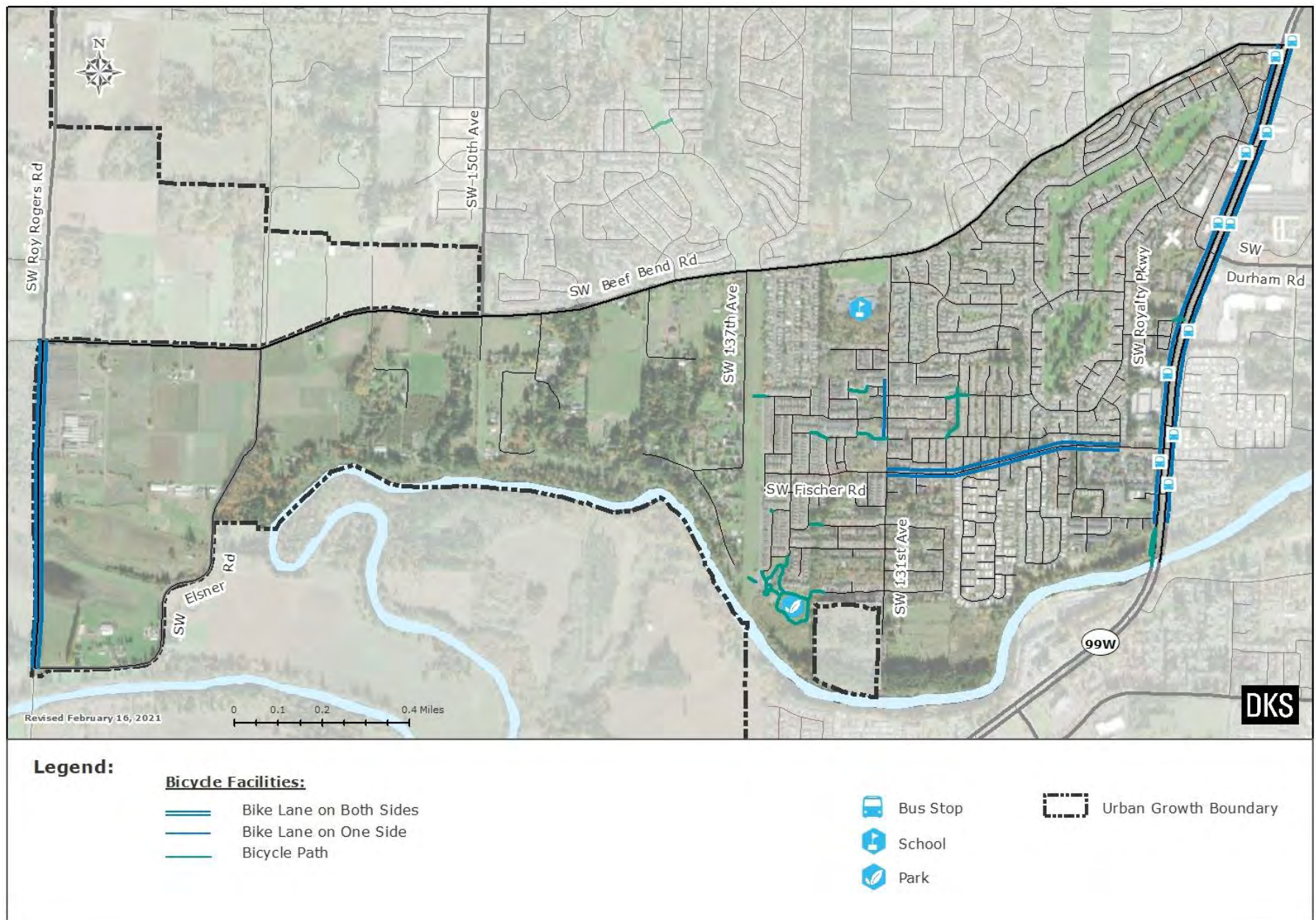
- **Bike lanes** are portions of the roadway designated specifically for bicycle travel via a striped lane and pavement stencils. Standard width for a bicycle lane is six feet. Bike lanes are most appropriate on arterials and collectors, where high traffic volumes and speeds warrant greater separation of the travel modes. Significant segments of continuous bicycle lanes exist along portions of OR 99W and SW Fischer Road, while one side of SW 131st Avenue has a bike lane for a short segment.
- **Shoulder bikeways** are paved with striped shoulders wide enough for bicycle travel. A six-foot paved shoulder is desired to adequately provide for bicyclists, with a four-foot minimum width in constrained areas. Roadways with shoulders less than four feet are considered shared roadways. Some shoulder bikeways are signed to alert motorists to expect bicycle travel along the roadway. A shoulder bikeway exists along the segment of SW Roy Rogers Road between SW Beef Bend Road and SW Elsner Road.
- **Shared roadways** include those on which bicyclists and motorists share the same travel lane. The most suitable roadways for shared bicycle use are those with low speeds (25 mph or less) and low traffic volumes (3,000 vehicles or fewer per day). Shared roadways, often signed as bicycle routes, serve to provide continuity to other bicycle facilities (e.g., bicycle lanes) or can be designated as a preferred route through the community. Common practice is to sign a route with standard Manual on Uniform Traffic Control Devices (MUTCD) green bicycle route signs with directional arrows and/or pavement markings. Shared roadways can have signs that highlight a special route or provide directional information in bicycling minutes or distance. Most local roadways in the City are considered shared roadways, but do not have signs or pavement markings.
- **Bicycle Paths** can serve both recreational and transportation needs. They include shared use paths, which allow for citywide pedestrian and bicycle travel, and short path segments providing accessways between disconnected streets or localized recreational biking opportunities. They can be separated or adjacent to the streets right-of-way and provide linear park facilities for bicycle travel.

² US Census Bureau, 2015-2019 American Community Survey

BICYCLE PARKING

End-of-trip bicycle facilities are a fundamental component of a bicycle network. Lack of safe and secure facilities for either short-term or long-term parking can be an obstacle to promoting bicycle riding. Short-term parking accommodates visitors, customers, and others expecting to depart within two hours. It requires a standard rack, appropriate location and placement, and weather protection. Long-term parking accommodates employees, students, residents, commuters, and others who park for more than two hours. This parking requires a secure, weather-protected manner and location. Short-term bicycle parking is available throughout King City, including at King City Community Park, Deer Creek Elementary School and within the King City Town Center.

FIGURE 3: BICYCLE FACILITIES



BICYCLE CLASSIFICATIONS

The recommended bicycle classifications for King City are shown in Figure 4. For more information, see the Transportation Infrastructure Standards Memorandum- Deliverable 5C. The bicycle classifications for streets helps support the movement of people riding bikes. It is recommended to determine the bicycle facilities along streets, including the type and width. The recommended classifications in King City, including Major Bicycle, Neighborhood Bicycle and Local Bicycle Streets, and Bicycle Paths.

MAJOR BICYCLE STREET

A Major Bicycle Street includes corridors linking different parts of the city, and those providing primary access to Multimodal Areas or Transit Corridors. These are typically located along Arterial or Collector Streets. The bike facilities should be high quality and emphasize safe, convenient, and comfortable bicycle travel, and are often protected or separate from the vehicle travel way.

NEIGHBORHOOD BICYCLE STREET

A Neighborhood Bicycle Street includes those connecting to Major Bicycle Streets and those providing access to schools, bicycle paths, parks, open spaces, and other significant destinations. These routes establish direct and convenient bicycle routes and provide bicycle facility coverage within ¼ of a mile of any given point in the city. The highest quality bike facility should be provided given other street classifications, and may include bicycle lanes, shared roadways (with shared lane markings), bike route wayfinding, traffic volume and speed management, and extra-wide curb lanes.

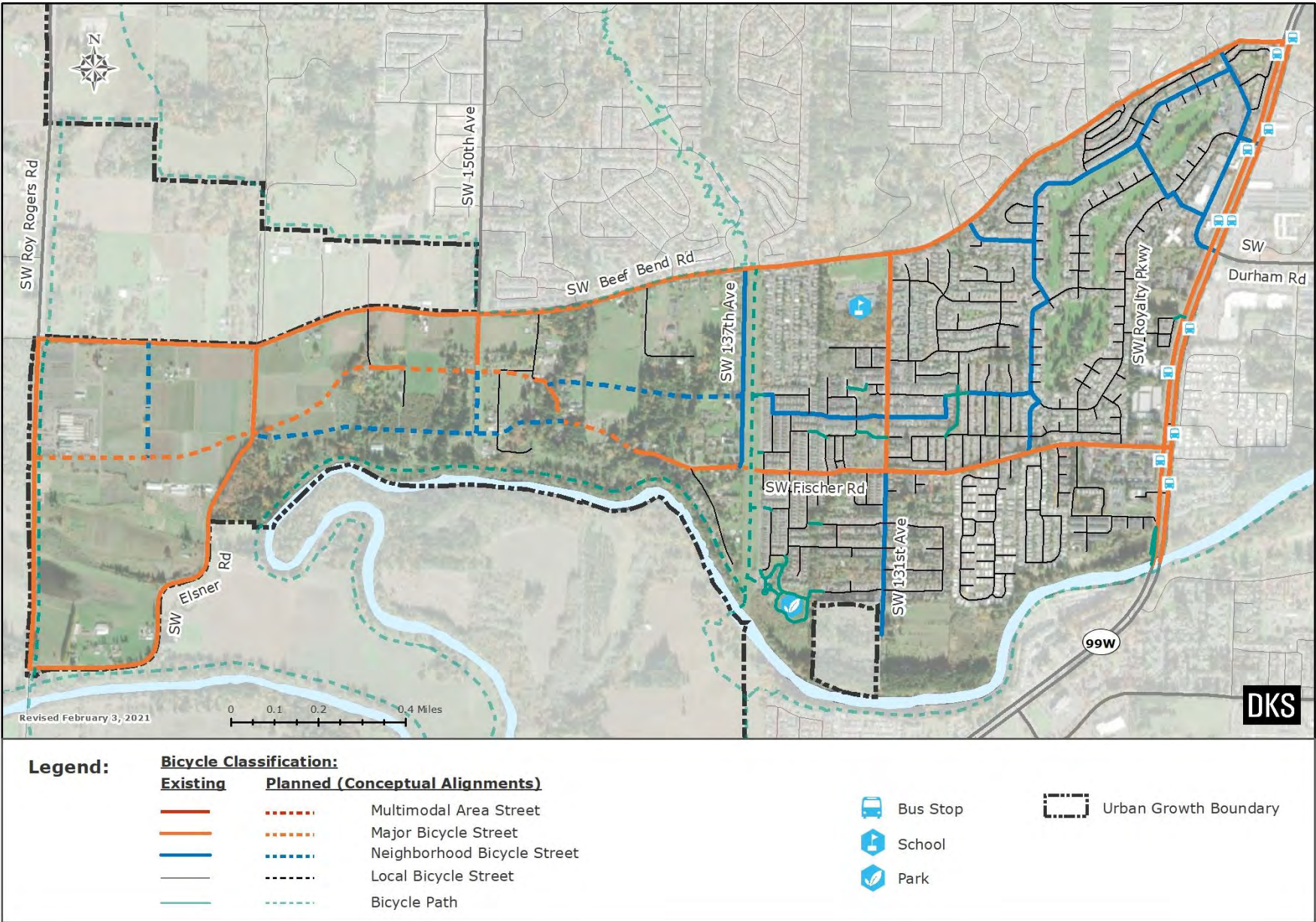
LOCAL BICYCLE STREET

All streets not classified as Major Bicycle, or Neighborhood Bicycle Streets are classified as Local Bicycle Streets. Local Bicycle Streets provide local access and circulation for bicyclists and typically include shared roadways (without shared lane markings).

BICYCLE PATH

Bicycle Paths can serve both recreational and transportation needs. They include shared use paths, which allow for citywide pedestrian and bicycle travel, and short path segments providing accessways between disconnected streets or localized recreational biking opportunities. They can be separated or adjacent to the streets right-of-way and provide linear park facilities for bicycle travel. Figure 4 shows several planned and conceptual bicycle paths around King City, including the Westside, Tualatin River Greenway, Roy Rogers Road and River Terrace Trails.

FIGURE 4: BICYCLE CLASSIFICATIONS



TRANSIT NETWORK

Transit service is provided in King City via three fixed bus routes (see Figure 5), a deviated route service, and an Americans with Disabilities Act (ADA) paratransit service.

FIXED BUS ROUTES

TriMet provides transit service in King City via two fixed bus routes connecting the City with Downtown Portland, Tigard, and Sherwood. The TriMet bus routes include:

- Trimet Route 93 (Tigard/Sherwood) – service 33 times per day during the week and weekend between 4:30 a.m. and 11:30 p.m. headed north and 6:00 a.m. to 1:00 a.m. headed south.
- Trimet Route 94 (Pacific Hwy/Sherwood) – service 17 times per day during the week between 5:40 a.m. and 7:00 p.m. headed north and 7:30 a.m. and 8:30 p.m. headed south. There is no service on the weekends.

Transit riders can transfer to other TriMet routes at the Tigard Transit Center and within Downtown Portland. Bus stops in King City are located along OR 99W near the SW Beef Bend Road, SW Royalty Parkway, SW Durham Road, SW King James Place and SW Fischer Road intersections. Each of the bus-stops are signed, but many lack benches or shelter. A park-and-ride facility that is also served by the fixed bus routes is located along SW Bull Mountain Road, just west of the OR 99W intersection. All TriMet buses are equipped with either a boarding ramp or a lift to allow wheelchair access and include bicycle racks. Riders are permitted to load their bicycle inside the bus only if there's room in one of the designated bike spaces.

Yamhill County Transit also provides a fixed bus route that connects McMinnville to Tigard (Route 44), with stops in King City at the SW Durham Road and SW Fischer Road intersections. It runs nine times per day during the week between the hours of 5:10 a.m. and 7:20 p.m. headed north and 7:50 a.m. and 8:45 p.m. headed south. On Saturday service runs from 7:50 a.m. to 6:05 p.m. headed north and 9:20 a.m. to 7:45 p.m. headed south.

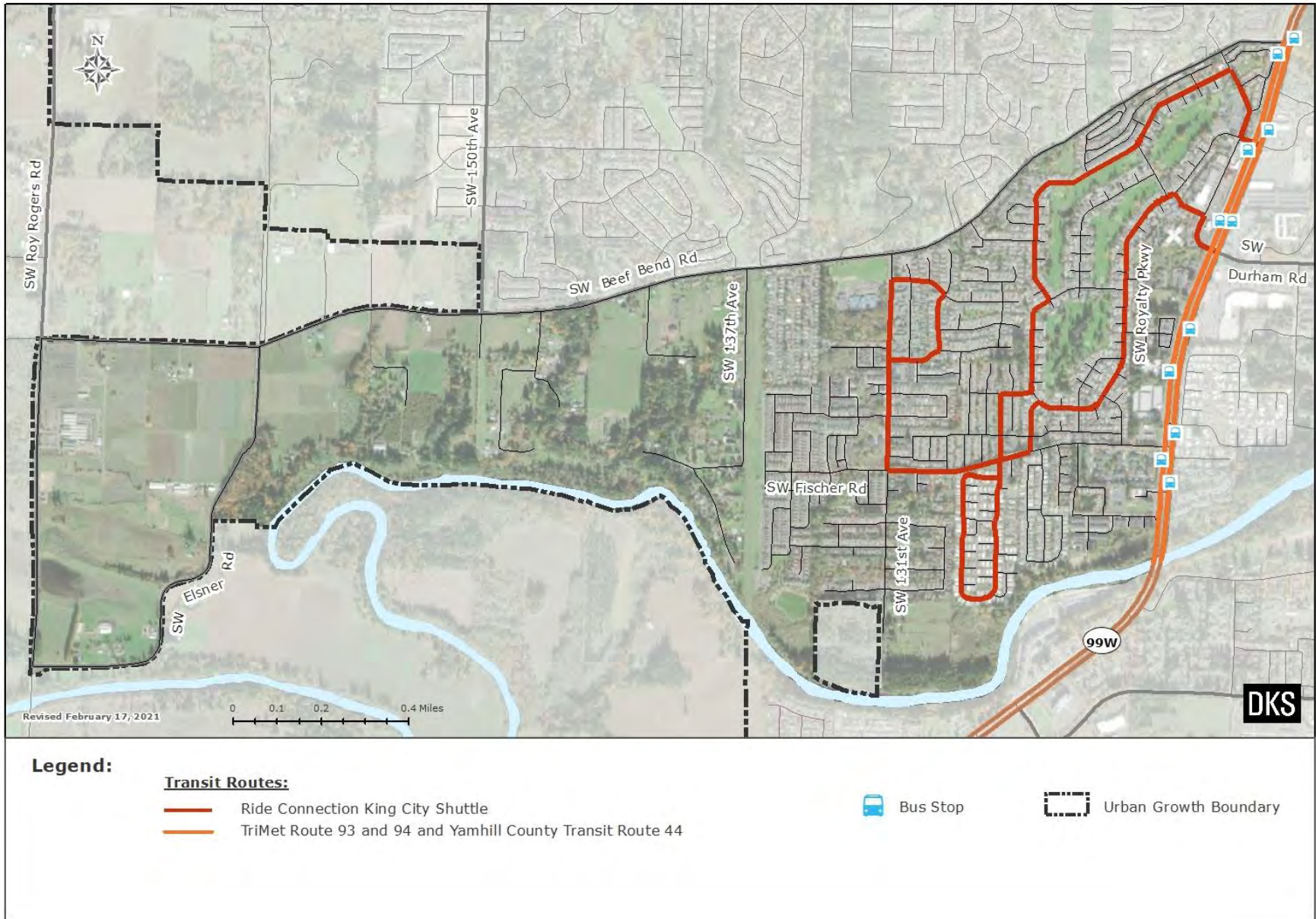
DEVIATED ROUTE SERVICE

Ride Connection also provides deviated route service (buses that run on a route and schedule) via the King City Shuttle. This local service runs Monday through Friday from 9 a.m. - 4 p.m., along a route that connects the King City Town Center with the neighborhoods to the west. This service is free and open to the public (although there is a suggested donation), and transit riders are able to schedule an off-route pick-up or drop-off within ½ mile of the route.

PARATRANSIT SERVICE

TriMet's LIFT paratransit service provides public transportation to persons with disabilities who are unable to use regular fixed route buses. Curb to curb paratransit service, in wheelchair lift equipped minibuses, is available generally between 4:30 a.m. and 1:00 a.m. seven days a week.

FIGURE 5: TRANSIT ROUTES



MOTOR VEHICLE NETWORK

King City streets are generally disconnected and follow an inconsistent pattern of development with large blocks, although the City has required more connectivity in the newest neighborhoods. Street connectivity to the King City Town Center is also limited by the King City Public Golf Course. Major streets that surround King City include OR 99W to the east, SW Beef Bend Road to the north, and SW Roy Rogers Road to the west.

- OR 99W runs north-south at the east end of King City, connecting the City to Tigard and Portland to the north, and Sherwood and McMinnville to the south.
- SW Roy Rogers Road runs north-south at the west end of the City's Urban Growth Boundary, connecting SW Scholls Ferry Road north of the City with OR 99W to the south in Sherwood.
- SW Beef Bend Road runs east-west at the north end of the City, connecting OR 99W with SW Roy Rogers Road.

Key streets that connect to OR 99W and provide access to neighborhoods in King City are SW Royalty Parkway, SW 116th Avenue (SW Durham Avenue) and SW Fischer Road. Key streets that connect to SW Beef Bend Road include SW 116th Avenue, SW 131st Avenue, SW 137th Avenue, SW 150th Avenue and SW Elsner Road, while existing connections to SW Roy Rogers Road are limited to SW Beef Bend Road and SW Elsner Road.

VEHICLE CLASSIFICATIONS

The recommended vehicle classifications for King City are shown in Figure 6. For more information, see the Transportation Infrastructure Standards Memorandum- Deliverable 5C. Vehicle classifications for streets helps support the movement of vehicles. It is recommended to determine the level of mobility, access, and use for vehicles. The vehicle classification system recognizes that individual streets do not act independently, but instead form a network that serves travel needs on a regional, citywide, neighborhood and local level. From highest to lowest intended use, the recommended classifications are Arterial, Collector, Neighborhood, and Local Streets. Streets with higher intended usage generally limit access to adjacent property in favor of more efficient motor vehicle traffic movement (i.e., mobility). Local roadways with lower intended usage have more driveway access and intersections, and generally accommodate shorter trips to nearby destinations.

Arterial Street

Arterial Streets include Major or Minor Arterials. Major Arterial Streets are primarily intended to serve regional traffic movement, while Minor Arterial Streets are intended to serve citywide traffic movement. Safety should be the highest priority on Arterial Streets and separation should be provided between motor vehicles and people walking, and bicycling, and safe multimodal crossings provided to destinations. Arterials provide the primary connection to other Arterial Streets or Collector Streets. Where an Arterial Street intersects with a Neighborhood or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay.

Collector Street

Collector Streets are intended to distribute traffic from Arterials Streets to streets of the same or lower classification. Safety should be the highest priority on Collectors. Where a Collector Street intersects with a Neighborhood or Local Street, access management and/or turn restrictions may be employed to reduce traffic delay.

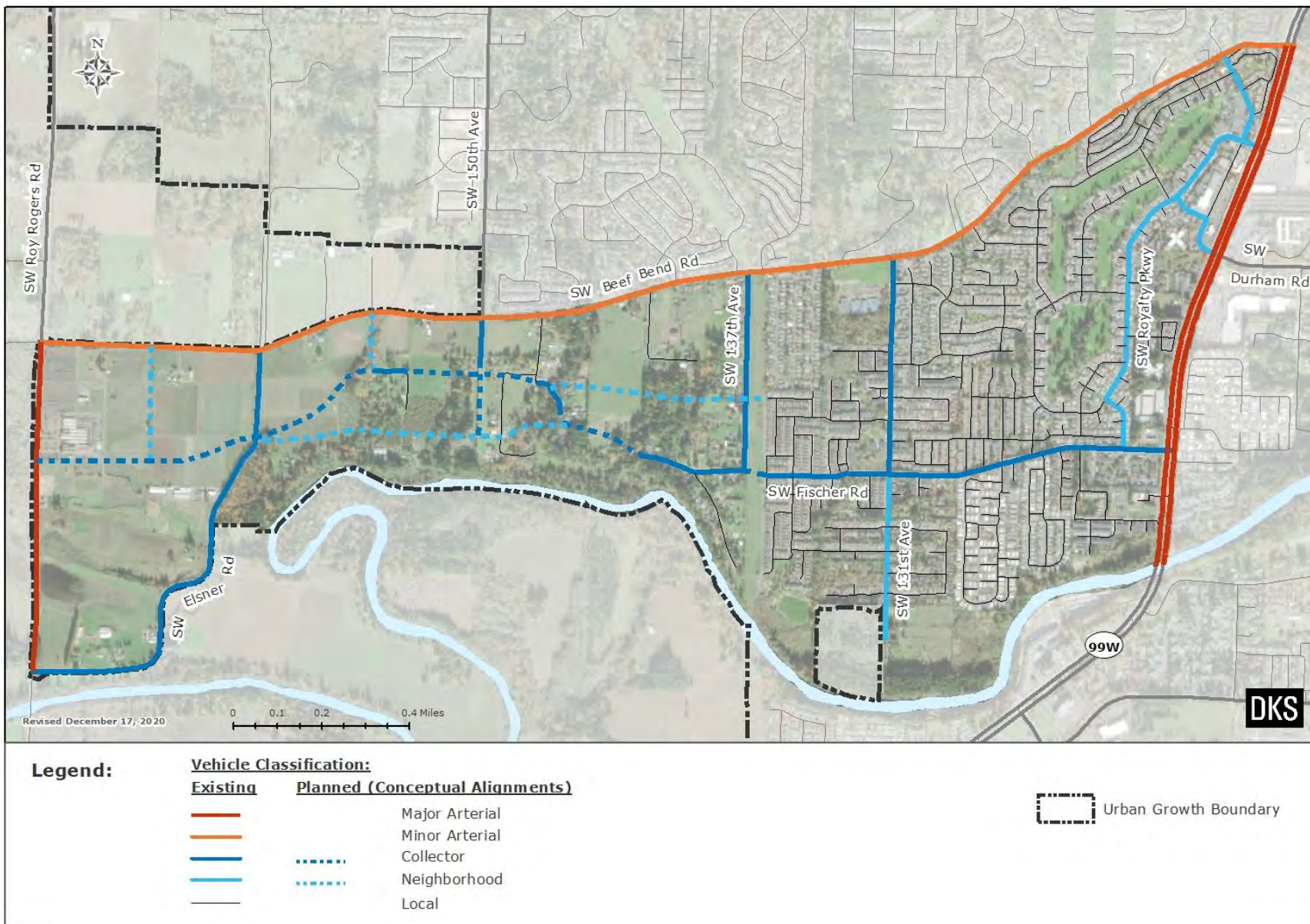
Neighborhood Street

Neighborhood Streets distribute traffic from Arterial or Collector Streets to Local Streets. Neighborhood Streets should maintain slow vehicle operating speeds to accommodate safe use by all modes and through traffic should be discouraged. Where a Neighborhood Street intersects with a higher-classified street, access management and/or turn restrictions may be employed to reduce traffic delay and discourage through traffic.

Local Street

All streets not classified as Arterial, Collector, or Neighborhood Streets are classified as Local Streets. Local Streets provide local access and circulation for traffic, connect neighborhoods, and often function as through routes for pedestrians and bicyclists. Local Streets should maintain slow vehicle operating speeds to accommodate safe use by all modes.

FIGURE 6: VEHICLE CLASSIFICATIONS



FREIGHT NETWORK

Efficient truck movement plays a vital role in the economical movement of raw materials and finished products. The designation of through truck routes provides for this efficient movement, while maintaining neighborhood livability, public safety, and minimizing maintenance costs of the roadway system. Through King City, OR 99W and SW Roy Rogers Road have various freight destinations by the State and Region, as summarized below.

- **State Highway Freight System:** OHP Goal 1, Policy 1C addresses the need to balance the movement of goods and services with other uses. It states that the timeliness of freight movements should be considered when developing and implementing plans and projects on freight routes. Through King City, OR 99W is classified as an Oregon Freight Route and Federal Truck Route.
- **Reduction Review Routes:** ORS 366.215 requires review of all potential actions that will alter, relocate, change or realign a Reduction Review Route that could result in permanent reductions in vehicle-carrying capacity. Reduction of vehicle-carrying capacity means a permanent reduction in the horizontal or vertical clearance of a highway section, by a permanent physical obstruction to motor vehicles located on useable right-of-way subject to Commission jurisdiction, unless such changes are supported by the Stakeholder Forum. If ODOT identifies that an action may result in a reduction of vehicle-carrying capacity, a Stakeholder Forum (consisting of at a minimum, a bicycle representative, pedestrian representative, a trucking industry representative, a mobile home manufacturing representative, an oversize load freight representative, a representative of automobile users, and a representative from any affected city, county or Metropolitan Planning Organization) will be convened to help advise ODOT regarding the effect of the proposed action on the ability to move motor vehicles through a section of highway. Through King City, OR 99W is classified as a Reduction Review Route.
- **Regional Freight Network:** OR 99W is a Main Roadway Route, which connect major activity centers in the region to other areas in Oregon. Roy Rogers Road is a Roadway Connector, which connects other freight facilities, industrial areas, and 2040 centers to a main roadway route.

RAIL NETWORK

There are no existing freight or passenger rail facilities in King City.

AIR NETWORK

The Meyer Riverside Airpark (FAA LID: OG34) is located south of SW Beef Bend Road, near SW 147th Avenue. This is a private use airport.

Regional and international air service for passengers and freight is provided via Portland International Airport (PDX). The airport is located approximately 25 miles (around 30 minutes) to the northeast of King City and is connected via I-5, I-84 and I-205.

WATERWAY NETWORK

King City is bordered by the Tualatin River on the south side of the City. This waterway generally only serves recreational boating needs and is not navigable for marine freight facilities.

PIPELINE NETWORK

Northwest Natural Gas operates a transmission pipeline that runs west of SW Roy Rogers Road. In addition, Kinder-Morgan has a gas pipeline that travels under King City near SW 137th Avenue. There are no other major regional water or oil pipelines within the City limits.

TRANSPORTATION SYSTEM CONDITIONS

The King City TSP employs a performance-based approach, focusing on measurable outcomes of the investments the City chooses to make to the transportation system. The approach allows the City to measure the degree to which its investments support City-wide and regional priorities. In this manner, the City is able to track how its investment decisions impact a set of performance measures through 2040. While the performance measures do not represent the complete picture, they do offer a baseline against which to assess how the policies, investments and planning decisions made in this plan may affect the future. The measures help translate investment decisions to the community priorities of the TSP and also allow the City to show progress towards meeting the regional performance measures in the Metro Regional Transportation Plan.

PERFORMANCE MEASURES

The performance measures serve as the link between TSP goals and plan implementation. This section summarizes the baseline performance evaluation that will be used to compare plan performance with the recommended transportation system projects and programs. Through an evaluation and comparison to baseline performance of the transportation system the City can better understand the extent to which investments in the transportation system will achieve desired outcomes and provide the best return on public investments. Table 1 provides performance measures used for the evaluation, and links them to the TSP goals they support.

TABLE 1: CONNECTION OF PERFORMANCE MEASURES TO TSP GOALS

PERFORMANCE MEASURE	TSP GOALS						
	ACCESSIBILITY AND CONNECTIVITY	SAFETY AND SECURITY	HEALTHY PEOPLE AND ENVIRONMENT	EQUITY	RELIABILITY AND EFFICIENCY	FISCAL RESPONSIBILITY	COLLABORATION
HOW MUCH DO PEOPLE TRAVEL IN THE CITY?							
MILES TRAVELED	●		●	◐	●	●	◐
MODE SHARE	●		●	●	◐	●	◐
HOW EFFICIENT IS TRAVEL IN THE CITY?							
MULTIMODAL LEVEL OF TRAFFIC STRESS	●	●	●	●	◐	◐	◐
CONGESTION	◐	◐	◐	◐	●		◐
HOW EASILY, COMFORTABLY AND DIRECTLY CAN PEOPLE ACCESS DESTINATIONS IN THE CITY?							
SYSTEM COMPLETENESS	●	●	●	●	●	◐	◐
ACCESS TO JOBS	●	◐	●	◐	◐		◐
ACCESS TO COMMUNITY AMENITIES	●	◐	●	◐	◐		◐
ACCESS TO TRANSIT	●	◐	●	◐	◐		◐
HOW SAFE IS TRAVEL IN THE CITY?							
SAFETY	◐	●		◐	◐	◐	◐

Notes:

● = Measure highly connected with achieving goal

◐ = Measure somewhat connected with achieving goal

PERFORMANCE EVALUATION

This section provides the results of the performance measure evaluation for both the existing and the future 2040 Baseline transportation system. This evaluation provides information that will be used to understand the baseline operating characteristics for King City's transportation system, and does not yet reflect the investments and decisions the City will make regarding its future transportation system. The 2040 Baseline scenario assumes the population and employment growth in the City through 2040, does not include any assumed network improvements that will occur with the growth. The impact of these improvements will be assessed with analysis of the Build scenarios that will occur later in the TSP process.

VEHICLE MILES TRAVELED

This measure is used to identify how the transportation investments impact travel by motor vehicles. As shown in Table 2, vehicle miles traveled per capita is expected to increase about 18 percent between 2015 and the 2040, meaning that people are driving more, or for longer distances. However, this represents the baseline condition for 2040 and is reflective of the high amount of growth expected and does not yet reflect the investments and decisions the City will make regarding its future transportation system.

TABLE 2: VEHICLE MILES TRAVELED PER PERSON LIVING WITHIN KING CITY

PM PEAK HOUR VEHICLE MILES TRAVELED	2015 BASE YEAR	2040 BASELINE	CHANGE
KING CITY POPULATION	5,141	14,086	8,945
TOTAL VEHICLE MILES TRAVELED	7,911	25,657	+17,746
VEHICLE MILES TRAVELED PER PERSON	1.54	1.81	+18%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. Based on Vehicle miles traveled (VMT) for each trip beginning or ending in a King City Traffic Analysis Zone (TAZ). For per capita calculations these trip distances are divided by the City population.

TRAVEL MODE SHARE

This measure is used to identify whether the transportation investments will increase non-drive alone mode share (i.e., walking, bicycling, transit and shared ride). Increasing the non-drive alone mode share reduces the impact that each person trip has on the transportation system by shifting users to more space-efficient travel options. The base year (2015) and future Baseline (2040) mode share estimates for King City are summarized in Table 3. Through 2040, the non-single occupant vehicle (SOV) trip share is expected to increase about two percent, as more users are expected to utilize transit, walk, or bike during an average weekday.

TABLE 3: CITYWIDE TRAVEL MODE SHARE

AVERAGE WEEKDAY TRIPS BY MODE	2015 BASE YEAR		2040 BASELINE	
	TRIPS	SHARE	TRIPS	SHARE
DRIVE ALONE TRIPS	12,044	52.4%	17,220	50.4%
SHARED RIDE TRIPS	8,559	37.3%	12,925	37.8%
TRANSIT TRIPS	1,210	5.3%	2,110	6.2%
WALK TRIPS	846	3.7%	1,324	3.9%
BIKE TRIPS	317	1.4%	569	1.7%
TOTAL PERSON TRIPS	22,976		34,148	
TOTAL NON-SOV TRIPS	10,932	47.6%	16,928	49.6%
TOTAL BIKE, WALK, TRANSIT TRIPS	2,373	10.3%	4,003	11.7%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. A trip mode choice analysis step was used to project future mode choice decisions based on the future land use.

MULTIMODAL LEVEL OF TRAFFIC STRESS

Pedestrian and bicycle level of traffic stress (LTS) evaluations provide a quantitative metric to understand a multimodal user's perception of the safety and comfort of the transportation network. This method can be used to understand key gaps and barriers to walking and bicycling which can then be addressed through targeted improvements.

The LTS evaluation generates a ranking between 1 and 4 of the relative safety and comfort of a segment or intersection for bicyclists or pedestrians based on roadway and intersection characteristics (e.g., land use context, number of lanes, travel speed and volume, intersection control, type and width of buffer, and the presence and condition of any bicycle or pedestrian facilities). The LTS rating scale recognizes that as vehicle speeds and volumes increase, enhanced pedestrian and bicycle facilities are needed to maintain a system that is accessible for all users. Refer to the Transportation Infrastructure Standards (Task 5.3; Deliverable 5C) document for more information on the LTS rankings.

Results of the multimodal LTS evaluations are summarized in Table 4, and Figures 7 and 8 for pedestrians and bicyclists respectively. As redevelopment and frontage improvements occur through 2040, the multimodal LTS ratings will improve. Additional pedestrian and bicycle investments and decisions identified through the TSP process will also contribute towards a new, low-stress bicycle and pedestrian network.

Overall, around 60 percent of the pedestrian network facility miles (i.e., edge of each street), and 75 percent of the bicycle network facility miles have a low or moderate level of stress. This is generally representative of the many low volume and low speed streets in the City. However, around 40 percent of the pedestrian network facility miles and 25 percent of the bicycle network facility miles have an extreme or high level of stress. In most cases, these include high speed and high volumes streets (e.g., OR 99W, SW Beef Bend Road, and SW Roy Rogers Road), but also include several streets that lack adequate facilities. Of the extreme or high stress segments, most are along streets with a recommended pedestrian classification of Multimodal Area Street and Major Pedestrian Street, and recommended bicycle classification of Major Bicycle Street. These streets are important for pedestrian and bicycle travel and should be a higher priority for improvement projects with high-quality facilities, and an emphasis on safe, convenient, and comfortable travel for these users.

TABLE 4: MULTIMODAL LEVEL OF TRAFFIC STRESS

MULTIMODAL LEVEL OF TRAFFIC STRESS	PEDESTRIAN NETWORK		BICYCLE NETWORK	
	MILES	SHARE	MILES	SHARE
EXTREME STRESS FACILITY MILES	20.41	36%	10.25	18%
HIGH STRESS FACILITY MILES	2.77	5%	3.92	7%
MODERATE STRESS FACILITY MILES	2.86	5%	2.19	4%
LOW STRESS FACILITY MILES	31.36	55%	41.04	71%
TOTAL FACILITY MILES	57.40	100%	57.40	100%
TOTAL EXTREME OR HIGH STRESS MILES	23.18	40%	14.17	25%
EXTREME OR HIGH STRESS MILES ALONG MAJOR MULTIMODAL STREETS *	12.64	55%	14.01	99%
EXTREME OR HIGH STRESS MILES ALONG OTHER STREETS	10.54	45%	0.16	1%

Notes: * Includes streets with a recommended pedestrian classification of Multimodal Area Street and Major Pedestrian Street, and recommended bicycle classification of Major Bicycle Street.

FIGURE 7: PEDESTRIAN LEVEL OF TRAFFIC STRESS

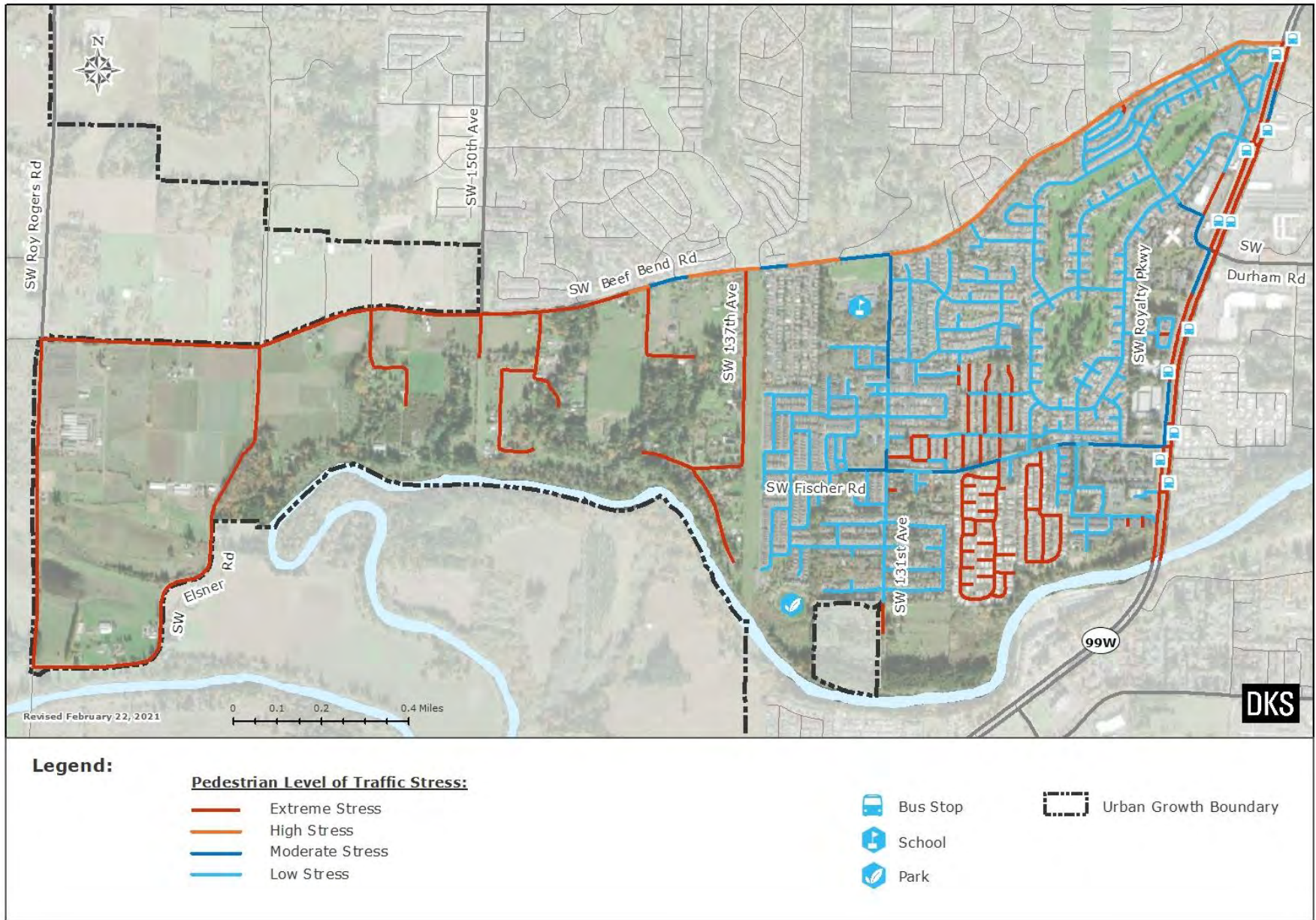
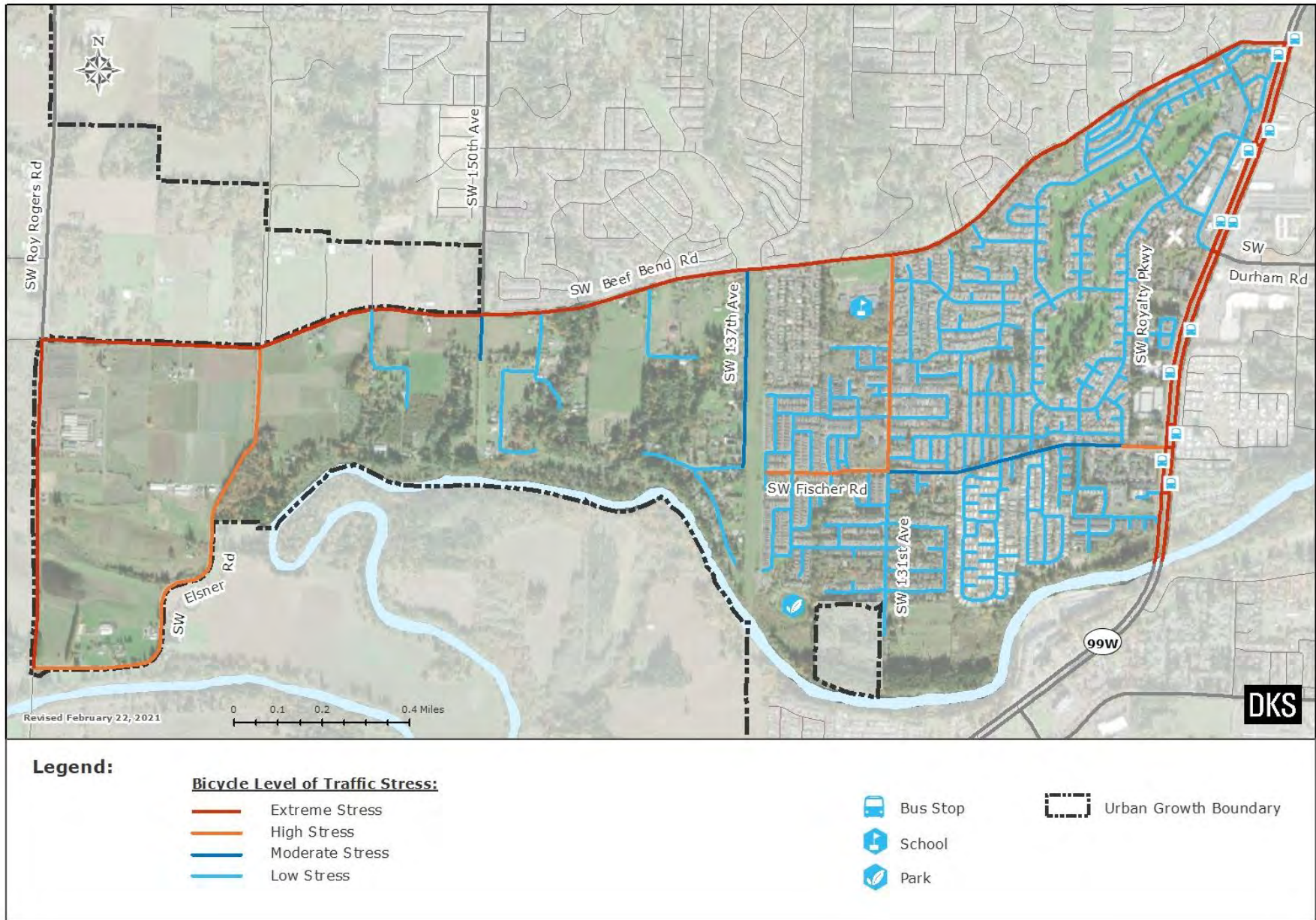


FIGURE 8: BICYCLE LEVEL OF TRAFFIC STRESS



CONGESTION

This measure helps identify the locations along streets that do not meet applicable vehicle congestion thresholds in the weekday pm peak hour. Mobility targets for streets and intersections in King City provide a metric for assessing the impacts of new development on the existing transportation system and for identifying where capacity improvements may be needed. They are the basis for requiring improvements needed to sustain the transportation system as growth and development occur. Refer to the Transportation Infrastructure Standards (Task 5.3; Deliverable 5C) document for more information on the vehicle congestion thresholds.

The method used to gauge operational conditions for motor vehicles in King City are volume-to-capacity (v/c) ratios. The following two thresholds were considered:

- **Severe congestion** defined as streets and intersections operating with a v/c ratio of 0.99 or higher during the P.M. peak hour.
- **Congestion** defined as streets and intersections operating with a v/c ratio between 0.90 and 0.99 during the P.M. peak hour.

Figure 9 and Table 5 summarize the results of the vehicle congestion analysis. Note that the mileage calculation is based on the length of the modeled network link associated with the point of congestion and does not include the length of the queuing that may occur as a result of the congested link. As shown, nearly 13 lane miles, or about 19 percent of the total street network lane miles in King City are expected to be congested by 2040. Of these congested lane miles, about 11 percent are expected to be severely congested by 2040. The severely congested segments are all along Arterials streets, including OR 99W, SW Beef Bend Road and SW Roy Rogers Road.

TABLE 5: VEHICLE CONGESTION

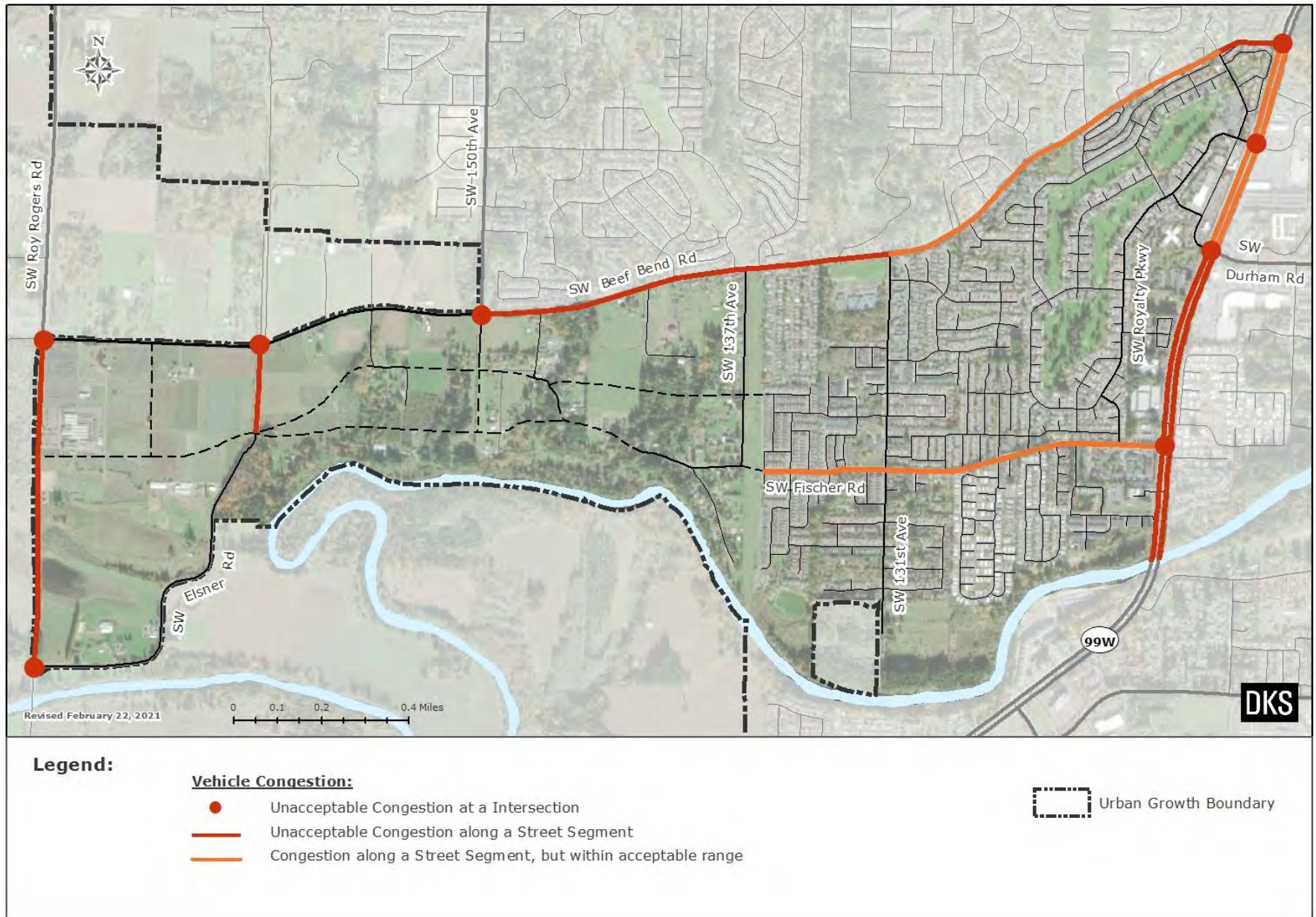
PM PEAK CONGESTED VEHICLE LANE MILES	2015 BASE YEAR		2040 BASELINE	
	TOTAL MILES	SHARE OF TOTAL NETWORK MILES	TOTAL MILES	SHARE OF TOTAL NETWORK MILES
TOTAL LANE MILES	59.87	100%	66.01	100%
TOTAL CONGESTED LANE MILES	1.49	2%	12.72	19%
SEVERELY CONGESTED MILES (>0.99)	0.00	0%	7.02	11%
CONGESTED MILES (0.90 <= V/C <= 0.99)	1.49	2%	5.69	9%

Source: Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. The mileage calculation is based on the length of the modeled network link associated with the point of congestion. It does not include the length of the queuing that may occur as a result of the congested link.

In addition, several intersections along these Arterial streets are expected to be severely congested by 2040. This includes most intersections along OR 99W through King City, and several intersections along SW Beef Bend Road and SW Roy Rogers Road at the west end of the City where high growth is expected through 2040 (see Figure 9). These conditions will likely change as the network connections planned with the growth are completed, however these results do provide a point of comparison to illustrate the overall need for such improvements. The intersection operational results and vehicle traffic volumes are summarized in the appendix. The following intersections are expected to exceed the vehicle congestion threshold by 2040:

- SW Roy Rogers Road/SW Beef Bend Road
- SW Elsner Road/SW Beef Bend Road
- SW 150th Avenue/SW Beef Bend Road
- SW Roy Rogers Road/SW Elsner Road
- OR 99W/SW Beef Bend Road
- OR 99W/SW Royalty Parkway
- OR 99W/SW 116th Avenue/SW Durham Road
- OR 99W/SW Fischer Road

FIGURE 9: VEHICLE CONGESTION (2040 PM PEAK)



SYSTEM COMPLETENESS

This measure evaluates the completeness of the pedestrian and bicycle networks in King City. Table 6 shows the existing completeness of sidewalks and bikeways in the City. This represents the baseline condition and does not yet reflect the investments and decisions the City will make regarding its future transportation system.

Sidewalks include any facilities along all streets, regardless of the quality. As shown in Table 6, sidewalks are about 55 percent complete on all streets citywide and 65 percent complete on streets near transit stops. The east and north parts of the City (i.e., east of SW 131st Avenue and north of SW Fischer Road) near the King City Town Center have sidewalk completion rates over 70 percent, while the rural west part of the City (i.e., west of SW 150th Avenue) has no existing sidewalk coverage. Sidewalks along recommended Major Pedestrian streets are just under 50 percent complete citywide, but roughly 76 percent complete near transit stops.

Bikeways include any facilities along streets with a recommended bicycle classification of Major Bicycle Street and Neighborhood Bicycle Street, regardless of the quality. As shown in Table 6, just over 20 percent of bikeways in the City are complete. The south part of the City (i.e., east of SW 131st Avenue and south of SW Fischer Road) has the highest share of bikeways complete at 55 percent, largely due to the segment of SW Fischer Road with bike lanes. Bikeways along recommended Major Bicycle streets are just over 30 percent complete citywide, and again highest in the south part of the City.

TABLE 6: PEDESTRIAN AND BICYCLE NETWORK COMPLETENESS

EXISTING FACILITY COMPLETENESS	AREA OF KING CITY ***					
	CITYWIDE	NEAR ALL TRANSIT STOPS	WEST KING CITY	NORTH KING CITY	SOUTH KING CITY	EAST KING CITY
SIDEWALKS						
TOTAL MILES COMPLETE *	31.73	27.04	0.00	16.75	4.92	13.65
PERCENT COMPLETE	55%	65%	0%	70%	47%	73%
TOTAL MILES COMPLETE ALONG MAJOR PEDESTRIAN STREETS **	8.07	7.23	0.00	2.98	1.66	3.85
PERCENT COMPLETE	47%	76%	0%	63%	90%	63%
BIKEWAYS						
TOTAL MILES COMPLETE *	5.01	3.51	1.50	0.80	1.43	2.37
PERCENT COMPLETE	22%	26%	25%	11%	55%	27%

EXISTING FACILITY COMPLETENESS	AREA OF KING CITY ***					
	CITYWIDE	NEAR ALL TRANSIT STOPS	WEST KING CITY	NORTH KING CITY	SOUTH KING CITY	EAST KING CITY
TOTAL MILES COMPLETE ALONG MAJOR BICYCLE STREETS	5.01	3.51	1.50	0.80	1.43	2.37
PERCENT COMPLETE	33%	45%	25%	17%	78%	55%

Notes: * Includes all streets for sidewalks; bikeways include streets with a recommended bicycle classification of Major Bicycle Street and Neighborhood Bicycle Street.

** Includes streets with a recommended pedestrian classification of Multimodal Area Street and Major Pedestrian Street, and recommended bicycle classification of Major Bicycle Street.

*** Transit stops includes areas within 1/4 of bus routes; West King City includes areas west of SW 150th Avenue; North includes areas between SW 150th Avenue and SW 131st Avenue; South includes areas east of SW 131st Avenue and south of SW Fischer Road; East includes areas east of SW 131st Avenue and north of SW Fischer Road.

ACCESS TO JOBS

This measure evaluates the number of jobs accessible by driving, bicycling, walking, and transit in the City within the specified commute times for each mode. The following commute times were used:

- **Driving:** Number of jobs reached in 20 minutes.
- **Bicycling:** Number of jobs reached in 20 mins (using average biking speed of 10 miles per hour)
- **Walking:** Number of jobs reached in 15 minutes (using average walking speed of 3 miles per hour)
- **Transit:** Number of jobs reached in 30 mins within 1/4 mile from a transit stop (including 5 minutes at the beginning and 5 minutes at the end of trip)

As shown in Table 7, currently the average household in King City has access to about 140,000 jobs when driving, 1,000 when using transit, 37,000 via a bike ride, and about 1,500 when walking. Job accessibility by non-driving modes increases in the City the further east a household is located, mainly due to the better transit service and shorter distances to nearby employment. By 2040, the average household in the City will have access to about 40,000 more jobs when driving, but slightly fewer jobs when utilizing non-driving modes. This is largely a result of the high growth forecasted for the west end of the City, with future residents of this area being further than households at the north, south, and east sides of the City from other nearby employment areas. Households in these areas of the City will see an increase in jobs accessible by all modes. It should also be noted that the 2040 Baseline scenario does not include any assumed network improvements that will occur associated with growth in the City, including potential expansion of

transit service further west through the City. The impact of these improvements will be assessed with analysis of the Build scenarios that will occur later in the TSP process.

TABLE 7: ACCESS TO JOBS FROM KING CITY BY TRAVEL MODE

JOBS ACCESSIBLE (BY AVERAGE HOUSEHOLD)	AREA OF KING CITY **				
	CITYWIDE	WEST KING CITY	NORTH KING CITY	SOUTH KING CITY	EAST KING CITY
2015 BASE YEAR					
BY MOTOR VEHICLE	141,948	122,058	132,544	137,884	159,226
BY TRANSIT	1,048	0	476	1,331	1,664
BY BIKING	36,939	6,599	25,878	41,335	49,921
BY WALKING	1,779	322	1,254	1,441	2,840
2040 BASELINE*					
BY MOTOR VEHICLE	183,162	168,843	184,030	189,748	218,092
BY TRANSIT	944	0	924	2,200	2,751
BY BIKING	33,198	10,189	37,409	57,165	69,951
BY WALKING	1,483	660	1,481	2,054	3,464
CHANGE (2040-2015)					
BY MOTOR VEHICLE	41,214	46,785	51,486	51,864	58,866
BY TRANSIT	-104	0	448	869	1,086
BY BIKING	-3,741	3,590	11,531	15,830	20,030
BY WALKING	-297	338	227	613	624

Source: The projections and distribution of employment is based on underlying data and assumptions regarding growth for employment in the Washington County 2015 and 2040 Westside Focus Area Travel Demand Models. The projections of travel distances are based on ArcGIS network analysis. Travel times are based on the P.M. peak hour.

Notes: * The 2040 Baseline scenario does not include any assumed network improvements that will occur associated with growth in the City. The impact of these improvements will be assessed with analysis of the Build scenarios that will occur later in the TSP process.

** West King City includes areas west of SW 150th Avenue; North includes areas between SW 150th Avenue and SW 131st Avenue; South includes areas east of SW 131st Avenue and south of SW Fischer Road; East includes areas east of SW 131st Avenue and north of SW Fischer Road.

ACCESS TO COMMUNITY AMENITIES

This measure evaluates the number of community amenities accessible by bicycling, walking, and transit in the City within the specified travel times for each mode. The following travel times were used:

- **Bicycling:** Number of community amenities reached in 15 mins (using average biking speed of 10 miles per hour)
- **Walking:** Number of community amenities reached in 10 minutes (using average walking speed of 3 miles per hour)
- **Transit:** Number of community amenities reached in 20 mins within 1/4 mile from a transit stop (including 5 minutes at the beginning and 5 minutes at the end of trip)

Community amenities include parks, civic (e.g., schools, libraries, community centers), essential retail and services (e.g., grocery stores, pharmacies) and medical uses. As shown in Table 8, currently the average household in King City has access to about 6 community amenities when using transit, 12 when biking and 2 when walking. Access to community amenity increases in the City the further east a household is located, mainly due to the better transit service and shorter distances to nearby services in the King City Town Center.

The 2040 Baseline scenario assumes planned parks associated with growth in and around the west end of the City. No additional community amenities were assumed beyond these planned parks. As shown in Table 8, the average household in the west end of the City will have access to more services when walking and biking due to this assumption. Transit service expansion to the west was not assumed, thus no change to community amenity accessibility via transit was estimated for all areas of the City. Although it is worth noting that the average household in the City will have access to fewer community amenities when using transit due to the high growth at the west end of the City weighting the overall average. The average household in the north, south, and east sides of the City will have access to more services when biking, but not when walking by 2040. This is due to the travel times to the planned parks at the west end of the City being outside of the walking distance, but not the biking distance for the average household in these areas.

TABLE 8: ACCESS TO COMMUNITY AMENITIES

COMMUNITY AMENITIES ACCESSIBLE (BY AVERAGE HOUSEHOLD)	AREA OF KING CITY **				
	CITYWIDE	WEST KING CITY	NORTH KING CITY	SOUTH KING CITY	EAST KING CITY
2015 BASE YEAR					
BY TRANSIT	6	0	4	6	8
BY BIKING	12	1	11	11	13
BY WALKING	2	0	1	0	4
2040 BASELINE*					
BY TRANSIT	3	0	4	6	8
BY BIKING	14	9	17	15	16
BY WALKING	2	2	1	0	4
CHANGE (2040-2015)					
BY TRANSIT	-3	0	0	0	0
BY BIKING	2	8	6	4	3
BY WALKING	0	2	0	0	0

Source: The projections of travel distances are based on ArcGIS network analysis. Travel times are based on the P.M. peak hour.

Notes: * The 2040 Baseline scenario assumes planned parks associated with growth in and around the City. No additional community amenities were assumed beyond the planned parks.

** West King City includes areas west of SW 150th Avenue; North includes areas between SW 150th Avenue and SW 131st Avenue; South includes areas east of SW 131st Avenue and south of SW Fischer Road; East includes areas east of SW 131st Avenue and north of SW Fischer Road.

ACCESS TO TRANSIT

This measure evaluates the number and percent of households with access to transit service. It includes all households within 1/4 mile of the bus stops along the TriMet routes that currently run along OR 99W and areas of the City within 1/4 mile of the King City Shuttle Route.

As shown in Table 9, currently about 13 percent of the total households in the City have access to TriMet routes. These households are located near OR 99W in the south and east parts of the City, accounting for 20 and 25 percent of households in these areas respectively. About 77 percent of households in the City have access to the King City Shuttle Route, including all households in the east end of the City (i.e., King City Town Center), and most households in the north and south parts of the City. No households in the west part of the City have transit access, although the area currently only represents a small portion of total households in the City.

By 2040, about 6 percent of the total households in the City will have access to TriMet routes, representing about half of the share today. In addition, only about 44 percent of households will have access to the King City Shuttle Route, down from 77 percent today. Since no expansion of transit service was assumed for the 2040 Baseline scenario, and with a high amount of household growth forecasted for the west end of the City where no current transit service is available, the overall Citywide transit accessibility is weighted downward. Despite this, more households in the north, south, and east ends of the City will be within 1/4 mile of the existing transit service by 2040. The impact on accessibility resulting from the potential expansion of transit service further west through the City will be assessed with analysis of the Build scenarios later in the TSP process.

TABLE 9: ACCESS TO TRANSIT

TRANSIT ACCESS (BY TOTAL HOUSEHOLDS)	AREA OF KING CITY **				
	CITYWIDE	WEST KING CITY	NORTH KING CITY	SOUTH KING CITY	EAST KING CITY
2015 BASE YEAR					
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	361	0	0	142	219
PERCENT OF HOUSEHOLDS	13%	0%	0%	20%	25%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	2,201	0	757	570	874
PERCENT OF HOUSEHOLDS	77%	0%	60%	80%	100%
2040 BASELINE *					
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	387	0	0	158	229
PERCENT OF HOUSEHOLDS	6%	0%	0%	20%	25%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	3,068	0	1,520	634	915
PERCENT OF HOUSEHOLDS	44%	0%	60%	80%	100%
CHANGE (2040-2015)					
HOUSEHOLDS WITHIN 1/4 MILE OF A TRIMET BUS STOP	26	0	0	16	10
PERCENT OF HOUSEHOLDS	-7%	0%	0%	0%	0%
HOUSEHOLDS WITHIN 1/4 MILE OF THE KING CITY SHUTTLE ROUTE	868	0	763	64	41
PERCENT OF HOUSEHOLDS	-33%	0%	0%	0%	0%

Source: The projections of travel distances are based on ArcGIS network analysis.

Notes: * The 2040 Baseline scenario does not include any assumed transit network improvements. The impact of these improvements will be assessed with analysis of the Build scenarios that will occur later in the TSP process.

** West King City includes areas west of SW 150th Avenue; North includes areas between SW 150th Avenue and SW 131st Avenue; South includes areas east of SW 131st Avenue and south of SW Fischer Road; East includes areas east of SW 131st Avenue and north of SW Fischer Road.

SAFETY

This measure monitors the safety of travel in the City. It will be used to track collision data over 5-year periods to provide trends related to total vehicle, pedestrian, and bicyclist collisions, fatal and severe injury collisions and total fatalities and severe injuries. Figure 10 and Table 10 summarizes data for the 5-year period between 2014 and 2018, with 384 collisions occurring in King City. Of these collisions, 9 involved a pedestrian, 2 involved a bicyclist, and 373 involved a vehicle or multiple vehicles. All of the pedestrian collisions occurred along OR 99W, while the bicycle collisions occurred along SW Roy Rogers Road and SW Royalty Parkway. There were three fatalities, all pedestrians, and 8 severe injuries, two of which were pedestrians. The fatalities occurred along OR 99W, near the SW Fischer Road intersection, with the pedestrian at fault in two of them, and the vehicle at fault in the third.

TABLE 10: COLLISION SUMMARY IN KING CITY

	ALL COLLISIONS	COLLISIONS INVOLVING VEHICLE(S) ONLY	COLLISIONS INVOLVING PEDESTRIANS	COLLISIONS INVOLVING BICYCLISTS
TOTAL COLLISIONS (2014 TO 2018)	384	373	9	2
COLLISIONS WITH FATALITIES	3	0	3	0
FATALITIES	3	0	3	0
COLLISIONS WITH SEVERE INJURIES	8	6	2	0
SEVERE INJURIES	8	6	2	0

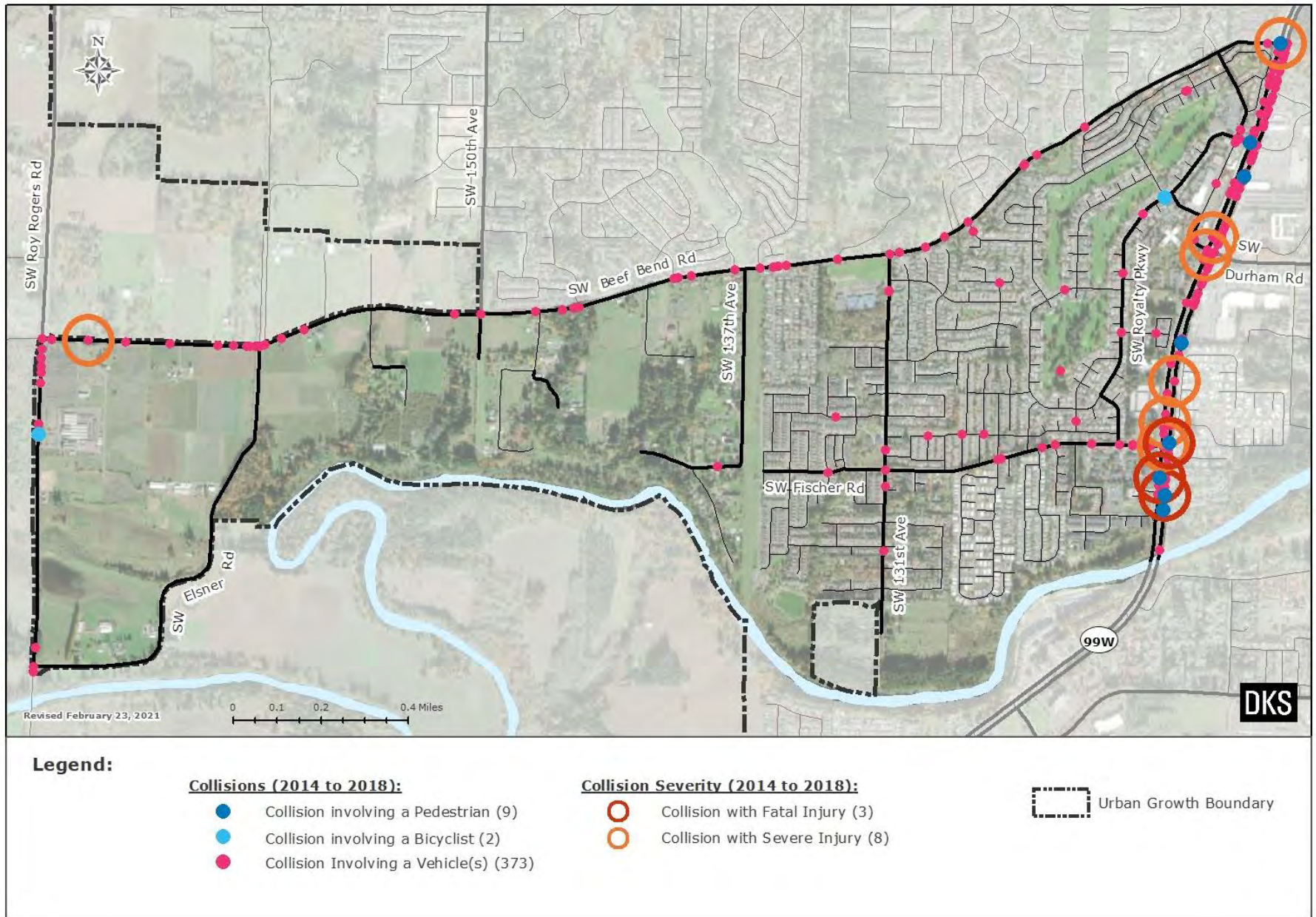
Source: ODOT Crash Analysis and Reporting Unit. Reported collision data from 2014 to 2018.

In addition, a safety analysis was completed for streets in King City. This included an analysis of collision rates at intersections and along street segments, and an identification of any top 10% ODOT Safety Priority Index System (SPIS) sites in the City. The result of this analysis is summarized below, with full details provided in the appendix.

The entire segment of OR 99W through King City exceeded the statewide collision rate for similar facilities, and the following intersections were identified as safety focus areas, and warrant further review when TSP solutions are considered:

- OR 99W/SW Beef Bend Road
- OR 99W/SW 116th Avenue/SW Durham Road
- OR 99W/SW Fischer Road

FIGURE 10: COLLISIONS IN KING CITY (2014 TO 2018)



KEY NETWORK RECOMMENDATIONS

Key recommendations from the evaluation of the existing and future no-build transportation system are summarized below. These recommendations provide guidance to help establish areas of focus for future investments to build upon the positive attributes and address the shortcomings of the baseline transportation system.

PEDESTRIAN NETWORK RECOMMENDATIONS

- Develop a Citywide low-stress walking network that corresponds with the recommended pedestrian classifications.
- Increase low stress pedestrian facility miles, while decreasing extreme or high stress miles through new or enhanced existing facilities.
- Increase the completeness of the Citywide pedestrian network, with a focus along Multimodal area and Major Pedestrian Streets.
- Install ADA compliant pedestrian curb ramps at all intersections.
- Evaluate potential protected crossing opportunities along major streets, including OR 99W and SW Beef Bend Road.
- Review locations of pedestrian collisions for potential improvements.

BICYCLE NETWORK RECOMMENDATIONS

- Develop a Citywide low-stress bicycle network that corresponds with the recommended pedestrian classifications.
- Increase low stress bicycle facility miles, while decreasing extreme or high stress miles through new or enhanced existing facilities.
- Increase the completeness of the Citywide bicycle network, with a focus along Major Bicycle Streets.
- Evaluate potential protected crossing opportunities along major streets, including OR 99W and SW Beef Bend Road.
- Review locations of bicycle collisions for potential improvements.

TRANSIT NETWORK RECOMMENDATIONS

- Increase the completeness of pedestrian and bicycle facilities near transit stops.
- Evaluate potential improved crossing opportunities on OR 99W near existing transit stops and consider options to relocate stops.
- Consider potential alignments for transit expansion and ensure network designs that can adequately serve it.
- Focus on opportunities to improve transit stop amenities (e.g., shelters, benches).

VEHICLE NETWORK RECOMMENDATIONS

- Decrease the amount of severely congested and congested lane miles through strategic vehicle network improvements, and investments in non-driving modes (e.g., expanded transit service).

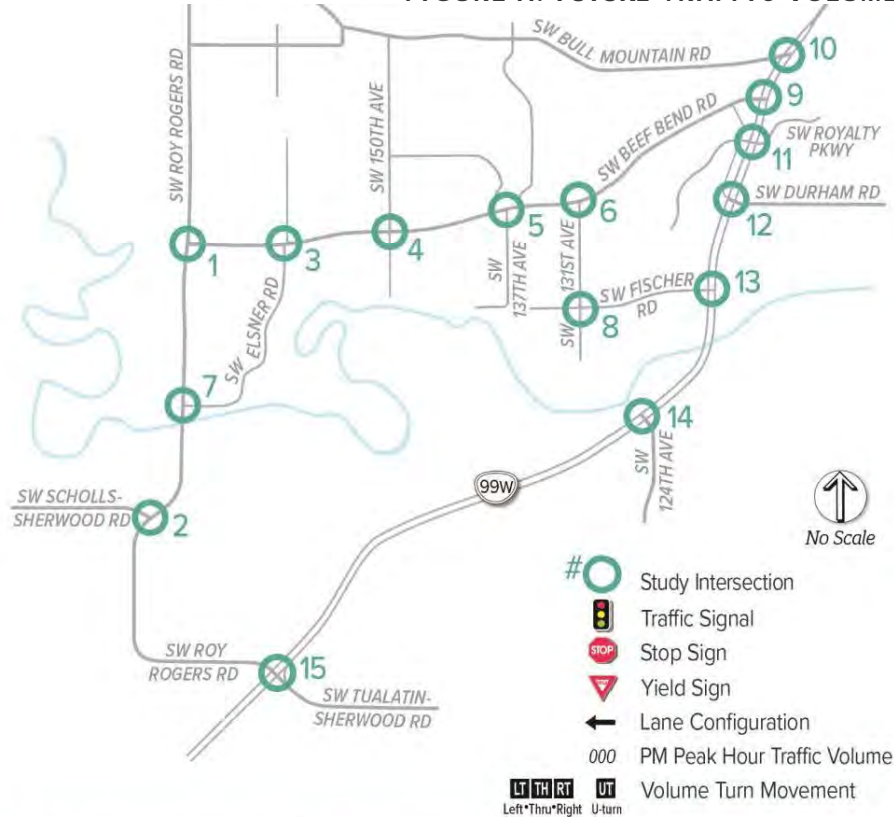
- Explore improvements at intersections along Arterial streets that are expected to be severely congested.
- Explore improvements along OR 99W to address identified safety focus areas.
- Improve connectivity of streets in the City through implementation of recommended transportation facility and access spacing standards.

APPENDIX FOR TRANSPORTATION EXISTING CONDITIONS AND NEEDS REPORT

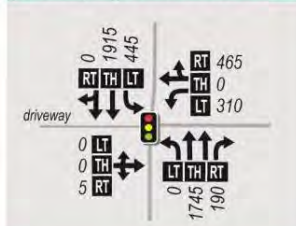
Contents:

- Future Traffic Volumes
- Existing (2020) Intersection Operations
- Future Baseline (2040) Intersection Operations
- HCM Reports
- Safety Analysis

FIGURE A: FUTURE TRAFFIC VOLUMES



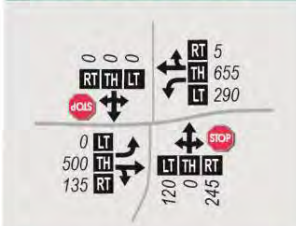
1. SW Roy Rogers Rd/SW Beef Bend Rd



2. SW Roy Rogers Rd/SW Scholls-Sherwood Rd



3. SW Elsnor Rd/SW Beef Bend Rd



4. SW 150th Ave/SW Beef Bend Rd



5. SW 137th Ave/SW Beef Bend Rd



6. SW 131st Ave/SW Beef Bend Rd



7. SW Roy Rogers Rd/SW Elsnor Rd



8. SW 131st Ave/SW Beef Bend Rd



9. OR 99W/SW Beef Bend Rd



10. OR 99W/SW Bull Mountain Rd



11. OR 99W/SW Royalty Pkwy



12. OR 99W/SW 116th Ave/SW Durham Rd



13. OR 99W/SW Fischer Rd



14. OR 99W/SW 124th Ave



15. OR 99W/SW Roy Rogers Rd



TABLE A: EXISTING (2020) INTERSECTION OPERATIONS

#	STUDY INTERSECTION	JURISDICTION	CONTROL	PERFORMANCE MEASURE ¹	LOS	DELAY	V/C
1	SW Roy Rogers Road/SW Beef Bend Road	County	Signal	0.99	A	6	0.83
2	SW Roy Rogers Road/SW Scholls-Sherwood Road	County	Signal	0.99	B	16	0.79
3	SW Elsner Road/SW Beef Bend Road	County	Two-Way Stop Control	0.99	A/B	8/12	0.29/0.14
4	SW 150 th Avenue/SW Beef Bend Road	County	All-Way Stop Control	0.99	C	20	0.72
5	SW 137 th Avenue/SW Beef Bend Road	County	Two-Way Stop Control	0.99	A/B	8/13	0.38/0.02
6	SW 131 st Avenue/SW Beef Bend Road	County	Signal	0.99	A	10	0.58
7	SW Roy Rogers Road/SW Elsner Road	County	Two-Way Stop Control	0.99	B/F	11/129	0.79/0.23
8	SW 131 st Avenue/SW Fischer Road	King City	All-Way Stop Control	0.99	C	17	0.65
9	OR 99W/SW Beef Bend Road	ODOT	Signal	0.99	C	24	0.90
10	OR 99W/SW Royalty Parkway	ODOT	Signal	1.10	D	41	0.94
11	OR 99W/SW 116 th Avenue/SW Durham Road	ODOT	Signal	1.10	F	91	1.05
12	OR 99W/SW Fischer Road	ODOT	Signal	0.99	E	72	1.13
13	OR 99W/SW 124 th Avenue	ODOT	Signal	0.99	C	28	0.98
14	OR 99W/SW Roy Rogers Road	ODOT	Signal	0.99	E	70	0.99
15	OR 99W/SW Bull Mountain Road	ODOT	Signal	0.99	C	30	0.95


















TABLE B: FUTURE BASELINE (2040) INTERSECTION OPERATIONS

#	STUDY INTERSECTION	JURISDICTION	CONTROL	PERFORMANCE MEASURE ¹	LOS	DELAY	V/C
1	SW Roy Rogers Road/SW Beef Bend Road	County	Signal	0.99	A	9.8	0.88
2	SW Roy Rogers Road/SW Scholls-Sherwood Road	County	Signal	0.99	B	18.4	0.88
3	SW Elsner Road/SW Beef Bend Road	County	Two-Way Stop Control	0.99	B/F	11/1562	0.42/ 4.27
4	SW 150 th Avenue/SW Beef Bend Road	County	All-Way Stop Control	0.99	F	398.5	1.89
5	SW 137 th Avenue/SW Beef Bend Road	County	Two-Way Stop Control	0.99	A/C	9/17	0.65/0.06
6	SW 131 st Avenue/SW Beef Bend Road	County	Signal	0.99	B	18.0	0.86
7	SW Roy Rogers Road/SW Elsner Road	County	Two-Way Stop Control	0.99	C/F	22/532	0.69/ 1.81
8	SW 131 st Avenue/SW Fischer Road	King City	All-Way Stop Control	0.99	D	30	0.85
9	OR 99W/SW Beef Bend Road	ODOT	Signal	0.99	E	71.2	1.15
10	OR 99W/SW Royalty Parkway	ODOT	Signal	1.10	F	81.4	1.10
11	OR 99W/SW 116 th Avenue/SW Durham Road	ODOT	Signal	1.10	F	134.3	1.13
12	OR 99W/SW Fischer Road	ODOT	Signal	0.99	F	100	1.23
13	OR 99W/SW 124 th Avenue	ODOT	Signal	0.99	C	30	1.03
14	OR 99W/SW Roy Rogers Road	ODOT	Signal	0.99	F	91	1.12
15	OR 99W/SW Bull Mountain Road	ODOT	Signal	0.99	E	76.3	1.22

HCM 6th Signalized Intersection Summary

6: Roy Rogers & Beef Bend

03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	1	162	0	282	0	978	88	246	1112	0
Future Volume (veh/h)	0	0	1	162	0	282	0	978	88	246	1112	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	0	1856	0	1885	1841	1856	1841	1900
Adj Flow Rate, veh/h	0	0	1	182	0	317	0	1099	99	276	1249	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	0	0	0	2	0	3	0	1	4	3	4	0
Cap, veh/h	0	0	3	0	0	0	0	1349	1068	398	1592	0
Arrive On Green	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.72	0.69	0.08	0.86	0.00
Sat Flow, veh/h	0	0	1610		0		0	1885	1528	1767	1841	0
Grp Volume(v), veh/h	0	0	1		0.0		0	1099	99	276	1249	0
Grp Sat Flow(s),veh/h/ln	0	0	1610				0	1885	1528	1767	1841	0
Q Serve(g_s), s	0.0	0.0	0.0				0.0	23.8	1.2	2.2	17.1	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0				0.0	23.8	1.2	2.2	17.1	0.0
Prop In Lane	0.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	3				0	1349	1068	398	1592	0
V/C Ratio(X)	0.00	0.00	0.37				0.00	0.81	0.09	0.69	0.78	0.00
Avail Cap(c_a), veh/h	0	0	215				0	2584	2069	843	2523	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	29.8				0.0	5.8	2.9	12.7	1.7	0.0
Incr Delay (d2), s/veh	0.0	0.0	28.7				0.0	1.5	0.0	0.8	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0				0.0	2.5	0.1	2.3	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	58.6				0.0	7.3	3.0	13.5	2.8	0.0
LnGrp LOS	A	A	E				A	A	A	B	A	A
Approach Vol, veh/h	1						1198			1525		
Approach Delay, s/veh	58.6						7.0			4.7		
Approach LOS	E						A			A		
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	8.9	46.8		4.1		55.8						
Change Period (Y+Rc), s	4.0	6.0		4.0		6.0						
Max Green Setting (Gmax), s	20.0	80.0		8.0		80.0						
Max Q Clear Time (g_c+I1), s	4.2	25.8		2.0		19.1						
Green Ext Time (p_c), s	0.2	15.0		0.0		20.6						
Intersection Summary												
HCM 6th Ctrl Delay			5.7									
HCM 6th LOS			A									
Notes												

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	333	1	7	435	1	9	0	62	0	0	0
Future Vol, veh/h	0	333	1	7	435	1	9	0	62	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	370	1	8	483	1	10	0	69	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	484	0	0	372	0	0	872	872	372	905	872	484
Stage 1	-	-	-	-	-	-	372	372	-	500	500	-
Stage 2	-	-	-	-	-	-	500	500	-	405	372	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1089	-	-	1198	-	-	273	291	674	260	291	587
Stage 1	-	-	-	-	-	-	653	622	-	557	546	-
Stage 2	-	-	-	-	-	-	557	546	-	626	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1089	-	-	1197	-	-	271	288	673	232	288	587
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	288	-	232	288	-
Stage 1	-	-	-	-	-	-	652	621	-	557	541	-
Stage 2	-	-	-	-	-	-	552	541	-	562	621	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			12.4			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	566	1089	-	-	1197	-	-	-				
HCM Lane V/C Ratio	0.139	-	-	-	0.006	-	-	-				
HCM Control Delay (s)	12.4	0	-	-	8	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	-				

Intersection

Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	81	314	0	1	390	80	0	0	1	75	0	53
Future Vol, veh/h	81	314	0	1	390	80	0	0	1	75	0	53
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	2	0	0	2	1	0	0	0	6	0	4
Mvmt Flow	92	357	0	1	443	91	0	0	1	85	0	60
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	16.7	19.8	9.1	11.3
HCM LOS	C	C	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	21%	0%	59%
Vol Thru, %	0%	79%	83%	0%
Vol Right, %	100%	0%	17%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	1	395	471	128
LT Vol	0	81	1	75
Through Vol	0	314	390	0
RT Vol	1	0	80	53
Lane Flow Rate	1	449	535	145
Geometry Grp	1	1	1	1
Degree of Util (X)	0.002	0.637	0.727	0.25
Departure Headway (Hd)	6.04	5.107	4.892	6.181
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	590	709	744	580
Service Time	4.106	3.138	2.892	4.228
HCM Lane V/C Ratio	0.002	0.633	0.719	0.25
HCM Control Delay	9.1	16.7	19.8	11.3
HCM Lane LOS	A	C	C	B
HCM 95th-tile Q	0	4.6	6.4	1

HCM 6th Signalized Intersection Summary

14: OR 99W & Bull Mountain

03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←	→	←	↑↑	↑↑	↔
Traffic Volume (veh/h)	249	240	265	1855	2090	437
Future Volume (veh/h)	249	240	265	1855	2090	437
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1856	1900	1856	1870	1885
Adj Flow Rate, veh/h	259	0	276	1932	2177	455
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	3	0	3	2	1
Cap, veh/h	262		312	2971	2183	981
Arrive On Green	0.08	0.00	0.23	1.00	0.61	0.61
Sat Flow, veh/h	3483	1572	1810	3618	3647	1598
Grp Volume(v), veh/h	259	0	276	1932	2177	455
Grp Sat Flow(s),veh/h/ln	1742	1572	1810	1763	1777	1598
Q Serve(g_s), s	10.4	0.0	20.6	0.0	85.4	21.5
Cycle Q Clear(g_c), s	10.4	0.0	20.6	0.0	85.4	21.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	262		312	2971	2183	981
V/C Ratio(X)	0.99		0.88	0.65	1.00	0.46
Avail Cap(c_a), veh/h	311		312	2971	2183	981
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.61	0.61	1.00	1.00
Uniform Delay (d), s/veh	64.7	0.0	52.6	0.0	26.9	14.6
Incr Delay (d2), s/veh	44.1	0.0	16.2	0.7	18.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	10.2	0.3	38.4	7.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	108.8	0.0	68.8	0.7	45.5	16.1
LnGrp LOS	F		E	A	D	B
Approach Vol, veh/h	259	A		2208	2632	
Approach Delay, s/veh	108.8			9.2	40.4	
Approach LOS	F			A	D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		122.0		18.0	32.0	90.0
Change Period (Y+Rc), s		4.8		4.5	4.8	* 4.8
Max Green Setting (Gmax), s		115.2		15.5	26.0	* 85
Max Q Clear Time (g_c+l1), s		2.0		13.4	23.6	87.4
Green Ext Time (p_c), s		71.8		0.1	0.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			30.4			
HCM 6th LOS			C			

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis

18: Roy Rogers & Scholls Sherwood




03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	138	164	945	867	414
Future Volume (vph)	141	138	164	945	867	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1568	1752	1881	1810	1572
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1568	1752	1881	1810	1572
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	144	141	167	964	885	422
RTOR Reduction (vph)	0	97	0	0	0	94
Lane Group Flow (vph)	144	44	167	964	885	328
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	2%	3%	3%	1%	5%	1%
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	13.9	34.2	15.8	85.9	66.1	80.0
Effective Green, g (s)	14.4	34.2	15.8	87.9	68.1	81.0
Actuated g/C Ratio	0.13	0.31	0.14	0.80	0.62	0.73
Clearance Time (s)	4.5		4.0	6.0	6.0	4.5
Vehicle Extension (s)	1.5		1.5	3.5	3.5	1.5
Lane Grp Cap (vph)	231	486	250	1499	1117	1154
v/s Ratio Prot	c0.08	0.03	0.10	c0.51	c0.49	0.04
v/s Ratio Perm						0.17
v/c Ratio	0.62	0.09	0.67	0.64	0.79	0.28
Uniform Delay, d1	45.4	27.0	44.8	4.7	15.8	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.7	0.0	5.2	1.0	4.0	0.0
Delay (s)	49.1	27.0	49.9	5.7	19.8	5.0
Level of Service	D	C	D	A	B	A
Approach Delay (s)	38.2			12.2	15.0	
Approach LOS	D			B	B	
Intersection Summary						
HCM 2000 Control Delay			16.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.79			
Actuated Cycle Length (s)			110.3		Sum of lost time (s)	16.5
Intersection Capacity Utilization			72.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	419	6	12	615	2	8
Future Vol, veh/h	419	6	12	615	2	8
Conflicting Peds, #/hr	0	4	4	0	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	432	6	12	634	2	8

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	442
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1129
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1125
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	12.9
HCM LOS			B




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	464	-	-	1125	-
HCM Lane V/C Ratio	0.022	-	-	0.011	-
HCM Control Delay (s)	12.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM Signalized Intersection Capacity Analysis

21: 131st & Beef Bend

03/01/2021

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	252	247	190	471	277	95
Future Volume (vph)	252	247	190	471	277	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1565	1786	1881	1787	1578
Flt Permitted	1.00	1.00	0.51	1.00	0.95	1.00
Satd. Flow (perm)	1863	1565	964	1881	1787	1578
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	271	266	204	506	298	102
RTOR Reduction (vph)	0	114	0	0	0	57
Lane Group Flow (vph)	271	152	204	506	298	45
Confl. Peds. (#/hr)		2	2		1	
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	2	8	1	6	8	1
Permitted Phases		2	2			8
Actuated Green, G (s)	14.1	27.6	21.9	25.9	13.5	21.3
Effective Green, g (s)	15.1	27.6	21.9	26.9	13.5	21.3
Actuated g/C Ratio	0.31	0.57	0.45	0.56	0.28	0.44
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0	4.0
Vehicle Extension (s)	3.0	2.5	1.5	3.0	2.5	1.5
Lane Grp Cap (vph)	581	892	568	1045	498	824
v/s Ratio Prot	0.15	0.05	0.06	c0.27	c0.17	0.01
v/s Ratio Perm		0.05	0.10			0.02
v/c Ratio	0.47	0.17	0.36	0.48	0.60	0.05
Uniform Delay, d1	13.4	4.9	8.2	6.5	15.1	7.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.1	0.1	0.4	1.6	0.0
Delay (s)	14.0	5.0	8.4	6.9	16.7	7.8
Level of Service	B	A	A	A	B	A
Approach Delay (s)	9.5			7.3	14.4	
Approach LOS	A			A	B	
Intersection Summary						
HCM 2000 Control Delay			9.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			48.4		Sum of lost time (s)	12.0
Intersection Capacity Utilization			49.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	1	1065	21	1	1274
Future Vol, veh/h	7	1	1065	21	1	1274
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	7	1	1121	22	1	1341
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	2475	1132	0	0	1143	0
Stage 1	1132	-	-	-	-	-
Stage 2	1343	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	33	250	-	-	619	-
Stage 1	311	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	33	250	-	-	619	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	311	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	128.9	0	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	37	619	-	
HCM Lane V/C Ratio	-	-	0.228	0.002	-	
HCM Control Delay (s)	-	-	128.9	10.8	0	
HCM Lane LOS	-	-	F	B	A	
HCM 95th %tile Q(veh)	-	-	0.7	0	-	

Intersection	
Intersection Delay, s/veh	15.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	26	1	86	76	280	1	26	42	231	59	59
Future Vol, veh/h	20	26	1	86	76	280	1	26	42	231	59	59
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	6	8	0	0	0	2	0	0	0	3	2	0
Mvmt Flow	22	28	1	92	82	301	1	28	45	248	63	63
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.7	16.6	9.4	15.6
HCM LOS	A	C	A	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	43%	19%	66%
Vol Thru, %	38%	55%	17%	17%
Vol Right, %	61%	2%	63%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	69	47	442	349
LT Vol	1	20	86	231
Through Vol	26	26	76	59
RT Vol	42	1	280	59
Lane Flow Rate	74	51	475	375
Geometry Grp	1	1	1	1
Degree of Util (X)	0.115	0.086	0.649	0.572
Departure Headway (Hd)	5.568	6.096	4.919	5.487
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	641	586	732	657
Service Time	3.623	4.155	2.958	3.524
HCM Lane V/C Ratio	0.115	0.087	0.649	0.571
HCM Control Delay	9.4	9.7	16.6	15.6
HCM Lane LOS	A	A	C	C
HCM 95th-tile Q	0.4	0.3	4.8	3.6

HCM 6th Signalized Intersection Summary

24: OR 99W & Beed Bend

03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	129	239	1943	1898	432
Future Volume (veh/h)	177	129	239	1943	1898	432
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1870	1870	1841	1870
Adj Flow Rate, veh/h	190	139	257	2089	2041	465
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	2	2	2	4	2
Cap, veh/h	205	181	298	3028	2298	1190
Arrive On Green	0.11	0.11	0.22	1.00	0.44	0.44
Sat Flow, veh/h	1795	1585	1781	3647	3589	1544
Grp Volume(v), veh/h	190	139	257	2089	2041	465
Grp Sat Flow(s),veh/h/ln	1795	1585	1781	1777	1749	1544
Q Serve(g_s), s	14.7	11.9	19.4	0.0	75.1	19.9
Cycle Q Clear(g_c), s	14.7	11.9	19.4	0.0	75.1	19.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	205	181	298	3028	2298	1190
V/C Ratio(X)	0.93	0.77	0.86	0.69	0.89	0.39
Avail Cap(c_a), veh/h	205	181	298	3028	2298	1190
HCM Platoon Ratio	1.00	1.00	1.33	1.33	0.67	0.67
Upstream Filter(I)	1.00	1.00	0.16	0.16	0.18	0.18
Uniform Delay (d), s/veh	61.4	60.2	52.9	0.0	34.4	9.9
Incr Delay (d2), s/veh	42.2	16.8	4.3	0.2	1.1	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	11.0	8.6	0.1	33.1	11.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	103.6	77.0	57.2	0.2	35.5	10.0
LnGrp LOS	F	E	E	A	D	B
Approach Vol, veh/h	329			2346	2506	
Approach Delay, s/veh	92.4			6.5	30.8	
Approach LOS	F			A	C	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		123.5		20.0	27.5	96.0
Change Period (Y+Rc), s		* 5.4		* 5.4	5.4	* 5.9
Max Green Setting (Gmax), s		* 1.1E2		* 15	18.6	* 90
Max Q Clear Time (g_c+I1), s		2.0		16.7	21.4	77.1
Green Ext Time (p_c), s		81.3		0.0	0.0	12.6

Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

Notes























User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM Signalized Intersection Capacity Analysis

25: OR 99W & Royalty Pkwy

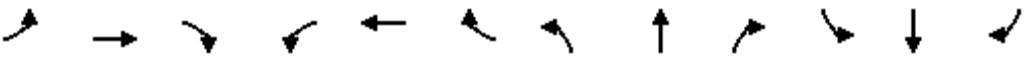
03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	71	20	230	92	141	35	1907	64	234	1681	112
Future Volume (vph)	146	71	20	230	92	141	35	1907	64	234	1681	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1686		1770	1707		1703	3505	1548	3502	3505	1546
Flt Permitted	0.95	0.99		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1686		1770	1707		1703	3505	1548	3502	3505	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	151	73	21	237	95	145	36	1966	66	241	1733	115
RTOR Reduction (vph)	0	5	0	0	39	0	0	0	28	0	0	38
Lane Group Flow (vph)	122	118	0	237	201	0	36	1966	38	241	1733	77
Confl. Peds. (#/hr)			8	8			1		6	6		1
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	2%	0%	12%	2%	0%	2%	6%	3%	2%	0%	3%	2%
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	13.6	13.6		15.0	15.0		6.7	78.6	78.6	12.3	84.2	84.2
Effective Green, g (s)	14.6	14.6		16.0	16.0		8.2	79.6	79.6	13.8	85.2	85.2
Actuated g/C Ratio	0.10	0.10		0.11	0.11		0.06	0.57	0.57	0.10	0.61	0.61
Clearance Time (s)	5.0	5.0		5.0	5.0		5.5	5.0	5.0	5.5	5.0	5.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)	175	175		202	195		99	1992	880	345	2133	940
v/s Ratio Prot	c0.07	0.07		c0.13	0.12		0.02	c0.56		c0.07	0.49	
v/s Ratio Perm									0.02			0.05
v/c Ratio	0.70	0.67		1.17	1.03		0.36	0.99	0.04	0.70	0.81	0.08
Uniform Delay, d1	60.6	60.4		62.0	62.0		63.4	29.7	13.4	61.1	21.2	11.3
Progression Factor	1.00	1.00		1.00	1.00		0.86	1.09	5.04	1.27	0.23	0.13
Incremental Delay, d2	10.1	8.4		117.9	72.8		0.1	3.8	0.0	2.6	1.7	0.1
Delay (s)	70.7	68.8		179.9	134.8		54.4	36.0	67.3	80.1	6.7	1.5
Level of Service	E	E		F	F		D	D	E	F	A	A
Approach Delay (s)		69.7			157.2			37.3			14.9	
Approach LOS		E			F			D			B	
Intersection Summary												
HCM 2000 Control Delay			41.0			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			92.8%			ICU Level of Service			F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis






















26: OR 99W & 116th/Durham

03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↔	↔	↔	↔↔	↔	↔↔	↔↔	↔
Traffic Volume (vph)	42	139	111	707	119	399	135	1640	206	368	1532	31
Future Volume (vph)	42	139	111	707	119	399	135	1640	206	368	1532	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3324		1698	1730	1521	1805	3539	1526	3467	3438	1578
Flt Permitted		0.99		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3324		1698	1730	1521	1805	3539	1526	3467	3438	1578
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	44	145	116	736	124	416	141	1708	215	383	1596	32
RTOR Reduction (vph)	0	67	0	0	0	265	0	0	45	0	0	17
Lane Group Flow (vph)	0	238	0	427	433	151	141	1708	170	383	1596	15
Confl. Peds. (#/hr)	17					17	1		9	9		1
Confl. Bikes (#/hr)						3			2			
Heavy Vehicles (%)	3%	1%	2%	1%	0%	2%	0%	2%	4%	1%	5%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)		13.3		27.0	27.0	27.0	12.9	57.4	84.4	19.6	64.4	64.4
Effective Green, g (s)		15.3		29.0	29.0	29.0	14.3	58.8	88.4	20.9	65.4	65.4
Actuated g/C Ratio		0.11		0.21	0.21	0.21	0.10	0.42	0.63	0.15	0.47	0.47
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		363		351	358	315	184	1486	963	517	1606	737
v/s Ratio Prot		c0.07		c0.25	0.25		0.08	c0.48	0.04	c0.11	c0.46	
v/s Ratio Perm						0.10			0.07			0.01
v/c Ratio		0.66		1.22	1.21	0.48	0.77	1.15	0.18	0.74	0.99	0.02
Uniform Delay, d1		59.8		55.5	55.5	48.9	61.2	40.6	10.7	57.0	37.1	20.1
Progression Factor		1.00		1.00	1.00	1.00	0.88	1.19	1.41	1.34	0.84	1.00
Incremental Delay, d2		3.6		120.7	117.6	0.7	11.4	73.0	0.0	2.8	14.8	0.0
Delay (s)		63.4		176.2	173.1	49.5	65.5	121.3	15.1	78.9	45.9	20.1
Level of Service		E		F	F	D	E	F	B	E	D	C
Approach Delay (s)		63.4			133.8			106.5			51.8	
Approach LOS		E			F			F			D	
Intersection Summary												
HCM 2000 Control Delay			90.9									
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			101.9%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 27: OR 99W & Fischer







03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (veh/h)	136	0	326	0	0	0	338	1917	0	29	2082	268
Future Volume (veh/h)	136	0	326	0	0	0	338	1917	0	29	2082	268
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1885	0	1841				1870	1870	0	1870	1841	1885
Adj Flow Rate, veh/h	142	0	340				352	1997	0	30	2169	279
Peak Hour Factor	0.96	0.92	0.96				0.96	0.96	0.92	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	4				2	2	0	2	4	1
Cap, veh/h	205	0	178				388	2754	0	45	2036	909
Arrive On Green	0.11	0.00	0.11				0.22	0.78	0.00	0.02	0.58	0.58
Sat Flow, veh/h	1795	0	1560				1781	3647	0	1781	3497	1562
Grp Volume(v), veh/h	142	0	340				352	1997	0	30	2169	279
Grp Sat Flow(s),veh/h/ln	1795	0	1560				1781	1777	0	1781	1749	1562
Q Serve(g_s), s	10.6	0.0	16.0				27.0	40.4	0.0	2.3	81.5	12.7
Cycle Q Clear(g_c), s	10.6	0.0	16.0				27.0	40.4	0.0	2.3	81.5	12.7
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	178				388	2754	0	45	2036	909
V/C Ratio(X)	0.69	0.00	1.91				0.91	0.73	0.00	0.67	1.07	0.31
Avail Cap(c_a), veh/h	205	0	178				394	2754	0	204	2036	909
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	0.0	62.0				53.4	8.1	0.0	67.7	29.3	14.9
Incr Delay (d2), s/veh	8.9	0.0	428.4				23.5	1.7	0.0	10.3	40.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	0.0	34.3				14.3	12.5	0.0	1.2	42.3	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.6	0.0	490.4				76.9	9.8	0.0	78.0	69.3	15.8
LnGrp LOS	E	A	F				E	A	A	E	F	B
Approach Vol, veh/h	482						2349			2478		
Approach Delay, s/veh	366.2						19.8			63.4		
Approach LOS	F						B			E		
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.5	112.5		20.0	34.5	85.5						
Change Period (Y+Rc), s	4.5	6.0		5.0	5.5	6.0						
Max Green Setting (Gmax), s	15.5	94.0		15.0	29.5	79.0						
Max Q Clear Time (g_c+l1), s	4.3	42.4		18.0	29.0	83.5						
Green Ext Time (p_c), s	0.0	39.8		0.0	0.0	0.0						
Intersection Summary												
HCM 6th Ctrl Delay	71.6											
HCM 6th LOS	E											
Notes												

HCM 6th Signalized Intersection Summary

28: 124th & OR 99W

03/01/2021

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↰	↑↑	↰	↰
Traffic Volume (veh/h)	1077	172	646	1533	557	714
Future Volume (veh/h)	1077	172	646	1533	557	714
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1796	1826	1841	1885	1885
Adj Flow Rate, veh/h	1146	183	687	1631	593	760
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	7	5	4	1	1
Cap, veh/h	1558	657	791	2482	780	1280
Arrive On Green	0.44	0.44	0.23	0.71	0.22	0.22
Sat Flow, veh/h	3618	1487	3374	3589	3483	2812
Grp Volume(v), veh/h	1146	183	687	1631	593	760
Grp Sat Flow(s),veh/h/ln	1763	1487	1687	1749	1742	1406
Q Serve(g_s), s	32.4	9.4	23.6	30.6	19.2	24.3
Cycle Q Clear(g_c), s	32.4	9.4	23.6	30.6	19.2	24.3
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1558	657	791	2482	780	1280
V/C Ratio(X)	0.74	0.28	0.87	0.66	0.76	0.59
Avail Cap(c_a), veh/h	1813	765	940	2482	780	1280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.8	21.4	44.4	9.5	43.8	24.5
Incr Delay (d2), s/veh	2.1	0.6	7.1	1.0	4.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	3.2	10.3	9.8	8.7	8.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.9	22.0	51.5	10.5	47.9	25.1
LnGrp LOS	C	C	D	B	D	C
Approach Vol, veh/h	1329			2318	1353	
Approach Delay, s/veh	28.9			22.6	35.1	
Approach LOS	C			C	D	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	32.3	57.3			89.6	31.0
Change Period (Y+Rc), s	* 5.6	6.0			6.0	6.0
Max Green Setting (Gmax), s	* 32	60.0			60.0	25.0
Max Q Clear Time (g_c+I1), s	25.6	34.4			32.6	26.3
Green Ext Time (p_c), s	1.1	16.9			22.6	0.0

Intersection Summary

HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes
























User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM 6th Signalized Intersection Summary

29: OR 99W & Roy Rogers/TSR






















03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	427	93	525	403	69	182	784	357	131	1538	375
Future Volume (veh/h)	112	427	93	525	403	69	182	784	357	131	1538	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1781	1841	1767	1841	1841	1752	1856	1826	1856	1767	1870	1900
Adj Flow Rate, veh/h	114	436	95	536	411	0	186	800	364	134	1569	383
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	8	4	9	4	4	10	3	5	3	9	2	0
Cap, veh/h	300	505	109	706	382		265	2086	656	169	1479	357
Arrive On Green	0.18	0.18	0.17	0.21	0.21	0.00	0.15	0.42	0.42	0.10	0.36	0.35
Sat Flow, veh/h	1697	2858	618	3401	1841	1485	1767	4985	1569	1682	4091	989
Grp Volume(v), veh/h	114	265	266	536	411	0	186	800	364	134	1303	649
Grp Sat Flow(s),veh/h/ln	1697	1749	1727	1700	1841	1485	1767	1662	1569	1682	1702	1675
Q Serve(g_s), s	7.7	19.2	19.5	19.3	27.0	0.0	13.0	14.5	22.8	10.1	47.0	47.0
Cycle Q Clear(g_c), s	7.7	19.2	19.5	19.3	27.0	0.0	13.0	14.5	22.8	10.1	47.0	47.0
Prop In Lane	1.00		0.36	1.00		1.00	1.00		1.00	1.00		0.59
Lane Grp Cap(c), veh/h	300	309	305	706	382		265	2086	656	169	1231	606
V/C Ratio(X)	0.38	0.86	0.87	0.76	1.08		0.70	0.38	0.55	0.79	1.06	1.07
Avail Cap(c_a), veh/h	300	309	306	706	382		265	2086	656	207	1231	606
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	51.9	52.3	48.4	51.5	0.0	52.5	26.2	28.6	57.1	41.5	42.1
Incr Delay (d2), s/veh	0.5	20.3	22.1	4.8	67.5	0.0	8.1	0.5	3.4	13.7	42.7	57.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	10.1	10.3	8.6	19.6	0.0	6.2	5.6	8.9	4.9	26.1	28.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.7	72.2	74.5	53.2	119.0	0.0	60.6	26.7	32.0	70.8	84.2	99.3
LnGrp LOS	D	E	E	D	F		E	C	C	E	F	F
Approach Vol, veh/h	645		947			A	1350		2086			
Approach Delay, s/veh	68.8		81.8				32.8		88.1			
Approach LOS	E		F				C		F			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.5	51.0		27.0	17.1	58.4		31.0				
Change Period (Y+Rc), s	6.0	* 6		5.5	5.0	6.0		6.0				
Max Green Setting (Gmax), s	16.0	* 45		21.5	15.0	46.0		25.0				
Max Q Clear Time (g_c+I1), s	15.0	49.0		21.5	12.1	24.8		29.0				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.1	10.2		0.0				
Intersection Summary												
HCM 6th Ctrl Delay	69.6											
HCM 6th LOS	E											
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary







6: Roy Rogers & Beef Bend

03/01/2021







												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	5	310	0	465	0	1745	190	445	1915	0
Future Volume (veh/h)	0	0	5	310	0	465	0	1745	190	445	1915	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	0	1856	1900	1885	1841	1856	1841	1900
Adj Flow Rate, veh/h	0	0	5	326	0	489	0	1837	200	468	2016	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	2	0	3	0	1	4	3	4	0
Cap, veh/h	0	0	11	0	0	0	85	2306	966	503	3145	0
Arrive On Green	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.64	0.63	0.21	0.90	0.00
Sat Flow, veh/h	0	0	1610		0		215	3582	1528	1767	3589	0
Grp Volume(v), veh/h	0	0	5		0.0		0	1837	200	468	2016	0
Grp Sat Flow(s),veh/h/ln	0	0	1610				215	1791	1528	1767	1749	0
Q Serve(g_s), s	0.0	0.0	0.3				0.0	31.8	4.7	15.4	11.6	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.3				0.0	31.8	4.7	15.4	11.6	0.0
Prop In Lane	0.00		1.00				1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	0	0	11				85	2306	966	503	3145	0
V/C Ratio(X)	0.00	0.00	0.47				0.00	0.80	0.21	0.93	0.64	0.00
Avail Cap(c_a), veh/h	0	0	152				106	2657	1116	760	3995	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	42.0				0.0	11.1	6.6	25.7	1.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	11.7				0.0	1.6	0.1	10.4	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.1				0.0	8.8	1.1	9.6	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	53.8				0.0	12.7	6.7	36.1	1.3	0.0
LnGrp LOS	A	A	D				A	B	A	D	A	A
Approach Vol, veh/h	5						2037			2484		
Approach Delay, s/veh	53.8						12.1			7.9		
Approach LOS	D						B			A		
Timer - Assigned Phs	1	2		4		6						
Phs Duration (G+Y+Rc), s	21.7	58.7		4.6		80.4						
Change Period (Y+Rc), s	4.0	6.0		4.0		6.0						
Max Green Setting (Gmax), s	30.0	61.0		8.0		95.0						
Max Q Clear Time (g_c+I1), s	17.4	33.8		2.3		13.6						
Green Ext Time (p_c), s	0.3	18.8		0.0		37.9						
Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									
Notes												

HCM 6th TWSC
12: Elsner/April & Beef Bend

03/01/2021

Intersection												
Int Delay, s/veh	294.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	500	135	290	655	5	120	0	245	0	0	0
Future Vol, veh/h	0	500	135	290	655	5	120	0	245	0	0	0
Conflicting Peds, #/hr	0	0	1	1	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	2	0	0	0	2	0	0	0
Mvmt Flow	0	543	147	315	712	5	130	0	266	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	717	0	0	691	0	0	1963	1965	618	2095	2036	715
Stage 1	-	-	-	-	-	-	618	618	-	1345	1345	-
Stage 2	-	-	-	-	-	-	1345	1347	-	750	691	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	893	-	-	913	-	-	~ 48	64	489	39	58	434
Stage 1	-	-	-	-	-	-	480	484	-	189	222	-
Stage 2	-	-	-	-	-	-	189	222	-	407	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	893	-	-	912	-	-	~ 35	42	489	13	38	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 35	42	-	13	38	-
Stage 1	-	-	-	-	-	-	480	484	-	189	145	-
Stage 2	-	-	-	-	-	-	~ 124	145	-	185	449	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.4			\$ 1562.3			0		
HCM LOS							F			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	93	893	-	-	912	-	-	-				
HCM Lane V/C Ratio	4.266	-	-	-	0.346	-	-	-				
HCM Control Delay (s)	\$ 1562.3	0	-	-	11	-	-	0				
HCM Lane LOS	F	A	-	-	B	-	-	A				
HCM 95th %tile Q(veh)	41.5	0	-	-	1.6	-	-	-				
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s				+: Computation Not Defined				*: All major volume in platoon		

Intersection	
Intersection Delay, s/veh	244.7
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	640	0	5	860	115	0	0	5	125	0	90
Future Vol, veh/h	105	640	0	5	860	115	0	0	5	125	0	90
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	1	2	0	0	2	1	0	0	0	6	0	4
Mvmt Flow	114	696	0	5	935	125	0	0	5	136	0	98
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	112.1	396.5	12.7	18
HCM LOS	F	F	B	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	0%	100%	0%	100%	0%	58%
Vol Thru, %	0%	0%	100%	0%	88%	0%
Vol Right, %	100%	0%	0%	0%	12%	42%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	105	640	5	975	215
LT Vol	0	105	0	5	0	125
Through Vol	0	0	640	0	860	0
RT Vol	5	0	0	0	115	90
Lane Flow Rate	5	114	696	5	1060	234
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.011	0.211	1.193	0.01	1.834	0.453
Departure Headway (Hd)	9.563	7.562	7.065	7.124	6.564	8.321
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	377	478	522	505	562	437
Service Time	7.563	5.262	4.765	4.824	4.264	6.321
HCM Lane V/C Ratio	0.013	0.238	1.333	0.01	1.886	0.535
HCM Control Delay	12.7	12.3	128.5	9.9	398.5	18
HCM Lane LOS	B	B	F	A	F	C
HCM 95th-tile Q	0	0.8	22.4	0	63.1	2.3

HCM 6th Signalized Intersection Summary

14: OR 99W & Bull Mountain

03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	←←	→	←	↑↑	↑↑	→
Traffic Volume (veh/h)	305	290	365	2230	2670	650
Future Volume (veh/h)	305	290	365	2230	2670	650
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1856	1900	1856	1870	1885
Adj Flow Rate, veh/h	318	0	380	2323	2781	677
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	3	0	3	2	1
Cap, veh/h	311		608	3547	2183	981
Arrive On Green	0.09	0.00	0.45	1.00	0.61	0.61
Sat Flow, veh/h	3483	1572	1810	3618	3647	1598
Grp Volume(v), veh/h	318	0	380	2323	2781	677
Grp Sat Flow(s),veh/h/ln	1742	1572	1810	1763	1777	1598
Q Serve(g_s), s	12.5	0.0	22.6	0.0	86.0	39.7
Cycle Q Clear(g_c), s	12.5	0.0	22.6	0.0	86.0	39.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	311		608	3547	2183	981
V/C Ratio(X)	1.02		0.62	0.65	1.27	0.69
Avail Cap(c_a), veh/h	311		608	3547	2183	981
HCM Platoon Ratio	1.00	1.00	1.33	1.33	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.28	0.28	1.00	1.00
Uniform Delay (d), s/veh	63.8	0.0	31.9	0.0	27.0	18.1
Incr Delay (d2), s/veh	56.9	0.0	0.5	0.3	127.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	0.0	9.1	0.1	71.5	14.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	120.7	0.0	32.4	0.3	154.0	22.0
LnGrp LOS	F		C	A	F	C
Approach Vol, veh/h	318	A		2703	3458	
Approach Delay, s/veh	120.7			4.8	128.2	
Approach LOS	F			A	F	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		145.3		20.0	55.3	90.0
Change Period (Y+Rc), s		4.8		4.5	4.8	* 4.8
Max Green Setting (Gmax), s		115.2		15.5	26.0	* 85
Max Q Clear Time (g_c+I1), s		2.0		15.5	25.6	88.0
Green Ext Time (p_c), s		93.7		0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	76.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM Signalized Intersection Capacity Analysis

18: Roy Rogers & Scholls Sherwood






03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	175	215	2015	1830	480
Future Volume (vph)	160	175	215	2015	1830	480
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.5	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1568	1752	3574	3438	1572
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1770	1568	1752	3574	3438	1572
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	163	179	219	2056	1867	490
RTOR Reduction (vph)	0	121	0	0	0	91
Lane Group Flow (vph)	163	58	219	2056	1867	399
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	2%	3%	3%	1%	5%	1%
Turn Type	Prot	pt+ov	Prot	NA	NA	pm+ov
Protected Phases	4	4 5	5	2	6	4
Permitted Phases						6
Actuated Green, G (s)	15.4	39.5	19.6	96.0	72.4	87.8
Effective Green, g (s)	15.9	39.5	19.6	98.0	74.4	88.8
Actuated g/C Ratio	0.13	0.32	0.16	0.80	0.61	0.73
Clearance Time (s)	4.5		4.0	6.0	6.0	4.5
Vehicle Extension (s)	1.5		1.5	3.5	3.5	1.5
Lane Grp Cap (vph)	230	508	281	2873	2098	1145
v/s Ratio Prot	c0.09	0.04	c0.12	0.58	c0.54	0.05
v/s Ratio Perm						0.21
v/c Ratio	0.71	0.11	0.78	0.72	0.89	0.35
Uniform Delay, d1	50.8	28.9	49.1	5.5	20.3	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.9	0.0	11.7	0.9	5.2	0.1
Delay (s)	58.7	29.0	60.8	6.4	25.5	6.1
Level of Service	E	C	E	A	C	A
Approach Delay (s)	43.1			11.7	21.4	
Approach LOS	D			B	C	
Intersection Summary						
HCM 2000 Control Delay			18.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.88			
Actuated Cycle Length (s)			121.9		Sum of lost time (s)	16.5
Intersection Capacity Utilization			81.4%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	720	10	15	1070	5	15
Future Vol, veh/h	720	10	15	1070	5	15
Conflicting Peds, #/hr	0	4	4	0	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	742	10	15	1103	5	15

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	756
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	864
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	861
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.8
HCM LOS			C





Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	861	-
HCM Lane V/C Ratio	0.063	-	-	0.018	-
HCM Control Delay (s)	16.8	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

HCM Signalized Intersection Capacity Analysis

21: 131st & Beef Bend

03/01/2021

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	550	275	210	915	345	135
Future Volume (vph)	550	275	210	915	345	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	0.99	1.00	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1560	1787	1881	1787	1575
Flt Permitted	1.00	1.00	0.23	1.00	0.95	1.00
Satd. Flow (perm)	1863	1560	429	1881	1787	1575
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	591	296	226	984	371	145
RTOR Reduction (vph)	0	82	0	0	0	88
Lane Group Flow (vph)	591	214	226	984	371	57
Confl. Peds. (#/hr)		2	2		1	
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	2%	2%	1%	1%	1%	1%
Turn Type	NA	pm+ov	D.P+P	NA	Prot	pm+ov
Protected Phases	2	8	1	6	8	1
Permitted Phases		2	2			8
Actuated Green, G (s)	35.5	57.7	44.6	48.6	22.2	31.3
Effective Green, g (s)	36.5	57.7	44.6	49.6	22.2	31.3
Actuated g/C Ratio	0.46	0.72	0.56	0.62	0.28	0.39
Clearance Time (s)	5.0	4.0	4.0	5.0	4.0	4.0
Vehicle Extension (s)	3.0	2.5	1.5	3.0	2.5	1.5
Lane Grp Cap (vph)	852	1127	394	1169	497	696
v/s Ratio Prot	0.32	0.05	0.07	c0.52	c0.21	0.01
v/s Ratio Perm		0.08	0.25			0.03
v/c Ratio	0.69	0.19	0.57	0.84	0.75	0.08
Uniform Delay, d1	17.2	3.5	11.4	12.0	26.2	15.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	1.3	5.6	5.7	0.0
Delay (s)	19.7	3.6	12.7	17.6	32.0	15.2
Level of Service	B	A	B	B	C	B
Approach Delay (s)	14.3			16.7	27.3	
Approach LOS	B			B	C	
Intersection Summary						
HCM 2000 Control Delay			18.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.86			
Actuated Cycle Length (s)			79.8		Sum of lost time (s)	12.0
Intersection Capacity Utilization			73.9%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Intersection						
Int Delay, s/veh	12.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	15	1920	255	10	2220
Future Vol, veh/h	90	15	1920	255	10	2220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	95	16	2021	268	11	2337
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	3346	1145	0	0	2289	0
Stage 1	2155	-	-	-	-	-
Stage 2	1191	-	-	-	-	-
Critical Hdwy	6.8	6.9	-	-	4.1	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	~ 6	196	-	-	224	-
Stage 1	~ 76	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 6	196	-	-	224	-
Mov Cap-2 Maneuver	~ 55	-	-	-	-	-
Stage 1	~ 76	-	-	-	-	-
Stage 2	243	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s\$	532.2		0		0.1	
HCM LOS	F					
Minor Lane/Major Mvmt	NBT		NBRWBLn1		SBL	SBT
Capacity (veh/h)	-		61		224	-
HCM Lane V/C Ratio	-		1.812		0.047	-
HCM Control Delay (s)	-		\$ 532.2		21.9	-
HCM Lane LOS	-		F		C	-
HCM 95th %tile Q(veh)	-		10.2		0.1	-
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	23.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	30	5	90	80	385	5	30	45	255	60	60
Future Vol, veh/h	20	30	5	90	80	385	5	30	45	255	60	60
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	6	8	0	0	0	2	0	0	0	3	2	0
Mvmt Flow	22	32	5	97	86	414	5	32	48	274	65	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.4	29.8	10.4	20.1
HCM LOS	B	D	B	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	6%	36%	16%	68%
Vol Thru, %	38%	55%	14%	16%
Vol Right, %	56%	9%	69%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	80	55	555	375
LT Vol	5	20	90	255
Through Vol	30	30	80	60
RT Vol	45	5	385	60
Lane Flow Rate	86	59	597	403
Geometry Grp	1	1	1	1
Degree of Util (X)	0.15	0.109	0.846	0.664
Departure Headway (Hd)	6.259	6.629	5.104	5.926
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	576	543	704	605
Service Time	4.263	4.636	3.177	4.002
HCM Lane V/C Ratio	0.149	0.109	0.848	0.666
HCM Control Delay	10.4	10.4	29.8	20.1
HCM Lane LOS	B	B	D	C
HCM 95th-tile Q	0.5	0.4	9.6	5

HCM 6th Signalized Intersection Summary 24: OR 99W & Beed Bend

03/01/2021



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	360	205	345	2235	2170	790
Future Volume (veh/h)	360	205	345	2235	2170	790
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1870	1870	1870	1841	1870
Adj Flow Rate, veh/h	379	216	363	2353	2284	832
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	2	4	2
Cap, veh/h	269	238	336	2901	2098	1158
Arrive On Green	0.15	0.15	0.06	0.27	0.40	0.40
Sat Flow, veh/h	1795	1585	1781	3647	3589	1543
Grp Volume(v), veh/h	379	216	363	2353	2284	832
Grp Sat Flow(s),veh/h/ln	1795	1585	1781	1777	1749	1543
Q Serve(g_s), s	21.0	18.8	26.4	86.7	84.0	44.6
Cycle Q Clear(g_c), s	21.0	18.8	26.4	86.7	84.0	44.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	269	238	336	2901	2098	1158
V/C Ratio(X)	1.41	0.91	1.08	0.81	1.09	0.72
Avail Cap(c_a), veh/h	269	238	336	2901	2098	1158
HCM Platoon Ratio	1.00	1.00	0.33	0.33	0.67	0.67
Upstream Filter(I)	1.00	1.00	0.09	0.09	0.09	0.09
Uniform Delay (d), s/veh	59.5	58.6	65.6	41.0	41.9	15.1
Incr Delay (d2), s/veh	204.0	34.4	41.9	0.2	40.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.7	17.8	16.6	41.1	48.7	27.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	263.5	93.0	107.5	41.3	82.6	15.5
LnGrp LOS	F	F	F	D	F	B
Approach Vol, veh/h	595			2716	3116	
Approach Delay, s/veh	201.6			50.1	64.7	
Approach LOS	F			D	E	
Timer - Assigned Phs	2			4	5	6
Phs Duration (G+Y+Rc), s	118.5			25.0	30.5	88.0
Change Period (Y+Rc), s	* 5.4			* 5.4	5.4	* 5.9
Max Green Setting (Gmax), s	* 1.1E2			* 20	21.6	* 82
Max Q Clear Time (g_c+I1), s	88.7			23.0	28.4	86.0
Green Ext Time (p_c), s	20.2			0.0	0.0	0.0

Intersection Summary

HCM 6th Ctrl Delay	71.2
HCM 6th LOS	E

Notes























User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

HCM Signalized Intersection Capacity Analysis

25: OR 99W & Royalty Pkwy


03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	75	30	280	120	175	40	2180	65	235	1990	150
Future Volume (vph)	225	75	30	280	120	175	40	2180	65	235	1990	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	0.95		1.00	1.00		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1681	1666		1770	1711		1703	3505	1548	3502	3505	1546
Flt Permitted	0.95	0.98		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1681	1666		1770	1711		1703	3505	1548	3502	3505	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	232	77	31	289	124	180	41	2247	67	242	2052	155
RTOR Reduction (vph)	0	5	0	0	37	0	0	0	30	0	0	39
Lane Group Flow (vph)	169	166	0	289	267	0	41	2247	37	242	2052	116
Confl. Peds. (#/hr)			8	8			1		6	6		1
Confl. Bikes (#/hr)									1			2
Heavy Vehicles (%)	2%	0%	12%	2%	0%	2%	6%	3%	2%	0%	3%	2%
Turn Type	Split	NA		Split	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	15.4	15.4		15.0	15.0		6.9	77.0	77.0	12.1	82.2	82.2
Effective Green, g (s)	16.4	16.4		16.0	16.0		8.4	78.0	78.0	13.6	83.2	83.2
Actuated g/C Ratio	0.12	0.12		0.11	0.11		0.06	0.56	0.56	0.10	0.59	0.59
Clearance Time (s)	5.0	5.0		5.0	5.0		5.5	5.0	5.0	5.5	5.0	5.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.8	4.8	2.3	4.8	4.8
Lane Grp Cap (vph)	196	195		202	195		102	1952	862	340	2082	918
v/s Ratio Prot	c0.10	0.10		c0.16	0.16		0.02	c0.64		c0.07	c0.59	
v/s Ratio Perm									0.02			0.07
v/c Ratio	0.86	0.85		1.43	1.37		0.40	1.15	0.04	0.71	0.99	0.13
Uniform Delay, d1	60.7	60.6		62.0	62.0		63.4	31.0	14.1	61.3	27.8	12.5
Progression Factor	1.00	1.00		1.00	1.00		0.86	1.13	5.05	1.37	0.17	0.02
Incremental Delay, d2	29.6	27.0		219.9	194.9		0.1	68.6	0.0	0.6	3.5	0.0
Delay (s)	90.3	87.6		281.9	256.9		54.6	103.6	71.1	84.8	8.1	0.3
Level of Service	F	F		F	F		D	F	E	F	A	A
Approach Delay (s)		88.9			269.1			101.8			15.2	
Approach LOS		F			F			F			B	
Intersection Summary												
HCM 2000 Control Delay			81.4			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			16.0			
Intersection Capacity Utilization			106.5%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis






















26: OR 99W & 116th/Durham

03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↔	↔	↔	↔↔	↔	↔↔	↔↔	↔
Traffic Volume (vph)	45	140	115	710	120	400	135	1820	210	385	1880	35
Future Volume (vph)	45	140	115	710	120	400	135	1820	210	385	1880	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor		0.95		0.95	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes		1.00		1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes		1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		3321		1698	1730	1521	1805	3539	1526	3467	3438	1578
Flt Permitted		0.99		0.95	0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		3321		1698	1730	1521	1805	3539	1526	3467	3438	1578
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	47	146	120	740	125	417	141	1896	219	401	1958	36
RTOR Reduction (vph)	0	69	0	0	0	261	0	0	44	0	0	19
Lane Group Flow (vph)	0	244	0	429	436	156	141	1896	175	401	1958	17
Confl. Peds. (#/hr)	17					17	1		9	9		1
Confl. Bikes (#/hr)						3			2			
Heavy Vehicles (%)	3%	1%	2%	1%	0%	2%	0%	2%	4%	1%	5%	0%
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm
Protected Phases	8	8		4	4		5	2	4	1	6	
Permitted Phases						4			2			6
Actuated Green, G (s)		13.4		27.0	27.0	27.0	12.9	56.8	83.8	20.1	64.3	64.3
Effective Green, g (s)		15.4		29.0	29.0	29.0	14.3	58.2	87.8	21.4	65.3	65.3
Actuated g/C Ratio		0.11		0.21	0.21	0.21	0.10	0.42	0.63	0.15	0.47	0.47
Clearance Time (s)		6.0		6.0	6.0	6.0	5.4	5.4	6.0	5.3	5.0	5.0
Vehicle Extension (s)		2.3		2.3	2.3	2.3	2.3	4.5	2.3	2.3	4.8	4.8
Lane Grp Cap (vph)		365		351	358	315	184	1471	957	529	1603	736
v/s Ratio Prot		c0.07		c0.25	0.25		0.08	c0.54	0.04	c0.12	c0.57	
v/s Ratio Perm						0.10			0.08			0.01
v/c Ratio		0.67		1.22	1.22	0.50	0.77	1.29	0.18	0.76	1.22	0.02
Uniform Delay, d1		59.9		55.5	55.5	49.0	61.2	40.9	11.0	56.8	37.4	20.1
Progression Factor		1.00		1.00	1.00	1.00	0.89	1.17	1.35	1.30	0.83	1.00
Incremental Delay, d2		3.9		122.9	120.8	0.7	12.0	133.8	0.0	0.5	100.2	0.0
Delay (s)		63.8		178.4	176.3	49.8	66.5	181.7	14.9	74.5	131.4	20.1
Level of Service		E		F	F	D	E	F	B	E	F	C
Approach Delay (s)		63.8			135.9			158.3			120.2	
Approach LOS		E			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			134.3									
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			107.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 6th Signalized Intersection Summary 27: OR 99W & Fischer

03/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 			 	
Traffic Volume (veh/h)	140	0	330	0	0	0	340	1920	0	30	2380	305
Future Volume (veh/h)	140	0	330	0	0	0	340	1920	0	30	2380	305
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1885	0	1841				1870	1870	0	1870	1841	1885
Adj Flow Rate, veh/h	146	0	344				354	2000	0	31	2479	318
Peak Hour Factor	0.96	0.92	0.96				0.96	0.96	0.92	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	4				2	2	0	2	4	1
Cap, veh/h	205	0	178				390	2751	0	46	2032	908
Arrive On Green	0.11	0.00	0.11				0.22	0.77	0.00	0.03	0.58	0.58
Sat Flow, veh/h	1795	0	1560				1781	3647	0	1781	3497	1562
Grp Volume(v), veh/h	146	0	344				354	2000	0	31	2479	318
Grp Sat Flow(s),veh/h/ln	1795	0	1560				1781	1777	0	1781	1749	1562
Q Serve(g_s), s	11.0	0.0	16.0				27.1	40.7	0.0	2.4	81.3	15.0
Cycle Q Clear(g_c), s	11.0	0.0	16.0				27.1	40.7	0.0	2.4	81.3	15.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	205	0	178				390	2751	0	46	2032	908
V/C Ratio(X)	0.71	0.00	1.93				0.91	0.73	0.00	0.68	1.22	0.35
Avail Cap(c_a), veh/h	205	0	178				394	2751	0	204	2032	908
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.8	0.0	62.0				53.3	8.2	0.0	67.6	29.3	15.4
Incr Delay (d2), s/veh	10.3	0.0	438.3				23.7	1.7	0.0	10.1	103.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	0.0	34.8				14.4	12.7	0.0	1.2	60.1	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.1	0.0	500.3				77.0	9.9	0.0	77.7	133.0	16.5
LnGrp LOS	E	A	F				E	A	A	E	F	B
Approach Vol, veh/h	490						2354			2828		
Approach Delay, s/veh	372.1						20.0			119.3		
Approach LOS	F						B			F		
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.6	112.4		20.0	34.7	85.3						
Change Period (Y+Rc), s	4.5	6.0		5.0	5.5	6.0						
Max Green Setting (Gmax), s	15.5	94.0		15.0	29.5	79.0						
Max Q Clear Time (g_c+I1), s	4.4	42.7		18.0	29.1	83.3						
Green Ext Time (p_c), s	0.0	39.7		0.0	0.0	0.0						
Intersection Summary												
HCM 6th Ctrl Delay			99.9									
HCM 6th LOS			F									
Notes												

HCM 6th Signalized Intersection Summary

28: 124th & OR 99W

03/01/2021

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↘↙	↑↑	↘↙	↘↙
Traffic Volume (veh/h)	1095	175	735	1580	560	810
Future Volume (veh/h)	1095	175	735	1580	560	810
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		0.98	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1856	1796	1826	1841	1885	1885
Adj Flow Rate, veh/h	1153	184	774	1663	589	853
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	7	5	4	1	1
Cap, veh/h	1531	646	860	2522	750	1313
Arrive On Green	0.43	0.43	0.26	0.72	0.22	0.21
Sat Flow, veh/h	3618	1487	3374	3589	3483	2812
Grp Volume(v), veh/h	1153	184	774	1663	589	853
Grp Sat Flow(s),veh/h/ln	1763	1487	1687	1749	1742	1406
Q Serve(g_s), s	34.5	10.0	27.8	31.7	20.0	26.6
Cycle Q Clear(g_c), s	34.5	10.0	27.8	31.7	20.0	26.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1531	646	860	2522	750	1313
V/C Ratio(X)	0.75	0.28	0.90	0.66	0.79	0.65
Avail Cap(c_a), veh/h	1742	735	903	2522	750	1313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.8	22.9	45.2	9.3	46.5	25.6
Incr Delay (d2), s/veh	2.5	0.6	11.3	1.0	5.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	3.4	12.6	10.1	9.2	9.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.3	23.6	56.5	10.3	51.8	26.6
LnGrp LOS	C	C	E	B	D	C
Approach Vol, veh/h	1337			2437	1442	
Approach Delay, s/veh	31.1			24.9	36.9	
Approach LOS	C			C	D	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), s	36.0	58.5		94.5	31.0	
Change Period (Y+Rc), s	* 5.6	6.0		6.0	6.0	
Max Green Setting (Gmax), s	* 32	60.0		60.0	25.0	
Max Q Clear Time (g_c+I1), s	29.8	36.5		33.7	28.6	
Green Ext Time (p_c), s	0.6	16.0		22.1	0.0	

Intersection Summary

HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.























* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

User approved changes to right turn type.

HCM 6th Signalized Intersection Summary

29: OR 99W & Roy Rogers/TSR

03/01/2021

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	155	610	130	610	620	80	245	785	370	135	1545	510	
Future Volume (veh/h)	155	610	130	610	620	80	245	785	370	135	1545	510	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.99	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach	No			No			No			No			
Adj Sat Flow, veh/h/ln	1781	1841	1767	1841	1841	1752	1856	1826	1856	1767	1870	1900	
Adj Flow Rate, veh/h	158	622	133	622	633	82	250	801	378	138	1577	520	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	
Percent Heavy Veh, %	8	4	9	4	4	10	3	5	3	9	2	0	
Cap, veh/h	300	507	108	706	647	84	662	3195	1007	173	1376	444	
Arrive On Green	0.18	0.18	0.17	0.21	0.21	0.21	0.37	0.64	0.64	0.10	0.36	0.35	
Sat Flow, veh/h	1697	2865	612	3401	3113	403	1767	4985	1571	1682	3805	1227	
Grp Volume(v), veh/h	158	379	376	622	355	360	250	801	378	138	1407	690	
Grp Sat Flow(s),veh/h/ln	1697	1749	1728	1700	1749	1767	1767	1662	1571	1682	1702	1628	
Q Serve(g_s), s	11.0	23.0	23.0	23.1	26.2	26.3	13.4	8.9	14.8	10.4	47.0	47.0	
Cycle Q Clear(g_c), s	11.0	23.0	23.0	23.1	26.2	26.3	13.4	8.9	14.8	10.4	47.0	47.0	
Prop In Lane	1.00		0.35	1.00		0.23	1.00		1.00	1.00		0.75	
Lane Grp Cap(c), veh/h	300	309	306	706	363	367	662	3195	1007	173	1231	589	
V/C Ratio(X)	0.53	1.23	1.23	0.88	0.98	0.98	0.38	0.25	0.38	0.80	1.14	1.17	
Avail Cap(c_a), veh/h	300	309	306	706	363	367	662	3195	1007	207	1231	589	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Uniform Delay (d), s/veh	48.6	53.5	53.8	49.9	51.2	51.2	29.6	10.0	11.0	57.0	41.5	42.3	
Incr Delay (d2), s/veh	1.2	126.8	128.5	12.4	41.2	41.7	0.4	0.2	1.1	14.8	74.5	94.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	4.7	20.9	20.8	11.0	15.6	15.9	5.6	3.0	5.0	5.0	31.5	33.6	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh	49.7	180.3	182.3	62.3	92.4	92.9	30.0	10.2	12.1	71.7	116.0	136.8	
LnGrp LOS	D	F	F	E	F	F	C	B	B	E	F	F	
Approach Vol, veh/h	913			1337				1429				2235	
Approach Delay, s/veh	158.5			78.5				14.1				119.7	
Approach LOS	F			E				B				F	
Timer - Assigned Phs	1	2		4	5	6		8					
Phs Duration (G+Y+Rc), s	54.1	51.0		27.0	17.4	87.8		31.0					
Change Period (Y+Rc), s	6.0	* 6		5.5	5.0	6.0		6.0					
Max Green Setting (Gmax), s	16.0	* 45		21.5	15.0	46.0		25.0					
Max Q Clear Time (g_c+I1), s	15.4	49.0		25.0	12.4	16.8		28.3					
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	12.2		0.0					
Intersection Summary													
HCM 6th Ctrl Delay	90.9												
HCM 6th LOS	F												
Notes													
User approved pedestrian interval to be less than phase max green.													
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.													

SAFETY ANALYSIS

A comprehensive safety analysis was conducted within the study area using crash data from 2014-2018 obtained from ODOT's Crash Analysis and Reporting Unit, in addition to information from ODOT's Safety Implementation Plan. A summary of the key findings is provided below, with the detailed analysis included in the appendix.

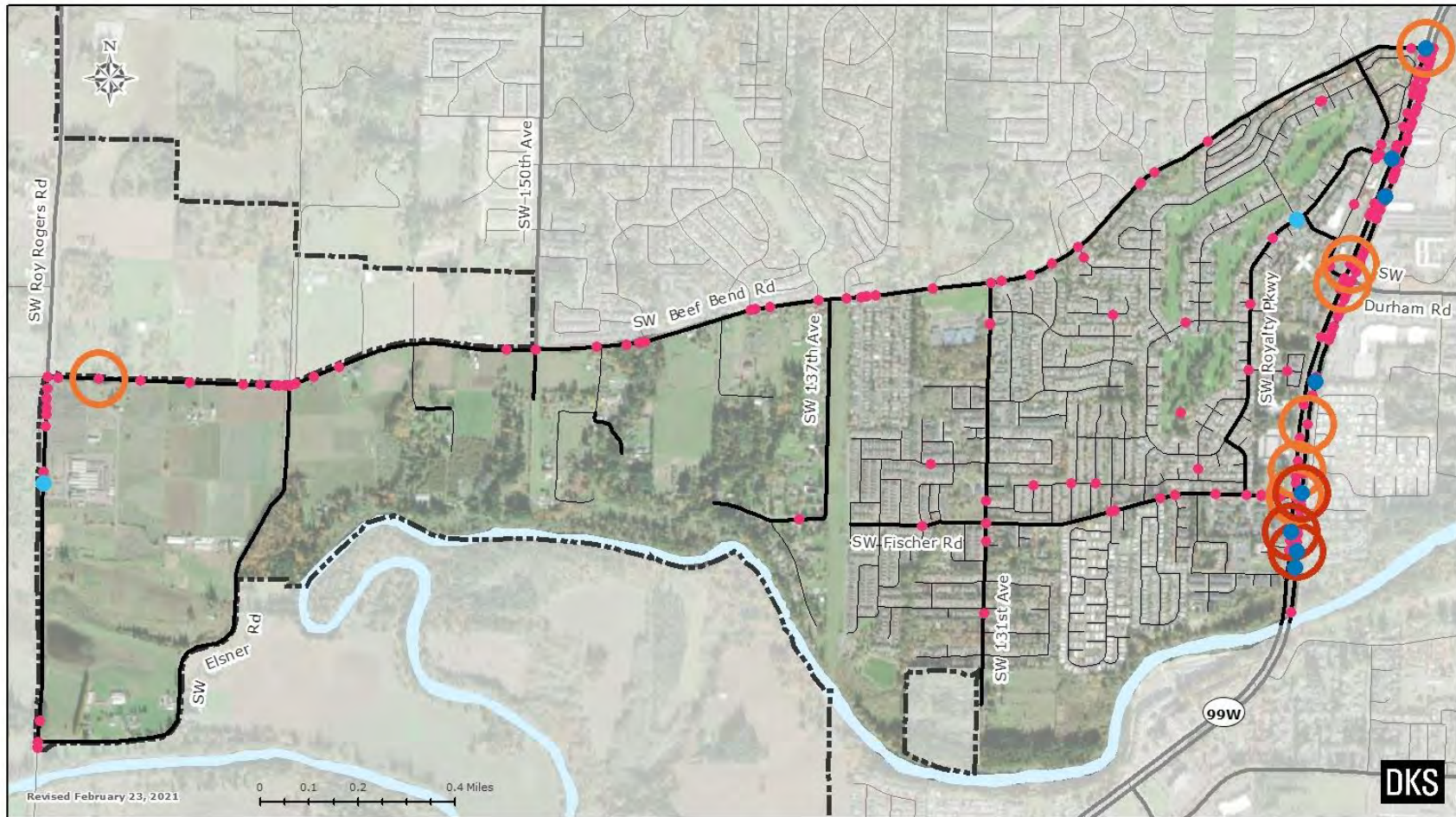
CRASH TRENDS

Figure B and Tables C and D summarize data for the 5-year period between 2014 and 2018, with 384 collisions occurring in King City. Of these collisions, 9 involved a pedestrian, 2 involved a bicyclist, and 373 involved a vehicle or multiple vehicles. All of the pedestrian collisions occurred along OR 99W, while the bicycle collisions occurred along SW Roy Rogers Road and SW Royalty Parkway. There were three fatalities, all pedestrians, and 8 severe injuries, two of which were pedestrians. The fatalities occurred along OR 99W, near the SW Fischer Road intersection, with the pedestrian at fault in two of them, and the vehicle at fault in the third.

TABLE C: COLLISION SUMMARY IN KING CITY

	ALL COLLISIONS	COLLISIONS INVOLVING VEHICLE(S) ONLY	COLLISIONS INVOLVING PEDESTRIANS	COLLISIONS INVOLVING BICYCLISTS
TOTAL COLLISIONS (2014 TO 2018)	384	373	9	2
COLLISIONS WITH FATALITIES	3	0	3	0
FATALITIES	3	0	3	0
COLLISIONS WITH SEVERE INJURIES	8	6	2	0
SEVERE INJURIES	8	6	2	0
Source: ODOT Crash Analysis and Reporting Unit. Reported collision data from 2014 to 2018.				

FIGURE B: COLLISIONS IN KING CITY (2014 TO 2018)



Legend:

Collisions (2014 to 2018):

- Collision involving a Pedestrian (9)
- Collision involving a Bicyclist (2)
- Collision Involving a Vehicle(s) (373)

Collision Severity (2014 to 2018):

- Collision with Fatal Injury (3)
- Collision with Severe Injury (8)

Urban Growth Boundary

TABLE D: INTERSECTION CRASH RATES* (2014-2018)

Intersection	Collision Type				Severity		Total Crashes
	Angle or Turn	Rear-End	Other ¹	PDO ²	Minor Injury	Serious /Fatal	
ROY ROGERS RD & BEEF BEND RD	2	12	1	5	10	0	15
BEEF BEND RD & TAYLOR LN/ ELSNER RD	1	0	1	0	2	0	2
BEEF BEND RD & 150 TH AVE	4	1	0	2	3	0	5
BEEF BEND RD & 137 TH AVE	0	0	0	0	0	0	0
BEEF BEND RD & 131 ST AVE	2	0	0	1	1	0	2
ROY ROGERS RD & AL'S GARDEN	2	4	0	2	4	0	6
ROY ROGERS RD & ELSNER RD	0	3	0	1	2	0	3
131 ST AVE & FISCHER RD	2	1	0	2	1	0	3
OR 99W & BEEF BEND RD	8	13	4	16	7	2	25
OR 99W & BULL MOUNTAIN RD	9	36	2	23	24	0	47
OR 99W & DURHAM RD	12	25	4	17	24	0	41
OR 99W & FISCHER RD	8	14	4	17	7	2	26
OR 99W & 124 TH AVE	4	11	0	4	11	0	15
OR 99W & TUALATIN-SHERWOOD RD	11	51	3	27	38	0	65

*Crash rates are crashes per million vehicles entering this intersection.

**All crashes occurred before Phase 1 was completed.

¹ Other crash types include fixed-object, SS-O, Non-Collision, Ped crashes.

² PDO = Property Damage Only

As can be seen above, the intersection of OR 99W and Tualatin-Sherwood Road had the highest number of crashes with 65 crashes. The majority of crashes were rear-end crashes followed by angle or turn crashes. None of these crashes resulted in a serious injury or fatality. The intersections of OR 99W and Beef Bend Road and OR 99W and Fischer Road did have two crashes each resulting in a serious injury or fatality. The two fatalities were pedestrian crashes caused by the drivers disregarding the signals. The two serious injury crashes were fixed object crashes caused by reckless driving.

CRASH RATE ANALYSIS

Crash rate analysis was completed for each study intersection and segments along OR 99W. These crash rates are compared to crash rates that would be expected for similar facilities within the state. Intersections and segments were flagged as safety focus locations if observed crash rates surpassed the critical and 90th percentile rates described below. The following crash rate analysis were performed:

- Intersection Crash Rate Analysis: Compares performance of intersection to other similar intersections throughout the state.
- Segment Crash Rate Analysis: Similar to intersection crash rate analysis, pre-defined highway segments are compared against statewide average crash rates with similar facilities.
- Safety Priority Index System: Provides another method for identifying potential safety problems and crash patterns on state highways.

INTERSECTION CRASH RATE ANALYSIS

The observed crash rate for intersections is a function of the number of crashes and the annual average daily traffic (AADT). Each intersection is grouped into a reference population based on intersection control. The crash rates (crashes per million entering vehicles) for each intersection were compared to two different standards:

- A critical crash rate, which compares performance to other similar intersections being studied in the project area, and
- A 90th percentile crash rate, which is based on similar intersections throughout the state (obtained from ODOT's Analysis Procedures Manual Exhibit 4-1).

Table E shows the crash rates for each study intersection where crashes were recorded. Intersections that have observed crash rates greater than either the critical or 90th percentile crash rate were flagged as safety focus areas for further consideration. Full calculations are provided in the appendix.

TABLE E: INTERSECTION CRASH RATES* (2014-2018)

Intersection Name	Safety Focus Area	Observed Crash Rate	Critical Crash Rate	90 th Percentile Crash Rate
ROY ROGERS RD & BEEF BEND RD		0.41	0.68	0.86
BEEF BEND RD & TAYLOR LN/ ELSNER RD		0.23	0.51	0.41
BEEF BEND RD & 150 TH AVE		0.32	0.42	0.41
BEEF BEND RD & 137 TH AVE		0.00	0.31	0.29
BEEF BEND RD & 131 ST AVE		0.13	0.70	0.51
ROY ROGERS RD & FISCHER RD EXTENSION		0.17	0.24	0.29
ROY ROGERS RD & ELSNER RD		0.10	0.26	0.29
131 ST AVE & FISCHER RD		0.37	0.52	0.41
OR 99W & BEEF BEND RD		0.36	0.54	0.51
OR 99W & BULL MOUNTAIN RD	Yes	0.67	0.54	0.51
OR 99W & DURHAM RD		0.59	0.62	0.86
OR 99W & FISCHER RD		0.37	0.54	0.51
OR 99W & 124 TH AVE		0.26	0.55	0.51
OR 99W & TUALATIN-SHERWOOD RD	Yes	1.09	0.63	0.86

*Crash rates are crashes per million vehicles entering this intersection.

As can be seen in the table above, two intersections were flagged as safety focus areas. The intersection of OR 99W and Bull Mountain Road and OR 99W and Tualatin-Sherwood Road.

SEGMENT CRASH RATE ANALYSIS

In addition to individual intersections, crash rates for segments of OR 99W were analyzed to identify potential safety focus areas along the corridor. Pre-defined highway segments along OR 99W and their crash rates were obtained from the 2018 ODOT State Highway Crash Book. Crash rates experienced for each of the last reported five years (between 2014-2018) were compared against the statewide average crash rate for similar facilities using Crash Rate Table II in the Crash Book.

This analysis led to the flagging of two segments as safety focus areas for further investigation and potential mitigation through alternatives considered (see Table F). These included the segments of SW Bull Mountain Road to SW 116th Avenue and SW 116th Avenue to the Tualatin River.

TABLE F: SEGMENT CRASH RATES

Start Milepoint	End Milepoint	Segment Name	Safety Focus Area	Area Type	Observed Crash Rate	Statewide Average Crash Rate
10.71	11.47	SW Bull Mt Rd to SW 116th Ave	YES	Urban City	3.84	2.96
11.47	12.20	SW 116 th Ave to Tualatin River	YES	Urban Fringe	1.74	1.43
12.20	13.33	Tualatin River to South City Limit		Urban City	0.71	2.96
13.33	14.54	South City Limit to Sherwood North City Limit		Urban Fringe	0.47	1.43
14.54	15.23	Sherwood North City Limit to Six Corners		Urban City	1.99	2.96

As can be seen in the table above, two segments have been identified as safety focus areas. The two segments connect together running from SW Bull Mountain Road to the Tualatin River. Crashes tend to run along the entire segment with heavier concentrations near major intersections. It should be noted that the majority of crashes were rear-end crashes and could be related to standing queues. Further consideration should be made to enhance the safety of these segments.

SAFETY PRIORITY INDEX SYSTEM

The Safety Priority Index System (SPIS) provides another method for identifying potential safety problems and crash patterns on state highways. The SPIS is a method developed by ODOT and is a scoring system based on three years of crash data and considers crash rates, severities, and frequencies. The highest rated sites are considered for potential safety improvements.

The 2018 SPIS ratings for OR 99W within the study area were obtained from ODOT to screen for locations with SPIS ratings among the state's top 10 percent. The following locations within the study area were identified among the top 10 percent SPIS sites:

- Intersection of OR 99W and Beef Bend Road
- Intersection of OR 99W and Durham Road
- Intersection of OR 99W and Fischer Road
- Intersection of OR 99W and Roy Rogers Road/Tualatin Sherwood Road

APPENDIX M. ASPIRATIONAL PROJECT LIST AND NETWORK MAPS

PROPOSED MULTIMODAL NETWORK MAPS AND DRAFT LONG-RANGE CAPITAL PROJECT LIST

DATE: June 11, 2021

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement

Proposed Multimodal Network Maps and Draft Long-Range Capital
Project List (Task 7.1 and 7.2; Deliverable 7A and 7B)

#20020-002

This document presents the draft list of transportation system investments to address all the identified City needs, regardless of the ability to fund them. The complete list of projects is referred to as Aspirational Projects. This draft project list will be further refined based on Project Management Team, public and stakeholder, Planning Commission and City Council input, and on-going Master Plan work in the Kingston Terrace area.

The final steps in the TSP process include developing planning level cost-estimates and applying measurable evaluation criteria for each project to arrive at a Financially Constrained list of projects (Deliverable 7D: Draft Financially Constrained Capital Project List) and assessing system performance of the long-range capital project and financially constrained capital project lists (Deliverable 7E: Evaluation Report on Transportation Network Alternatives).

PROPOSED MULTIMODAL NETWORK MAPS

The following sections include the proposed network maps for vehicles, pedestrians, bicyclists and transit riders. The proposed networks are consistent with the standards and policies established in Task 5 and address the gaps and deficiencies identified in Task 6 of this TSP effort.

VEHICLE NETWORK

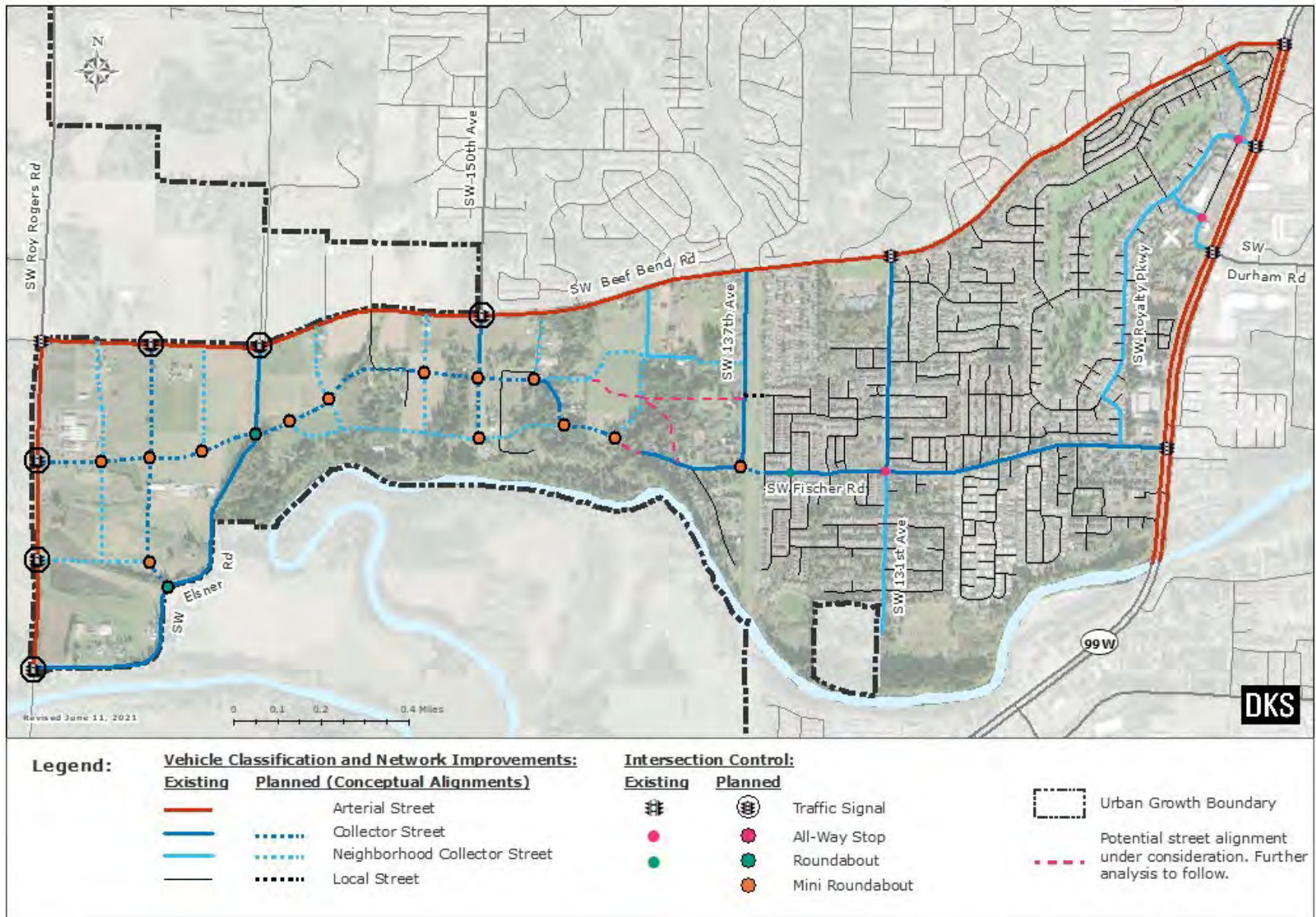
The proposed vehicle network improvements and intersection control can be seen in Figure 1. See Table 1 later in this document for more detail on the proposed improvements. Most of the vehicle network projects include street improvements, extensions, and new streets to accommodate future growth in the Kingston Terrace area. The alignments shown for these streets are preliminary and will continue to be refined through the Kingston Terrace Master Planning process and through the typical development review process. The proposed vehicle network includes two large scale



widening projects along arterial streets taken from the current Metro Regional Transportation Plan, including that of SW Roy Rogers Road to five-lanes from SW Elsner Road to SW Beef Bend Road, and widening of SW Beef Bend Road to three-lanes from SW Roy Rogers Road to SW 131st Avenue.

Another critical project is a study of the OR 99W Corridor through King City, along with neighboring agencies, to develop a corridor-wide improvement plan to align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical focus areas in King City are expanded and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight. Various projects were proposed along the highway through King City, although those will likely be further refined in the future corridor study.

FIGURE 1: PROPOSED VEHICLE CLASSIFICATIONS AND NETWORK IMPROVEMENTS



PEDESTRIAN NETWORK

The proposed pedestrian overlays can be seen in Figure 2. The pedestrian overlays were used to develop the proposed network improvements shown in Figure 3. As shown, the proposed network includes a connected system of sidewalks, shared-use paths and pedestrian crossings. See Table 1 later in this document for more detail on the proposed improvements.

Legend:

Pedestrian Overlay:

Existing Street	Planned Street (Conceptual Alignments)
	Multimodal Area Street
	Major Pedestrian Street
	Neighborhood Pedestrian Street
	Local Pedestrian Street

Bus Stop

School

Park

Urban Growth Boundary

Multimodal Area

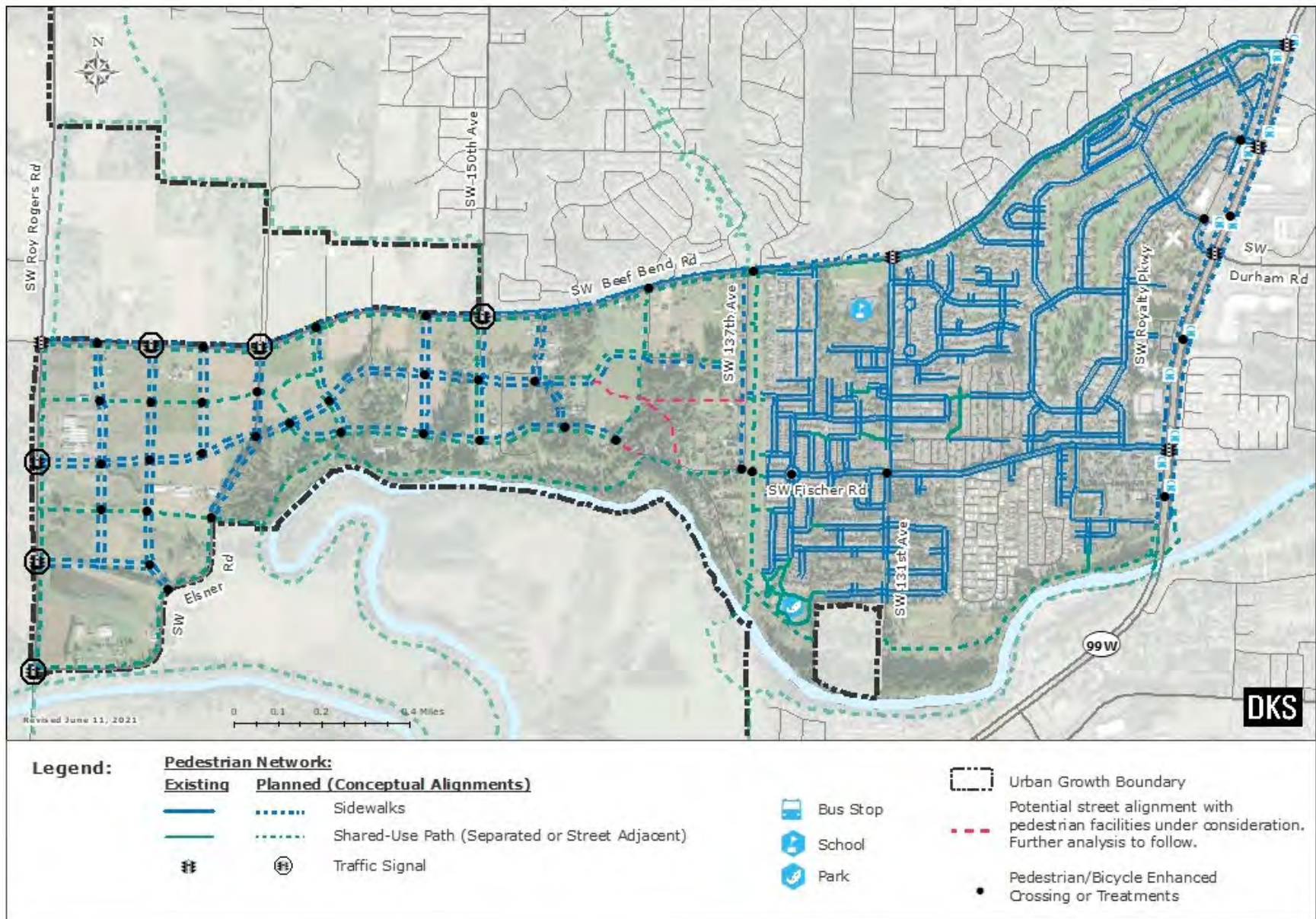
Potential street alignment with pedestrian facilities under consideration. Further analysis to follow.

Revised June 11, 2021

0 0.1 0.2 0.4 Miles

DKS

FIGURE 3: PROPOSED PEDESTRIAN NETWORK IMPROVEMENTS



BICYCLE NETWORK

The proposed bicycle overlays can be seen in Figure 4. The bicycle overlays were used to develop the proposed network improvements shown in Figure 5. As shown, the proposed network includes a connected system of on-street bike lanes, protected and separated bike lanes, shared-use paths and street crossings. See Table 1 later in this document for more detail on the proposed improvements.

FIGURE 4: PROPOSED BICYCLE OVERLAYS

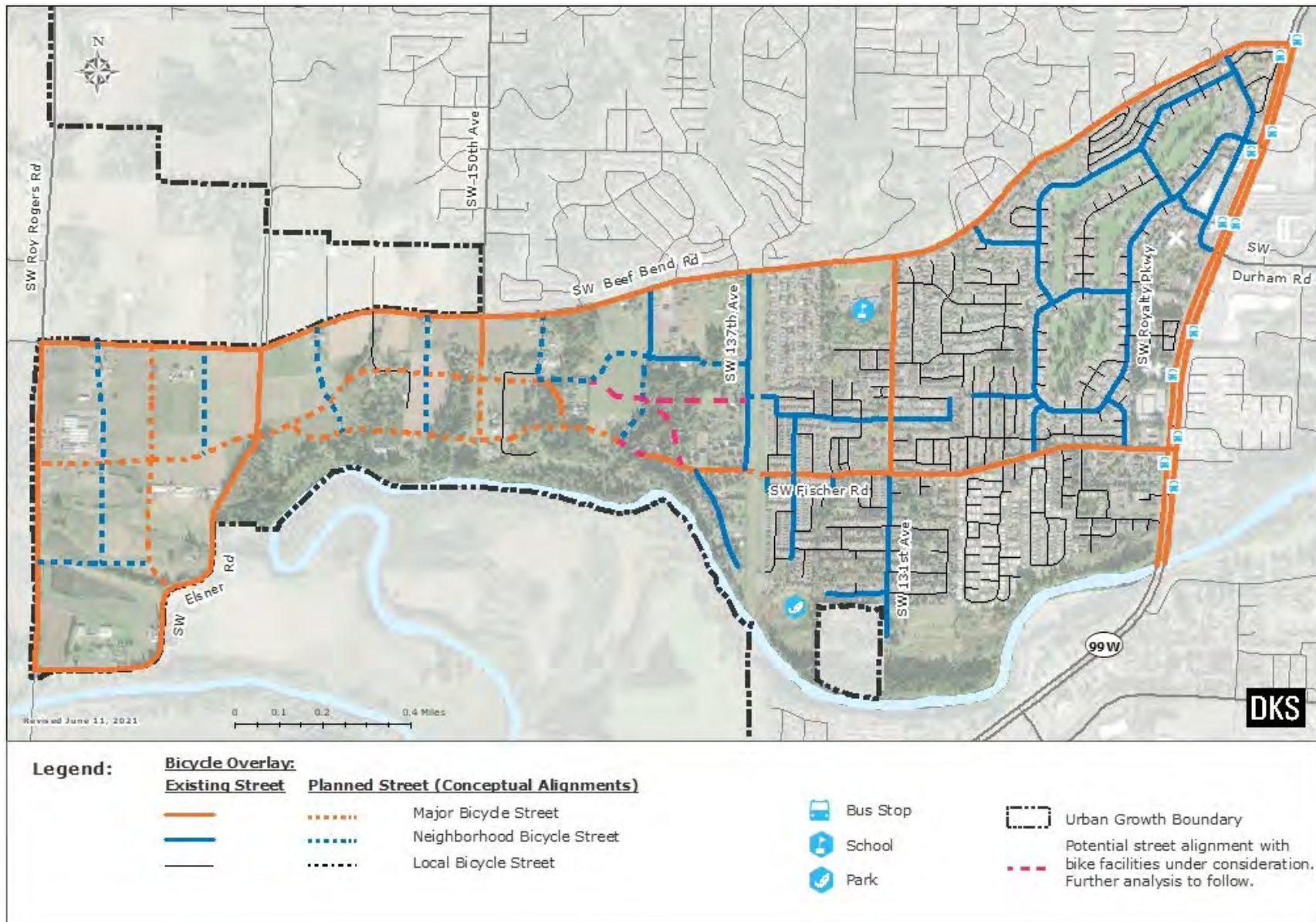
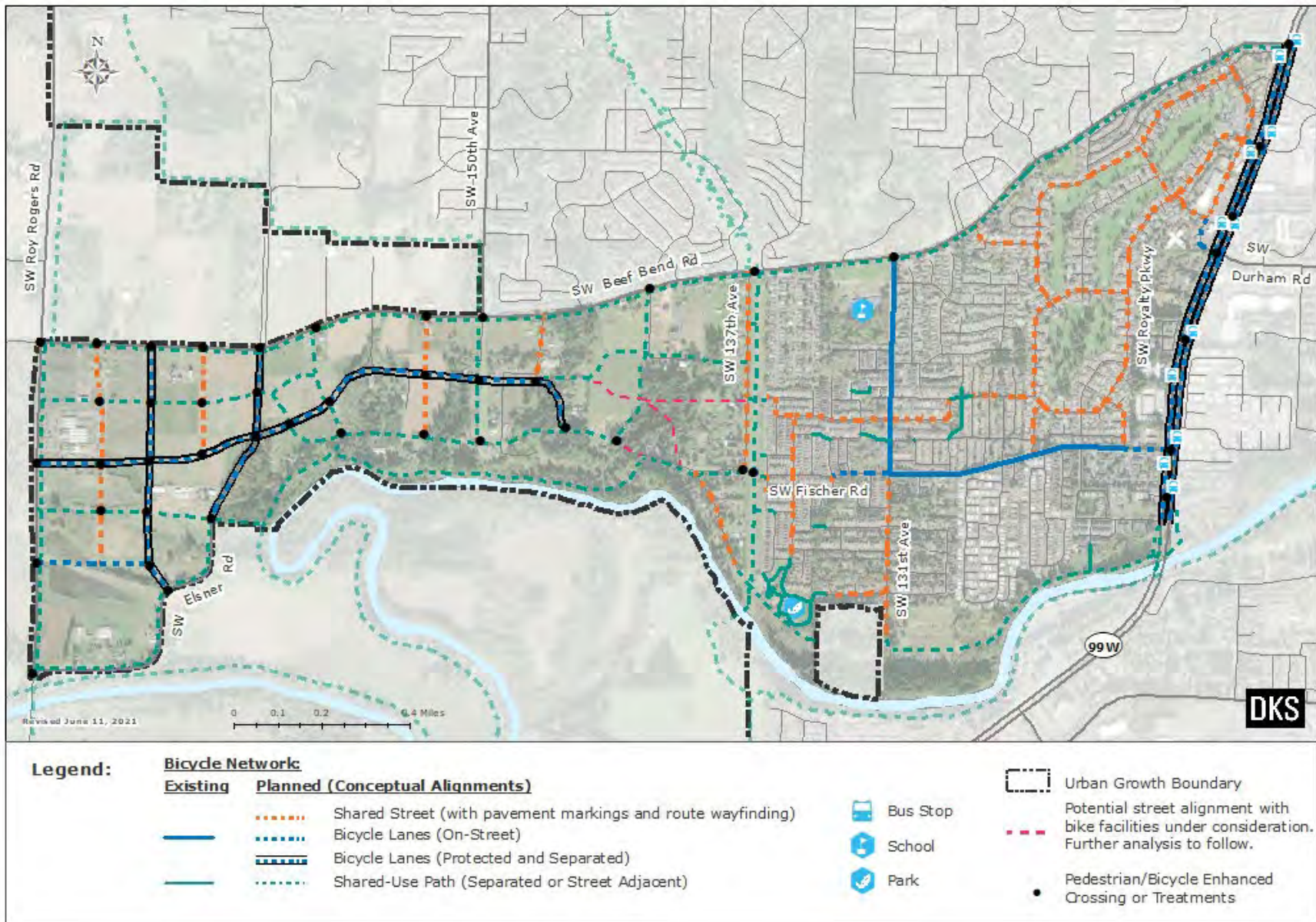


FIGURE 5: PROPOSED BICYCLE NETWORK IMPROVEMENTS



TRANSIT NETWORK

A potential approach to the expanding transit circulation into Kingston Terrace is shown in Figure 6. The SW River Terrace Boulevard extension, SW Elsner Road, and the SW Fischer Road extension are recommended to serve as the primary pedestrian and bicycle paths to the proposed bus service, where bus-bulb outs could be constructed into the on-street parking lanes for bus stops. Wide on-street sidewalks and shared-use paths will connect transit users from these facilities to other key destinations. Within the King City Town Center and what would be a reasonable bus ride from Kingston Terrace, pedestrians and cyclists can access two TriMet fixed bus routes connecting the City with Downtown Portland, Tigard, and Sherwood. The King City Town Center is also a potential location for a transit hub for riders in the City. A portion of the King City Plaza parking lot could be repurposed for the facility and could offer riders a spot to connect to all bus routes that serve the City. This is currently envisioned in the King City Town Center Plan and Implementation Strategy, and TriMet's SW Service Enhancement Plan.

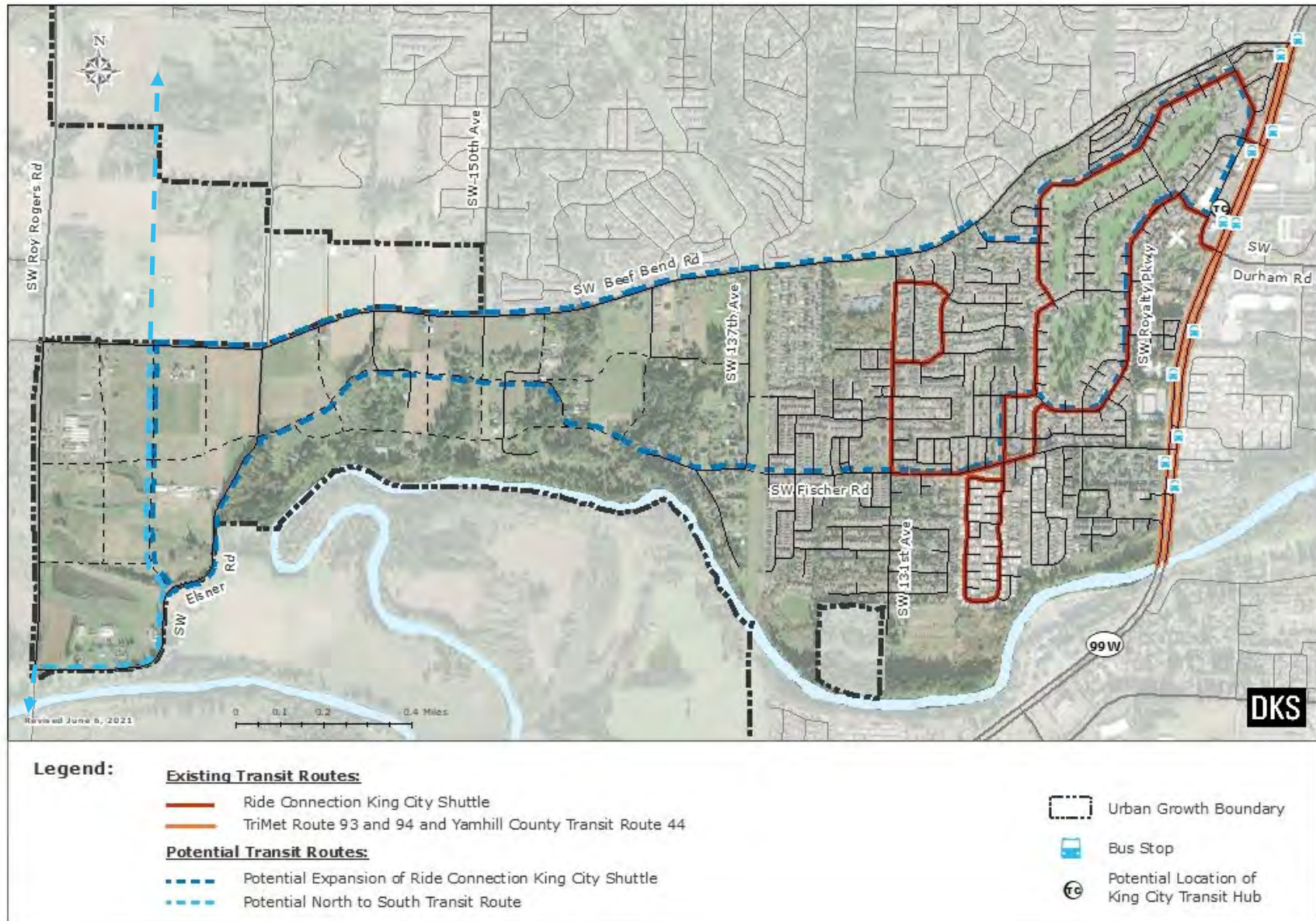
A few options to consider for bus service include:

- A route modification to extend the Ride Connection King City Shuttle west from the SW King George Drive/SW Prince Albert Street intersection to SW Beef Bend Road. The route could travel west on SW Beef Bend Road and turn south onto the SW River Terrace Boulevard extension, before returning via SW Elsner Road and the SW Fischer Road extension.
- A route modification allowing TriMet buses to enter the King City Town Center at the SW Royalty Parkway intersection and exit at the SW 116th Avenue intersection, or vice versa. A potential bus-stop at the transit hub east of the SW Queen Elizabeth Avenue and SW 116th Avenue intersection.
- A potential new route along the SW Roy Rogers Road and/or SW River Terrace Boulevard corridor.
- Enhancing existing bus stops along OR 99W in King City.
- Improving pedestrian and bicycle access to existing bus stops along OR 99W, including new and/or improved street crossings.

Proposed streets will provide adequate right-of-way to support the King City Shuttle bus access via the suggested routes. On-street parking will need to be restricted near potential bus-stop locations. Curb extensions may need to be adjusted and parking also may need to be restricted within about 15 feet of corners to allow for buses to maneuver turns along the potential route.

Kingston Terrace will be served by high quality pedestrian/bicycle connections. The fine grain of blocks will be oriented towards pedestrian and bicycle users, with active and inviting public walkways and shared-use paths proposed to connect neighborhoods to the Tualatin River and areas to the east in King City. It is intended that the area will also include a supportive mix of uses and amenities for encouraging transit ridership. A key strategy of the King City TSP is to extend bus service and ensure necessary infrastructure (e.g., shelter, signage) is implemented to support ridership.

FIGURE 6: POTENTIAL TRANSIT ROUTES



DRAFT ASPIRATIONAL PROJECT LIST

The draft Aspirational Project list is included in Table 1 and shown on Figure 7. Projects are grouped by corridors, with each project summarized under the segment.

TABLE 1: DRAFT ASPIRATIONAL PROJECT LIST

PROJECT ID	PROJECT DESCRIPTION
1	SW Roy Rogers Road Corridor (#1) Improvements from SW Elsner Road to SW Beef Bend Road.
1a	Widen to five lanes (Arterial Street) with pedestrian (Major Pedestrian Overlay) and bicycle facilities (Major Bicycle Overlay). Cost assumes a shared-use path on the east side.
1b	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.
2	New Corridor (#2) between SW Roy Rogers Road and SW Elsner Road.
2a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes 2-lane street with parking, and sidewalks and on-street bike lanes on each side, with 3-lanes at the SW Roy Rogers Road intersection.
2b	Improve the SW Roy Rogers Road intersection. Cost assumes installation of a traffic signal.
3	New Corridor (#3) between SW Beef Bend Road and the planned Corridor 2.
3a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking and sidewalks on each side, and shared lane markings for bikes, with 3-lanes at the SW Beef Bend intersection.
3b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.
3c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
4	SW River Terrace Boulevard Corridor (#4) Extension between SW Beef Bend Road and SW Elsner Road.
4a	Construct a Collector Street with pedestrian (Multimodal Area Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks and a one-way cycle track on each side, with 3-lanes provided at the SW Beef Bend intersection.
4b	Improve the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.
4c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
4d	Improve the planned Corridor 2 intersection. Cost assumes installation of a mini roundabout.
4e	Improve the SW Elsner Road intersection. Cost assumes installation of a roundabout.
5	New Corridor (#5) between SW Beef Bend Road and the SW Fischer Road extension.
5a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking and sidewalks on each side, and shared lane markings for bikes, with 3-lanes at the SW Beef Bend intersection.
5b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.
5c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.

PROJECT ID	PROJECT DESCRIPTION
6	SW Elsner Road Corridor (#6) Improvements from SW Roy Rogers Road to SW Beef Bend Road.
6a	Improve to a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Roy Rogers Road to the planned Tualatin River Trail crossing. Cost assumes a 2-lane street with a shared-use path on the west side and left-turn lanes where needed.
6b	Improve to a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Beef Bend Road to the planned Tualatin River Trail crossing. Cost assumes a 2-lane street with sidewalks and a one-way cycle track on each side and left-turn lanes where needed.
7	SW Fischer Road Corridor (#7) Extension/Improvements from SW Roy Rogers Road to OR 99W.
7a	Extend SW Fischer Road as a Collector Street with pedestrian (Multimodal Area Overlay) and bike facilities (Major Bicycle Overlay) from SW Roy Rogers Road to SW Elsner Road. Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.
7b	Extend/Improve SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Elsner Road to the planned Corridor #9. Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.
7c	Extend SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from the planned Corridor #9 to the SW Myrtle Avenue extension. Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.
7d	Improve SW River Lane to include pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW River Lane to SW 137 th Avenue. Cost assumes a 2-lane street, with a shared-use path on the south side.
7e	Extend SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW 137 th Avenue to SW Cordelia Terrace. Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.
7f	Improve SW King Lear Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay).
7g	Reconfigure SW Fischer Road as a 2-lane street with bike lanes (Major Bicycle Overlay) on each side from SW King Lear Way to SW 131 st Avenue.
7h	Reconfigure SW Fischer Road as a 3-lane street with bike lanes (Major Bicycle Overlay) on each side from SW Queen Anne Avenue to OR 99W.
7i	Improve the SW Roy Rogers Road intersection. Cost assumes installation of a traffic signal.
7j	Improve the SW Elsner Road intersection. Cost assumes installation of a roundabout.
7k	Improve the SW 150 th Avenue intersection. Cost assumes installation of a mini roundabout.
7l	Improve the SW 137 th Avenue intersection. Cost assumes installation of mini roundabout.
8	SW Beef Bend Road Corridor (#8) Improvements from SW Roy Rogers Road to OR 99W.

PROJECT ID	PROJECT DESCRIPTION
8a	Widen to three lanes (Arterial Street), with pedestrian (Major Pedestrian Overlay) and bicycle facilities (Major Bicycle Overlay) between SW Roy Rogers Road and SW 150 th Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.
8b	Widen to three lanes (Arterial Street), complete sidewalk gaps (Major Pedestrian Overlay), and add separated/protected bike facilities (Major Bicycle Overlay) between SW 150 th Avenue to SW 131 st Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.
8c	Add separated/protected bike facilities (Major Bicycle Overlay) and complete sidewalk gaps (Major Pedestrian Overlay) between SW 131 st Avenue and OR 99W. Cost assumes a shared-use path on the south side.
8d	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.
8e	Improve the SW 150 th Avenue intersection. Cost assumes installation of a traffic signal.
8f	Improve the SW 116 th Avenue intersection. Cost assumes restriping the SW 116 th Avenue approach to SW Beef Bend Road to include separate left-turn and right-turn lanes.
9	New Corridor (#9) between SW Fischer Road extension (near SW Elsner Road) to the SW Fischer Road extension (near SW Myrtle Avenue).
9a	Construct a Neighborhood Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, a sidewalk on the north side and a shared-use path on the south side.
9b	Improve the SW Fischer Road extension intersection (west intersection). Cost assumes installation of a mini roundabout.
9c	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #10 intersection.
9d	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #11 intersection.
9e	Improve the SW 150 th Avenue intersection. Cost assumes installation of a mini roundabout.
9f	Improve the SW Fischer Road extension intersection (east intersection). Cost assumes installation of a mini roundabout.
10	New Corridor (#10) between SW Beef Bend Road and the planned Corridor #9.
10a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, a shared-use path on the west side, and a sidewalk on the east side.
10b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.
10c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
11	New Corridor (#11) between SW Beef Bend Road and the planned Corridor #9.
11a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.

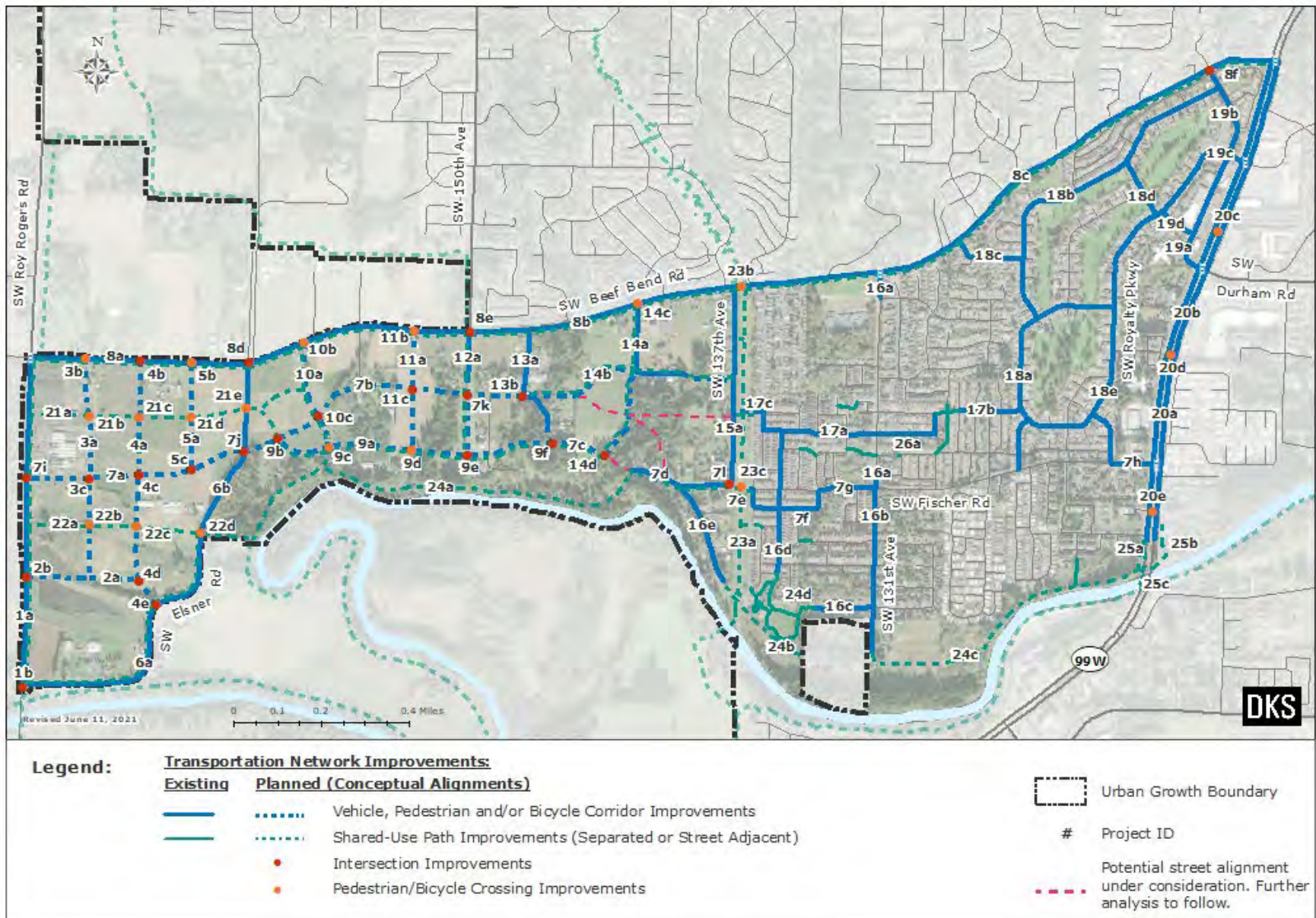
PROJECT ID	PROJECT DESCRIPTION
11b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.
11c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
12	SW 150th Avenue Corridor (#12) Improvements from SW Beef Bend Road to the planned Corridor #9.
12a	Construct a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, a shared-use path on the west side and a sidewalk on the east side, with 3-lanes provided at the SW Beef Bend intersection.
13	SW 147th Avenue Corridor (#13) Improvements from SW Beef Bend Road to the SW Fischer Road extension.
13a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.
13b	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
14	SW Myrtle Avenue Corridor (#14) Extension/Improvements from SW Beef Bend Road to the SW Fischer Road extension and SW 147th Avenue to SW 137th Avenue.
14a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay) from SW Beef Bend Road to the SW Fischer Road extension. Cost assumes a 2-lane street with parking, a shared-use path on the west side, with 3-lanes provided at the SW Beef Bend intersection.
14b	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay) from SW 147 th Avenue to SW 137 th Avenue. Cost assumes a 2-lane street, a shared-use path on the north side and a sidewalk on the south side
14c	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.
14d	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.
15	SW 137th Avenue Corridor (#15) Improvements from SW Beef Bend Road to the SW Fischer Road extension.
15a	Improve to include pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street, a sidewalk on the west side and shared lane markings for bikes, with 3-lanes provided at the SW Beef Bend intersection.
16	SW 131st Avenue/SW Bedford Street/SW 136th Avenue/SW King Lear Way/SW River Lane Bike Route Improvements.
16a	Improve SW 131 st Avenue to include a northbound bike lane north of SW Peachvale Street, and southbound bike lane between SW Carmel Street and SW Fischer Road.
16b	Improve SW 131 st Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) south of SW Fischer Road.
16c	Improve SW Bedford Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) west of SW 131 st Street.
16d	Improve SW 136 th Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay).

PROJECT ID	PROJECT DESCRIPTION
16e	Improve SW River Lane to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) south of SW Watson.
17	SW Cordelia Terrace to SW King Charles Avenue Improvements.
17a	Improve SW Capulet Lane, SW Romeo Terrace, SW MacBeth Drive and SW Jordan Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Cordelia Terrace and SW Matador Lane.
17b	Improve SW Morocco Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Matador Lane and SW King Charles Avenue.
17c	Extend SW Capulet Lane as a Local Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.
18	SW Fischer Road to SW Beef Bend Road Bike Route Improvements.
18a	Improve SW 124 th Avenue and SW King Charles Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Fischer Road and SW Royalty Parkway.
18b	Improve SW King George Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King Charles Avenue and SW 116 th Avenue.
18c	Improve SW Prince Albert Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King George Drive and SW Beef Bend Road.
18d	Improve SW Queen Elizabeth Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King George Drive and SW Royalty Parkway.
18e	Improve SW Royalty Parkway and SW Queen Anne Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and SW Fischer Road.
19	King City Town Center Improvements from SW Beef Bend Road to OR 99W.
19a	Improve SW 116 th Avenue to enhance the streetscape, improve ADA compliance and widen existing sidewalks, complete sidewalk gaps (Multimodal Area Overlay) and reconfigure to include bike lanes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and OR 99W.
19b	Improve SW 116 th Avenue to enhance the streetscape and widen existing sidewalks, improve ADA compliance, complete sidewalk gaps (Multimodal Area Overlay) and include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and SW Beef Bend Road. Note a portion of this street segment is currently private.
19c	Improve SW Royalty Parkway to include shared lane markings and route wayfinding for bikes between OR 99W and SW Queen Elizabeth Street.
19d	Improve SW Queen Elizabeth Street to enhance the streetscape, improve ADA compliance and widen existing sidewalks and include shared lane markings and route wayfinding for bikes between SW Royalty Parkway and SW 116 th Avenue.
20	OR 99W Corridor Plan from SW Beef Bend Road to the Tualatin River.

PROJECT ID	PROJECT DESCRIPTION
20a	Study the OR 99W Corridor through King City, along with neighboring agencies, to develop a corridor-wide improvement plan to align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical focus areas in King City are expanded and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight.
20b	Provide expanded pedestrian facilities and buffer from the vehicle travel way and protected and separated bicycle facilities. Cost assumes widened sidewalks, a one-way cycle track, and a buffer on each side.
20c	Provide an enhanced pedestrian/bicycle crossing between SW 116 th Avenue and SW Royalty Parkway, the TriMet bus stops.
20d	Provide an enhanced pedestrian/bicycle crossing between SW 116 th Avenue and SW Fischer Road, near the SW King James Place intersection.
20e	Provide an enhanced pedestrian/bicycle crossing between SW Fischer Road and SW Versailles Road, near the fire signal.
21	North Kingston Terrace Trail from SW Roy Rogers Road to the planned South Kingston Terrace Trail.
21a	Construct a shared-use path for pedestrian and bicycle travel.
21b	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #3 intersection.
21c	Provide an enhanced pedestrian/bicycle crossing at the planned SW River Terrace Boulevard intersection.
21d	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #5 intersection.
21e	Provide an enhanced pedestrian/bicycle crossing at the SW Elsner Road intersection.
22	South Kingston Terrace Trail from SW Roy Rogers Road to the planned North Kingston Terrace Trail.
22a	Construct a shared-use path for pedestrian and bicycle travel.
22b	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #3 intersection.
22c	Provide an enhanced pedestrian/bicycle crossing at the planned SW River Terrace Boulevard intersection.
22d	Provide an enhanced pedestrian/bicycle crossing at the SW Elsner Road intersection.
23	Westside Trail from SW Beef Bend Road to south side of Tualatin River.
23a	Construct a shared-use path for pedestrian and bicycle travel. Provide pedestrian and bicycle connections to adjacent streets. Includes a pedestrian and bicycle crossing of the Tualatin River.
23b	Realign SW Colyer Way and SW Peachtree Drive to connect with SW 137 th Avenue and provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.
23c	Install an enhanced pedestrian/bicycle crossing at the SW Fischer Road intersection.

PROJECT ID	PROJECT DESCRIPTION
24	Tualatin River Trail from SW River Lane to King City Community Park and SW 131st Avenue to OR 99W.
24a	Construct a shared-use path for pedestrian and bicycle travel from the planned South Kingston Terrace Trail to SW River Lane.
24b	Construct a shared-use path for pedestrian and bicycle travel through King City Community Park to SW River Lane. Provide a future connection to SW 131 st Avenue (this segment is currently outside of the Urban Growth Boundary).
24c	Construct a shared-use path for pedestrian and bicycle travel from OR 99W to SW 131 st Avenue.
24d	Widen the pathway connection between SW Bedford Street and King City Community Park to provide for shared pedestrian and bicycle travel along the planned bike route.
25	OR 99W Connector Trail from OR 99W to south side of Tualatin River.
25a	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail to SW Versailles Road along the west side of OR 99W.
25b	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail under OR 99W to the fire signal along the east side of OR 99W.
25c	Construct a pedestrian and bicycle crossing of the Tualatin River along the west side of OR 99W.
26	New Shared-Use Path from SW Fitzwilliam Court to SW King Richard Drive.
26a	Construct a shared-use path for pedestrian and bicycle travel.

FIGURE 7: DRAFT ASPIRATIONAL PROJECTS



APPENDIX N. FINANCIAL FEASIBILITY REPORT



TRANSPORTATION FINANCIAL FEASIBILITY ASSESSMENT REPORT

DATE: June 8, 2021

TO: Project Management Team

FROM: Carl Springer, Kevin Chewuk and Kayla Fleskes | DKS

SUBJECT: King City Transportation System Plan

Transportation Financial Feasibility Assessment Report

#20020-002

(Task 7.3; Deliverable 7C)

This memorandum details the transportation funding that can reasonably be expected to be available through 2040. The funding assumptions will help prioritize the investments the City can make in the transportation system and will be utilized to develop reasonable budgeting assumptions when selecting a set of transportation improvements to meet identified needs through 2040.

CURRENT FUNDING SOURCES

The City uses a few primary funds for transportation, including the State Highway Trust, County Transportation Development Tax and Vehicle Registration Fees in addition to other miscellaneous funds.

- **State Highway Trust Fund**

The State Highway Trust Fund makes distributions from the state motor vehicle fuel tax, vehicle registration and title fees, driver license fees and truck weight-mile taxes. Cities and counties receive a share of State Highway Trust Fund monies, and by statute may use the money for any road-related purpose, including walking, biking, bridge, street, signal, and safety improvements.

- **Transportation Development Tax**

The Transportation Development Tax (TDT) is a one-time tax assessed on all new development and some redevelopment occurring within Washington County. In King City, the only roadways currently authorized to receive TDT funds include 131st Avenue, Beef Bend Road, and Fischer Road, while SW Roy Rogers Road is eligible in the Kingston Terrace area. The TDT list may be modified in the future to include additional projects from the TSP, particularly in the Kingston Terrace area.

- **Vehicle Registration Fees**

Washington County established a \$30 per year vehicle registration fee (VRF) for new renewals/registrations starting July 2018 to offset maintenance funding shortfalls and improve transportation safety. Forty percent of the VRF is allocated to cities within the county, which equates to approximately \$90,000 annually for King City¹.

REVENUES AND EXPENDITURES

The following sections detail the revenue and expenditure forecasts.

REVENUES

Annual revenues include \$350,000 from the State Highway Trust Fund, \$1.6 million from the County TDT and \$115,000 from other miscellaneous revenue sources including grants, service charges and earned interest (see Table 1). In addition, the recently adopted County VRF is anticipated to provide approximately \$90,000 annually for King City.

Assuming, as a conservative estimate², the same levels of funding occur in the future, King City can expect to receive approximately \$10.5 million in State Highway Trust Fund, County VRF, and miscellaneous fee revenue through 2040. In addition, the County TDT is expected to provide approximately \$30.0 million in revenue through 2040.

EXPENDITURES

Expenditures include personnel services, roadway striping, traffic control, vegetation trimming, street sweeping, maintenance, and roadway engineering. The City estimates that it spends approximately \$360,000 per year (or \$6.8 million through 2040) to maintain and operate its streets. In addition, approximately \$30,000 per year (or \$570,000 through 2040) is needed to administer the TDT.

This includes an escalation rate of 4.5 percent³ on the current expenditures to account for rising costs and ensure that needed roadway maintenance and repair work will not be deferred through 2040. Deferring necessary repair and preservation means spending much more to fix the same streets later, and repair costs rise exponentially as streets are left unmaintained. Every \$1 spent to keep a street in good condition avoids \$6 to \$14 needed later to rebuild the same street once it has deteriorated significantly⁴.

¹ <https://www.co.washington.or.us/LUT/TransportationFunding/2016-vehicle-registration-fee.cfm>

² This assumes the population growth rate in King City will be roughly the same as the cost inflation rate, therefore, maintaining existing revenues through 2040.

³ Escalation rate of 4.5 percent based on the Construction Cost Index.

⁴ Smart Growth America, American Association of State Highway Officials (AASHTO)

Heavy truck traffic and wet weather comprise two of the most critical factors in pavement deterioration⁵. Heavy trucks (particularly those hauling gravel, logs, construction materials, overseas containers, agricultural products, garbage) flex the pavement and create spaces underneath. Wet weather, with cracked pavement or poor drainage, can lead to water undermining pavement.

FUNDING SUMMARY

Through 2040, the City is expected to have approximately \$3.7 million for general street improvement needs (e.g., construction of new facilities) with an additional \$29.8 million in TDT revenue specifically for projects on 131st Avenue, Beef Bend Road, and Fischer Road (or other projects that may be added to the TDT list in the future), as shown in Table 1.

TABLE 1: KING CITY TRANSPORTATION REVENUE AND EXPENDITURES

STREET OPERATIONS FUNDS	AVERAGE ANNUAL AMOUNT (2021)	ESTIMATED AMOUNT THROUGH 2040
REVENUES		
STATE HIGHWAY TRUST FUND	\$350,000	\$6,650,000
VEHICLE REGISTRATION FEES	\$90,000	\$1,710,000
MISCELLANEOUS REVENUE AND FEES	\$115,000	\$2,185,000
TOTAL STREET OPERATIONS REVENUES	\$555,000	\$10,545,000
EXPENDITURES		
PERSONNEL SERVICES	\$60,000	\$1,140,000
MATERIALS AND SERVICES	\$100,000	\$1,900,000
CAPITAL OUTLAY/MAINTENANCE	\$200,000	\$3,800,000
TOTAL STREET OPERATIONS EXPENDITURES	\$360,000	\$6,840,000
FUNDING SUMMARY (REVENUE-EXPENDITURES)	\$195,000	\$3,705,000
TRANSPORTATION DEVELOPMENT TAX ^A		
REVENUE	\$1,600,000	\$30,400,000
EXPENDITURE	\$30,000	\$570,000
FUNDING SUMMARY (REVENUE-EXPENDITURES)	\$1,570,000	\$29,830,000

^A Transportation development tax revenues and expenditures listed separately as only 131st Avenue, Beef Bend Road, and Fischer Road are currently eligible for funds. The TDT list may be modified in the future to include additional projects from the TSP, particularly in the Kingston Terrace area.

⁵ Long-Term Pavement Performance, U.S. Department of Transportation, Federal Highway Administration

POTENTIAL ADDITIONAL FUNDING SOURCES

New transportation funding options include local taxes, assessments and charges, and state and federal appropriations, grants, and loans. Factors that constrain these resources, include the willingness of local leadership and the electorate to burden residents and businesses with taxes and fees; the portion of available local funds dedicated or diverted 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. It is also worth noting that many of the TSP projects will be implemented with partner agencies (i.e., Metro, ODOT, Washington County, Tigard), and some will also likely be built in coordination with land use actions and future development.

Counties and cities have used the following sources to fund the capital and maintenance aspects of their transportation programs. As described below and summarized in Table 2, they may help to address existing or new needs identified in King City's TSP.

TRANSPORTATION SYSTEM DEVELOPMENT CHARGE

System development charges (SDC) are fees collected from new development and used as a funding source for all capacity adding projects for the transportation system. The fee is based on the proposed land use and size and is proportional to each land use's potential PM peak hour vehicle trip generation.

The City may wish to establish an SDC rate for transportation facilities based on the transportation needs established in the TSP. As an example, an SDC rate of \$9,000 per single-family unit, \$5,400 per multi-family unit and \$9,400 per peak hour trip for non-residential uses (based on rates used in the Beaverton South Cooper Mountain and Tigard River Terrace areas) would provide the City with approximately \$1.8 million annually or \$34.0 million through 2040. If an SDC is desired, a rate study would be required to determine appropriate fees based on capacity projects costs, growth potential, and local preferences.

TRANSPORTATION UTILITY FEE

A transportation utility fee is a recurring monthly charge that could be paid by all residences and businesses within the City. The 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. This fee is typically collected through regular utility billing; however, it could be collected as a separate stand-alone bill. 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. Some local agencies utilize the revenue for any transportation related project, including construction, improvements and repairs; however, many choose self-imposed restrictions or parameters on the use of the funds.

For every \$1.00 per month in charged rates for residential units and \$0.01 per month per 1,000 square feet of non-residential uses in the City, the City could expect to collect an average of \$100,000 annually or \$1.9 million through 2040. Oregon City, for example, charges a fee ranging

from \$4.50 to \$11 per month for single family residential units, \$3.15 to \$7.70 per month for multi-family units, and between \$0.154 and \$19.20 (based on type and size of the land use) per month for non-residential uses⁶.

LOCAL FUEL TAX

To estimate the potential revenue generated from implementing a local fuel tax in King City, the monthly gallons of fuel utilized per capita in Tigard and Washington County was obtained. Using an average rate from the two jurisdictions, King City fuel distributors could collect revenue on approximately 540,000 gallons of fuel per month. A local fuel tax of three cents per gallon year could generate an additional \$190,000 annually or \$3.6 million through 2040. Note that this simplified calculation does not assume improved fuel economy of the vehicle fleet (which can cause falling fuel tax revenues) and is only based on the current King City population.

PROPERTY TAX LEVY

Property tax levies are another funding option available to cities. Voter approval is required to enact a local option tax, and the tax may be imposed for up to five years at a time, at which time a city will need voter approval if it desires to renew the levy. The only exception is that a levy for a specific capital project may be imposed for the expected useful life of the capital project up to a maximum of 10 years. Assuming a rate of \$0.20 per \$1,000 in assessed value as a five-year levy for the City, the City could expect to collect around \$550,000 over five years.

LOCAL IMPROVEMENT DISTRICTS

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 improvements. LIDs can supply match for other funds where a project has system wide benefit beyond benefiting the adjacent properties. LIDs are often used for sidewalks and pedestrian amenities that provide local benefit to residents along the subject street. Property owners are assessed a proportional share of the cost at the end of the project, or the City may elect to allow for installment payments with interest.

DEBT FINANCING

While not a direct funding source, debt financing is another funding method. Through debt financing, available funds can be leveraged, and the cost can be spread over the project's useful life. Though interest costs are incurred, the use of debt financing can serve not only as a practical means of funding major improvements, but it is also viewed as an equitable funding source for

⁶ <https://www.orcity.org/publicworks/transportation-utility-fee>

larger projects because it spreads the burden of repayment over existing and future customers who will benefit from the projects. One caution in relying on debt service is that a funding source must still be identified to fulfill annual repayment obligations. Three methods of debt financing are listed below:

- **General Obligation (GO) Bonds** – Subject to voter approval, a city can issue GO bonds to debt finance capital improvement projects. GO bonds are backed by the increased taxing authority of the City, and the annual principal and interest repayment is funded through a new, voter-approved assessment on property throughout the City (i.e., a property tax increase). Depending on the critical nature of projects identified in the TSP and the willingness of the electorate to accept increased taxation for transportation improvements, voter approved GO bonds may be a feasible funding option for specific projects. Proceeds may not be used for ongoing maintenance.
- **Limited Tax General Obligation (LTGO) Bonds** – Limited Tax General Obligation (LTGO) Bonds are similar to General Obligation (GO) bonds; however, they do not have to be voted on by constituents. A city pledges its general revenues to bondholders along with the utility revenues. LTGO Bonds do not require reserves or coverage (such as Revenue bonds) and does not require a vote.
- **Revenue Bonds** – Revenue bonds are debt instruments secured by rate revenue. For a city to issue revenue bonds for transportation projects, it would need to identify a stable source of ongoing rate funding. Interest costs for revenue bonds are slightly higher than for general obligation bonds due to the perceived stability offered by the “full faith and credit” of a jurisdiction.

GRANT OPPORTUNITIES

Grant opportunities could also provide additional funding for the City. Several major grant opportunities are listed below.

ODOT STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM (STIP) 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. Projects that enhance system connectivity and improve multi-modal travel options are the focus. The TSP prepares the City to apply for STIP funding.

ODOT ALL ROADS TRANSPORTATION SAFETY PROGRAM (ARTS) FUNDING

The All Roads Transportation Safety Program (ARTS) is a statewide safety program that addresses safety for all public roads in the state of Oregon. The program is a competitive program with a focus on implementation of cost-effective and proven safety countermeasures. It is supported through federal and state funds based on the federal Highway Safety Improvement Program. HSIP adopts a data-driven approach that uses crash data, risk factors, and other supported methods to identify the best possible locations to achieve the greatest benefits. The first and second round of ARTS selected projects scheduled for delivery in years 2017-2021 and 2022-2024. The third round of the ARTS project selection will begin in the fall of 2020 and extend through the spring of 2021. During this period, projects will be selected for the Statewide Transportation Improvement Program (STIP) and delivered in years 2025 through 2027. During the period of 2025 through 2027,

approximately \$30 million per year will likely be available for the ARTS program. Funds will be allocated to each ODOT region based on the proportion of fatalities and serious injuries that occurred within the region during the last five years. ODOT Region 1 (where King City is located) allocations during the last round of ARTS funding was approximately 32 percent, which would amount to around \$9.6 million available for Region 1 if that were to remain the case during this round.

MULTIMODAL ACTIVE TRANSPORTATION FUND

In 2017, the Oregon Legislature passed Keep Oregon Moving (House Bill 2017), which includes changes to the existing Connect Oregon Grant Fund program that necessitates aligning the implementing rules with the new statutes. The legislation bifurcated the program into two new parts, with a separate allocation of 7 percent for multimodal active transportation projects.

In 2019, the Oregon Legislature passed House Bill 2592 to clarify and amend House Bill 2017. The legislation establishes the Multimodal Active Transportation (MAT) Fund for bicycle and pedestrian projects, consisting of 7 percent of the Connect Oregon Fund plus revenues from Oregon's bicycle excise tax. The MAT is a separate grant program from Connect Oregon. In addition to state MAT funding, federal funding is provided through Transportation Alternative (TA) funds. The state of Oregon restricts the use of TA funds to planning and design expenses, development, construction, reconstruction, major resurfacing, or other capital improvements of multiuse paths, bicycle paths and footpaths.

The Oregon Community Paths (OCP) program combines funds from the Multimodal Active Transportation Fund (formerly Connect Oregon Bike/Ped), Oregon Bicycle Excise Tax, and federal Transportation Alternatives Program to fund grants for project development, construction, reconstruction, major resurfacing or other improvements of multiuse paths that improve access and safety for people walking and bicycling. The Community Path Fund will start awarding grants in 2021, with amount up to \$750,000 for planning and design, and up to \$4 million for construction.

SAFE ROUTES TO SCHOOL PROGRAMS

Safe Routes to School refers to efforts that improve, educate, or encourage children safely walking (by foot or mobility device) or biking to school. ODOT has two main types of Safe Routes to School programs: infrastructure and non-infrastructure. Infrastructure programs focus on making sure safe walking and biking routes exist through investments in crossings, sidewalks, bike lanes, flashing beacons, and the like. Non-infrastructure programs focus on education and outreach to assure awareness and safe use of walking and biking routes. ODOT manages statewide funding competitions for both infrastructure and non-infrastructure programs at the annual levels of \$10 million (increasing to \$15 million in 2023) and \$300,000 respectively.

TABLE 2: POTENTIAL FUNDING OPTIONS

FUNDING OPTION	ALLOWED USE OF FUNDS	ACTION REQUIRED TO IMPLEMENT	EXAMPLE CHARGE	POTENTIAL ADDITIONAL ANNUAL REVENUE
TRANSPORTATION SYSTEM DEVELOPMENT CHARGE	Capital improvements	City Council action	\$9,000 per single-family unit; \$5,400 per multi-family unit; \$9,400 per peak hour trip for non-residential	\$1.8 million
TRANSPORTATION UTILITY FEE	Capital improvements or maintenance	City Council action	\$1 per month for residential units and \$.01 per month per square foot for non-residential uses	\$100,000
LOCAL FUEL TAX	Capital improvements or maintenance	Voter Approval	Three cents per gallon	\$190,000
PROPERTY TAX LEVY	Capital improvements or maintenance	Voter Approval	\$0.20 per \$1,000 in assessed value (per year, for 5 years)	\$550,000
LOCAL IMPROVEMENT DISTRICTS	Capital improvements	Affected Property Owners	n/a	n/a
DEBT FINANCING	Capital improvements	Varies	n/a	n/a
GRANT OPPORTUNITIES	Capital improvements or maintenance	Varies	n/a	n/a

APPENDIX O. FINANCIALLY CONSTRAINED CAPITAL PROJECT LIST AND NETWORK EVALUATION



FINANCIALLY CONSTRAINED CAPITAL PROJECT LIST AND NETWORK EVALUATION

DATE: August 16, 2021

TO: Project Management Team

FROM: Carl Springer and Kevin Chewuk | DKS Associates

SUBJECT: King City Transportation System Plan and Land Use Refinement
Financially Constrained Capital Project List and Network Evaluation
(Deliverable 7D and 7E)

#20020-002

This document summarizes how the Financially Constrained Plan was developed, including a summary of the prioritization process, a detailed listing of the Financially Constrained and Long-Term Projects, and an evaluation of the transportation network alternatives.

ASPIRATIONAL PROJECTS

Aspirational projects include all identified projects for improving King City's transportation system, regardless of their priority or their likelihood to be funded. The TSP planning process screens candidate projects to set aside those that may not be feasible due to environmental or existing development limitations. The remaining projects are a combination of new and previous ideas for the transportation system that seek to address the gaps and deficiencies in the City.

The full aspirational list includes 102 projects totaling nearly \$180 million in total investments (see Table 1). For the purposes of initial cost estimates, project design elements are identified in this document, however, the actual design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process and are subject to City, ODOT and/or other partner agency approval. The Aspirational projects were assigned to one of several categories:

- **Multi-Modal Street Improvement** – projects to improve or construct new multi-modal streets throughout the City, each with facilities for motorists, pedestrians and bicyclists. A total of 23 projects were identified, that, as originally proposed, would cost an estimated \$123 million to complete.
- **Intersection Improvement** – projects to improve safety and mobility at intersections throughout the City. A total of 22 projects were identified to construct new or improve existing intersections that, as originally proposed, would cost an estimated \$15 million to complete.
- **Pedestrian/ Bike Improvement** – projects include stand-alone sidewalk, path and roadway crossing improvements, and an integrated network of bicycle lanes, marked on-street routes

and shared-use paths to facilitate safe and convenient travel citywide. A total of 52 pedestrian and bicycle projects were identified that, as originally proposed, would cost an estimated \$36 million to complete.

- **Transit Enhancement** – projects to enhance the quality and convenience for transit passengers. A total of three transit projects, as originally proposed, would cost an estimated \$6 million.
- **Demand/ System Management** – projects to encourage more efficient usage of the transportation system. A total of two projects, as originally proposed, would cost an estimated \$150,000.

PROJECT FUNDING

Each project was reviewed to consider how it might be funded during the next 20 years. In general, the primary funding agency was assumed to be the current or future facility owner, as they are responsible to oversee construction and long-term maintenance. All projects were assigned a primary funding agency which include King City, Washington County, Metro and ODOT. In some cases, funding partnerships were identified for projects that were expected to provide mutual benefits between agencies or where there were opportunities to accelerate projects to completion. It is important to note that these funding assumptions do not obligate any agency to commit to these projects.

The TSP will present the high priority City projects that are constrained to a level of funding available for the next 20 years. In addition, the TSP will identify priority County projects that the City could use to inform its decisions for applying Washington County Transportation Development Tax (TDT) revenues. While there may be other partnering opportunities with ODOT, Metro and TriMet, these decisions are ultimately up to those agencies. Private development projects will likely be built in coordination with land use actions and future development in the city, especially Kingston Terrace. While projects related to property development or re-development may occur within the TSP planning horizon, no funding was assumed from current City revenue sources.

As detailed in the Transportation Financial Feasibility Assessment Report (Deliverable 7C), the City can expect to have around \$3.7 million to spend on locally funded improvements over the next 20 years. About \$10 million of the total project costs are assumed to be City responsibility (see Table 1). The TSP has identified about \$68 million worth of needed investments along County facilities. Revenue from the County TDT will be expected to provide \$29.8 million for eligible projects over the next 20 years. The TSP has also identified projects estimated at around \$33 million for other partner agencies, and around \$69 million funded through private development.

TABLE 1: ASSUMED ASPIRATIONAL PROJECT FUNDING

FUNDING SOURCE	TOTAL FUNDING NEED	EXPECTED FUNDING AVAILABLE
King City	\$9,947,500	\$3,705,000
Washington County	\$68,480,000	\$29,830,000
Partner Agency	\$33,272,500	N/A
Private Development	\$68,825,000	N/A
Total	\$180,525,000	\$33,535,000

PRIORITIZING INVESTMENTS

Unless the City expands its funding options, most of the Aspirational projects identified are not reasonably likely to be funded by 2040 (as shown in Table 1). For this reason, projects from the Aspirational list were divided into two improvement packages, referred to as Financially Constrained and Long-Term.

- **Financially Constrained projects** are the most valued, in terms of how they meet critical needs and how well they work to deliver on community goals. Projects in this group have a total construction budget that is similar to the reasonably available funding over the planning horizon, meaning the \$3.7 million likely to be available through existing City funding sources and \$29.8 million from the County TDT. The projects included in the Financially Constrained list (shown in Table 2) were recommended within several different priority horizons, based on the project evaluation score:
 - Tier 1: Projects recommended for implementation within 1 to 5 years.
 - Tier 2: Projects recommended for implementation within 5 to 10 years.
 - Tier 3: Projects likely to be implemented beyond 10 years.
- **Long-Term projects** are those remaining from the Aspirational list that likely will not include funding by 2040. These projects (shown in Table 2) were recommended within the following priority horizons, based on the project evaluation score:
 - Long-term Tier 1: Projects with the highest priority for implementation beyond the projects included on the Financially Constrained list, should additional funding become available.
 - Long-term Tier 2: Projects with the next highest priority for implementation beyond the projects included on the Financially Constrained list, should additional funding become available.
 - Long-term Tier 3: The last phase of projects to be implemented, should additional funding become available.

A process for evaluating and ranking projects was utilized to help identify which transportation investments would be most valued by the community. Measurable evaluation criteria associated with each TSP goal were used to prioritize individual transportation projects in King City (see

Deliverable 5E: Project Prioritization Framework). The prioritization score was calculated for each project and used to develop a Financially Constrained and Long-Term list of projects. Projects deemed to contribute more towards achieving the transportation goals of King City ranked higher and were assigned a higher priority for implementation.

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 an unanticipated transportation need or take advantage of opportunities as they arise.

TABLE 2: FINANCIALLY CONSTRAINED AND LONG-TERM PROJECTS

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
1	SW Roy Rogers Road Corridor (#1) Improvements from SW Elsner Road to SW Beef Bend Road.							
1a	Widen to five lanes (Arterial Street) with pedestrian (Major Pedestrian Overlay) and bicycle facilities (Major Bicycle Overlay). Cost assumes a shared-use path on the east side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$16,050,000	Medium	Unconstrained	Unconstrained Tier 1
1b	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$1,200,000	Medium	Unconstrained	Unconstrained Tier 2
2	New Corridor (#2) between SW Roy Rogers Road and SW Elsner Road.							
2a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes 2-lane street with parking, and sidewalks and on-street bike lanes on each side, with 3-lanes at the SW Roy Rogers Road intersection.	King City		New Development	\$3,500,000	Low	Unconstrained	Unconstrained Tier 3
2b	Improve the SW Roy Rogers Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City	County Transportation Development Tax / New Development	\$1,200,000	Low	Unconstrained	Unconstrained Tier 3
3	New Corridor (#3) between SW Beef Bend Road and the planned Corridor 2.							
3a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking and sidewalks on each side, and shared lane markings for bikes, with 3-lanes at the SW Beef Bend intersection.	King City		New Development	\$5,475,000	Low	Unconstrained	Unconstrained Tier 3
3b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
3c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Medium	Unconstrained	Unconstrained Tier 3
4	SW River Terrace Boulevard Corridor (#4) Extension between SW Beef Bend Road and SW Elsner Road.							
4a	Construct a Collector Street with pedestrian (Multimodal Area Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks and a one-way cycle track on each side, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$7,550,000	Medium	Unconstrained	Unconstrained Tier 2
4b	Improve the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$1,200,000	High	Unconstrained	Unconstrained Tier 1
4c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$400,000	High	Unconstrained	Unconstrained Tier 1
4d	Improve the planned Corridor 2 intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Medium	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
4e	Improve the SW Elsner Road intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$1,975,000	Medium	Unconstrained	Unconstrained Tier 2
5	New Corridor (#5) between SW Beef Bend Road and the SW Fischer Road extension.							
5a	Construct a Neighborhood Collector Street with pedestrian (Multimodal Area Overlay) and bicycle facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking and sidewalks on each side, and shared lane markings for bikes, with 3-lanes at the SW Beef Bend intersection.	King City		New Development	\$2,650,000	Low	Unconstrained	Unconstrained Tier 3
5b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
5c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Medium	Unconstrained	Unconstrained Tier 3
6	SW Elsner Road Corridor (#6) Improvements from SW Roy Rogers Road to SW Beef Bend Road.							
6a	Improve to a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Roy Rogers Road to the planned Tualatin River Trail crossing. Cost assumes a 2-lane street with a shared-use path on the west side and left-turn lanes where needed.	Washington County		County Transportation Development Tax	\$5,025,000	Medium	Unconstrained	Unconstrained Tier 2
6b	Improve to a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Beef Bend Road to the planned Tualatin River Trail crossing. Cost assumes a 2-lane street with sidewalks and a one-way cycle track on each side and left-turn lanes where needed.	Washington County		County Transportation Development Tax	\$3,375,000	Medium	Unconstrained	Unconstrained Tier 2
7	SW Fischer Road Corridor (#7) Extension/Improvements from SW Roy Rogers Road to OR 99W.							
7a	Extend SW Fischer Road as a Collector Street with pedestrian (Multimodal Area Overlay) and bike facilities (Major Bicycle Overlay) from SW Roy Rogers Road to SW Elsner Road. Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.	Washington County	King City	County Transportation Development Tax	\$6,950,000	Medium	Financially Constrained	Tier 3
7b	Extend/Improve SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW Elsner Road to the planned Corridor #9. Cost assumes a 2-lane street with parking, sidewalks, and a one-way cycle track on each side.	Washington County	King City	County Transportation Development Tax	\$11,150,000	Medium	Financially Constrained	Tier 3
7c	Extend SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from the planned Corridor #9 to the SW Myrtle Avenue extension. Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.	Washington County	King City	County Transportation Development Tax	\$1,150,000	Medium	Financially Constrained	Tier 3
7d	Improve SW River Lane to include pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW River Lane to SW 137 th Avenue. Cost assumes a 2-lane street, with a shared-use path on the south side.	Washington County	King City	County Transportation Development Tax	\$1,050,000	Medium	Unconstrained	Unconstrained Tier 3
7e	Extend SW Fischer Road as a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay) from SW 137 th Avenue to SW Cordelia Terrace. Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.	Washington County	King City	County Transportation Development Tax	\$600,000	Medium	Unconstrained	Unconstrained Tier 2
7f	Improve SW King Lear Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay).	King City		City Funds	\$25,000	Medium	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
7g	Reconfigure SW Fischer Road as a 2-lane street with bike lanes (Major Bicycle Overlay) on each side from SW King Lear Way to SW 131 st Avenue.	King City		City Funds	\$25,000	Medium	Unconstrained	Unconstrained Tier 2
7h	Reconfigure SW Fischer Road as a 3-lane street with bike lanes (Major Bicycle Overlay) on each side from SW Queen Anne Avenue to OR 99W.	King City	Washington County	City Funds	\$225,000	High	Financially Constrained	Tier 1
7i	Improve the SW Roy Rogers Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City	County Transportation Development Tax / New Development	\$1,200,000	High	Unconstrained	Unconstrained Tier 1
7j	Improve the SW Elsner Road intersection. Cost assumes installation of a roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$1,975,000	Medium	Unconstrained	Unconstrained Tier 2
7k	Improve the SW 150 th Avenue intersection. Cost assumes installation of a mini roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$400,000	Medium	Unconstrained	Unconstrained Tier 2
7l	Improve the SW 137 th Avenue intersection. Cost assumes installation of mini roundabout.	Washington County	King City	County Transportation Development Tax / New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
8	SW Beef Bend Road Corridor (#8) Improvements from SW Roy Rogers Road to OR 99W.							
8a	Widen to three lanes (Arterial Street), with pedestrian (Major Pedestrian Overlay) and bicycle facilities (Major Bicycle Overlay) between SW Roy Rogers Road and SW 150 th Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$11,425,000	High	Financially Constrained	Tier 2
8b	Widen to three lanes (Arterial Street), complete sidewalk gaps (Major Pedestrian Overlay), and add separated/protected bike facilities (Major Bicycle Overlay) between SW 150 th Avenue to SW 131 st Avenue. Cost assumes a sidewalk on the north side and a shared-use path on the south side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$10,975,000	High	Unconstrained	Unconstrained Tier 1
8c	Add separated/protected bike facilities (Major Bicycle Overlay) and complete sidewalk gaps (Major Pedestrian Overlay) between SW 131 st Avenue and OR 99W. Cost assumes a shared-use path on the south side.	Washington County	Metro	County Transportation Development Tax/ Regional Funds	\$4,900,000	High	Unconstrained	Unconstrained Tier 1
8d	Improve the SW Elsner Road intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$1,200,000	High	Unconstrained	Unconstrained Tier 1
8e	Improve the SW 150 th Avenue intersection. Cost assumes installation of a traffic signal.	Washington County	King City / Tigard	County Transportation Development Tax / New Development	\$1,200,000	Medium	Unconstrained	Unconstrained Tier 2
8f	Improve the SW 116 th Avenue intersection. Cost assumes restriping the SW 116 th Avenue approach to SW Beef Bend Road to include separate left-turn and right-turn lanes and an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City		City Funds	\$100,000	High	Financially Constrained	Tier 2
9	New Corridor (#9) between SW Fischer Road extension (near SW Elsner Road) to the SW Fischer Road extension (near SW Myrtle Avenue).							

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
9a	Construct a Neighborhood Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, a sidewalk on the north side and a shared-use path on the south side.	King City		New Development	\$11,575,000	Low	Unconstrained	Unconstrained Tier 3
9b	Improve the SW Fischer Road extension intersection (west intersection). Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
9c	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #10 intersection.	King City		New Development	\$125,000	Low	Unconstrained	Unconstrained Tier 3
9d	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #11 intersection.	King City		New Development	\$125,000	Low	Unconstrained	Unconstrained Tier 3
9e	Improve the SW 150 th Avenue intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
9f	Improve the SW Fischer Road extension intersection (east intersection). Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
10	New Corridor (#10) between SW Beef Bend Road and the planned Corridor #9.							
10a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, a shared-use path on the west side, and a sidewalk on the east side.	King City		New Development	\$3,725,000	Low	Unconstrained	Unconstrained Tier 3
10b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
10c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
11	New Corridor (#11) between SW Beef Bend Road and the planned Corridor #9.							
11a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$3,550,000	Low	Unconstrained	Unconstrained Tier 3
11b	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County / Tigard	New Development	\$75,000	Low	Unconstrained	Unconstrained Tier 3
11c	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
12	SW 150th Avenue Corridor (#12) Improvements from SW Beef Bend Road to the planned Corridor #9.							
12a	Construct a Collector Street with pedestrian (Major Pedestrian Overlay) and bike facilities (Major Bicycle Overlay). Cost assumes a 2-lane street with parking, a shared-use path on the west side and a sidewalk on the east side, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$4,375,000	Medium	Unconstrained	Unconstrained Tier 2
13	SW 147th Avenue Corridor (#13) Improvements from SW Beef Bend Road to the SW Fischer Road extension.							

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
13a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street with parking, sidewalks on each side and shared lane markings for bikes.	King City		New Development	\$1,650,000	Low	Unconstrained	Unconstrained Tier 3
13b	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
14	SW Myrtle Avenue Corridor (#14) Extension/Improvements from SW Beef Bend Road to the SW Fischer Road extension and SW 147th Avenue to SW 137th Avenue.							
14a	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay) from SW Beef Bend Road to the SW Fischer Road extension. Cost assumes a 2-lane street with parking, a shared-use path on the west side, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$3,525,000	Low	Unconstrained	Unconstrained Tier 3
14b	Construct a Neighborhood Collector Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay) from SW 147th Avenue to SW 137th Avenue. Cost assumes a 2-lane street, a shared-use path on the north side and a sidewalk on the south side	King City		New Development	\$7,075,000	Low	Unconstrained	Unconstrained Tier 3
14c	Provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection.	King City	Washington County	New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
14d	Improve the SW Fischer Road extension intersection. Cost assumes installation of a mini roundabout.	King City		New Development	\$400,000	Low	Unconstrained	Unconstrained Tier 3
15	SW 137th Avenue Corridor (#15) Improvements from SW Beef Bend Road to the SW Fischer Road extension.							
15a	Improve to include pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street, a sidewalk on the west side and shared lane markings for bikes, with 3-lanes provided at the SW Beef Bend intersection.	King City		New Development	\$975,000	Low	Unconstrained	Unconstrained Tier 3
16	SW 131st Avenue/SW Bedford Street/SW 136th Avenue/SW King Lear Way/SW River Lane Bike Route Improvements.							
16a	Improve SW 131st Avenue to include a northbound bike lane north of SW Peachvale Street, and southbound bike lane between SW Carmel Street and SW Fischer Road.	King City		City Funds / New Development	\$400,000	High	Financially Constrained	Tier 2
16b	Improve SW 131st Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) south of SW Fischer Road.	King City		City Funds	\$50,000	Low	Unconstrained	Unconstrained Tier 3
16c	Improve SW Bedford Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) west of SW 131st Street.	King City		City Funds	\$25,000	Low	Unconstrained	Unconstrained Tier 3
16d	Improve SW 136th Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay).	King City		City Funds	\$25,000	Low	Unconstrained	Unconstrained Tier 3
16e	Improve SW River Lane to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) south of SW Watson.	King City		City Funds	\$25,000	Low	Unconstrained	Unconstrained Tier 3
17	SW Cordelia Terrace to SW King Charles Avenue Improvements.							
17a	Improve SW Capulet Lane, SW Romeo Terrace, SW MacBeth Drive and SW Jordan Way to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Cordelia Terrace and SW Matador Lane.	King City		City Funds	\$50,000	Low	Unconstrained	Unconstrained Tier 3

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
17b	Improve SW Morocco Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Matador Lane and SW King Charles Avenue.	King City		City Funds	\$25,000	Medium	Unconstrained	Unconstrained Tier 2
17c	Extend SW Capulet Lane as a Local Street with pedestrian (Neighborhood Pedestrian Overlay) and bike facilities (Neighborhood Bicycle Overlay). Cost assumes a 2-lane street, with a sidewalk on the north side and a shared-use path on the south side.	King City		City Funds	\$250,000	Low	Unconstrained	Unconstrained Tier 3
18	SW Fischer Road to SW Beef Bend Road Bike Route Improvements.							
18a	Improve SW 124 th Avenue and SW King Charles Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Fischer Road and SW Royalty Parkway.	King City		City Funds	\$50,000	High	Financially Constrained	Tier 2
18b	Improve SW King George Drive to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King Charles Avenue and SW 116 th Avenue.	King City		City Funds	\$75,000	High	Financially Constrained	Tier 2
18c	Improve SW Prince Albert Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King George Drive and SW Beef Bend Road.	King City		City Funds	\$25,000	High	Financially Constrained	Tier 2
18d	Improve SW Queen Elizabeth Street to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW King George Drive and SW Royalty Parkway.	King City		City Funds	\$25,000	High	Financially Constrained	Tier 2
18e	Improve SW Royalty Parkway and SW Queen Anne Avenue to include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and SW Fischer Road.	King City		City Funds	\$75,000	High	Financially Constrained	Tier 2
19	King City Town Center Improvements from SW Beef Bend Road to OR 99W.							
19a	Improve SW 116 th Avenue to enhance the streetscape, improve ADA compliance and widen existing sidewalks, complete sidewalk gaps (Multimodal Area Overlay) and reconfigure to include bike lanes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and OR 99W.	King City	Private Development	City Funds / New Development	\$475,000	High	Financially Constrained	Tier 1
19b	Improve SW 116 th Avenue to enhance the streetscape and widen existing sidewalks, improve ADA compliance, complete sidewalk gaps (Multimodal Area Overlay) and include shared lane markings and route wayfinding for bikes (Neighborhood Bicycle Overlay) between SW Queen Elizabeth Street and SW Beef Bend Road. Note a portion of this street segment is currently private.	King City		City Funds	\$1,725,000	High	Financially Constrained	Tier 1
19c	Improve SW Royalty Parkway to include shared lane markings and route wayfinding for bikes between OR 99W and SW Queen Elizabeth Street.	King City		City Funds	\$25,000	High	Financially Constrained	Tier 1
19d	Improve SW Queen Elizabeth Street to enhance the streetscape, improve ADA compliance and widen existing sidewalks and include shared lane markings and route wayfinding for bikes between SW Royalty Parkway and SW 116 th Avenue.	King City	Private Development	City Funds / New Development	\$500,000	High	Financially Constrained	Tier 1
20	OR 99W Corridor Plan from SW Beef Bend Road to the Tualatin River.							
20a	Study the OR 99W Corridor through King City, along with Tigard and other neighboring agencies, to develop a corridor-wide improvement plan to align the highway with the Commercial Corridor context zone from the ODOT Blueprint for Urban Design. Critical focus areas in King City are expanded and improved pedestrian and bicycle crossings, improved access to transit, expanded pedestrian facilities and buffer from the vehicle travel way, protected and separated bicycle facilities, and improved traffic flow for vehicles and freight.	ODOT	Metro	State/ Regional Funds	\$250,000	High	Financially Constrained	Tier 1

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
20b	Construct pedestrian facilities and buffer from the vehicle travel way. Cost assumes sidewalks and a buffer on each side.	ODOT	Metro	State/ Regional Funds	\$2,075,000	High	Unconstrained	Unconstrained Tier 1
20c	Provide expanded pedestrian facilities and buffer from the vehicle travel way and protected and separated bicycle facilities. Cost assumes widened sidewalks, a one-way cycle track, and a buffer on each side.	ODOT	Metro	State/ Regional Funds	\$6,300,000	High	Unconstrained	Unconstrained Tier 1
20d	Improve the pedestrian/bicycle crossing at the SW Royalty Parkway intersection.	ODOT		State Funds	\$150,000	High	Unconstrained	Unconstrained Tier 1
20e	Provide an enhanced pedestrian/bicycle crossing between SW 116th Avenue and SW Royalty Parkway, near the TriMet bus stops.	ODOT		State Funds	\$225,000	High	Unconstrained	Unconstrained Tier 1
20f	Improve the pedestrian/bicycle crossing at the SW 116th Avenue and SW Durham Road intersection.	ODOT		State Funds	\$150,000	High	Unconstrained	Unconstrained Tier 1
20g	Provide an enhanced pedestrian/bicycle crossing between SW 116th Avenue and SW Fischer Road, near the SW King James Place intersection.	ODOT		State Funds	\$225,000	High	Unconstrained	Unconstrained Tier 1
20h	Provide an enhanced pedestrian/bicycle crossing between SW Fischer Road and SW Versailles Road, near the fire signal.	ODOT		State Funds	\$225,000	High	Unconstrained	Unconstrained Tier 1
21	North Kingston Terrace Trail from SW Roy Rogers Road to the planned South Kingston Terrace Trail.							
21a	Construct a shared-use path for pedestrian and bicycle travel.	King City		New Development	\$2,125,000	High	Unconstrained	Unconstrained Tier 1
21b	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #3 intersection.	King City		New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
21c	Provide an enhanced pedestrian/bicycle crossing at the planned SW River Terrace Boulevard intersection.	King City		New Development	\$75,000	High	Unconstrained	Unconstrained Tier 1
21d	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #5 intersection.	King City		New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
21e	Provide an enhanced pedestrian/bicycle crossing at the SW Elsner Road intersection.	King City	Washington County	New Development	\$75,000	High	Unconstrained	Unconstrained Tier 1
22	South Kingston Terrace Trail from SW Roy Rogers Road to the planned North Kingston Terrace Trail.							
22a	Construct a shared-use path for pedestrian and bicycle travel.	King City		New Development	\$2,875,000	Medium	Unconstrained	Unconstrained Tier 2
22b	Provide an enhanced pedestrian/bicycle crossing at the planned Corridor #3 intersection.	King City		New Development	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
22c	Provide an enhanced pedestrian/bicycle crossing at the planned SW River Terrace Boulevard intersection.	King City		New Development	\$75,000	High	Unconstrained	Unconstrained Tier 1
22d	Provide an enhanced pedestrian/bicycle crossing at the SW Elsner Road intersection.	King City	Washington County	New Development	\$75,000	High	Unconstrained	Unconstrained Tier 1
23	Westside Trail from SW Beef Bend Road to south side of Tualatin River.							
23a	Construct a shared-use path for pedestrian and bicycle travel. Provide pedestrian and bicycle connections to adjacent streets. Includes a pedestrian and bicycle crossing of the Tualatin River.	Metro	King City	Regional/ City Funds	\$2,950,000	Medium	Unconstrained	Unconstrained Tier 2
23b	Realign SW Colyer Way and SW Peachtree Drive to connect with SW 137th Avenue and provide an enhanced pedestrian/bicycle crossing at the SW Beef Bend Road intersection. Cost assumes installation of a traffic signal.	Washington County	Metro / King City	Regional Funds/ New Development	\$1,750,000	High	Unconstrained	Unconstrained Tier 1

PROJECT ID	PROJECT DESCRIPTION	PRIMARY FUNDING AGENCY	POTENTIAL FUNDING PARTNER(S)	POTENTIAL FUNDING SOURCE	ESTIMATED PROJECT COST (2021 DOLLARS)	PROJECT EVALUATION SCORE	PACKAGE	PRIORITY HORIZON
23c	Install an enhanced pedestrian/bicycle crossing at the SW Fischer Road intersection.	King City		City Funds	\$75,000	Medium	Unconstrained	Unconstrained Tier 2
24	Tualatin River Trail from SW River Lane to King City Community Park and SW 131st Avenue to OR 99W.							
24a	Construct a shared-use path for pedestrian and bicycle travel from the planned South Kingston Terrace Trail to SW River Lane.	Metro	King City	Regional Funds/ New Development	\$3,475,000	Low	Unconstrained	Unconstrained Tier 3
24b	Construct a shared-use path for pedestrian and bicycle travel through King City Community Park to SW River Lane. Provide a future connection to SW 131 st Avenue (this segment is currently outside of the Urban Growth Boundary).	Metro	King City	Regional Funds/ City Funds	\$700,000	Medium	Unconstrained	Unconstrained Tier 2
24c	Construct a shared-use path for pedestrian and bicycle travel from OR 99W to SW 131 st Avenue.	Metro	King City	Regional Funds/ City Funds	\$2,450,000	High	Unconstrained	Unconstrained Tier 1
24d	Widen the pathway connection between SW Bedford Street and King City Community Park to provide for shared pedestrian and bicycle travel along the planned bike route.	King City		City Funds	\$175,000	Low	Unconstrained	Unconstrained Tier 3
25	OR 99W Connector Trail from OR 99W to south side of Tualatin River.							
25a	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail to SW Versailles Road along the west side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$200,000	High	Unconstrained	Unconstrained Tier 1
25b	Construct a shared-use path for pedestrian and bicycle travel from the Tualatin River Trail under OR 99W to the fire signal along the east side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$425,000	High	Unconstrained	Unconstrained Tier 1
25c	Construct a pedestrian and bicycle crossing of the Tualatin River along the west side of OR 99W.	ODOT	Metro	State/ Regional Funds	\$1,100,000	High	Unconstrained	Unconstrained Tier 1
26	New Shared-Use Path from SW Fitzwilliam Court to SW King Richard Drive.							
26a	Construct a shared-use path for pedestrian and bicycle travel.	King City		City Funds	\$75,000	Low	Unconstrained	Unconstrained Tier 3
A	Transit Service Enhancements							
A1	Improve transit stop amenities as needed, to include sheltered stops with seating, landing pads, route information, sidewalk connections, bicycle parking and lighting.	TriMet	King City	TriMet / City Funds	\$1,000,000	High	Unconstrained	Unconstrained Tier 3
A2	Construct a transit hub in the King City Town Center to offer riders a spot to connect to all bus routes that serve the City.	TriMet	King City	TriMet / City Funds	\$5,000,000	High	Unconstrained	Unconstrained Tier 3
A3	Study to evaluate options to extend bus service into Kingston Terrace and ensure necessary infrastructure (e.g., shelter, signage) is implemented to support ridership.	TriMet	King City	TriMet / City Funds	\$250,000	High	Financially Constrained	Tier 1
B	Demand and System Management Enhancements							
B1	Install new bike parking throughout the City. Standard rack parking should be provided in areas where users park for less than two hours. Long-term parking that is secure and weather-protected should be provided in areas where users park for more than two hours.	King City		City Funds	\$50,000	High	Financially Constrained	Tier 3

NETWORK EVALUATION

The following sections summarize motor vehicle operations under the three major scenarios included in the TSP and provide details on several potential alignments that are still under consideration for a new east to west street with pedestrian and bicycle facilities connecting Kingston Terrace with the east end of King City.

2040 MOTOR VEHICLE OPERATIONS

Future traffic forecasts were prepared for 2040 for three major scenarios:

- **2040 Baseline** – this scenario assumes the population and employment growth in the City through 2040, but does not include any assumed network improvements that will occur with the growth.
- **2040 with Aspirational Projects** – this scenario assumes the population and employment growth in the City through 2040, but with the Aspirational projects shown in Table 2.
- **2040 with Financially Constrained Projects** – this scenario assumes the population and employment growth in the City through 2040, but with only the Financially Constrained projects shown in Table 2.

Motor vehicle conditions were evaluated during the 2040 p.m. peak hour at the study intersections (shown in Table 3) under each scenario. As shown, several intersections along Arterial streets are expected to exceed current mobility targets by 2040 under the Baseline scenario. This includes most intersections along OR 99W through King City, and several intersections along SW Beef Bend Road and SW Roy Rogers Road in Kingston Terrace where high growth is expected. After assuming the Aspirational projects, several intersections will no longer be expected to exceed mobility targets. The Aspirational project list includes several intersection improvements and street extensions that will redistribute traffic throughout the City and improve operating conditions. However, it should be noted that the Financially Constrained project list does not include any projects that will be expected to drastically change traffic patterns, therefore the intersection operating conditions are consistent with the 2040 Baseline results. In reality, many of the Aspirational projects will be constructed with new development, particularly in Kingston Terrace, despite not be included on the Financially Constrained list, so forecasted intersection operating conditions will likely be better in that scenario.

OR 99W Intersections

Intersections along OR 99W are expected to serve a significant amount of traffic, with over 2,000 vehicles in each direction of OR 99W during the p.m. peak hour by 2040, up from 1,800 to 1,900 today. These intersections were tested with additional turn lanes, but the improvements only had a minimal benefit to operations and are not recommended. Intersection operations for vehicles can be improved by widening OR 99W, but that requires a significant investment and should be more extensively studied to ensure the needs of all users of the corridor are addressed, and all possible options are considered. At nearly all intersections, an additional northbound and southbound travel

lane would be required to significantly reduce congestion. A detailed regional corridor study is proposed as part of the Financially Constrained project list (i.e., City funding contribution towards a multi-agency corridor study) to determine what improvements can be made on OR 99W or what improvements can be made on parallel regional facilities to reduce the demand on OR 99W.

SW Roy Rogers Road Intersections

All unsignalized intersections (existing and proposed) with SW Roy Rogers Road are expected to have unacceptable levels of congestion under the 2040 Baseline conditions due to high traffic volumes along SW Roy Rogers Road. New traffic signals are recommended at these locations once signal warrants are met, including at the SW Elsner Road (Project 1b), Corridor #2 (Project 2b) and SW Fischer Road (Project 7i) intersections.

SW Beef Bend Road Intersections

In addition to the intersection of OR 99W/SW Beef Bend Road, two other intersections were identified as exceeding mobility targets under the 2040 Baseline scenario: SW 150th Avenue and SW Elsner Road. Under the Aspirational scenario, the new intersection of SW River Terrace Boulevard/SW Beef Bend Road was also analyzed. Traffic signals are recommended at both SW 150th Avenue and SW Elsner Road. At SW River Terrace Boulevard, either a traffic signal or roundabout would allow the intersection to meet current mobility targets. However, while the preliminary street alignment for River Terrace Road may be refined through the Kingston Terrace Master Planning process, given the proximity to the adjacent intersections (approximately 1,300 feet to SW Roy Rogers Road/SW Beef Bend Road and SW Elsner Road/SW Beef Bend Road), a traffic signal at SW River Terrace Boulevard would allow for coordination between traffic signals and would likely function better than a roundabout.

SW Fischer Road/SW Elsner Road Intersection

The new intersection of SW Fischer Road and SW Elsner Road is expected to operate with significant delay as a two-way stop control intersection. The Aspirational project list includes a recommended intersection control improvement here, with either a single lane roundabout or traffic signal allowing the intersection to meet current mobility targets.

TABLE 3: 2040 MOTOR VEHICLE OPERATIONS (PM PEAK)

#	STUDY INTERSECTION	CONTROL	V/C TARGET	2040 BASELINE		RECOMMENDED IMPROVEMENT (PACKAGE)	2040 ASPIRATIONAL		2040 FINANCIALLY CONSTRAINED	
				LOS	V/C		LOS	V/C	LOS	V/C
1	SW Roy Rogers Road/SW Beef Bend Road	Signal	0.99	A	0.88	N/A	A	0.76	A	0.88
2	SW Roy Rogers Road/SW Scholls-Sherwood Road	Signal	0.99	B	0.88	N/A	B	0.88	B	0.88
3	SW Elsner Road/SW Beef Bend Road	Two-Way Stop Control	0.99	B/F	0.42/ 4.27	Traffic Signal (Aspirational)	B	0.82	B/F	0.42/ 4.27
4	SW 150 th Avenue/SW Beef Bend Road	All-Way Stop Control	0.99	F	1.89	Traffic Signal (Aspirational)	C	0.85	F	1.89
5	SW 137 th Avenue/SW Beef Bend Road	Two-Way Stop Control	0.99	A/C	0.65/ 0.06	N/A	A/C	0.65/ 0.06	A/C	0.65/ 0.06
6	SW 131 st Avenue/SW Beef Bend Road	Signal	0.99	B	0.86	N/A	B	0.86	B	0.86
7	SW Roy Rogers Road/SW Elsner Road	Two-Way Stop Control	0.99	C/F	0.69/ 1.81	Traffic Signal (Aspirational)	A	0.75	C/F	0.69/ 1.81
8	SW 131 st Avenue/SW Fischer Road	All-Way Stop Control	0.99	D	0.85	N/A	D	0.85	D	0.85
9	OR 99W/SW Beef Bend Road	Signal	0.99	E	1.15	Corridor Study (Financially Constrained) *	F	1.08	E	1.15
10	OR 99W/SW Royalty Parkway	Signal	1.10	F	1.10	Corridor Study (Financially Constrained) *	F	1.02	F	1.10
11	OR 99W/SW 116 th Avenue/SW Durham Road	Signal	1.10	F	1.13	Corridor Study (Financially Constrained) *	F	1.11	F	1.13

#	STUDY INTERSECTION	CONTROL	V/C TARGET	2040 BASELINE		RECOMMENDED IMPROVEMENT (PACKAGE)	2040 ASPIRATIONAL		2040 FINANCIALLY CONSTRAINED	
				LOS	V/C		LOS	V/C	LOS	V/C
12	OR 99W/SW Fischer Road	Signal	0.99	F	1.23	Corridor Study (Financially Constrained) *	C	1.06	F	1.23
13	OR 99W/SW 124 th Avenue	Signal	0.99	C	1.03	Corridor Study (Financially Constrained) *	C	1.03	C	1.03
14	OR 99W/SW Roy Rogers Road	Signal	0.99	F	1.12	Corridor Study (Financially Constrained) *	F	1.12	F	1.12
15	OR 99W/SW Bull Mountain Road	Signal	0.99	E	1.22	Corridor Study (Financially Constrained) *	E	1.22	E	1.22

Notes: **Bold and red** indicates mobility target is not met.

Volume-to-capacity (V/C) ratio and level of service (LOS) reported as worst major street/minor street movement at two-way stop-controlled (TWSC) intersections, and average intersection for all-way stop-controlled (AWSC) and signalized intersections.

* The OR 99W Corridor Study has no impact on intersection operations.

EAST-WEST STREET ALTERNATIVES

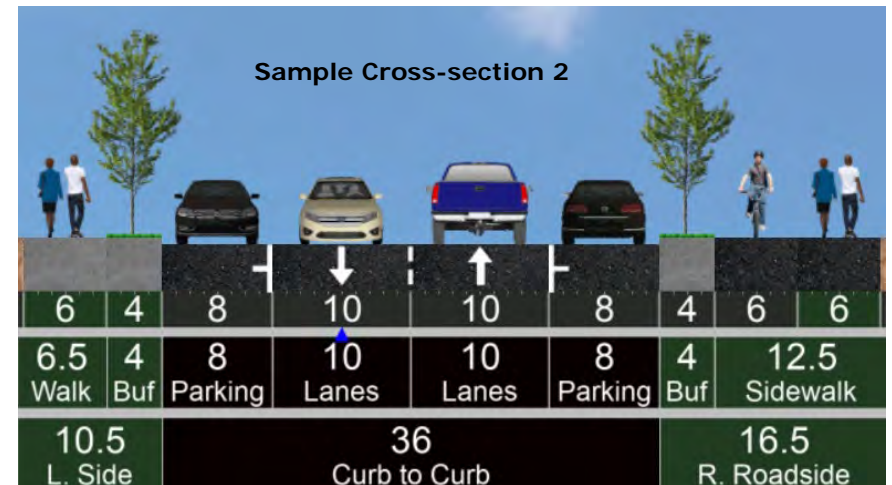
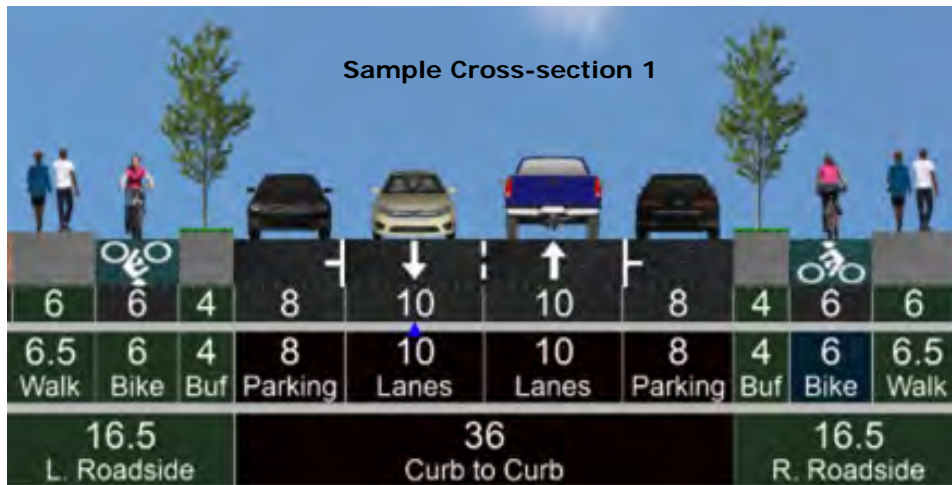
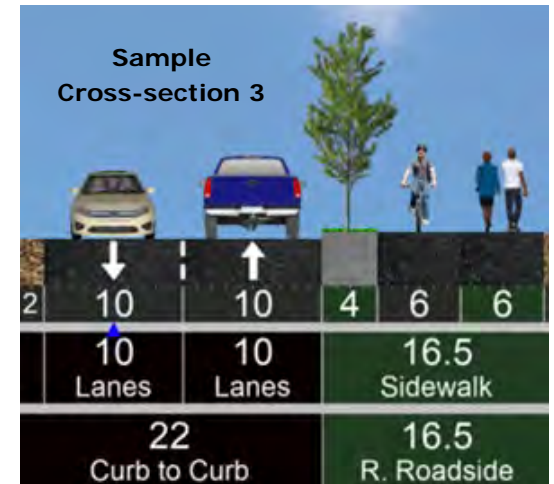
Several potential alignments are under consideration for a new east to west street with pedestrian and bicycle facilities connecting SW Roy Rogers Road with SW 137th Avenue. The alignments and design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual alignments and design elements for any project are subject to change and will ultimately be determined through a preliminary and final design process.

Overall, this corridor is expected to be designed for slow motor vehicle travel speeds between 20 and 25 miles per hour and will include treatments (shown in Table 4) to manage traffic volumes and travel speeds and discourage through travel, while prioritizing pedestrian and bicycle travel.

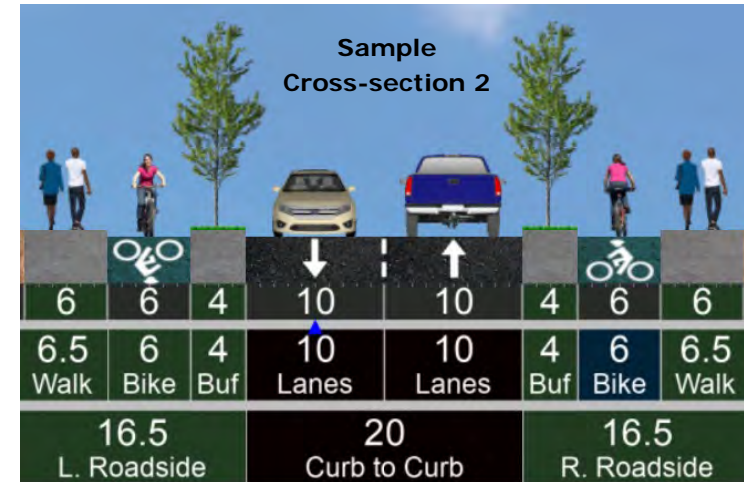
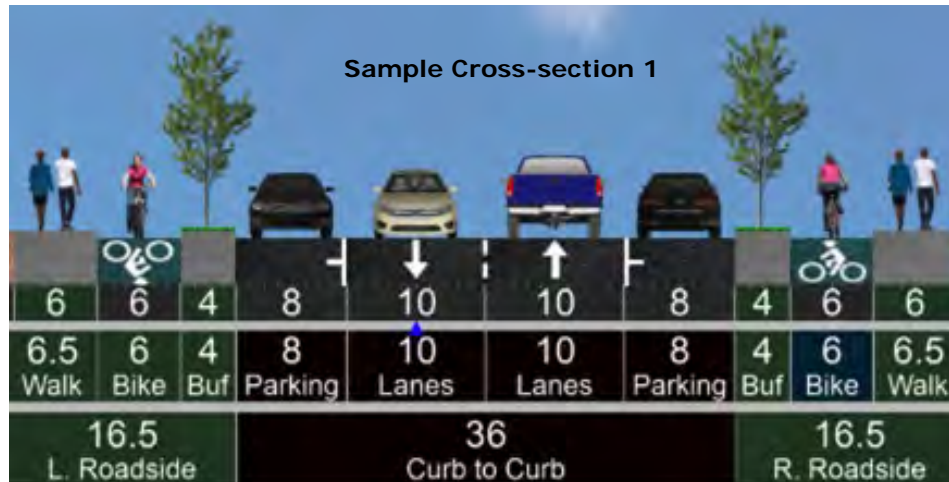
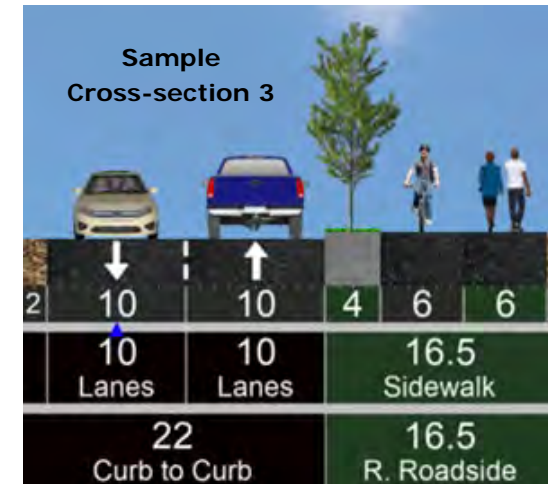
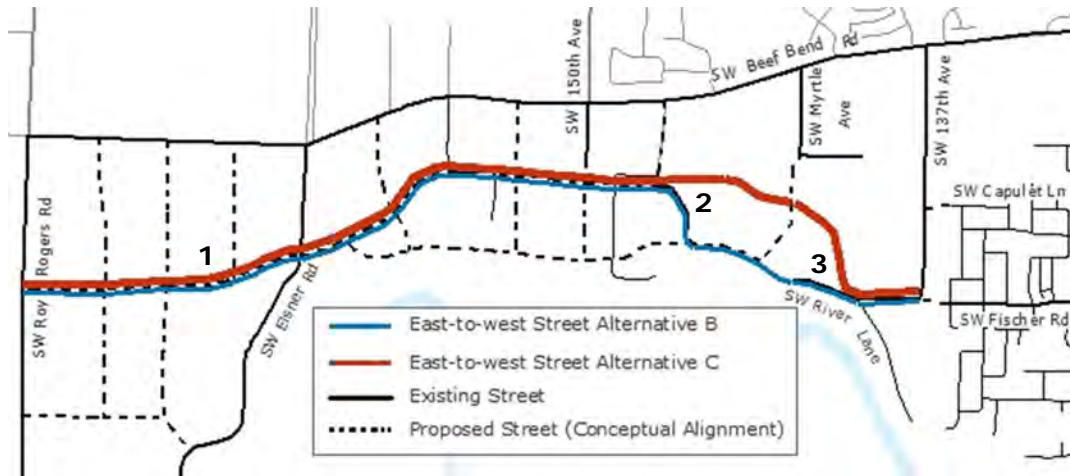
TABLE 4: SAMPLE TOOLS TO MANAGE TRAFFIC VOLUMES AND TRAVEL SPEEDS

Narrowing travel lanes	Roundabouts	Curb Extensions or Bulb outs
		
Placing buildings, street trees, on-street parking, and landscaping closer to the street	Mini-Roundabouts	Medians and Pedestrian Islands
		

Alternative A



Alternatives B and C



Alternatives D and E

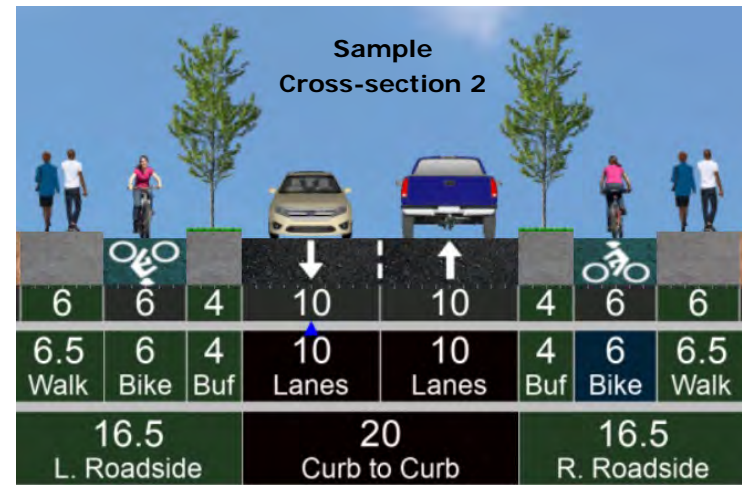
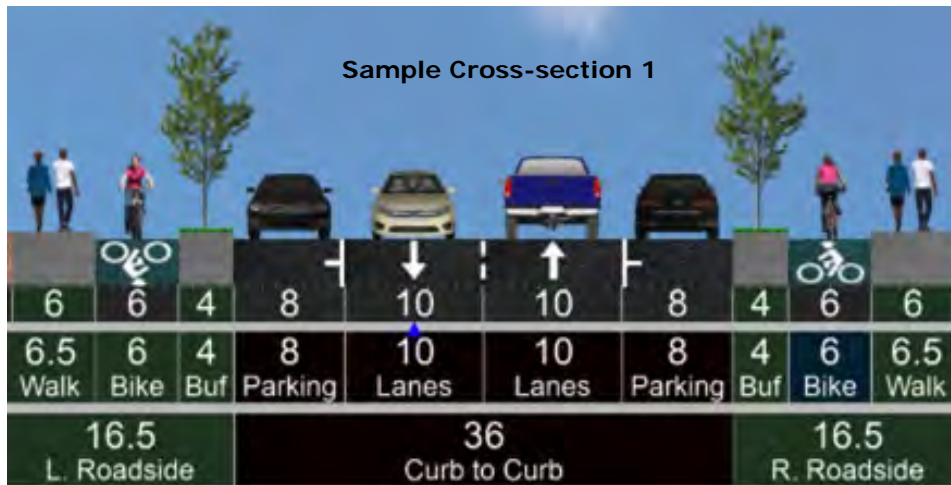


Table 5 summarizes a high-level evaluation of the east-west street alternatives. As shown, the biggest factor is the overall cost, as the estimates range from \$30 million for Alternative B to \$65 million for Alternative A. The alternatives are very similar for motor vehicles, with Alternatives A and B providing the most direct route, but also result in the highest forecasted traffic volumes along the segment of SW Fischer Road, east SW 137th Avenue (between 8,000-10,000 vehicles per day). While Alternatives C, D and E provide for an indirect route and would be expected to result in a lower level of traffic along the segment of SW Fischer Road, east SW 137th Avenue (between 6,000-8,000 vehicles per day). More detailed analysis, including environmental, topographic, neighborhood and right-of-way impacts, will need to be considered outside of this TSP before any alternative can be advanced. This TSP does not include a recommendation.

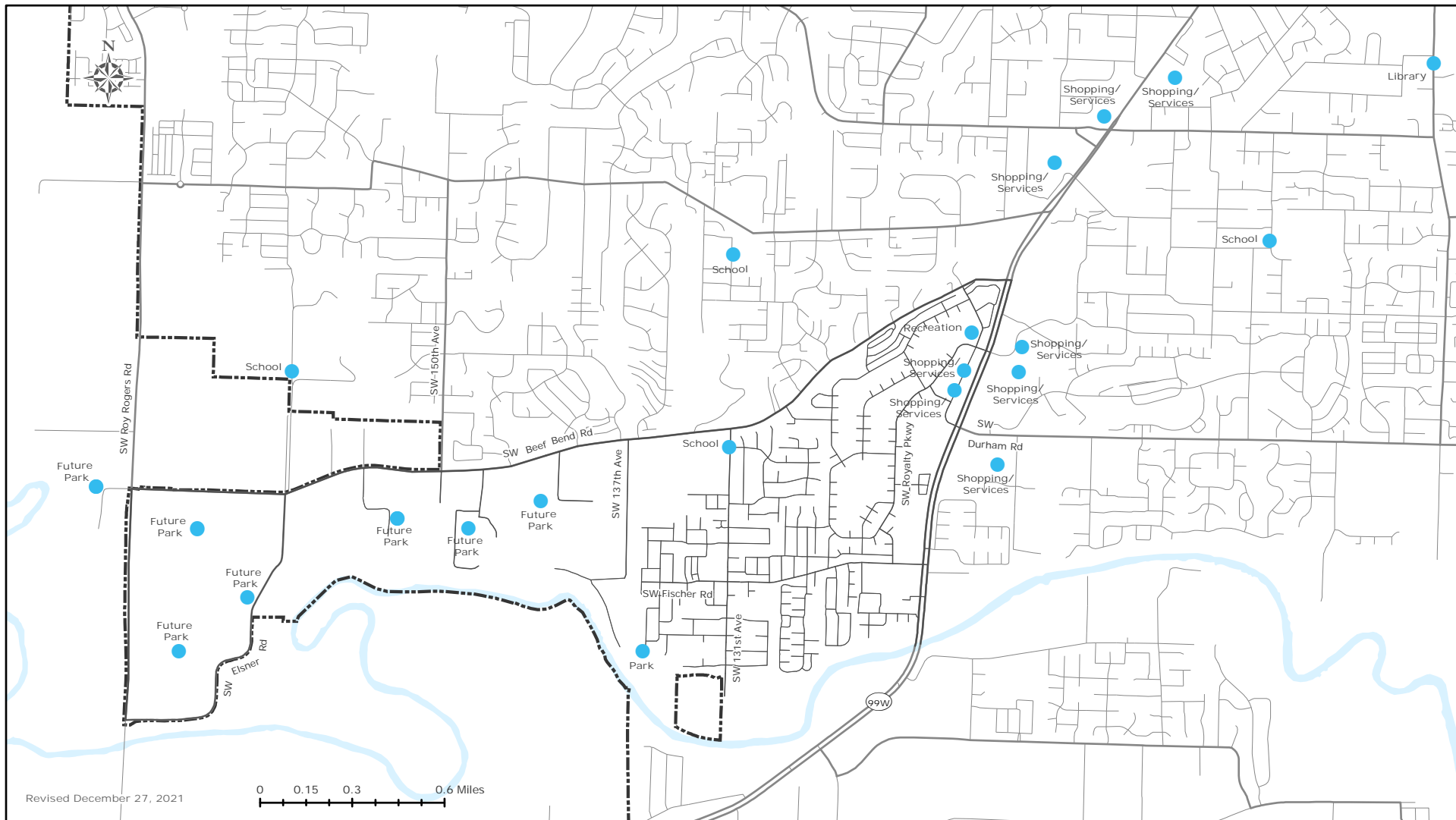
TABLE 5: EAST-WEST STREET ALTERNATIVES EVALUATION SUMMARY

ALTERNATIVES	EVALUATION CRITERIA					
	Minimizes Right-of-way Needed	Direct and Convenient Pedestrian and Bicycle Route	Effective Motor Vehicle Route for Local Trips	Minimizes Neighborhood Impacts	Minimizes Environmental Impacts	Estimated Cost (with Contingencies)
A	●	●	●	●	●	\$65 million
B	●	●	●	●	●	\$30 million
C	●	●	●	●	●	\$50 million
D	●	●	●	●	●	\$40 million
E	●	●	●	●	●	\$40 million

Notes:

- = Most effective at achieving evaluation criteria
- = Somewhat effective at achieving evaluation criteria
- = Least effective at achieving evaluation criteria

APPENDIX P. MAP OF COMMUNITY AMENITIES



Revised December 27, 2021

Legend:

● Community Amenity

Urban Growth Boundary



PLANNING COMMISSION RECOMMENDATION TO THE CITY COUNCIL FOR KING CITY, OREGON

TO: City Council for King City
FROM: Planning Commission Chair Annie Paulsen, City Manager, Michael Weston &
Contract City Planner Keith Liden
SUBJECT: Planning Commission Recommendation & Staff Report
RE: Ordinance 2023-01 - King City Transportation System Plan LU File # 23-01
DATE: May 9, 2023

GENERAL INFORMATION

Application

Staff and Consultants request that the City Council adopt Ordinance 2023-01 the King City Transportation System Plan (TSP) to guide transportation planning and future transportation facility and service improvements within the existing King City limits and the Kingston Terrace Master Plan area. In addition to this memorandum, the TSP application package includes:

- Planning Commission Recommendation
- Exhibit A – Recommended Findings
- Exhibit B – Agency and Public Comments
- Volume 1, City of King City Transportation System Plan
- Volume 2, King City Transportation System Plan Appendices

Affected Area

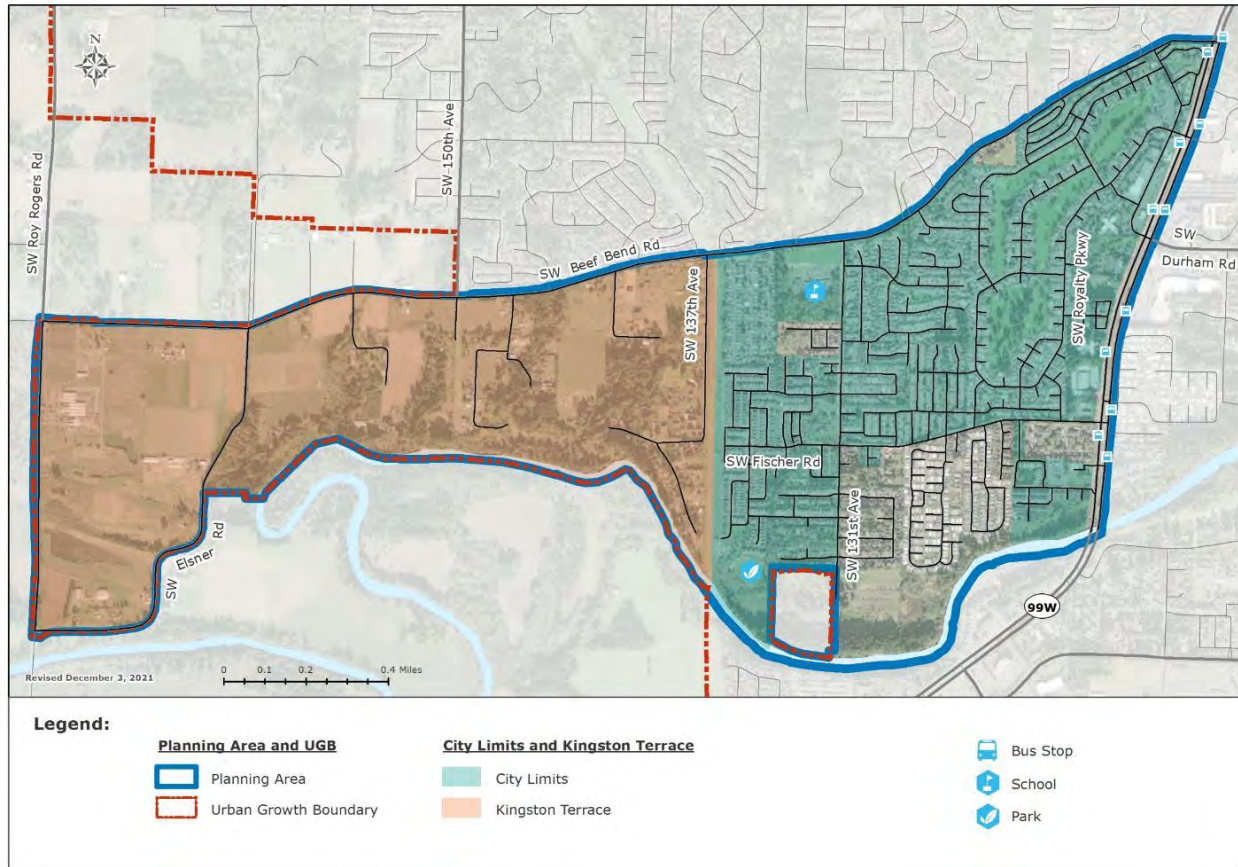
The TSP applies to the area bordered by Highway 99W, SW Beef Bend Road, SW Roy Rogers Road, and the Tualatin River as shown in Figure 1.

Staff Recommendation

The City Council should conduct the first reading and hold a public hearing for Ordinance 2023-01, consider the Planning Commission Recommendation, Staff Report & Findings and Public Comments. Upon Closure of the public hearing the City Council will need to deliberate and render a decision on the King City Transportation System Plan. The City Council has the options to Adopt, Adopt with Amendments, Remand to the Planning Commission for Further Consideration, or Deny Ordinance 2023-01 - King City Transportation System Plan – LU File # 23-01. **The Consultants and City Staff recommend the City Council:**

- **Conduct 1st Reading of Ordinance 2023-01 – King City Transportation System Plan - LU File# 23-01**
- **Conduct a De Novo Public Hearing to Consider Public Testimony.**
- **Adopt Ordinance 2023-01 - King City Transportation System Plan – LU File # 23-01.**
- **Conduct 2nd Reading of Ordinance 2023-01 – King City Transportation System Plan – LU File # 23-01**

Figure 1 King City TSP Planning Area



ABOUT THE PLAN

Introduction

Due its small size and lack of jurisdiction over major transportation facilities, King City does not currently have a transportation system plan (TSP). However, as the city has grown and plans to ultimately expand west to SW Roy Rogers Road, it is now necessary for the city to have a TSP. The TSP is a 20-year plan that guides transportation investment decisions for the city. This type of plan is required of most cities in the state, and completion of a TSP is a condition that Metro placed on its approval of the urban growth boundary expansion decision to include the Kingston Terrace area (formerly Urban Reserve Area 6D) into the UGB.

The King City TSP was developed in cooperation with Oregon Department of Transportation and grant funds administered by the Division of Transportation and Growth Management. The plan was developed in accordance with the criteria set forth in the Oregon Transportation Planning Rule, Metro's Regional Transportation Functional Plan, Oregon Statewide Planning Goals, and the King City Comprehensive Plan and Municipal Code. The consulting and engineering team lead by DKS & Associates (Traffic Modeling and Engineering), also included work by EcoNorthwest (Housing and Growth Projections), JLA (Public Involvement Team), and Urbswork (Land Use Planning Team).

Purpose

The King City TSP is a long-range plan to guide transportation investments within the city's planning area (Figure 1) from now to 2040. The transportation system improvements identified in the plan are intended to address current deficiencies and serve future local and regional needs in alignment with the community's goals, objectives, and vision for the future. The TSP includes a financing strategy based upon anticipated funding made available from existing and potential sources. The resulting plan is a multifaceted document the City will use to guide facility and service improvements to accommodate present and future transportation needs throughout King City.

TSP Overview

The King City Transportation System Plan includes Volume I, which is the plan document, and Volume 2, which contains all the background material and technical information related to the plan. They are attached to this report as TSP – Volume 1 and TSP – Volume 2. The plan and related appendices are available on the city's website. The primary elements of the TSP (Volume 1) include:

- **Chapter 1. Context for the Plan.** This chapter provides an overview of the planning area, which includes the existing city and the Kingston Terrace Master Plan area, and the basic requirements for transportation plans in Oregon.
- **Chapter 2. How the Plan Was Developed.** The public engagement process and TSP goals and objectives are presented in this chapter.
- **Chapter 3. King City Transportation System Today & Tomorrow.** This chapter describes the existing land use, transportation facilities and services, demographics, population and employment growth, travel demand for different modes, transportation safety, and system performance.
- **Chapter 4. Facility and Performance Standards.** This chapter covers street networks and functional classifications for streets, pedestrian, bicycle and transit route designations, and facility design standards.
- **Chapter 5. Projects and Priorities.** Funding for transportation improvements is discussed in this chapter. Projects are prioritized with the higher priority (financially constrained) improvements and lower priority (financially unconstrained) improvements. Within the constrained and unconstrained categories, projects are again prioritized as Tier 1 through Tier 3 improvements.
- **Chapter 6. Future Strategies and Considerations.** System performance measures are described as a tool for evaluating how well the transportation facility network and services are operating compared to the plan's goals and objectives. They provide a way to measure success or identify need for enhancing the transportation system.

The TSP Appendices (Volume 2) contains 16 separate appendices, which include all background materials and technical data that support the TSP in Volume 1.

Summary of the TSP Planning Process

Public engagement and outreach for the plan was conducted between September 2020 and June 2021. Several hundred people participated through a variety of outreach opportunities explained within the TSP and Appendix B – Public and Stakeholder Involvement Summary (Volume 2). In addition to the public, the development of the TSP featured the involvement of a Stakeholder Advisory Committee (SAC) representing interested residents, property owners, and organizations along with a Technical Advisory Committee (TAC) representing government agencies and partner jurisdictions.

Adoption of the TSP was delayed to allow for any modifications necessary to accommodate the Kingston Terrace Master Plan. A public review draft of the TSP was placed on the city's website in fall 2022. In response to transportation-related elements developed for the draft Kingston Terrace Master Plan, the draft TSP was

amended in March 2023 prior to an all day public hearing before the King City Planning Commission on March 22, 2023.

The King City Planning Commission held a public hearing On March 22, 2023; there were 24 members of the public that presented written or oral testimony. Written testimony collected 7 days prior to the public hearing was included in the Planning Commission packets. Written testimony received after March 15, 2023 was presented to the Planning Commission at the Public Hearing and entered into the Record under Exhibit A-PC(*#).

Planning Commission Recommendation

The King City Planning Commission, after hearing and considering all public testimony, closed the public hearing and proceeded with deliberations. One Commissioner had a schedule conflict for a portion of the meeting and missed some of the public testimony. The Commissioner who missed the public testimony did not have an opportunity to review the public testimony and abstained from the deliberations.

The Planning Commission voted unanimously with one abstention to recommended that the City Council adopt the King City Transportation System Plan and the associated Staff Report, Amended Findings of Facts and Conclusions of Law with minor grammatical amendments to the findings as presented by the Staff and Consultants. The Planning Commission recommends that the City Council Approve & Adopt Ordinance 2023-01 the King City TSP LU File # 23-01 with Special Considerations to:

1. Future Beef Bend Improvements
2. Costs of Bridges including Drainage & Design
3. Implementation of the Clean Water Service's Area Plan
4. Intersection improvements suggested at 99W and Fischer
5. Understanding the impacts of Parallel Routes being planned by Tigard in the neighboring community of River Terrace 2.0.

RECOMMENDED FINDINGS AND CONCLUSIONS

The comments (Exhibit A) and relevant criteria (Exhibit B) for evaluating the proposed King City Transportation System Plan are addressed in the report and attached exhibits attached hereto and by this reference made a part hereof. They address the relevant State, Metro, and City requirements for the plan. The City Council should consider the findings regarding the proposed King City Transportation System Plan when making its decision to approve and adopt, approve conditionally, and adopt with amendments, or disapprove the plan and remand to the Planning Commission.



Annie Paulsen (May 9, 2023 13:57 PDT)

Annie Paulsen, Chair
King City Planning Commission

May 9, 2023

Date



Michael Weston
City Manager for King City

May 9, 2023

Date

ORDINANCE NO. 2023-01
EXHIBIT A

EXHIBIT A: FINDINGS OF FACTS AND CONCLUSIONS OF LAW

RECOMMENDED FINDINGS AND CONCLUSIONS (amended 3.25.23)

The King City Transportation System Plan (TSP) must comply with the relevant goals, policies and rules in the following state, regional, and city plans:

- Oregon Statewide Planning Goals
- Oregon Transportation Planning Rule (OAR 660-012)
- Metro Regional Transportation Functional Plan
- King City Comprehensive Plan
- Metro UGB Decision, Exhibit C to Ordinance 18-1427

OREGON STATEWIDE PLANNING GOALS

The Statewide Planning Goals are satisfied as indicated below:

Citizen Involvement - Goal 1: To develop a citizen involvement program that ensures the opportunity for citizens to be involved in all phases of the planning process.

FINDINGS: The TSP was created with citizen input. Its development was dependent from the start on input and participation by residents, property owners, partner agencies, Planning Commission, and City Council. The TSP process included a comprehensive public involvement process including public information provided through mailings and information on the city's website, a Stakeholder Advisory Committee, and public open houses and meetings. The program met or exceeded the procedural requirements in Chapter 16.40 of the King City Municipal Code. Details are provided in Chapter 2 and Appendix B of the TSP.

This goal is satisfied.

Land Use Planning - Goal 2: To establish a land use planning process and policy framework as a basis for all decisions and actions related to use of land and to assure an adequate factual base for such decisions and actions.

FINDING: The city has adopted the King City Comprehensive Plan and Community Development Code (Title 16 of the King City Municipal Code) in accordance this goal, and as noted above, citizens participated in that process as well as being involved in the creation of the draft Kingston Terrace Master Plan (KTMP).

This goal is satisfied.

Agricultural Lands – Goal 3 and Forest Lands – Goal 4

FINDINGS: These goals are not applicable because they are directed at rural areas and counties. The KC-TSP area does contain some agricultural lands, especially in the portion west of SW 150th Avenue. However,

the decision about what lands to preserve as rural and what lands are better suited for urbanization was made on a regional scale when the KTMP areas were added to the Portland Metro Urban Growth Boundary. Therefore, Statewide Planning Goals 3 and 4 are not applicable to the Kingston Terrace Master Plan.

This goal is satisfied.

Open spaces, scenic and historic areas, and natural resources – Goal 5: To conserve open space and protect natural and scenic resources.

FINDINGS:

Goal 5 aims to protect natural resources and conserve scenic and historic areas and open spaces. Particularly in urban areas, the emphasis of Goal 5 is on the inventory and conservation of wetlands, riparian zones, and wildlife habitats. In addition to Goal 5, the City is required to comply with Metro Title 13 for all mapped resources located within the UGB. By meeting the requirements of Title 13, the City also complies with Goal 5 for riparian areas and wildlife habitat.

Metro Title 13 requires King City to apply protections to areas identified as riparian habitat and upland wildlife habitat on the Metro Inventory Map. Of the three options for compliance offered by Metro, King City has selected option #2 to demonstrate that the amended implementing ordinances substantially comply with the performance standards and best management practices described in Metro Code Section 3.07.1340. Community Development Code amendments to implement Title 13 will be adopted through a subsequent process. Metro Title 13 is addressed further in the KTMP findings for the Urban Growth Management Functional Plan.

Open space and natural resources, consisting primarily of flood plain, drainageways, and wetlands are recognized in the King City Comprehensive Plan, draft KTMP, and King City Development Code (Title 16 – Municipal Code) and will continue to be protected in accordance with current standards and requirements and in coordination with federal and state agencies. For the Kingston Terrace area, the presence of several riparian resource areas is recognized and protected through an intergovernmental agreement with Clean Water Services. For the Kingston Terrace area the proposed street network is designed to minimize the number of crossings. Additional upland habitat areas defined by Metro Title 13 will be protected through new regulations in the King City Development Code.

There is no known historical landscape assessment or survey of the study area for cultural and historic resources. The Confederated Tribes of Grand Ronde indicated that if any resources of cultural significance exist in the study area, they would likely be in the areas King City is looking to develop.

The Oregon Historic Sites Database includes properties listed in the National Register of Historic Places. However, the database is limited to areas in which previous work has already occurred. The only site included in the database is the Plieth, Gustave House, a single dwelling built around 1890 located just south of Beef Bend Road between Elsner Road and Roy Rogers Road. The Plieth, Gustave House is eligible but not currently listed in the National Register. The area surrounding the Plieth, Gustave House is included in a Washington County Historic and Cultural Overlay District, which requires County review to alter, repair, demolish, or relocate the identified historic structure and to partition or subdivide the property.

Based on the findings above, the TSP is consistent with Statewide Planning Goal 5.

This goal is satisfied.

Air, water and land resource quality – Goal 6: To maintain and improve the quality of the air, water, and land resources of the state.

FINDINGS: As noted under Goal 5 above, existing open space and natural resource areas will continue to be regulated and protected as they are today. Major themes of the King City Transportation System Plan (KC-TSP) and the draft Kingston Terrace Master Plan (KTMP) are to maintain and enhance natural resources and sensitive lands and to improve the active transportation environment to promote fewer car trips leading to a modest beneficial effect on air quality. The TSP supports this approach by including pedestrian and bicycle facilities for all major streets (arterials, collectors, and neighborhood routes).

Goal 6 instructs local governments to consider protection of air, water and land resources from pollution and pollutants when developing comprehensive plans. The pollutants addressed in Goal 6 include solid waste, water waste, noise and thermal pollution, air pollution, and industry-related contaminants. Comprehensive Plans must demonstrate consistency with the administrative rules related to air, water, and land quality established by the Environmental Quality Commission (EQC).

Under the oversight of the EQC, the Oregon Department of Environmental Quality (DEQ) regulates air, water, and land through its permitting actions under the federal Clean Water Act and Clean Air Act. The Department of State Lands and the Army Corps of Engineers regulate jurisdictional wetlands and waters of the state and the country, respectively. Clean Water Services regulates impervious surface and stormwater runoff throughout the City through design standards applied to development. Clean Water Services provides sewer and stormwater services for City residents. Chapter 16.140 of the King City Municipal Code includes regulations for water quality and surface water. All development within the KTMP area will be subject to applicable state, and local environmental regulations.

In addition to existing comprehensive plan policies and development codes, new policies specific to the KTMP area include:

- Use a conservative approach to protecting natural resources, with a progression of physical transitions from south to north, between the river and developed areas. The most sensitive areas and highest quality wetlands found along ravine bottoms are protected from development. Maintaining the health of the Tualatin River and wildlife habitats is critical to the protection of natural systems and the preservation of the essential character of Kingston Terrace.

The following resources are regulated in accordance with federal, state, and local regulations:

- FEMA floodplains
- Metro Wetlands
- Class A and B Upland Wildlife Habitat
- Class I and II Riparian Wildlife Habitat Quality
- Local Wetland Inventory (LWI)
- Significant Natural Resources Inventory (SNR)

In addition, the KC-TSP and the KTMP promote habitat-friendly development practices which are encouraged to protect Class III Riparian Habitat and Class C Upland Habitat, along with open space dedications that increase from west to east in order to establish the desired character of each neighborhood.

- Development in areas with lower quality resources is designed to prevent damage to the environment and mitigated to restore any ecological functions lost or damaged due to the development. In developed areas, active environmental repair is built into the urban fabric. New development plays an important role in repairing the damage caused by earlier development; it provides funding for restoration projects

through system development charges and requires property owners to restore degraded resources to their natural state as a condition of development.

- Open space dedications add to environmental protections in and adjacent to identified resource areas, with the amount of open space increasing as development progresses from west to east. Combined with protected resources and habitat areas, the open space network provides opportunities for a public trail system, access to wildlife, and water quality treatment.
- Integrate green spaces and wetlands into each neighborhood. Retain trees and tree groves. The Tualatin River is the defining feature of this area, including adjacent streams, ravines, and riparian and upland habitat areas, and a major contributor to what makes it special. New development should connect, in physical and visual ways, to the Tualatin River and Wildlife Refuge. Maintain a sensitivity to the health and vitality of the river.

Development code amendments needed to implement these policies will be adopted through a subsequent process.

While air quality is largely regulated by DEQ, the City can impose conditions of approval on land use approvals that require minimizing air pollution and carbon emission impacts through actions such as vegetative plantings and conservation. The City also manages air and water resources through the provisions of King City Municipal Code Title 8- Health and Safety.

Highly connected neighborhoods and a fine-grained network of streets and trails are a defining characteristic of the KTMP transportation network. The neighborhoods of Kingston Terrace will be made up of relatively small blocks and a fine-grained network of streets, trails, and alleys that make it easy and fun to walk and bike to local destinations and access future transit services. Narrow streets minimize impacts to water and land resources.

The Federal Transit Administration and Federal Highway Administration enforce noise standards for federally funded rail and highway projects. The Oregon Noise Control Act authorizes cities and counties to adopt and enforce noise ordinances and standards of their own. King City regulates noise through Municipal Code Chapter 8.04.130 of the King City Municipal Code Chapter 8.12 Noise Control, which designates prohibited noises and maximum permissible environmental noise and sound levels.

Through the concepts and policies adopted through the King City TSP, the KTMP and the comprehensive plan the city will have no affect or will enhance existing King City regulations. Based on the findings above, the KC-TSP is consistent with Statewide Planning Goal 6.

This goal is satisfied.

Natural Disasters and Hazards – Goal 7

FINDINGS: Goal 7 requires local comprehensive plans to address Oregon’s natural hazards. Protecting people and property from natural hazards requires knowledge, planning, coordination, and education. Natural hazards applicable to King City include floods, landslides, weak foundation soils, earthquakes, and wildfires. Goal 7 calls for local governments to respond to new hazard inventory information provided by federal and state agencies by adopting or amending plan policies and implementing measures as needed. For riverine flood hazards, local governments must adopt and implement local floodplain regulations that meet the minimum National Flood Insurance Program (NFIP) requirements. In implementing natural hazard plans and policies, the State goal urges local governments to do the following: coordinate plans with emergency preparedness and recovery programs; consider stormwater management as a means to address flood and landslide hazards;

consider nonregulatory approaches to implementing hazard plans; and to require technical reports when reviewing development requests in hazard areas.

The identified hazard areas are primarily related to drainageways and the Tualatin River floodplain. The King City Comprehensive Plan, draft KTMP, and Community Development Code identify these areas along with regulations to protect them.

The City of King City complies with Goal 7 by regulating development in hazard-prone areas through the Municipal Code, the Public Works Design Guidelines and memorandums of understanding (MOUs) with Tualatin Valley Fire and Rescue and other emergency preparedness efforts. Chapter 16.140 of the King City Municipal Code, Floodplain and Drainage Hazard Areas, address flooding and landslides. The purpose of this chapter of the development code is to:

- Implement the Federal Emergency Management Agency's (FEMA) flood insurance program and to minimize flood damage to property
- Implement the Metro Urban Growth Management Functional Plan Title 3 Water Quality and Flood Management
- Implement Statewide Planning Goal 7 Areas Subject to Natural Hazards
- Promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions

Additionally, the Design Review and Conditional Use land use processes address applicable natural hazards on a site specific basis.

The KC-TSP and the KTMP amendments do not modify design standards related to protecting development from hazards. The adoption of the KC TSP and future adoption of the KTMP amendments does not propose any changes to the adopted inventories or City Municipal Code.

Goal 7 does not directly apply to the KC-TSP because no new Goal 7 program is advanced by this adoption and no existing Goal 7 program is changed by this document.

Therefore, Goal 7 is not applicable to the KC-TSP because the adoption does not propose to change comprehensive land use plan policies or implementing regulations for compliance with Statewide Planning Goal 7.

Based on the findings above, the KC-TSP is consistent with Statewide Planning Goal 7.

This goal is satisfied.

Recreational Needs – Goal 8: To satisfy the recreation needs of the citizens of the state and visitors and, where appropriate, to provide for the siting of necessary recreational facilities including destination resorts.

FINDINGS: Although the TSP does not directly affect recreational needs of city residents, the proposed addition of suitable street and pathway connections for pedestrians and bicyclists will support the recreational goals of the King City Comprehensive Plan and draft KTMP. The TSP calls for transportation connections with recreational facilities, including Metro's Westside Trail.

The following is a transcript from the KTMP findings and relevant to this matter:

FINDINGS: Goal 8 requires local governments to plan for the recreation needs of their residents and visitors. The goal places priority on non-motorized forms of recreation, and recreation areas that serve high-density populations with limited transportation options and limited financial resources. It also places priority on recreation areas that are free or available at a low cost to the public.

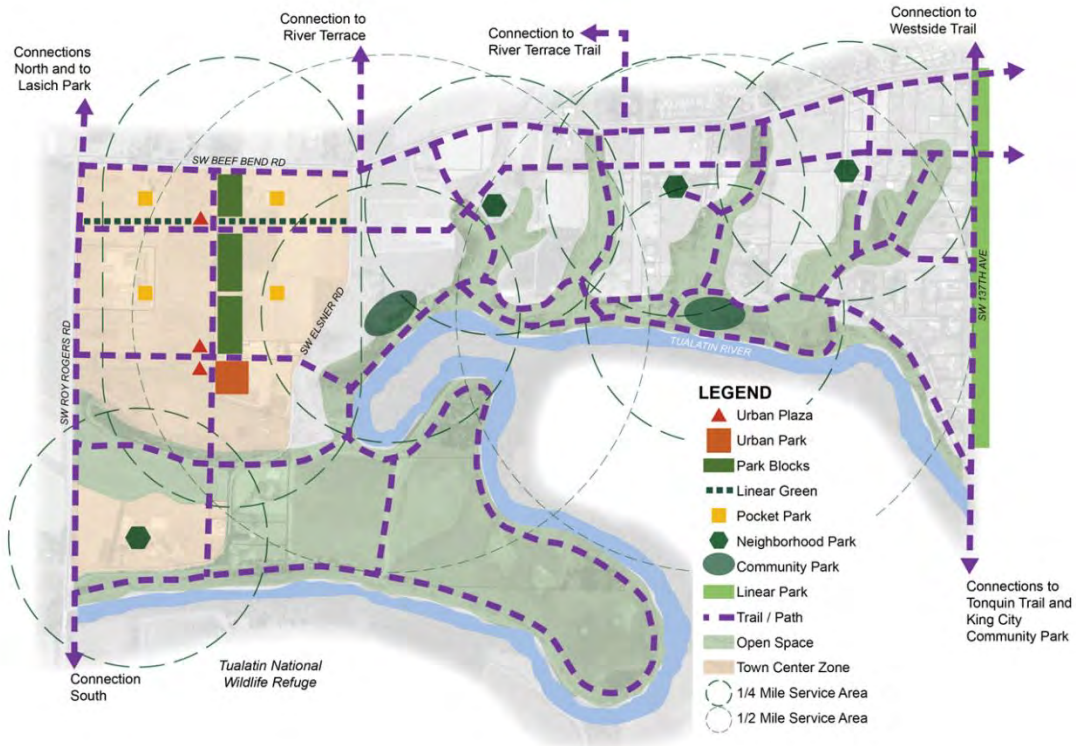
Kingston Terrace will benefit from a comprehensive and networked system of parks and open spaces, strategically distributed throughout its four primary neighborhoods. These public spaces will be places of shared use and seamlessly linked to their surroundings. They are arranged to support identifiable geographic neighborhood edges, help conserve environmental resources, and shape a community landscape that celebrates the area's local history, climate, and ecology. They provide active and passive recreational opportunities, health promoting amenities, and a necessary visual and functional balance to the proposed development. Additional objectives include: 1) help define the community structure and urban form, 2) enhance neighborhood character and function, 3) help conserve natural areas and open lands, 4) connect the different neighborhoods to each other, and 5) connect with nearby open spaces and trails.

Table 1. KTMP Parks and Open Spaces: Types, Guideline, Location

Type	Guideline (min.)	Location (Existing in King City and/or new proposed locations in Kingston Terrace)
Urban Plaza	TBD*	Proposed: In Town Center, on Main Street
Urban Park	TBD*	Proposed: In Town Center, south of Park Blocks
Park Blocks	TBD*	Proposed: In Town Center, running N/S parallel to Main Street / River Terrace Blvd.
Linear Green	TBD*	Proposed: In Town Center, along one side of a primary east / west collector.
Pocket Park	1/4 acre / 1,000 people	Proposed: Small parks within the most urban neighborhoods
Neighborhood Park	1.5 acres / 1,000 people	Proposed: One park within each neighborhood
Community Park	3 acres / 1,000 people	Existing: King City Community Park Proposed: 1) Central Neighborhood with Tualatin River access and 2) Rural Character Zone Riverfront Park
Linear Park	1.25 acres / 1,000 people	Proposed: BPA Right of Way (utility easement between SW King Lear Way / SW Montgomery Way and SW 137th Avenue)
Trail / Path	.25 miles / 1,000 people	Proposed: Tualatin Greenway, Westside Trail, neighborhood connections, and connections throughout the Town Center
Open Space	4.25 acres / 1,000 people	Existing: Areas under natural resource protection Proposed: Including, and adjacent to, Natural Resource areas

*Note: Final size, quantity, location, and design details to be determined during City review and approval.

The most significant feature of the system is preservation of the interconnected naturally occurring ravines and forested open spaces along the Tualatin River. As shown in Table 1 and Figure 2 below, four Neighborhood Parks are envisioned near the natural ravines in the central and eastern portions of the plan area, combined with additional park types. Two larger Community Parks are envisioned, 1) in the Central Neighborhood with access to the Tualatin River, and 2) in the southern portion of the Rural Character Zone. In addition to the park spaces, several Trails / Paths will provide connections between neighborhoods and along the river, envisioned as a continuation of the Tualatin River Greenway Trail. The Town Center includes urban park sizes, facilities, and settings. The Park Blocks, Urban Park and Urban Plazas will be significant open space features serving residents from all neighborhoods.



In addition to existing comprehensive plan policies and development codes, new policies specific to the KTMP area include:

- *Provide different choices for recreation and parks, including pocket parks, recreation and playfields, and a connected trail system and ensure that all residents have visual and physical access to natural edges, trails, and natural resources. Equitable access is built into neighborhood design and not reserved exclusively for homes along natural resources area. Incorporate shared open space into neighborhoods.*

Development code amendments needed to implement these policies will be adopted through a subsequent process.

The proposed addition of suitable street and pathway connections for pedestrians and bicyclists also will support the recreational goals of the King City Comprehensive Plan and draft KTMP.

Based on the findings above, the KTMP is consistent with Statewide Planning Goal 8.

As illustrated above these elements are further addressed in the Kingston Terrace Master plan and through the future adoption of the KTMP and requisite Comprehensive plan amendment the KC-TSP and subsequently adopted amendments will satisfy Goal 8 Requirements.

This goal is satisfied.

Economy – Goal 9: To provide adequate opportunities throughout the state for a variety of economic activities vital to the health, welfare, and prosperity of Oregon’s citizens.

FINDINGS: Goal 9 ensures cities and counties have enough land available to realize economic growth and development opportunities. Commercial and industrial development takes a variety of shapes and leads to economic activities that are vital to the health, welfare and prosperity of Oregon's citizens. To be ready for these opportunities, local governments perform Economic Opportunity Analyses based on a 20-year forecast of population and job growth.

An important focus of the KC-TSP and draft KTMP is to create a Main Street/Town Center area to encourage a variety of business opportunities appropriate to the scale of the surrounding residential neighborhoods. The Main Street/Town Center will be a mixed-use area with local-serving businesses and a variety of civic uses. Three studies examined the feasibility of commercial development prior to the KC-TSP and KTMP process. The 2017 Concept Plan report found that 54,000 to 85,000 square feet of commercial uses were possible within 10 years as part of a neighborhood retail center. The Market analysis conducted as a function of this TSP report in 2020 found that slightly less commercial development was possible within 10 years. Finally, in the 2022 KTMP market analysis it was again found that the level of supportable square feet of commercial retail/service space that would likely occur by year 2045 for the KTMP area is expected to range from 42,000 to 86,000 square feet.

Based on the findings above, the KC-TSP is consistent with Statewide Planning Goal 9. Urban design aspects of the plan promote a pedestrian-friendly appearance and character of the center. The transportation facility designs in the TSP are geared toward improving walkability and to create a center, which is transit-ready, to enable TriMet to provide effective future service. These transportation improvements are expected to improve the economic viability and success of the city and surrounding community.

This goal is satisfied.

Housing – Goal 10: To provide for the housing needs of citizens of the state.

FINDING: This goal is not directly relevant to the TSP but is fully addressed within the subsequent processes of the KTMP and requisite Comprehensive Plan Amendment.

This goal is satisfied.

Public Facilities and Services – Goal 11: To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

FINDINGS: The TSP provides a prioritized list of transportation improvements along with a financing strategy to implement the plan. These transportation improvements will be part of the larger infrastructure package needed to support existing and future development in the city.

The KC-TSP focuses on the Transportation facilities City wide, while the KTMP address the implementation strategy of other utilities throughout the newly identified urban growth area for Goal 11. Colocation of utilities within public rights of way are encouraged in both documents, and while the TSP focuses on the functionality of the transportation system, the KTMP focuses on the wide breadth of utilities necessary to serve the expansion areas.

This goal is satisfied.

Transportation – Goal 12: To provide and encourage a safe, convenient and economic transportation system.

FINDINGS: Goal 12 is implemented by Oregon Administrative Rules (OAR) Chapter 660, Division 12. Local governments are required to adopt a transportation system plan (TSP) and land use regulations to implement the TSP. OAR 660-012-0060 requires any comprehensive plan amendment to be evaluated according to the terms outlined in that OAR to demonstrate whether they will have a significant impact on the transportation system.

A primary objective shared by the King City Comprehensive Plan, draft KTMP, and TSP is to provide a balanced transportation system, which successfully accommodates all modes and all households, regardless of income. The importance of SW Roy Rogers Road, SW Beef Bend Road, and SW Fischer Road as regional and local transportation facilities is recognized. In addition, the TSP implementation actions are intended to encourage active transportation by improving facility safety, connectivity, and environment to promote walking, bicycling, and future transit.

The TSP and KTMP identify a “backbone” street system for the Kingston Terrace area. This system identifies collector streets that provide east/west and north/south circulation to link destinations within Kingston Terrace and connect Kingston Terrace with the existing city, and the surrounding arterial street system. The backbone street system also includes a series of Neighborhood Routes that provide connections between collector streets and the local street system.

Traffic movement along the collector streets are envisioned to be controlled by the use of roundabouts to reduce speeds, minimize required roadway widths, and discourage through traffic. Modern design roundabouts would be placed at the intersections of collector streets with other collectors. The frequency and connectivity offered by the backbone street system is also intended to encourage active transportation by providing good connectivity that minimizes out-of-direction travel and provides for the safe and comfortable movement of pedestrians and bicyclists.

As described in the Mobility policies, most streets serving Kingston Terrace will change in character to match the neighborhood they traverse. Context sensitive design approaches support the functional classification of a street (e.g., Collector, Neighborhood Route) and its role within the street network while allowing certain characteristics of the street such as sidewalk widths, landscape strip widths, or planted medians, to change in response to the land use and urban design goals of individual neighborhoods.

Local Streets and Collector Streets share the same cross section characteristics. Collector Streets differ from Local Streets in the following ways: Collector Streets are tasked with connecting to Arterial Streets (SW Beef Bend Road, OR 99 W, and SW Roy Rogers Road) and serving longer-distance vehicular and micro-mobility travel trips. In addition, Collector Streets may have intersection treatments that prioritize the collector’s primary direction of travel. However, Collector Streets would still be designed to discourage speeding and cut-through traffic by using a variety of effective traffic calming techniques.

The perimeter arterial street system of SW Beef Bend and SW Roy Rogers Roads (and OR 99W) play an important role in connecting Kingston Terrace to regional traffic and transit. However, arterial streets do not need to be designed like highways. As described in KTMP Policies, streets like SW Beef Bend Road will play an expanded role in the future: connecting the region and serving local needs. In particular, SW Beef Bend Road, which runs along the northern edge of Kingston Terrace and along the southern edge of Tigard’s River Terrace 2.0 area, can serve as a connector between the two communities, instead of as a barrier. This is a goal that has been expressed by both cities.

Bicycle and Pedestrian Pathways and Crossings

While all streets would include sidewalks, on-street bicycle facilities will be provided only along collector

streets or on separated shared use pathways. These pathways would either parallel the alignment of vehicular streets or would provide separate, independent connections to encourage the use and safety of active transportation modes. The separation of shared use paths from the motor vehicle travel way should consider roadway speed and volume. With a 30 mph target design speed, the minimum separation should be five feet with more separation depending on the quality of experience desired. Typically, shared use path separation is correlated to roadway speeds and volumes.

Shared use paths and side paths should be a minimum of 10-feet in width with wider cross-sections considered based on the level of expected bicycle and pedestrian activity. Travel to the right should be encouraged with separation of bicyclists and pedestrians where possible.

In addition to existing comprehensive plan policies and development codes, new policies specific to the KTMP area include:

- Highly connected neighborhoods and a fine-grained network of streets and trails. The new neighborhoods of Kingston Terrace are connected to each other, the existing King City east of SW 137th Avenue, and neighboring areas by a wide variety of streets and trails, which are designed to encourage walking and cycling while serving vehicles. The neighborhoods of Kingston Terrace are made up of relatively small blocks and a fine-grained network of streets, trails, and alleys that make it easy and fun to walk and bike to local destinations and access future transit services.
- Most streets serving King City and the Kingston Terrace area change in character to match the neighborhood they traverse. This applies to the multiple east-west streets that cross the area. In the far west area, Main Street/Town Center streets are wider to serve commercial uses, accommodate on-street parking, outdoor dining and socializing, like a traditional “main street.” In contrast, where the same street traverses the eastern area of Kingston Terrace is narrow; only two lanes for cars, and limited on-street parking. Sidewalks accommodate comfortable walking but may meander through planted areas and around trees. In the eastern neighborhoods the street itself may curve to avoid groves of trees, existing properties, and slow traffic. This “context-sensitive” design principle applies to all east-west streets, including the East-West Collector Street. Where streets cross natural areas or ravines are designed to minimize adverse impacts.
- Narrow streets and appropriate traffic controls “tame streets” by reducing speeds through use of geometric design, signals, roundabouts and mini-roundabouts (traffic circles), bicycle and pedestrian protections (e.g., refuge islands and pedestrian -activated signals). Even the East-West Collector Street has no more than two vehicular travel lanes for most of its length. All other streets have two travel lanes except where they accommodate on-street parking, a family-friendly separated bike lane, a green center park for trees or plants, or a center turn lane for left turns. Left turn lanes may be necessary within the vicinity of SW Beef Bend Road where north-south Collectors or Neighborhood Routes intersect. Roundabout-style intersections, particularly along Collector streets minimize the need for left turn lanes. Roundabouts are designed using specific geometric design techniques that slow traffic and make it easy and safe for pedestrians and bicyclists to cross and move through.
- Micromobility, active transportation, and universal design concepts are built into the network and into the design of each individual street from the beginning and not as an afterthought. Micromobility refers to forms of small, fully or partially human-powered vehicles such as bikes, electric bikes (e-bikes), or e-scooters. Active transportation refers to the intentional design of environments including streets and paths that makes it easy to exercise and incorporate healthy choices into daily life. Universal design addresses the right for everyone to use all spaces in an independent, inclusive, and equal way.
- Streets like SW Beef Bend Road play a different role in the future: connecting the region and serving

local needs. SW Beef Bend Road, SW Roy Rogers Road and SW Elsnor Road evolve from rural highways to urban streets, particularly where they serve two adjoining communities that share future commercial, transit, and recreational facilities. One such area is SW Beef Bend Road between SW Roy Rogers Road and SW 150th Avenue. In the future, the ability to safely walk and bicycle alongside this arterial and to easily cross it—to access a transit stop, for example—are of paramount importance. The transformation of this street includes attractive development that fronts onto SW Beef Bend Road, facing the street rather than turning its back.

Development code amendments needed to implement these policies will be adopted through a subsequent process.

Based on the findings above, the KC-TSP is consistent with Statewide Planning Goal 12.

This Goal is Satisfied.

Energy Conservation – Goal 13: To conserve energy.

FINDINGS: Goal 13 requires that land and uses developed on the land shall be managed and controlled so as to maximize the conservation of all forms of energy, based upon sound economic principles. The TSP's promotion of active transportation with an interconnected network is expected to help replace short vehicular trips with walking, bicycling, or transit. This will help reduce energy use.

Based on the findings above, the KC-TSP continues to implement the City's consistency with Statewide Planning Goal 13.

This goal is satisfied.

Urbanization – Goal 14: To provide for an orderly and efficient transition from rural to urban land use.

FINDINGS: The TSP covers the existing city plus the Kingston Terrace area, which is currently unincorporated and planned to ultimately become part of King City. An urban transportation system is clearly a major component to achieve a successful transition from rural to urban. The TSP provides a clear strategy for providing the necessary urban transportation infrastructure to support the existing city and the anticipate future growth in the Kingston Terrace area.

Goal 14 states that urban growth boundaries shall be established to identify and separate urbanizable land from rural land. Establishment and change of the boundaries shall be based upon considerations of the following factors:

1. Demonstrated need to accommodate long-range urban population growth requirements consistent with LCDC goals
2. Need for housing, employment opportunities, and livability
3. Orderly and economic provision for public facilities and services
4. Maximum efficiency of land uses within and on the fringe of the existing urban area
5. Environmental, energy, economic and social consequences
6. Retention of agricultural land as defined, with Class I being the highest priority for retention and Class VI the lowest priority
7. Compatibility of the proposed urban uses with nearby agricultural activities

The requirements of Goal 14 were met through the development of the 2018 *King City Urban Reserve Area 6D*

Concept Plan, which created an initial vision to urbanize the area. Metro approved the plan and expanded the Urban Growth Boundary to include the Urban Reserve 6D Area. The entirety of the KC-TSP, the KTMP, and King City Comprehensive Plan amendments govern the transition of the newly added areas within the Kingston Terrace planning area from rural to urban uses. In addition, the TSP covers the existing city plus the Kingston Terrace area. These documents provide a clear strategy for providing the necessary urban services and infrastructure to support the anticipated future growth in the Kingston Terrace area.

Based on the findings above, the KC-TSP is consistent with Statewide Planning Goal 14.

This goal is satisfied.

TRANSPORTATION PLANNING RULE

The provisions of the Transportation Planning Rule (TPR), which are relevant to King City are addressed below.

OAR 660-012-0015 Preparation and Coordination of Transportation System Plans

(3) Cities and counties shall prepare, adopt, and amend local TSPs for lands within their planning jurisdiction in compliance with this division:

(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP;

(b) Where the regional TSP or elements of the state TSP have not been adopted, the city or county shall coordinate the preparation of the local TSP with the regional transportation planning body and ODOT to ensure that regional and state transportation needs are accommodated.

FINDINGS: Local transportation needs were evaluated for existing and future conditions in coordination with Washington County, city of Tigard, and ODOT. An intersection analysis was conducted for the key intersections identified for the TSP study area, and this information is presented in the TSP document and appendices. Other transportation modes were evaluated considering network gaps, quality of the facilities city/county/regional/state policies, and other measures.

(4) Cities and counties shall adopt regional and local TSPs required by this division as part of their comprehensive plans. Transportation financing programs required by OAR 660-012-0040 may be adopted as a supporting document to the comprehensive plan.

FINDING: Adoption of the King City TSP on [REDACTED], 2023 satisfies this requirement.

(5) The preparation of TSPs shall be coordinated with affected state and federal agencies, local governments, special districts, and private providers of transportation services.

FINDING: A Technical Advisory Committee representing key agency and jurisdiction partners participated in the creation of the plan to ensure consistency between all government entities.

(6) Mass transit, transportation, airport, and port districts shall participate in the development of TSPs for those transportation facilities and services they provide. These districts shall prepare and adopt plans for transportation facilities and services they provide. Such plans shall be consistent with and adequate to carry out relevant portions of applicable regional and local TSPs. Cooperative agreements executed under ORS 195.020(2) shall include the requirement that mass transit, transportation, airport, and port districts adopt a plan consistent with the requirements of this section.

FINDING: TriMet participated as a TAC member, and it was given an opportunity to comment on the plan as it was developed.

(7) Where conflicts are identified between proposed regional TSPs and acknowledged comprehensive plans, representatives of affected local governments shall meet to discuss means to resolve the conflicts. These may include:

- (a) Changing the draft TSP to eliminate the conflicts; or*
- (b) Amending acknowledged comprehensive plan provision to eliminate the conflicts.*

FINDING: Planning issues raised by the TAC members were discussed and addressed during the development of the plan.

OAR 660-012-0016 Coordination with Federally-Required Regional Transportation Plans in Metropolitan Areas

(1) In metropolitan areas, local governments shall prepare, adopt, amend and update transportation system plans required by this division in coordination with regional transportation plans (RTPs) prepared by MPOs required by federal law. Insofar as possible, regional transportation system plans for metropolitan areas shall be accomplished through a single coordinated process that complies with the applicable requirements of federal law and this division. Nothing in this rule is intended to make adoption or amendment of a regional transportation plan by a metropolitan planning organization a land use decision under Oregon law.

FINDING: Metro staff participated on the TAC, and Metro transportation planning requirements are addressed in the TSP.

OAR 660-012-0020 Elements of Transportation System Plans

(1) A TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs.

FINDINGS: The TSP considers the state, regional, and local facilities in and around King City and how the vehicular and active transportation components should function to be mutually complementary. Particular attention was paid to coordination with ODOT regarding 99W, Washington County and its arterial and collector streets adjacent to and within the city, and the city of Tigard with special attention given to its future aspirations pertaining to River Terrace.

(2) The TSP shall include the following elements:

- (a) A determination of transportation needs as provided in OAR 660-012-0030;*

FINDINGS: The TSP evaluates the present and future planning horizon needs for all modes of transportation on state, county, and city facilities. It also provides a specific description of the improvements necessary to accommodate present and future transportation needs for vehicles, transit, pedestrians, and bicyclists.

(b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections. Functional classifications of roads in regional and local TSP's shall be consistent with functional classifications of roads in state and regional TSP's and shall provide for continuity between adjacent jurisdictions. The standards for the layout of local streets shall provide for safe and convenient bike and pedestrian circulation necessary to carry out OAR 660-012-0045(3)(b). New connections to arterials and state highways shall 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 which are needed to provide reasonably direct routes for bicycle and pedestrian travel. The standards for the layout of local streets shall address:

- (A) Extensions of existing streets;*

(B) Connections to existing or planned streets, including arterials and collectors; and

(C) Connections to neighborhood destinations.

(c) A public transportation plan which:

(A) Describes public transportation services for the transportation disadvantaged and identifies service inadequacies;

FINDINGS: With the guidance of the TAC, the street system presented in the TSP is consistent with the functional street classifications found in state, regional, county, and neighboring city plans. The future street and pathway system for the KTMP area is designed to provide safe and convenient travel for all modes. Particular attention has been paid to developing an active transportation network that encourages non-automotive trips by providing a network of relatively dense network of streets and trails developed as a grid with connections to local destinations. Access management requirements are reflected in the TSP, and this coordination is expected to continue as development and transportation infrastructure is built or renovated.

While future transit service will be determined by TriMet, the TSP acknowledges the need to promote transit use through improved access to the existing transit service provided along the 99W corridor and within the existing city. The Kingston Terrace urban expansion area considers how the future street system and land uses should be designed to accommodate future transit routes and service.

(B) Describes intercity bus and passenger rail service and identifies the location of terminals;

FINDINGS: The primary “intercity” bus service is provided by TriMet connecting King City with Sherwood, Tigard, and the greater metropolitan area. Yamhill County Transit provides service along 99W. The King City TSP also envisions a series of options for future local transit. Transit is covered in Chapter 3 of the TSP.

(C) For areas within an urban growth boundary which have public transit service, identifies existing and planned transit trunk routes, exclusive transit ways, terminals and major transfer stations, major transit stops, and park-and-ride stations. Designation of stop or station locations may allow for minor adjustments in the location of stops to provide for efficient transit or traffic operation or to provide convenient pedestrian access to adjacent or nearby uses.

FINDINGS: Bus service is provided by TriMet connecting King City with Sherwood, Tigard, and the greater metropolitan area. Ride Connection provides deviated route service, and TriMet also provides LIFT service for persons with disabilities. Transit is covered in Chapter 3 of the TSP.

(D) For areas within an urban area containing a population greater than 25,000 persons, not currently served by transit, evaluates the feasibility of developing a public transit system at buildout. Where a transit system is determined to be feasible, the plan shall meet the requirements of paragraph (2)(c)(C) of this rule.

FINDINGS: The city currently has TriMet service for portions of the existing city, but TriMet service is not available to the Kingston Terrace area or SW Beef Bend Road or SW Roy Rogers Road (Washington Co. arterials), which are adjacent. Bus service is primarily found today along 99W. The TSP describes how, in coordination with TriMet, the transit network could be expanded to serve the Kingston Terrace area in the future (Chapter 3).

(d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area. The network and list of facility improvements shall be consistent with the requirements of ORS 366.514;

FINDINGS: In addition to identifying cohesive pedestrian and bicycle networks, the TSP includes proposed design standards that go well beyond the minimum to make walking and cycling safer and more appealing to a wide range of ages and abilities (Chapter 3).

(e) An air, rail, water and pipeline transportation plan which identifies where public use airports, mainline and branchline railroads and railroad facilities, port facilities, and major regional pipelines and terminals are located or planned within the planning area. For airports, the planning area shall include all areas within airport imaginary surfaces and other areas covered by state or federal regulations;

FINDING: An inventory of the existing pipeline facilities within the planning area is provided in TSP Appendix L (Existing Conditions and Needs Report). The planning area does not have any existing freight or passenger rail facilities, navigable waterways for marine freight facilities or public use airports.

(f) For areas within an urban area containing a population greater than 25,000 persons a plan for transportation system management and demand management;

FINDING: The primary transportation demand management strategy is to improve pedestrian, bicycle, and transit facilities to provide reasonable and attractive alternative to driving for local trips.

(g) A parking plan in MPO areas as provided in OAR 660-012-0045(5)(c);

FINDINGS: Park and Ride facilities are planned by the Metropolitan Transit Provider Tri-Met, which serves the greater Metro Region including King City. A park and ride facility is available just to the north of King City along SW Bull Mountain Road, just west of the OR 99W intersection. Future Park and Ride option may be implemented in the King City Town Center along 99W, with potential shuttle (potentially autonomous/self driving) service to the Kingston Terrace Mainstreet with intermittent stops throughout King City. Parking regulations within King City are regulated via Title 16 of the King City Municipal Code. Electric bike and scooter parking and charging facilities are promoted as an alternative mode of transportation throughout the planning area with stations suggested and planned for the Westside Trail Segment, King City Plaza, and Kingston Terrace Mainstreet.

(h) Policies and land use regulations for implementing the TSP as provided in OAR 660-012-0045;

FINDING: Subsection (2)(h) is addressed under the findings for OAR 660-012-0045.

(i) For areas within an urban growth boundary containing a population greater than 2500 persons, a transportation financing program as provided in OAR 660-012-0040.

FINDING: Chapter 5 of the TSP provides the transportation financing program. The merits on whether this meets OAR 660-012-0040 is addressed under that section.

(3) Each element identified in subsections (2)(b)–(d) of this rule shall contain:

(a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition:

(A) The transportation capacity analysis shall include information on:

(i) The capacities of existing and committed facilities;

(ii) The degree to which those capacities have been reached or surpassed on existing facilities; and

(iii) The assumptions upon which these capacities are based.

(B) For state and regional facilities, the transportation capacity analysis shall be consistent with standards of facility performance considered acceptable by the affected state or regional transportation agency;

(C) The transportation facility condition analysis shall describe the general physical and operational condition of each transportation facility (e.g., very good, good, fair, poor, very poor).

(b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and performance standards;

(c) A description of the location of planned facilities, services and major improvements, establishing the general corridor within which the facilities, services or improvements may be sited. This shall include a map showing the general location of proposed

transportation improvements, a description of facility parameters such as minimum and maximum road right of way width and the number and size of lanes, and any other additional description that is appropriate;
(d) Identification of the provider of each transportation facility or service.

FINDINGS: The TSP contains an existing conditions inventory (Chapter 3 and Appendix D), a future demand and needs assessment (Appendix D), and a transportation system plan (Chapter 3) that identify the functional classifications for streets and the improvement projects necessary to address the city's transportation needs.

OAR 660-012-0025 Complying with the Goals in Preparing Transportation System Plans; Refinement Plans

(1) Except as provided in section (3) of this rule, adoption of a TSP shall constitute the land use decision regarding the need for transportation facilities, services and major improvements and their function, mode, and general location.

FINDINGS: The adoption of the city's first TSP will constitute a land use decision regarding the need for transportation facilities, services, and major improvements necessary to support existing and proposed urban development and the transportation needs related to these land uses.

(2) Findings of compliance with applicable statewide planning goals and acknowledged comprehensive plan policies and land use regulations shall be developed in conjunction with the adoption of the TSP.

FINDING: These findings of compliance with applicable statewide planning goals, Metro Regional Transportation Functional Plan, and King City Comprehensive Plan were thoroughly considered during the development of the TSP as noted in these findings.

(3) A local government or MPO may defer decisions regarding function, general location and mode of a refinement plan if findings are adopted that:

- (a) Identify the transportation need for which decisions regarding function, general location or mode are being deferred;*
- (b) Demonstrate why information required to make final determinations regarding function, general location, or mode cannot reasonably be made available within the time allowed for preparation of the TSP;*
- (c) Explain how deferral does not invalidate the assumptions upon which the TSP is based or preclude implementation of the remainder of the TSP;*
- (d) Describe the nature of the findings which will be needed to resolve issues deferred to a refinement plan; and*
- (e) Set a deadline for adoption of a refinement plan prior to initiation of the periodic review following adoption of the TSP.*

FINDINGS: This provision is not applicable because the TSP does not include any major transportation facility decision that is deferred. The future transportation system for the Kingston Terrace area is clearly articulated with the understanding that final street and pathway alignments will be determined in conjunction with future development and environmental analysis.

(4) Where a Corridor Environmental Impact Statement (EIS) is prepared pursuant to the requirements of the National Environmental Policy Act of 1969, the development of the refinement plan shall be coordinated with the preparation of the Corridor EIS. The refinement plan shall be adopted prior to the issuance of the Final EIS.

FINDING: This provision is not applicable because the TSP does not include any major transportation facility, which will require an EIS.

OAR 660-012-0030 Determination of Transportation Needs

(1) The TSP shall identify transportation needs relevant to the planning area and the scale of the transportation network being planned including:

- (a) State, regional, and local transportation needs;*
- (b) Needs of the transportation disadvantaged;*
- (c) Needs for movement of goods and services to support industrial and commercial development planned for pursuant to OAR chapter 660, division 9 and Goal 9 (Economic Development).*

FINDING: The TSP identifies the planning needs listed above in Chapter 3 and Appendix D.

(2) Counties or MPO's preparing regional TSP's shall rely on the analysis of state transportation needs in adopted elements of the state TSP. Local governments preparing local TSP's shall rely on the analyses of state and regional transportation needs in adopted elements of the state TSP and adopted regional TSP's.

FINDING: This section does not apply to the city.

(3) Within urban growth boundaries, the determination of local and regional transportation needs shall be based upon:
(a) Population and employment forecasts and distributions that are consistent with the acknowledged comprehensive plan, including those policies that implement Goal 14. Forecasts and distributions shall be for 20 years and, if desired, for longer periods; and

FINDINGS: The city and consulting team coordinated with Metro to ensure the employment and population forecasts for the existing city and Kingston Terrace planning area were coordinated and realistic. The scope of the TSP work included a market analysis to verify reasonable expectations for future growth and its associated transportation needs.

(b) Measures adopted pursuant to OAR 660-012-0045 to encourage reduced reliance on the automobile.

FINDINGS: The TSP pays specific attention to reducing auto reliance by including a robust plan for pedestrian and bicycle improvements to improve the existing facilities into a safe and convenient network. In particular, the plan focuses on reducing local trips by automobile. The TSP identifies the planning needs listed above in Chapter 3 and Appendix D.

(4) In MPO areas, calculation of local and regional transportation needs also shall be based upon accomplishment of the requirement in OAR 660-012-0035(4) to reduce reliance on the automobile.

FINDING: As noted in the above finding, appropriate attention was given to making walking and bicycling realistic, safe, and convenient options to driving, especially for local trips.

OAR 660-012-0035 Evaluation and Selection of Transportation System Alternatives

(1) The TSP shall be based upon evaluation of potential impacts of system alternatives that can reasonably be expected to meet the identified transportation needs in a safe manner and at a reasonable cost with available technology. The following shall be evaluated as components of system alternatives:

- (a) Improvements to existing facilities or services;*
- (b) New facilities and services, including different modes or combinations of modes that could reasonably meet identified transportation needs;*
- (c) Transportation system management measures;*
- (d) Demand management measures; and*
- (e) A no-build system alternative required by the National Environmental Policy Act of 1969 or other laws.*

FINDING: The TSP evaluated the items above in Chapters 3, 4, and 6.

(2) The following standards shall be used to evaluate and select alternatives:

- (a) The transportation system shall support urban and rural development by providing types and levels of transportation facilities and services appropriate to serve the land uses identified in the acknowledged comprehensive plan;*
- (b) The transportation system shall be consistent with state and federal standards for protection of air, land and water quality including the State Implementation Plan under the Federal Clean Air Act and the State Water Quality Management Plan;*
- (c) The transportation system shall minimize adverse economic, social, environmental, and energy consequences;*
- (d) The transportation system shall minimize conflicts and facilitate connections between modes of transportation; and*
- (e) The transportation system shall avoid principal reliance on any one mode of transportation by increasing transportation choices to reduce principal reliance on the automobile.*

FINDINGS: The TSP was developed in collaboration with Washington County to support land uses in the area as they generally will transition from rural to urban over the planning period. The plan calls for improvement of existing rural highways to urban streets containing multi-modal improvements. The street designs proposed in the plan are intended to reduce potential conflicts and safety issues between different transportation modes primarily by addressing the needs to separated facilities and safe crossing and intersection designs. While the automobile will continue to be the dominant form of transportation in this suburban context, the proposed system improvements are focused on improving the viability of active transportation.

(3) Where existing and committed transportation facilities and services have adequate capacity to support the land uses in the acknowledged comprehensive plan, the local government shall not be required to evaluate alternatives as provided in this rule.

FINDING: The transportation improvements itemized in the plan are designed to accommodate future transportation needs and demand as King City grows as assumed by the TSP. Evaluation in the TSP confirms that the proposed improvements will keep up with growing demand.

(4) Transportation uses or improvements listed in OAR 660-012-0065(3)(d) to (g) and (o) and located in an urban fringe may be included in a TSP only if the project identified in the transportation system plan as described in section (6) of this rule, will not significantly reduce peak hour travel time for the route as determined pursuant to section (5) of this rule, or the jurisdiction determines that the following alternatives cannot reasonably satisfy the purpose of the improvement project:

- (a) Improvements to transportation facilities and services within the urban growth boundary;*
- (b) Transportation system management measures that do not significantly increase capacity; or*
- (c) Transportation demand management measures. The jurisdiction needs only to consider alternatives that are safe and effective, consistent with applicable standards and that can be implemented at a reasonable cost using available technology.*

FINDING: The TSP does not include any projects that are in the urban fringe. All transportation system improvements proposed are within the UGB.

OAR 660-012-0040 Transportation Financing Program

(1) For areas within an urban growth boundary containing a population greater than 2,500 persons, the TSP shall include a transportation financing program.

FINDING: A financing program is provided in Chapter 5 and Appendices M, N, and O of the TSP.

(2) A transportation financing program shall include the items listed in (a)–(d):

- (a) A list of planned transportation facilities and major improvements;*
- (b) A general estimate of the timing for planned transportation facilities and major improvements;*
- (c) A determination of rough cost estimates for the transportation facilities and major improvements identified in the TSP; and*
- (d) In metropolitan areas, policies to guide selection of transportation facility and improvement projects for funding in the short-term to meet the standards and benchmarks established pursuant to 0035(4)–(6). Such policies shall consider, and shall include among the priorities, facilities and improvements that support mixed-use, pedestrian friendly development and increased use of alternative modes.*

FINDINGS: Chapter 5 of the TSP provides a prioritized listing of projects, which are within the constrained and unconstrained budget for the planning period. This also includes cost estimates plus the anticipated general timing of improvements in the constrained budget list. Many of the higher priority projects are for pedestrian and bicycle improvements.

(3) The determination of rough cost estimates is intended to provide an estimate of the fiscal requirements to support the land uses in the acknowledged comprehensive plan and allow jurisdictions to assess the adequacy of existing and possible alternative funding mechanisms. In addition to including rough cost estimates for each transportation facility and major improvement, the transportation financing plan shall include a discussion of the facility provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each transportation facility and major improvement. These funding mechanisms may also be described in terms of general guidelines or local policies.

FINDINGS: The transportation projects listed in the TSP have cost estimates designed to fulfill the purposes noted. Chapter 5 of the TSP reviews existing and potential funding sources for completing the improvement listed.

(4) Anticipated timing and financing provisions in the transportation financing program are not considered land use decisions as specified in ORS 197.712(2)(e) and, therefore, cannot be the basis of appeal under 197.610(1) and (2) or 197.835(4).

FINDING: This is a procedural item that does not need to be addressed.

(5) The transportation financing program shall provide for phasing of major improvements to encourage infill and redevelopment of urban lands prior to facilities and improvements which would cause premature development of urbanizable lands or conversion of rural lands to urban uses.

FINDINGS: The projects listed in the TSP will be built when the need occurs to address safety, capacity, and accessibility. The high cost of transportation improvements and the current backlog of desired improvements to serve existing land uses will prevent premature development in urbanizing areas or conversion of rural lands (other than those areas currently in the UGB) to urban uses.

OAR 660-012-0045 Implementation of the Transportation System Plan

(1) Each local government shall amend its land use regulations to implement the TSP.

(a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use:

(A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport, and rail facilities, and major regional pipelines and terminals;

(B) Dedication of right-of-way, authorization of construction, and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;

(C) Uses permitted outright under ORS 215.213(1)(j)–(m) and 215.283(1)(h)–(k), consistent with the provisions of OAR 660-012-0065; and

(D) Changes in the frequency of transit, rail, and airport services.

(b) To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy, or legal judgment;

(c) In the event that a transportation facility, service, or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy, or legal judgment, the local government shall provide a review and approval process that is consistent with OAR 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.

FINDINGS: The city currently defers to Washington County and ODOT relating to the design of facilities under their jurisdiction. The design standards (e.g., street cross sections, sidewalk/pathway widths) for city facilities is detailed in Chapter 4 of the TSP. The city will continue to rely upon Washington County construction standards and technical specifications to ensure that new facilities are durable and efficient to maintain.

Regarding land use regulations to support the TSP, the city currently has most of its transportation requirements in Chapter 16.212 of the CDC pertaining to system design, block sizes, interconnected facilities, intersection spacing, etc. Following the adoption of the TSP and Kingston Terrace Master Plan, the CDC will be further revised to support the TSP and KTMP.

(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors, and sites for their identified functions. Such regulations shall include:

- (a) Access control measures, for example, driveway and public road spacing, median control, and signal spacing standards, that are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;*
- (b) Standards to protect future operation of roads, transitways, and major transit corridors;*
- (c) Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation;*
- (d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors, or sites;*
- (e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors, or sites;*
- (f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of:*
 - (A) Land use applications that require public hearings;*
 - (B) Subdivision and partition applications;*
 - (C) Other applications that affect private access to roads; and*
 - (D) Other applications within airport noise corridors and imaginary surfaces that affect airport operations; and*
- (g) Regulations ensuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities, and performance standards of facilities identified in the TSP.*

FINDINGS: As noted above, the city defers to Washington County and ODOT regarding development that will potentially impact county or state facilities. The County TSP indicates that SW Beef Bend Road and SW Roy Rogers Road are expected to be under the long-term jurisdiction of Washington County. All other existing or planned streets are assumed to ultimately be under city jurisdiction. This TSP includes portions of SW Fischer Road, SW Elsner Road, and other streets in Kingston Terrace currently under County jurisdiction that are assumed to become City streets as the area is incorporated. Regarding transportation facilities that are under city jurisdiction, Chapter 16.212 of the King City Community Development Code (CDC) and Chapter 4 of the TSP provide additional requirements for ensuring the necessary construction and protection of transportation facilities. The city has and will continue to utilize a coordinated land use and development application review process with partner agencies including ODOT, Washington County, and city of Tigard.

(3) Local governments shall adopt land use or subdivision regulations for urban areas and rural communities as set forth below. The purposes of this section are to provide for safe and convenient pedestrian, bicycle and vehicular circulation consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and accessways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and that avoids wherever possible levels of automobile traffic that might interfere with or discourage pedestrian or bicycle travel.

- (a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park-and-ride lots;*

FINDINGS: The circulation and safety noted in this section is satisfied by the design standards described in the TSP. In addition, Chapter 16.212 of the King City CDC requires direct and convenient pedestrian and bicycle connections, including pathways where street extensions are not feasible or desirable. The parking standards in Chapter 16.132 of the CDC require bike parking.

(b) On-site facilities shall be provided that accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts to adjacent residential areas and transit stops, and to neighborhood activity centers within one-half mile of the development. Single-family residential developments shall generally include streets and accessways. Pedestrian circulation through parking lots should generally be provided in the form of accessways.

(A) "Neighborhood activity centers" include, but are not limited to, existing or planned schools, parks, shopping areas, transit stops, or employment centers;

FINDINGS: As noted above, CDC Chapter 16.212 requires pedestrian and bicycle connections within and between developments. CDC Chapter 16.136 requires pedestrian walkways within parking lots.

(B) Bikeways shall be required along arterials and major collectors. Sidewalks shall be required along arterials, collectors, and most local streets in urban areas, except that sidewalks are not required along controlled access roadways, such as freeways;

FINDINGS: Bikeways are routinely required by the city, Washington County, and ODOT for these street classifications in King City and surrounding area.

(C) Cul-de-sacs and other dead-end streets may be used as part of a development plan, consistent with the purposes set forth in this section;

FINDING: Dead end streets are allowed, but generally discouraged in CDC Chapter 16.212.

(D) Local governments shall establish their own standards or criteria for providing streets and accessways consistent with the purposes of this section. Such measures may include but are not limited to: standards for spacing of streets or accessways; and standards for excessive out-of-direction travel;

FINDING: These standards are found in CDC Chapter 16.212.

(E) Streets and accessways need not be required where one or more of the following conditions exist:

(i) Physical or topographic conditions make a street or accessway connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided;

(ii) Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or

(iii) Where streets or accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.

FINDING: These types of exceptions to street connectivity are permitted in CDC Chapter 16.212.

(c) Where off-site road improvements are otherwise required as a condition of development approval, they shall include facilities accommodating convenient pedestrian and bicycle travel, including bicycle ways along arterials and major collectors;

FINDING: Off-site improvements have rarely been required in King City, but pedestrian and bicycle access is considered in addition to vehicular access.

(d) For purposes of subsection (b) "safe and convenient" means bicycle and pedestrian routes, facilities and improvements that:

(A) Are reasonably free from hazards, particularly types or levels of automobile traffic that would interfere with or discourage pedestrian or cycle travel for short trips;

(B) Provide an accessible and reasonably direct route of travel between destinations such as between a transit stop and a store; and
(C) Meet travel needs of cyclists and pedestrians considering destination and length of trip; and considering that the most common trip length of pedestrians is generally under one-half mile.
(e) Internal pedestrian circulation within new office parks and commercial developments shall be provided through clustering of buildings, construction of accessways, walkways and similar techniques.

FINDINGS: The design requirements in the TSP will accomplish the objectives in this section. The design requirements offer multiple ways to provide safe and convenient pedestrian and bicycle facilities to fit the street classification and land use context.

(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible, local governments shall adopt land use and subdivision regulations as provided in subsections (a)–(g) below:
(a) Transit routes and transit facilities shall be designed to support transit use through provision of bus stops, pullouts and shelters, optimum road geometrics, on-road parking restrictions and similar facilities, as appropriate;

FINDINGS: Currently, the only regularly scheduled bus service is along 99W, and ODOT facility. Bus stops are currently provided, and the city has no jurisdiction over their design and placement.

(b) New retail, office, and institutional buildings at or near major transit stops shall provide for convenient pedestrian access to transit through the measures listed in paragraphs (A) and (B) below.
(A) Accessible walkways shall be provided connecting building entrances and streets adjoining the site;
(B) Accessible pedestrian facilities connecting to adjoining properties shall be provided except where such a connection is impracticable as provided for in paragraph (3)(b)(E). Pedestrian facilities shall connect the on-site circulation system to existing or proposed streets, walkways, and driveways that abut the property. Where adjacent properties are undeveloped or have potential for redevelopment, streets, accessways and walkways on site shall be laid out or stubbed to allow for extension to the adjoining property;
(C) In addition to paragraphs (A) and (B) above, on sites at major transit stops provide the following:
(i) Either locate buildings within 20 feet of the transit stop, a transit street or an intersecting street or provide a pedestrian plaza at the transit stop or a street intersection;
(ii) An accessible and reasonably direct pedestrian facility between the transit stop and building entrances on the site;
(iii) A transit passenger landing pad accessible to people with disabilities;
(iv) An easement or dedication for a passenger shelter if requested by the transit provider; and
(v) Lighting at the transit stop.

FINDINGS: The existing built environment along 99W was established primarily in the 1960s and 1970s. The creation of the King City Town Center Plan and related amendments to the CDC (Title 16 of the King City Municipal Code) has changed development standards to allow the types of development, orientation, and setbacks mentioned in this section, but it will only occur over time as properties redevelop. As noted above, the city has no jurisdiction regarding improvements within the 99W right-of-way.

(c) Local governments may implement paragraphs (b)(A) and (B) through the designation of pedestrian districts and adoption of appropriate implementing measures regulating development within pedestrian districts. Pedestrian districts must comply with the requirement of paragraph (b)(C);
(d) Designated employee parking areas in new developments shall provide preferential parking for carpools and vanpools;
(e) Existing development shall be allowed to redevelop a portion of existing parking areas for transit-oriented uses, including bus stops and pullouts, bus shelters, park and ride stations, transit-oriented developments, and similar facilities, where appropriate;
(f) Road systems for new development shall be provided that can be adequately served by transit, including provision of pedestrian access to existing and identified future transit routes. This shall include, where appropriate, separate accessways to minimize travel distances;
(g) Along existing or planned transit routes, designation of types and densities of land uses adequate to support transit.

FINDINGS: Subsection (c) shall be implemented through the creation of two “multimodal areas” in the TSP. These areas have or are expected to have, high levels of pedestrian activity. Non-vehicular movement is given higher priority with wider sidewalks and more appealing streetscapes. The multimodal area designations apply to the established town center adjacent to 99W and to the new town center/main street proposed in the draft KTMP adjacent to SW Roy Rogers and SW Beef Bend roads. Subsection (d) is not applicable because the city does not have, or plan to have, designated employee parking. Regarding Subsection (e), the CDC does allow redevelopment of parking lots. Regarding Subsections (f) and (g) the new street system proposed in the TSP for the urbanization of the Kingston Terrace area is designed to facilitate connectivity and densities that will be supportive of future transit service. In particular, the TSP and draft KTMP encourage future transit service along the Roy Rogers Road corridor, potentially via a southerly extension of SW River Terrace Blvd. though the proposed main street/town center near SW Roy Rogers Road.

(5) In developing a bicycle and pedestrian circulation plan as required by OAR 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas. Appropriate improvements should provide for more direct, convenient, accessible, and safer bicycle or pedestrian travel within and between residential areas and neighborhood activity centers (i.e., schools, shopping, transit stops). Specific measures include, for example, constructing walkways between cul-de-sacs and adjacent roads, providing walkways between buildings, and providing direct access between adjacent uses.

FINDINGS: King City has consistently stressed convenient bike and pedestrian travel, primarily through the requirements in CDC Chapter 16.212. Connecting pathways are required when street connections are not necessary or advisable. The TSP and draft KTMP are proposed to continue leveraging opportunities to provide these connections.

(6) Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation. Notwithstanding section (1) or (3) of this rule, local street standards adopted to meet this requirement need not be adopted as land use regulations.

FINDINGS: The TSP and draft KTMP feature a wide range of street improvements that offer opportunities to minimize total pavement width and right-size the street for its intended use and purpose. The city has allowed local street cross sections as narrow as 22 feet, and this practice will continue. The TSP and draft KTMP include a wide range of traffic calming techniques such as narrower streets, crosswalk designs, and roundabouts.

OAR 660-012-0500 Pedestrian System Planning

(1) Transportation system plans must include a pedestrian system element that meets the requirements of this rule. For the purposes of this division, the pedestrian system is intended to serve people walking and those using mobility devices or other devices that operate at a similar speed and scale as people walking. The pedestrian system is intended to serve most short trips under one mile in cities.

FINDING: The TSP has a pedestrian system element.

(2) A pedestrian system element must include the following elements:

- (a) The complete pedestrian system as described in section (3) of this rule that includes the full buildout of the pedestrian system within the urban growth boundary;*
- (b) Identification of gaps and deficiencies in the pedestrian system as described in section (4);*
- (c) Locations of key pedestrian destinations identified as provided in OAR 660-012-0360; and*

(d) A list of prioritized pedestrian system projects developed as provided in OAR 660-012-0520.

FINDING: The TSP contains all of the pedestrian system elements listed.

(3) The complete pedestrian system is the full buildout of a complete pedestrian system within the planning area. A city or county determines the complete pedestrian system plan by:

(a) Using the pedestrian system inventory developed under OAR 660-012-0505 as a base;

(b) Adding the minimum pedestrian facilities to places that do not presently meet the minimum pedestrian system requirements in OAR 660-012-0510; and

(c) Adding enhanced facilities above the minimum pedestrian system requirements where the city or county finds that enhanced facilities are necessary or desirable to meet the goals of the jurisdiction's comprehensive plan.

FINDINGS: The city inventory demonstrated that the city currently has high-quality pedestrian infrastructure on almost all major streets with the primary gaps identified on county and state facilities. The gaps on all streets in the city (city, county and state jurisdiction) are identified along with projects to complete these problem areas.

(4) Cities and counties shall identify gaps and deficiencies in the pedestrian system by comparing the complete pedestrian system plan with the pedestrian system inventory developed under OAR 660-012-0505. Cities or counties must include any part of the complete pedestrian system not presently built to the standard in the complete pedestrian system plan as a gap or deficiency.

FINDING: As noted above, pedestrian gaps and deficiencies are identified in the TSP.

OAR 660-12-0505 Pedestrian System Inventory

(1) Pedestrian system inventories must include information on pedestrian facilities and street crossings for all areas within climate-friendly areas, within Metro Region 2040 centers, within one-quarter mile of all schools, and along all arterials and collectors. Pedestrian system inventories should include information on pedestrian facilities and street crossings for all areas within the planning area.

(a) Inventories of pedestrian facilities must include information on width and condition.

(b) Inventories of street crossings must include crossing distances, the type of crossing, closed crossings, curb ramps, and distance between crossings.

FINDING: The pedestrian facility inventory covered the entire existing city and Kingston Terrace planning area, satisfying this requirement.

(2) Pedestrian system inventories must include the crash risk factors of inventoried pedestrian facilities, including but not limited to speed, volume, and roadway width. Pedestrian system inventories must also include the location of all reported injuries and deaths of people walking or using a mobility device. This must include all reported incidents from the most recent five years of available data prior to the year of adoption of the pedestrian system inventory.

FINDING: Crashes and “stress” levels were evaluated as part of the TSP inventory.

OAR 660-12-0510 Pedestrian System Requirements

(1) This rule describes the minimum planned pedestrian facilities that must be included in plans. Cities and counties may choose to exceed the requirements in this rule.

FINDING: The TSP satisfies this section as noted below.

(2) Pedestrian facility owners must design, build, and maintain pedestrian facilities to allow comfortable travel for all people, including people with disabilities.

FINDINGS: This is understood to apply to private property owners. The city's Community Development Code (Title 16 of the King City Municipal Code) requires the provision and maintenance of the facilities described.

(3) All streets and highways, other than expressways, shall have pedestrian facilities, as provided in ORS 366.514.

(a) Pedestrian facilities must be planned for both sides of each street.

(b) Cities shall plan for enhanced pedestrian facilities such as wide, protected sidewalks and pedestrian zones, such as plazas, in the following contexts:

(A) Along high volume or high-speed streets;

(B) In climate-friendly areas and Metro Region 2040 centers;

(C) In areas with concentrations of underserved populations.

(c) A substantial portion of the right-of-way in climate-friendly areas and Metro Region 2040 centers must be dedicated to pedestrian uses, including but not limited to sidewalks, pedestrian plazas, and protective buffers.

(d) Cities shall plan for enhanced tree canopy and other infrastructure that uses natural and living materials in pedestrian spaces in climate-friendly areas, Metro Region 2040 centers, and areas with concentrations of underserved populations.

FINDINGS: The TSP calls for sidewalks on both sides of the street along with planter strips for street trees. The Community Development Code currently requires street trees along property street frontages.

(4) Off-street multi-use paths must be designed to permit comfortable joint or separated use for people walking, using mobility devices, and cycling. Separated areas for higher speeds and low speeds shall be provided when there is high anticipated use of the path.

FINDINGS: The TSP includes design guidelines consistent with this requirement.

(5) Enhanced crossings are pedestrian facilities to cross streets or highways that provide a high level of safety and priority to people crossing the street. Enhanced crossings must have adequate nighttime illumination to see pedestrians from all vehicular approaches. Enhanced crossings must be provided, at minimum, in the following locations:

(a) Closely spaced along arterial streets in climate-friendly areas and Metro Region 2040 centers;

(b) Near transit stops on local access priority arterial segments, or collector streets in a climate-friendly area or Metro Region 2040 center, or on a priority transit corridor;

(c) At off-street path crossings; and

(d) In areas with concentrations of underserved populations.

FINDINGS: The TSP identifies a variety of crossing treatments to be used in the future to provide enhanced pedestrian access and safety. Allowance of crossings on arterial streets will continue to be determined by the county of ODOT.

(6) Cities may take exemptions to the requirements in this rule through findings in the transportation system plan, for each location where an exemption is desired, for the following reasons:

(a) A city may plan for a pedestrian facility on one side of local streets in locations where topography or other barriers would make it difficult to build a pedestrian facility on the other side of the street, or where existing and planned land uses make it unnecessary to provide pedestrian access to the other side of the street. Street crossings must be provided near each end of sections where there is a pedestrian facility on only one side of the street.

(b) A city or county may plan for no dedicated pedestrian facilities on very slow speed local streets that are sufficiently narrow, and carry little or no vehicular traffic, so that pedestrians are the primary users of the street.

FINDING: The TSP includes a section regarding how tradeoff should be considered in situations where full street improvements are not possible.

OAR 660-12-0520 Pedestrian System Projects

(1) Cities and counties shall develop a list of pedestrian system projects that would address all the gaps and deficiencies in the pedestrian system identified by the city under OAR 660-012-0500(4).

FINDING: The TSP includes a prioritized pedestrian project improvement list.

(2) Cities and counties shall develop pedestrian project prioritization factors that are able to sort the list of pedestrian system projects into a prioritized list of pedestrian system projects. Cities must develop pedestrian project prioritization factors by engaging underserved populations as provided in OAR 660-012-0130.

FINDING: The prioritized list favors access to transit and major destinations in the city to facilitate easy and safe access for all.

(3) Cities and counties shall use the following factors when prioritizing pedestrian system projects:

- (a) Pedestrian system investments in climate-friendly areas and Metro Region 2040 centers;*
- (b) Pedestrian system investments in areas with concentrations of underserved populations;*
- (c) Pedestrian system investments in areas with pedestrian safety risk factors such as roadways with high speeds and high traffic volumes;*
- (d) Pedestrian system investments in areas with reported crashes involving pedestrian serious injuries and deaths;*
- (e) Pedestrian system investments that provide access to key pedestrian destinations identified as provided in OAR 660-012-0360;*
- (f) Pedestrian system investments that will connect to, fill gaps in, and expand the existing pedestrian network;*
- (g) Pedestrian system investments that prioritize pedestrian travel consistent with the prioritization factors in OAR 660-012-0155; and*
- (h) Where applicable, pedestrian system investments that implement a scenario plan approved by order as provided in OAR 660-044-0120.*

FINDINGS: As noted above and in the TSP, the existing pedestrian network is good, and there are critical gaps, such as along 99W and SW Beef Bend Road that need to be addressed. The city has and will continue to work with ODOT and Washington County to complete those gaps.

(4) The transportation system plan must include a description of the prioritization factors and method of prioritizing pedestrian projects used to develop the prioritized list of pedestrian system projects.

FINDINGS: The rationale for prioritizing pedestrian projects is found in Chapter 5 of the TSP.

OAR 660-12-0600 Bicycle System Planning

(1) Transportation system plans must include a bicycle system element that meets the requirements of this rule. The bicycle system must be designed to provide safe and comfortable routes for a range of users and abilities. For the purposes of this division, the bicycle system is intended to serve people riding bicycles and other vehicles that operate at a similar speed and scale to people riding bicycles. These vehicles include, but are not limited to: electric bicycles, kick-style and electric scooters, and skateboards; and do not include motorcycles.

FINDING: As noted above, bicycle system gaps and deficiencies are identified in the TSP.

(2) A bicycle system element must include the following elements:

- (a) The complete bicycle system as described in section (3) that includes the full buildout of the bicycle system within the urban growth boundary;*
- (b) Identification of gaps and deficiencies in the bicycle system as described in section (4);*
- (c) Locations of key bicycle destinations identified as provided in OAR 660-012-0360; and*
- (d) A list of prioritized bicycle system projects developed as provided in OAR 660-012-0620.*

FINDING: The TSP contains all of the bicycle system elements listed.

(3) The complete bicycle system is the full buildout of a complete bicycle system within the planning area. A city or county determines the complete bicycle system plan by:

(a) Using the bicycle system inventory developed under OAR 660-012-0605 as a base;

(b) Adding the minimum bicycle facilities to places that do not presently meet the minimum bicycle system requirements in OAR 660-012-0610; and

(c) Adding enhanced facilities above the minimum bicycle system requirements where the city or county finds that enhanced facilities are necessary or desirable to meet the goals of the jurisdiction's comprehensive plan.

FINDINGS: The city inventory demonstrated that the city currently has reasonable bicycle infrastructure on almost all major streets with the primary gaps identified on county and state facilities. The gaps on all streets in the city (city, county and state jurisdiction) are identified along with projects to complete these problem areas.

(4) Cities and counties shall identify gaps and deficiencies in the bicycle system by comparing the complete bicycle system with the bicycle system inventory developed under OAR 660-012-0605. Cities must include any part of the complete bicycle system not presently built to the standard in the complete bicycle plan as a gap or deficiency.

FINDINGS: As noted above, bicycle facility gaps and deficiencies are identified in the TSP.

OAR 660-12-0605 Bicycle System Inventory

(1) Bicycle system inventories must include information on bicycle lanes, bicycle routes, accessways, paths, and other types of bicycle facilities, including pedestrian facilities that may be used by bicycles. Inventories must include information on width, type, and condition.

FINDING: The bicycle facility inventory covered the entire existing city and Kingston Terrace planning area, satisfying this requirement.

(2) Bicycle system inventories must include information on bicycle facilities of all types within climate-friendly areas, within Metro Region 2040 centers, within one-quarter mile of all schools, on bicycle boulevards, and along all arterials and collectors. Bicycle system inventories should include information on bicycle facilities and street crossings for all areas within the planning area.

FINDING: The pedestrian facility inventory covered the entire existing city and Kingston Terrace planning area, satisfying this requirement.

(3) Bicycle system inventories must include the crash risk factors of inventoried bicycle facilities, including but not limited to speed, volume, separation, and roadway width. Bicycle system inventories must also include the location of all reported injuries and deaths of people on bicycles. This must include all reported incidents from the most recent five years of available data prior to the year of adoption of the bicycle system inventory.

FINDING: Crashes and “stress” levels were evaluated as part of the TSP inventory.

OAR 660-12-0610 Bicycle System Requirements

(1) This rule describes the minimum planned bicycle facilities that must be included in plans. Cities or counties may choose to exceed the requirements in this rule.

FINDING: As noted herein, the TSP meets or exceeds the requirements of this rule.

(2) Cities and counties shall plan for a connected network of bicycle facilities that provides a safe, low stress, direct, and comfortable experience for people of all ages and abilities. All ages and abilities includes:

- (a) School-age children;*
- (b) People over 65 years of age;*
- (c) Women;*
- (d) People of color;*
- (e) Low-income riders;*
- (f) People with disabilities;*
- (g) People moving goods, cargo, or other people; and*
- (h) People using shared mobility services.*

FINDINGS: As noted herein, the bicycle system is well-established on the arterial and collector system within the existing city. The plan includes additional project improvements to enhance existing facilities and to expand this network to include routes more appropriate for school-age children and a wider range of adults.

(3) A connected network is comprised of both the ability to access key destinations within a community and enough coverage of safe and comfortable facilities to ensure most people within the community can travel by bicycle.

(a) Cities and counties must design the connected network to connect to key destinations identified as provided in OAR 660-012-0360, and to and within each climate-friendly area or Metro Region 2040 center.

(b) Cities and counties must design the connected network to permit most residents of the planning area to access the connected network with an emphasis on mitigating uncomfortable or unsafe facilities or crossings.

(c) The connected network shall consist of connected bicycle facilities including, but not limited to, separated and protected bicycle facilities, bicycle boulevards, and multi-use or bicycle paths. The connected network must include a series of interconnected bicycle facilities and provide direct routes to key destinations. Cities and counties must design comfortable and convenient crossings of streets with high volumes of traffic or high-speed traffic.

FINDINGS: The city was originally designed as a self-contained retirement communities, subdivisions, and manufactured home parks. This has resulted in limited options to provide the ideal interconnected system. However, the TSP does recognize and leverage the opportunities available to create a reasonably interconnected network of low-traffic streets and pathways that do not require using arterial bike lanes. The Kingston Terrace urban expansion area is planned for an interconnected network of lower-traffic streets and bike facilities.

(4) Cities and counties shall plan and design bicycle facilities considering the context of adjacent motor vehicle facilities and land uses.

(a) Cities and counties must design bicycle facilities with higher levels of separation or protection along streets that have higher volumes or speeds of traffic.

(b) Cities and counties must plan for separated or protected bicycle facilities on streets in climate-friendly areas, Metro Region 2040 centers, and other places with a concentration of destinations. Separated or protected bicycle facilities may not be necessary on streets with very low levels of motor vehicle traffic or where a high-quality parallel bicycle facility on the connected network exists within one block.

(c) Cities and counties must identify locations with existing bicycle facilities along high traffic or high-speed streets where the existing facility is not protected or separated, or parallel facilities do not exist. Cities and counties must plan for a transition to appropriate facilities in these locations.

FINDING: The TSP includes a range of bicycle facility treatments that will provide 1st-class bicycling environment in terms of safety and convenience.

(5) Cities and counties shall adopt standards for bicycle system planning and facilities that will result in a safe, low stress, and comfortable experience for people of all ages and abilities. In adopting standards, cities and counties may use one or more of the following:

- (a) The Urban Bikeway Design Guide, second edition, published by the National Association of City Transportation Officials;*
- (b) Designing for All Ages & Abilities, December 2017, published by the National Association of City Transportation Officials; and*
- (c) For state facilities, The Blueprint for Urban Design, 2019, published by the Oregon Department of Transportation.*

FINDINGS: The TSP identifies higher-stress portions of the existing bicycle network along with recommended solutions for those problem areas. Some of these are on state or county streets. For city facilities, the TSP provides a range of street and pathway treatments that will maximize cyclist comfort and safety through physical separation and intersection design.

- (6) Cities and counties shall use the transportation prioritization framework in OAR 660-012-0155 when making decisions about bicycle facilities.*

FINDING: The TSP properly prioritizes future bicycle improvement projects in Chapter 5.

OAR 660-12-0620 Bicycle System Projects

- (1) Cities and counties shall develop a list of bicycle system projects that would address all the gaps and deficiencies in the bicycle system identified by the city under OAR 660-012-0600(4).*

FINDINGS: The TSP does this in Chapter 5. As noted, the city will work with ODOT and Washington County to address gaps and stressful segments on their facilities.

- (2) Cities and counties shall develop bicycle project prioritization factors that are able to sort the list of bicycle system projects into a prioritized list of bicycle system projects. Cities must develop bicycle project prioritization factors by engaging underserved populations as provided in OAR 660-012-0130.*

FINDINGS: The TSP does this in Chapter 5.

- (3) Cities and counties shall use the following factors when prioritizing bicycle system projects:*
 - (a) Bicycle system investments in climate-friendly areas and Metro Region 2040 centers;*
 - (b) Bicycle system investments in areas with concentrations of underserved populations;*
 - (c) Bicycle system investments in areas with safety risk factors such as roadways with high speeds and high traffic volumes;*
 - (d) Bicycle system investments in areas with reported crashes involving serious injuries and deaths to people riding bicycles;*
 - (e) Bicycle system investments that provide access to key bicycle destinations identified as provided in OAR 660-012-0360;*
 - (f) Bicycle system investments system investments that will connect to, fill gaps in, and expand the existing bicycle system network;*
 - (g) Bicycle system investments that prioritize bicycle travel consistent with the prioritization factors in OAR 660-012-0155; and*
 - (h) Where applicable, bicycle system investments that implement a scenario plan approved by order as provided in OAR 660-044-0120.*

FINDINGS: The city is small geographically, and as noted above, the system deficiencies have been identified. For the existing city, the TSP primarily focuses on working with the county and ODOT regarding the arterial street system bikeways and creating a safe and efficient system using local streets and pathway connections. The Kingston Terrace area is planned so that appropriate bicycle facilities will be provided as development occurs.

- (4) The transportation system plan must include a description of the prioritization factors and method of prioritizing bicycle projects used to develop the prioritized list of bicycle system projects.*

FINDINGS This prioritization is explained in Chapter 5.

OAR 660-12-0630 Bicycle Parking

(1) Cities and counties shall require and plan for adequate parking to meet the increasing need for travel by bicycle and other small-scale mobility devices.

FINDINGS: The city currently has bicycle parking requirements in its Community Development Code, and it plans to update this portion of the code to satisfy current requirements, including those related to the Climate-Friendly and Equitable Communities requirements.

(2) Cities and counties shall require covered, secure bicycle parking for all new multifamily development or mixed-use development of four residential units or more, and new office and institutional developments. Such bicycle parking must include at least one bicycle parking space for each residential unit.

FINDINGS: As note above, the city's bike parking standards will be updated accordingly. The city received a 2-year exemption from DLCD to allow time to complete and adopt the TSP and Kingston Terrace Master Plan and then make a comprehensive set of code amendments.

(3) Cities and counties shall require bicycle parking for all new retail development. Such bicycle parking shall be located within a short distance from the main retail entrance.

FINDING: The existing Community Development Code requirements satisfy this requirement.

(4) Cities and counties shall require bicycle parking for all major transit stations and park-and-ride lots.

FINDING: This will be included in the upcoming code amendments described above.

(5) Cities and counties shall require bicycle parking in climate-friendly areas, Metro Region 2040 centers, and near key destinations identified as provided in OAR 660-012-0360.

FINDINGS: Bicycle parking is currently required in the existing 2040 town center, and further enhancements will be included in the upcoming code amendments described above.

(6) Cities and counties shall allow and provide for parking and ancillary facilities for shared bicycles or other small-scale mobility devices in climate-friendly areas, Metro Region 2040 centers, and near key destinations identified as provided in OAR 660-012-0360.

FINDING: This will be included in the upcoming code amendments described above.

(7) Cities and counties shall require bicycle parking for any land use where off-street motor vehicle parking is mandated. The minimum number of bicycle parking spaces shall be no less than the greater of:

- (a) Twice the number of mandated motor vehicle parking spaces, raised to the power of 0.7, rounded to the next highest whole number; or*
- (b) As otherwise provided in this rule.*

FINDINGS: This will be included in the upcoming code amendments described above.

(8) Cities and counties shall ensure that all bicycle parking provided must:

- (a) Allow ways to secure at least two points on a bicycle;*
- (b) Be installed in a manner to allow space for the bicycle to be maneuvered to a position where it may be secured without conflicts from other parked bicycles, walls, or other obstructions;*
- (c) Be in a location that is convenient and well-lit; and*
- (d) Include sufficient bicycle parking spaces to accommodate large bicycles, including family and cargo bicycles.*

FINDINGS: The existing code requirements satisfy the majority of these requirements, and the remainder will be addressed with the code amendments noted above.

OAR 660-12-0700 Public Transportation System Planning

(1) Transportation system plans must include a public transportation system element that meets the requirements of this rule. Cities and counties must work in close cooperation with transit service providers in order to complete the public transportation system element of the transportation system plan.

(a) Cities and counties shall coordinate with public transportation service providers to develop the public transportation system plan element.

(b) The public transportation system plan element must include elements of the public transportation system that are in the control of the city, county, and coordinating transportation facility owners.

(c) The public transportation system plan element must identify elements of the public transportation system that the city or county will work with transit service providers to realize or improve, including transit priority corridors, transit supportive infrastructure, and stop amenities.

(d) Cities and counties must align the public transportation system plan transit element with Transit Development Plans, goals, and other strategic planning documents developed by a transit service provider.

(e) Transportation system plans do not control public transportation elements exclusively controlled by transit service providers. These include funding or details of transit service provision, including timetables and routing.

FINDING: TriMet staff served on the TSP Technical Advisory Committee, and the TSP includes a transit element that identifies current service routes along with potential future transit service enhancements.

(2) A public transportation system element must include the following elements:

(a) The complete public transportation system as described in section (3) that includes the full buildout and provision of services of the public transportation system within the urban growth boundary;

(b) Identification of gaps and deficiencies in the public transportation system as described in section (4);

(c) Locations of key public transportation destinations identified as provided in OAR 660-012-0360; and

(d) A list of prioritized public transportation system projects developed as provided in OAR 660-012-0720.

FINDINGS: As noted above, the TSP illustrates the existing transit routes, level of service, and potential future transit routes within the Kingston Terrace area. In addition, the Kingston Terrace master Plan draft acknowledges the importance of working with TriMet to ensure that future land uses and urban design will support future transit service.

(3) The complete public transportation system is the full buildout of a complete public transportation system within the planning area. The city or county determines the complete public transportation system plan by:

(a) Using the public transportation system inventory developed under OAR 660-012-0705 as a base; and

(b) Adding the minimum public transportation services and facilities to places that do not presently meet the minimum public transportation system requirements in OAR 660-012-0710.

FINDING: This was done in the TSP as described above.

(4) Cities and counties shall identify gaps and deficiencies in the public transportation system by comparing the complete public transportation system with the public transportation system inventory developed under OAR 660-012-0705. Cities and counties must include any part of the complete public transportation system not presently built or operated to the standards in the complete public transportation system plan as a gap or deficiency. Cities and counties must identify gaps in the transit supportive facilities provided on priority transit corridors and other transit corridors identified as provided in OAR 660-012-0710. Transit supportive facilities include, but are not limited to:

(a) Stations, hubs, stops, shelters, signs, and ancillary features; and

(b) Transit priority infrastructure, including signals, queue jumps, and semi-exclusive or exclusive bus lanes or transitways.

FINDINGS: To the extent possible given available information from transit providers, this is addressed in the TSP. Currently, transit infrastructure, such as shelters, and transit-priority infrastructure is located within the right-of-way for state and county roadways.

OAR 660-12-0705 Public Transportation System Inventory

(1) The public transportation system inventory must include information on local and intercity transit services, including the location of routes, major stations, transit stops, transitways, transit lanes, transit priority signals, queue jumps, on-route charging, and other transit supportive facilities not otherwise inventoried. The inventory must document which services and facilities are accessible for people with disabilities based on the requirements in the Americans with Disabilities Act, or locally adopted higher standards.

FINDING: This inventory is provided in the TSP.

(2) The public transportation system inventory must include the identification of existing service characteristics, including frequency and span of service for all services along identified transit priority corridors, serving key destinations, and serving major transit stations.

FINDING: This information is provided with inventory in the TSP.

(3) Where local or intercity transit services travel outside of the planning area to other cities, the public transportation system inventory must include the identification of routes connecting to the next nearest cities with a population exceeding 9,000, as well as key destinations and major stations these routes serve.

FINDING: This information is provided with inventory in the TSP.

OAR 660-12-0710 Public Transportation System Requirements

(1) Cities and counties shall plan for a connected local transit network that serves key destinations identified as provided in OAR 660-012-0360, and can be accessed by housing and jobs within the planning area. Cities must identify transit corridors, including:

- (a) Priority transit corridors, which are transit corridors that are planned for the highest levels of regional transit service providing for a wide range of mobility needs; and*
- (b) Other transit corridors, which are planned to carry at least a moderate level of transit service providing for basic mobility needs.*

FINDINGS: This mostly outside of the city's control, but future potential transit routes are identified in the TSP.

(2) Cities and counties shall plan for a range of transit supportive facilities along priority transit corridors and in other locations where transit priority is desired. Cities and counties shall:

- (a) Coordinate with transit service providers to determine transit priority infrastructure needed on priority transit routes for efficient transit service;*
- (b) Prioritize expedited access for transit vehicles to and from major stops, stations, and terminals; and*
- (c) Consider intercity transit access to stations or terminals.*

FINDINGS: The city has an on-going planning and service with TriMet, including this TSP and SW Service Enhancement Plan. As noted herein, the TSP and Kingston Terrace Master Plan will continue to provide opportunities for further collaboration to improve transit service to the city and surrounding area.

(3) Cities and counties shall plan for safe and accessible transit stops and stations.

(a) Along priority transit corridors and other locations where transit priority is desired, cities and counties shall coordinate with transit service providers on the construction of transit supportive facilities. Cities and counties shall allow transit service providers to construct amenities at stops outright, with limited permitting requirements. These amenities include but are not limited to: pedestrian facility repair and extension, signage, lighting, benches, and shelters.

(b) Cities and counties shall limit on-street parking at transit stop locations at the request of a transit service provider.

FINDINGS: This mostly outside of the city's control today because transit facilities described are within ODOT right-of-way, but future potential transit routes are identified in the TSP, and the city will be willing to partner with TriMet to provide them.

(4) Cities and counties shall coordinate with transit service providers to identify needs for intercity transit services at a level appropriate to the size of the urban area and the size and distance of intercity markets.

FINDINGS: Other than continuing to coordinate with TriMet, this requirement is not really relevant to King City.

(5) Cities and counties shall coordinate with transit service providers to identify gaps in transit service provided in the transportation system plan, and gaps for each priority transit corridor and other transit corridors.

FINDING: The TSP identifies existing service and gaps.

(6) Cities and counties with an urban area of less than 10,000 population need not plan for priority transit corridors.

FINDING: The TSP identifies the existing priority transit corridor on 99W.

OAR 660-12-0720 Public Transportation System Projects

(1) Cities and counties shall develop a list of public transportation projects that would address all the gaps and deficiencies in the public transportation system identified by the city under OAR 660-012-0700(4).

FINDINGS: To the extent King City can address transit-supportive projects, they are identified in the TSP. The primary support provided by the TSP is the transportation improvements identified for pedestrians and cyclists.

(2) Cities and counties shall coordinate with transit service providers to identify the gaps in transit service provided in the transportation system plan and those identified in a land use and transportation scenario plan as provided in OAR 660-044-0110 or in the Statewide Transportation Strategy as adopted by the Oregon Transportation Commission, including the gap in transit miles per capita, and gaps for each priority transit corridor and other transit corridors. The purpose of identifying these gaps is to illustrate the need for transit service operating funds for services operated within the planning area. The transportation system plan need not make provisions for funding operations of transit services directly.

FINDING: To the extent possible this coordination has been ongoing and is reflected in the TSP.

(3) Cities and counties shall develop public transportation system project prioritization factors that are able to sort the list of public transportation system projects into a prioritized list of public transportation system projects. Cities must develop public transportation project prioritization factors by engaging underserved populations as provided in OAR 660-012-0130.

FINDINGS: The TSP supports this primarily with improvements identified for pedestrians and cyclists to have easier access to transit.

(4) Cities and counties shall use the following factors when prioritizing public transportation system projects:

(a) Public transportation system investments in climate-friendly areas and Metro Region 2040 centers;

- (b) Public transportation system investments in areas with concentrations of underserved populations, particularly in areas with concentrations of people dependent on public transportation;*
- (c) Public transportation system investments that provide access to key public transportation destinations identified as provided in OAR 660-012-0360;*
- (d) Public transportation system investments that will connect to, fill gaps in, and expand the existing public transportation network;*
- (e) Public transportation system investments that prioritize transit travel consistent with the prioritization factors in OAR 660-012-0155; and*
- (f) Where applicable, public transportation system investments that implement a scenario plan approved by order as provided in OAR 660-044-0120.*

FINDINGS: The TSP supports this primarily with improvements identified for pedestrians and cyclists to have easier access to transit.

- (5) The transportation system plan must include a description of the prioritization factors and method of prioritizing public transportation projects used to develop the prioritized list of public transportation projects.*

FINDING: The TSP provides this in Chapter 5.

OAR 660-12-0800 Street and Highway System Planning

- (1) Transportation system plans must include a street and highway system element that meet the requirements of this rule.*

FINDING: The TSP includes a street element.

- (2) A street and highway system element must include the following elements:*
 - (a) The complete street and highway system as described in section (3) that includes the full buildout of the street and highway system within the urban growth boundary.*
 - (b) Identification of gaps or deficiencies in the street and highway system as described in section (4);*
 - (c) Locations of key destinations identified as provided in OAR 660-012-0360; and*
 - (d) A list of prioritized street and highway system projects developed as provided in OAR 660-012-0820.*

FINDINGS: The TSP includes descriptions of what constitutes complete streets, identifies gaps and deficiencies, including current and future intersection performance, identification of key destinations, and a prioritized list of improvements.

- (3) The complete street and highway system is the full buildout of a complete street and highway system within the planning area. A city determines the ultimate street and highway system plan by:*
 - (a) Using the street and highway system inventory developed under OAR 660-012-0805 as a base;*
 - (b) Adding the minimum street and highway facilities to places that do not presently meet the minimum street and highway system requirements in OAR 660-012-0810; and*
 - (c) Accommodating the reallocation of right of way on facilities where this is deemed necessary as provided in this division.*

FINDINGS: The TSP complies by completing a facilities inventory and a future street network concept for the Kingston Terrace urban expansion area.

- (4) Cities and counties shall identify gaps and deficiencies in the street and highway system by comparing the complete street and highway system with the street and highway system inventory developed under OAR 660-012-0805. Cities must include any part of the complete street and highway system not presently built to the standard in the ultimate street and highway plan as a gap or deficiency.*

FINDINGS: The TSP evaluates current and future traffic volumes and its potential impact on existing facilities, including major intersections. It then describes the improvements necessary to satisfy existing and future traffic demand.

OAR 660-12-0805 Street and Highway System Inventory

(1) Street and highway system inventories must include information on all streets and highways, including the functional classification of each facility.

(a) For local streets, inventories must include location.

(b) For collector streets, inventories must include location, condition, and number of general-purpose travel lanes, and turn lanes.

(c) For arterial streets, inventories must include location, condition, and number of general-purpose travel lanes, turn lanes, and lane width.

(d) For expressways and other limited-access highways, inventories must include location, condition, number of general-purpose travel lanes, and lane width. Inventories must also include locations and type of interchanges.

FINDING: The TSP includes inventory information consistent with the above.

(2) Street and highway system inventories must include the location of all reported serious injuries and deaths of people related to vehicular crashes. This must include all reported incidents from the most recent five years of available data prior to the year of adoption of the street and highway system inventory.

FINDINGS: The TSP

(3) Street and highway system inventories must include an overview of pricing strategies in use, including specific facility pricing, area or cordon pricing, and parking pricing. Inventories must include pricing mechanisms and rates.

FINDINGS: The TSP considers tools such as these in Chapter 6.

(4) Street and highway system inventories must include the location of designated freight routes, and the location of all key freight terminals within the planning area, including intermodal terminals.

FINDINGS: The TSP inventory includes this information.

OAR 660-12-0810 Street and Highway System Requirements

(1) Cities and counties shall plan, design, build, and maintain a connected streets and highway network in a manner that respects the prioritization factors in OAR 660-012-0155.

(a) Cities and counties shall plan streets and highways for the minimum size necessary for the identified function, land use context, and expected users of the facility.

(b) Cities and counties shall consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, increase safety, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, provide for utility placement, and support connected and safe pedestrian and bicycle networks.

(c) Cities and counties shall plan for an equitable allocation of right-of-way consistent with the prioritization factors as provided in OAR 660-012-0155. Streets in climate-friendly areas, Metro Region 2040 centers, and along priority transit corridors must be designed to prioritize pedestrian, bicycle, and transit systems, as provided in OAR 660-012-0510, OAR 660-012-0610, and OAR 660-012-0710.

FINDING: The TSP includes design treatments for future streets and street improvements consistent with the above in Chapter 4.

(2) Cities and counties shall plan local streets to provide local access to property and localized circulation within neighborhoods.

- (a) Cities and counties shall plan and design local streets for low and safe travel speeds compatible with shared pedestrian and bicycle use.*
- (b) Cities and counties shall establish standards for local streets with pavement width and right-of-way width as narrow as practical to meet needs, reduce the cost of construction, efficiently use urban land, discourage inappropriate traffic volumes and speeds, improve safety, and accommodate convenient pedestrian and bicycle circulation. Local street standards adopted by a city or county must be developed as provided in ORS 368.039. A local street standard where the paved width is no more than 28 feet on streets where on-street parking is permitted on both sides of the street shall be considered adequate to meet this requirement. Wider standards may be adopted if the local government makes findings that the wider standard is necessary.*
- (c) Cities and counties shall plan and design a complete and connected network of local streets. Cities and counties may plan for chicanes, diverters, or other strategies or devices in local street networks where needed to prevent excessive speed or through travel. These measures must continue to provide for connected and pedestrian and bicycle networks.*
- (d) Cities and counties shall avoid planning or designing local streets with a dead end. Dead end local streets may be permitted in locations with topographic or other barriers, or where the street is planned to continue to a connected network in the future.*
- (e) Cities and counties shall plan for multimodal travel on local streets as provided in OAR 660-012-0510, OAR 660-012-0610, and OAR 660-012-0710. Cities and counties must plan local streets in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian and bicycle systems, and be limited to local access for motor vehicles.*
- (f) A city or county may plan for local streets to be wider than otherwise allowed in this rule when used exclusively for access to industrial or commercial properties outside of climate-friendly areas or Metro Region 2040 centers, and where plans do not allow residential or mixed-use development.*
- (g) Transportation system plans need not include the specific location of all planned local streets but must describe areas where they will be necessary.*

FINDINGS: The TSP calls for local streets to be designed for slow vehicle speeds and safe multimodal travel. In addition, the Community Development Code requires interconnected local street system featuring small block sizes consistent with Metro requirements.

- (3) Cities and counties shall plan collector streets to provide access to property and collect and distribute traffic between local streets and arterials. Cities and counties must plan and design a collector street network that is complete and connected with local streets and arterials.*
- (a) Cities and counties must plan for multimodal travel on collector streets as provided in OAR 660-012-0510, OAR 660-012-0610, and OAR 660-012-0710.*
- (b) Cities and counties must plan collectors in climate-friendly areas and Metro Region 2040 centers to prioritize pedestrian, bicycle, and public transportation systems.*

FINDINGS: The TSP describes the major street system of collector and neighborhood routes, which is interconnected. Few amendments to the existing street system is feasible, but a well-connected system is proposed for the Kingston Terrace area that will include a finer-grained local street network within the collector/neighborhood route system.

- (4) Cities and counties shall plan arterial streets and highways to provide travel between neighborhoods and across urban areas. Cities and counties must plan an arterial street network that is complete and connected with local streets and collectors.*
- (a) Cities and counties shall designate each segment of an arterial as one of the three categories below in the transportation system plan. These designations must be made considering the intended function, the land use context, and the expected users of the facility. Cities and counties must address these considerations to ensure local plans include different street standards for each category of arterial segment.*
- (A) Cities and counties shall plan for local access priority arterial segments to prioritize access to property and connected streets when balancing needs on the facility. Local access priority arterial segments will generally allow for more access locations from property, more opportunities to make turns, more frequent intersections with other streets, and slower speeds.*
- (B) Cities and counties shall plan for through movement priority arterial segments to prioritize through movement of traffic when balancing needs on the facility. Through movement priority arterial segments will generally prioritize access limited to intersections with the street network, limited access to individual properties, and safe speeds.*

(C) Cities and counties shall plan for arterial segments in a climate-friendly area to prioritize multimodal travel as provided in subsection (b). This includes prioritizing complete, connected, and safe pedestrian, bicycle, and public transportation facilities.
(b) Cities and counties shall plan for multimodal travel on or along arterial streets as provided in OAR 660-012-0510, OAR 660-012-0610, and OAR 660-012-0710.

(A) Cities and counties shall plan arterials in climate-friendly areas to prioritize pedestrian, bicycle, and public transportation systems.

(B) Cities and counties shall plan arterials along transit priority corridors to prioritize transit service reliability and frequency over general-purpose traffic.

FINDINGS: The existing arterial network is set, and future improvement to this system is recognized as a shared responsibility between the county, state, and city. As noted throughout these findings, a complete multimodal system is proposed in the TSP.

(5) Cities and counties shall carefully consider new or expanded freeways considering goals for reductions in vehicle miles traveled per capita.

(a) Cities and counties shall consider high-occupancy vehicle lanes, including transit lanes, and managed priced lanes on freeways.

(b) Pedestrian and bicycle facilities should be parallel to freeways, rather than on them. Transit facilities on or along freeways must be designed for direct transit vehicle access.

FINDING: This not relevant to King City.

(6) Notwithstanding other provisions of this rule, where appropriate, cities and counties shall plan and design streets and highways to accommodate:

(a) Transit vehicles on a segment of a priority transit corridor or transit corridor without dedicated transit lanes or transitway.

(b) Freight travel on designated freight routes and key freight terminals inventoried as provided in OAR 660-012-0805.

(c) Agricultural equipment on streets or highways connecting to agriculturally zoned land used for agricultural purposes where equipment access is necessary.

FINDINGS: The TSP street designs will be able to accommodate transit on city collector and neighborhood route streets. Freight routes will continue to be on the county and state system, and agricultural vehicles are not relevant to King City.

OAR 660-12-0820 Street and Highway Projects

(1) Cities and counties shall develop a list of street and highway system projects that would address the gaps and deficiencies in the street and highway system.

FINDING: The TSP describes these types of improvements in Chapter 5.

(2) Cities and counties shall develop street and highway project prioritization factors that are able to sort the list of street and highway system projects into a prioritized list of street and highway system projects. Cities must develop street and highway project prioritization factors by engaging underserved populations as provided in OAR 660-012-0130.

FINDINGS: Chapter 5 of the TSP provides this information. Most of these improvements will need to be initiated by the county of state on the major system. As noted herein, the main thing the city will do to accommodate underserved populations is to continue improving pedestrian and bicycle access throughout the city.

(3) Cities and counties shall use the following factors when prioritizing street and highway system projects:

(a) Street and highway investments that reallocate right-of-way from facilities dedicated to moving motor vehicles to those for use by the pedestrian, bicycle, and public transportation systems, particularly:

(A) In climate-friendly areas and Metro Region 2040 centers;

- (B) *In areas with concentrations of underserved populations; and*
- (C) *In areas with reported serious injuries and deaths.*
- (b) *Street and highway system investments that will fill gaps in the existing street network;*
- (c) *Street and highway system investments consistent with the prioritization factors in OAR 660-012-0155;*
- (d) *Street and highway system investments that will help meet the performance targets set as provided in OAR 660-012-0910;*
and
- (e) *Street and highway system investments consistent with a scenario plan approved by order as provided in OAR 660-044-0120.*

FINDING: The TSP prioritizes projects primarily according to the needs above with particular emphasis on hazardous locations, gaps, and satisfying performance targets for each mode.

- (4) *The transportation system plan must include a description of the prioritization factors and method of prioritizing street and highway projects used to develop the prioritized list of street and highway system projects.*

FINDINGS: These are described in Chapter 5 of the TSP.

- (5) *Cities or counties choosing to include a proposed facility requiring authorization as provided in OAR 660-012-0830 in the transportation system plan must first meet the requirements provided in OAR 660-012-0830.*

FINDING: This is not relevant to the King City TSP.

OAR 660-12-0830 Enhanced Review of Select Roadway Projects

- (1) *Cities and counties shall review and may authorize certain proposed facilities to be included as a planned project or unconstrained project in any part of the local comprehensive plan, including the transportation system plan.*
- (a) *The following types of proposed facilities must be reviewed as provided in this rule:*
 - (A) *A new or extended arterial street, highway, freeway, or bridge carrying general purpose vehicle traffic;*
 - (B) *New or expanded interchanges;*
 - (C) *An increase in the number of general purpose travel lanes for any existing arterial or collector street, highway, or freeway; and*
 - (D) *New or extended auxiliary lanes with a total length of one-half mile or more. Auxiliary lane means the portion of the roadway adjoining the traveled way for speed change, turning, weaving, truck climbing, maneuvering of entering and leaving traffic, and other purposes supplementary to through-traffic movement.*

FINDING: This is not relevant to the King City TSP.

In Sum, the King City Transportation System Plan is consistent with the rules and regulations of the Transportation Planning Rules OAR 660 division 12.

METRO REGIONAL TRANSPORTATION FUNCTIONAL PLAN

Title 1: Transportation System Design

3.08.110 Street System Design

- A. *To ensure that new street construction and re-construction projects are designed to improve safety, support adjacent land use and balance the needs of all users, including bicyclists, transit vehicles, motorists, freight delivery vehicles and pedestrians of all ages and abilities, city and county street design regulations shall allow implementation of:*
 - 1. *Complete street designs as set forth in Creating Livable Streets: Street Design Guidelines for 2040 (2nd Edition, 2002), or similar resources consistent with regional street design policies;*

2. *Green street designs as set forth in Green Streets: Innovative Solutions for Stormwater and Street Crossings (2002) and Trees for Green Streets: An Illustrated Guide (2002) or similar resources consistent with federal regulations for stream protection; and*
3. *Transit-supportive street designs that facilitate existing and planned transit service pursuant subsection 3.08.120B.*

FINDINGS: Chapter 4 of the TSP includes transportation facility design standards, which properly accommodate all travel modes as described in the street design guidelines. All designs include buffers and planter strips for landscaping and street trees. The existing scheduled transit service route is on 99W, an ODOT facility. However, the street designs are intended to accommodate future transit service within the existing city and the Kingston Terrace Master Plan area (formerly URA 6D). A TriMet representative served on the TSP Technical Advisory Committee, and the city will continue to work in partnership with TriMet to enhance transit service.

- B. *City and county local street design regulations shall allow implementation of:*
1. *Pavement widths of less than 28 feet from curb-face to curb-face;*
 2. *Sidewalk widths that include at least five feet of pedestrian through zones;*
 3. *Landscaped pedestrian buffer strips, or paved furnishing zones of at least five feet, that include street trees;*
 4. *Traffic calming devices, such as speed bumps and cushions, woonerfs and chicanes, to discourage traffic infiltration and excessive speeds;*
 5. *Short and direct right-of-way routes and shared-use paths to connect residences with commercial services, parks, schools, hospitals, institutions, transit corridors, regional trails and other neighborhood activity centers; and*
 6. *Opportunities to extend streets in an incremental fashion, including posted notification on streets to be extended.*

FINDINGS: Chapter 4 of the TSP offers a wide range of design options. The TSP presents "typical" cross-sections that apply in unconstrained conditions. Narrower sections permitted with the constrained options, which includes the removal of on-street parking from one or both sides.

The minimum dimensional requirements noted above are satisfied in the TSP with minimum widths of 5 feet for sidewalks and 4 to 6 feet for planter strips. Multiple traffic calming techniques are also illustrated in Chapter 4.

The city has aggressively promoted local street connectivity, primarily through its existing circulation design standards in Chapter 16.212 of the CDC. The major route maps in Chapter 4 illustrate the city's intent to have an interconnected transportation network in the Kingston Terrace area west of the existing city. The opportunities for connections between the existing city and Kingston Terrace are limited, but the TSP proposes to take maximum advantage of what is available. When street connections are not feasible or environmentally advisable, pedestrian and bike connections are typically required to provide safe and direct connections for people walking and cycling.

- C. *To improve connectivity of the region's arterial system and support walking, bicycling and access to transit, each city and county shall incorporate into its TSP, to the extent practicable, a network of major arterial streets at one-mile spacing and minor arterial streets or collector streets at half-mile spacing considering the following:*
1. *Existing topography;*
 2. *Rail lines;*
 3. *Freeways;*
 4. *Pre-existing development;*
 5. *Leases, easements or covenants in place prior to May 1, 1995; and*
 6. *The requirements of Titles 3 and 13 of the Urban Growth Management Functional Plan (UGMFP).*
 7. *Arterial design concepts in Table 2.6 and Figure 2.11 of the RTP.*
 8. *Best practices and designs as set forth in Green Streets: Innovative Solutions for Stormwater, Street Crossings (2002) and Trees for Green Streets: An Illustrated Guide (2002), Creating Livable Streets: Street Design Guidelines for*

2040 (2nd Edition, 2002), and state or locally-adopted plans and best practices for protecting natural resources and natural areas.

FINDINGS: For King City, the arterial street network is established, and given the geography of the existing city and Kingston Terrace, there are no opportunities for additional arterial routes. The same can be said for the collector street system in the existing city. Although the KTMP area is constrained by terrain, natural resource areas, and existing intersection spacing on SW Beef Bend Road, additional collector and neighborhood route streets are proposed to be generally consistent with the ½-mile spacing guideline for collector routes. This future street network is intended to accommodate local trips within the city and reduce reliance on the arterial system for local trips.

- D. To improve local access and circulation, and preserve capacity on the region's arterial system, each city and county shall incorporate into its TSP a conceptual map of new streets for all contiguous areas of vacant and re-developable lots and parcels of five or more acres that are zoned to allow residential or mixed-use development. The map shall identify street connections to adjacent areas to promote a logical, direct and connected system of streets and should demonstrate opportunities to extend and connect new streets to existing streets, provide direct public right-of-way routes and limit closed-end street designs consistent with subsection E.*

FINDING: as noted in the finding above, Chapter 4 of the TSP contains conceptual route maps with an interconnected local network that will provide for intercity connectivity and reduced reliance on the arterial street system.

- E. If proposed residential or mixed-use development of five or more acres involves construction of a new street, the city and county regulations shall require the applicant to provide a site plan that:*
- 1. Is consistent with the conceptual new streets map required by subsection D;*
 - 2. Provides full street connections with spacing of no more than 530 feet between connections, except if prevented by barriers such as topography, rail lines, freeways, pre-existing development, leases, easements or covenants that existed prior to May 1, 1995, or by requirements of Titles 3 and 13 of the UGMFP;*
 - 3. If streets must cross water features protected pursuant to Title 3 UGMFP, provides a crossing every 800 to 1,200 feet unless habitat quality or the length of the crossing prevents a full street connection;*
 - 4. If full street connection is prevented, provides bicycle and pedestrian accessways on public easements or rights-of-way spaced such that accessways are not more than 330 feet apart, unless not possible for the reasons set forth in paragraph 3;*
 - 5. Provides for bike and pedestrian accessways that cross water features protected pursuant to Title 3 of the UGMFP at an average of 530 feet between accessways unless habitat quality or the length of the crossing prevents a connection;*
 - 6. If full street connection over water features protected pursuant to Title 3 of the UGMFP cannot be constructed in centers as defined in Title 6 of the UGMFP or Main Streets shown on the 2040 Growth Concept Map, or if spacing of full street connections exceeds 1,200 feet, provides bike and pedestrian crossings at an average of 530 feet between accessways unless habitat quality or the length of the crossing prevents a connection;*
 - 7. Limits cul-de-sac designs or other closed-end street designs to circumstances in which barriers prevent full street extensions and limits the length of such streets to 200 feet and the number of dwellings along the street to no more than 25; and*
 - 8. Provides street cross-sections showing dimensions of right-of-way improvements and posted or expected speed limits.*

FINDINGS: Except for a few acres, the existing city is fully developed, and the street system is established. The city has maximum street spacing and pedestrian/bicycle access standards consistent with Metro requirements in Chapter 16.212 of the CDC. The TSP proposes to minimize the number of ravine crossings in Kingston Terrace due to environmental and cost considerations. However, an interconnected system will emerge as development occurs.

- F. For redevelopment of contiguous lots and parcels less than five acres in size that require construction of new streets, cities and counties shall establish their own standards for local street connectivity, consistent with subsection E.*

FINDING: As noted above, the city's Community Development Code currently has these standards.

- G. *To protect the capacity, function and safe operation of existing and planned state highway interchanges or planned improvements to interchanges, cities and counties shall, to the extent feasible, restrict driveway and street access in the vicinity of interchange ramp terminals, consistent with Oregon Highway Plan Access Management Standards, and accommodate local circulation on the local system to improve safety and minimize congestion and conflicts in the interchange area. Public street connections, consistent with regional street design and spacing standards in this section, shall be encouraged and shall supercede this access restriction, though such access may be limited to right-in/right-out or other appropriate configuration in the vicinity of interchange ramp terminals. Multimodal street design features including pedestrian crossings and on-street parking shall be allowed where appropriate.*

FINDING: This is not applicable because there are no interchanges or ramps in or near King City.

3.08.120 Transit System Design

- A. *City and county TSPs or other appropriate regulations shall include investments, policies, standards and criteria to provide pedestrian and bicycle connections to all existing transit stops and major transit stops designated in Figure 2.15 of the RTP.*

FINDINGS: As described in Chapter 3 of the TSP, the existing city has an almost complete network of connections to transit along 99W. Sidewalk connections are available via local and collector streets to 99W. The city has worked with ODOT to improve sidewalk conditions and remove gaps along 99W. SW Beef Bend Road, SW 131st Avenue, SW Fischer Road, and 99W all have bike lanes. The TSP identifies existing transit stop locations, sidewalk and bike facility gaps, and higher stress locations. It proposes further improvements to this system to eliminate obstacles and mitigate high-stress locations for pedestrians and cyclists, which are identified in the TSP. The proposed system improvements will enhance transit access. A notable addition will be an east-west pedestrian/bike connection utilizing local streets and pathways in an alignment that is midway between SW Beef Bend Road and SW Fischer Road.

- B. *City and county TSPs shall include a transit plan, and implementing land use regulations, with the following elements to leverage the region's investment in transit and improve access to the transit system:*
1. *A transit system map consistent with the transit functional classifications shown in Figure 2.15 of the RTP that shows the locations of major transit stops, transit centers, high capacity transit stations, regional bicycle transit facilities, inter-city bus and rail passenger terminals designated in the RTP, transit-priority treatments such as signals, regional bicycle transit facilities, park-and-ride facilities, and bicycle and pedestrian routes, consistent with sections 3.08.130 and 3.08.140, between essential destinations and transit stops.*
 2. *The following site design standards for new retail, office, multi-family and institutional buildings located near or at major transit stops shown in Figure 2.15 in the RTP:*
 - a. *Provide reasonably direct pedestrian connections between transit stops and building entrances and between building entrances and streets adjoining transit stops;*
 - b. *Provide safe, direct and logical pedestrian crossings at all transit stops where practicable;*
 - c. *At major transit stops, require the following:*
 - i. *Locate buildings within 20 feet of the transit stop, a transit street or an intersecting street, or a pedestrian plaza at the stop or a street intersection;*
 - ii. *Transit passenger landing pads accessible to disabled persons to transit agency standards;*
 - iii. *An easement or dedication for a passenger shelter and an underground utility connection to a major transit stop if requested by the public transit provider; and*
 - iv. *Lighting to transit agency standards at the major transit stop.*
 - v. *Intersection and mid-block traffic management improvements as needed and practicable to enable marked crossings at major transit stops.*

FINDINGS: The 2018 RTP does not include a Figure 2.15, and Metro staff advised that Figure 3.16 should

be used instead. The major transit route is on 99W, which is under ODOT jurisdiction. The established city lies along this corridor, and there are only a few opportunities for redevelopment. The sidewalk network within the city is largely complete, and most of the streets without sidewalks on one or both sides are low traffic streets where walking in the street is not particularly problematic (TSP, Figures 18 and 19). The city's sidewalk network provides good accessibility to 99W. There are several significant gaps along major streets that are identified in the TSP for improvement to complete the pedestrian network and further improve transit access.

The Kingston Terrace area west of the existing city is proposed to have streets that include high-quality pedestrian facilities in a fine-grained street network consistent with Metro design requirements. The proposed land uses will include higher density residential development along SW Beef Bend Road and a high-density mixed-use town center/main street is proposed between SW Roy Rogers Road and SW Elsner Road. Although the exact street alignments will be determined at the time of development, and the shape of future TriMet service is unknown, the TSP articulates a conceptual transit network to serve the existing city and future urbanized land in Kingston Terrace (TSP, Figure 23). A central theme in the TSP and draft KTMP is to create places that are pedestrian-friendly and designed to accommodate and support future transit.

C. Providers of public transit service shall consider and document the needs of youth, seniors, people with disabilities and environmental justice populations, including minorities and low-income families, when planning levels of service, transit facilities and hours of operation.

FINDING: This is not applicable because the city does not provide transit service.

3.08.130 Pedestrian System Design

- A. City and county TSPs shall include a pedestrian plan, with implementing land use regulations, for an interconnected network of pedestrian routes within and through the city or county. The plan shall include:*
- 1. An inventory of existing facilities that identifies gaps and deficiencies in the pedestrian system;*
 - 2. An evaluation of needs for pedestrian access to transit and essential destinations for all mobility levels, including direct, comfortable and safe pedestrian routes.*
 - 3. A list of improvements to the pedestrian system that will help the city or county achieve the regional Non-SOV modal targets in Table 3.08-1 and other targets established pursuant to section 3.08.230;*
 - 4. Provision for sidewalks along arterials, collectors and most local streets, except that sidewalks are not required along controlled roadways, such as freeways; and*
 - 5. Provision for safe crossings of streets and controlled pedestrian crossings on major arterials.*

FINDINGS: The TSP includes an inventory of existing pedestrian facilities, identification of gaps, and transit accessibility in Chapter 3 of the TSP. The TSP proposes improvements to the pedestrian network in Chapter 4 (improvement standards) and Chapter 5 (prioritized project list) that will help move the city closer to the modal targets described in Table 3.08-1.

The city currently has jurisdiction of one collector street, which is SW 131st Avenue. This street is fully improved with sidewalks, and it has marked crosswalks for all intersections along its length. The remaining collector and arterial streets in King City are under Washington County or ODOT jurisdiction. The city works closely with these agencies but does not control improvements to these facilities.

- B. As an alternative to implementing section 3.08.120(B)(2), a city or county may establish pedestrian districts in its comprehensive plan or land use regulations with the following elements:*
- 1. A connected street and pedestrian network for the district;*
 - 2. An inventory of existing facilities, gaps and deficiencies in the network of pedestrian routes;*
 - 3. Interconnection of pedestrian, transit and bicycle systems;*
 - 4. Parking management strategies;*

5. *Access management strategies;*
6. *Sidewalk and accessway location and width;*
7. *Landscaped or paved pedestrian buffer strip location and width;*
8. *Street tree location and spacing;*
9. *Pedestrian street crossing and intersection design;*
10. *Street lighting and furniture for pedestrians; and*
11. *A mix of types and densities of land uses that will support a high level of pedestrian activity.*

FINDINGS: The TSP identifies two multimodal areas in the planning area. One is along 99W in the approximate middle of the Metro 2040 town center designation, which includes portions of King City and Tigard on the east side of 99W. This area is primarily zoned LC – Limited Commercial, and commercial is the primary use along with civic (City Hall and King City Civic Association community center) and residential. To promote a higher density mix of uses, the city adopted amendments to the LC district that allow residential and mixed-use commercial/residential development. The amendments include design standards to enhance walkability along with a master planning provision to allow for redevelopment of auto-oriented uses into multimodal and transit-supportive land uses. The second multimodal area is on the west end of the Kingston Terrace area where a high-density, mixed-use town center/main street is envisioned.

These two multimodal areas will satisfy the above requirements by:

- Currently providing or planning to provide an interconnected and fine-grained network to facilitate non-vehicular travel. Due to the eastern multimodal area's roots as a highway strip commercial center, pedestrian and bike access is not ideal in all cases, but the shortcomings have been identified in the TSP to be corrected. As noted above, the city also has taken steps on the land use side to encourage supportive land use as redevelopment occurs.
- As noted in these findings, the TSP contains an inventory and assessment of pedestrian facilities.
- The TSP evaluates the existing pedestrian, bicycle, and transit systems along with proposed projects and design standards to improve them.
- Parking will continue to be managed consistent with state and Metro requirements. The city received a 2-year exemption from the Climate Friendly and Equitable Communities requirements, which would include parking standards. The city intends to amend its parking requirements once the Kingston Terrace Master Plan is adopted, allowing a more efficient and comprehensive set of code amendments.
- Access to all collector and arterial streets, except for SW 131st Avenue, is managed by Washington County or ODOT. Table 9 in the TSP provides minimum driveway standards for different street classifications.
- Sidewalk and accessway design, buffers, and street location for multimodal areas is shown in the TSP (TSP, Table 4). In addition, Chapter 16.124 of the Community Development Code.
- The TSP includes a variety of street crossing treatments that may be used (TSP, Table 10).
- Street lighting is established in the existing town center, and the streetscape standards for the western town center/main street will be developed as part of the Kingston Terrace Master Plan.
- The eastern multimodal area is fully developed, and as noted herein, the Community Development Code was amended to allow higher density mixed-use development in the future. The western multimodal area in Kingston Terrace is proposed to have a density of approximately 35 units per net acre along with retail, commercial, and civic uses.

C. City and county land use regulations shall require new development to provide on-site streets and accessways that offer reasonably direct routes for pedestrian travel.

FINDINGS: Chapter 16.212 of the CDC currently requires direct pedestrian connections using a combination of smaller block sizes, pathway connections where streets are not feasible, and pedestrian walkways within commercial and multifamily developments.

3.08.140 Bicycle System Design

- A. City and county TSPs shall include a bicycle plan, with implementing land use regulations, for an interconnected network of bicycle routes within and through the city or county. The plan shall include:*
- 1. An inventory of existing facilities that identifies gaps and deficiencies in the bicycle system;*
 - 2. An evaluation of needs for bicycle access to transit and essential destinations, including direct, comfortable and safe bicycle routes and secure bicycle parking, considering TriMet Bicycle Parking Guidelines.*
 - 3. A list of improvements to the bicycle system that will help the city or county achieve the regional Non-SOV modal targets in Table 3.08-1 and other targets established pursuant to section 3.08.230;*
 - 4. Provision for bikeways along arterials, collectors and local streets, and bicycle parking in centers, at major transit stops shown in Figure 2.15 in the RTP, park-and-ride lots and associated with institutional uses; and*
 - 5. Provision for safe crossing of streets and controlled bicycle crossings on major arterials.*

FINDINGS: The TSP includes an inventory of existing bicycle facilities, identification of gaps, and transit accessibility in Chapter 3 of the TSP. The TSP proposes improvements to the bicycle network in Chapter 4 (improvement standards) and Chapter 5 (prioritized project list) that will help move the city closer to the modal targets described in Table 3.08-1.

The city currently has jurisdiction of one collector street, which is SW 131st Avenue. This street is fully improved with bike lanes, and it has marked crosswalks for all intersections along its length. The remaining collector and arterial streets in King City are under Washington County or ODOT jurisdiction. All of the county and state routes within/adjacent to the existing city have bike lanes. There are identified gaps and stressful segments that are identified in the TSP to be remedied. The city works closely with these agencies but does not control improvements to these facilities.

Beyond the existing city limits, Washington County arterial and collector streets do not have bicycle facilities. The TSP identifies this as a future improvement need (TSP, Chapter 5) as development occurs in the Kingston Terrace area. In addition, the city is working with Washington County and the city of Tigard on developing a design standard for SW Beef Bend Road that would provide superior pedestrian and bicycle facilities.

3.08.150 Freight System Design

- A. City and county TSPs shall include a freight plan, with implementing land use regulations, for an interconnected system of freight networks within and through the city or county. The plan shall include:*
- 1. An inventory of existing facilities that identifies gaps and deficiencies in the freight system;*
 - 2. An evaluation of freight access to freight intermodal facilities, employment and industrial areas and commercial districts; and*
 - 3. A list of improvements to the freight system that will help the city or county increase reliability of freight movement, reduce freight delay and achieve the targets established pursuant to section 3.08.230.*

FINDINGS: The freight system is on Washington County and ODOT facilities. The primary contribution of the TSP to freight movement and accessibility is to implement the multimodal improvement called for in the plan to help reduce congestion, which is the key issue for freight movement in and near the city.

3.08.160 Transportation System Management and Operations

- A. City and county TSPs shall include transportation system management and operations (TSMO) plans to improve the performance of existing transportation infrastructure within or through the city or county. A TSMO plan shall include:*
- 1. An inventory and evaluation of existing local and regional TSMO infrastructure, strategies and programs that identifies gaps and opportunities to expand infrastructure, strategies and programs;*

2. *A list of projects and strategies, consistent with the Regional TSMO Plan, based upon consideration of the following functional areas:*
 - a. *Multimodal traffic management investments, such as signal timing, access management, arterial performance monitoring and active traffic management;*
 - b. *Traveler information investments, such as forecasted traffic conditions and carpool matching;*
 - c. *Traffic incident management investments, such as incident response programs; and*
 - d. *Transportation demand management investments, such as individualized marketing programs, rideshare programs and employer transportation programs.*

FINDINGS: The planning area has no existing or planned TSMO infrastructure. The TSP does however, include many transportation demand investments, including expanded bike parking, ped/bike facilities, and transit improvements. Strategies per 2a are also provided for access management and multi-modal connectivity.

Title 2: Development and Update of Transportation System Plans

3.08.210 Transportation Needs

- A. *Incorporate regional and state transportation needs identified in the RTP as well as local transportation needs. The determination of local transportation needs shall be based upon:*
 1. *System gaps and deficiencies identified in the inventories and analysis of transportation systems pursuant to Title 1;*
 2. *Identification of facilities that exceed the Deficiency Thresholds and Operating Standards in Table 3.08-2 or the alternative thresholds and standards established pursuant to section 3.08.230;*
 3. *Consideration and documentation of the needs of youth, seniors, people with disabilities and environmental justice populations within the city or county, including minorities and low-income families.*

FINDINGS: The TSP incorporates regional and state transportation needs identified in the 2040 RTP along with local transportation needs. The TSP includes an existing conditions (Chapter 3) and a future needs assessment (Chapter 4), which identifies existing deficiencies for walking, bicycling, transit, and driving within the city. To accommodate the needs for the populations listed in Subsection 3. above, the modal plans within the TSP for pedestrians, bicyclists, and transit call for well-designed and complete networks that provide convenient and safe connections to destinations within and near the city.

- B. *A local determination of transportation needs must be consistent with the following elements of the RTP:*
 1. *The population and employment forecast and planning period of the RTP, except that a city or county may use an alternative forecast for the city or county, coordinated with Metro, to account for changes to comprehensive plan or land use regulations adopted after adoption of the RTP;*

FINDINGS: The TSP is based on accepted population and employment forecasts for the existing city. In addition, three economic and market studies were undertaken for the urban expansion area, which is now referred to as Kingston Terrace. They were done to support the Concept Plan for URA 6D (predecessor to Kingston Terrace), the TSP, and draft KTMP. While the findings for all three were slightly different, they all found the development, population, and employment potential for this expansion area to essentially be the same. These forecasts were used to support the TSP.

2. *System maps and functional classifications for street design, motor vehicles, transit, bicycles, pedestrians and freight in Chapter 3 of the RTP; and*

FINDING: The TSP includes a functional classification map for the modes of transportation listed above (Chapter 4).

3. *Regional non-SOV modal targets in Table 3.08-1 and the Deficiency Thresholds and Operating Standards in Table 3.08-2.*

FINDINGS: The improvement of non-vehicular transportation facilities will likely have the greatest impact on reducing SOV traffic, by providing attractive options to driving for shorter, local trips. In addition, the city has worked closely with TriMet to identify ways to improve future transit service for the existing city per TriMet's Southwest Service Enhancement Plan and for Kingston Terrace.

- C. *When determining its transportation needs under this section, a city or county shall consider the regional needs identified in the mobility corridor strategies of the RTP.*

FINDING: Regional needs and future transportation improvement to the regional network (SW Roy Rogers Road, SW Beef Bend Road, Fischer/Kingston Terrace Blvd Extension and 99W) are reflected in the TSP.

3.08.220 Transportation Solutions

- A. *Each city and county shall consider the following strategies, in the order listed, to meet the transportation needs determined pursuant to section 3.08.210 and performance targets and standards pursuant to section 3.08.230. The city or county shall explain its choice of one or more of the strategies and why other strategies were not chosen:*
 1. *TSMO strategies, including localized TDM, safety, operational and access management improvements;*

FINDING: Future strategies to improve system performance are described in Chapter 6 of the TSP.

2. *Transit, bicycle and pedestrian system improvements;*

FINDINGS: The existing city has a reasonably complete sidewalk network. The TSP identifies the gaps and prioritizes their improvement. The bicycle network is also reasonably complete along the major streets including SW Beef Bend Road, 99W, SW 131st Avenue, and SW Fischer Road. The TSP calls for improving the internal street system to provide better connectivity through the local street and pathway network.

3. *Traffic-calming designs and devices;*

FINDINGS: The TSP includes several techniques to be employed for traffic calming and pedestrian safety. The draft KTMP builds on these techniques and will also include urban design elements to give motorists visual cues to reduce speeds.

4. *Land use strategies in OAR 660-012-0035(2) to help achieve the thresholds and standards in Tables 3.08-1 and 3.08-2 or alternative thresholds and standards established pursuant to section 3.08.230;*

FINDINGS: With beginnings as a retirement community followed by a subsequent wave of development following the implementation of minimum density requirements, the existing city is quite dense by suburban standards, and there is a health mix of housing types. In addition, the city adopted a plan and code amendments for the existing town center along 99W to ultimately transform it from a strip commercial center to a more vibrant mixed-use center. The land uses proposed for the Kingston Terrace area will continue to allow for a mix of housing types, higher overall densities, and a mixed-use main street/town center immediately east of SW Roy Rogers Road.

5. *Connectivity improvements to provide parallel arterials, collectors or local streets that include pedestrian and bicycle facilities, consistent with the connectivity standards in section 3.08.110 and design classifications in Table 3.3 of the RTP, in order to provide alternative routes and encourage walking, biking and access to transit; and*

FINDINGS: The arterial system is set with SW Roy Rogers Road, SW Beef Bend Road, and 99W. The TSP and draft KTMP call for an interconnected street network to the west of the existing city. This network will feature collector and neighborhood route streets as the “backbone” system with a finer-grained network of local streets. This system will accommodate efficient north-south and east-west travel throughout the area. In particular, the TSP contemplates street and pathway connections between the existing city and Kingston Terrace.

6. *Motor vehicle capacity improvements, consistent with the RTP Arterial and Thoroughway Design and Network Concepts in Table 3.3 and section 3.5 of the RTP, only upon a demonstration that other strategies in this subsection are not appropriate or cannot adequately address identified transportation needs.*

FINDINGS: The TSP project list in (Chapter 5) include motor vehicle capacity improvements where the needs could not be addressed by the strategies listed in Subsection 1 through 5 above. Intracity connectivity is a major theme throughout the TSP and draft KTMP. East-west connectivity is challenging due to the “growth rings” of first the retirement community and then the expansion to SW 137th Avenue where future western expansion was not contemplated at the time of development. These boundaries are less permeable, but the TSP proposes aspirational connections to existing and future pedestrian, bike, and vehicular connections that can be made to link the city east to west.

- B. *A city or county shall coordinate its consideration of the strategies in subsection A with the owner of the transportation facility affected by the strategy. Facility design is subject to the approval of the facility owner.*

FINDINGS: The city and TSP consultant has and will continue to work with Washington County and ODOT regarding strategies to reduce vehicular travel demand.

- C. *If analysis under subsection 3.08.210A indicates a new regional or state need that has not been identified in the RTP, the city or county may propose one of the following actions:*
 1. *Propose a project at the time of Metro review of the TSP to be incorporated into the RTP during the next RTP update;*
or
 2. *Propose an amendment to the RTP for needs and projects if the amendment is necessary prior to the next RTP update.*

FINDINGS: King City has proposed amendments to the RTP comprising of 14 additional projects of a regional significance and improving the regional system. Some of these projects have been broken into smaller phases due to the costs and projected development. These projects are included in the TSP and carry a classification of Collector, Minor Collector, or Regional Trail. The City’s TSP considers the addition or enhancement of 1 Highway, 2 Arterials, 6 Collectors, 2 Regional Trails, Sidewalk Enhancement Projects, and Multimodal Trail Access Projects. These projects were submitted for approval to the King City - City Council in December of 2022 for submittal to Washington County and Metro’s RTP Hub.

3.08.230 Performance Targets and Standards

- A. *Each city and county shall demonstrate that solutions adopted pursuant to section 3.08.220 will achieve progress toward the targets and standards in Tables 3.08-1, and 3.08-2 and measures in subsection D, or toward alternative targets and standards adopted by the city or county pursuant to subsections B and, C. The city or county shall include the regional targets and standards or its alternatives in its TSP.*

FINDINGS: The findings for Subsections in 3.08.220.A demonstrate how the city will make progress toward the targets and standards in Tables 3.08-1 and 3.08-2 through completion of the TSP projects.

- B. *A city or county may adopt alternative targets or standards in place of the regional targets and standards prescribed in subsection A upon a demonstration that the alternative targets or standards:*
 1. *Are no lower than the modal targets in Table 3.08-1 and no lower than the ratios in Table 3.08-2;*

2. *Will not result in a need for motor vehicle capacity improvements that go beyond the planned arterial and throughway network defined in Figure 2.12 of the RTP and that are not recommended in, or are inconsistent with, the RTP; and*
3. *Will not increase SOV travel to a degree inconsistent with the non-SOV modal targets in Table 3.08-1.*

FINDING: The city will not be pursuing alternative targets or standards.

- C. *If the city or county adopts mobility standards for state highways different from those in Table 3.08-2, it shall demonstrate that the standards have been approved by the Oregon Transportation Commission.*

FINDING: The city is not pursuing alternative targets or standards.

- D. *Each city and county shall also include performance measures for safety, vehicle miles traveled per capita, freight reliability, congestion, and walking, bicycling and transit mode shares to evaluate and monitor performance of the TSP.*

FINDINGS: Completion of the TSP project list will enhance existing pedestrian and bicycling facilities in the city, which is expected to encourage fewer SOV trips locally. This would have a beneficial effect on the arterial streets under county and state jurisdiction. Walking and bicycling performance will be measured by the improvements and gaps removed from the networks shown in the TSP.

- E. *To demonstrate progress toward achievement of performance targets in Tables 3.08-1 and 3.08-2 and to improve performance of state highways within its jurisdiction as much as feasible and avoid their further degradation, the city or county shall adopt the following:*
 1. *Parking minimum and maximum ratios in Centers and Station Communities consistent with subsection 3.08.410.A;*

FINDINGS: The city's parking standards are consistent with Metro requirements. The city will make additional amendments to its parking standards in accordance with the state's Climate Friendly and Equitable Communities legislation. The city requested and received a 2-year extension to allow completion and adoption of the TSP and draft KTMP before making corresponding Community Development Code amendments. These amendments are currently scheduled for completion by the end of 2023.

2. *Designs for street, transit, bicycle, freight, and pedestrian systems consistent with Title 1; and*

FINDING: The TSP evaluates existing and future transportation needs for all modes including design alternatives for each (Chapters 3 and 4).

3. *TSMO projects and strategies consistent with section 3.08.160; and*

FINDINGS: The TSP focuses on making alternative to car travel attractive for local trips. The city also coordinates with Washington County, ODOT, Tigard, and TriMet to reduce auto travel demand.

4. *Land use actions pursuant to OAR 660-012-0035(2nd use decision described in ORS 197.015(10) (a) (A).*

FINDING: See findings for OAR 660-012-0035 above.

Title 3: Transportation Project Development

3.08.310 Defining Projects in Transportation System Plans

- A. *Each city or county developing or amending a TSP shall specify the general locations and facility parameters, such as minimum and maximum ROW dimensions and the number and width of traffic lanes, of planned regional transportation facilities and improvements identified on the appropriate RTP map. The locations shall be within the general location depicted in the appropriate RTP map. Except as otherwise provided in the TSP, the general location is as follows:*

1. *For new facilities, a corridor within 200 feet of the location depicted on the appropriate RTP map;*
2. *For interchanges, the general location of the crossing roadways, without specifying the general location of connecting ramps;*
3. *For existing facilities planned for improvements, a corridor within 50 feet of the existing right-of-way; and*
4. *For realignments of existing facilities, a corridor within 200 feet of the segment to be realigned as measured from the existing right-of-way depicted on the appropriate RTP map.*

FINDING: The RTP network maps were used to guide the development of the TSP, and therefore it is consistent with the regional plan.

- B. *A city or county may refine or revise the general location of a planned regional facility as it prepares or revises its TSP. Such revisions may be appropriate to reduce the impacts of the facility or to comply with comprehensive plan or statewide planning goals. If, in developing or amending its TSP, a city or county determines that the general location of a planned regional facility or improvement is inconsistent with its comprehensive plan or a statewide planning goal requirement, it shall:*
1. *Propose a revision to the general location of the planned facility or improvement to achieve consistency and, if the revised location lies outside the general location depicted in the appropriate RTP map, seek an amendment to the RTP; or*
 2. *Propose a revision to its comprehensive plan to authorize the planned facility or improvement at the revised location.*

FINDING: This is not applicable because no revision to the location of any regional transportation facilities is proposed in the TSP.

In Sum, the King City Transportation System Plan is consistent with the rules and regulations of the Metro Regional Transportation Functional Plan, Title 2.

KING CITY COMPREHENSIVE PLAN

The King City Comprehensive Plan uses the Statewide Planning Goals for policy direction and therefore, the findings for the state goals above apply to the comprehensive plan as well. In addition, the Transportation – Goal 12 has policies that are relevant, and they are addressed below.

The City shall strive to create a transportation system which:

Is coordinated with other agencies including Oregon Department of Transportation, Washington County, city of Tigard, Tri-Met, and Metro;

FINDING: As noted in the findings above regarding OAR 660-012, the city has actively coordinated with all of these agencies and will continue to do so.

Provides suitable facilities for all modes of transportation including walking, bicycling, and transit;

Provides for special needs for individuals who do not have ready access to automobiles or transit;

Encourages the use of other transportation alternatives to the automobile by providing improvements to facilities, amenities, and programs.

FINDING: As noted in the findings above regarding OAR 660-012, the city has actively promoted these forms of transportation. The transportation systems for these modes is described in the plan along with a robust improvements list to further improve active transportation within the city.

City streets are paved and typically include sidewalks. The local street and sidewalk system generally provides safe and convenient access for motorists, pedestrians, and bicyclists throughout the City. The City will look for opportunities to improve this system to further enhance convenience and safety. Provision of improved crosswalks, benches, landscaping, etc. will be considered to promote walking and bicycling.

FINDING: The TSP follows this directive by emphasizing improvements to the existing pedestrian and bicycling networks.

In Sum, the King City Transportation System Plan is consistent with the rules and regulations of the King City Comprehensive Plan.

METRO UGB DECISION, EXHIBIT C TO ORDINANCE 18-1427

A. Conditions of Approval on Land Added to UGB.

1. Within four years after the date of this ordinance, the four cities shall complete comprehensive planning consistent with Metro code section 3.07.1120 (Planning for Areas Added to the UGB).

FINDINGS: In 2018, King City adopted the *King City Urban Reserve Area 6D Concept Plan*, which created an initial vision to urbanize the area. Metro approved the plan and expanded the Urban Growth Boundary to include the Urban Reserve 6D Area. This led to the current Kingston Terrace Master Plan process.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #1.

2. The four cities shall allow, at a minimum, single-family attached housing, including townhomes, duplexes, triplexes, and fourplexes, on all lots on which single family housing is allowed in the expansion areas; however, cities may adopt standards that limit housing types on particular lots if necessary due to site constraints or in order to comply with environmental protections under the Metro Code or state law.

FINDINGS: As described in the response to Oregon Statewide Planning Goal 10, Oregon's middle housing legislation (House Bill 2001) introduced statewide requirements for all but the smallest cities to allow middle housing in areas that would otherwise be zoned for detached single-family dwellings. Within the Portland metropolitan service district, all cities above 1,000 residents (including King City) are required to allow duplexes, triplexes, quadplexes, cottage clusters, and townhomes in residential zones where detached single-family dwelling uses are permitted. The HB 2001 middle housing rule placed minimum density requirements for master planned areas which will apply to Kingston Terrace; minimum density per net acre is set at 20 dwelling units.

The King City Middle Housing Code Update project updated the King City Comprehensive Plan (Plan) and Community Development Code (CDC) to fully comply with the Oregon State House Bill 2001 for Housing Choices. The project:

1. Further expanded the range of middle housing types in King City, which are to be allowed and encouraged citywide.
2. Streamlined the review and approval process with clear and objective standards for middle housing.
3. Updated dimensional standards and design criteria so they are consistently and fairly applied to all types of residential construction.

Specific amendments to the Community Development Code that will apply to the KTMP included:

- Section 16.24.030 C. Residential Use Types – amendments to residential use definitions.

- Chapters 16.84 through 16.100 (R-9, SF, AT, R-12, R-15, and R-24 districts) – combine the provisions for the city’s residential districts into one overall residential zoning chapter with a reorganized and amended set of development and design standards.
- Chapters 16.80 and 16.82 – supporting amendments for consistency with the Chapter 16.84 through 16.100 amendments.
- Chapter 16.132 Parking and Loading – minor residential parking amendments.
- Chapter 16.146 Density Calculations – amendments to clarify that density maximums do not apply to duplexes, quadplexes, triplexes, or cottage clusters, that townhouses have a maximum density of 25 dwelling units per acre, and cottage clusters have minimum density requirement of 4 dwelling units per acre and are exempt from density maximums.
- Section 16.152.020 Applicability of Provisions – remove site plan review requirements for duplexes, triplexes, quadplexes, and cottage cluster development from the requirements of Chapter 16.152 Site Plan Review – amendments to coincide with other proposed CDC amendments.
- Chapter 16.179 Accessory Dwelling Units – delete references to “single family dwelling.”

Manufactured homes will also be permitted within Kingston Terrace. In 16.24.030 (Definitions of land use types), manufactured homes are defined as: “a structure constructed for movement on the public highways that has sleeping, cooking and plumbing facilities, that is intended for human occupancy, that is being used for residential purposes and that was constructed in accordance with federal manufactured housing construction and safety standards regulations in effect at the time of construction. It does not mean any building or structure subject to the structural specialty code adopted pursuant to ORS 455.100 to 455.450, any unit identified as a recreational vehicle by the manufacturer, or a modular home.”

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #2.

3. The four cities shall explore ways to encourage the construction of ADUs in the expansion areas.

FINDINGS: Among the specific amendments to the Community Development Code were updates to:

- Ensure that minimum density requirements were in place for each residential zone.
- Update the chapter on Accessory Dwelling Units to:
 - Clarify that at least one accessory dwelling unit is allowed for each detached single-family dwelling unit in each zone
 - Comply with Metro code section 3.07.120(g) and ORS 197.312(5)
 - Clarify that accessory dwelling units do not need to be owner occupied
 - Clarify that off street parking is not required when street parking is available.
 - Remove barriers to the construction of accessory dwelling units, including:
 - the requirement that accessory dwelling units can only be built on lots that are at least 7,500 square feet, which effectively prohibits construction of accessory dwelling units in the city
 - the requirement that accessory dwelling units be no bigger than 33 percent of the square footage of the primary home so that an accessory dwelling unit of at least 800 square feet would be allowable

King City plans to consider scaling system development charges based on unit size, which would encourage the construction of ADUs.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #3.

4. As the four cities conduct comprehensive planning for the expansion areas, they shall address how their plans implement relevant policies adopted by Metro in the 2014 regional Climate Smart Strategy regarding: (a) concentrating mixed-use and higher density development in existing or planned centers; (b) increasing use of transit; and (c) increasing active transportation options. The cities shall coordinate with the appropriate county and transit provider regarding identification and adoption of transportation strategies.

FINDINGS: This Condition of Approval is addressed in the responses to Oregon Statewide Planning Goals 2, 10, and 12 and Metro Titles 1, 7, and 11.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #4.

5. As the four cities conduct comprehensive planning for the expansion areas, they shall regularly consult with Metro Planning and Development staff regarding compliance with these conditions, compliance with the Urban Growth Management Functional Plan, compliance with the state Metropolitan Housing Rule, and use of best practices in planning and development, and community engagement. To those ends, cities shall include Metro staff in advisory groups as appropriate.

FINDINGS: Several members of the Metro Planning and Development staff participated on the KTMP Technical Advisory Committee and were consulted regularly regarding compliance with these conditions, compliance with the Urban Growth Management Functional Plan, compliance with the state Metropolitan Housing Rule, and use of best practices in planning and development, and community engagement.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #5.

6. At the beginning of comprehensive planning, the four cities shall develop – in consultation with Metro – a public engagement plan that encourages broad-based, early and continuing opportunity for public involvement. Throughout the planning process, focused efforts shall be made to engage historically marginalized populations, including people of color, people with limited English proficiency and people with low income, as well as people with disabilities, older adults and youth.

FINDINGS: This Condition of Approval is addressed in the response to Oregon Statewide Planning Goal 1. A Community Engagement Plan was developed at the outset of the project. Focused efforts were made to engage the Spanish and Korean speaking communities of King City. A variety of in-person and online opportunities to participate were provided using accessible methods and locations.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Condition of Approval on Land Added to UGB #6.

B. Citywide Requirements (for the four cities)

1. Within one year after the date this ordinance is acknowledged by LCDC (excluding any subsequent appeals), the four cities shall demonstrate compliance with Metro code Exhibit C to Ordinance No. 18-1427 2 section 3.07.120(g) and ORS 197.312(5) regarding accessory dwelling units. In addition to the specific requirements cited in Metro code and state law, cities shall not require that

accessory dwelling units be owner occupied and shall not require off street parking when street parking is available.

FINDINGS: This Citywide Requirement was addressed in the responses to Oregon Statewide Planning Goal 10 and Metro Condition of Approval for Land Added to UGB 3.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #1.

2. Within one year after the date this ordinance is acknowledged by LCDC (excluding any subsequent appeals), the four cities shall demonstrate compliance with ORS 197.309 regarding clear and objective standards for affordable housing.

FINDINGS: This Citywide Requirement was addressed in the responses to Oregon Statewide Planning Goal 10.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #2.

3. Before amending their comprehensive plans to include the expansion areas, the four cities shall amend their codes to ensure that any future homeowners associations will not regulate housing types, including accessory dwelling units, or impose any standards that would have the effect of prohibiting or limiting the type or density of housing that would otherwise be allowable under city zoning.

FINDINGS: King City amended Chapter 16.80.080(C) of the Community Development Code to address this Citywide Requirement.

16.80.080 Other requirements.

C. No homeowners' association governing documents or deed restrictions shall be recorded to regulate housing types, including accessory dwelling units, or impose any standards, including owner occupancy, which would have the effect of prohibiting or limiting the type or density of housing that would otherwise be allowable under this code. Any such restriction recorded on or after January 1, 2020, and that restriction violated state housing laws, shall be deemed void and removed pursuant to this section and applicable state housing law.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #3.

4. Before amending their comprehensive plans to include the expansion areas, the four cities shall amend their codes to ensure that any future homeowners associations will not require owner occupancy of homes that have accessory dwelling units.

FINDINGS: King City amended Chapter 16.80.080(C) of the Community Development Code to address this Citywide Requirement.

16.80.080 Other requirements.

C. No homeowners' association governing documents or deed restrictions shall be recorded to regulate housing types, including accessory dwelling units, or impose any standards, including owner occupancy,

which would have the effect of prohibiting or limiting the type or density of housing that would otherwise be allowable under this code. Any such restriction recorded on or after January 1, 2020, and that restriction violated state housing laws, shall be deemed void and removed pursuant to this section and applicable state housing law.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #4.

5. The four cities shall continue making progress toward the actions described in Metro Code section 3.07.620 (Actions and Investments in Centers, Corridors, Station Communities, and Main Streets).

FINDINGS: This Citywide Requirement was addressed in the response to Metro Title 6.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #5.

6. Cities shall engage with service providers to consider adoption of variable system development charges designed to reduce the costs of building smaller homes in order to make them more affordable to purchasers and renters.

FINDINGS: King City has engaged service providers including the City of Tigard and Clean Water Services in considering the adoption of variable system development charges designed to reduce the costs of building smaller homes in order to make them more affordable to purchasers and renters. The City of Tigard and Clean Water Services had representatives participate on the KTMP Technical Advisory Committee.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #6.

7. For at least six years after this UGB expansion, the four cities shall provide Metro with a written annual update on compliance with these conditions as well as planning and development progress in the expansion areas. These reports will be due to the Metro Chief Operating Officer by December 31 of each year, beginning December 31, 2019.

FINDINGS: The City of King City has regularly provided Metro with written annual updates on compliance with these conditions as well as planning and development progress in the expansion areas since the UGB expansion.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Citywide Requirement #7.

C. Requirements for King City

1. King City shall coordinate with Washington County and the City of Tigard as it engages in its work on a Transportation System Plan, other infrastructure planning, and comprehensive planning.

FINDINGS: King City has coordinated with Washington County in the development of the *King City Urban Reserve Area 6D Concept Plan*, *King City Transportation System Plan*, and *Kingston Terrace Master Plan*.

Representatives from Washington County and the City of Tigard participated on the TSP and KTMP Technical Advisory Committees. In addition, regular coordination meetings were held with representatives from Washington County, Tigard, and King City.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #1.

2. Before amending the King City comprehensive plan to include the expansion area, King City shall conduct additional market analysis to better understand the feasibility of creating a new mixed-use town center.

FINDINGS: This Requirement for King City was addressed in the responses to Oregon Statewide Planning Goal 9 and Metro Titles 4 and 6.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #2.

3. Pending the results of the market analysis of a new town center, King City shall plan for at least 3,300 homes in the Beef Bend South expansion area. If the market analysis indicates that this housing target is infeasible, King City shall work with Metro to determine an appropriate housing target for the expansion area.

FINDINGS: This Requirement for King City was addressed in the responses to Oregon Statewide Planning Goal 9 and Metro Titles 7 and 11.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #3.

5. Pending the results of the market analysis of a new town center, Metro will work with King City to make necessary changes to the 2040 Growth Concept map.

FINDINGS: This Requirement for King City was addressed in the responses to Oregon Statewide Planning Goal 9 and Metro Titles 4, 6, 11, and 12.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #5.

6. Prior to amending the King City comprehensive plan to include the expansion area, King City shall complete a Transportation System Plan for the city.

FINDINGS: King City has prepared this Transportation System Plan that includes the existing city and the KTMP area.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #6.

7. Prior to amending the King City comprehensive plan to include the expansion area, King City shall amend its code to remove barriers to the construction of accessory dwelling units, including:
 - a. Remove the requirement that accessory dwelling units can only be built on lots that are at least 7,500 square feet, which effectively prohibits construction of accessory dwelling units in the city.
 - b. Remove or increase the requirement that accessory dwelling units be no bigger than 33 percent of the square footage of the primary home so that an accessory dwelling unit of at least 800 square feet would be allowable.

FINDINGS: This Requirement for King City was addressed in the responses to Oregon Statewide Planning Goal 10, Metro Condition of Approval for Land Added to UGB 3, and Citywide Requirement #1.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #7.

8. The Columbia Land Trust holds a conservation easement over portions of the Bankston property, which King City's concept plan identifies as the intended location for a key transportation facility serving the expansion area. King City shall work with the Columbia Land Trust to protect, to the maximum extent possible, the portion of the Bankston property covered by the conservation easement.

FINDINGS: The Columbia Land Trust holds a conservation easement over portions of the Bankston property, which King City's concept plan identifies as the intended location for a key transportation facility serving the expansion area. The KTMP proposes an extension of SW Fischer Road to complete an east/west collector street from Highway 99 to Roy Rogers Road. The collector is anticipated to be a two lane street that spans over the northern portion of the conservation easement where it is narrowest and where the least valuable resources within the conservation easement exist.

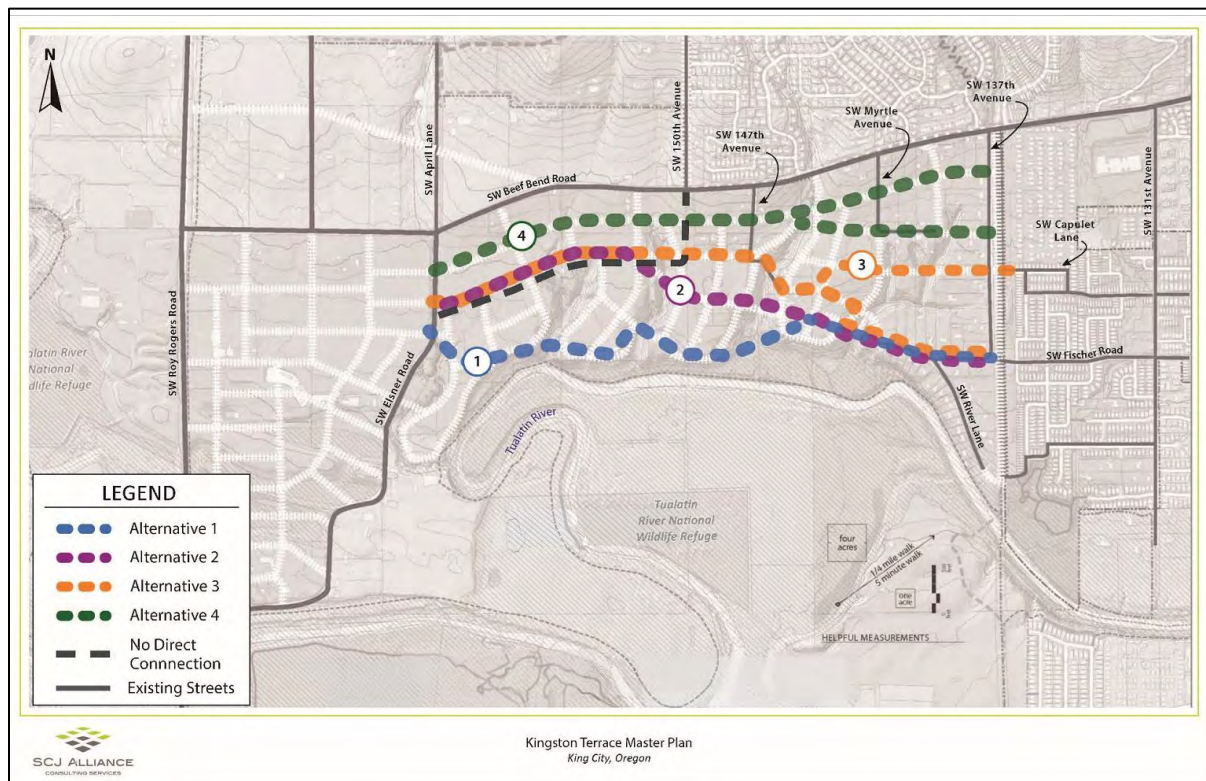
The City anticipates that the bridge or bottomless culvert will impact up to 1/2-acre of the 12-acre easement. This alignment, along with protection and enhancement measures taken at the time of development, will minimize impacts to the conservation easement to the maximum extent possible. The majority of the easement that lies closer to the Tualatin River and contains high value resources will remain protected from development. The street and associated infrastructure will be subject to applicable federal, state, regional, and local environmental regulations. The precise route of the collector street, a complete description of impacts, and any necessary mitigation will be determined during the street design phase, prior to construction.

The *King City Urban Reserve Area 6D Concept Plan*, *Draft King City Transportation System Plan*, and *Kingston Terrace Master Plan Existing Conditions Report* identified the need for an east/west collector street to facilitate intercity trips thereby reducing the number of trips on SW Beef Bend Road. Traffic modeling showed that without an additional collector street, SW Beef Bend Road would need to be expanded to five lanes from the KTMP area east to Highway 99. This expansion of SW Beef Bend Road would require the demolition of multiple residences, including several multifamily structures.

In 2022, as part of the KTMP process, the City prepared the East/West Circulation Alternatives Analysis. This report was prepared to document the multi-disciplinary analysis process leading to the identification of a preferred east/west circulation alternative for the KTMP area. Consistent with prior planning work in the study area through the Concept Plan, it was intended that this east/west circulation alternative function as a collector street to:

- Link neighborhoods and other destinations across Kingston Terrace with particular focus on connecting residential areas with the proposed Main Street / Town Center
- Connect Kingston Terrace to destinations within the existing city
- Connect Kingston Terrace to Tigard's River Terrace via an east/west and north/south collector street system.

The report was built on information collected and analyzed for the master planning effort including multimodal Baseline Conditions analyses and the Draft King City Transportation System Plan (TSP). This information was supplemented by further multidisciplinary research focused on land use, socio-economic and environmental justice considerations, transportation elements, public utilities and services, and natural resources. Order-of-magnitude cost estimates for each east/west circulation alignment alternative were also prepared and documented. Four alternative alignments were evaluated for the east/west collector along with a no build option. All four alternatives would connect to SW Fischer Road either directly or via SW 137th Avenue. SW Fischer Road is the only east/west street in existing King City designed to be a collector. Other possible connections, such as B and C Streets, which are private roads through a manufactured home park, a source of naturally occurring affordable housing, and SW Capulet Lane would require the demolition of multiple homes.



Based on the results of this analysis, Alternative 2 was identified as the preferred east/west connection to be used to complete the Kingston Terrace Master Plan. Alternative 2 has particular advantages including:

- This alternative does not require demolition of existing homes in the study area.
- Alternative 2 would likely require less right-of-way acquisition than Alternatives 3 or 4 due to its use of existing roadway rights-of-way.

- As a collector road providing redundancy for Beef Bend Road and serving a newly developing area, this alternative is most likely to secure public funding from state, regional, and county sources that would reduce the need for developer funding for this key piece of roadway infrastructure.
- The alignment offers both a central spine or backbone roadway through the development linking it most directly with the Kingston Terrace Town Center and the existing city. This has advantages for:
 - Emergency response (TVFR has indicated a preference for Alternative 2)
 - Good access to many neighborhoods and new public parks
 - Potential future regional transit service through a developed area when densities are sufficient
 - Good connectivity and minimized travel times for active and vehicular transportation
 - Minimization of the potential for either long cul-de-sacs or closed end roadways that require out of direction travel, discourage pedestrian and bicycle use, and may result in added utility costs

The analysis determined that Alternative 1 is aligned too close to the Tualatin River resulting in significant impacts on natural resources and a high cost of development. Alternative 4 is located too close to SW Beef Bend Road to remove trips from SW Beef Bend Road and therefore does not meet KTMP connectivity and circulation objectives. Alternative 3 had many of the same benefits as Alternative 2, but is less likely to be eligible for state, regional, and county funding needed to construct the street due to its indirect connection to SW Fischer Road.

Alternative 2 may provide the opportunity to co-locate sanitary sewer facilities with other infrastructure, which is a policy of the KTMP for Public Utilities and Services. The alignment has the potential to maximize the effectiveness of gravity sewer through co-location of utilities along an optimal elevation for sewage flow. This would reduce the on-going cost of this public utility. Additionally, the alternative does not create long closed end roadway segments that may require added infrastructure cost to provide potable water.

To properly plan and account for potential growth within the sanitary service area, Clean Water Services is conducting a study of potential alignments for future sanitary system improvements that allow for flexibility to meet the needs of the multiple jurisdictions. Options for potential alignments may include gravity service, multiple pump stations, or a combination of these approaches for sanitary service. Final alignments will be dependent on development patterns, timing for development, capacity needs, and other factors.

CWS will look for opportunities to co-locate its infrastructure with new roads, but this will not be the only factor considered. Other considerations may include but are not limited to, social impacts, environmental impacts, initial costs, long-term maintenance costs and logistics, as well as land suitability to avoid impacts such as landslides and active erosion.

The alignment has the potential to maximize the effectiveness of gravity sewer through co-location of utilities along an optimal elevation for sewage flow. This would reduce the on-going cost of this public utility. Additionally, the alternative does not create long closed end roadway segments that may require added infrastructure cost to provide potable water.

Representatives of the Columbia Land Trust participated on the KTMP Technical Advisory Committee and have provided comments throughout the KTMP planning process. In addition, several meetings have been held between representatives of the Columbia Land Trust and King City. Columbia Land Trust representatives have expressed several concerns through formal comment letters, including:

- B. Alternatives 1, 2, and 3S, by crossing the Bankston property and other properties along the Tualatin River, would significantly impact conservation values of those properties and of the river itself.

- C. King City is placing insufficient emphasis on the condition Metro attached to its approval of the King City urban growth expansion plan regarding protection of the Bankston conservation easement.
- D. Alternative 2 would be more costly than King City believes.
- E. Alternatives 3N or 4 offer several advantages, without the disadvantages of the southern route across the Bankston easement and other environmentally sensitive properties.

In response to Columbia Land Trust concerns, the City of King City has narrowed the street profile from three to two lanes and adjusted the street alignment further north to avoid the highest value resources. The street and a multiuse path on the south side of the street will act as a buffer between development and the Tualatin River. In addition, the City has offered to designate the entire parcel as Recreational Open Space as an additional layer of protection against future development.

Additional benefits and opportunities the collector street provides include opportunities to implement erosion control solutions along the ravines. The City and CWS could provide water quality treatment of existing impervious areas with a particular focus on hydromodification. Although retrofit opportunities may be limited, it will be important to identify those that are there to arrest existing stream degradation and provide better protection from future development. Future development within the planning area should be coordinated with current upstream planning efforts to mitigate high flow events and prevent further degradation of the existing drainage ways.

CWS will provide recommendations to enhance streams from their current conditions back to a more “natural” state. This approach could include elements such as expanding floodplains, laying back of stream banks, raising the stream beds, installing grade control, and roughening of stream beds to slow runoff. CWS will look at these opportunities from stormwater management and stream resiliency perspectives, particularly for streams generally to the east of SW Elsner Road, which have suffered the most from existing development.

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #8.

- 9. To reduce housing costs, King City shall, in its comprehensive planning, explore ways to encourage the use of manufactured housing in the expansion area.

FINDINGS: This Citywide Requirement was addressed in the responses to Oregon Statewide Planning Goal 10, Metro Condition of Approval for Land Added to UGB 3, and Metro Citywide Requirement #6

Based on the findings above, the KC-TSP and KTMP are consistent with Metro Requirement for King City #9.

WASHINGTON COUNTY-KING CITY URBAN PLANNING AREA AGREEMENT

II. Coordination of Comprehensive Planning and Development

FINDINGS: Section II of the Washington County-King City Urban Planning Area Agreement (UPAA) requires King City to provide Washington County with the appropriate opportunity to participate, review, and comment on proposed amendments to the King City Comprehensive Plan and implementing regulations. Specific requirements for King City include:

- Notify Washington County of proposed amendments to the King City Comprehensive Plan no less than 35 calendar days prior to the first hearing on adoption.

- Provide Washington County the opportunity to participate on the City's advisory committee.
- Transmit the draft amendments as an attachment to electronic mail to Washington County for its review and comment before finalizing. Washington County has 10 calendar days after receipt of the draft to submit comments orally or in writing.
- Revise the final recommendations based on Washington County comments or respond by letter explaining why the comments cannot be addressed in the final draft.
- Include comments from Washington County in the public record.
- Upon final adoption, transmit the ordinance to Washington County as soon as publicly available.

A representative from Washington County participated on the KTMP Technical Advisory Committee. Washington County representatives participated in meetings with King City and reviewed draft documents throughout the process and worked with King City staff to revise project documents accordingly. Washington County was notified no later than 35 days before the first hearing for the KTMP and comprehensive plan amendments.

Based on the findings above, the KC-TSP and KTMP are consistent with Washington County-King City Urban Planning Area Agreement, Section II.

IV. Comprehensive Planning and Development Policies for Urban Planning Areas

FINDINGS: Section IV of the UPAA requires Washington County and King City to amend any agreements related to the KTMP area as needed in response to modifications to the comprehensive plan proposed in the KTMP. Section IV also states that King City will be the provider of local water, sanitary sewer, storm sewer, and transportation facilities within the urban planning area, except for facilities provided by other service providers through intergovernmental agreements. King City is also responsible for preparing and adopting a public facility plan as required by OAR 660-11.

This section of the UPAA was addressed in the responses to Oregon Statewide Planning Goal 11 and Metro Title and 11.

Based on the findings above, the KC-TSP and KTMP are consistent with Washington County-King City Urban Planning Area Agreement, Section IV.