KING CITY MASTER PLAN

EXISTING CONDITIONS REPORT

January 12, 2021

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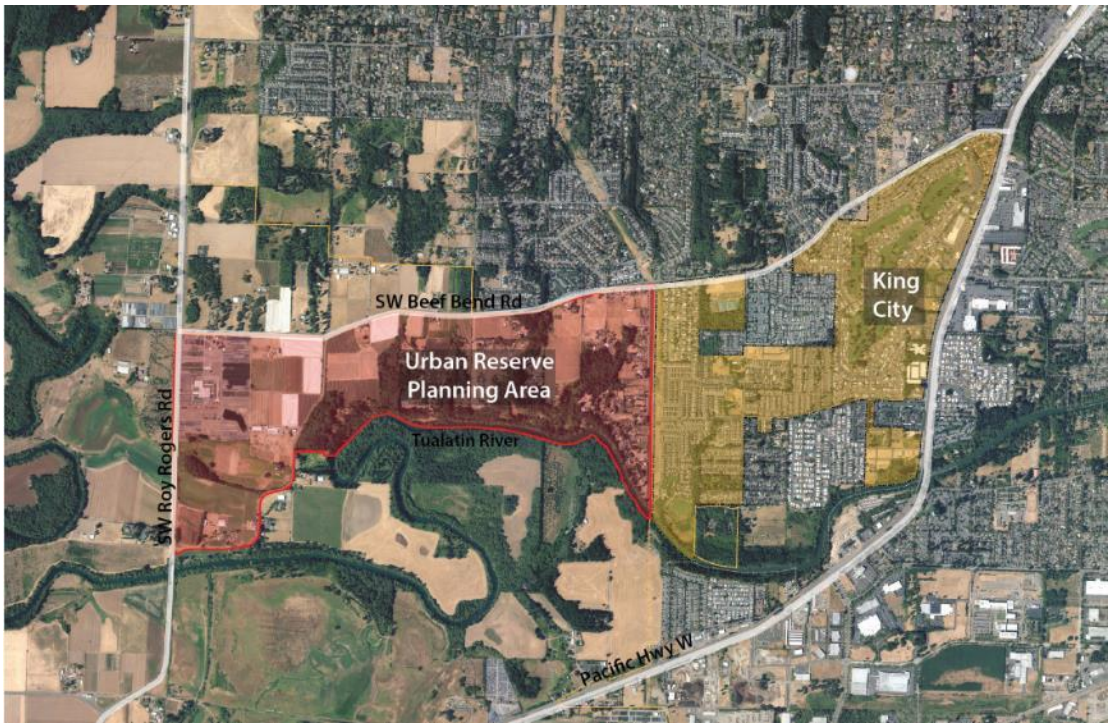
Introduction

Following King City's completion of the *King City Urban Reserve Area 6D Concept Plan*, Metro approved the inclusion of King City Urban Reserve Area (URA) 6D into the urban growth boundary (UGB) in 2018. The Concept Plan started the planning processes necessary to urbanize URA 6D, including a series of baseline reports addressing housing, land uses, transportation routes, parks and open spaces, public facilities, governance, and infrastructure costs for the area. The Concept Plan process also engaged the public to create a community vision and preliminary design considerations for the area. The *King City Master Plan* builds on the Concept Plan to provide additional development detail and implement the community vision resulting in Comprehensive Plan and Community Development Code amendments.

With the start of the King City Master Plan process, URA 6D Area is now referred to as the King City Master Plan (KCMP) area. The KCMP area (Figure 1) is bounded by current King City limits to the east, Beef Bend Road on the north, the Tualatin River/Elsner Road on the south, and Roy Rogers Road to the west. This area of approximately 528 acres is completely within Washington County.

This Existing Conditions Report documents existing policies, plans, infrastructure, and transportation systems in the KCMP area as an initial step in the King City Master Plan.

Figure 1. King City Maser Plan Area (Urban Reserve Planning Area 6D)



Existing Policy and Plan Analysis

The following section summarizes policy documents and current planning processes in and around the King City Master Plan area and assesses policies and codes that may need to be added, removed or modified to support the KCMP. Particular consideration is given to Oregon House Bills 2001 and 2003 and active projects in areas along Roy Rogers Road and the north and south of Beef Bend Road.

Relevant King City Planning Documents

King City Concept Plan

The King City Concept Plan, completed in 2018, created an initial vision for urbanizing the KCMP area and identified a series of tasks that should be undertaken during the master planning effort, including, but not limited to:

- Refine the land use concept by more specifically identifying land use and development parameters.
- Conduct additional planning, design, and coordination with partner agencies regarding public facilities and infrastructure, including transportation, water, sanitary sewer, stormwater, parks, civic uses, and schools.
- Create a phasing plan for development and the public facilities necessary to support it.
- Refine the financing mechanisms for providing necessary facilities and infrastructure.
- Identify necessary updates for the King City Comprehensive Plan and Community Development Code.

The Vision and Goals from the *King City URA 6D Concept Plan* which relate to the KCMP are as follows:

- *Sensitivity to Tualatin River and Surrounding Natural Areas*
    - Tualatin River as the primary reason for settling in this area
    - Graceful transitions between neighborhoods, and between developed and natural areas
    - Integrated stormwater management throughout
    - Integrate nature into developed areas
- *Community of Great Neighborhoods*
    - Character of development: a blend of residential and, in some locations, neighborhood-serving commercial.
    - Denser development is desirable provided there is easy access to green spaces.
    - Range of housing types and inclusive development: provide a mix of housing to accommodate a wide range of household types, incomes, and needs.
    - Historical context: new development should respect the history of the area.

    - Connected communities: Build connections between new developments and existing King City.

- *Universal Access and Fluidity of Transportation*
    - Support all modes of transportation
    - Provide a complete network of street and path types
    - Provide a connected transportation network

King City Transportation System Plan

The City's first *Transportation System Plan* (TSP) is in early stages of development. This planning effort will run roughly concurrent with the King City Master Plan effort and will be carefully coordinated and integrated at each stage. The primary focus of the TSP will be on citywide transportation issues and the integration of the city's transportation system within the regional multimodal network of services and facilities operated by ODOT, Washington County, Tigard, Sherwood, Tualatin and TriMet. Key work elements identified for preparation of the TSP include:

- Establish a transportation vision, goals and policies along with infrastructure standards and performance measures. Includes walking, bicycling, low speed vehicles, transit, freight, motor vehicles, other modes, safety and connectivity *(Timeline: August to December 2020).*
- Existing conditions and needs analysis *(Timeline: October 2020 to February 2021)*.
- Transportation network evaluation including improvement alternatives, map and project lists, financial feasibility assessment, and revenue enhancement analysis *(Timeline: January to April 2021)*.
- Draft TSP *(Timeline: April to June 2021)*.

Key points of integration with the King City Master Plan include input into the transportation vision, goals, policies and performance measures for King City that reflects the unique characteristics and intent for development of the Master Plan study area. This report notes where additional information from the TSP is not yet available.

King City TSP Land Use Assumptions Memorandum

The Land Use Assumptions memo was prepared as part of the King City TSP project. Metro placed a number of conditions on the King City UGB expansion. Those that affect land use assumptions are excerpted below.

For the purpose of expanding the UGB 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 (ADUs), and the other requires the city to explore ways to encourage the use of manufactured housing in the expansion area.

Land Use Assumptions

Land use assumptions for the Transportation System Plan draw from two main planning efforts: The *King City URA 6D 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 and the Concept Plan agree on upwards of 50,000 square feet of commercial and identifies an overall total of 3,576 dwelling units could be accommodated within a 10- to 20-year horizon. 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 (see Figure 2):

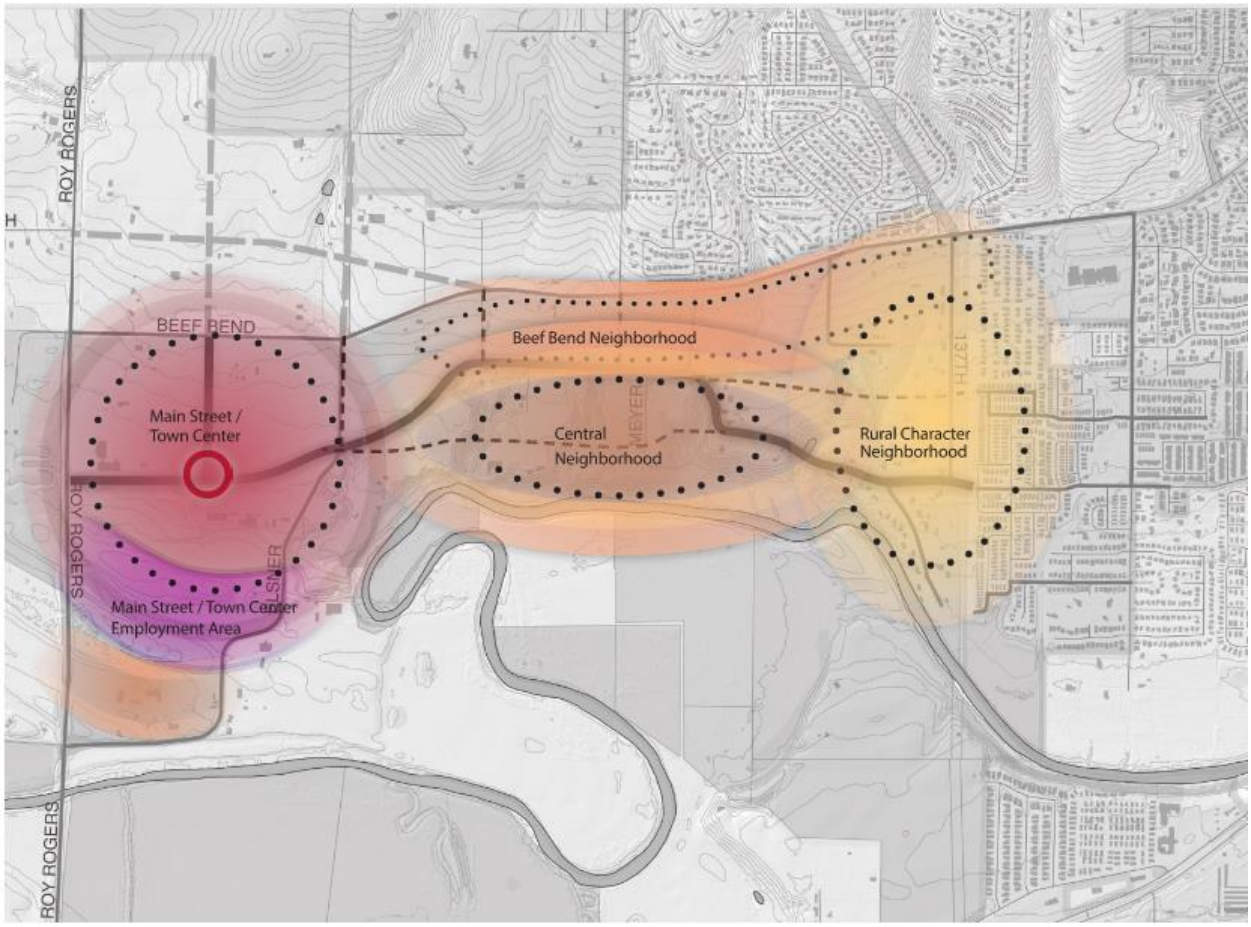
- Main Street / Town Center
- Beef Bend Neighborhood
- Central Neighborhood
- Rural Character Neighborhood

The residential program or specific mix of housing types for each neighborhood was developed to demonstrate how the KCMP area 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 KCMP 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.

Figure 2. URA 6D Concept Plan Neighborhood Areas



Comparison of Market Findings

As described above, two market analyses have been conducted for the KCMP area. 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 the 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.
- *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 Main Street / Town Center commercial uses. 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.

King City Urban Design Guidebook

The guidebook was developed as part of the King City TSP planning process. It is intended to serve as a bridge between the URA 6D Concept Plan, the City's first TSP, and the King City 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 objective in studying these case studies was to identify characteristics that made them successful. They provide lessons learned and recommended action items for King City, and were chosen because they detailed similarly scaled and master-planned communities, involved a mix of single- and multi-developer communities, and were exemplary approaches to planning a new community. The case studies include:

- NorthWest Crossing in Bend, Oregon
- Bethany in Unincorporated Washington County, Oregon
- Villebois in Wilsonville, Oregon

The critical success factors found in these case studies are detailed below.

- *Major streets are attractors not barriers*: In the three case studies, 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.
- *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. 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.

- *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 street trees, and even on-street parking.

King City Community Development Code Middle Housing Update

The following is a summary of work to be completed by the City and Urbsworks between November 2020 and May 2021.

Compliance with House Bill 2001

King City proposes to update its Community Development Code (CDC) to fully comply with HB 2001. The City currently allows many of the middle housing types in the CDC, and this update will further expand the range of middle housing types allowed and encouraged by the City. A "hearings-ready" amendment package will be prepared for the King City Comprehensive Plan and the CDC, with a plan for adoption by June 2021. The City acknowledges that the Comprehensive Plan and CDC are in need of a thorough update, especially to prepare for properly guiding future development in the KCMP area. The proposed Middle Housing Update will be a component of this larger overall update.

To systematically incorporate amendments to the Comprehensive Plan and CDC, the City is currently developing a framework and format for the amended Comprehensive Plan and CDC so as work is completed on middle housing, the TSP, and master plan, the related amendments will have identified places where they will "fit" into this Comprehensive Plan/CDC framework.

Additional goals of the project include:

- Prepare the Comprehensive Plan and CDC amendment framework in advance of the middle housing code update to have a logical and organized method for making necessary amendments over the next several years as required by this project, the TSP, King City Master Plan, and general code improvements and streamlining.
- Create middle housing amendments that increase the likelihood of middle housing construction in the future.
- Address the provision of middle housing in the context in-fill and new development.
- Adopt middle housing and related amendments that are consistent with building code requirements.

King City Comprehensive Plan

The King City Comprehensive Plan was adopted in 1991 and has been amended several times since then to update background information, comply with state and Metro requirements, and include amendments related to the West King City Planning Area and the King City Town Center Plan and Implementation Strategy. As noted, the Comprehensive Plan will need to be updated to properly reflect the KCMP and support its implementation. The current Comprehensive Plan goals and policies are organized and stated according to the Oregon Statewide Planning Goals. Plan sections related to the West King City Planning Area and the King City Town Center Plan and Implementation Strategy have separate goals and policies. Both of these planning efforts are pertinent to the KCMP; specific goals and policies from these two plans which pertain to this master planning effort are listed below.

The *West King City Planning Area* falls within the southwest portion of the KCMP study area, and the concept plan identified initial planning goals that coincide with the seven Metro and state planning requirements:

Relevant *West King City Planning Area* Goals	
Future Land Uses and Zoning	1. Plan for a mix of residential uses as contemplated in the Metro Urban Growth Management (UGM) Functional Plan. 2. Promote compatibility between different land uses and/or densities by: • Arranging different land uses to reduce the potential for conflicts due to noise and visual impacts; and • Requiring landscaping guidelines and standards to help ensure quality development and compatibility between different land uses. 3. Provide sufficient parking with new development that meets parking requirements of the King City Community Development Code.
Housing Types and Densities	4. Create a mix of housing types and densities, which meet the Metro UGM Functional Plan requirement for an average density of 10 units per net developable residential acre. 5. Provide a variety of housing types and affordable housing choices, which meet the needs of residents within UR #47 and the King City area. 6. Encourage housing, which promotes home ownership.
Commercial and Retail Opportunities	7. Maintain and enhance access to local retail services such as grocery stores
Urban Facilities and Services	8. Maintain current levels of police and fire protection, which are available to the area.

	9. Plan and design public infrastructure including water, sanitary sewer, and storm drainage to resolve existing deficiencies and to adequately serve new development. 10. Resolve storm water problems in the area by: • Addressing issues in cooperation with Washington County and City of Tigard; • Providing adequate facilities to accommodate existing and future storm water in the area; • Employing techniques to reduce and/or mitigate the amount of storm water created by new development; and • Enforcing government regulations. 11. Design storm water facilities to: • Route storm water to the existing drainageway. The drainage system should be improved as necessary to accommodate the additional runoff. • Analyze downstream and upstream impacts as part of all development applications. Evaluations shall document that storm water will remain within the current basin boundaries and not impact surrounding properties. • Require storm water detention as necessary to avoid adverse impacts to surrounding properties. • Locate and design water quality treatment facilities to meet CWS standards. 12. Provide underground utilities whenever possible.
Transportation	13. Design the street system to direct through traffic to collector and arterial streets. 14. Reduce traffic congestion by: • Providing direct and convenient access to transit stops and park-and-rides; • Designing new streets to meet Metro connectivity requirements; • Limiting the use of private streets, because they generally discourage street connectivity between properties; and • Providing direct, safe, and convenient pedestrian and bicycle connections to important destinations in the King City area. 15. Provide transportation facilities and improvements to accommodate increasing demand associated with new development.

	16. Provide transportation improvements, which are consistent with the Regional Transportation Plan, the Washington County Transportation System Plan, and the Neighborhood Circulation Plan Map. 17. Design transportation system improvements to be consistent with those described in the Plan Implementation - Transportation section. 18. Support Metro 2040 regional non-SOV (single occupancy vehicle) modal targets of forty-five to fifty-five percent for town centers (city center area) and corridors (along SW Pacific Highway) and forty to forty-five percent for inner neighborhoods (city residential areas).
Parks, Greenspaces, and Habitat Protection	19. Retain significant natural vegetation, including mature trees, to the maximum extent possible, while allowing land development according to the applicable zoning requirements. 20. Protect wetlands, riparian areas, and other environmentally sensitive areas as required by the Metro Functional Plan and Statewide Planning Goal 5. Such sensitive areas that may lie within the Tualatin River flood plain and associated with the drainageway shall not be developed for intensive recreational activities but may include environmentally sensitive recreational activities such as wildlife viewing areas or trails. 21. Develop separate pedestrian and bicycle paths when appropriate to provide safe and convenient access to parks, schools, natural areas, and other destinations. 22. Provide suitable park and open space facilities for all ages by employing one or both of the following: • Allowing private common open space as part of new residential developments; or • Developing one or more public parks to serve the area.
School Facility Needs	23. Establish clear lines of communication between the City of King City and Tigard-Tualatin School District regarding land use planning, development activity, and school capacity issues to allow for cooperative and proactive planning by the city and the district.

The King City Town Center Plan and Implementation Strategy includes three primary elements:

- **Multi-modal Accessibility Concept**, which identifies how the town center area should improve accessibility for walking, bicycling, taking transit, and driving.
- **King City Town Center Land Use and Design Concept**, which describes how the town center might be redeveloped and revitalized to enhance access and be maintained as a viable commercial asset for residents of King City and the surrounding area.
- **Implementation Strategy**, which identifies variety of important steps the city, its agency partners, property and business owners, development community, and residents should take to realize the full potential of the King City Town Center.

Relevant *King City Town Center Plan and Implementation Strategy* Goals	
Multi-Modal Accessibility Concept	The city shall actively engage property and business owners and city residents along with partner jurisdictions and agencies, including ODOT, Washington County, city of Tigard, TriMet, and Clean Water Services to: • Provide high quality pedestrian and bicycle facilities and environment along 99W, Fischer Road, and Beef Bend Road; • Improve pedestrian safety and comfort at existing intersections on 99W; • Enhance pedestrian and bicycle access between the town center and surrounding neighborhoods; and • Improve access to transit.
King City Town Center Land use and Design Concept	Maintain and further diversify the land use mix and the quality of the pedestrian environment by: • Allowing residential uses; • Encouraging development and redevelopment that enhances the pedestrian environment and encourages walking; and • Amending dimensional and design standards in the CDC, as appropriate, to promote mixed-use development, inviting pedestrian environment, and compatibility between land uses.
Implementation Strategy	The city shall actively engage property and business owners and city residents along with partner jurisdictions and agencies, including ODOT, Washington County, city of Tigard, TriMet, and Clean Water Services to complete the action items contained in the Implementation Strategy.

Other Local and Regional Planning Efforts

Tigard River Terrace West and South Concept Plan

Concept planning for West and South River Terrace (RT) Urban Reserve areas is happening just north of the KCMP planning area and is scheduled to be completed by June 2021. The South River Terrace Urban Reserve Area is located at the southwestern extent of Tigard city limits, north of SW Beef Bend Road. This 205-acre area is bounded by the existing River Terrace community to the north, the KCMP area to the south, SW Roy Rogers Road to the west and SW 150th Avenue to the east.

The South River Terrace URA is generally located on the south slope of Bull Mountain where stormwater flows through a series of creeks southward through the KCMP area and, ultimately, to the Tualatin River. Natural resources planning conducted with the South River Terrace URA will prepare the City for these discussions and help ensure the best regional strategy and environmental outcome for these resources. The City of Tigard anticipates a stormwater strategy for the expansion areas that is similar to that currently applied in River Terrace, with a focus on regional stormwater facilities. Stormwater and sanitary sewerage planning will be coordinated with Clean Water Services.

Specific Development Goals for TRT Concept Planning

- Explore innovative housing strategies and evaluate demand for a variety of densities and attached housing product types, as well as compact and efficient growth patterns that minimize vehicle miles travelled and greenhouse gas emissions to the extent practicable.
- Optimize functional and physical relationships with neighboring plan areas to ensure that neighborhood retail, parks and open space, educational and other amenities are well coordinated and supportive of on-going planning efforts in these adjacent jurisdictions.
- Evaluate the market viability of employment and non-residential uses to advance the city's economic development objectives and the goals of creating spaces where residents can work, live and play.
- Evaluate the necessary transportation network and required improvements to support the land use plan for this area, including multi-modal improvements and how bike and pedestrian ways can be best integrated with King City and other neighboring areas. A special focus will be the improvement needs and alignment for Beef Bend Road.
- Identify important natural resources to be preserved within the requirements of State Goal 5 and Metro Functional Plan Titles 3 and 13. Special consideration will be given to the connection with the natural resource areas in King City that extend south to the Tualatin River.
- Consider needed improvements to support growth in the area to ensure that infrastructure systems are positioned and sized to accommodate growth.

Washington County Urban Reserves Transportation Study (URTS)

The URTS will examine how future development in Washington County's Urban Reserve areas will affect the transportation network. The study will identify area roadways that will need to be widened

in the future to accommodate additional traffic generated by new development. It also will develop best practices for Washington County to help local cities plan for future growth and transportation impacts. The outcomes will include priority transportation improvements and right-of-way needs.

Applicable Metro Title 11 and Statewide Planning Goals

The KCMP is intended to refine the concept plan to provide additional development detail and outcomes consistent with the 2040 Growth Concept, Urban Growth Management Functional Plan, and the Metro conditions of approval for the UGB expansion decision. To ensure full compliance with these guiding documents the following matrix identifies applicable policies and requirements for ease of compliance for the Plan Consistency Analysis in Task 6 of the KCMP work plan:

Metro Title 11 Requirements

3.07.1120 Planning for Areas Added to the UGB		**King City Master Plan Applicability**
(a)	The county or city responsible for comprehensive planning of an area, as specified by the intergovernmental agreement adopted pursuant to section 3.07.1110(c)(7) or the ordinance that added the area to the UGB, shall adopt comprehensive plan provisions and land use regulations for the area to address the requirements of subsection (c) by the date specified by the ordinance or by section 3.07.1455(b)(4) of this chapter.	√
(b)	If the concept plan developed for the area pursuant to section 3.07.1110 assigns planning responsibility to more than one city or county, the responsible local governments shall provide for concurrent consideration and adoption of proposed comprehensive plan provisions unless the ordinance adding the area to the UGB provides otherwise.	
(c)	Comprehensive plan provisions for the area shall include:	
(1)	Specific plan designation boundaries derived from and generally consistent with the boundaries of design type designations assigned by the Metro Council in the ordinance adding the area to the UGB;	√
(2)	Provision for annexation to a city and to any necessary service districts prior to, or simultaneously with, application of city land use regulations intended to comply with this subsection;	√
(3)	Provisions that ensure zoned capacity for the number and types of housing units, if any, specified by the Metro Council pursuant to section 3.07.1455(b)(2) of this chapter;	√
(4)	Provision for affordable housing consistent with Title 7 of this chapter if the comprehensive plan authorizes housing in any part of the area.	√
(5)	Provision for the amount of land and improvements needed, if any, for public school facilities sufficient to serve the area added to the UGB in coordination with affected school districts. This requirement	√

	includes consideration of any school facility plan prepared in accordance with ORS 195.110;	
(6)	Provision for the amount of land and improvements needed, if any, for public park facilities sufficient to serve the area added to the UGB in coordination with affected park providers.	√
(7)	A conceptual street plan that identifies internal street connections and connections to adjacent urban areas to improve local access and improve the integrity of the regional street system. For areas that allow residential or mixed-use development, the plan shall meet the standards for street connections in the Regional Transportation Functional Plan;	√
(8)	Provision for the financing of local and state public facilities and services; and	√
(9)	A strategy for protection of the capacity and function of state highway interchanges, including existing and planned interchanges and planned improvements to interchanges.	√
(d)	The county or city responsible for comprehensive planning of an area shall submit to Metro a determination of the residential capacity of any area zoned to allow dwelling units, using a method consistent with a Goal 14 analysis, within 30 days after adoption of new land use regulations for the area. [Ord. 98-772B, Sec. 2. Ord. 99-818A, Sec. 3. Ord. 01-929A, Sec. 8. Ord. 02-964, Sec. 5. Ord. 05-1077C, Sec. 6. Ord. 05-1089A, Sec. 2. Ord. 07-1137A, Sec. 3. Ord. 10-1238A, Sec. 5. Ord. 11-1252A, Sec. 1. Ord. 15-1357.]	√
3.07.1130 Interim Protection of Areas Added to the UGB Until land use regulations that comply with section 3.07.1120 become applicable to the area, the city or county responsible for planning the area added to the UGB shall not adopt or approve:		√
(a)	A land use regulation or zoning map amendment that allows higher residential density in the area than allowed by regulations in effect at the time of addition of the area to the UGB;	
(b)	A land use regulation or zoning map amendment that allows commercial or industrial uses not allowed under regulations in effect at the time of addition of the area to the UGB;	
(c)	A land division or partition that would result in creation of a lot or parcel less than 20 acres in size, except for public facilities and services as defined in section 3.07.1010 of this chapter, or for a new public school;	
(d)	In an area designated by the Metro Council in the ordinance adding the area to the UGB as Regionally Significant Industrial Area:	
	(1) A commercial use that is not accessory to industrial uses in the area; and A school, a church, a park or any other institutional or community service use intended to serve people who do not work or reside in the area. [Ord. 98-772B, Sec. 2. Ord. 99-818A, Sec. 3. Ord. 10-1238A, Sec. 5. Ord. 11-1252A, Sec. 1.]	

Oregon Statewide Planning Goals

The foundation of statewide program for land use planning in Oregon is a set of 19 Statewide Land Use Planning Goals. The goals express the state's policies on land use and related topics, like citizen involvement, housing, and natural resources. Oregon's statewide goals are achieved through local comprehensive planning. Plans are reviewed for such consistency by the state's Land Conservation and Development Commission (LCDC). When LCDC officially approves a local government's plan, the plan is said to be acknowledged. It then becomes the controlling document for land use in the area covered by that plan. The King City Master Plan will guide the necessary amendments to the King City Comprehensive Plan. The following statewide planning goals are applicable to the KCMP area for annexation.

Oregon Statewide Planning Goals	**King City Master Plan Applicability**
Goal 1 Citizen Involvement	√
Goal 2 Land Use Planning	√
Goal 3 Agricultural Lands	√
Goal 4 Forest Lands	√
Goal 5 Natural Resources, Scenic and Historic Areas, and Open Spaces	√
Goal 6 Air, Water and Land Resources Quality	√
Goal 7 Areas Subject to Natural Hazards	√
Goal 8 Recreational Needs	√
Goal 9 Economic Development	√
Goal 10 Housing	√
Goal 11 Public Facilities and Services	√
Goal 12 Transportation	√
Goal 13 Energy Conservation	√
Goal 14 Urbanization	√
Goal 15 Willamette River Greenway	
Goal 16 Estuarine Resources	
Goal 17 Coastal Shorelands	
Goal 18 Beaches and Dunes	
Goal 19 Ocean Resources	

Infrastructure and Public Facilities

Land Use

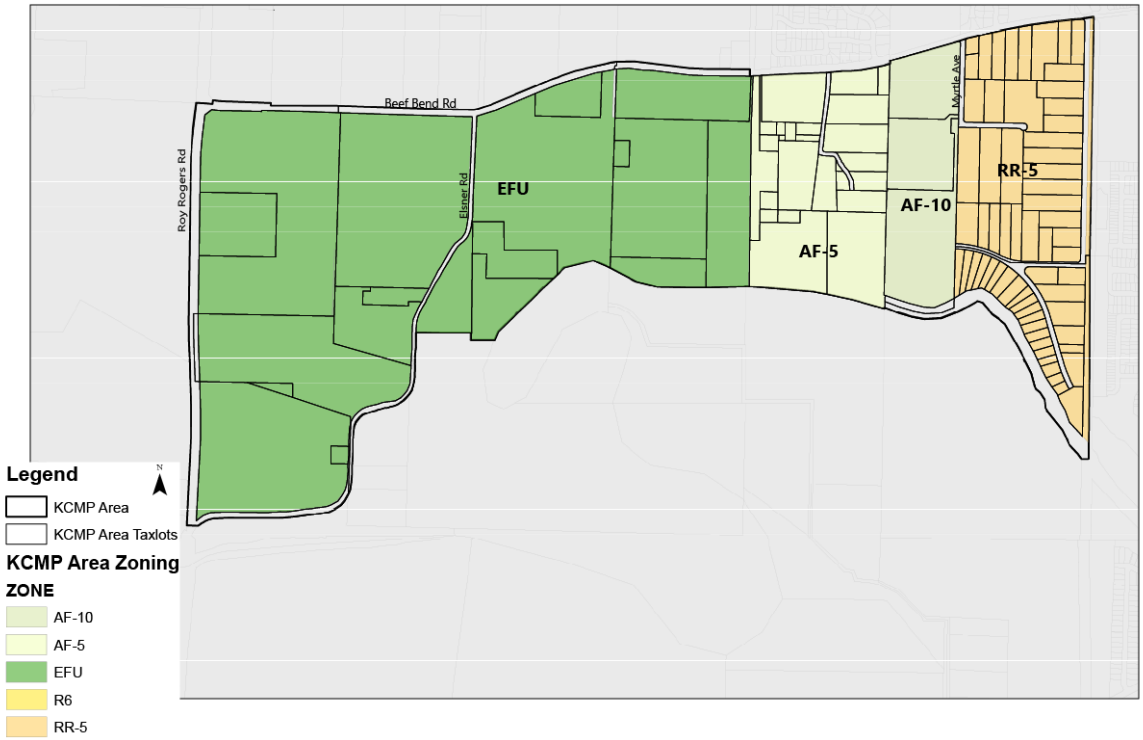
The King City Master Plan area is completely within Washington County. The county has land use and development authority over this area along with jurisdiction of the major roads serving the area. The land uses and development allowed in the study area is guided by the Washington County Comprehensive Plan.

The current land use in the planning area generally ranges from home sites of ½ 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.

There are four land use designations and one overlay zone within the planning area:

- RR-5 Rural Residential, 5-acre minimum (eastern portion)
- AF-10 Agriculture and Forest District, 10-acre minimum (central portion)
- AF-5 Agriculture and Forest District, 5-acre minimum (central portion)
- EFU Exclusive Farm Use (western half)
- Private Use Airport Overlay, Meyer Riverside Airport (central portion/AF-5 District)

Figure 3. Washington County Land Use Designations



The land use designations reflect the general land use pattern noted above, providing a gradual transition from low density residential development to agricultural parcels.

The land uses and zoning in surrounding areas are governed by three jurisdictions: Washington County, city of Tigard, and city of King City. The existing zoning and land uses include a wide spectrum from developed urban areas to agricultural use.

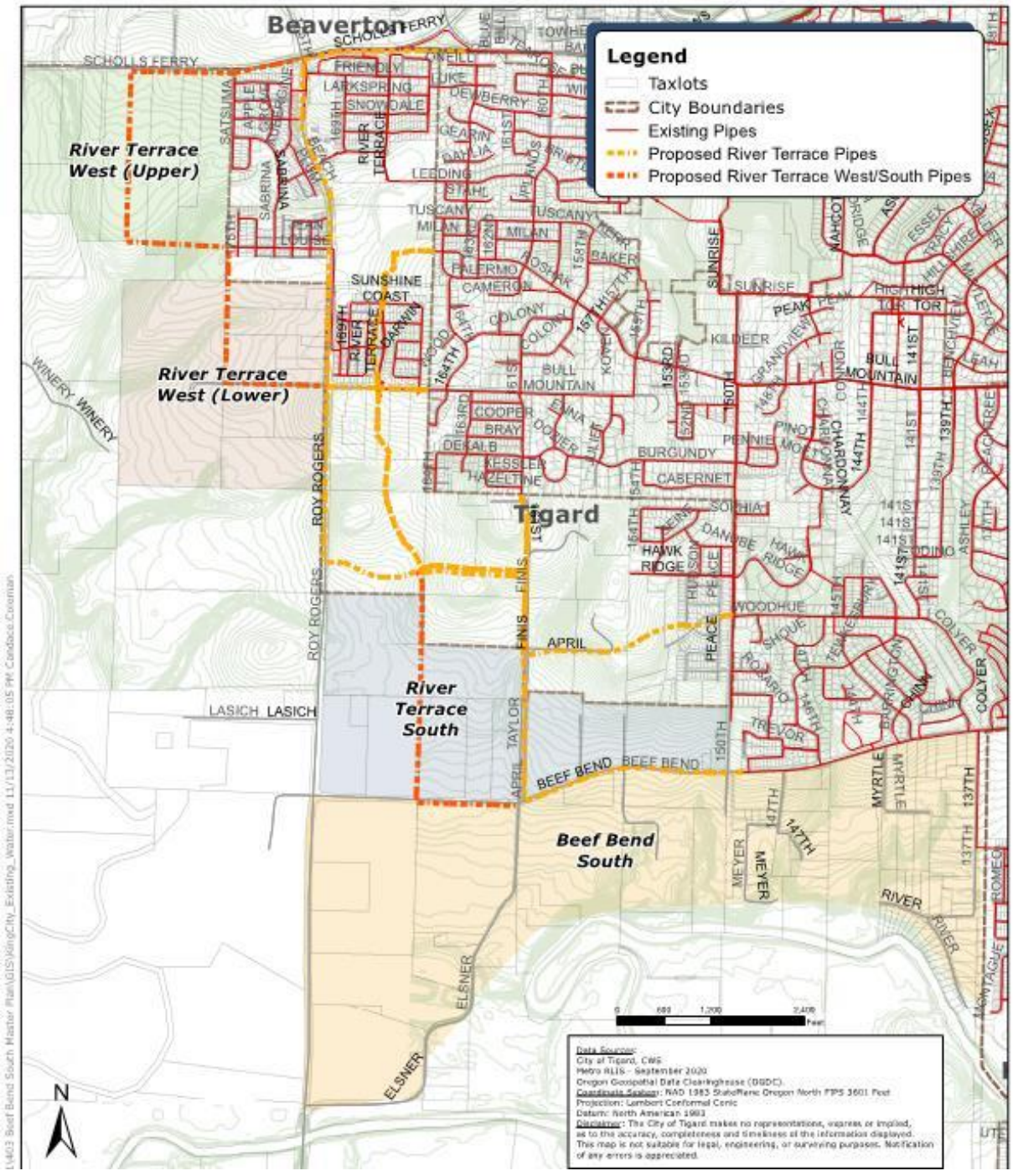
Infrastructure

Water

In 2014, the City completed an addendum to their 2010 Water System Master Plan (2010 WSMP Addendum), which included sizing considerations for water service infrastructure in the KCMP area. Today, the city is finalizing an updated WSMP. The updated WSMP provides updated water demand forecasts and includes projected demands in the KCMP area, as well as the anticipated pumping and storage needs to serve this area.

The KCMP area is located in the southwest portion of the Tigard Water Service Area (TWSA). The elevations in these areas fall in the City's 410 Pressure Zone (PZ). Large diameter mains are planned for the bordering River Terrace and River Terrace South areas that can connect to the KCMP area. Figure 4 shows the proposed large diameter mains that will run through the River Terrace and River Terrace South areas.

Figure 4. Existing and Proposed Water Pipes



Infrastructure needs are determined using a combination of planning criteria, the water system hydraulic model, and estimated dwelling units. These sources will aid in sizing future storage reservoirs, pump stations, and distribution mains. Water demand for the KCMP area will not be estimated until the number of dwelling units has been established; however, the draft 2020 WSMP

calculated a build-out demand for the TWSA, which accounts for preliminary estimated demand for KCMP area. The build-out demand aids in defining the timing for and sizing of future storage and pump station projects.

Storage

Based on elevations, KCMP area is located entirely within the 410 PZ, which is currently served by Pump Station 5 (PS 5), nine storage reservoirs, and PRVs from the 470 PZ (Reservoir 10) and 560 PZ. The storage analysis in the draft 2020 WSMP indicates a storage deficit occurring between 2030 and 2040, with a total deficit of 3 million gallons (MG) by 2050, at which time the system is considered to have reached build-out conditions. This deficit includes the abandonment of several storage reservoirs that are aging and are located in areas not ideal with respect to recent changes in the system, including the growth on the west side of the system. A new 3 MG, 410 PZ reservoir is recommended for the River Terrace area that would also serve the KCMP area.

The River Terrace Service Area 410-ft Reservoir Siting study, completed in 2018, ranked potential reservoir sites by site topography, property size, proximity to existing mains, proximity to geohazards and sensitive areas, and site access. Results of the study showed that the most desirable sites are located in the 560 PZ, which would help to serve the 560 PZ portion of River Terrace. The most favorable 410 PZ site is located at SW 150th Avenue south of SW Woodhue Street. However, this site requires further investigation, and the City is exploring potential reservoir sites on undeveloped parcels of land within the River Terrace area.

Pumping

As previously stated, pumping to the 410 PZ is provided through PS 5. This pump station has the capacity to serve growing demands including the demand of the KCMP area, and there is space for another pump when additional capacity is needed.

Distribution Mains

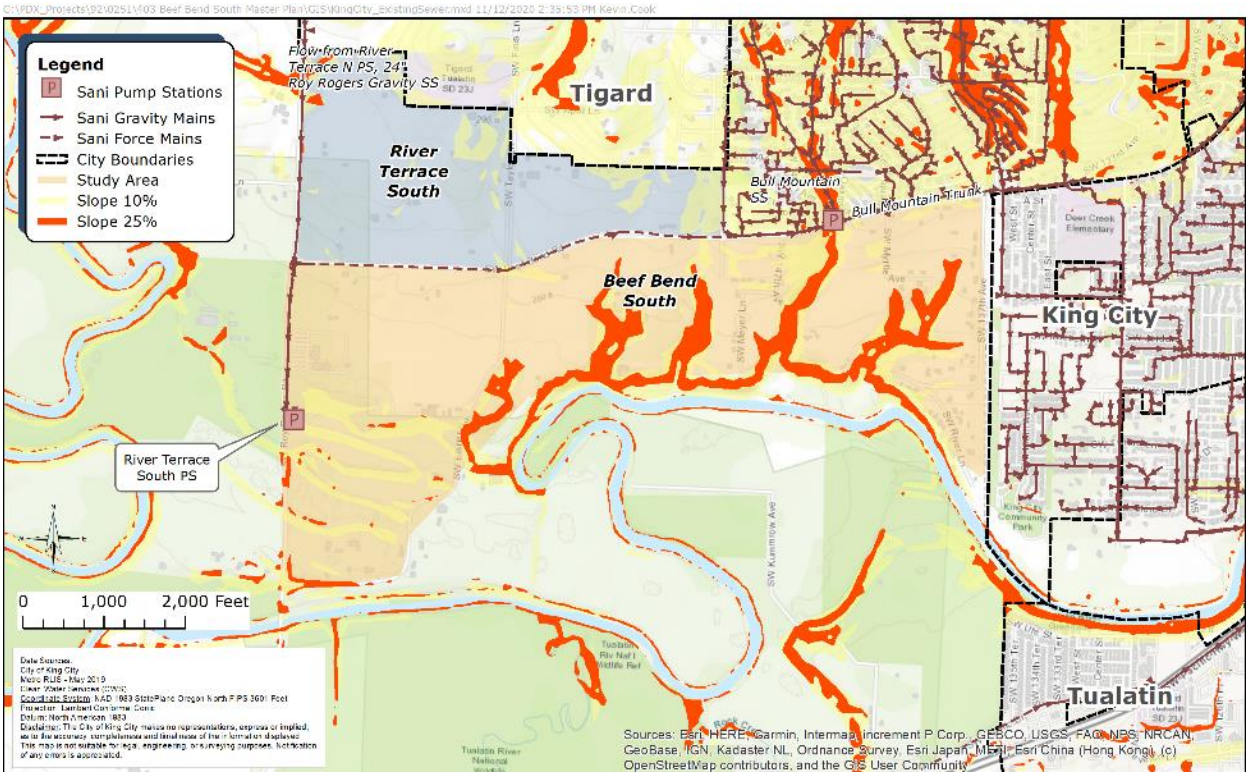
Large diameter backbone mains are recommended to supply Beef Bend South at reasonable velocities under PHD and fire flow conditions. Backbone mains are intended to supply smaller mains (8-inch to 12-inch diameter) that branch off and connect to customer service lines. Backbone piping will connect to existing and proposed large diameter mains that extend to the Beef Bend South boundary. The location of the backbone piping will be determined at a future date.

Sanitary Sewer

Clean Water Services owns and operates all wastewater conveyance infrastructure in the City of King City. Wastewater is generally collected throughout the City via 6-in to 8-in diameter sewer mains and routed into CWS' Upper Tualatin Interceptor system, which conveys wastewater to the Durham Wastewater Treatment Plant. Properties within the KCMP planning area west of the City are currently served by private on-site septic systems. Figure 5**Error! Reference source not found.**

shows the location of the BBS planning area and existing public sanitary sewer infrastructure in the immediate vicinity.

Figure 5. Existing and Planned Sanitary Sewer



In 2020, CWS completed construction of several significant improvement projects needed for development of the western and southern portions of the Bull Mountain vicinity of Washington County. The River Terrace South PS and the Bull Mountain SS improvements are relevant to the KCMP area.

The River Terrace South PS is located in the BBS area on Roy Rogers Road, just south of Al's Garden Center. It conveys wastewater via a 16-inch force main to the Upper Tualatin Interceptor via the Bull Mountain Trunk in Beef Bend Road. The pump station's service area includes the western half of the KCMP area. The pump station is also intended to serve areas to the north of the KCMPA area, including existing areas in Washington County and City of Tigard. It is expected that the CWS Pleasant View PS will be decommissioned as gravity sewers are constructed in the River Terrace South and KCMP areas for conveyance to the River Terrace South PS. Upsizing of some new infrastructure within the KCMP area will likely be required by CWS to also allow service to those areas north of the KCMP area.

The Bull Mountain sewer system currently services areas north of Beef Bend Road. The system includes the existing Bull Mountain Trunk sewer and the Bull Mountain PS, both located in Beef Bend Road. The eastern portion was recently upsized to handle flows from the River Terrace South PS and River Terrace North PS, and the Bull Mountain PS. The sewer line flows to the Upper Tualatin

Interceptor system in King City. The western portion serves areas around SW 150th Avenue north of Beef Bend Road, and flows to the existing Bull Mountain PS.

Sewer planning efforts are determined by those standards as defined by CWS and the City. These standards help inform planning efforts including minimum pipe diameter and slopes, capacity limits for wet and dry weather flows, minimum pipe cover, and location. The standards used to inform sewer planning include Chapters 5 and 9 from Clean Water Services and King City's Municipal Code.

Proposed Sanitary Sewer Infrastructure

Proposed sanitary sewer infrastructure for the KCMP area builds upon previous work and concepts completed as part of the *King City URA 6D Concept Plan* (Figure 5). Information regarding potential connections to existing City and CWS infrastructure for conceptual planning was based on review of the 2014 Upper Tualatin Interceptor Study (CH2M Hill, 2017) and coordination with on-going analysis in adjacent areas and infrastructure needs.

Topographic limitations in the KCMP area require dividing the area into east and west service areas. The KCMP area generally slopes south towards the Tualatin River with several steep ravines running south to the river. These ravines make construction of gravity sewer running east and west challenging and likely infeasible due to depth and cost.

Much of the western half of the KCMP area can be served by a new gravity sewer line running southwest from near the intersection of Beef Bend Road and SW 150th Avenue to the River Terrace South PS. This gravity sewer line may require oversizing to serve areas to the north that can naturally flow south into the KCMP area.

The existing 24-inch gravity sewer in Roy Rogers Road may serve developments directly adjacent to the road, where determined to be feasible.

The most southwesterly area of the KCMP area contains a small area that appears suitable for development. It is located south of low-lying land that is wetted seasonally by the Tualatin River, and will require a local pump station to convey wastewater north to the River Terrace South PS.

Local pump stations are likely needed to serve three internal portions of the KCMP area to the east, given the challenges in crossing the deep streams. These pump stations are expected to be developer-implemented pump stations, with capacities at 200 gallons per minute (gpm) or less. The pump stations would generally be located toward the south of the developable area to minimize depth and maximize service area. The stations will each require a force main to pump north and east to the improved Bull Mountain Trunk system in Beef Bend Road near SW 137th Avenue.

The easternmost portion of the KCMP area can be served by gravity through new sewers connecting into the existing CWS-owned collection system in King City at the 8-inch connection on SW Fischer Road. For areas to the south that are lower in elevation, new sewer can be constructed to discharge into the existing sewer at SW Montague Way near SW 136th Avenue.

Stormwater

This section builds upon information originally described in the King City Urban Reserve Area 6D Concept Plan. The updated information is related to the existing conditions described in the King City Master Plan with respect to stormwater management.

Existing Stormwater Infrastructure

The KCMP area is moderately sloped and generally drains from north to south in one of the six small drainage corridors. There is an additional area at the southwest corner of the KCMP area that has no defined channel and drains overland directly to the Tualatin River. For all of these tributaries, the conversion of land from its historic condition to agricultural uses and then to urban land uses in the Beef Bend South area and the greater Bull Mountain area results in an increase in runoff that produces flashier flow regimes for a given storm event. The altered hydrology in turn results in channel incision and stream bank collapse. These changes also affect the vegetation, habitat quality, and morphology of the stream corridor. The lower reaches of the tributaries are also impacted by backwatering effects from the Tualatin River, and a lowering of the Tualatin River water levels over time.

Except for T7, the other tributaries are observed or believed to be in some advanced stage of channel degradation. Current trajectories of channel incision and widening are likely to continue under current conditions and will likely be exacerbated by additional development. Additional changes in land use will need to employ best management practices, such as stormwater quantity control, high flow bypass, or stream corridor enhancement to avoid even greater perturbances to these channels.

Some fair infiltration potential is believed to exist in a portion of the KCMP area. Good infiltration can increase the effectiveness of Low Impact Development Approaches (LIDA) at managing stormwater runoff and can reduce the size and reliance on regional facilities, so infiltration testing is recommended for all fair infiltration areas. The infiltration of stormwater should also be carefully considered in areas of steep terrain and/or shallow bedrock due to slope stability. Strategy areas that call for LIDA facilities may need to be limited to flow-through type facilities that are constructed with an underdrain and do not rely on infiltration of stormwater.

The site specific geologic and geotechnical conditions will be important to evaluate during the design and construction of stormwater management facilities in the KCMP area.

Stormwater Standards and Strategy

Development in the KCMP planning area will be required to meet the current CWS Design & Construction Standards (CWS D&C Standards) at the time of development. The proposed stormwater management strategy calls for the management of post-construction stormwater runoff including the following:

1. Water Quality treatment sized per the CWS D&C Standards
2. Water Quantity for hydromodification sized using a flow-duration based design standard. The same standard adopted by City of Tigard for River Terrace.
3. Above ground, vegetated facilities that meets the LIDA requirement in the CWS D&C Standards.

During a coordination meeting with Tigard and CWS on September 22, 2020, King City expressed the desire to adopt the same set of standards for the KCMP area that was adopted for River Terrace. These standards included a requirement for a flow duration-based design and also adopted a Community Amenity Standard, which required the stormwater facilities to be natural features accessible to the public and integrated into the neighborhoods. King City will need to determine how best to adopt these standards into their code.

It is recommended that the City adopt land use conditions from 2011 as the basis for determining predevelopment hydrology used in sizing stormwater management facilities. The KCMP area was added by Metro to the Urban Reserves in 2011, and an aerial photograph from that year would be used to map the pre-developed land uses as of 2011.

The recommended strategy for the KCMP area is to make use of Regional Stormwater Facilities strategically located at the low point along each stream corridor. The Regional Stormwater Facilities would be designed as described above to provide for both treatment of stormwater for water quality and management of water quantity for hydromodification within the same facility. This strategy is similar to those applied in the nearby River Terrace area and has resulted in stormwater tracts that occupy about 4% of the developable area draining to them (i.e.- 25 acres of development needs a 1-acre tract of land for the stormwater facility).

In general, the conveyance of stormwater runoff throughout the Beef Bend South planning area is assumed to follow closely with the street, trail, and public right-of-way network to be further described by the KCMP.

Areas believed to have “Fair” infiltration potential should be explored during design to determine the suitability for stormwater infiltration and the impact on regional facility size. This would require infiltration testing be performed during design of each facility and slope stability recommendations be provided by a geotechnical engineer.

The consolidation of regional stormwater facilities to serve both River Terrace and Beef Bend South could be considered but will require further coordination and eventually agreements between the City of King City and the City of Tigard. CWS would probably be involved in developing more of a regional strategy that spans the jurisdictional boundaries.

An alternative regional strategy that looks at bypass of high flows and/or enhancement of the existing stream corridors instead of providing regional stormwater facilities is also a possibility but would benefit from the same or greater coordination between the two Cities and CWS.

Public Facilities

Emergency services

The KCMP area is served by Tualatin Valley Fire and Rescue (TVF&R). Station 35 in King City is the nearest fire station to the area, although a network of fire stations serves this area. As part of a 10-year plan, the Fire District has identified at least seven sites, including West Bull Mountain, where additional fire stations and infrastructure will improve response times. Factors considered for station placement include housing density, types of development, demographics, and transportation infrastructure.

King City currently participates in regional public safety and law enforcement response. Recent annexations in 2017 have allowed the City to expand its police coverage and is now capable of staffing a department 24 hours a day, 7 days a week. However, with expanded area demands on city services are expected to increase, the City will likely need to add 3-5 additional officers over time.

Schools and Civic Centers

The KCMP area is served by the Tualatin-Tigard School District. There are currently no school facilities in the KCMP area, though Deer Creek Elementary School is located just east of the study area within current City limits. The King City Concept Plan calls for a new Town Center area in the north-western portion of the KCMP area. This area would include a new city hall, school and library, and will be further defined in the KCMP process.

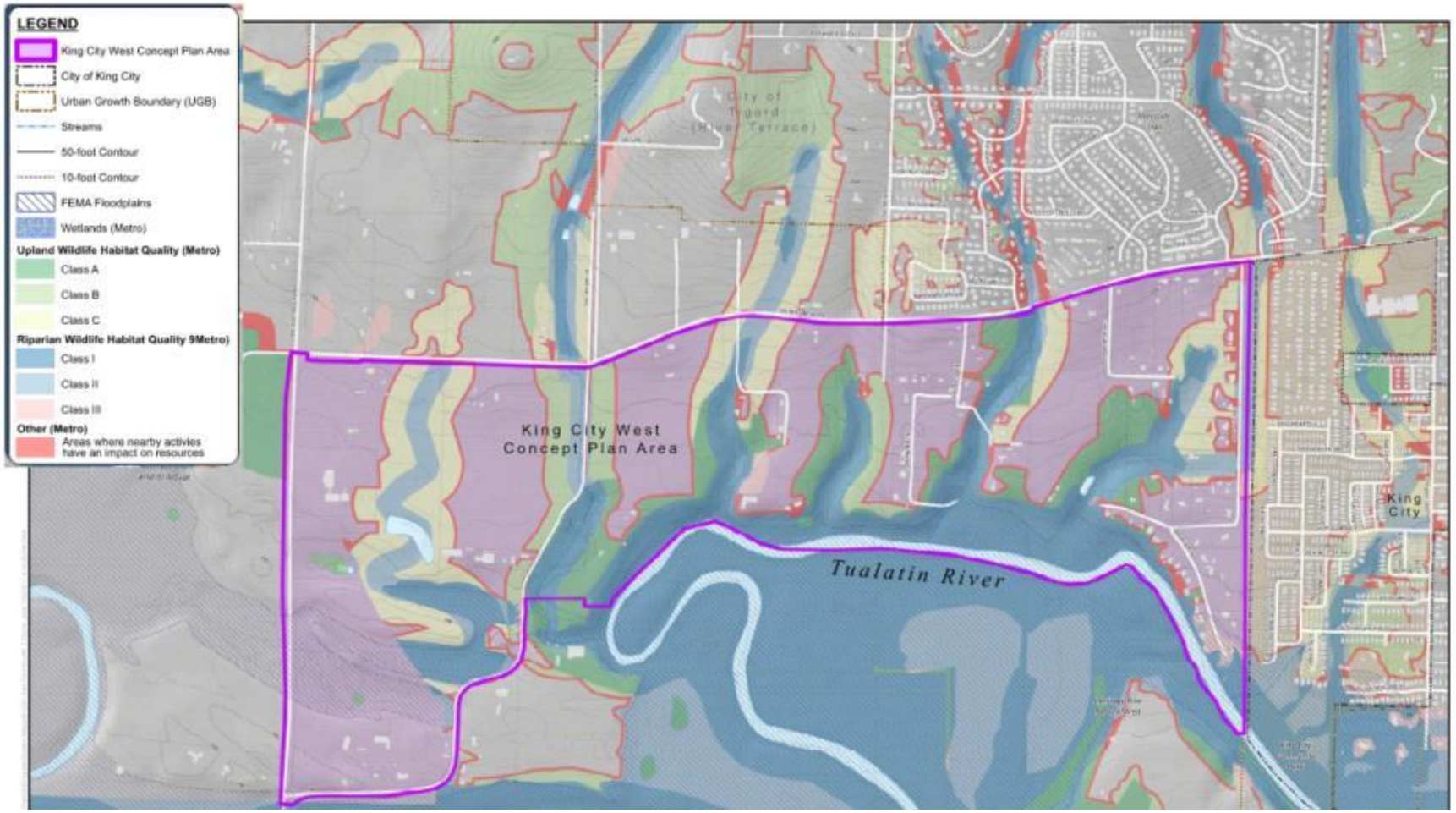
Natural Resources/Environmental Protection

The planning area contains several natural resources and environmental protection considerations as detailed in this section. The discussion below examines previous planning documents including the Concept Plan, city infrastructure plans, capital improvement plans, and other relevant data to identify needed updates and future analysis for natural resource planning in the study area.

Streams and Wetlands

Water resources in the KCMP area are shown in Figure 6. If CWS standards are adopted, the buffers associated with streams and wetlands can range from 15 to over 200 feet depending on the size of the drainage area and the slope adjacent to the resource. In addition, it is likely that CWS will implement standards to address stormwater flow management and adverse hydromodification via in-stream detention. This technique will allow for the use of stream channel to help maintain natural stream functions, rather than using upland areas for required detention measures. However, the details for this program have not been published at this time.

Figure 6. Water Resources



Source: Murraysmith

Floodplains

There will be substantial restrictions related to development within floodplain areas. West of SW Elsner Road are several areas of mapped floodplain that are planned for medium-density residential/institutional use. The existing and updated development standards for these flood hazard areas will need to be reviewed prior to further design of the area. It is possible that floodplain mitigation will be required within the planning area.

Likewise, as the process for planning moves forward, the potential for revised development codes and floodplain impact mitigation should be considered. The National Marine Fisheries Service has published a biological opinion related to the Federal Emergency Management Agency's implementation of the National Flood Insurance Program in Oregon. This biological opinion, published as part of a litigation process, has mandated that development within and adjacent to 100-year floodplains follow certain impact minimization and mitigation procedures. While FEMA has postponed implementation of the NMFS-required measures, it is possible that court intervention could require compliance in the next several years. These measures are generally more restrictive than current floodplain development standards and can require additional habitat restoration activities.

Conservation Easements

There is a property that is owned by the Bankston Family Trust and is encumbered by a conservation easement with the Three Rivers Conservancy and Columbia Land Trust. This conservation easement mandates some restrictions on the property such that roads and development is not allowed. Recreation trails for the general public may be allowed, per Term 4.6 of the easement, but a contradictory statement in Term 8.1 prohibits the use of the property by the general public. A legal interpretation of the terms of this easement and outreach to the property owners and easement holders will likely be required to confirm what uses of the property will be allowed. The conservation easement area is shown in Figure 7.

Figure 7. Bankston Family Trust Conservation Easement

Source: DOWL

Cultural Resources

The Gustave Plieth House site at 16170 SW Beef Bend Road consists of a house and several outbuildings. Additional coordination with SHPO might be required as part of the development. In addition, with the site's location in the Tualatin River bottomlands and along the river, there is a high probability of other cultural resources associated with native peoples and Euro-American peoples within the area. Oregon law prohibits the disturbance of human remains. In addition, should a federal permit (e.g., for wetland or stream impacts) be required on a site, cultural resource surveys and potential monitoring will likely be required.

In summary, the following information should be updated or investigated more closely for the King City Master Plan:

- Presence of streams and wetlands, along with associated buffers,
- Presence of floodplains, review of associated development standards, and identification of potential mitigation areas,
- Bankston Conservation Easement conditions, and
- Cultural resources identification.

Parks and Trails

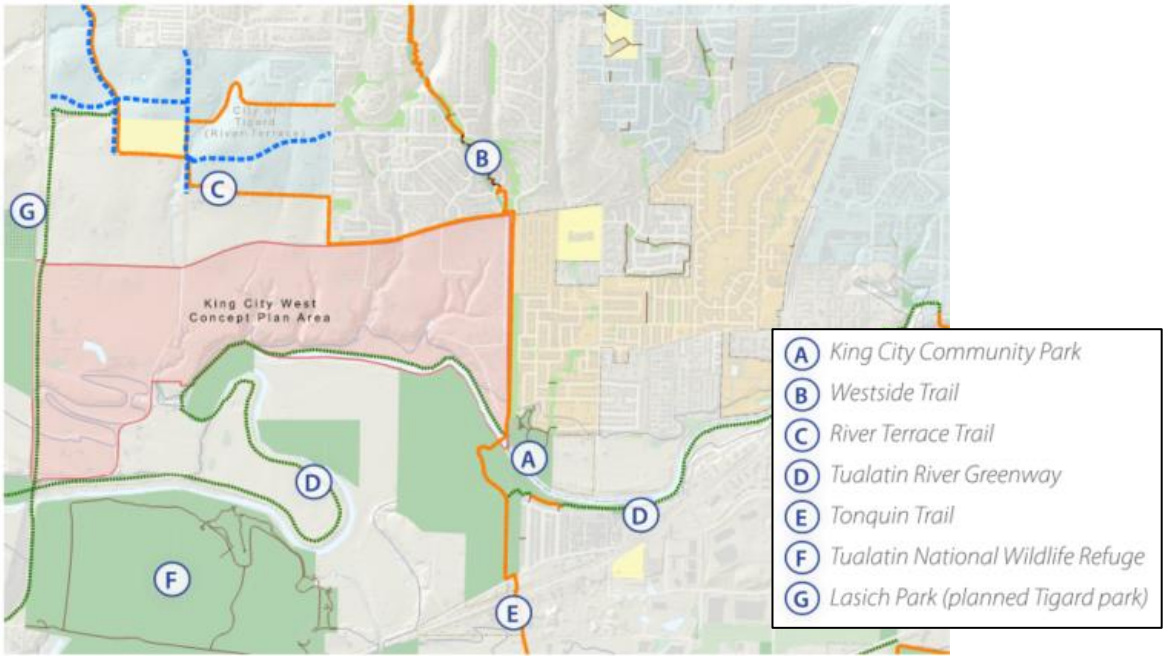
Regional and Local Trails

There are several planned and proposed connectors to regional trail systems in and around the KCMP area as shown in figure 8. The City of Tigard has a proposed park (Lasich property) located northwest of the intersection of Beef Bend Road and Roy Rogers Road, directly across from the northwest corner of the KCMP area. The planned Westside Trail would run along the BPA powerline easement that forms the eastern boundary of the KCMPA area, and then loop around Bull Mountain to the north to connect with other secondary planned trails to the northwest and south along Roy Rogers Road. Connections would also be available to the proposed trail system in the recently approved River Terrace project which could substitute for or augment the steep portions of the Westside Trail north of Beef Bend Road.

There will also be opportunities to connect south to branches of the "Ice Age Tonquin Trail" that will lead to Sherwood and Wilsonville. Other locally planned trails include an extension of the Tualatin River Greenway from the east, which would follow the north shore of the Tualatin River through the King City URA, and continue offsite to the west, eventually connecting to the planned Reedville Trail.

These regional trail systems provide opportunities for long-distance bike rides, but also provide for local walking and running users. In addition to the trail systems, there are some existing opportunities for bicycling along the wide shoulders of Roy Rogers Road and there are some bike-friendly streets in the area north of Beef Bend Road and on lower volume streets within King City. This is detailed further in Section 5: Multi-Modal Transportation System Analysis.

Figure 8. Existing and Planned Parks and Trails



Source: Urbsworks

Parks and Open Space Resources

The KCMP area has no internal parks, but the Tualatin River National Wildlife Refuge and the Heritage Pine Natural Area are directly across the river to the south. King City to the east has a 9-hole Golf Course in the northeast portion of the City (which may not be considered Open Space), and a 17-acre Community Park in the southwest corner of the City, near the Tualatin River, with a soccer field and playground.

Transportation Infrastructure and Operations Analysis

The following overview identifies the existing roadway functional classification and provides a general description of the physical characteristics of key roadways and intersections. These features characterize the backbone transportation system upon which new roadway improvement concepts for the KCMP area will be developed. They also help to define factors that affect roadway and intersection capacity and influence driver route choices.

The analysis is built upon the transportation information collected and analyzed for the *King City Concept Plan* and other transportation planning efforts recently or currently underway such as the city's TSP and Washington County's *Urban Reserves Transportation Study* (URTS). The full technical report is included in **Appendix A.**

Existing Street Characteristics

The existing functional classification of streets in King City study area as adopted in either the County's TSP or the City's Comprehensive Plan is presented in Table 3. Any street not designated as either an arterial, collector, or neighborhood route is considered a local street. Since most of the streets within or near the study area are under the jurisdiction of Washington County, most of these streets follow the County's classification system. In a few instances, the City street classification is also identified. Table 3 also includes information about the number of travel lanes planned to be provided on each of these streets.

Existing Streets and Roadways

Located on the east side of Roy Rogers Road between Beef Bend Road and the Tualatin River, the study area is characterized by higher speed roads on its perimeter, and narrow, rural roads in its interior. It should be noted that regional mobility to and from the King City Master Plan study area is hindered along its southern edge by the Tualatin River. Connectivity across the river to the regionally significant Highway 99W corridor is provided only along Roy Rogers Road or via Beef Bend Road and other local streets after Highway 99W crosses north of the river itself. The following is a short description of each key roadway.

Table 3. Classification of Major Study Area Streets

Street	Functional Classification		Planned Lanes
	King City	Washington County	
Oregon 99W (SW Pacific Hwy)	--	Principal Arterial	5
Roy Rogers Road	--	Arterial	4/5
Beef Bend Road	--	Arterial	2/3
Elsner Road	--	Collector	2
150th Avenue	--	Collector	2
146th Avenue	--	Neighborhood Route	2
131st Avenue north of Fischer Road	Collector	Collector	2
131st Avenue south of Fischer Road	Neighborhood Collector	Neighborhood Route	2
Fischer Road east of 131st Avenue	Neighborhood Collector	Collector	2

Source: Washington County 2015 TSP and King City Concept Plan

- *Roy Rogers Road* – This arterial provides for high capacity north/south travel that connects the study area with Highway 99W and the City of Sherwood to the south and the City of Tigard to the north. Roy Rogers has one travel lane in each direction with wide shoulders to accommodate bicycle travel. Left turn channelization is provided at key intersections and driveways. The posted speed is 45-55 mph. A traffic signal and turn lane channelization is provided at the intersection with Beef Bend Road.
- *Beef Bend Road* – This arterial provides for high capacity east/west travel for study area traffic, connecting the study area with Highway 99W, and, ultimately, OR 217 and I-5. Beef Bend Road has one travel lane in each direction with minimal shoulders west of 150th Avenue. There are sidewalks along the south side for portions of this road between 150th and east of 137th Avenues. The posted speed is 35-45 mph in the study area. A traffic signal and turn lane channelization is provided at the intersection with 131st Avenue.
- *Elsner Road* – This collector road provides for local circulation and property access in the western portion of the study area. The road has one travel lane in each direction and has minimal shoulders. The road runs between Roy Rogers Road on the west and south, and Beef Bend Road on the north and east. The intersections with Roy Rogers and Beef Bend Roads are stop-sign controlled. The speed limit is unposted but there are several 30-35 mph curves.

- *150th Avenue* – This north/south collector road provides residential property access and circulation for the area north of Beef Bend Road and connects the study area to Bull Mountain Road. This road is narrow with no shoulders or sidewalks and a posted 40 mph speed. Within the study area on the south side of Beef Bend Road, 150th Avenue is a narrow, paved facility with no shoulders that provides local access only. It dead ends at private properties boundaries adjacent to the Tualatin River. The speed limit along this roadway segment is unposted.
- *137th Avenue* – This local street provides a north/south connection between Beef Bend Road and the Rivermeade community located along the north bank of the Tualatin River. The BPA powerline corridor runs parallel and immediately east of 137th Avenue which creates a barrier between the existing King City limits and the study area. 137th Avenue is a narrow, paved facility with no shoulders. This road is posted for a 25-mph speed limit.

Study Area Intersections

The study area evaluated during the King City Concept Plan included an evaluation of twelve key intersections located on the streets surrounding the project area. These twelve locations were identified for analysis in consultation with Washington County and the Oregon Department of Transportation (ODOT). Analysis focused on identifying any potential future (2035 PM peak hour) impacts that could be associated with the Plan. These intersections included:

- Beef Bend Road at Roy Rogers Road
- Beef Bend Road at Elsner Road
- Beef Bend Road at 150th Avenue
- Beef Bend Road at 137th Avenue
- Beef Bend Road at 131st Avenue
- Elsner Road at Roy Rogers Road
- Fischer Road at 131st Avenue
- OR Highway 99W at Beef Bend Road
- OR Highway 99W at Durham Road
- OR Highway 99W at Fischer Road
- OR Highway 99W at 124th Avenue
- OR Highway 99W at Roy Rogers Road

The City's new TSP will include an update to each of these intersections using newly collected traffic counts and will add the intersections of:

- Roy Rogers Road at a future entrance to the proposed King City Master Plan town center south of Beef Bend Road
- Beef Bend Road at a new intersection with the main River Terrance north/south collector street
- OR Highway 99W at Bull Mountain Road

Existing Traffic Performance Standards

State, local, and regional transportation plans require that all study area intersections must operate at or below adopted performance measures or mitigation in the form of roadway improvements may be necessary to support future growth. The intersection performance measures (or mobility targets) vary by roadway jurisdiction including both ODOT and Washington County. King City does not have an adopted *Transportation System Plan* or mobility targets, but it is expected that these will be adopted when the TSP is completed.

Metro and ODOT are currently undertaking a joint project to update the way the region defines mobility and measures success in meeting transportation objectives. The updated policy is expected to be incorporated into the 2023 update to the Regional Transportation Plan and the next update of the Oregon Highway Plan. Updated policy will guide development of regional and local transportation plans and studies, and the evaluation of potential impacts of plan amendments and zoning changes on the transportation system.

2018 Traffic Operational Analysis

Traffic analyses were conducted to identify any existing deficiencies within the study area for the 2018 PM peak hour. The acknowledged source for determining overall capacity for signalized and unsignalized intersections is the *Highway Capacity Manual (HCM)*. Consistent with the ODOT *Analysis Procedures Manual*, the 2010 HCM was used to obtain average delay, v/c ratios and level of service output for unsignalized intersections, as well as delay and levels of service for signalized intersections. The 2000 version of HCM was used to determine v/c ratios at signalized intersections, Capacity analyses were completed for all study intersections using the Synchro (Version 10) software package. The results of the 2018 PM peak hour intersection operations analysis are presented in Table 4. As indicated in this table, all intersections are currently operating within their identified mobility target.

The Washington County URTS included analysis of existing PM peak hour traffic operations at the intersection of Roy Rogers Road and Beef Bend Road based on turning movement counts collected in the fall of 2019. This analysis conducted using the 6th Edition of the HCM and yielded a v/c ratio of 0.64 and an overall delay of 6.7 seconds or LOS A. This represents improved operations from the analysis conducted in early 2018 which likely reflects a significant difference in the number of southbound left-turning vehicles counted between the two time periods.

Table 4. 2018 PM Peak Hour Intersection Operations

Intersection	Traffic Control	Mobility Target	PM Peak Hour		
			Volume/ Capacity	Avg Delay (sec.)	Level of Service
Beef Bend Road at Roy Rogers Road	Signal	v/c 0.90	0.81	23.9	C
Beef Bend Road at Elsner Road	Stop Sign	v/c 0.90	0.05	11.3	B
Beef Bend Road at 150th Avenue	Stop Sign	v/c 0.99	0.26	16.7	C
Beef Bend Road at 137th Avenue	Stop Sign	v/c 0.99	0.03	14.8	B
Beef Bend Road at 131st Avenue	Signal	v/c 0.99	0.55	9.3	A
Roy Rogers Road at Elsner Road	Stop Sign	v/c 0.90	0.15	91.2	F
Fischer Road at 131st Avenue	Stop Sign	v/c 0.99	0.47	12.8	B
Highway 99 at Beef Bend Road	Signal	v/c 0.99	0.81	19.5	B
Highway 99 at Durham Road	Signal	v/c 0.99	0.90	56.3	E
Highway 99W at Fischer Road	Signal	v/c 0.99	0.91	41.8	D
Highway 99W at 124th Avenue	Signal	v/c 0.99	0.85	34.4	C
Highway 99W at Roy Rogers Road	Signal	v/c 0.99	0.89	49.7	D

Note 1: Performance results for the unsignalized intersections represent the worst movement.
Note 2: Analysis conducted based on 2010 Highway Capacity Manual except for volume/capacity ratios at signalized intersections which used 2000 HCM.

Future Background Traffic Conditions

Future 2035 PM peak hourly traffic volumes were developed using the Washington County transportation model and reflect conditions without full build-out of the land uses identified in the Concept Plan. This information will be updated for the City's TSP which is presently under preparation. In the absence of future traffic projections from the TSP planning effort, these volumes and the traffic operational performance described below is useful for evaluating the transportation implications associated with Master Plan land use alternatives (to which the incremental increase in traffic volumes attributed to land use growth can be added).

Traffic operations analysis was conducted to identify any future long-term (2035) PM peak hour background traffic deficiencies within the KCMP area, with several intersection expected to exceed their identified mobility targets. These include:

- *Beef Bend Road at Roy Rogers Road* – This intersection is assumed to be improved to add a second through lane in each direction on Roy Rogers Road as identified in the RTP and

County TSP. In the background condition this intersection would remain outside the UGB with a target mobility standard of v/c = 0.90. Intersection operations would slightly exceed this target. In the fall of 2020, Washington County began an improvement project to widen Roy Rogers Road between Scholls Ferry Road and a point 2,500 feet south of Bull Mountain Road to five lanes (two travel lanes in each direction with a center turn lane) with bicycle/pedestrian facilities along both sides of the road.

- *Beef Bend Road at 150th Avenue* – This stop-controlled intersection would operate substantially above its mobility standard of v/c = 0.99 for the southbound side street (150th Avenue) movement.
- *Roy Rogers Road at Elsner Road* – The side street stop-controlled movement at this intersection would substantially exceed its mobility standard of v/c = 0.90.
- *Highway 99W at Beef Bend Road, Durham Road and Fischer Road* – Each of these intersections is expected to exceed its mobility target of v/c = 0.99. At Beef Bend and Fischer Roads, the target would only be slightly exceeded. Longer delays would be experienced at Durham Road, in part due to the split phase signal operations necessitated by existing lane geometry.

Highway 99W at Roy Rogers Road/Tualatin-Sherwood Road – This intersection is expected to substantially exceed its mobility target of v/c = 0.99 even with the addition of a second northbound and southbound through lane on Roy Rogers Road as identified in the RTP and County TSP.

Multi-Modal Transportation System Analysis

Discussion presented in this section focuses on identifying key elements of the transportation system context for the KCMP area including:

- Issues related to integration of new or existing streets in the KCMP area with the surrounding transportation system
- Recent or on-going transportation studies and community development activities
- Early discussion on potential street standards that suit the vision for the KCMP study area
- Multimodal system elements and potential improvement opportunities

The full technical memorandum is provided in **Appendix A.**

Transportation System Context

Integration with the Surrounding Street System

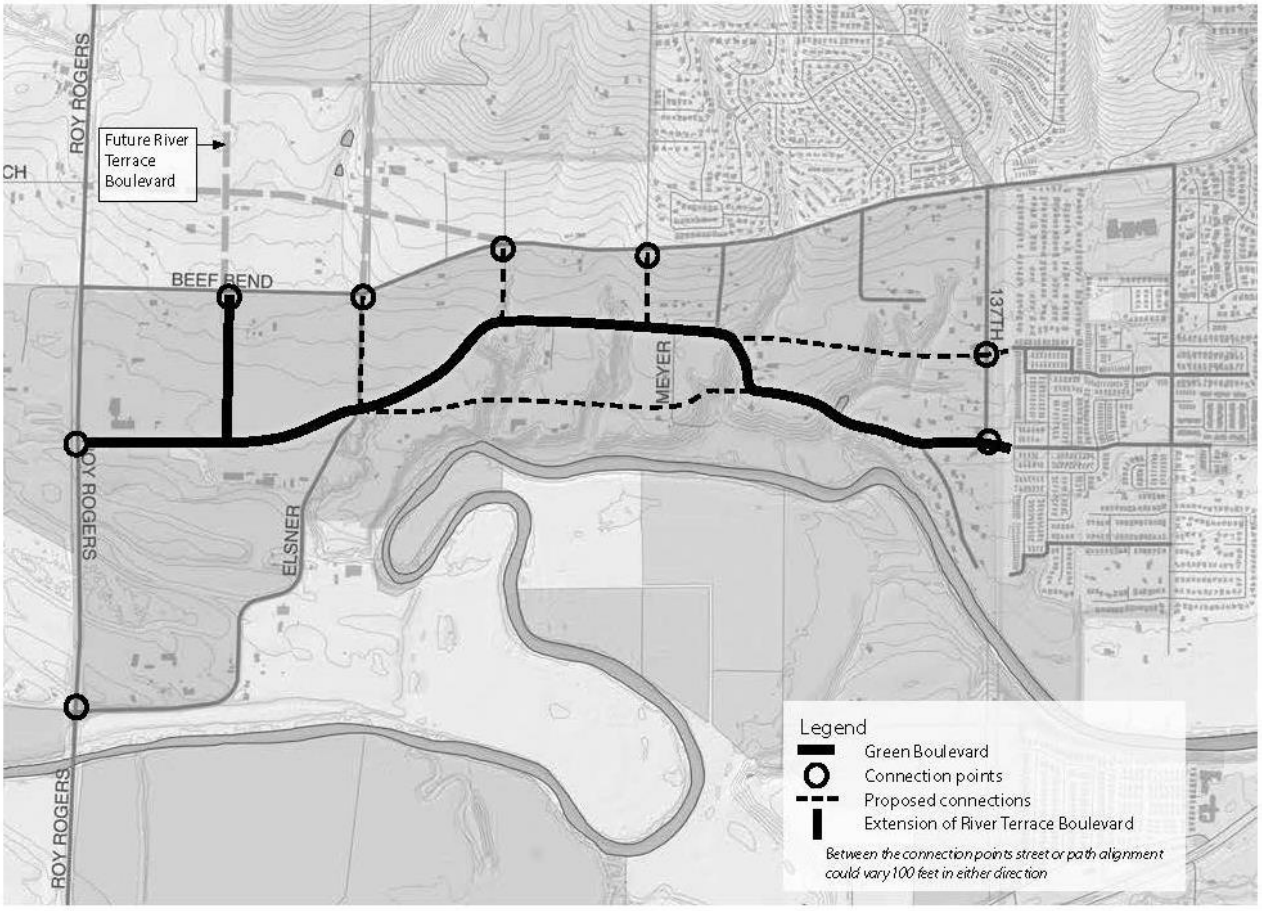
The TSP will focus on many of the issues related to integration of the King City Master Plan study area with the surrounding street system and adjacent developed urban areas. Figure 9 from the Concept Plan illustrates a vision of the backbone transportation system (composed largely of collector streets) that could serve the Master Plan study area. This figure is intended to provide planning context. Key issues to keep in mind while preparing the Master Plan include:

- *Roy Rogers Road -* Pending or potential improvements to Roy Rogers Road. As previously, in the fall of 2020, Washington County began an improvement project to widen Roy Rogers Road between Scholls Ferry Road and a point 2,500 feet south of Bull Mountain Road to five lanes (two travel lanes in each direction with a center turn lane) with bicycle/pedestrian facilities along both sides of the road. This improvement represents about ½ of the distance from Scholls Ferry Road to Beef Bend Road. Improvements including widening and multimodal facilities in the vicinity of Beef Bend Road are included in the Washington County TSP as a rural road enhancement area.
- *Beef Bend Road* is identified as an ultimate urban three-lane cross-section in the Washington County TSP between OR 99W and 150th Avenue. No improvement west of 150th Avenue was identified. Questions have been raised as to whether this road should be further widened to a five-lane cross-section to provide added east/west arterial capacity through this portion of the County.
- *East/West Backbone Street* - Connectivity to the existing developed portions of the City are largely expected to be focused on Fischer Road due to the lack of other connectivity on existing east/west streets. The Concept Plan envisioned a more-or-less continuous connection from Elsner Road to the existing alignment of Fischer Road which would require crossing several large ravines with their added construction cost. Close consideration should be given to the ultimate alignment of this street to both minimize costs and encourage local traffic within King City to stay on this road for shorter trips rather than using Beef Bend

Road. The ultimate location of this backbone east/west street should also be constructed at sufficient distance from Beef Bend Road to allow for appropriate land use.

- *Collector Streets* in the Master Plan study area – Per Washington County requirements, any direct connections to Roy Rogers Road or Beef Road must be made from a collector level street. Thus, many of the north/south streets proposed in the study area will need to be designated, designed and function as collector streets. Access to the proposed King City Master Plan Town Center area from Roy Rogers and/or Beef Bend Road should also be allowed and is anticipated in the TSP as a key analysis location.
- *Connections to River Terrace* – As discussed below, the approved River Terrace development located north of Beef Bend Road and east of Roy Rogers Road identifies road and trail connections to the south. Any road or trail connections to the north from the study area should be coordinated with the development plan for this area.

Figure 9: Backbone Transportation System Context



Washington County Urban Reserves Transportation Study

The Washington County *Urban Reserves Transportation Study* (URTS) began in the spring of 2019 and is nearing completion. The URTS examines how future land development in the County's existing Urban Reserve areas will affect the existing and potential future transportation system. The study identifies which area roadways will need to be widened to accommodate the added traffic from Urban Reserve development and will provide guidance to affected cities in planning for future priority transportation improvements and reservation of the necessary rights-of-way.

The URTS includes the KCMP area and evaluates the following:

- *Two alternatives for realignment of Beef Bend Road* were evaluated with the primary objective of avoiding impacts to the Tualatin River National Wildlife Refuge. The Refuge could be affected by any extension of this road further west to serve future urban reserve areas to the west and north of the KCMP area. Option 1 would relocate the intersection with Roy Rogers Road immediately north of its current location, while Option 2 would relocate the Roy Rogers Road intersection about 900 feet north of its location opposite Lasich Lane. Preliminary costs and potential benefits of these two alignments were identified but no recommendation was made.
- *The effectiveness of a westerly extension of Fischer Road* from its existing terminus to Roy Rogers Road was evaluated. The URTS found that lack of such a facility restricts local access between the existing city and the KCMP area. As noted:

  > *"Without the extension in place, future development must use Beef Bend Road to access these areas, adding 4,800 vehicles to Beef Bend Road each day along with other key local access roads, such as 131st Avenue. The Fischer Road extension allows for local traffic to circulate through the city without having to use Beef Bend Road, leaving the arterial capacity for through traffic from Roy Rogers to OR 99W."*

  As further noted:

  > *"Without the Fischer Road extension, westbound Beef Bend Road between 131st Avenue and 150th Avenue, and northbound Roy Rogers Road between Beef Bend Road and Elsner Road will exceed their capacity. Northbound 131st Avenue is also expected to exceed Washington County's mobility standard without the Fischer Road extension."*

  As 131st Avenue is now a city street, the TSP will need to address conformity of expected traffic operations along this street with any mobility standards that are adopted as part of the TSP.
- *The extension of Tile Flat Road* south from Scholls Ferry Road to Roy Rogers Road with an expected connection to Beef Bend Road. Two phases of the project were identified, Extension A and Extension B. Extension A would run from Scholls Ferry Road to Bull Mountain Road and provide a backbone road for development in the River Terrace West

Urban Reserve. Extension B would run from Bull Mountain Road to Beef Bend Road east of and parallel to Roy Rogers Road. It would complete a new corridor for regional travel that diverts traffic from Roy Rogers Road and Scholls Ferry Road. As noted in the URTS report:

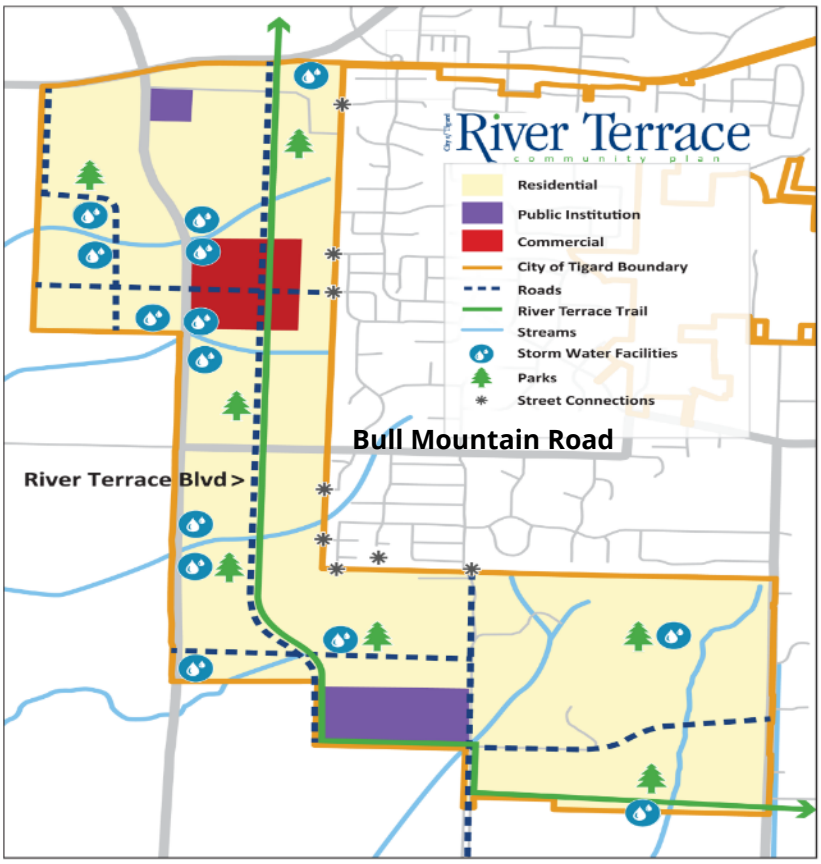
> *"Constructing Tile Flat Road Extension B can further reduce traffic on Roy Rogers Road between Bull Mountain Road and Beef Bend Road which is expected to be highly congested in the future. With this extension in place, most segments of Roy Rogers (between Scholls Ferry Road and Scholls-Sherwood Road) will not exceed capacity."*

The project would also add sidewalks and bike lanes and provide lower speeds to create a more comfortable active transportation corridor than Roy Rogers Road. Construction of Extension B is expected to occur in concert with development in the area.

River Terrace Development

The *River Terrace Community Plan* envisions a comprehensive circulation system for motor vehicles, pedestrians and cyclists in the River Terrace development located north of Beef Bend Road and east of Roy Rogers Road. This system, including trails, would link the many existing natural resource areas, proposed parks, future schools and services, residential and employment areas to the surrounding transportation system including potential future development in the KCMP area (Figure 10).

Figure 10. River Terrace Proposed Multimodal Circulation System



A key part of the River Terrace circulation system is a north/south facility to be known as River Terrace Boulevard east of and parallel to Roy Rogers Road. This roadway alignment would run from Bull Mountain Road on the north to the southern edge of the River Terrace development. Completion of a connection to Beef Bend Road will be addressed as part of Tigard's Concept Plan for future development in the River Terrace South Urban Reserve.

Paralleling River Terrace Boulevard is the River Terrace trail which is intended to take the place of the Roy Rogers Road regional trail originally identified in the *Washington County TSP*. The trail alignment within the River Terrace development was preferred over a Roy Rogers Road alignment by most community stakeholders, who also felt that the inclusion of both alignments was neither feasible nor necessary given the proximity of both trails to each other. The River Terrace trail would travel from Scholls Ferry Road on the north to 150th Avenue on the southeast. It would be co-located with the development's main north/south boulevard for approximately 1.5 miles of its 2.25-mile length. This trail was planned, in part, to complement Metro's Westside Trail as it provides a less steep travel option around Bull Mountain. This option is illustrated in the *Westside Trail Master Plan.* When planning active transportation facilities and/or trails for the KCMP area, it will be important to coordinate proposed trail alignments with the River Terrace facilities.

Roadway Design Characteristics

Design characteristics of roads in the KCMP study area were developed as part of the Washington County TSP and articulated in the County's Road Standards. Because the actual design of a roadway can vary, the objective was to define a system that allows standardization of key characteristics for each functionally classified facility to provide consistency, but also to provide criteria for some flexibility, while meeting standards. The discussion in this section addresses both roadway cross-sections and street connectivity goals and limitations.

Street Cross-Sections

Table 5 highlights key design parameters including street and right-of-way widths and street cross-sections.

Table 5. Design Parameters for Major Study Area Streets

Street	Lanes	Bike Lanes	Maximum Right-of-Way	Max. Paved Width
Oregon 99W	5	Yes	170-230 feet	100-115 feet
Roy Rogers Road	5	Yes	98 feet	74 feet
Beef Bend Road	3	Yes	90 feet	50 feet
Elsner Road	2	Yes	74 feet	50 feet
150th Avenue	2	Yes	74 feet	50 feet
146th Avenue	2	No	60 feet	36 feet
131st Avenue north of Fischer Road	2	Yes	74 feet	50 feet
131st Avenue south of Fischer Road	2	No	60 feet	36 feet
Fischer Road east of 131st Avenue	2	Yes	74 feet	50 feet

Source: Washington County 2015 TSP and King City West Concept Plan

The most common roadways in the KCMP study area are two, three and five lanes wide. Where center left turn lanes are identified, the actual design of the street may include sections without center turn lanes or with median treatments, where feasible. The actual treatment will be determined within the design and public process for implementation of each project. Specific right-of-way needs must be monitored continuously through the development review process to reflect current needs and conditions.

The City will need to coordinate with regional agencies to assure consistency in cross-section planning with the Washington County *Transportation System Plan* for roadways under the County's jurisdiction.

Local Street Connectivity

Much of the local street network within the existing King City limits is fairly well connected in a north/south direction with multiple access opportunities for entering or exiting most neighborhoods. Key north/south streets include Royalty Parkway (and connecting streets of King Charles Avenue and 124th Avenue), El Dorado Drive/126th Avenue, and 131st Avenue.

SW Fischer Road, a designated County collector street, provides good east/west connectivity through the existing residential portion of the city between Highway 99W and 131st Avenue. This street offers a potentially good future connection into the King City URA. The recommended functional classification of this future connection will be determined in the planning process.

There are few other east/west connections that unite existing King City neighborhoods. Particularly isolated are the mobile villages including El Dorado and King Village on the south side of the city, and Mountain View Mobile Estates in the northwest corner of the existing city. Access into, out of or through these villages provide little opportunity for connectivity with the remainder of the City.

Due to the lack of connections, traffic is funneled largely onto SW Fischer Road or onto Beef Bend Road. This type of street network can result in out-of-direction travel for motorists and create an

imbalance in traffic volumes. In addition to motor vehicles, direct connections contribute greatly to accessibility for pedestrians and bicyclists.

In developing a proposed road network for the study area, local street connectivity will be an important consideration. By providing good connectivity throughout the URA and into the existing city, out-of-direction travel, and the need to use Beef Bend Road can be reduced. Good local road connections can reduce potential neighborhood traffic impacts by balancing traffic volumes between various streets and can mitigate capacity deficiencies by better dispersing traffic. Additionally, accessibility between various modes can be enhanced to encourage the use of non-automotive travel.

Guidance for Planning Street Connectivity

Guidance in planning for street connectivity in the Master Plan study area can be found in many sources including the Metro *Regional Transportation Functional Plan (RTFP)*, the Washington County Community Development Code (CDC), the Washington County Road Standards, and the King City Municipal Code (KCMC) and *Comprehensive Plan* (*West King Planning Area*).

Table 6 summarizes maximum spacing for connections to arterial and collector streets, pedestrian and bicycle accessways, cul-de-sacs, arterial pedestrian crossings, and maximum block lengths and block perimeters.

Table 6. Street Connectivity Guidelines

Type of Connection	Maximum Dimension	Notes	Source
Street Spacing:			
• Full Street	530 feet	Except if not reasonable or cost-effective	Metro RTFP
• Ped/Bike Accessways	330 feet		Metro RTFP
Water Crossings:			
• Full Street	800-1200 ft	Unless habitat quality or length of crossing prevents full street	Metro RTFP
• Ped/Bike Accessways	530 feet		Metro RTFP
Cul-de-sacs	200 feet	Serving no more than 25 dwellings	Metro RTFP/KCMC
Access to Arterials	600 feet	From collector or other arterial	Washington County CDC
Access to Collectors	NA	150 feet minimum frontage width, no direct access if less than 150-foot width	Washington County CDC
Pedestrian/Bicycle Accessways	600-foot block faces	Accessway required every 400 feet	Washington County CDC
Arterial Pedestrian Crossings	NA	Minimum spacing of 600 feet	Washington County CDC
Block Length	530 feet	Between through streets	KCMC
Total Block Perimeter	1800 feet	Between through streets	KCMC

Other Considerations:

1. Within the West King City Planning Area, the KCMC requires that street system design include a minimum of two future local street connections to SW 137th Avenue and a minimum of one future local street connection to the property presently occupied by the Mountain View Mobile Estates manufactured home park. The Code indicates that the northern street shall be dedicated or otherwise reserved for future public street use.
2. While an interconnected street system is required, local street systems should be designed to discourage motorists traveling between destinations that are outside of the neighborhood being served by the local streets.

Note: Metro RTFP means *Regional Transportation Functional Plan,* KCMC means King City Municipal Code, Washington County CDC means Community Development Code

Alternative Street Standards

This section summarizes prior planning efforts and various ideas to facilitate creation of a typology of streets that reflects the unique character and vision for development of the KCMP area. These typologies build on existing standards but include modifications that are intended to correlate with adjacent land uses, thus suiting the context and sense of place that the Master Plan is trying to achieve - a more walkable and livable community for a diversity of residents.

The discussion of alternative street typologies has been organized by street classification or type and is included as **Appendix B**. Each street type includes information about the function, characteristics, and application of the type. Consideration of alternative street typologies could modify the existing street standards identified in the Washington County TSP and the *West King City Concept Plan*.

Multimodal Transportation System

As the City's TSP is in early stages of preparation, the information contained in this section was abstracted from the Concept Plan prepared for the King City Master Plan study area. There are many opportunities for developing a variety of activity transportation facilities and providing full modal connections with and connecting to the study area. This information will be updated by the TSP and coordination will occur between the TSP and the King City Master Plan to ensure that multimodal connections reflect the vision and goals for development of the study area.

Key destinations for the active pedestrian and bicycle transportation system within and near the study area include various schools, parks, and employment/retail commercial centers located within reasonable proximity. The study area is also the focus of a significant regional trail system which maximizes proximity to the Tualatin River, the Tualatin River National Wildlife Refuge and the Bonneville Power Administration's utility corridor.

Existing Pedestrian Facilities

An inventory of pedestrian facilities was conducted for the Washington County TSP Update and was updated in 2018 for the Concept Plan. This inventory considered sidewalks, trails and any enhanced pedestrian crossings to major streets or highways in unincorporated areas or along roads under County jurisdiction. Connectivity and pedestrian linkages are generally good on the local street system in the existing developed portions of King City. A key issue with existing pedestrian circulation is the limited east/west circulation opportunities on both the north and south sides of Fischer Road between 131st Avenue and OR 99W (including Fischer Road, King Richard Drive, a pathway between Jordan Road and Morocco Drive and Beef Bend Road). The existing inventory of pedestrian facilities is currently being updated for the TSP, but new mapping is not yet available.

There are little or no pedestrian facilities in the KCMP area, with walking being largely accommodated on existing roadway shoulders. Sidewalks have recently been constructed along the north side of Beef Bend Road for most of the segment between 137th Avenue and 150th Avenue with a few short gaps. There are no protected pedestrian crossing locations along this street which is signed for 45 mph speeds. There are no existing trails in the vicinity of the KCMP area except on the south side of the Tualatin River in the Wildlife Refuge.

Potential Pedestrian Facilities

Planning for development of a pedestrian circulation system in and adjacent to the KCMP area is guided by several documents including the West King City Planning Area in the City's Comprehensive Plan, and the Washington County TSP and Road Standards.

West King City Planning Area

The West King Planning Area in the City's Comprehensive Plan identifies several street cross-sections that can be applied to the planning of new collectors and local streets and associated pedestrian facilities in the study area. Based on these guidelines, pedestrian circulation will primarily be provided with sidewalks on both sides of all streets within and adjacent to the study area. Additionally, the Comprehensive Plan encourages the city to look for opportunities to provide pathways or trails in conjunction with development and in coordination with other agencies. Special attention should be paid to pathways that will complement existing or planned parks and open space areas or provide direct connections for active transportation modes where full street connections are not necessary or viable from a cost-effectiveness or impact standpoint.

The Comprehensive Plan further identifies the need to develop safe pedestrian facilities to provide access between residential areas and the Deer Creek Elementary School. Whether this school will serve the entire KCMP area or if a new school facility is located within the study area, the City will need to work closely with the Tigard-Tualatin School District and Washington County to provide permanent sidewalks or temporary pathways that provide access to these institutions. School attendance boundaries will also need to be considered in the development of active transportation facilities, particularly if a crossing of Beef Bend Road is necessary.

Washington County TSP

The Washington County TSP provides regional context for the development of pedestrian facilities in the KCMP area and identifies locations for pedestrian parkways, streetscape overlay zones, proposed regional trails, and regional trail refinement areas. Particularly pertinent to the development of a pedestrian circulation system in the KCMP area are the proposed regional trails in the vicinity and two of the designated regional trail refinement areas. The refinement areas include along the Tualatin River immediately south of the study area, and along Roy Rogers Road. Regional trails are only conceptually planned in a refinement area, and a specific alignment has not yet been determined. A feasibility study or master plan is necessary to determine the specific alignment. Coordination with Washington County on these refinement areas should occur during the master planning process.

The Washington County TSP also includes an extensive regional trail system as part of both the Plan's Pedestrian Element and Bicycle Element and identifies the major existing and proposed regional trails in the County. Of relevance to the KCMP are the following:

- *Westside Trail* – This trail generally follows a north/south power line corridor across Washington and Multnomah counties (see Figure 9), eventually connecting the Tualatin River near King City with the Willamette River in far northwest Portland. Many portions are complete between Barrows Road in Tigard and TV Highway in Beaverton. Major challenges in the remaining sections include steep topography on Bull Mountain, and costly crossings of Sunset Highway and the Tualatin River.

Westside Trail Segment 1- Looking North
Source: Metro

- *Tualatin River Greenway Trail* - This riverside trail would extend from the Wildlife Refuge eastward through downtown Tualatin, underneath Interstate 5 and into Clackamas County, where it would enter the Stafford urban reserve.
- *Ice Age Tonquin Trail* - A three-pronged network of trails will eventually connect Tualatin, Sherwood and Wilsonville. One section has been completed within Metro's Graham Oaks Nature Park in Clackamas County. The northern prong of the trail would connect with the Westside Trail at a proposed pedestrian/bicycle bridge over the Tualatin River near King City. The western prong would pass through the City of Sherwood as the Cedar Creek Trail.

Figure 11. Westside Trail Segment 1 – Tualatin River to Beef Bend Road

Existing Bicycle Facilities

An inventory of bicycle facilities was conducted for the Washington County TSP Update and was updated in 2018 for the Concept Plan. The County's TSP inventoried bike lanes, wide shoulders, trails and any enhanced crossings to major streets or highways in unincorporated areas or along roads under County jurisdiction. With the exception of the wide shoulders on Roy Rogers Road, none of the arterial and collector streets in KCMP area have bike lanes or wide shoulders to accommodate bicycle travel. Additionally, while there are many planned trails in the vicinity of the study area, there are no existing trails that specifically benefit the KCMP area. The existing inventory of bicycle facilities is currently being updated for the TSP, but new mapping is not yet available.

Beef Bend Road, Elsner Road and 150th Avenue are all identified as "Ride with Caution" due to the narrow roadway cross-section, lack of shoulders and relatively high vehicle speed. 131st Avenue has recently been improved to provide two through lanes with left turn channelization and bicycle lanes. Additionally, Fischer Road has been improved to add bike lanes and sidewalks from 131st Avenue to Pacific Highway.

Potential Bicycle Transportation Facilities

Planning for development of a bicycle circulation system in and adjacent to the KCMP area is guided by several documents including the West King City Planning Area in the City's Comprehensive Plan, and the Washington County TSP and Road Standards.

West King City Planning Area

The West King Planning Area in the City's Comprehensive Plan indicates that, when developed, the bicycle circulation system would largely rely on shared use with vehicular traffic on the existing and proposed street system. This system would consist of local and collector facilities that were expected to carry low traffic volumes at relatively low speeds. The sidewalks and pathways would also be available to novice cyclists. The plan notes that bicycle lanes would generally be appropriate when average daily traffic volumes exceed 3,000 and have been recently added by improvements to both SW 131st Avenue and SW Fischer Road. As with pedestrian routes, bicycle connections between important destinations may include separate pathways in addition to on-street facilities. The Comprehensive Plan also encourages the City to look for opportunities to provide pathways or trails in conjunction with development and in coordination with other agencies. Special attention should be paid to pathways that will complement existing or planned parks and open space areas or provide direct connections for active transportation modes where full street connections are not necessary or viable from a cost-effectiveness or impact standpoint.

Washington County TSP

Particularly pertinent to the development of a bicycle circulation system in King City Master Plan area are the proposed regional trails in the vicinity and two of the designated regional trail refinement areas as identified in the pedestrian system discussion. The TSP highlights locations in the rural portions of Washington County (outside of exiting UGBs) where the addition of widened roadway shoulders would help to accommodate the need for bicycle travel in these areas (Table 3-18 of the TSP). Specifically pertinent to the KCMP area are identified needs for bicycle lanes (or wider shoulders) along Beef Bend Road and Fischer Road (Fischer Road improvements have recently been completed).

Transit

Transit service is not currently provided within the Master Plan study area, but two fixed bus routes operate on Highway 99W connecting King City to the rest of the Portland Metropolitan Area. Bus stops are located at most major intersections along the highway through King City, along with two park-and-ride lots. The northern park-and-ride lot serving the study area is on Highway 99W at Bull Mountain Road (in the parking lot at Christ the King Lutheran church). A total of 30 spaces are available. The southern park-and-ride lot is located just off Highway 99W on Tualatin-Sherwood Road. A total of 50 spaces are available. Americans with Disabilities Act (ADA) paratransit service is also provided by TriMet in the study area.

Local paratransit service is provided by Ride Connection, a non-profit organization dedicated to providing transportation in areas and for persons not adequately served by fixed route buses. Ride Connection service is designed primarily for people over the age of 60 and for people with disabilities, although service is available for the general public when traveling in areas not served by public transportation. Ride Connection also provides deviated route service (buses that run on a route and schedule and can make small deviations to pick up or drop off passengers) in rural Washington County, Forest Grove, Tualatin, King City, and North Hillsboro.

Aviation

There is one small private use airport in the Master Plan study area – Meyer Riverside Airpark. The airport is located at 147th Avenue, is approximately 1,600 feet long and 100 feet side with a turf surface.

Market Analysis

This section discusses market feasibility for potential new development in the King City Master Plan area. This assessment reviews housing and economic trends and forecasts, overviews updated market information such as housing construction starts, demographic and real estate market data since COVID-19 pandemic and assesses the proposed development program for housing and employment uses.

Demographic Trends

The most recent available population and income estimates still predate the COVID-19 pandemic. During the two decades prior to 2020, the annual population growth rate for King City and Sherwood far outpaced the Washington County average. As indicated in Table 7, King City had a population of 4,190 in 2019, up from 1,945 in 2000.

Table 7. Population Trends

	2000	2010	2019	2000-2010 AGR	2010-2019 AGR	2000-2019 AGR
Washington County	449,250	531,070	613,410	1.69%	1.61%	1.65%
King City	1,945	2,800	4,190	3.71%	4.58%	4.12%
Tualatin	22,791	26,160	27,135	1.39%	0.41%	0.92%
Tigard	42,260	47,595	53,450	1.20%	1.30%	1.24%
Sherwood	12,230	16,705	19,595	3.17%	1.79%	2.51%

***Source** : Portland State University Population Research Center. AGR = average annual growth rate.*

King City's demographics are changing. Historically, King City's residents were much older and households much smaller than the Washington County average. However, in recent years, younger, more affluent families have moved in.

Income levels are expected to increase as new residential subdivisions are developed in King City. Currently, median family income in King City, at $53,750, is below that of peer cities in Washington County. Comparatively, Tigard's median family income is $75,795, Tualatin's is $81,118, and Sherwood's is $103,592.[1]

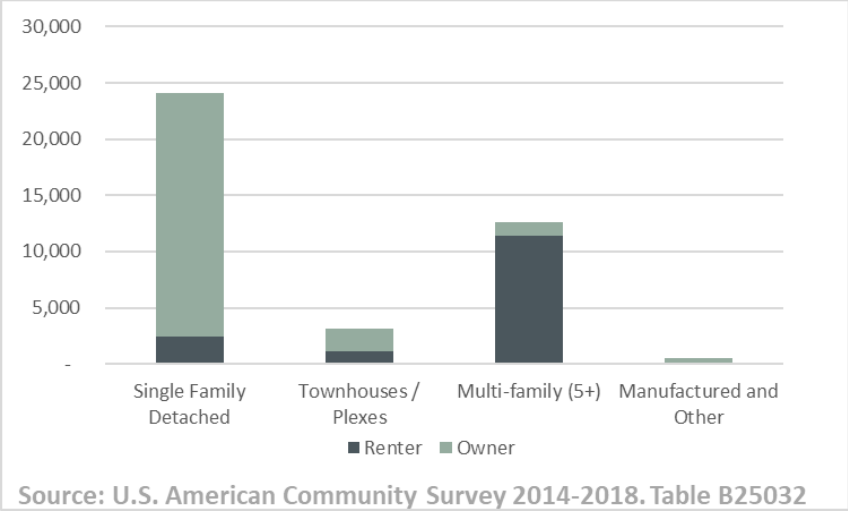
[1] U.S. American Community Survey 2014-2018. Table S1901.

Housing Inventory and Tenancy

The changing housing inventory and tenancy mix within the South Beef Bend Road Primary Market Area (PMA) sheds light on local market demand preferences. For analysis purposes, the PMA is defined to include King City, Tigard, Tualatin and Sherwood. In 2018, there were 40,247 housing units in the PMA. Like most Oregon cities, single-family detached housing is the most prevalent housing type in the PMA, representing 60% of the housing stock. The remaining housing inventory includes multi-family (31% of the inventory), townhomes and duplexes (8%), and mobile homes (1%).

Within the PMA, owner-occupied housing units account for 63% of the occupied housing inventory while renter-occupied units account for 37%. Only 3.5% of the housing inventory in the PMA was vacant in 2018, and vacancy rates are reported to be even lower today. Most homeowners reside in single-family detached units (85%) or attached dwelling units (8%). Renters primarily reside in multi-family units (76%), followed by single family detached (16%) and single family attached units (8%), as indicated in Figure 12.

Figure 12: Occupied Housing Units by Structure Type, King City Primary Market Area



Housing within the PMA is starting to shift more towards townhomes, plexes and apartments. As indicated in Table 8, between 2010 and 2018 the PMA added 3,552 dwelling units. Slightly over half (54%) of this increase was in single family detached housing, and 46% in the attached and multi-family housing categories.

Table 8: Changes in Housing Inventory, King City PMA, 2010-2018

	2010	2018	2010 to 2018 Change	Avg. Annual Change
Single Family Detached	22,156	24,082	**1,926**	**241**
Townhouses / Plexes	2,475	3,089	**614**	**77**
Multi-family (5+)	11,534	12,567	**1,033**	**129**
Other	530	509	**(21)**	**(3)**
Total	36,695	40,247	**3,552**	**444**

Source: U.S. Census Bureau, 2010 & 2018 American Community Survey (Table B25032),

Housing Market Analysis

Like most locations within the Pacific Northwest, home values in the PMA have increased significantly. Home prices in King City are still comparatively lower than surrounding locations but increased to $359,000 in October 2020 up 2.6% from one year earlier (Table 9). Nearby locations, such as Tigard, Sherwood and Tualatin, where new subdivision activity is occurring, are recording significantly higher home prices.

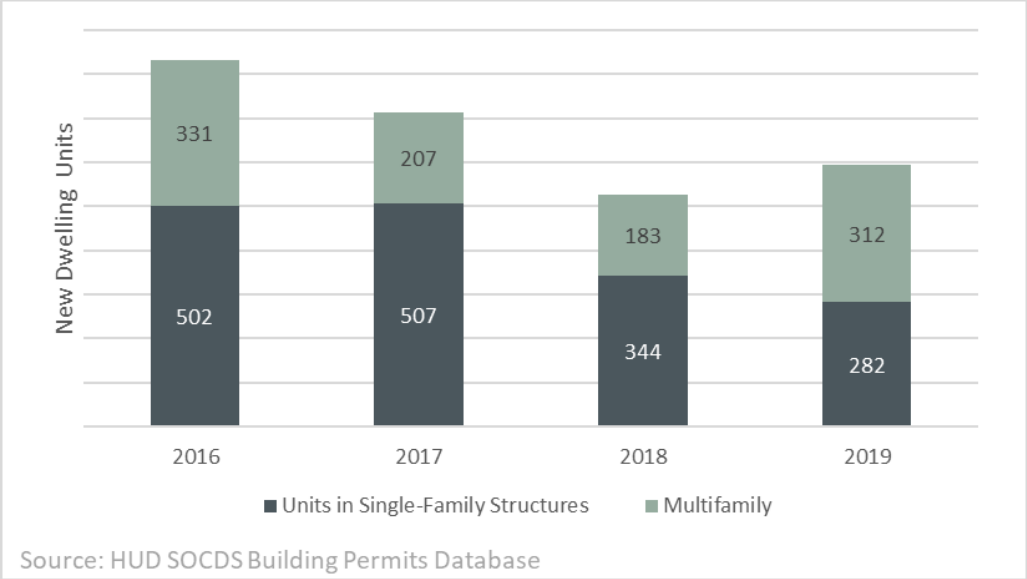
Table 9: Median Home Sales Price Trends in Selected Markets

	Oct-19	Oct-20	Change %
Washington County	$429,000	$444,000	3.5%
King City	$350,000	$359,000	2.6%
Tigard	$451,000	$472,000	4.7%
Sherwood	$451,000	$470,000	4.2%
Tualatin	$464,000	$483,000	4.1%

Source: Zillow.com; analysis by FCS Group, October 2020.

Construction activity within the PMA has ranged from 527 to 833 new housing permits each year over the past four years. Single-family detached and attached units accounted for 61% for of the net increase, while multifamily development accounted for 39% of the demand (Figure 13).

Figure 13: Residential Units Permitted, Primary Market Area (2016-2019)



In October 2020, FCS GROUP conducted a survey of six apartment complexes within the PMA with a combined total of 1,058 rental units. Monthly rents ranged from $0.80 to $1.10 per square foot of floor area for older apartment buildings, and $1.50 to $1.80 per square foot for the newer buildings (Table 10). While overall average vacancy rates were reported to be in the 3-5% range, waitlists were reported mostly for the larger 3-bedroom units.

Table 10: Apartment Survey

Bedrooms	Average Rental Rate (per month)	Average Square Feet	Rent per SF
1	$1,271	706	$1.80
2	$1,504	920	$1.63
3	$1,718	1,145	$1.50

Source: Apartments.com, survey by FCS GROUP.

Development Program Assessment

The current growth forecast for the King City Master Plan area and the rest of King City is provided in Table 11. The growth forecast assumes that by year 2045, the 528-acre KCMP area will include 3,091 dwellings (households) and 275 employees. The remainder of King City is projected to include 2,751 dwellings and 882 employees. This amount of growth equates to a net increase of approximately 3,070 dwelling units for the KCMP area, and 850 for the remainder of King City.

Table 11: Future Employment and Dwelling Forecast, King City Master Plan Area and King City, 2045

	TAZs within King City Beef Bend			Other TAZs within King City (current city limit)					
Traffic Analysis Zone #/Area	1001	1051 (West)	Subtotal Beef Bend South	1051 (East)	1052	1050	1025	Subtotal rest of King City	King City Total
Employees	265	10	**275**	162	49	671	-	**882**	**1,157**
Dwellings (households)	2,295	796	**3,091**	1,440	147	1,072	92	**2,751**	**5,842**
Total employees and households	2,560	806	**3,366**	1,602	196	1,743	92	**3,633**	**6,999**

Source: King City Transportation System Plan Land Use Assumptions Report, Urbsworks August 2020

Residential Development Program

According to the *King City TSP Land Use Assumptions Report*, the KCMP area is to be planned for 1,794 single family detached dwelling units, 560 townhomes/plexes, and 1,222 multifamily residential units. The findings discussed previously suggests that the forecasted level of housing development within the KCMP area would equate to approximately 19% of the PMA residential market share.

To optimize housing attainability, the King City Concept Plan planned for a wide range of residential land use types. In addition to 1,222 multifamily units and 560 townhomes/plexes, the Concept Plan assumed at least: 479 small "narrow lot" units; and 190 cottage cluster units. Accessory dwellings would also be allowed by right on all standard size detached lots. In light of the fact that market conditions have not yet supported much cottage cluster development in the PMA, it is likely that some form of group housing (e.g., assisted living) or manufactured housing may address that general style of housing need. Overall, this development program appears to be reasonable in meeting middle-income market demand forecasts.

Commercial Development Program

The commercial development program for the KCMP area assumes that 275 jobs will be added by year 2045. In light of the current COVID-19 pandemic, a share of workers can be expected to live/work within their home. The residential development program described above assumes 300 of the 560 attached units to be in live/work housing developments. The actual number of people that work from home may continue to exceed these forecasts.

For analysis purposes, if 15% of the workers within the KCMP area are assumed to be home-based workers that do not require for-lease commercial space, the planned commercial development program for the master plan area would include approximately 85,900 square feet of leasable commercial floor area.

In order to "test" the market support for future commercial development, FCS GROUP considered the level of increased aggregate income and retail buying power that would likely occur over time within the KCMP area and rest of King City. The analysis assumes that average household income within the KCMP area would be nearly on par with the Tigard River Terrace area ($95,435 per year)

and the rest of King City would continue to have income at current levels ($74,296 per year). Annual retail purchase patterns per household are assumed to remain at current levels for the PMA.

As indicated in Table 12, the level of supportable square feet of commercial retail/service space that would likely occur by year 2045 for the KCMP area is expected to range from 42,000 to 86,000 square feet. The viability of such a commercial center will depend heavily on access and visibility. If the commercial center is located near a high-traffic location with future transit access, such as Roy Rogers Road, the potential for retail inflow would be greater, which would increase the sales and raise the potential for attracting a grocery store tenant, such as Trader Joes or Whole Foods. If located internally within the master plan area, the viability of the commercial would be much lower.

In either case, the potential for future commercial development is not expected for at least 10 years, or until significant residential activity occurs within the master plan area. Little to no development potential for an office element is foreseen for the future. As the planning process continues, the market assessment will be refined based on input from the public and technical partners.

Table 12: Supportable Retail Demand, King City Master Plan Area

	Beef Bend South	Rest of KC	King City Total
Change in Households	3,071	851	3,922
Avg. HH Income	$95,435	$74,296	$90,848
Change in Aggregate Income	$293,080,885	$63,225,896	$356,306,781

	Proj. Annual Retail Spending per Household	Proj. Additional Retail Demand In King City	Supportable For Lease Space SF (@$475/SF)	Proj. Beef Bend South Capture	
Gasoline Stations	$3,513	$13,776,130		None	
Food Stores	$5,502	$21,579,660	47,800	Convenience store, specialty market	4,000 to 26,000 SF
General Merch.	$20,398	$80,000,948	177,300	Low, specialty retail shops	6,000 to 10,000 SF
Food & Drink	$4,362	$17,107,173	37,900	Good, long term	20,000 to 30,000 SF
Services/Other	$3,000	$11,766,000	26,100	Good, long term	12,000 to 20,000 SF
Total	**$36,775**	**$144,229,911**	**289,100**		**42,000 to 86,000 SF**

Source: Household growth forecasts for defined market area; ESRI Business Analyst (income and spending assumptions); excludes auto sales and non-store retail pruchases, which are assumed to increase from 2.5% to 10% of total retail sales by year 2040.

Next Steps

The purpose of this Existing Conditions report is to update and supplement existing conditions materials from the Concept Plan and TSP to ensure the KCMP is based on the most recent and accurate data available. The Existing Conditions report also provides a baseline information for a preliminary discussion of opportunities and constraints for the King City Master Plan. Key findings from the Existing Conditions Report will be presented to the Technical Advisory Committee (TAC) and at a Public Workshop for review and input.

APPENDIX

- **Appendix A.** Existing Multimodal Transportation Conditions Technical Memorandum
- **Appendix B.** Summary of Alternative Street Typologies