

King City
Inc. 1966
A Community For All Ages

Kingston Terrace
Master Plan

July 2023

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This project was funded through a Metro 2040 planning and development grant.

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Introduction

Purpose and Scope

The Kingston Terrace Master Plan (KTMP) is a tool to direct and manage development of the 528-acre area located directly west of existing King City (Figure 1.1), referred to interchangeably as Kingston Terrace or Urban Reserve Area (URA) 6D. The Master Plan refines the 2018 King City Urban Reserve Area 6D Concept Plan to provide additional development detail and implementation strategies, including amendments to the King City Comprehensive Plan and Community Development Code. The KTMP has been coordinated with the city's first Transportation System Plan (TSP), which will be adopted in coordination with the KTMP to ensure consistency between the two plans.

The KTMP aims to create:

- A vibrant, walkable, and complete community where every day needs are easily accessible.
- Housing choice and affordability for all current and future residents.
- Safe, efficient, convenient, and reliable transportation choices to enhance connectivity and minimize automobile dependency.
- Protection of environmentally sensitive lands and retention of healthy ecosystems.
- The efficient and equitable provision of infrastructure and associated costs between current and future residents.

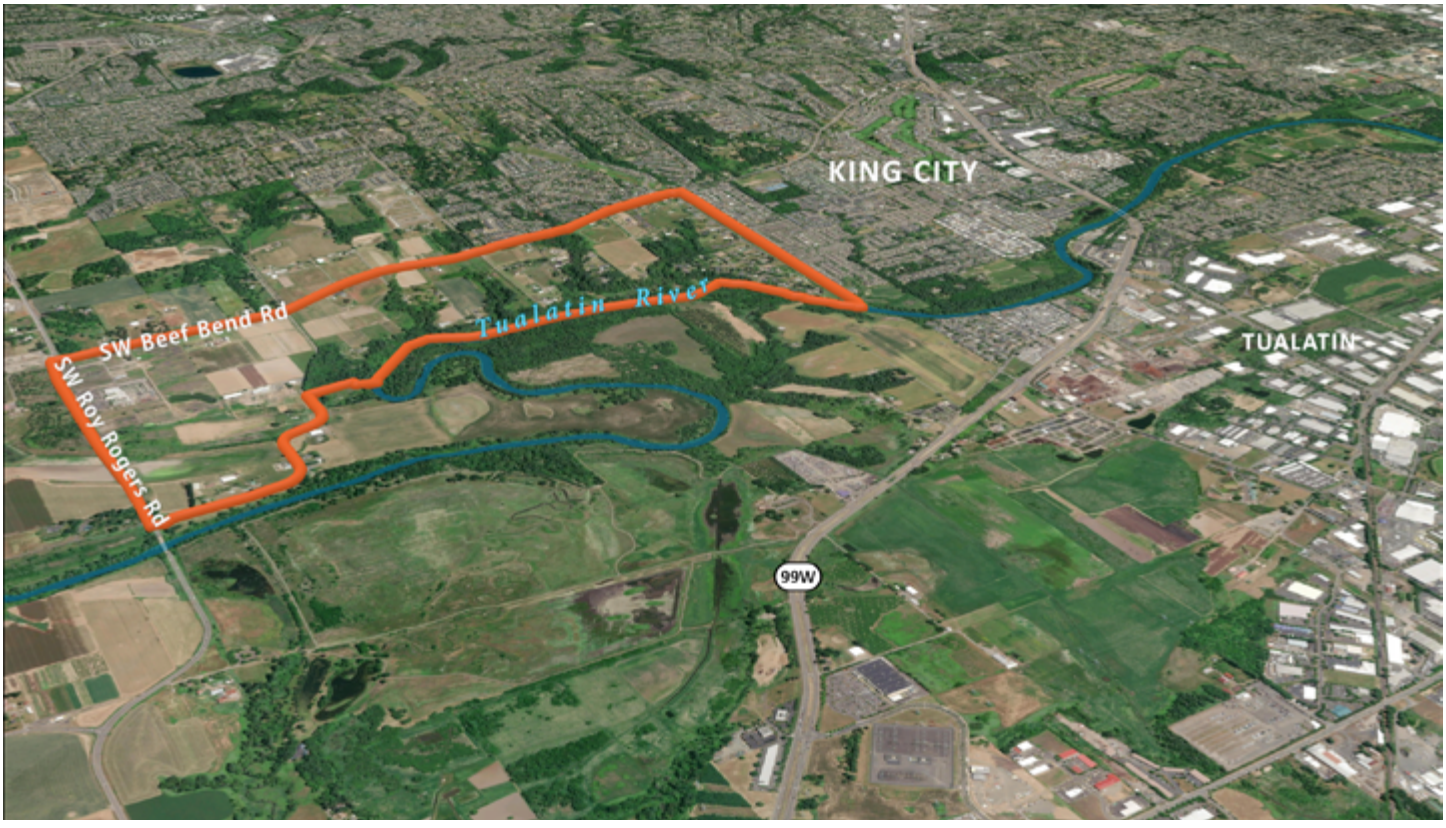


Figure 1.1 Kingston Terrace Vicinity Map (originally Urban Reserve Area 6D)

Background

NEED FOR THE PLAN

Recognizing an approaching shortage of developable urban land for future residential and employment growth in the Portland region, Metro and the region's cities and counties began to evaluate suitable urban reserve areas in 2009. In Washington County, the study area included over 170,000 acres adjacent to the existing Urban Growth Boundary (UGB). Land within this area was analyzed for suitability as rural reserves (land to continue in resource use) and urban reserves (land most suitable for urbanization) within the next 40 to 50 years. Part of the evaluation included an assessment about how much future urban development could be accommodated within the existing UGB.

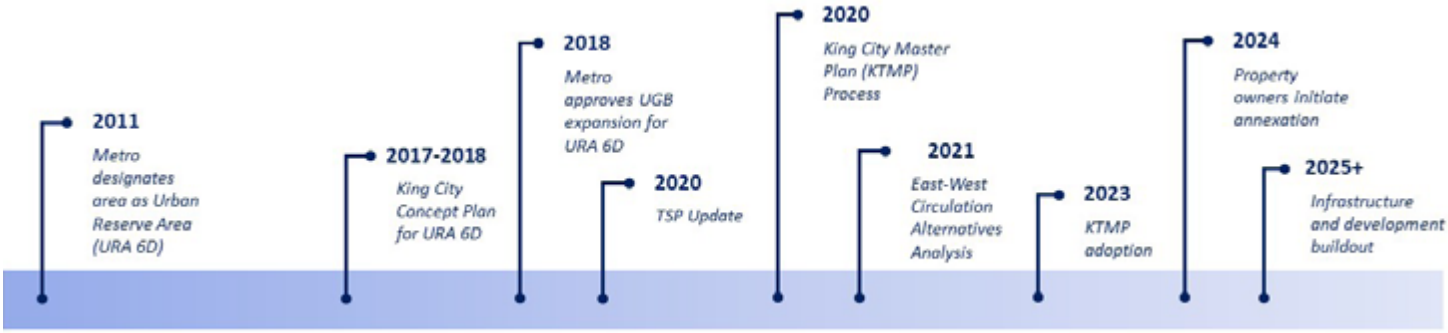


Figure 1.2. Kingston Terrace Planning Timeline

Following a planning and public involvement process involving Washington County, cities within Washington County, Metro, and the Oregon Land Conservation and Development Commission, it was determined that the existing UGB could not accommodate all of the anticipated future urban development and that additional land would be necessary for homes, businesses, and public facilities. Because of its overall suitability to support urban development, URA 6D was one of many study areas designated as an Urban Reserve Area in 2011. The City of Tigard has completed a Concept Plan for URA 6C which was also added to the Metro UGB and is now known as Tigard River Terrace 2.0.

KING CITY URBAN RESERVE AREA 6D CONCEPT PLAN

Originating as a retirement community, King City doubled in population between 2000 and 2020, and it has diversified in terms of race, ethnicity, and age. To accommodate this rapid growth, King City identified Urban Reserve Area 6D as a potential site for expansion. King City completed the King City Urban Reserve Area 6D Concept Plan in spring 2018, which created an initial vision describing how the area could be urbanized.

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.

Key elements of the Concept Plan include:

- Kingston Terrace will accommodate 3,300 to 3,600 dwellings within four distinct neighborhoods.
- Kingston Terrace will accommodate approximately 50,000 square feet of commercial uses within a 20-year horizon.
- Residential and commercial uses can be accommodated on approximately 320 of the areas 528 acres.
- Sensitivity to the Tualatin River and other natural areas is a key consideration for future development, especially in regard to ravine crossings.
- Pedestrian and bicycle connectivity will be a priority for the transportation network.
- Residential development will include a variety of housing types and concentrate higher densities in the town center near SW Roy Rogers Road and along SW Beef Bend Road.

Following the Concept Plan, Metro approved the expansion of the UGB to include URA 6D. Metro placed conditions of approval on the four cities that submitted proposals for UGB expansions in May 2018: Wilsonville, Hillsboro, Beaverton, and King City. In addition, the following conditions of approval were placed on King City specifically:

1. King City shall coordinate with Washington County and the City of Tigard as it engages in its work on a Transportation System Plan, other infrastructure planning, and comprehensive planning.
2. Before amending the King City comprehensive plan to include the expansion area, King City shall conduct additional market analysis to better understand the feasibility of creating a new mixed-use town center.
2. Pending the results of the market analysis of a new town center, King City shall plan for at least 3,300 homes in the Beef Bend South expansion area. If the market analysis indicates that this housing target is infeasible, King City shall work with Metro to determine an appropriate housing target for the expansion area.
4. The expansion area shall be designated Neighborhood on the 2040 Growth Concept map.
5. Pending the results of the market analysis of a new town center, Metro will work with King City to make necessary changes to the 2040 Growth Concept map.
6. Prior to amending the King City comprehensive plan to include the expansion area, King City shall complete a Transportation System Plan for the city.
7. Prior to amending the King City comprehensive plan to include the expansion area, King City shall amend its code to remove barriers to the construction of accessory dwelling units, including:
   a. Remove the requirement that accessory dwelling units can only be built on lots that are at least 7,500 square feet, which effectively prohibits construction of accessory dwelling units in the city.
   b. Remove or increase the requirement that accessory dwelling units be no bigger than 33 percent of the square footage of the primary home so that an accessory dwelling unit of at least 800 square feet would be allowable.
8. The Columbia Land Trust holds a conservation easement over portions of the Bankston property, which King City's concept plan identifies as the intended location for a key transportation facility serving the expansion area. King City shall work with the Columbia Land Trust to protect, to the maximum extent possible, the portion of the Bankston property covered by the conservation easement.
9. To reduce housing costs, King City shall, in its comprehensive planning, explore ways to encourage the use of manufactured housing in the expansion area.

Development of the Master Plan

The Kingston Terrace Master Plan was prepared to be consistent with Metro's 2040 Growth Concept, Urban Growth Management Functional Plan, and conditions of approval for the urban growth boundary (UGB) expansion. The King City Concept Plan for URA 6D identified the following key steps for the master plan:

- Refine the land use concept by identifying more specific 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 to provide the necessary facilities and infrastructure.
- Identify necessary updates for the King City Comprehensive Plan and Community Development Code.

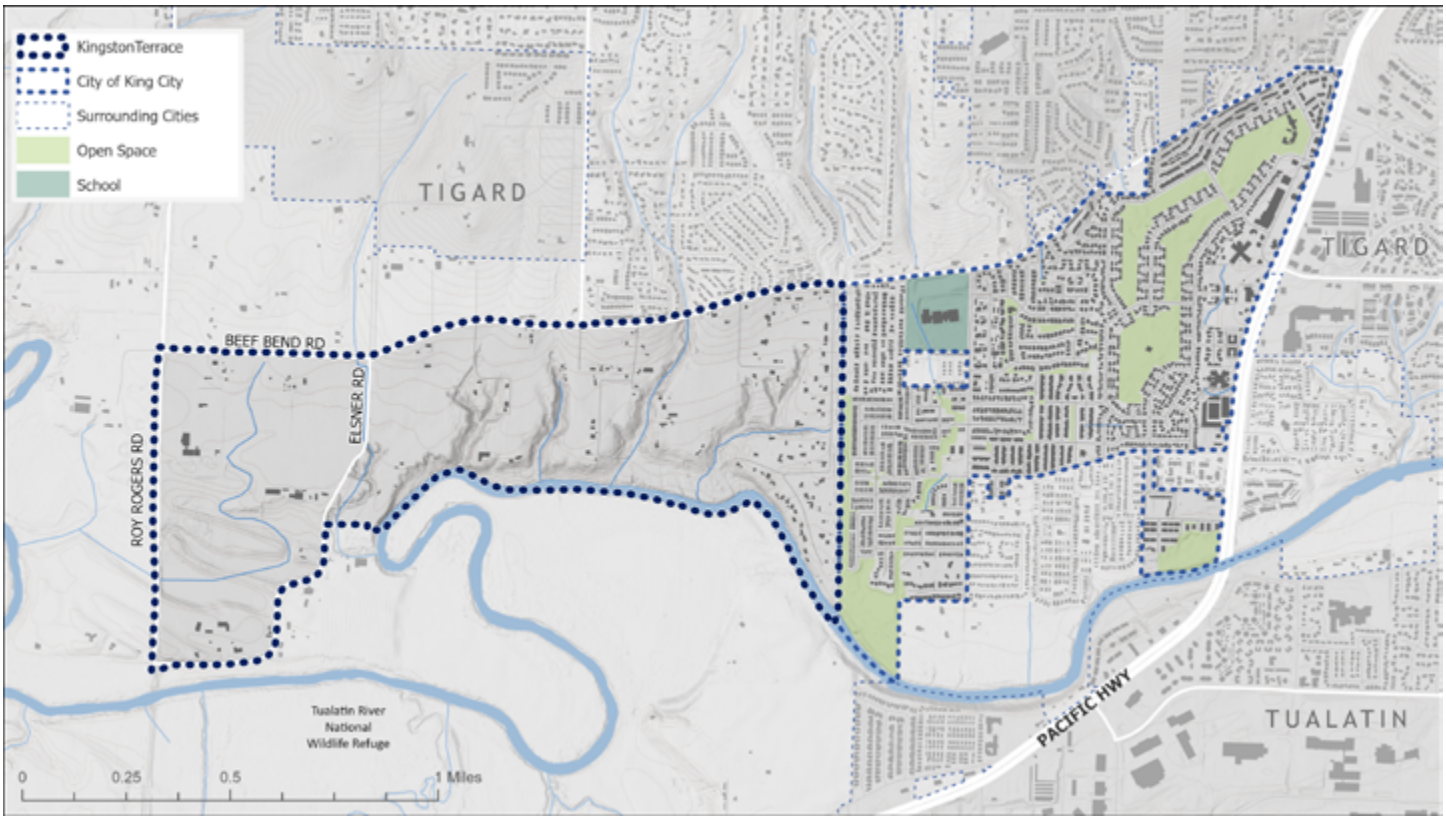


Figure 1.3 Kingston Terrace Master Plan Area

PLANNING AREA

The KTMP planning area is approximately 528 acres located immediately west of King City, as shown in Figure 1.3. SW Beef Bend Road and SW Roy Rogers Road border the area on the north and west, respectively. The south boundary is formed primarily by the southern segment of SW Elsner Road and the Tualatin River.

Land along the Tualatin River is within the 100-year floodplain, and five drainages generally run south from Bull Mountain to the river. Riparian and wetland habitat is found in portions of these areas. The land outside of the floodplain and drainages is currently devoted to agriculture, rural home sites, and a retail garden and landscaping business on SW Roy Rogers Road. Property sizes in the KTMP area tend to become larger from east to west.

RELATED PROJECTS

In the intervening four years since the adoption of the Concept Plan, several necessary related projects have been completed. These include:

King City Housing Needs Analysis (2018) – Study of land capacity to accommodate needed housing over a 20-year planning horizon.

King City Economic Opportunities Analysis (2020) – Study of land capacity to accommodate needed jobs over a 20-year planning horizon.

King City TSP Draft (2022) – Update to the Mobility Framework

King City Middle Housing Code Amendments (2021) – Update to the Land Use and Neighborhoods Framework

King City TSP Urban Design Guidebook (2020) – Update to the Mobility Framework and the Land Use and Neighborhoods Framework

King City TSP Land Use Assumptions Report (2020) – Update to the Mobility Framework and the Land Use and Neighborhoods Framework

King City TSP Market Analysis (2017) – Update to the Mobility Framework and the Land Use and Neighborhoods Framework

KTMP East-West Circulation Alternatives Analysis (2022) – Update to the Mobility Framework

The outcomes of each are incorporated into subsequent chapters.

Vision and Framework

VISION AND GOALS

During the URA 6D Concept Plan process, community stakeholders helped develop and refine the vision and goals for development of this area. The vision and goals were vetted and further refined by stakeholders during the KTMP process.

1. Sensitivity to the Tualatin River and Surrounding Natural Areas

Feature the Tualatin River as the reason for being: The river is a defining feature of this area and a major contributor to what makes it special. New development should connect, in physical and other ways (like wayfinding and other public art) to the Tualatin River and Wildlife Refuge. Provide access to the Tualatin River through a Riverwalk trail and a trail across the river. A sensitivity to the health and vitality of the river should be maintained.

Design graceful transitions: Make sure that development transitions down in scale and intensity where it meets natural areas, particularly on the southern edge where future development might be located near the Tualatin River. Transition density from center to edge. Leave a buffer between developed and undeveloped areas, the river, and the Tualatin Wildlife Refuge.

Integrate stormwater management throughout: Work with Clean Water Services to use the appropriate mix of approaches through retrofits, new development, and stream corridor enhancements to treat stormwater from new and existing development uphill. Aim to reduce runoff and heal existing erosion damage. Use best practices for stormwater management and mitigation; build upon what Tigard and Clean Water Services (CWS) has done for River Terrace and areas north of Kingston Terrace.

Integrate nature into developed areas: Integrate green spaces and wetlands into each neighborhood. Provide different choices for recreation and parks, including pocket parks, recreation and playfields, and a connected trail system.

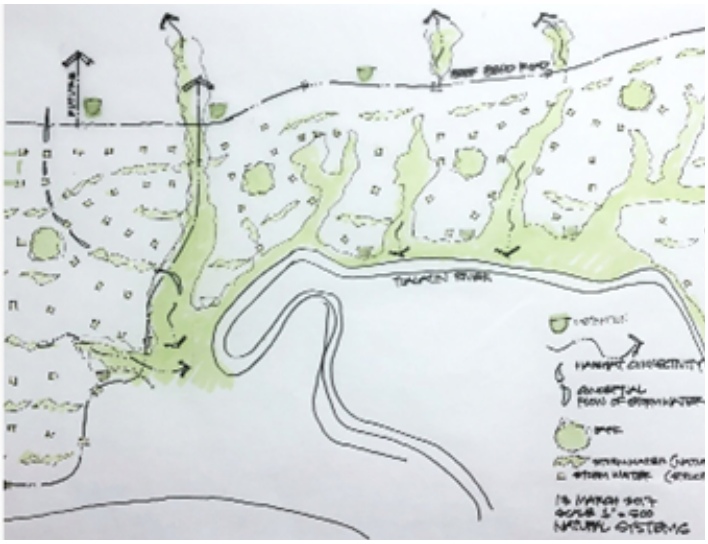


Figure 1.4 Fundamental and First Vision Principle

2. Community of Great Neighborhoods

Create complete communities: Develop neighborhoods that are a blend of residential and, in some locations, neighborhood-serving commercial. Denser development is desirable provided there is easy access to green spaces The Main Street/Town Center will be a mixed-use area with local-serving uses and neighborhood scale character, with places such as a library, school, new city hall, police station and recreation facilities. In addition, consider commercial uses that cater to the wine country tourism such as a boutique hotel, winery or brewery. Also consider campus-style employment or institutional uses. New development should strive to serve existing neighborhoods and new residential uses that will be developed in Kingston Terrace and the surrounding area.

Feature inclusive development: Provide a mix of housing to accommodate a wide range of household types, incomes, and needs. Affordability is key; provide affordable housing that matches the identity of King City and includes single story living options and manufactured homes. Housing should appeal to a full spectrum of people, taking into account diverse incomes, ages, and needs.

Appreciate historical context: New development should respect the history of the area.

- Drawing on the tradition of agriculture in the area, make it easy to access farm-fresh products; consider incorporating urban farming and/or provide easy access to urban farming, including community gardens.
- Consider Meyer's airstrip and related airspace when planning for future development.
- Respect the senior community that is a part of King City's history by creating inclusive developments for all ages.
- Include history of the area in plans, and the heritage of agriculture and earlier cultures.

Connect communities: Build connections between new developments and existing King City. Consider ways to complement existing civic and commercial activities and other amenities in the Main Street/Town Center area. Strive to bring communities together with shared community character. Connect to other destinations, such as regional parks, trails, and mixed-use developments in neighboring River Terrace.



3. Universal Access and Fluidity of Transportation

Support all modes of transportation: Prioritize walking and bicycling over driving for local trips within Kingston Terrace and nearby areas, including downtown King City. In addition to walking and bicycling, include routes for other modes of transportation, such as golf carts by providing parking, service hubs, and golf cart park-and-ride connections to transit.

Provide a complete network of street and path types: Complement the conventional street and trails system of local streets and paths with types of streets and trails that are unique to King City and that share park-like or rural characteristics: curbless green streets, alley-trails, and "country roads."

Offer a connected transportation network: Create an internal system of streets and paths that offer internal neighborhood mobility, so that SW Beef Bend Road is not necessary for every intracity trip, and many daily services are available within a walk, a bike ride, or a short drive, negating the need for regional trips on major arterials. Use traffic calming and other techniques to discourage intercity/regional trips. Provide convenient connections to existing and future transit. Provide streets that seamlessly connect to trails and vice versa. Connect to existing and planned trails in the region.

FRAMEWORKS

The Master Plan uses the framework approach used in the King City Concept Plan for URA 6D. The frameworks approach was developed for the Concept Plan to describe, understand, and address key attributes and characteristics of the area.

The four frameworks continue to guide the master planning process as a means for evaluating, testing, and coordinating all practical aspects of development.

The **Natural Systems** framework envisions a KTMP area physically and figurately connected to the Tualatin River. Development and growth are thoughtfully planned, environmentally sensitive areas are protected, greenspaces are integrated throughout the area. . Ravines and natural areas define the shape, size, and extent of each individual neighborhood, and from within each neighborhood is easy access to the extensive network of parks and trails.

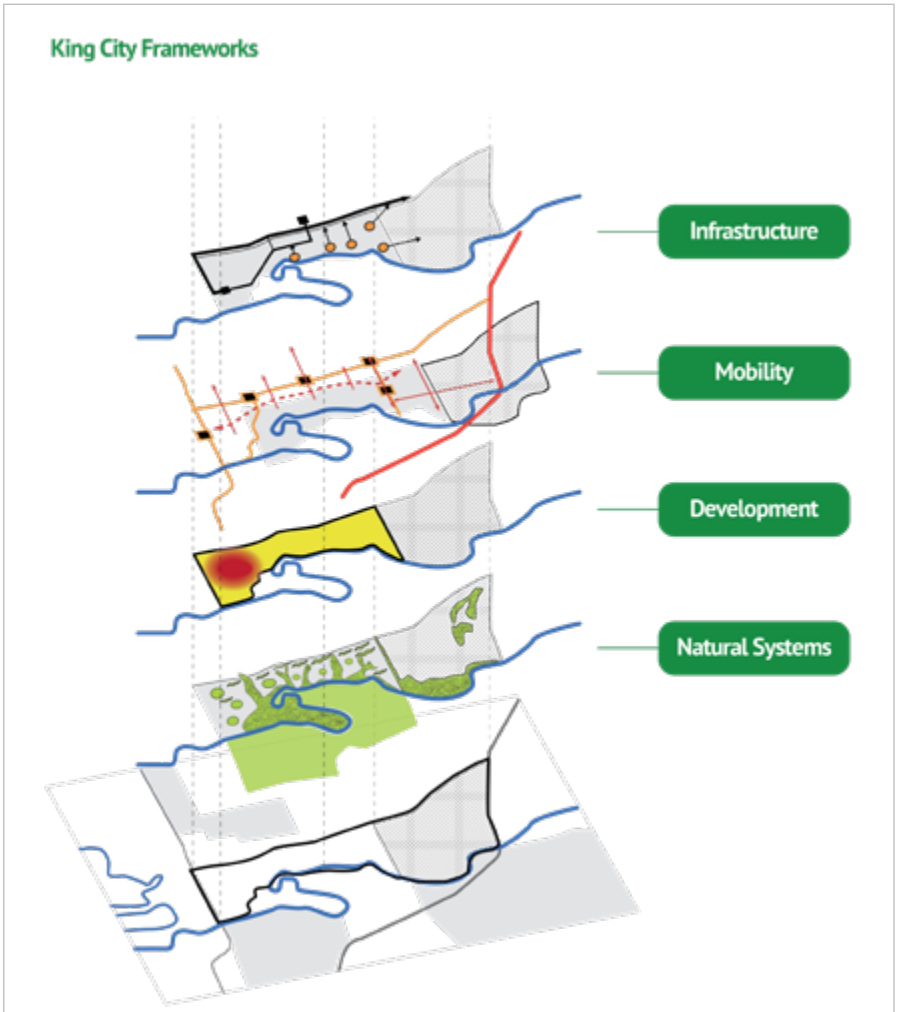


Figure 1.5 Frameworks Approach

The **Land Use** framework envisions an area where residents of all family types and income-levels can find housing to suit their needs and budgets. A gentle transition from rural to urban development guides growth, and King City's agricultural tradition is highlighted in new urban farming, farmer's markets, and community gardens. A new mixed-use area provides neighborhood scale commercial, and residents are not far from civic amenities and recreational opportunities.

The **Mobility** framework envisions a KTMP area with connected and complete streets with an emphasis on active transportation modes. The transportation network supports all modes of transportation and since streets and trails seamlessly connect, walking and biking is the preferred choice for moving around because it is easy, safe, and fun. The accessible network is designed to accommodate small vehicles and emerging forms of transportation such as shared vehicles or micromobility vehicles (small, fully, or partially human-powered vehicles such as e-bikes or e-scooters).

The **Public Utilities and Services** framework lays the groundwork for coordinated and equitable allocation of infrastructure throughout the KTMP area.

Micromobility: any small, low-speed, human- or electric-powered transportation device, including bicycles, scooters, electric-assist bicycles, electric scooters (e-scooters), and other small, lightweight, wheeled conveyances.

Natural Systems

Introduction

The *King City Urban Reserve Area 6D Concept Plan* recognized that the Kingston Terrace area is rich with floodplains, riparian areas, and other sensitive lands. Potential developable areas are often separated into subareas by ravines, riparian areas, and similar natural features. Generally speaking, wetland, riparian, stream, and upland habitat quantity and quality increases from north to south, following the various tributaries to their confluence with the Tualatin River and similarly following from the Beef Bend Neighborhood in the north to the Rural Character Neighborhood in the southeast to the Central Neighborhood in the south. These three neighborhoods generally contain higher quality natural resources overall compared to the Main Street/Town Center.

Base Conditions



Figure 2.1 Resource crossing in Tigard River Terrace

The *King City Urban Reserve Area 6D Concept Plan* recognized that the Kingston Terrace area is rich with floodplains, riparian areas, and other sensitive lands. Potential developable areas are often separated into subareas by ravines, riparian areas, and similar natural features. Generally speaking, wetland, riparian, stream, and upland habitat quantity and quality increases from north to south, following the various tributaries to their confluence with the Tualatin River and similarly following from the Beef Bend Neighborhood in the north to the Rural Character Neighborhood in the southeast to the Central Neighborhood in the south. These three neighborhoods generally contain higher quality natural resources overall compared to the Main Street/Town Center. Development north of SW Beef Bend Road has caused significant environmental degradation in the planning area. In conjunction with future development of the area, measures should be taken to address the existing problem and to adequately mitigate potential negative impacts from additional development. Maintaining the health of the Tualatin River and wildlife habitats is critical to the protection of natural systems and the preservation of the essential character of Kingston Terrace.

The Columbia Land Trust holds a conservation easement of approximately 12 acres in the southeastern portion of the planning area (Rural Character Neighborhood) that includes portions of the Tualatin River floodplain, adjacent forested bluffs along a tributary stream, and associated riparian areas. The conservation easement agreement states that the protected property includes:

- Forest and forested wetlands that provide wildlife habitat for birds and animals
- Several creeks that provide cool water to the Tualatin River and habitat for fish and amphibians
- Riparian forest and floodplain that shade the river and hold the soil from eroding into the river
- View of undeveloped natural area from the Tualatin River for river users

Metro Condition of Approval E.8 for the King City UGB expansion states that "King City shall work with the Columbia Land Trust to protect, to the maximum extent possible, the portion of the Bankston property covered by the conservation easement." The proposed east/west collector street, anticipated to be a two lane street and associated infrastructure deemed to have critical importance to the KTMP area are projected to span over the northern portion of the conservation easement where it is narrowest and where the least valuable resources exist. This alignment, along with protection and enhancement measures taken at the time of development, will minimize impacts to the conservation easement to the maximum extent possible. The majority of the easement that lies closer to the Tualatin River and contains high value resources will remain protected from development. In addition, the City has offered to designate the entire parcel as Recreational Open Space as an additional layer of protection. The street and associated infrastructure will be subject to applicable state, and local environmental regulations. The precise route of the collector street, a complete description of impacts, and any necessary mitigation will be determined during the street design phase, prior to construction.

Building upon the work of the Concept Plan, a more detailed review of natural resources within the planning area was conducted in 2021 and 2022. These included a refinement of stream, wetland, and riparian buffer mapping based on aerial photo interpretation, GIS analysis, and field reconnaissance (David Evans Aassociates 2021-revised 2022). The refinements were reviewed and an analysis of upland habitat features was added as part of the East/West Circulation Alternatives Analysis for the KTMP (SCJ Alliance et. al. 2022).

Natural resources, as defined in Oregon Statewide Land Use Planning Goal 5, are regulated at the time of development review and must be delineated by the property owner/developer. Natural resources in Oregon have varying degrees of regulatory protections based on federal, state, and local laws and regulations. The approach to Natural Systems described in this chapter is based on the best available information. On-site delineations will be required prior to development and specific regulator standards will be enforced at the time of development review. Regulations typically focus on a specific type or grouping of natural resources or ecosystems and habitat types. Those most relevant to the KTMP include the following types of resources: 1) water bodies (e.g., rivers, streams, ponds) and wetlands; 2) water body and wetland buffers, and 3) upland wildlife habitats.

The regulatory framework for natural systems involves federal, state, and local agencies, as shown in Table 2.1. Water bodies and wetlands are regulated by the federal Clean Water Act (CWA) and Oregon Removal-Fill law. The U.S. Environmental Protection Agency (EPA) is the lead regulator of the CWA, but typically delegates Section 404 of the CWA to the U.S. Army Corps of Engineers (USACE) and Section 401 of the CWA to the Oregon Department of Environmental Quality (DEQ). Section 404 regulates placement of fills and similar activities in regulated water bodies and wetlands, while Section 401 regulates water quality impacts to these resources. The Oregon Department of State Lands (DSL) administers the Oregon Removal-Fill law. The USACE also requires compliance with other federal laws such as the Endangered Species Act (ESA) and National Historic Preservation Act (NHPA). King City defers to federal and state laws for protection of water bodies and wetlands. The KTMP area includes approximately 83 acres of these resources (100-year flood plain and larger water bodies) as shown in Figure 2.2.

RESOURCE	LEGISLATION	RESPONSIBLE AGENCY	DETAILS	ACRES 1[1]	ACRES 2[2]
Water bodies and wetlands	Clean Water Act	Environmental Protection Agency	Lead regulator	83.1	83.1
		U.S. Army Corps of Engineers	Placement of fills		
	Oregon Removal-Fill	Department of Environmental Quality	Water quality impacts		
		Department of State Lands	Oregon Removal-Fill		
Vegetated Corridors (Riparian Buffers)	Clean Water Act	Clean Water Services	Includes Metro Title 13 Riparian Habitat Class I and II	136.1	93.9
Wildlife Habitat	Metro Title 13	City of King City	Includes Metro Title 13 Upland Wildlife Habitat Class A and B	195.95	59.2

Table 2.1. Natural Systems Regulatory Framework

[1] Acres 1 indicates the total number of acres included in each regulatory category.

[2] Acres 2 shows the total number of acres for each regulatory category that are not included in a higher level of regulation.

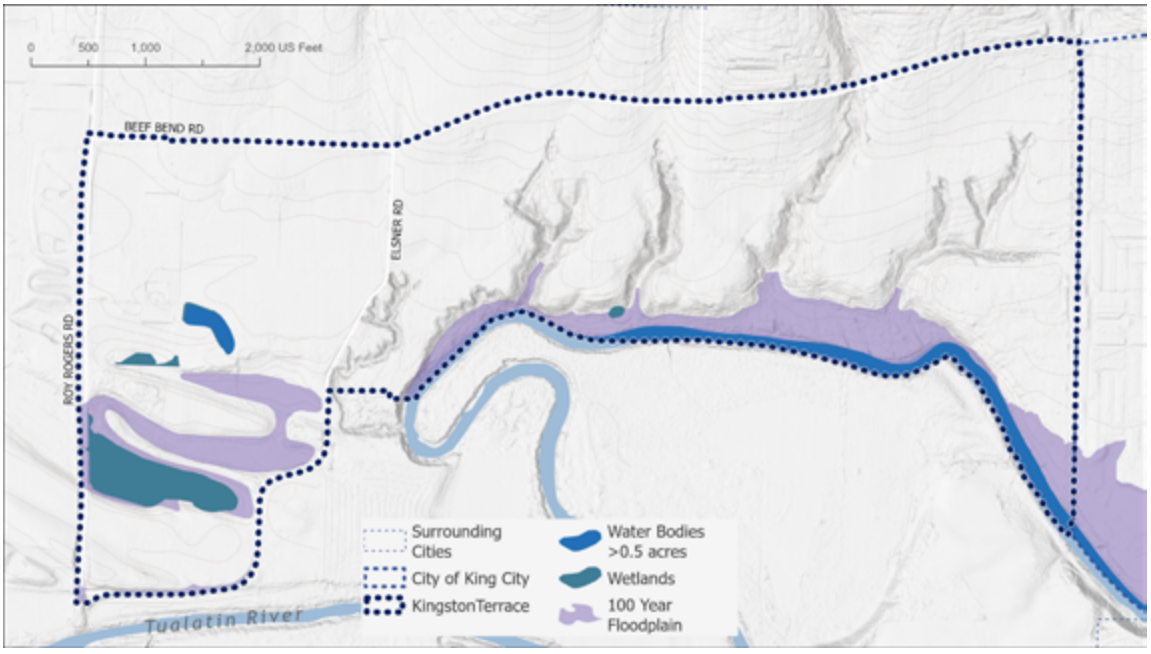


Figure 2.2 Federal and State Regulated Resources

In the Tualatin Basin, within the Portland Metro UGB, Clean Water Services, regulates buffers around water bodies and wetlands. CWS refers to these buffers as vegetated corridors. As shown in Table 2.2, the vegetated corridor width is typically a minimum of 50 feet as measured from the edge of the water body or wetland. For small, isolated wetlands and some intermittent headwater streams, the minimum vegetated corridor width may be as narrow as 25 feet, but occasionally less in a few select circumstances.

For the Tualatin River, the minimum vegetated corridor width is 125 feet. These minimum widths may be required to be extended to a maximum of 200 feet if steep slopes greater than or equal to 25% are present. Proposed impacts to Goal 5 resources must be offset with mitigation. Even if the resources are not impacted, CWS requires any resource that is degraded or in marginal condition to be restored to a good condition.

King City defers to CWS for protection of vegetated corridors, except in cases where city protections exceed those of CWS. While some development is allowed in vegetated corridors, CWS requires both protection of existing resources and enhancement where resources are degraded. The KTMP area contains approximately 94 acres of vegetated corridors.

Upland Wildlife Habitat is typically other native habitats that are not water bodies, wetlands, or riparian habitats. Upland habitat types in the KTMP area typically consist of upland prairie and Oak woodlands, though these habitat are largely absent from the area other than a few scattered individual or small clusters of oaks. Metro requires clear and objective development approval standards that protect Habitat Conservation Areas, but allow limited development within High Habitat Conservation Areas and slightly more development in Moderate Habitat Conservation Areas. High Habitat Conservation Areas include Class I Riparian Habitat and Class A Upland Habitat (Figure 2.4). Moderate Habitat Conservation Areas include Class II Riparian Habitat and Class B Upland Habitat. Riparian Habitat is regulated by CWS vegetated corridors and Upland Wildlife Habitat will be regulated by King City. Upland Wildlife Habitat Class A and B are shown in Figure 2.4. These standards should allow property owners to consider measures such as reducing building footprints, setback and landscaping requirements, or limits on clustering and the transfer of development rights on-site. The standards will also require that all development in Habitat Conservation Areas be mitigated to restore the ecological functions that are lost or damaged as a result of the development.

The city will encourage habitat-friendly development practices intended to minimize the magnitude of the impact of development in these areas and designate additional areas as open space to enhance environmental protections and establish neighborhood character.

SENSITIVE AREA TYPE	SLOPE < 25%	SLOPE
Existing or created wetlands:		
< 0.5 acres and isolated	25 ft.	Variable from 25-200 ft.
< 0.5 acres and not isolated	50 ft.	Variable from 50-200 ft.
⩾ 0.5 acres	50 ft.	Variable from 50-200 ft.
Natural lakes, ponds, and in-stream impoundments	50 ft	Variablefrom 50-200 ft.
Springs:		
Intermittent flow	0	15 ft.
Perennial flow	50 ft.	Variable from 50-200 ft.
Intermittent Streams draining:		
< 10 acres	0	0
⩾ 10 to < 50 acres	15 ft.	Variable from 50-200 ft.
⩾ 50 to < 100 acres	25 ft.	Variable from 50-200 ft.
⩾ 100 acres	50 ft.	Variable from 50-200 ft.
Perennial Streams:		
Other than Tualatin River	50 ft.	Variable from 50-200 ft.
Tualatin River	125 ft.	Variable from 125-200 ft.

Source: Clean Water Services

Table 2.2 Vegetated Corridor Widths

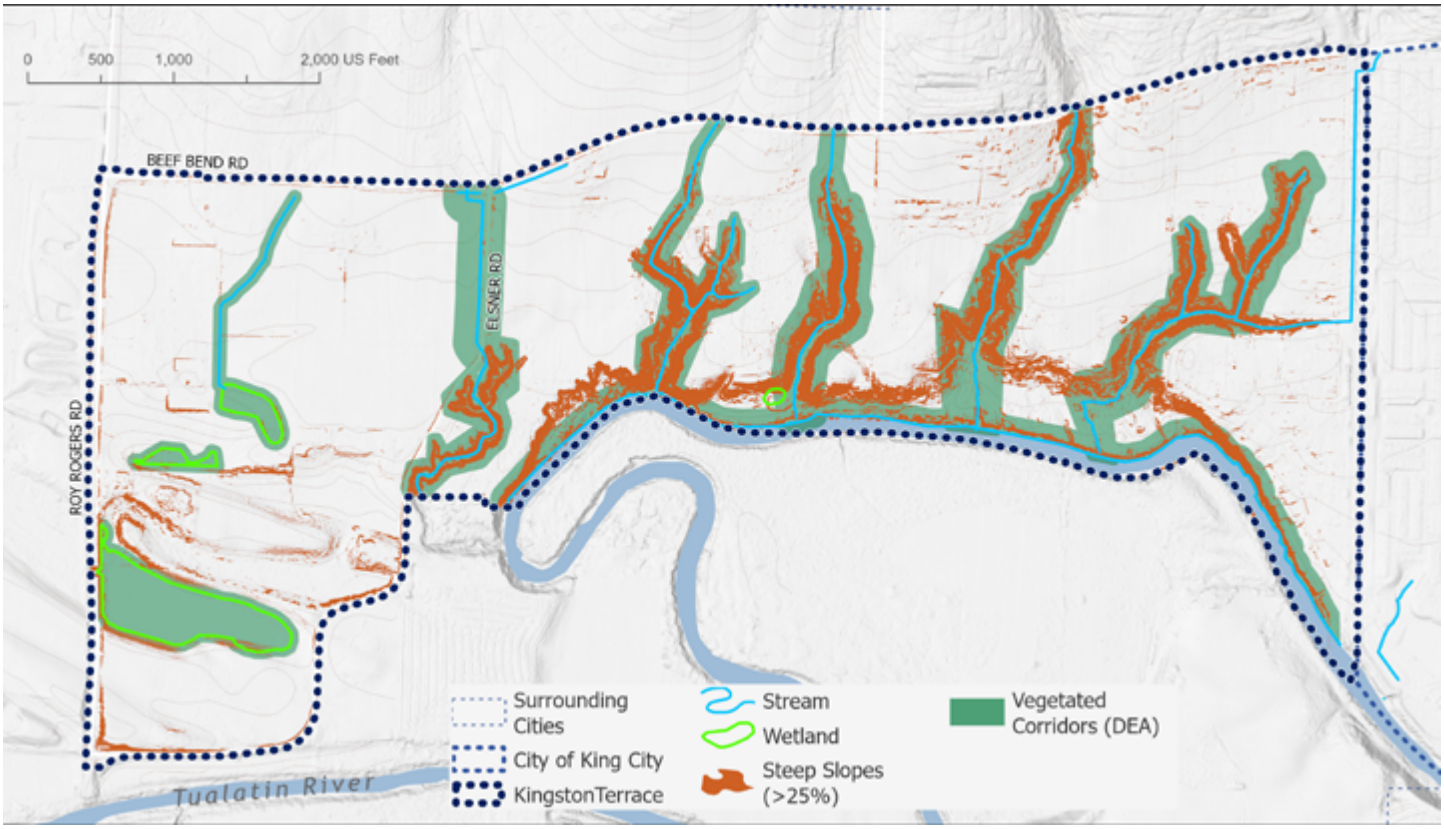


Figure 2.3 Clean Water Services Regulated Resources

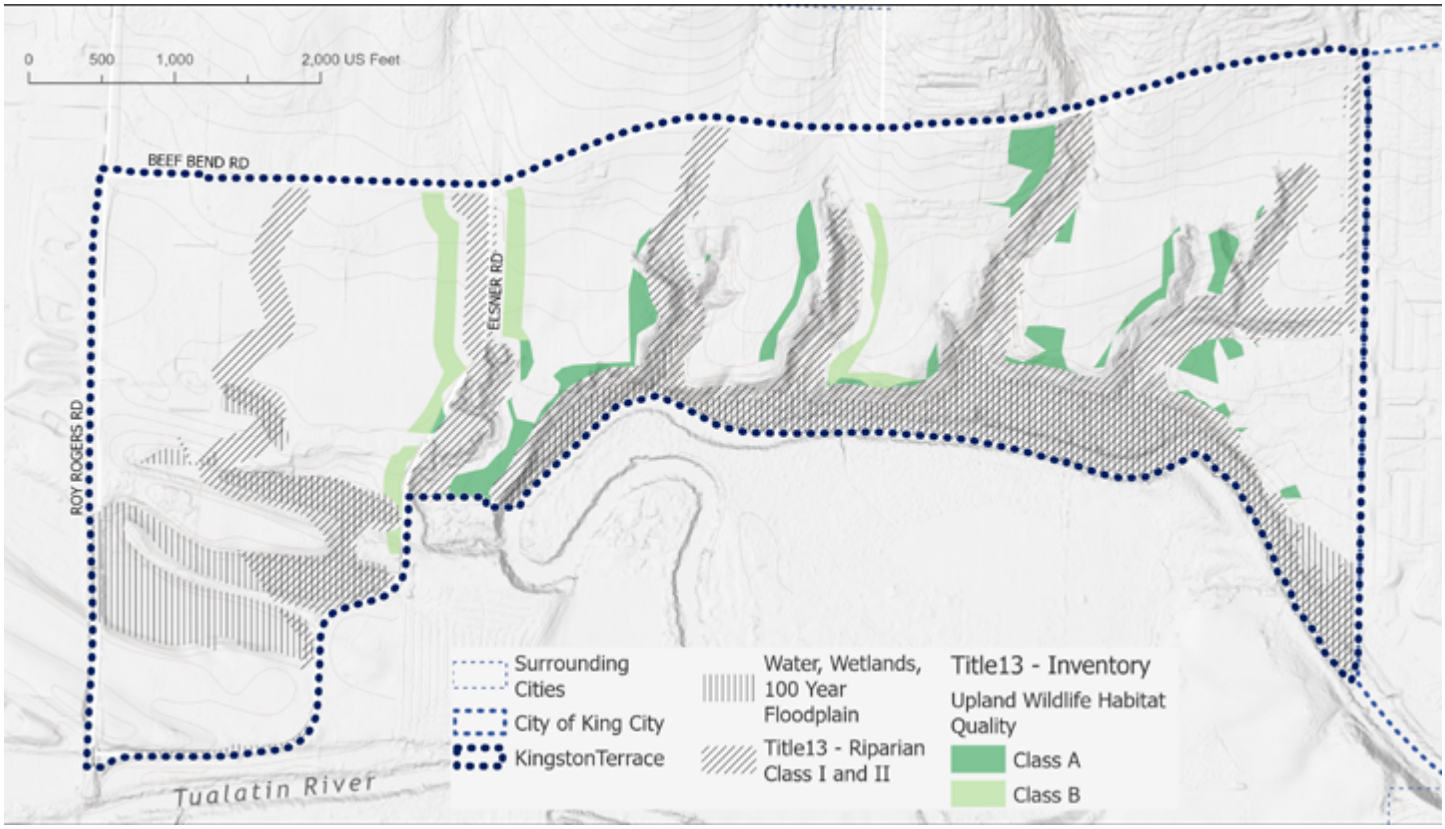


Figure 2.4 Metro Title 13 Habitat Conservation Areas



Policies

1. ADOPT A CONSERVATIVE APPROACH TO PROTECTING NATURAL AREAS.

The KTMP will facilitate a progression of physical transitions from south to north, between the river and developed areas. The most sensitive areas and highest quality wetlands found along ravine bottoms are protected from development. Maintaining the health of the Tualatin River and wildlife habitats is critical to the protection of natural systems and the preservation of the essential character of the KTMP area.

Habitat-friendly development practices will be encouraged to protect Class III Riparian Habitat and Class C Upland Habitat, along with open space dedications that increase from west to east in order to establish the desired character of each neighborhood.

2. IMPROVE THE QUALITY OF NATURAL RESOURCES THROUGH DEVELOPMENT.

Development in areas with lower quality resources will be designed to prevent damage to the environment and mitigated to restore any ecological functions lost or damaged due to the development. In developed areas, active environmental repair will be built into the urban fabric. New development will play an important role in repairing the damage caused by earlier development; it provides funding for restoration projects through system development charges and requires property owners to restore degraded resources to their natural state as a condition of development.

3. FEATURE NATURAL AREAS AND BRING NATURE INTO THE NEIGHBORHOODS.

Open space dedications will add to environmental protections in and adjacent to identified resource areas, with the amount of open space increasing as development progresses from west to east. Combined with protected resources and habitat areas, the open space network will provide opportunities for a public trail system, access to wildlife, and water quality treatment.

Implementation Strategies

- Enact regulations required by USACE and DSL, and CWS to protect these resources:
    - FEMA floodplains
    - Metro Wetlands
    - Class A and B Upland Wildlife Habitat
    - Class I and II Riparian Wildlife Habitat Quality
    - Local Wetland Inventory (LWI)
    - Significant Natural Resources Inventory (SNR)
- Enact additional measures as needed to protect and preserve natural resource lands and enhance the city's network of open spaces. One example could be the way in which design modeling is conducted. While CWS designs facilities to match peak flows, the City of Tigard conducted a continuous flow simulation to handle not just peak events, but all storm occurrences, that may result in larger facilities that can handle larger continuous volumes of water.
- Provide a trail system that gives provides public access and connects neighborhoods to natural features.
- Work with CWS to reduce runoff and heal existing erosion damage through actions that may include:
    - Stream restoration projects planned in cooperation with regional stormwater management plans will improve water quality in the Tualatin River and improve habitat functions within the KTMP area. Through engineered regional stormwater facilities or through small interventions such as stormwater gardens on individual lots, there are a variety of treatments that are appropriate for each zone of the transition.
    - Maintaining and improving deep-rooted native vegetation in areas with steep slopes, such as the drainage ravines, will minimize or avoid erosion and sediment problems. Steep slopes near sensitive areas that are not currently vegetated can be replanted with deep-rooted native vegetation to reduce erosion problems and provide for habitat connections.
    - Providing the appropriate level of stormwater management in accordance with current rules and regulations will be tantamount to attenuating stormwater flows from current and new development.

Land Use: Community and Neighborhood Design

Introduction

The Kingston Terrace Master Plan promotes a diverse mix of development contexts, with a careful sensitivity to the transition between rural and urban areas. Because the development concept features the higher density uses in the western and northern portions of the area, it is critical to create gentle transitions between developed and natural areas. The densest development is to the west and along SW Beef Bend Road, consisting of mixed-use buildings, attached housing, and incorporating commercial and institutional uses. Common areas in this neighborhood take the form of urban, paved plazas and community parks and trails. Moving east, neighborhoods become more exclusively residential and are defined by the natural edges of the ravines. The least dense areas would be furthest to the east and along the Tualatin River, characterized by low profile residential forms gathered around common green areas. A series of neighborhood types and general locations (character areas), each with their own mix of uses and specific contexts, is described starting on page 22.

As Tigard's planned River Terrace neighborhood to the north is built out, there will be numerous opportunities for King City and Tigard to connect to and share neighborhood amenities. Concept planning for URA 6D attempted to recognize these opportunities and build on them. For example, as shown in the Mobility chapter, the future River Terrace Boulevard will run north-south through Tigard and is planned to connect to the Kingston Terrace north-south collector street through King City's Main Street/Town Center neighborhood. Similarly, the layout of parks, trails, streets and land uses in Kingston Terrace have been located and conceptually designed to create an interconnected and complementary system of open space and trails with King City, Washington County, Tigard, and Metro. It's not likely that residents in the area will recognize which municipality provides a particular amenity—but they will recognize that it makes their neighborhood great.

In addition to maintaining compatible relationships between different development types within Kingston Terrace, and connecting to neighborhoods to the north, attention must also be given to protecting existing development and resource uses, which are to the south and west. The most important of these are areas not within the Metro Urban Growth Boundary (UGB) and are not designated as urban reserve areas. The Tualatin River and associated floodplain provides a natural buffer between future development in Kingston Terrace and the National Wildlife Refuge and agricultural uses to the south. The Main Street / Town Center area will be separated from designated rural areas to the southeast of SW Elsner Road and on the west side of SW Roy Rogers Road. During the master planning phase, land use and design techniques should be identified to minimize adverse impacts to rural uses and agricultural activities in these areas.

Base Conditions

Since the adoption of the Concept Plan in 2018, a number of land use studies and other efforts have been completed that further refined the land use assumptions underpinning the community and neighborhood design concepts:

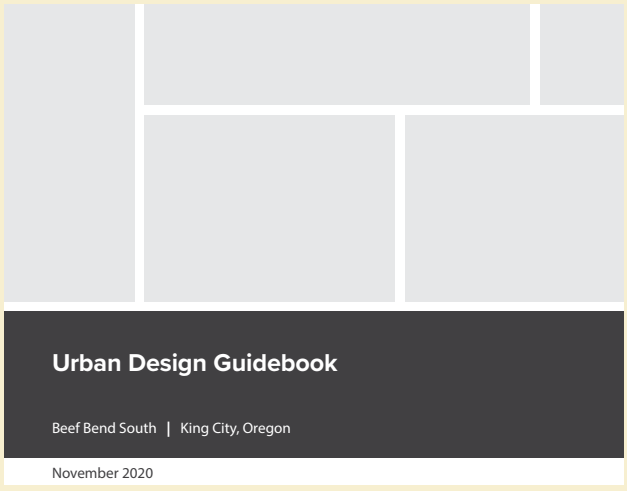
- King City Housing Needs Analysis, 2018 (prepared in conjunction with the Concept Plan)
- Market Analysis, 2020
- Land Use Assumptions, 2020 for the King City Transportation System Plan
- King City Community Development Code (CDC) Amendments for Middle Housing, 2021
- Tigard River Terrace 2.0 Concept Plan, 2021
- Urban Design Guidebook, 2020 for the King City TSP

Table 3.1 Land Use Framework Relevant Studies and their Relationship to the KTMP Area

RELEVANT STUDIES	RELATIONSHIP TO THE KTMP AREA
Market Analysis, 2020	As part of the concept planning process from 2016 to 2018, an economic analysis was performed in order to estimate the development potential of the developable land within Kingston Terrace/URA 6D. As stated elsewhere, "developable land" is Project Area land that does not lie within the areas that may have an impact on natural resources (see Figure 3.1). As part of the Transportation System Plan a second economic analysis was completed in 2020. The purpose of this analysis was to verify if earlier assumptions were reasonable, particularly regarding the amount of commercial uses that had been estimated for the Main Street /Town Center. What the studies found: Commercial uses: The two reports had 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 development 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." Dwelling units: The 2017 and 2020 market analyses agreed that 500 to 950 new residential units are possible during the first phase of development, but differ on the timing, with the 2017 report projecting this housing growth in 10 years, while the 2020 report estimates this amount of housing will take 20 years to be built. The dwelling estimates were made using conservative estimates with respect to natural areas, such as very wide buffers, and still demonstrated that residential targets could be met inside of a compact development footprint, protecting continuous habitat areas adjacent to the Tualatin River and connecting streams.

RELEVANT STUDIES	RELATIONSHIP TO THE KTMP AREA
Land Use Assumptions, 2020	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 floor area 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, as described on page 22: • 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 master plan 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 a range of housing types to accommodate households of varying size and income levels 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. The 2020 Land Use Assumptions 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. The Transportation System Plan land use assumptions exercise resulted in the following allocations for Kingston Terrace: • Households / dwellings = 3,681 • Employees = 275
King City Community Development Code (CDC) Amendments for Middle Housing, 2021	Oregon's middle housing legislation (House Bill 2001) introduced statewide requirements for all but the smallest cities to allow middle housing in areas that would otherwise be zoned for residential single detached dwellings. Within the Portland metropolitan service district, all cities above 1,000 residents (including King City) are required to allow duplexes, triplexes, quadplexes, cottage clusters, and townhomes in residential zones where residential uses are permitted. As a result, in 2020 King City amended the Community and Development Code (CDC), Title 16 King City Municipal Code. See Implementation Strategies for more information. The HB 2001 middle housing rule placed minimum density requirements for master planned areas which will apply to Kingston Terrace; minimum density per net acre is set at 20 dwelling units.

RELEVANT STUDIES	RELATIONSHIP TO THE KTMP AREA
Tigard River Terrace 2.0 Concept Plan, 2021	River Terrace is a master planned community in Tigard north of Kingston Terrace. The most recent Tigard-led effort related to this area was a concept plan for River Terrace 2.0. King City and Tigard have made efforts to coordinate because they are interested in creating a larger, connected community on both sides of SW Beef Bend Road. Plans for River Terrace 2.0 are developing along a similar timeline as plans for Kingston Terrace, and it is located directly across the street from the future Main Street / Town Center. In fact, the southern-most portion of the study area spans between SW Roy Rogers Road and SW 150th Avenue on SW Beef Bend Road (see Figure 3.2) and will be connected to Main Street / Town Center by the future extension of River Terrace Blvd. In addition, the Tigard River Terrace 2.0 effort shares with King City the same vision for housing: homes for all income groups, ages, and household sizes, affordable homes fully integrated into each neighborhood, and providing all residents equal access to parks, natural resources, and community amenities regardless of income or housing choices. The project sponsored studies which modeled a minimum density of 20 dwelling units per acre for a variety of neighborhood contexts and are applicable to Kingston Terrace (see Figure 3.3).
Urban Design Guidebook, 2020	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 case studies were chosen because they detailed similarly scaled and master-planned communities, involving a mix of single- and multi-developer communities. The Guidebook identified specific characteristics that made each development or master plan successful.



SUCCESS FACTOR: 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.

Policies

1. NEIGHBORHOODS ARE INTEGRATED WITH NATURE

Integrate green spaces and wetlands into each neighborhood. Retain trees and tree groves. Above all, remember that the Tualatin River is the defining feature of this area and a major contributor to what makes it special, including adjacent streams, ravines, and riparian and upland habitat areas. New development should connect, in physical and visual ways to the Tualatin River and Wildlife Refuge. A sensitivity to the health and vitality of the river should be maintained.

2. MIXED-INCOME NEIGHBORHOODS OFFER A WIDE VARIETY OF HOUSING OPTIONS

Mixed-income neighborhoods offer a wide variety of housing options – A wide variety of housing types are intermixed together into the same neighborhood, even on the same block, providing housing choices to people of all ages and income levels. King City's evolution from retirement village into a diverse community of nearly 5,000 proves the point that cities are socially stronger, more resilient, and more equitable when people who represent a wide variety of household sizes and incomes make up a neighborhood. This policy specifically excludes monocultures of single housing types segregated into enclaves or separate subdivisions. Besides benefiting the area, mixed-income neighborhoods in King City will address regional and local housing needs and help address the housing crisis.

While the design philosophy for Kingston Terrace is that the least dense areas would be farthest to the east and along the Tualatin River, it should be clarified that "least dense" does not exclude multi-dwelling structures or that only detached single family housing is permitted. The preference for a mix of housing applies to all proposed Kingston Terrace neighborhoods equally. Furthermore, HB 2001 requires King City to permit middle housing in areas that would otherwise be zoned for single detached dwellings.

Implementation Strategies

NEIGHBORHOOD DEVELOPMENT

Kingston Terrace consists of four neighborhoods: Main Street / Town Center, Beef Bend Neighborhood, Central Neighborhood, and Rural Character, outlined in Figure 3.1 (neighborhood boundaries/backbone streets map). Precise neighborhood boundaries will be defined by the street network (discussed in greater detail in the mobility section) and the development code adopted in conjunction with the Kingston Terrace Master Plan. The Kingston Terrace Neighborhoods map also serves as the Comprehensive Plan map for Kingston Terrace as each neighborhood represents a new comprehensive plan designation.

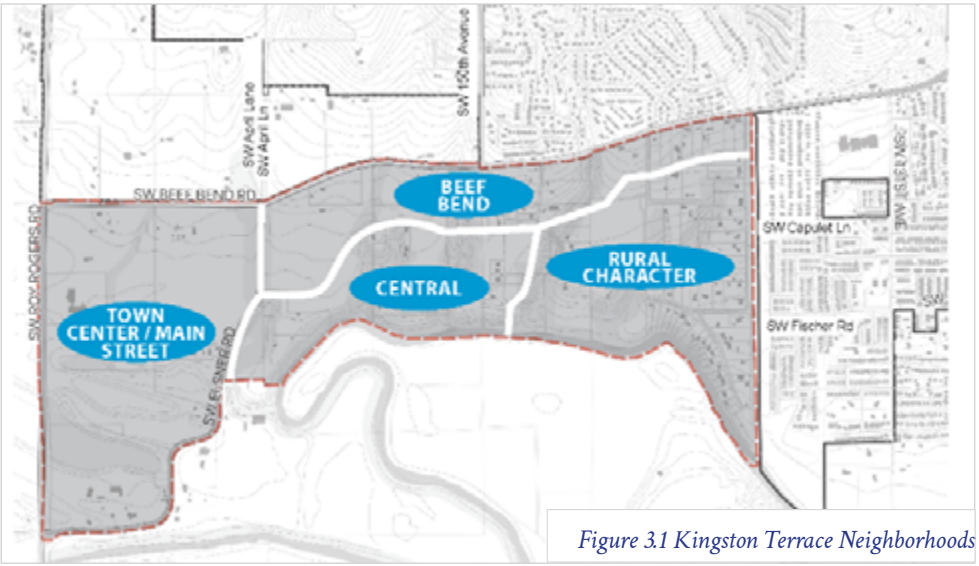


Figure 3.1 Kingston Terrace Neighborhoods

Kingston Terrace neighborhood zones are defined by the location of Backbone Streets (see Figure 5.3 in Chapter 5. Mobility). Development within the neighborhood zones will be regulated on resource lands as indicated in Chapter 2. Natural Systems.

The four Master Plan neighborhoods were developed from conceptual neighborhoods (Concept Plan in 2018), each depicted as a colored circle in Figure 3.2. Neighborhoods were designed to protect natural resources, respond to contextual factors including likelihood for development, and ensure sufficient density to meet state and regional housing goals within areas appropriate for development (Figure 3.3).

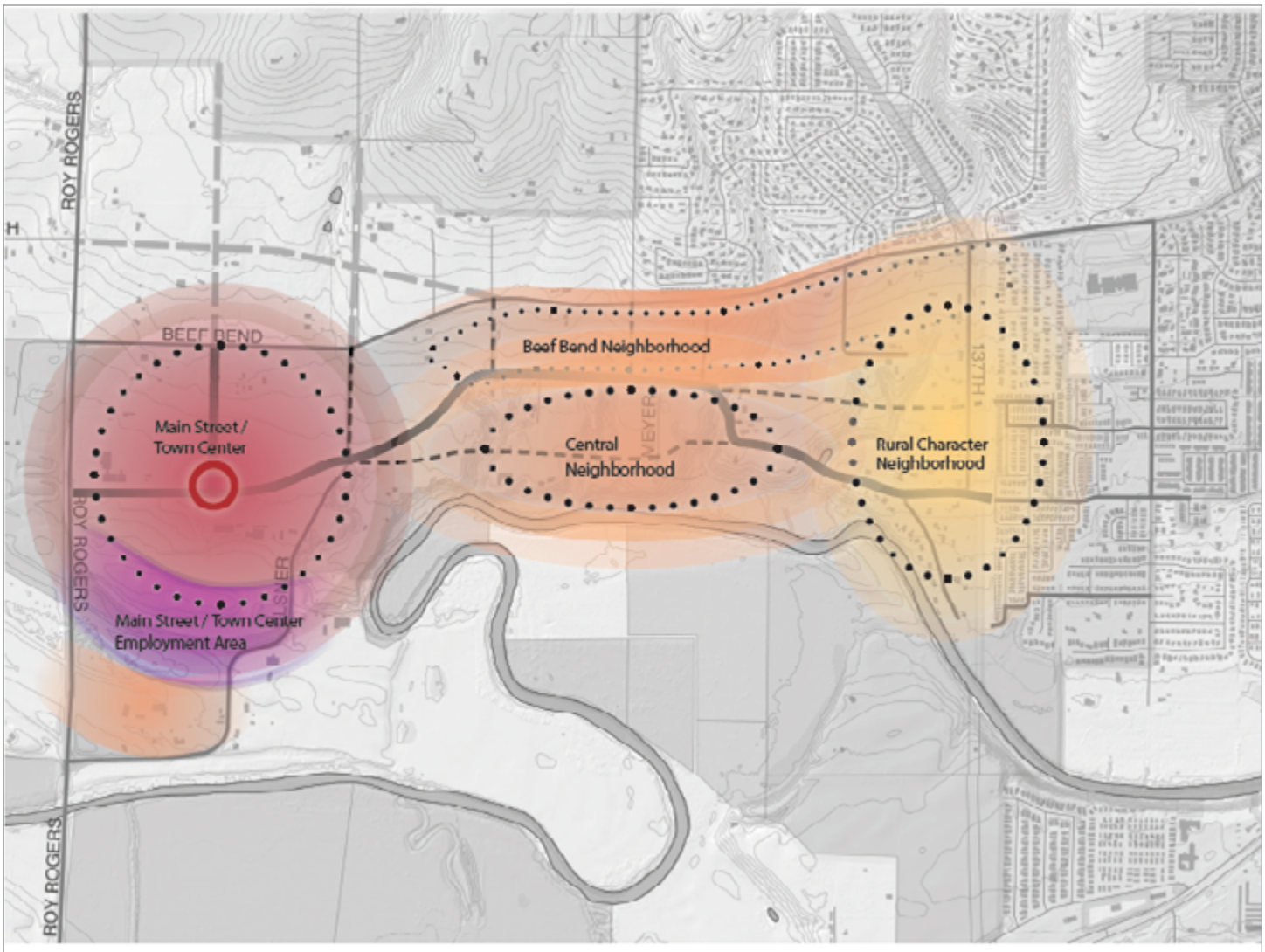


Figure 3.2 – 2018 Concept Plan Neighborhoods

The red line in Figure 3.3 indicates where nearby activities will have an impact on resources. Protected areas will be modified when local delineations are completed through the development process. The purple areas bounded by the red line are considered developable areas. Within the Master Plan neighborhood zones, which are defined by the location of Backbone Streets (see Figure 5.3 in Chapter 5: Mobility), development will be limited to developable areas. Certain natural areas which are large and flat may serve as parks.

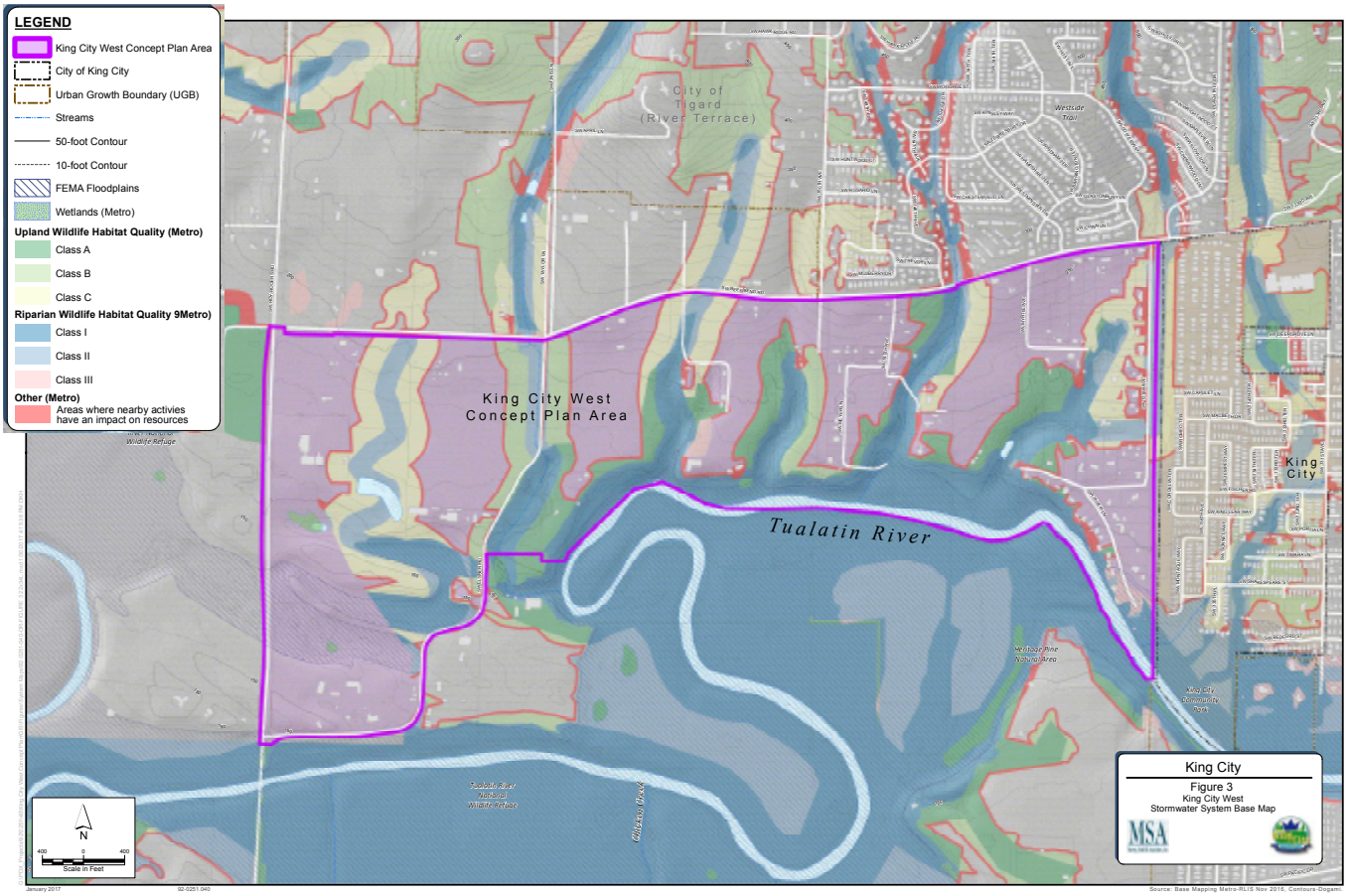


Figure 3.3 Land Use and Development Capacity

REQUIRED STREETS, BLOCK SIZES, AND STREET CONNECTIVITY

"Backbone Streets" form the required network of collector streets and neighborhood routes streets that are necessary to serve development. Within the areas bounded by the backbone streets, local streets will be required to meet regional and TSP connectivity requirements, and to serve the small block size and a fine-grained network of local streets is essential to achieve the master plan policy goals for housing, as well as the walkability, universal design , micromobility, and future transit access policies which date from the 2018 Concept Plan and are detailed in the Mobility chapter. More information is included in Community Development Code amendments to implement the KTMP.

The desired intermix of housing types is made possible with blocks that contain alleys that are designed to accommodate a range of lot widths. The intermixing of lot widths ensures that affordable compact housing types can sit side-by-side along with more conventional larger-lot detached homes. Exceptions are cottage clusters and smaller-scale apartments (garden apartments, boulevard apartments), which need aggregated lots. Such apartments buildings need to be sized and designed to fit into the neighborhood context. More information about the form-based approach for Kingston Terrace is included in Community Development Codes to implement the KTMP.

The location of backbone streets will correspond with the proposed form based code Regulating Plan, which is similar to a zoning map. The Regulating Plan will establish permitted and conditional land uses and applicable for each neighborhood zone, as well as development code regulations. Form based codes (FBCs) are development regulations used by local government agencies that emphasize the physical character of development and deemphasize the regulation of specific land uses. They provide greater predictability about the look and feel of development and offer developers a clearer understanding of community policies.

MASTER PLAN NEIGHBORHOODS

Kingston Terrace follows a gradient of density with the most dense development on the west and closest to SW Beef Bend Road on the north. Moving east, neighborhoods become more residential and are defined by the natural edges of the ravines. The least dense areas would be farthest to the east and along the Tualatin River. Four neighborhood types and general locations (character areas) have been identified, each with their own mix of uses and specific contexts.

An overview of the dimensional characteristics associated with each neighborhood zone are shown in Table 3.2.

Main Street/Town Center

The Main Street/Town Center Neighborhood is in the northwestern area of the URA. It will include the majority of Main Street / Town Center commercial and mixed use residential uses, with major activity around the intersection of collector streets visible and accessible from SW Roy Rogers Road and SW Beef Bend Road. This neighborhood will represent the densest development in the Kingston Terrace area and will include civic uses such as a new city hall and library. Neighborhood-scale commercial activity is desirable, as are public plazas, parks, and other places for gathering. The southern portion of this area may accommodate a school and campus-style mixed employment and, possibly, institutional uses. As urban development occurs, care will be taken to separate the Main Street/Town Center area from designated rural areas to the southeast of SW Elsner Road and west of SW Roy Rogers Road.

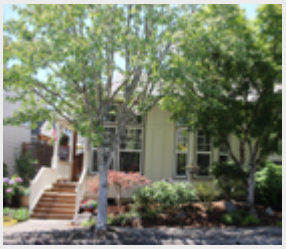
Main Street/ Town Center	
Beef Bend Neighborhood	
Central Neighborhood	
Rural Character Neighborhood	

Figure 3.4 Neighborhoods Zones

Beef Bend Neighborhood

The Beef Bend Neighborhood is directly adjacent to SW Beef Bend Road to the south, between 137th and SW Elsner Road. Improvements to SW Beef Bend Road include a multiuse path and green space, and street-facing development. This neighborhood has the second highest density, with both attached and detached residential development. There is potential for this area to support a small amount of neighborhood-scale commercial uses in conjunction with housing. Commercial uses would take the form of home-based businesses, and, if there is market demand, office or retail uses on the ground floor of residential buildings or in limited-size standalone buildings. The Beef Bend Neighborhood is connected east-west, and not constricted by the deep wooded ravines farther to the south.

Central Neighborhood

The Central Neighborhood is in the center of Kingston Terrace. Two smaller neighborhoods are defined by the drainage ravines running south to the Tualatin River. The ravines create separate areas that are well-sized for individual developments, but will be connected by a small number of east-west streets and a trail system. This neighborhood is defined as residential, with both attached and detached dwellings, ample neighborhood parks, and plenty of wild natural areas along the ravine and river edges.

Rural Character Neighborhood

The Rural Character Neighborhood is the eastern-most section of the planning area. It connects to SW 137th Avenue and includes the established Rivermeade neighborhood. This area has a rural character, with low density residential uses and opportunities for modest redevelopment. Context-sensitive low density development prioritizes clustered housing, cottage clusters, and multifamily configurations with ample green space. Natural areas are prominent both on the edges of development and within neighborhoods. Local streets through the area have a residential character and carry low-volume neighborhood traffic shared by all modes. Where collector streets cross the area care will be taken to minimize the width of pavement and allow flexibility in the location and design of adjacent walking, biking, and parking areas so that trees and tree grove preservation can be maximized. Some streets within the Rural Character Neighborhood (and other neighborhoods) may be curbless and instead of a fixed plant strip between the sidewalk and street, landscaped areas will vary in width, accommodating native plants and LID (Low Impact Development) stormwater treatments. More information is included in the Mobility chapter and Community Development Code amendments to implement the KTMP.

DIMENSIONAL AND DESIGN CHARACTERISTICS OF EACH NEIGHBORHOOD

Table 3.2 presents an overview of dimensional and design characteristics by neighborhood. Find complete design and dimensional standards in development code adopted in conjunction with the master plan for the Kingston Terrace area.

	MAIN STREET / TOWN CENTER	BEEF BEND NEIGHBORHOOD	CENTRAL NEIGHBORHOOD	RURAL CHARACTER NEIGHBORHOOD
LAND USES				
Permitted uses	Commercial Residential	Residential Limited Commercial	Residential Limited Commercial	Residential
Permitted Housing types	All Housing Types Listed Above	All Housing Types Listed Above	All Housing Types Listed Above	All Housing Types Listed Above except for "Dwelling, multi"
Density and Dwelling Units	A minimum of 3,300 dwelling units will be achieved within the Kingston Terrace Master Plan area. See the King City Community Development Code for aspirational targets and minimum density requirements for each neighborhood.			
Conditional Uses	For Conditional Uses, see the King City Community Development Code			
DEVELOPMENT STANDARDS				
Setbacks[1]	Front 0 to 10 feet; Side/rear: 0 to 10 feet	Front: 0 to 20 feet; Side/rear: 0 to 20 feet	Front: 5 to 20 feet; Side/rear: 10 to 20 feet; adjustments permitted to avoid natural resource areas	Front: 10 to 20 feet; Side/rear: 10 to 20 feet; adjustments permitted to avoid natural resource areas
Height	TBD	4 stories / 45 feet	3 stories / 35 feet	35 feet
Portion of lot permitted to be covered by buildings	The percentage of lot coverage is established by the Regulating Plan for each neighborhood, see the King City Community Development Code.			

Table 3.2 Neighborhood Land Use Zones – Dimensional and Design Characteristics Overview

[1]Setbacks will vary from neighborhood to neighborhood, and correspond to the density of development. In the Main Street / Town Center, the front, side and rear setbacks will be zero feet or close to zero feet and increase in number of feet in the other neighborhoods.

MIDDLE HOUSING TYPES ADOPTED AS PART OF KING CITY HB 2001 CODE COMPLIANCE

As a result of King City's 2020 amendments (required by Oregon state "middle housing" legislation called HB 2001) to the Community and Development Code, Chapter 16, Title 1, the following housing types are now permitted within existing King City and will be permitted within Kingston Terrace:

RESIDENTIAL USE TYPES

- "Cottage cluster" means a grouping of no fewer than four detached dwelling units with a footprint of less than nine hundred square feet each that includes a common courtyard. Cottage cluster units may be located on a single lot or parcel, or on individual lots or parcels.
- "Dwelling, multi" means a structure that contains three or more dwelling units which may share common walls, floors or ceilings with one or more than two dwelling units on one lot. Dwelling units may be attached or detached.
- "Dwelling, single-family attached" means a dwelling unit, located on its own lot, which shares one or more common or abutting walls with one or more dwelling units. It does not share common floors or ceilings with other dwelling units.
- "Dwelling, single-family detached" means a detached dwelling unit located on its own lot.
- "Dwelling unit, accessory" means a second and independent living unit created on a lot with a primary dwelling, which may be an attached or detached single-family dwelling or manufactured home. This second unit is created auxiliary to, and is always smaller than, the primary dwelling. It has a separate kitchen, living, bathroom, and sleeping facilities within the primary dwelling or in a separate accessory building on the same lot as a primary dwelling. Because it is considered as an accessory use, this type of residential unit is not included in density calculations.
- "Duplex" means a structure that contains two primary dwelling units on one lot. The units may share common walls, floors or ceilings.

Manufactured homes will also be permitted within Kingston Terrace. In 16.24.030 (Definitions of land use types), manufactured homes are defined as:

- "Manufactured home" means a structure constructed for movement on the public highways that has sleeping, cooking and plumbing facilities, that is intended for human occupancy, that is being used for residential purposes and that was constructed in accordance with federal manufactured housing construction and safety standards regulations in effect at the time of construction. It does not mean any building or structure subject to the structural specialty code adopted pursuant to ORS 455.100 to 455.450, any unit identified as a recreational vehicle by the manufacturer, or a modular home."

RIVER TERRACE 2.0 CONCEPT PLANNING HOUSING AND NEIGHBORHOOD PROTOTYPES

River Terrace 2.0 is a 500-acre master planned community between SW Beef Bend Road and the original River Terrace development, at the western edge of Tigard. Approved by Metro in early 2023, the concept plan will expand the urban growth boundary and allow Tigard to move forward with the next phase of River Terrace, on a similar timeline as Kingston Terrace. The land is in two areas near SW Roy Rogers Road, between Scholls Ferry and SW Beef Bend roads (see Figure 3.5).

The southern portion is located directly across SW Beef Bend Road from the future Kingston Terrace Main Street / Town Center and will be connected by a future extension of SW River Terrace Boulevard.

Both Kingston Terrace and River Terrace share similar urban design ethos and goals for housing, community, and connectivity. The two cities have collaborated along with many of the same implementation partners throughout the planning process to create a larger, connected community on both sides of SW Beef Bend Road. Their shared vision is for a unified neighborhood with complementary land uses, streets, parks, and urban design approach that knits together areas on both sides of SW Beef Bend Rd. As stated in excerpts from the May 2021 River Terrace 2.0 Concept Plan (pages 25-26):

"The main street corridor in River Terrace South is intended to reflect and complement the planned town center in Kingston Terrace to the south, across Beef Bend Road."

"Through River Terrace South, the primary north-south collector will be an extension of River Terrace Boulevard through the study area and south to Beef Bend Road and into Kingston Terrace. In both areas, logical extensions of the existing adjacent street network are planned."

The City of Tigard River Terrace Concept Plan promotes many of the same goals as those established for Kingston Terrace, listed below. They are illustrated in in Figures 3.5 – 3.7.

- Integrating nature into neighborhoods
- Mixed-income housing
- Full spectrum of housing types offered in every neighborhood
- High-density, low-profile middle housing
- Providing equitable visual and physical access to natural edges, parks, trails, sand natural resources
- Retaining trees and tree groves within new neighborhoods
- Incorporating shared open space in new neighborhoods

River Terrace 2.0 Concept Plan

The River Terrace 2.0 Concept Plan offers opportunities for a wide variety of household types and sizes, along with places to shop, work and recreate – all within walkable, well-connected neighborhoods.

Legend

- River Terrace 2.0 Project Area
- Employment Area
- Commercial / Neighborhood Node
- Main Street
- Even Mix
- Feathered Edge
- Collector Road
- Street / Pedestrian Connection
- Minor Street Connection
- Mountainside Way Future Study Area
- Beef Bend Road Future Study Area
- Community Connection
- Trail Network
- Stream
- Wetlands
- Vegetated Corridor
- Park (Outside Project Area)
- School (Outside Project Area)

1 Tile Flat, Future Study Area – Framework B, See Transportation Section

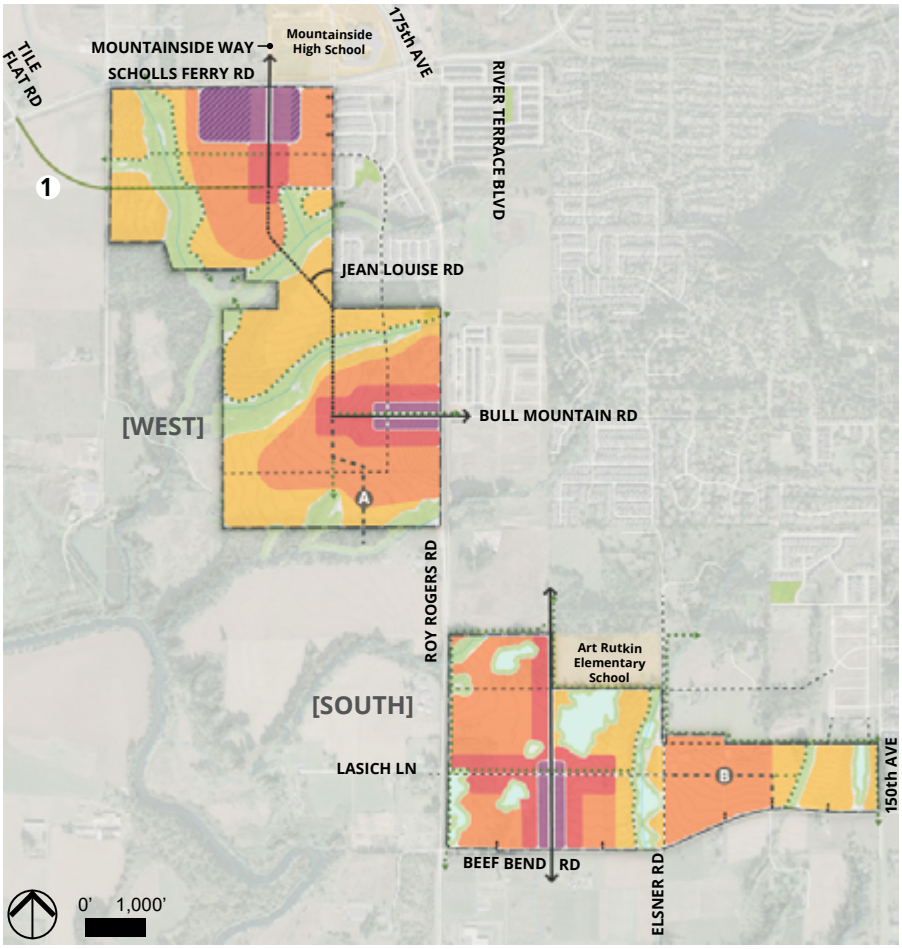
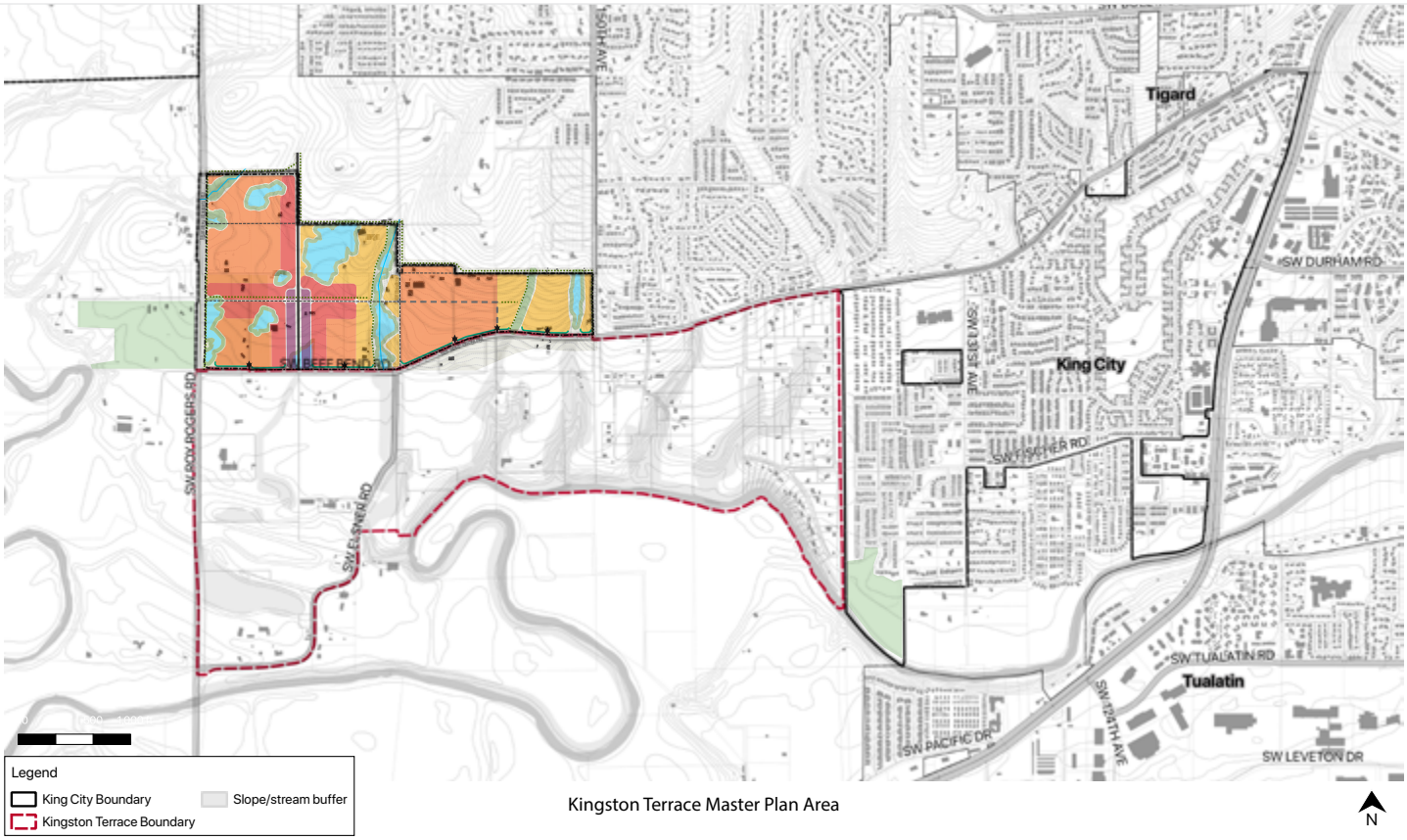
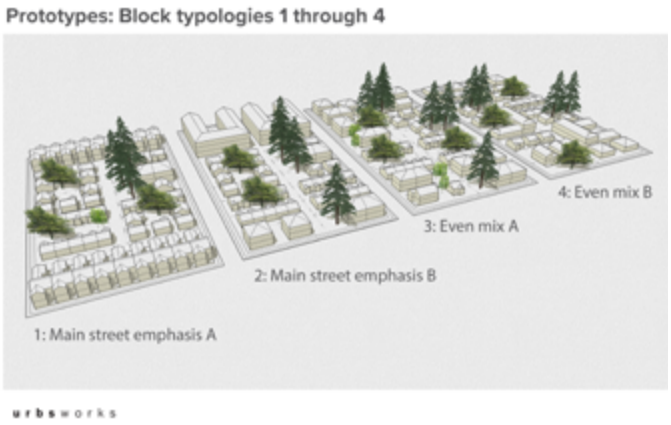
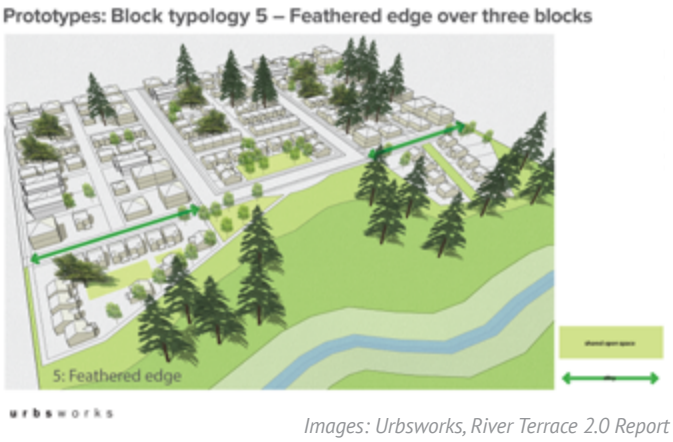


Figure 3.5 Tigard River Terrace 2.0 Concept Plan



^ Figure 3.6 Location of River Terrace 2.0 (South) in relationship to King City and Kingston Terrace





Images: Urbsworks, River Terrace 2.0 Report

^ Figure 3.7 River Terrace 2.0 Concept Plan Housing and Neighborhood Prototypes

Land Use: Parks and Open Space

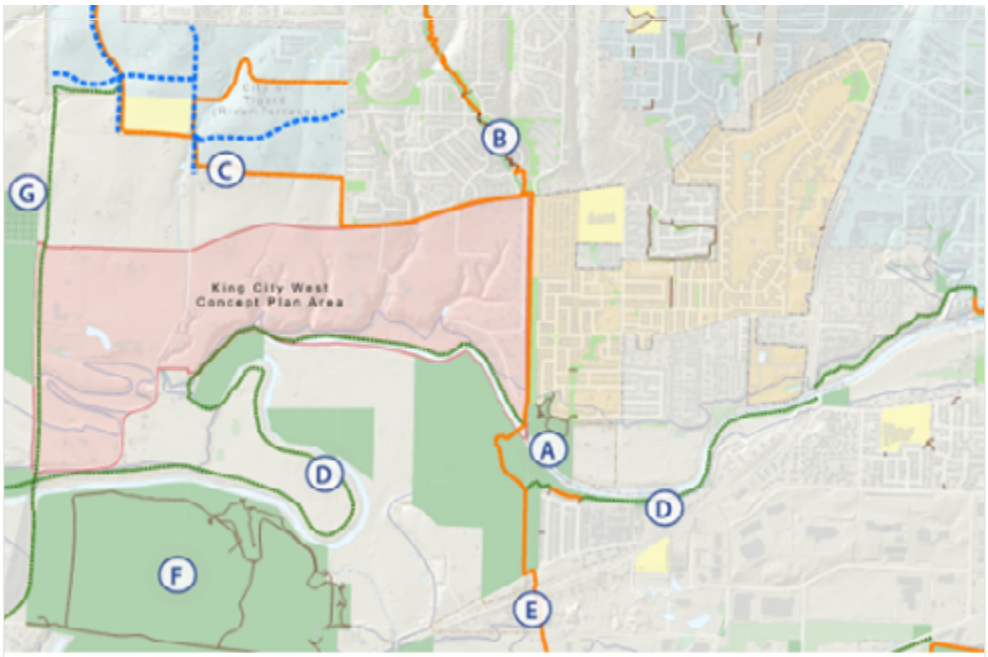
Introduction

Kingston Terrace will benefit from a comprehensive and networked system of parks and open spaces, strategically distributed throughout its four primary neighborhoods. These public spaces will be places of shared use and seamlessly linked to their surroundings. They are arranged to support identifiable geographic neighborhood edges, help conserve environmental resources, and shape a community landscape that celebrates the area's local history, climate, and ecology. They provide active and passive recreational opportunities, health promoting amenities, and a necessary visual and functional balance to the proposed development. Additional objectives include: 1) help define the community structure and urban form, 2) enhance neighborhood character and function, 3) help conserve natural areas and open lands, 4) connect the different neighborhoods to each other, and 5) connect with nearby open spaces and trails.

Base Conditions

PART OF A REGIONAL FRAMEWORK

Kingston Terrace's open spaces, parks, and trails will link to a larger regional network of connected trails and green spaces. The following figure shows the relationship between Kingston Terrace and the regional facilities. Existing parks [King City Community Park (A) & Tualatin National Wildlife Refuge (F)]; others shown are planned.



Existing and proposed parks, open spaces, and trails

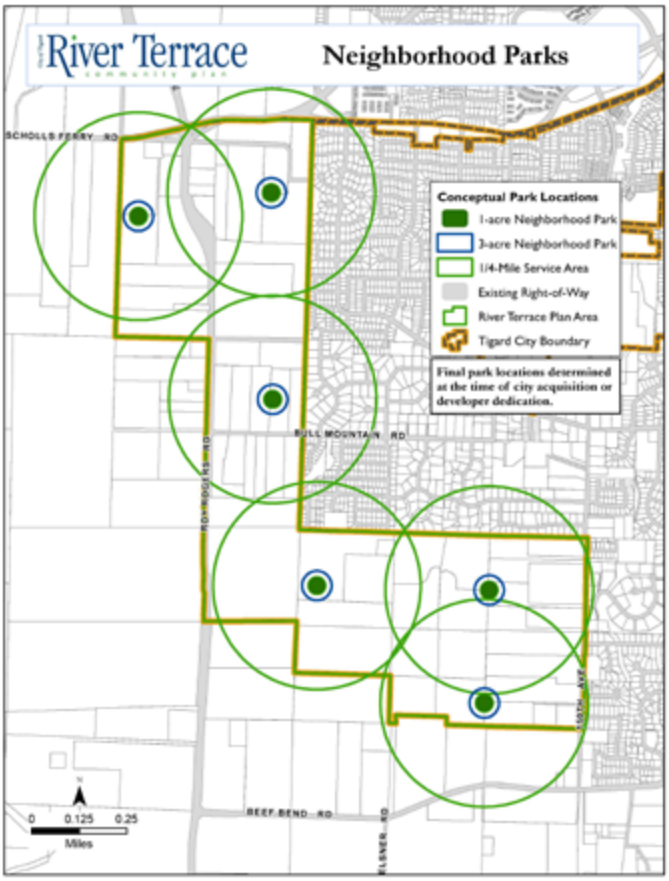
- A *King City Community Park*
- B *Westside Trail*
- C *River Terrace Trail*
- D *Tualatin River Greenway*
- E *Tonquin Trail*
- F *Tualatin National Wildlife Refuge*
- G *Lasich Park (planned Tigard Park)*

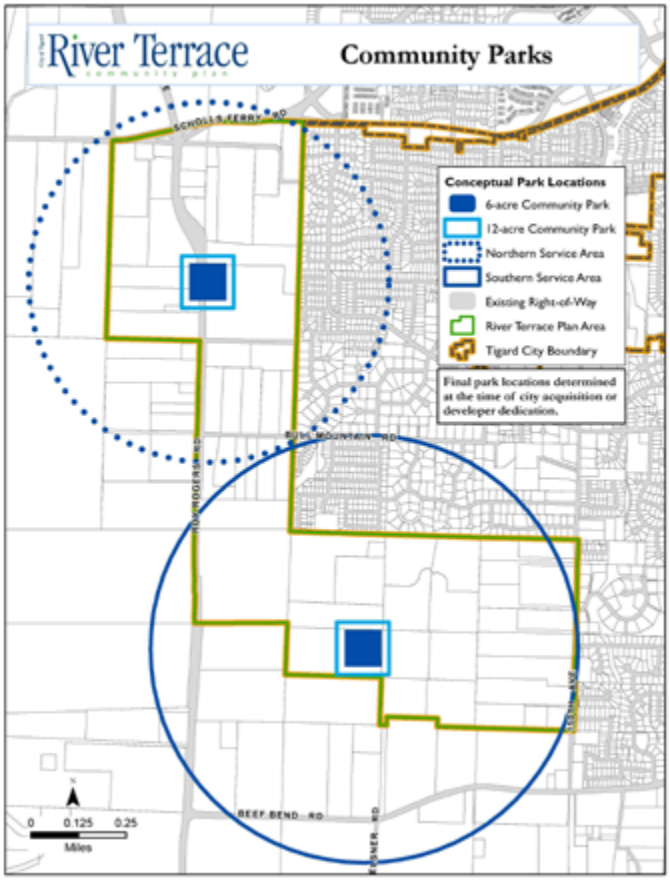
Figure 4.1 Regional Existing and Proposed Parks, Open Spaces and Trails

CONNECTED TO RIVER TERRACE PARKS NETWORK

As illustrated in Figure 4.2, the River Terrace Parks Master Plan Addendum identifies conceptual park locations for community parks, neighborhood parks and trails. While final park locations will be determined at the time of city acquisition or private development, the addendum shows a robust network of green spaces that Kingston Terrace will connect to.

The River Terrace Trail is planned to link into the Westside Trail, which will run north and south immediately east of the Kingston Terrace. In addition, there are a number of community parks and open spaces directly north of Kingston Terrace that provide an opportunity to connect to the larger network of diverse parks, wild open spaces, and recreational trails.





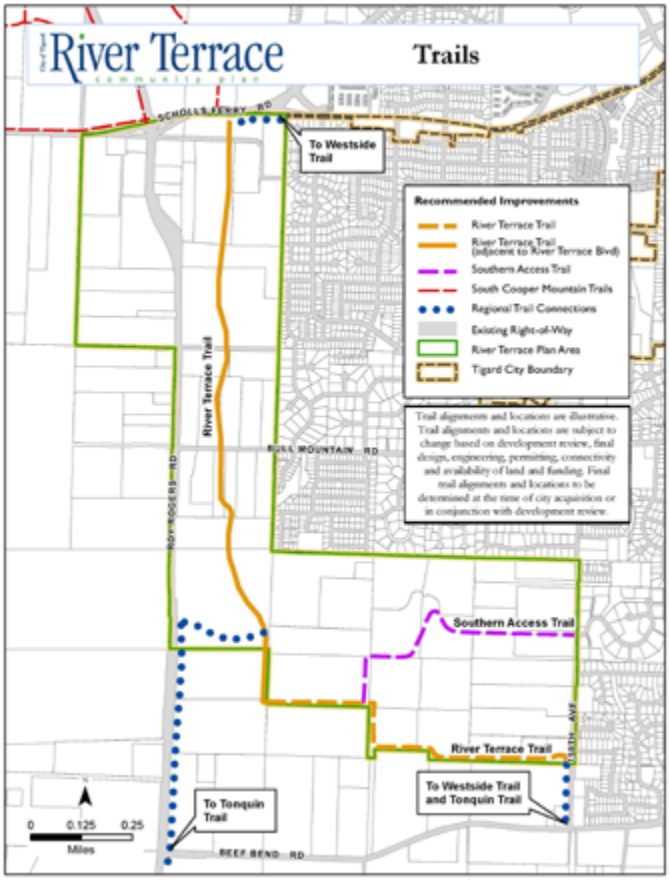


Figure 4.2 River Terrace Parks Master Plan



Policies

1. PARKS AND NATURAL AREAS FOR EVERYONE

Provide different choices for recreation and parks, including pocket parks, recreation and playfields, and a connected trail system and ensure that all residents have visual and physical access to natural edges, trails, and natural resources. Equitable access is built into neighborhood design and not reserved exclusively for homes along natural resources area. Incorporate shared open space into neighborhoods.

2. PARKS AND TRAILS PROVISION

This Parks and Open Space chapter describes the number and types of parks planned for Kingston Terrace as well as their general characteristics, key features, sizes, and services areas. The City of King City will use developer agreements to designate land for parks or obtain funds through SDC allocation to acquire property for specific parks.

Implementation Strategies

TRANSECT APPROACH

To support the envisioned overall land use and neighborhood character areas, the Kingston Terrace system of parks and open spaces follow a 'rural-to-urban' transect arrangement - with the Main Street / Town Center defining the most urban area, and the eastern Rural Character neighborhoods defining the other end of the transect. This approach respects and is informed by the study area's topography, streams and watersheds, Tualatin River basin, and regional and local parks and open space management plans.

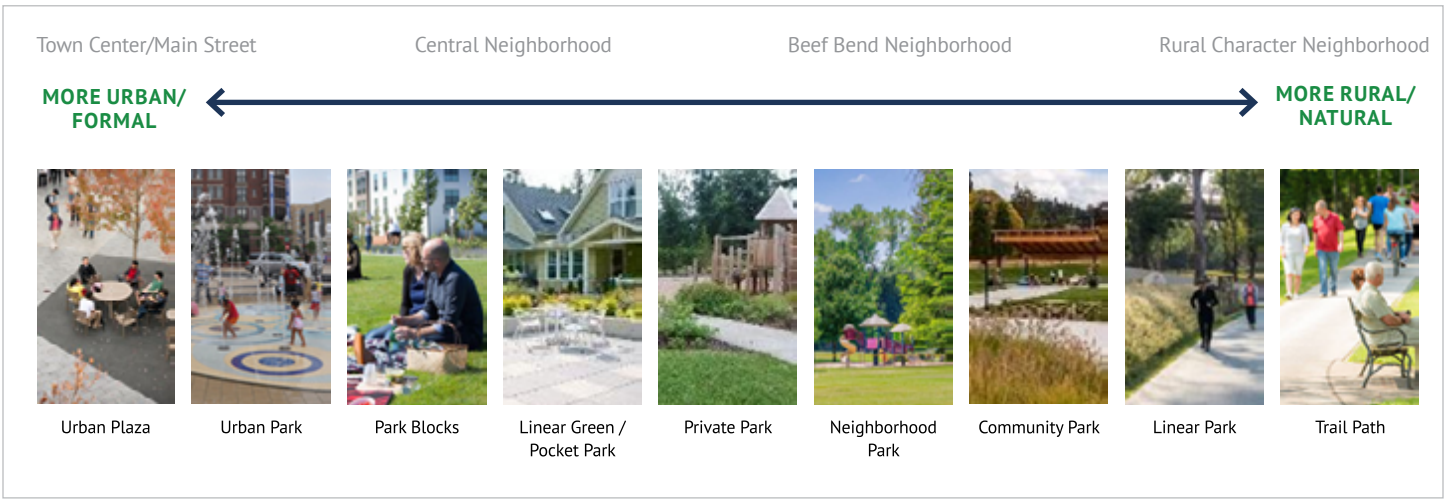


Figure 4.3 Park and Open Space Transect

KINGSTON TERRACE PARKS AND OPEN SPACE SYSTEM

Kingston Terrace's comprehensive parks and open space concept is described in the following pages (see Table 4.1 and Figure 4.4). The most significant feature of the system is preservation of the interconnected naturally occurring ravines and forested open spaces along the Tualatin River. Four Neighborhood Parks are envisioned near the natural ravines in the central and eastern portions of the plan area, combined with additional park types. Two larger Community Parks are envisioned, 1) in the Central Neighborhood with access to the Tualatin River, and 2) in the southern portion of the Rural Character Zone. In addition to the park spaces, several Trails / Paths will provide connections between neighborhoods and along the river, envisioned as a continuation of the Tualatin River Greenway Trail. The Town Center includes urban park sizes, facilities, and settings. The Park Blocks, Urban Park and Urban Plazas will be significant open space features serving residents from all neighborhoods.

Table 4.1 Parks and Open Spaces: Types, Guideline, Location

TYPE	GUIDELINE (min.)	LOCATION (Existing in King City and/or new proposed locations in Kingston Terrace)
Urban Plaza	TBD[1]	**Proposed**: In Town Center, on Main Street
Urban Park	TBD[1]	**Proposed**: In Town Center, south of Park Blocks
Park Blocks	TBD[1]	**Proposed**: In Town Center, running N/S parallel to Main Street / River Terrace Blvd.
Linear Green	TBD[1]	**Proposed**: In Town Center, along one side of a primary east / west collector.
Pocket Park	1/4 acre / 1,000 people	**Proposed**: Small parks within the most urban neighborhoods
Neighbor-hood Park	1.5 acres / 1,000 people	**Proposed**: One park within each neighborhood
Community Park	3 acres / 1,000 people	**Existing**: King City Community Park **Proposed:** Central Neighborhood with Tualatin River access, and Rural Character Zone Riverfront Park
Linear Park	1.25 acres / 1,000 people	**Proposed**: BPA Right of Way (utility easement between SW King Lear Way / SW Montgomery Way and SW 137th Avenue)
Trail / Path	.25 miles / 1,000 people	**Proposed**: Tualatin Greenway, Westside Trail, neighborhood connections, and connections throughout the Town Center
Open Space	4.25 acres / 1,000 people	**Existing**: Areas under natural resource protection **Proposed**: Including, and adjacent to, Natural Resource areas

[1] Final size, quantity, location, and design details to be determined during City review and approval.



NOTE: This exhibit illustrates overall intent but is not definitive. Final park and trail locations to be determined at the time of city acquisition and/or developer dedication.

Figure 4.4 Parks and Open Space System Diagram





URBAN PLAZA

Several urban plazas will be dispersed along the Main Street of the Town Center neighborhood. The urban plazas will be located adjacent to and in-between buildings to help improve the character and function of the public realm. In addition to supporting commercial and retail uses on the Main Street, the plazas will offer open space to residents and employees in the highest density area of the Kingston Terrace Master Plan area.

General Characteristics: Vibrant and active urban plazas will be an important element in the success of Kingston Terrace's Main Street businesses, restaurants, retail, and civic uses. Designed as formal and informal gathering places, plazas provide unique opportunities for social interaction and a sense of community and togetherness.

Key Features: Urban plazas will be designed primarily as a formal hardscaped open space with high quality amenities, such as durable site furnishings, ornamental plantings, public artwork, sheltered seating, pedestrian scale lighting, and decorative water features. Large planters may support development of an urban tree canopy in the heart of the Town Center neighborhood.

Size: approximately 1,000 to 5,000 square feet.

Service Area: Community wide.

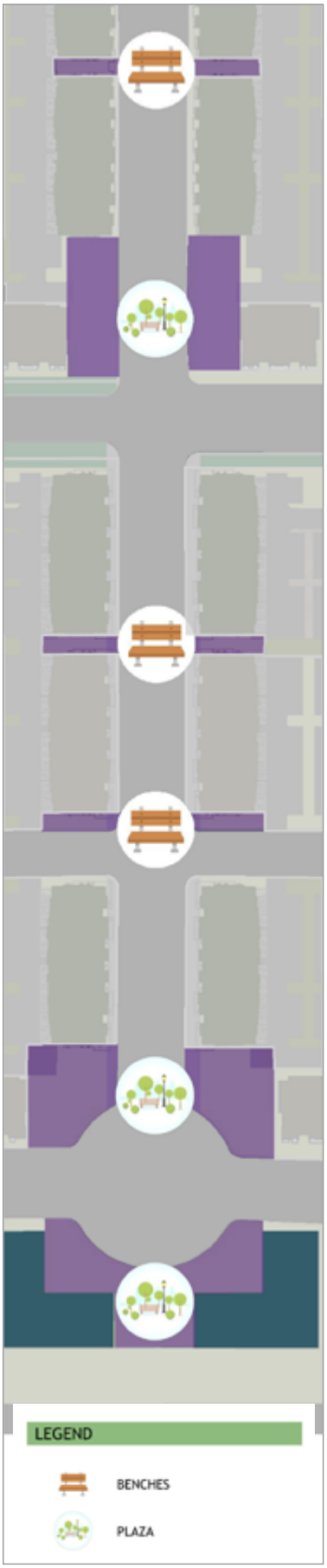


Figure 4.5 Urban Plaza











URBAN PARK

An urban park will be located in the Town Center neighborhood where the park blocks intersect with the envisioned civic use. The park will be designed to create a strong sense of community. The park's location and design will offer a welcoming space for large community gatherings and events.

General Characteristics: The Town Center's urban park will be a community gathering place. The space will support programmed activities such as open-air markets, concerts, festivals, and special events. Located adjacent to the City's civic center and bounded by adjacent streets, the park will be easily accessible through adjacent sidewalk and trail network.

Key Features: The urban park will be designed with large plazas and open lawns to provide areas for community gatherings and events. The urban park may also include a swim center or skate park. Furnishings such as seating and pedestrian scale lighting will increase comfort and safety for all park users.

Size: 1 to 5 acres.

Service Area: Community wide.



Figure 4.6 Urban Park











PARK BLOCKS

The park blocks are designed to serve the recreation needs of all Kingston Terrace neighborhoods. They include multiple and diverse activities and amenities. The park blocks will be oriented in a north / south direction and located parallel to Main Street / SW River Terrace Blvd.

General Characteristics: The park blocks will consist of approximately 3 blocks of interconnected greenspace. The series of open spaces will provide recreational amenities for all ages and abilities. The blocks will provide a unique characteristic to the Kingston Terrace Town Center neighborhood with safe and convenient pedestrian and bicycle access. Park blocks will also support the development of an urban tree canopy.

Key Features: Recreational spaces may include sports fields, sports courts, play structures, dog park, fitness stations, and splash pad. Shelters, open lawn, seating, and park furnishings including benches, picnic tables, drinking fountains, and trash receptacles offer spaces for gatherings and group picnicking.

Size: approximately 4 to 7 acres.

Service Area: Community wide.



Figure 4.7 Park Blocks



Figure 4.8 Linear Greens

LINEAR GREENS

Linear greens are provided primarily for passive recreation and for connecting neighborhoods, park facilities and other community spaces to one another. Linear greens will be located along one side of a primary east/ west collector in the Town Center neighborhood.

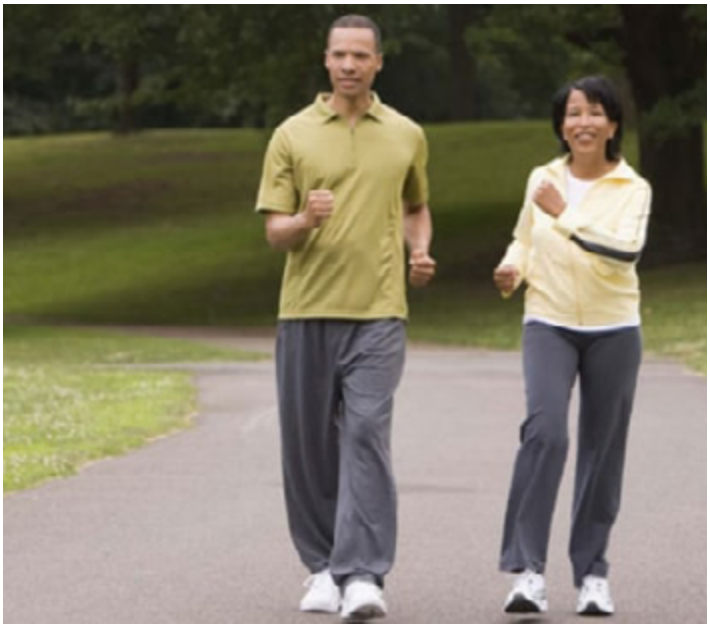
General Characteristics: Linear greens are integrated into the pedestrian and bicycle transportation network in the Town Center neighborhood. The linear greens may offer active and passive recreation amenities. The elongated open space corridor will provide a safe and direct pedestrian and bicycle route through the Town Center neighborhood with connections to adjacent neighborhoods, parks, and amenities. The linear greens combine elements of transportation with recreation providing green space for people living along the collector. The linear greens may also support the development of an urban tree canopy.

Key Features: Linear greens may be designed with furnishings such as benches, lighting, and trash receptacles. An ADA accessible hard surface pathway promotes bicycle and pedestrian mobility.

Size: Additional 5 to 10 feet outside of right-of-way.

Service Area: Community wide.









POCKET PARKS

Pocket Parks located in the Town Center neighborhood are designed primarily for non-organized recreation activities. They are located to be easily accessible from adjacent pedestrian and bike paths.

General Characteristics: Pocket parks in the Town Center neighborhood will be small-scale, safe, and inviting open spaces. The parks may be designed for passive recreation such as gathering, relaxing, or meeting friends. Dependent on the location and size of the park, a small-scale play area may be provided to offer a greater variety of equipment and atmosphere for residents and visitors to enjoy in the Town Center neighborhood.

Key Features: Pocket parks may be designed with open space amenities such as play structures, manicured landscape plantings, paths, and benches.

The parks may also include picnic tables and BBQ areas.

Size: approximately 0.25 to 0.50 acre.

Service Area: Neighborhood wide.



Figure 4.9 Pocket Parks







Figure 4.10 Neighborhood Park

NEIGHBORHOOD PARK

Four neighborhood parks are envisioned, serving informal local recreational and social purposes.

General Characteristics: Centrally located within neighborhoods. Designed for spontaneous, non-organized recreation activities and flexibility. Ideally suited to informal gatherings, picnicking, and small special events. Accessible by local streets and sidewalks.

Key Features: A combination of playground and park typically with a lawn area used as a flex space, shaded seating, small playground, and pathways encircling it. Skateparks and community gardens are encouraged. Programmed activities are limited to youth sports

Size: 3 acres, ideally (2-to-5 acre range).

Service Area: ¼ to ½ mile radius.





TOWN CENTER- NEIGHBORHOOD PARK

In the Town Center neighborhood south of the civic and commercial areas, a neighborhood park will be provided as an outdoor amenity within walking distance of nearby residents.

General Characteristics: The Town Center neighborhood park will provide active and passive recreational amenities. The park will be designed to include flexible open space for spontaneous, non-organized play and space for informal gatherings such as picnics or neighborhood events. A playground will provide an opportunity for neighborhood children an opportunity to practice and hone social, emotional, cognitive, and physical skills.

Key Features: The Town Center neighborhood park will be designed with an open lawn area used as a flex space and include shaded seating and play area. Pathways through the park will provide easily pedestrian and bicycle connections to the adjacent streets and sidewalks.

Size: Approximately 3/4 acres.

Service Area: 1/4-to-1/2 mile radius.



Figure 4.11 Town Center Neighborhood Parks



Figure 4.12 Community Park

COMMUNITY PARK

A destination for all Kingston Terrace residents, serving a range of recreational and social needs.

General Characteristics: Community Parks can be active or passive in nature, or a combination of both characters if the site is large enough. This park type accommodates a range of active recreation compatible with forested and water resources. It balances organized recreation with other uses such as gatherings, group picnicking, and/or special events.

Key Features: A range of amenities that could include a playground community garden, picnic shelters, nature play, activities like hiking and disc golf, access to the Tualatin River restrooms, and parking. Pathways connect the park to the larger regional trail network.

Size: 20 acres, ideally (15 to 30 acre range).

Service Area: Community wide.











Figure 4.13 Linear Park

LINEAR PARK

A linear greenway integrated with the street network, and/or other infrastructure.

General Characteristics: Open space integrated with the electric transmission tower corridor along the eastern edge of the plan area.

Key Features: Multiuse paths, potential exercise stations, and low maintenance plants and lawn or wildflower seeded areas.

Size: Varies

Service Area: Community wide.

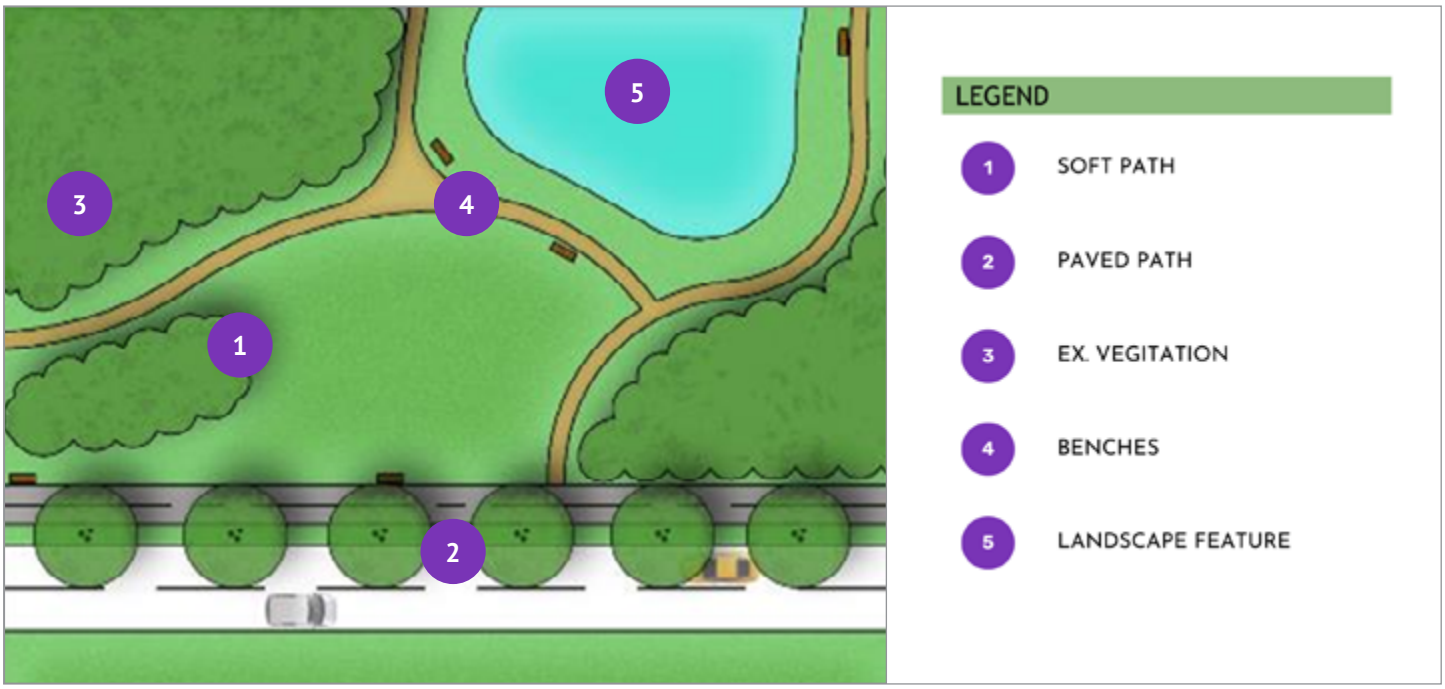


Figure 4.14 Trail / Path

TRAIL / PATH

Recreational pedestrian and bicycle facilities.

General Characteristics: Active and passive pedestrian and bicycle network through Kingston Terrace providing connections to nearby regional trails, such as the Westside Trail, the River Terrace trail system to the north, and the Tonquin Trail to the south. (Include: Tualatin Greenway Trail)

Key Features: A mixture of ADA accessible hard paved paths along streets and soft paved forest trails through expanses of open space, with trailheads, and scenic overlooks. Protective guard rails may provide benefit adjacent to steep slopes.

Size: Two-way primary route = 12 foot wide minimum (generally), secondary route = 4- 6 foot wide soft path.

Service Area: Community wide.







TOWN CENTER- TRAILS AND ACCESSWAYS

Trails and accessways located throughout the Town Center neighborhood will provide safe and direct pedestrian and bicycle connections to nearby amenities, open spaces, regional trails, residential neighborhoods, and commercial and civic centers.

General Characteristics: To encourage walking and biking, trails and accessways will be located adjacent to or along collectors and neighborhood routes in the Town Center neighborhood. Accessways, located in mid-block locations, will provide more direct pedestrian and bike routes making it easy and fun to bike and walk to local destinations. Trails will meander through parks, natural areas, and the parks blocks in the Town Center neighborhood to create an enjoyable and comfortable bike and pedestrian transportation system.

Key Features: Trails and accessways in the Town Center neighborhood will be a mixture of ADA accessible hard surface paths and soft surface trails. Adequate and convenient bike parking will be located at trail heads, parks, and plazas to encourage multi-modal transportation through the Town Center neighborhood.

Size: Two-way primary route = 12-feet wide (typical); Secondary route = 5 to 8 feet wide.

Service Area: Community wide.







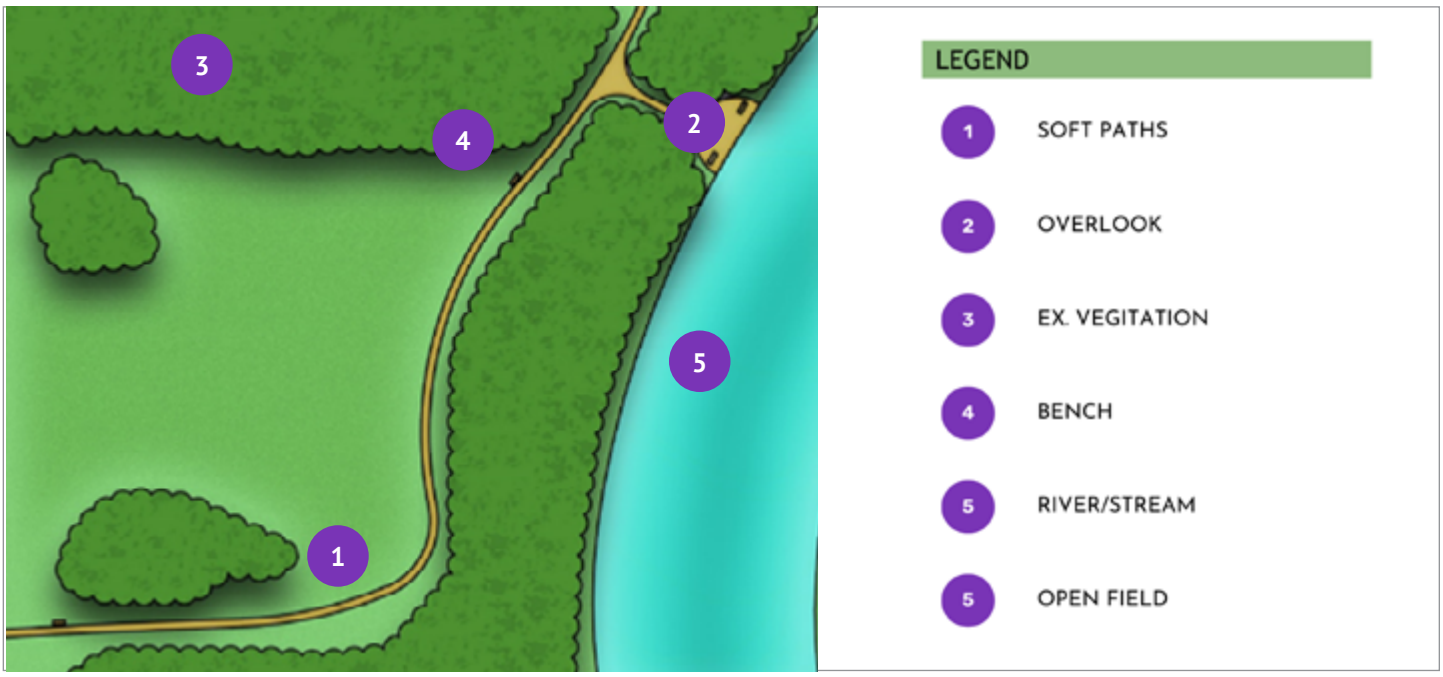


Figure 4.15 Open Space/Natural Areas

OPEN SPACE / NATURAL AREAS

Open spaces, generally along the north / south stream corridors, steep terrain, wetlands, and adjacent to the Tualatin River.

General Characteristics: Natural areas protected from development for a range of purpose including wildlife habitat preservation; urban heat island, air quality and stormwater management; and visual balance with more intensely developed areas. Some of these areas may be appropriate for grass playing fields.

Key Features: Forested areas, open fields, and wetlands with minimal recreation development such as trails, trailheads, and scenic overlooks.

Size: No size limitation.

Service Area: Community wide







Figure 4.16 Town Center Neighborhood - Open Space Area

TOWN CENTER- OPEN SPACE AREA

The Town Center neighborhood includes a wetland and floodplain area, south of the main street and civic center. This natural area will be protected from impacts of development. Mitigation efforts should enhance the beauty of the open space as well as restore the natural function of the wetland to offset the impacts of urbanization.

General Characteristics: The open space area in the Town Center neighborhood may offer opportunities to develop environmental and ecological awareness. The open space will offer a recreational amenity with minimal impact to the natural resources. The area will include pedestrian trails; and bikeways that will connect the Town Center neighborhood to trails and overlooks adjacent to and around the natural open space area.

Key Features: Recreational amenities in and adjacent to the natural open space area in the Town Center may include pedestrian walkways, nature play elements, trails, interpretive signage, scenic overlooks, and seating areas.

Size: 10 to 20 acres.

Service Area: Community wide.

Mobility

Introduction

The Kingston Terrace Master Plan promotes a connected transportation system of new internal streets and paths to provide travel options throughout the district, to accommodate primarily local traffic circulation within Kingston Terrace and to reduce reliance on county arterials like SW Roy Rogers Road and SW Beef Bend Road. Specifically, the vision for the arterial streets that bound the planning area (SW Roy Rogers Road and SW Beef Bend Road) is that they evolve to become urban in nature. SW Beef Bend Road and SW Roy Rogers Road would ultimately be transformed into urban boulevards with significant capacity for traffic but with additional improvements to provide a pleasant and safe walking and bicycling environment—characteristics which these current highways lack today. The primary function of these arterial streets is to serve regional traffic while supporting some level of local travel demand.

In addition to arterial streets, the land use/mobility concept is built on a system of multi-modal and interconnected streets that serve neighborhoods and a mixed-use main street/ town center. These streets are intended to promote local walking and bicycling trips, in addition to accommodating local vehicular traffic circulation. In its Southwest Service Enhancement Plan, TriMet acknowledges future growth in this general area, including River Terrace and South Cooper Mountain. Although future bus routes have not been identified, the land use and urban design concept for Kingston Terrace would establish a walkable and transit-friendly environment to support future transit service along major streets such as SW Beef Bend Road, SW Roy Rogers Road, the southerly extension of SW River Terrace Boulevard into Kingston Terrace, and selected internal streets such as collectors or neighborhood routes.

The transformation of these two streets includes attractive development which fronts onto SW Beef Bend Road and SW Roy Rogers Road. Rather than facing the street with the backyards and tall fences which characterize many suburban arterial edges, the Kingston Terrace Master Plan envisions development set behind an expanse of green space and facing the street.

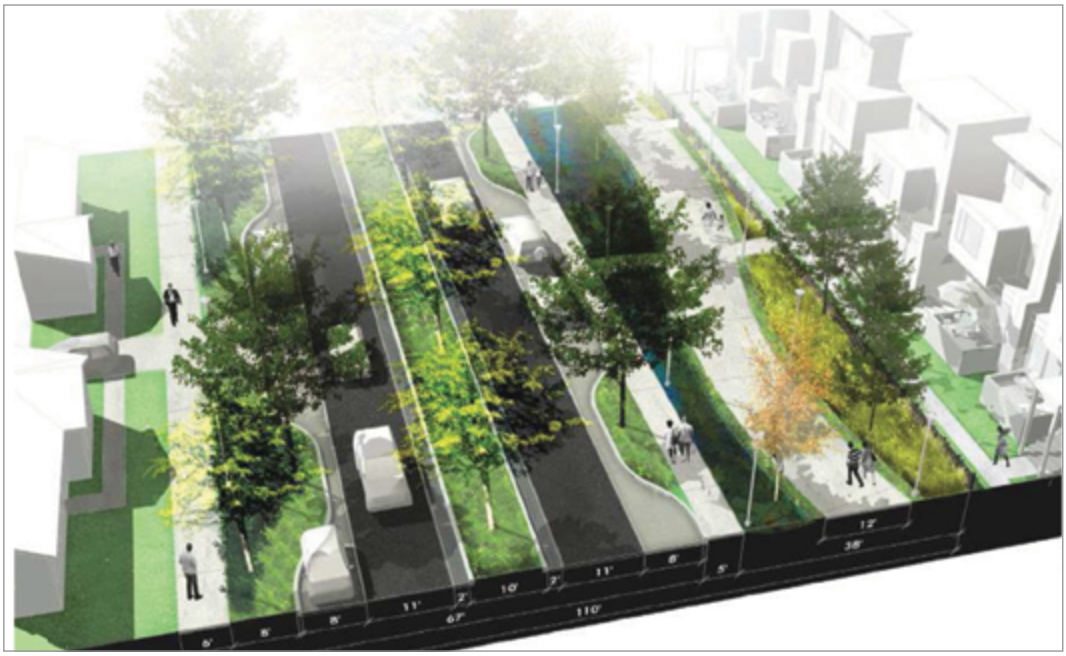


Image: Tigard River Terrace Concept Plan, 2014

Figure 5.1 River Terrace Boulevard Design Concept

Base Conditions

In the intervening years since the adoption of the *King City URA 6D Concept Plan* (2018) a number of mobility studies have been completed that address the circulation needs of the area and evaluate a range of facility concepts:

- King City TSP Draft, 2023
- Land Use Assumptions Report for the TSP, 2020
- King City TSP Market Analysis, 2020
- King City TSP Urban Design Guidebook, 2020
- Kingston Terrace Master Plan (KTMP) East-West Alignments Alternatives, 2022
- Kingston Terrace Mobility Framework in 2022
- SW Beef Bend Road Design Network Coordination (ongoing)
- Washington County TSP, 2019

On the following pages is a summary of each of the relevant studies, its relationship to the Project Area, and its relevant findings.

Table 5.1 Mobility Framework Relevant Studies and their Relationship to the KTMP Area

RELEVANT STUDIES	RELATIONSHIP TO THE KTMP AREA
King City Transportation System Plan (TSP) (Overview), 2018 – Present	The project analyzed and planned for both King City's incorporated areas and the Beef Bend South area, brought into the Metro's Urban Growth Boundary in December 2018. The project provided market analysis to support subsequent development of a Master Plan for Beef Bend South, as required by Metro's conditions of approval for URA 6D.
Land Use Assumptions Report for the TSP, 2020	This document made recommendations for the land use assumptions that were used to inform the Transportation System Plan. Note this document identified land use assumption for the entire city of King City. Specifically, the document summarized and updated all URA 6D Concept Plan land use planning efforts in order to verify land use densities, development typologies, and the total quantities of residential uses and non-residential uses. In keeping with current transportation planning industry conventions, land uses were expressed in total number of dwelling units (households), and, for non-residential uses, numbers of employees for translation into numbers of vehicular trips generated by the proposed development. The TSP Technical Advisory Committee recommended shifting the build-out year to 2050 to align better with the Washington County Urban Reserve Transportation Study and Tigard River Terrace concept planning work. For the URA 6D Concept Plan area only in Year 2050: • Households / dwellings = 3,681 Employees = 275
King City TSP Market Analysis, 2020	The Metro Conditions of Approval on Land Added to UGB for King City (Exhibit C to Ordinance No. 18-1427) stipulated that future planning must: • 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 2020 analysis supported the Concept Plan's recommended mix of housing types and densities suggested in URA 6D's Concept Plan.

King City TSP Urban Design Guidebook, 2020



The guidebook was part of the King City Transportation System Planning process and was intended to serve as a bridge between the URA 6D Concept Plan, the TSP, and the forthcoming Kingston Terrace Master Plan. It builds on comparable developments (case studies) evaluated as part of the 2020 Market Analysis report to understand details around land use, transportation, urban design, and implementation. The case studies provide lessons learned and recommended actions for King City, including several design strategies that are important for the Kingston Terrace Master Plan to achieve the goals and the goals and vision of the community. Two were applicable to the Mobility Framework:

- Success factor: Major streets are attractors not barriers
- Success factor: Variety of street types and a context sensitive design approach
- Success factor: Major streets are attractors not barriers

In each of the three case studies, communities' major streets — where they run along or within the planned development —are designed like urban 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.

An example of major region-serving street treatment is located in Bend on Mt. Washington Drive which runs north-south through NorthWest Crossing. The design of the street makes it possible for homes to front onto the arterial. Homes with street-facing facades have alleys rather than driveways for property access. Each block face on Mt. Washington Drive has a parking pocket that allows limited on-street parking. In addition, regular intersections and pedestrian crossings are essential in preventing this major street from acting as a barrier. Intersections are every 300 - 500 feet and mid-block crossings with protected places to stand at the median create safe options for pedestrians.

Arterials and collectors in Villebois have a planted median, full sidewalks, plant strips, and bike lanes. In certain areas the street design trades the planted median for on-street parking. In both Villebois and NorthWest Crossing where major streets intersect, roundabouts are used to manage auto traffic instead of signalized intersections.

- Success factor: Variety of street types and a context sensitive design approach

Each of the case studies employs the technique of creating a network of new streets and paths within the planned development that are not subject to the state or county regulations. State and county regulations tend to prioritize auto and transit travel on regional arterials and highways. They are often at odds with local goals for walkability; bikeability; small block size; use of curb space for parking; and sidewalks for retail, outdoor dining, or merchandising. Since internal street types are not subject to the same rules which apply to arterials, they are able to accommodate frequent intersections, frequent pedestrian crossings, continuous plant strips and streets trees, and even on-street parking.

In each case study one of these interior streets functions as a community oriented "main street." In North Bethany it is NW Kaiser Rd; in NorthWest Crossing it is NW Crossing Drive; and in Villebois it is Villebois Drive.

Kingston Terrace Mobility Framework in 2022

Regarding Mobility Framework, the 2022 vision for mobility remains unchanged; in fact, intervening studies have further confirmed the original vision, which can be highlighted by the following goals.

- Connected –Highly connected neighborhoods and a fine-grained network of streets and trails
- Context sensitive –Streets that change character to match the character of the neighborhood
- Safe and slow –Narrow streets and appropriate traffic control that tame cars
- Streets for everyone –Micro-mobility and universal complete streets design are built into the network and each individual street design (not an afterthought)

Big streets connect not divide – Streets like SW Beef Bend Road play a different role in the future: connecting the region and serving local needs

KTMP East-West Alignments Alternatives, 2022 (Figure 4.2)	This report was prepared to document the multi-disciplinary analysis process leading to the identification of a preferred east/west circulation alternative for the KTMP area. Consistent with prior planning work in the study area through the Concept Plan, it was intended that this east/west circulation alternative function as a collector street to: Link neighborhoods and other destinations across Kingston Terrace with particular focus on connecting residential areas with the proposed Main Street / Town Center • Connect Kingston Terrace to destinations within the existing city • Connect Kingston Terrace to Tigard's River Terrace via an east/west and north/south collector street system. This report was built on information collected and analyzed for the master planning effort including multimodal Baseline Conditions analyses and the Draft King City Transportation System Plan (TSP). This information was supplemented by further multidisciplinary research focused on land use, socio-economic and environmental justice considerations, transportation elements, public utilities and services, and natural resources. Order-of-magnitude cost estimates for each east/west circulation alignment alternative were also prepared and documented. (Additional detail below).
King City TSP Draft, 2023	A final draft of King City's first Transportation System Plan (TSP) was completed in March 2023. The project analyzed and planned for both King City's incorporated areas and the Kingston Terrace area, brought into the Metro's Urban Growth Boundary in December 2018. The project provided market analysis to support subsequent development of a Master Plan for Beef Bend South, as required by Metro's conditions of approval for URA 6D. When finally adopted in 2023, the project will provide an amended comprehensive plan that complies with key state and regional requirements, such as the Transportation Planning Rule and Regional Transportation Functional Plan. It will support associated land use amendments to the comprehensive plan and zoning code to encompass URA 6D (now referred to as Kingston Terrace). Project updates and key public outreach messaging can be found on the project website: http://maps.jla.us.com/king-city-tsp

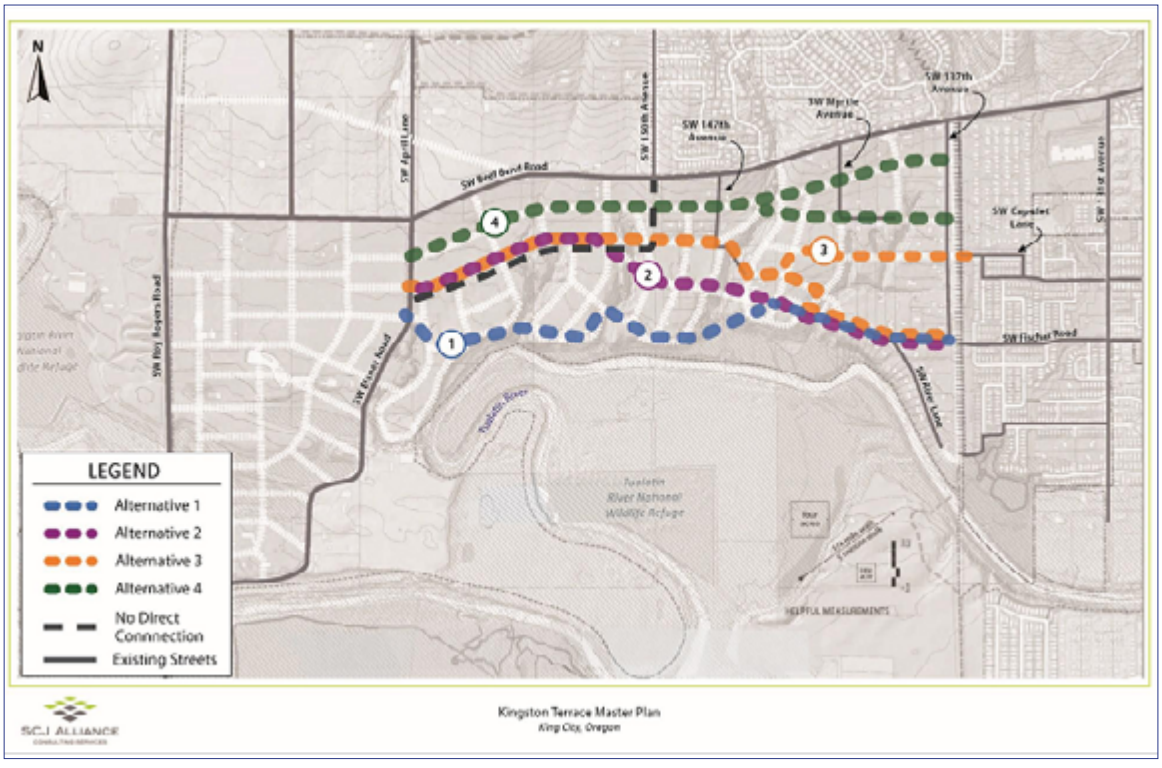


Figure 5.2 East/ West Circulation Alternatives Transportation Analysis, Summary of Conclusions

> *"Alternatives 2 and 3 provide the greatest benefits to safe bicycle, pedestrian, and vehicular mobility, accommodate associated infrastructure, and mesh well with the planned land use patterns and proposed local street system identified in the Concept Plan. The connectivity that these three alternatives provide to existing King City and neighboring communities will enhance community sustainability and reduce VMT. Alternatives 2 and 3 do have greater impacts on natural resources, but also provide the opportunity to address erosion issues caused by existing stormwater. Alternative 2 rises to the top due to its lower implementation costs."*
>
> *"It is important to note in identifying a preferred alternative to recognize that there is no perfect solution – all alternatives will have positive benefits and negative impacts. Existing plans, policies and the regulatory context were considered in evaluating trade-offs among alternatives, as was the magnitude of identified adverse impacts and positive benefits. A balance among the factors was sought so that no single category would outweigh another but that they are considered on the basis of their merits. For example, if too much importance is placed on not crossing riparian corridors, the master plan could end up with a series of long cul-de-sac neighborhoods where car use becomes almost a necessity and both transit and emergency vehicle access might be compromised. Utility services, especially sanitary sewer and potable water could become inefficient as well. It will also be important to remember that the selected east/west circulation alternative will need to accommodate all travel modes and must support and integrate with the broader transportation network that will ultimately serve Kingston Terrace. Emphasis will be on accommodating local circulation needs rather than regional through traffic." —Pages 64-66*

Based on the results of this analysis, Alternative 2, with minor modifications to avoid existing homes, is the preferred east/west connection to be used to complete the Kingston Terrace Master Plan. As work on the master plan process progresses, Alternative 2 may be adjusted to accommodate land use, environmental, and other factors. The recommendation that emerges from this process will be integrated as a fundamental element of the draft KTMP and Transportation System Plan. Ultimately, the master plan including transportation system recommendations will be incorporated into the City's Comprehensive Plan, East/West Circulation Alternatives Analysis Transportation System Plan and Development Code per City Council approval, where community members will have another opportunity to provide testimony.

Policies

The following policies should govern the buildout of the Kingston Terrace mobility network:

1. CONNECTED

Highly connected neighborhoods and a fine-grained network of streets and trails.

The new neighborhoods of Kingston Terrace will be connected to each other, the existing King City east of SW 137th Avenue, and neighboring areas by a wide variety of streets and trails, which are designed to encourage walking and cycling while serving vehicles.

The neighborhoods of Kingston Terrace will be made up of relatively small blocks and a fine-grained network of streets, trails, and alleys that make it easy and fun to walk and bike to local destinations and access future transit services.

2. CONTEXT SENSITIVE

Streets that change character to match the character of the neighborhood. Most streets serving Kingston Terrace will change in character to match the neighborhoods they traverse. This applies to the multiple east-west streets that cross the area. In the far western Main Street/Town Center, like a traditional "main street", streets will be wider to serve commercial uses, accommodate on-street parking, outdoor dining and socializing. In contrast, where the same street traverses the eastern area of Kingston Terrace it will be narrow with only two lanes for cars and limited on-street parking. Sidewalks will accommodate comfortable walking but may meander through planted areas and around trees. In the eastern neighborhoods the street itself may curve to avoid groves of trees, existing properties, and slow traffic. This "context-sensitive" design principle applies to all east-west streets, including the east-west collector.

Where streets cross natural areas or ravines they will be designed to minimize adverse impacts.

3. SAFE AND SLOW

Narrow streets and appropriate traffic controls that "tame streets" by reducing speeds through use of geometric design, signals, roundabouts and mini-roundabouts (traffic circles), and bicycle and pedestrian protections (e.g., refuge islands and pedestrian -activated signals), which are described in more detail in Implementation Strategies.

The east-west collector street will have no more than two vehicular travel lanes for most of its length. All other streets will have narrow two travel lanes except where additional width is provided to accommodate on-street parking, a family-friendly separated bike lane, a green center park for trees or plants, or a center turn lane for left turns. Left turn lanes may be necessary within the vicinity of SW Beef Bend Road where north-south collectors or neighborhood routes intersect.

Roundabout-style intersections, particularly along collector streets, will minimize the need for left turn lanes. Roundabouts will be designed using specific geometric design techniques that slow traffic and make it easy and safe for pedestrians and bicyclists to cross and move through.

4. STREETS FOR EVERYONE

Micromobility, active transportation, and universal design concepts are built into the network and into the design of each individual street from the beginning and not as an afterthought. Micromobility refers to forms of small, fully or partially human-powered vehicles such as bikes, electric bikes (e-bikes), or e-scooters. Active transportation refers to the intentional design of environments including streets and paths that makes it easy to execise and incorporate healthy choices into daily life. Universal design addresses the right for everyone to use all spaces in an independent, inclusive, and equal way.

5. BIG STREETS CONNECT NOT DIVIDE

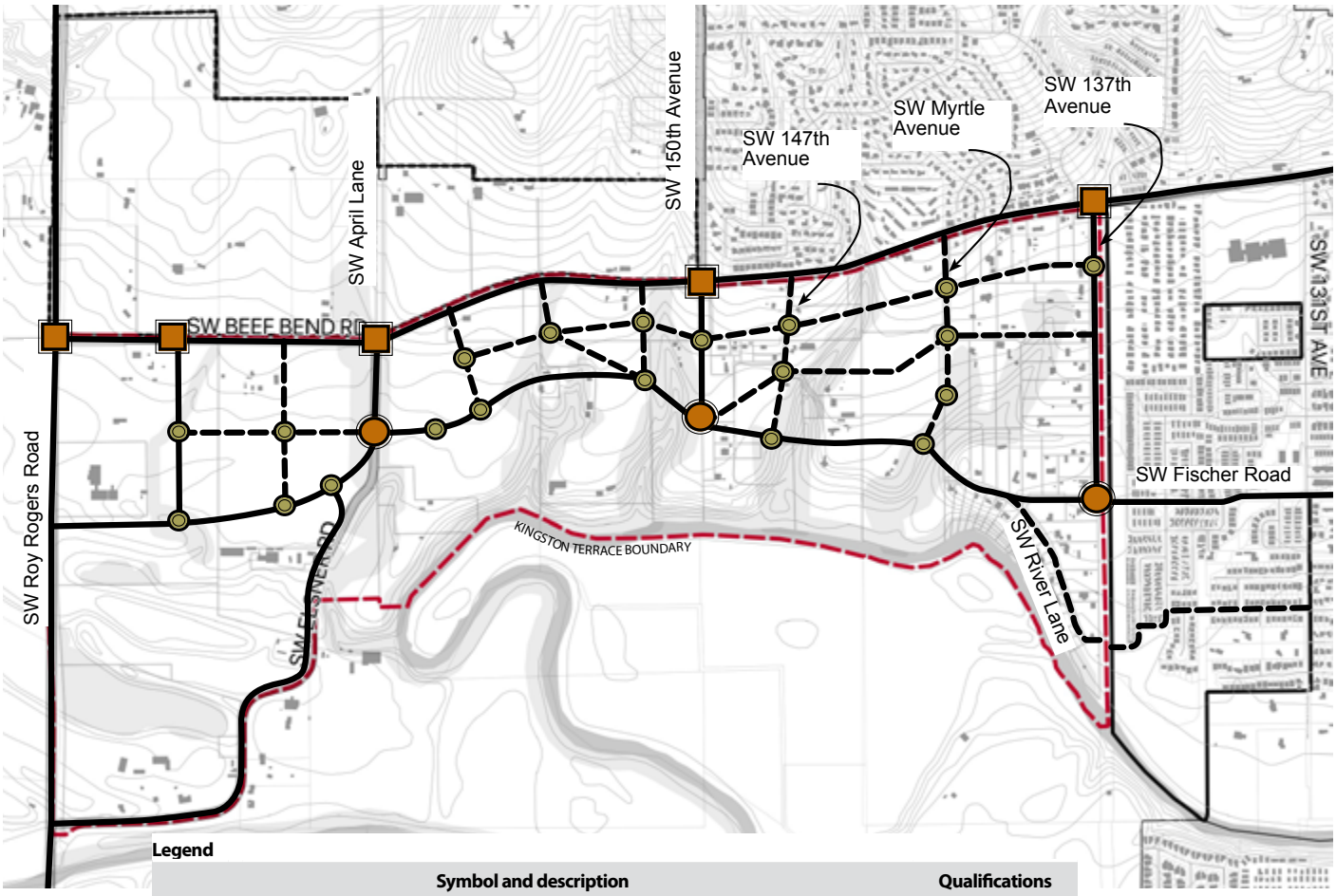
Streets like SW Beef Bend Road will play a different role in the future: connecting the region and serving local needs. SW Beef Bend Road, SW Roy Rogers Road, and SW Elsner Road will evolve from rural highways to urban streets, particularly where they serve two adjoining communities that will share future commercial, transit, and recreational facilities. One such area is SW Beef Bend Road between SW Roy Rogers Road and SW 150th Avenue. In the future, the ability to safely walk and bicycle alongside this arterial to easily cross it and to access a transit stop, will be of paramount importance. The transformation of this street will include attractive development which fronts onto SW Beef Bend Road, facing the street rather than turning its back.

Implementation Strategies

KINGSTON TERRACE BACKBONE STREET SYSTEM

A "backbone" street system was identified for the Kingston Terrace area and is illustrated in Figure 5.3. This system identifies collector streets that provide east/west and north/south circulation to link destinations within Kingston Terrace and connect Kingston Terrace with the existing city, and the surrounding arterial street system. The backbone street system also includes a series of Neighborhood Routes that provide connections between collector streets and the local street system. The graphic illustrates the location of proposed north/south and east/west collector streets, as well as the proposed neighborhood routes.

Traffic movement along the collector streets would be controlled by the use of roundabouts to reduce speeds, minimize required roadway widths, and discourage through traffic. Modern design roundabouts would be placed at the intersections of collector streets with other collectors. The frequency and connectivity offered by the backbone street system is also intended to encourage active transportation by providing good connectivity that minimizes out-of-direction travel and provides for the safe and comfortable movement of pedestrians and bicyclists. Note that the locations of roundabouts and traffic circles are aspirational.



Legend

Symbol and description	Qualifications
Functional classification – Arterial Street (SW Beef Bend Road, SW Roy Rogers Road)	
Functional classification – Collector Street (SW Fischer Road extension, SW River Terrace Boulevard, SW Elsner Road, SW 150th Avenue, SW 137th Avenue)	
Functional classification – Neighborhood Route (SW 147th Avenue, SW Myrtle Avenue, and other new streets identified by the King City TSP)	1
Roundabout	2
Traffic Circle	2
Traffic Signal	3

Figure 5.3 Backbone Streets Map

1. Connection of Neighborhood Routes to Beef Bend Road is aspirational and subject to meeting the Washington County criteria for a design exception and approval by the County Engineer in coordination with the City of Tigard. Intersections may be Right-in/Right-out only and/or provide a logical location for a pedestrian crossing.
2. Roundabouts and traffic circles as shown are aspirational. Final decisions about intersection type will be made during engineering and site design.
3. Final determination on intersection location and configuration will be subject to a refinement plan prepared for Beef Bend Road by King City, Tigard, and Washington County.

TRANSPORTATION SYSTEM PLAN FUNCTIONAL CLASSIFICATIONS

The Draft Transportation System Plan (TSP) established four Vehicle Functional Street Classifications to manage the King City street network, as follows:

- Arterial Street
- Collector Street
- Neighborhood Route
- Local Street

Each Master Plan street and path will fulfill a role within the network of streets and will therefore be assigned a Functional Classification according to the TSP. As shown in Figure 5.4, the classifications seek to create a balance between property access and mobility across the system as a whole. The TSP defines the street classifications as follows:

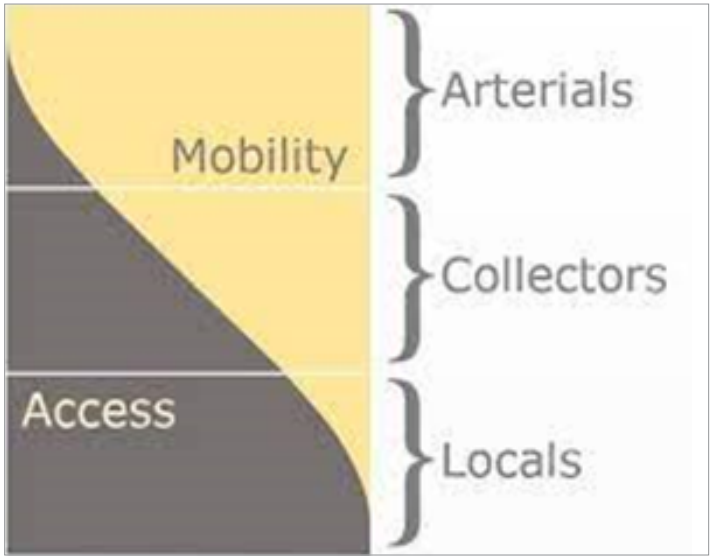


Figure 5.4 Functional Classifications

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

Collector Streets are intended to distribute traffic from Arterials Streets to streets of the same or lower classification. They provide both access and circulation within and between residential and non-residential areas. Collectors differ from arterials in that they provide more of a citywide circulation function, do not require as much access control compared to arterials, and they serve residential neighborhoods, distributing trips from the neighborhood and local street system. Collectors generally support traffic volumes typically ranging from 5,000 to 10,000 daily vehicles and speeds often managed between 25 mph and 35 mph.

Neighborhood Routes provide connectivity between local streets and collectors or arterials. Because neighborhood routes connect local street networks with collector and arterial streets, they generally have more traffic than local streets and are typically used by residents to get into and out of the neighborhood. A neighborhood route is not intended to serve citywide/large area circulation. Neighborhood routes should maintain slow vehicle operating speeds to accommodate safe use by all modes and through vehicle traffic without an origin or destination in the immediate area should be discouraged. Neighborhood routes generally support traffic volumes ranging from 1,500 to 5,000 daily vehicles, with vehicular speeds managed to no more than 25 mph.

Local Streets - All streets not classified as Arterial, Collector, or Neighborhood Routes are classified as Local streets. Local streets prioritize providing immediate access to adjacent land and often function as through routes for pedestrians and bicyclists. These streets should be designed to enhance the livability of neighborhoods and can generally accommodate up to 1,500 vehicles per day.

CONTEXT SENSITIVE DESIGN OF STREETS

The functional classification established by transportation system plan does not mean a particular street must have a uniform look and feel wherever it occurs. Design features can be added, subtracted, or amplified to respond to a specific land use or neighborhood context. This approach is called context sensitive design.

As described in the Mobility policies, most streets serving Kingston Terrace will change in character to match the neighborhood they traverse. The Master Plan Street Types established in 2018 for the Concept Plan and contained in the Master Plan were created to respond to the different neighborhood contexts of Kingston Terrace.

In addition to the eight context sensitive design approaches that were identified during concept planning, two new context sensitive street treatments are proposed to respond to TSP guidance, community concerns, and studies that have been completed following the 2018 URA 6D Concept Plan, such as the 2022 East/West Circulation Alternatives Analysis. These are "family-friendly biking street (micromobility-accommodating)," and "minimal-impact crossing." See Figure 5.5. Master Plan Street and Path Types for a visual overview.

Context sensitive design approaches support the functional classification of a street (e.g., Collector, Neighborhood Route) and its role within the street network while allowing certain characteristics of the street such as sidewalk widths, landscape strip widths, or planted medians, to change in response to the land use and urban design goals of individual neighborhoods. For example, the character of the primary east/west collector street will transition from a very urban, Town Center-focused cross-section at the west end of Kingston Terrace area to a rural character neighborhood at the east end.

Table 5.2. Street-Path Dimensional and Design Characteristics provides a guide to how each context sensitive design approach is applied to the TSP functional classification and the resulting dimensional and design characteristics for each existing and planned street within the Kingston Terrace network.



Images: 2018 URA 6D Concept Plan

Figure 5.5 Master Plan Street and Path Types

CONTEXT SENSITIVE DESIGN TREATMENT	TSP CLASSIFICATION [1]	TARGET SPEED (MPH) [2][3]	RIGHT OF WAY OR EASEMENT WIDTH (MAX.)	PAVEMENT WIDTH (MAX.)	VEHICULAR TRAVEL LANES	TRAVEL LANE WIDTH	PARKING LANE WIDTH	BICYCLE & MICRO-MOBILITY FACILITIES	SIDEWALK, PLANT STRIP, AND FURNISHING ZONE[4]
Green Boulevard	Collector, Neighborhood Route, or Local	Collector and Neighborhood Route – 25-30 Local – 25	84 feet, (optional center median additional)	54 feet	2 lanes	10-11 feet	8 feet	Protected lane on Collectors; shared on Locals	12 feet min
Main Street	Collector, Neighborhood Route, or Local	25	84 feet	54 feet	2 lanes	10-11 feet	8 feet	Protected lane on Collectors; shared on Locals	12 feet min
Neighborhood Street	Collector, Neighborhood Route, or Local	25	84 feet	54 feet	2 lanes	10-11 feet	7-8 feet	Protected lane on Collectors; shared on Locals	12 feet min
Queuing Street	Local	25	54 feet	30 feet	2 lanes (part of one lane is shared with on-street parking)	Total vehicular travel width varies; min. 22; max. 30	7 feet	Shared	12 feet min

Table 5.2. Street-Path Dimensional and Design Characteristics

[1] As noted above, the TSP Functional Classification represents a street's role within the street network; the Master Plan Street or Path Type represents the context sensitive design approach applied.

[2] Vehicular target speed as opposed to design speed, per CNU/ITE manual "Designing Walkable Urban Throughfares: A Context Sensitive Approach."

[3] Per the TSP, the speed and speed management strategy for each functional classification is as follows: Collector Street: speeds often managed between 25 mph and 35 mph; Neighborhood Route: vehicular speeds managed to no more than 30 mph; Local Street Speeds are not normally posted; a statutory 25 mph speed limit in effect.

[4] Minimum dimension for each component is specified in the Kingston Terrace streets section of the King City Development Code. The combined dimensions of each component (i.e., plant strip, sidewalk) may be accommodated within the right of way or easement or a combination of the two.

CONTEXT SENSITIVE DESIGN TREATMENT	TSP CLASSIFICATION [1]	TARGET SPEED (MPH) [2] [3]	RIGHT OF WAY OR EASEMENT WIDTH (MAX.)	PAVEMENT WIDTH (MAX.)	VEHICULAR TRAVEL LANES	TRAVEL LANE WIDTH	PARKING LANE WIDTH	BICYCLE & MICRO-MOBILITY FACILITIES	SIDEWALK, PLANT STRIP, AND FURNISHING ZONE[4]
Shared Street	Local	20-25	varies	<30 feet	varies	varies	varies	Shared	varies
Residential Alley	NA	Under 20 mph	varies	varies	varies	varies	varies	Shared	varies
Rural Neighbor-hood Character Street	Collector, Neighborhood Route, or Local	25	50 feet	38 feet	2 lanes	10-11 feet	7-8 feet	Shared on either Collectors or Locals	5-10 feet
Multi-Use Path / Trail	NA	NA			NA	NA	NA	Shared	NA
Minimal-impact crossing (culvert or bridge crossing)	Collector, Neighborhood Route, or Local	25	48 feet	22 feet	2 lanes	10-11 feet	NA	Separated or protected on Collectors; shared on Locals	NA
Biking street	Collector, Neighborhood Route, or Local	25	70 feet	36 feet	2	10-11 feet	NA	Separated or protected on Collectors; shared on Locals	5-10 feet

Table 5.2 Street-Path Dimensional and Design Characteristics (Continued)

[1] As noted above, the TSP Functional Classification represents a street's role within the street network; the Master Plan Street or Path Type represents the context sensitive design approach applied.

[2] Vehicular target speed as opposed to design speed, per CNU/ITE manual "Designing Walkable Urban Throughfares: A Context Sensitive Approach."

[3] Per the TSP, the speed and speed management strategy for each functional classification is as follows: Collector Street: speeds often managed between 25 mph and 35 mph; Neighborhood Route: vehicular speeds managed to no more than 30 mph; Local Street Speeds are not normally posted; a statutory 25 mph speed limit in effect.

[4] Minimum dimension for each component is specified in the Kingston Terrace streets section of the King City Development Code. The combined dimensions of each component (i.e., plant strip, sidewalk) may be accommodated within the right of way or easement or a combination of the two.

CONTEXT SENSITIVE DESIGN APPROACH APPLIED TO THE EAST/WEST COLLECTOR

While a street fulfills its functional classification network destiny, the palette of context sensitive design approaches will be selected to suit and serve the surrounding neighborhood context. This is especially true for the east-west collector that will likely be four different Master Plan street types from east to west, beginning as a Shared Street/Town Center and tapering to a Rural Character Street.

Most east-west streets will change to match the context: A street which originates in the Town Center as a traditional "main street" will change nature as it moves through the Central Neighborhood, and again as it travels through the Rural Character Neighborhood. According to the TSP Functional Classification system it may be a Collector (or a Neighborhood Route or a Local Street), but it will change from a Master Plan Main Street (Town Center) to a still be a Master Plan Neighborhood Street (Central Neighborhood) to a Rural Character Street (at Rural Character Neighborhood). Whether it's a Collector or a Neighborhood Route, it will accommodate two lanes for cars. The sidewalk environment or the bike lane may change but walkability and bikeability will not be compromised. Where streets cross natural areas or ravines they will be designed to minimize adverse impacts.

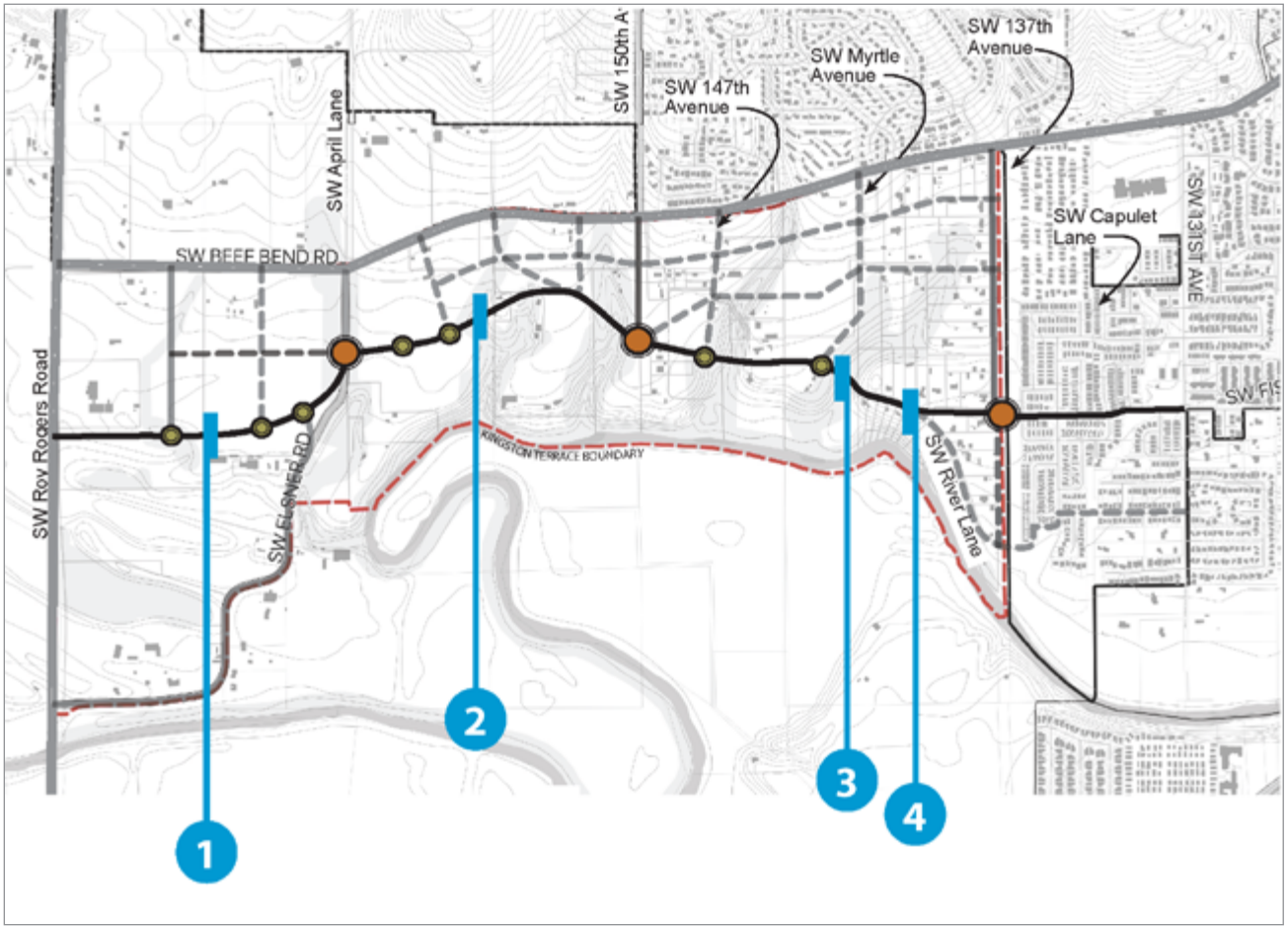
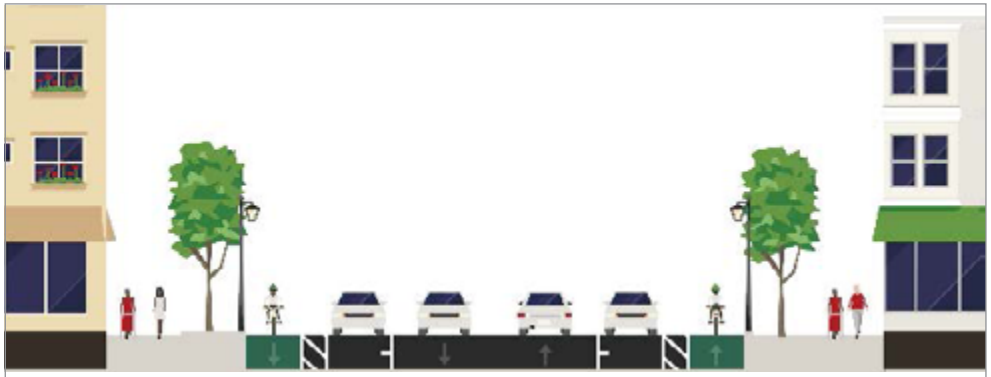
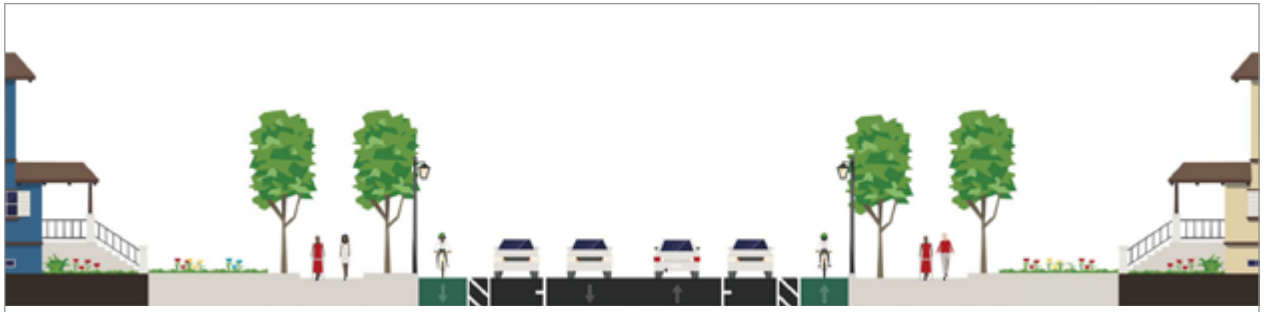


Figure 5.6 Illustrative Street Cross Sections and Key Map

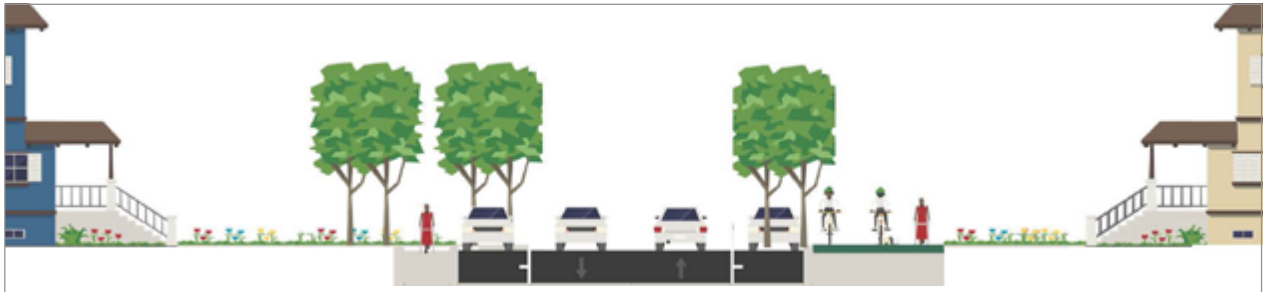
Figure 5.6 highlights four different street designs at different points along the east-west collector road, depicted in cross-sections shown in Figure 5.7 – Figure 5.11 on the following pages.



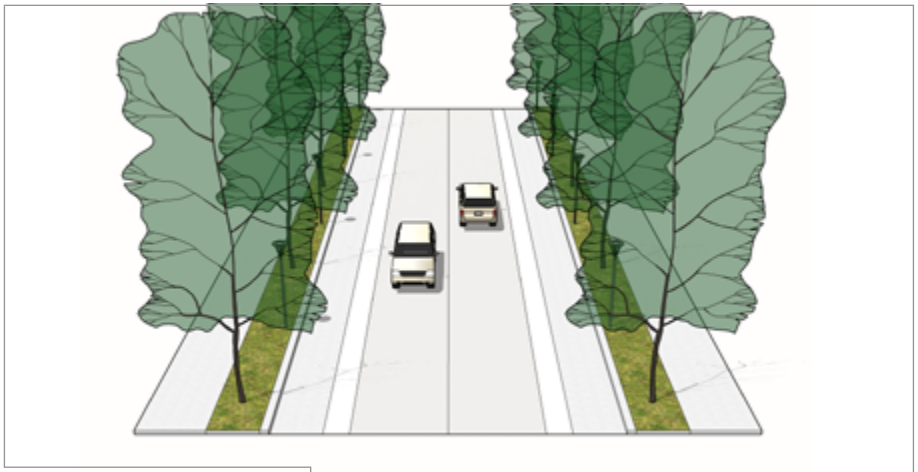
1 *Figure 5.7 – Cross Section #1. Collector Street Example – Main Street in Town Center*



2 *Figure 5.8 – Cross Section #2. Collector Street Example – In Beef Bend or Central Neighborhood*



4 *Figure 5.10. – Cross Section #4. Collector Street Example – In Rural Character Neighborhood*



3 *Figure 5.9 – Cross Section #3. Collector Street Example – At Culvert or Bridge Crossing*



4

Figure 5.11 - Cross Section #4 (Continued). Collector Street Example – In Rural Character Neighborhood

STREET AND PATH DIMENSIONAL AND DESIGN CHARACTERISTICS

Local Streets and Collector Streets share the same cross section characteristics, e.g., right of way (ROW) and pavement widths, number of vehicular travel lanes, and vehicular speed controls in most cases. See Table 5.2 for details.

Collector Streets differ from Local Streets in the following ways: Collector Streets are tasked with connecting to Arterial Streets (SW Beef Bend Road, OR 99 W, and SW Roy Rogers Road) and serving longer-distance vehicular and micro-mobility travel trips. In addition, Collector Streets may have intersection treatments that prioritize the collector's primary direction of travel, i.e., stop signs on the side streets or roundabout traffic control at key intersections with other Collectors, and bicycle lanes. However, Collector Streets would still be designed to discourage speeding through a variety of effective traffic calming techniques and will be designed to discourage cut-through traffic.



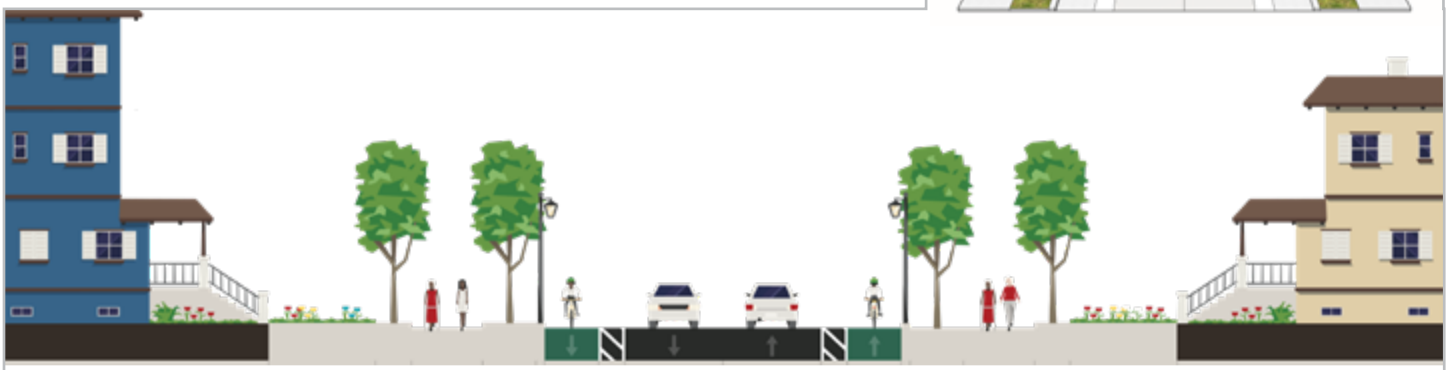


Figure 5.12 –Neighborhood Route Example – In Beef Bend or Central Neighborhood

INTERSECTIONS ON THE BACKBONE STREET SYSTEM

As described in Master Plans' Mobility Policies, an important goal is a fine-grained network of streets that are safe, designed to slow traffic, and be narrow in width. Roundabout-style intersections will minimize the need for left turn lanes and allow streets to be narrow which encourages slower speeds. Roundabouts will be designed using specific geometric design techniques that, besides slowing traffic, will make it easy and safe for pedestrians and bicyclists to cross streets and move through the area.

Left turn lanes may be necessary within the vicinity of SW Beef Bend Road where north-south Collectors or Neighborhood Routes intersect. Where Neighborhood Routes intersect, Traffic Circles (also called Mini-Roundabouts) will be used. See the following figures for the locations of each type of intersection and visual examples.

In general, driveway access will be limited on Collectors and Neighborhood Routes, and the use of medians on Collectors will be carefully coordinated to avoid adverse impacts on nearby intersections. Final decisions about intersection spacing and access will be made during engineering and site design, and will be consistent with the city's TSP.

Roundabouts and Mini-Roundabouts (Traffic Circles) are identified in the TSP as Volume and Speed Management Tools

TOOLS *		USE BY VEHICLE FUNCTIONAL CLASSIFICATION			IMPACT	
		Arterial Street	Collector Street	Neighborhood Route or Local Street	Speed Reduction	Traffic Diversion
ROUNDABOUTS		✓	✓	✓	✓	
MINI-ROUNDABOUTS			✓	✓	✓	

Figure 5.13. Roundabouts and Traffic Circles

TRAFFIC CALMING

In addition to the use of roundabouts and traffic circles to control traffic and vehicle speeds at intersections, particularly in the future residential neighborhoods of Kingston Terrace, there are many other traffic calming strategies and devices that can control the speed and volume of traffic on local streets. A selection of such strategies is shown in Figure 5.14.

TOOLS [1]		USE BY VEHICLE FUNCTIONAL CLASSIFICATION			IMPACT	
		Arterial Street	Collector Street	Neighborhood Route or Local Street	Speed Reduction	Traffic Diversion
NARROWING TRAVEL LANES		✓	✓	✓	✓	
PLACING BUILDINGS, ON-STREET PARKING, AND LANDSCAPING CLOSER TO THE STREET		✓	✓	✓	✓	
CURB EXTENSIONS OR BULBOUTS		✓	✓	✓	✓	
MEDIANS AND PEDESTRIAN ISLANDS		✓	✓	✓	✓	
PAVEMENT TEXTURE		✓	✓	✓	✓	

TOOLS [1]		USE BY VEHICLE FUNCTIONAL CLASSIFICATION			IMPACT	
		Arterial Street	Collector Street	Neighborhood Route or Local Street	Speed Reduction	Traffic Diversion
RAISED INTERSECTION OR CROSSWALK			✓	✓	✓	✓
CHOKER			✓	✓	✓	✓
CHICANES			✓	✓	✓	✓
DIVERTERS (WITH EMERGENCY VEHICLE PASS-THROUGH)			✓	✓	✓	✓

Figure 5.14. Traffic Calming Tools

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

BEEF BEND ROAD – VISION AND EMERGING IMPLEMENTATION SCENARIOS FOR IMPROVEMENTS

The perimeter arterial street system of SW Beef Bend and SW Roy Rogers Roads (and OR 99W) play an important role in connecting Kingston Terrace to regional traffic and transit. However, arterial streets do not need to be designed like highways. As described in Master Plan Policies, streets like SW Beef Bend Road will play an expanded role in the future: connecting the region and serving local needs. In particular, SW Beef Bend Road, which runs along the northern edge of Kingston Terrace and along the southern edge of Tigard's River Terrace 2.0 area, can serve as a connector between the two communities, instead of as a barrier. This is a goal that has been expressed by both cities.



Figure 5.15. SW Beef Bend Road Boulevard Design Concepts

LOCATION AND TYPE OF CROSSINGS ON SW BEEF BEND ROAD

Figure 5.15 illustrates the design concept for SW Beef Bend Road to minimize total pavement width, allow for separated pedestrian/bike facilities, ability to have a more sensitive design in cross slope segments, and to provide storm water treatment opportunities. Consistent with the Kingston Terrace backbone street system presented in Figure 5.3, Figure 5.16 shows the eleven streets that are planned to run north-south through Kingston Terrace and connect to SW Beef Bend Road. As indicated in the TSP these streets have been designated as Collectors and Neighborhood Routes.

In conjunction with the images that follow, Figure 5.16 also illustrates conceptual cross-sections that provide guidance for future development of Beef Bend Road consistent with proposed adjacent land uses. It should be noted that further development of these concepts is dependent on coordination with both the City of Tigard and Washington County to determine the ultimate cross-section. It should also be noted that any Neighborhood Route connection to Beef Bend Road is subject to further review and approval by the County.

Figure 5.17 illustrates Concept A near the west end adjacent to the Town Center. Figure 5.18 illustrates Concept B in the center of the Kingston Terrace frontage. Figure 5.19 illustrates Concept C, the preferred concept, adjacent to the eastern end of Kingston Terrace. Further details related to the nature of potential street crossings are included in Table 5.3.

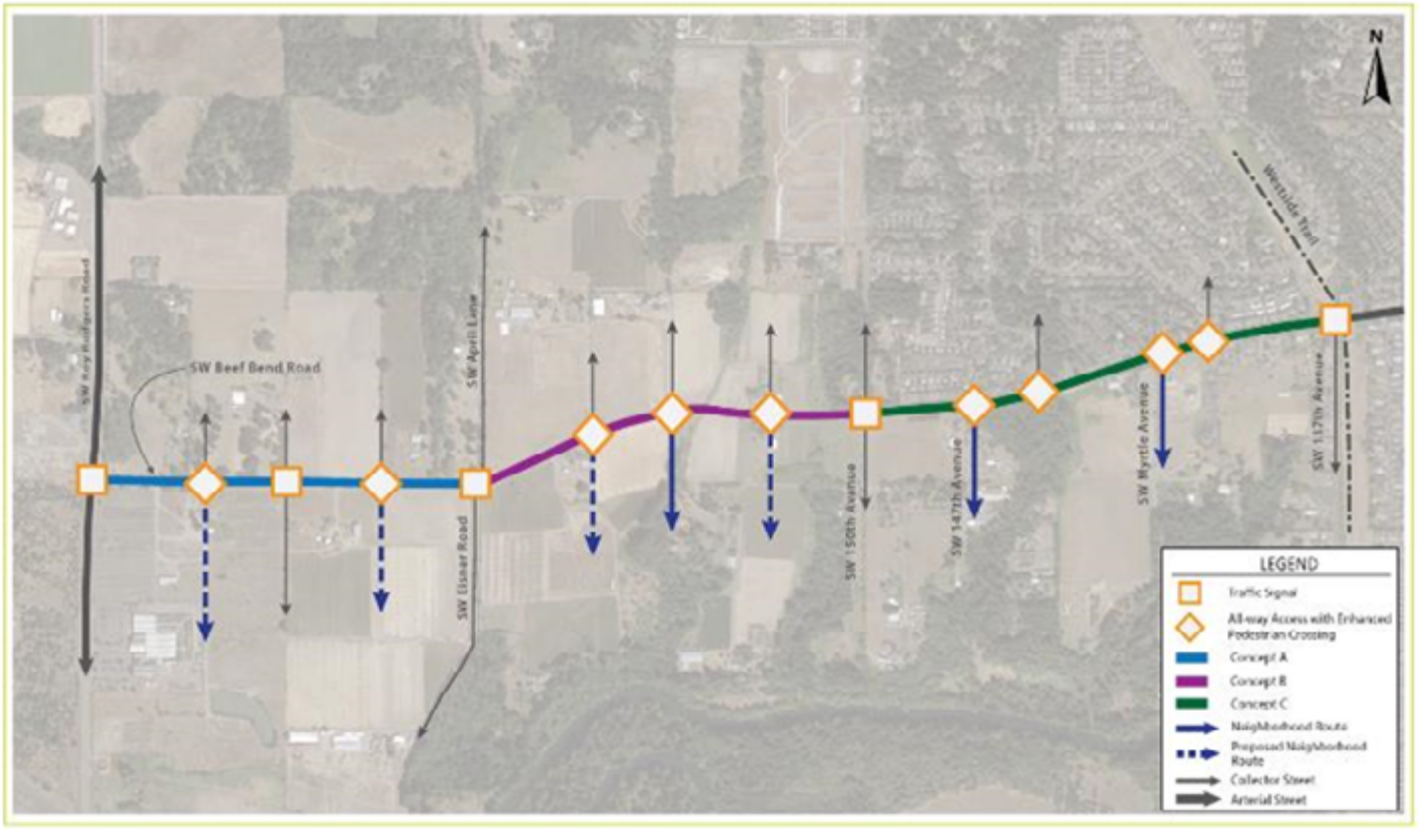


Image: SW Beef Bend Road Design Network Coordination Memo

Figure 5.16 Suggested Beef Bend Road Crossings and Connections

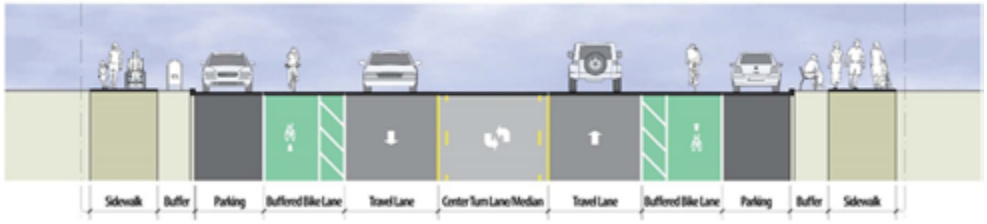


Figure 5.17 Beef Bend Road – Roy Rogers Road to Elsner Road

Key Elements of Concept A:

Adjacent to Multimodal Area including Kingston Terrace Town Center and small commercial area anticipated on north side of the street in Tigard.

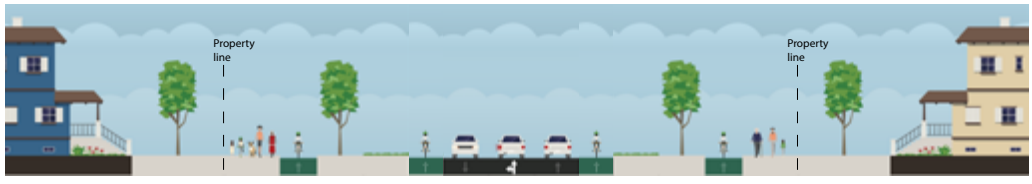


Figure 5.18. Beef Bend Road – Elsner Road to 150th Avenue

Key Elements of Concept B:

Adjacent to currently undeveloped areas on both sides of Beef Bend road which are largely expected to develop for residential uses.



Figure 5.19 Prefered Concept: Beef Bend Road – 150th Avenue to Existing King City Limits/137th Avenue

Key Elements of Concept C: Adjacent to future residential area in King City and existing developed residential area in Washington County. The existing developed area has limited vehicular connections to Beef Bend Road, largely at intersections with buffered sidewalks along most of the distance but no bicycle lanes.

LOCATION AND TSP CORRIDOR #	Corridor 3	River Terrace	Corridor 5	Elsner	Corridor 10	Corridor 26	Corridor 11	150th	147th	Myrtle	137th
TSP Functional Classification	ND	C	ND	C	ND	ND	ND	C	ND	ND	ND
TSP Corridor	#3	#4	#5	#6	#10	#26	#11	#12	#13	#14	#15
Intersection Type	Two-lane road with left turn lane	Signalized	Two-lane road with left turn lane	Signalized	Two-lane road	Two-lane road	Two-lane road	Signalized	Two-lane road	Two-lane road with left turn lane	Two-lane road with left turn lane
Bike and Pedestrian Facilities	Enhanced crossing	Yes	Enhanced crossing	Yes	Enhanced crossing	--	Enhanced crossing	Yes	Yes	Enhanced crossing	Yes

KEY: A = ARTERIAL | C = COLLECTOR | ND = NEIGHBORHOOD ROUTE

Table 5.3. Location and Type of Crossings on SW Beef Bend Road

Notes:

1) The intersection of SW Roy Rogers Road and SW Beef Bend Road, identified by the TSP as Corridor #1 in the TSP Projects and Priorities list, is slated to be signalized and to include bike and pedestrian facilities.

2) Corridor #26 (located midway between SW Elsner and SW 150th, identified on the Backbone Streets Map but is not identified within the Draft TSP Projects and Priorities list.

BICYCLE AND PEDESTRIAN PATHWAYS AND CROSSINGS

Figure 5.20 illustrates the planned location of pedestrian and/or bicycle pathways in Kingston Terrace. While all streets would include sidewalks, on-street bicycle facilities will be provided only along collector streets or on separated shared use pathways. These pathways would either parallel the alignment of vehicular streets or would provide separate, independent connections to encourage the use and safety of active transportation modes. The separation of shared use paths from the motor vehicle travel way should consider roadway speed and volume. With a 30 mph target design speed, the minimum separation should be five feet with more separation depending on the quality of experience desired. Typically, shared use path separation is correlated to roadway speeds and volumes.

Shared use paths and side paths should be a minimum of 10-feet in width with wider cross-sections considered based on the level of expected bicycle and pedestrian activity. Travel to the right should be encouraged with separation of bicyclists and pedestrians where possible.

A key element of the shared use pathway system will be providing safe and convenient crossings of public streets. Bicycle and pedestrian street crossings will generally occur at intersections including at locations identified for enhanced crossing protection along SW Beef Bend Road. These crossings will focus on signalized intersections where this traffic control is provided. At other locations enhanced bicycle/pedestrian crossings may also be developed, particularly to provide access to/from the shared use path proposed along the south side of this street. Motor vehicle crossings of the shared use path should be limited to reduce conflicts and allow for smoother bicycle movement. Driveways should not be permitted onto SW Beef Bend Road, and intersections should be limited to provide no less than 600-feet separation per Washington County standards.

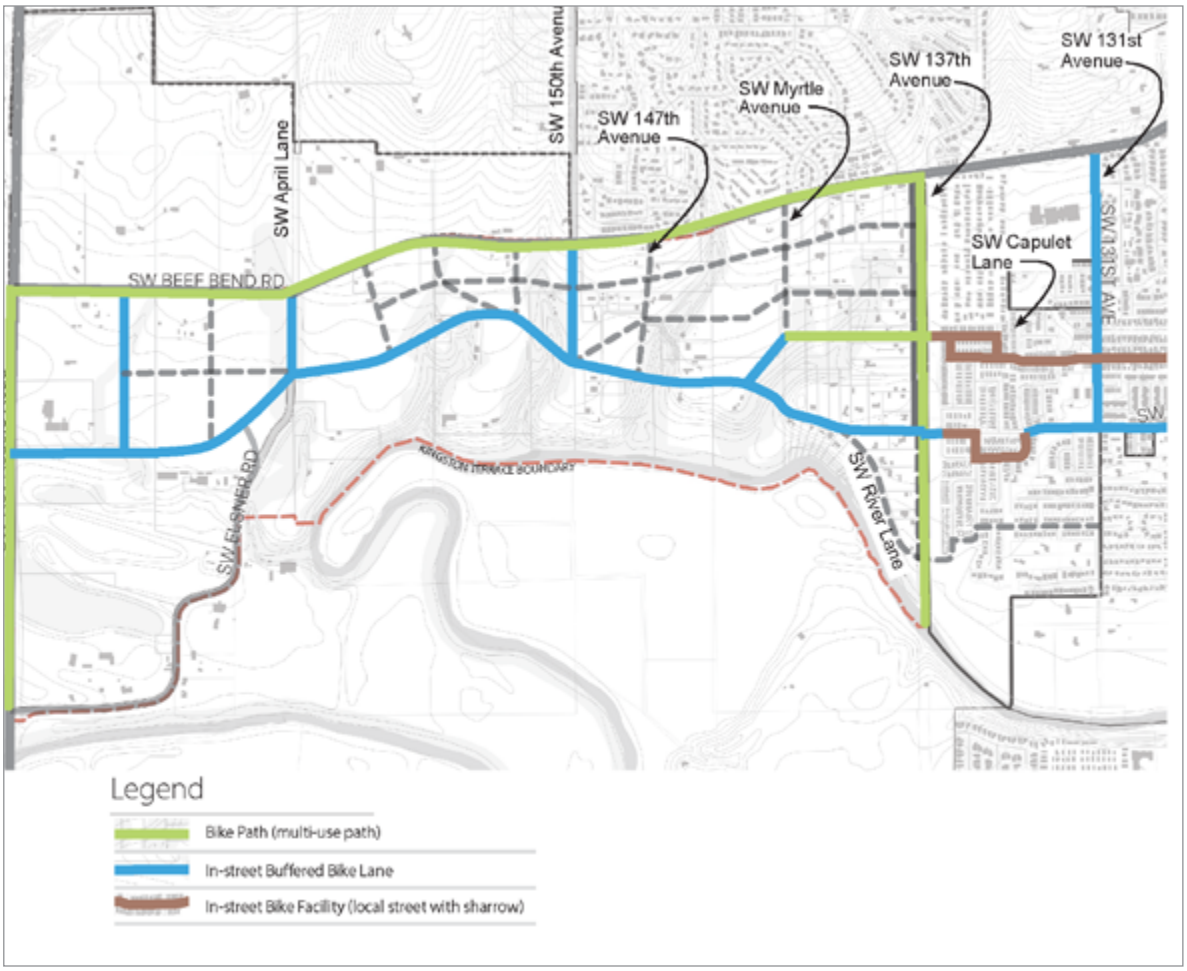


Figure 5.20 Bicycle Facilities

When approaching motor vehicle crossings, the shared use path that is separated by more than five feet from the adjacent public street should transition to a "side path" located as close to roadway intersections as practical to provide a safer and more predictable travelling environment at the intersection. As shown in Figures 4.21 and 4.22, a side path is a bidirectional shared use path located immediately adjacent and parallel to a roadway. Side paths can offer a high-quality experience for users of all ages and abilities as compared to on-roadway facilities in heavy traffic environments, allow for reduced roadway crossing distances, and maintain rural and small town community character (excerpt from Small Town and Rural Design Guide).

Based on the AASHTO *Bicycle Facilities Design Guidelines* and other references, treatments appropriate for consideration where side paths intersect with motor vehicle crossings should:

- Provide good visibility including sufficient stopping sight distance.
- Be intuitive and offer predictability in assignment of right of way.
- Discourage motor vehicle access to the side path/shared use path.
- Integrate crossing into intersection traffic control following principles of pedestrian crossings. Consider limiting motor vehicle movements at signalized intersections to reduce potential conflicts (such as prohibition on right-turns-on-red or providing a leading bike/pedestrian signal phase).
- Slow bicycle traffic with geometric design and signage in advance of the crossing, and heighten awareness of path users for motorists.
- Consider crossings with raised speed table or "dustpan" style driveway geometry to create vertical deflection of turning vehicles. This physically indicates priority of travel on the over vehicular crossing traffic and helps reduce the risk associated with bidirectional side path use.
- Use small roadway corner radii to enforce slow turning speeds of 20 mph or less.
- Use crosswalk markings to indicate the through crossing along the pathway.
- Terminate at a bicycle compatible location to ensure system continuity.
- Meet ADA accessibility requirements since they will likely be used by both bicyclists and pedestrians.



Figure 5.21 Separated Bicycle Facility

Source: Bicycle Facility Implementation Quick Reference Guide, Minnesota DOT



Figure 5.22 Separated Bicycle Facility

Source: Greater Greater Washington, Smart Growth

ENHANCED CROSSING PROTECTION

There are many tools that can be implemented that will improve the safety of pedestrians, bicycles and micromobility devices at unsignalized street crossing locations, particularly at mid-block locations. The King City TSP and other references identify a variety of tools as illustrated in Figure 5.23.

Crosswalks		**Bulb Out with More Visible Ladder Crosswalks**	
ADA Pedestrian Crossing Treatment – Warning strips to alert vision impaired to street crossing and location of median refuge		**Median Refuge** – roadway treatments that provide refuge for pedestrians and bicyclists between motor vehicle travel lanes at intersections and midblock locations. Minimum of 6 feet wide for pedestrians or 8 feet wide for bicyclists.	
Mid-Block Crossing in Urban Context – can be used to add streetscape enhancement in downtown area where a mid-block crossing would be appropriate.		**Pedestrian Crossing Signal (HAWK)** – May be used where side-street volumes do not warrant a conventional traffic signal, or in situations where a conventional signal may encourage additional motor vehicle traffic on the minor street.	
Rectangular Rapid Flashing Beacon (RRFB)		**Pedestrian Crossing at Roundabout**	
Bicycle Lane Treatment Approaching Roundabout		**Curb Extension with On-Street Parking in Commercial Area**	

Figure 5.23 Street Crossing Treatments for Pedestrians and Bicyclists

The following paragraphs describe a sample of such devices. This sample list is not comprehensive and a full exploration of options should be evaluated during design.

The Concept Plan promotes universal design at the community scale as a core tenet of the vision for Kingston Terrace. As stated on page 55 of the plan:

> *"Environments that meet the principles of universal design are barrier-free, ergonomic, and accessible by all people. When applied to the physical environment at the community scale, universal design takes mobility into account in every layout concept and every detail. It is universal design applied to streets and trails, homes, businesses, and civic facilities. It's an ethic as well as an aesthetic: When a community or a facility is designed to function for universal access, it communicates a welcoming and friendly spirit. An intentionally designed universal access community works for and welcomes people of all ages."*

A related concept applied to transportation is **micromobility**, with an emphasis on identifying streets, trails, and components of the street-path network which can provide space for pedestrians, bicycles, golf carts, even horses—a wish expressed by members of the community during the Concept Planning phase. For example, there should be family-friendly, universal design connections to regional trails, and multiple family-friendly biking street each east-west and north-south through the area.

Universal design addresses the right for everyone, from childhood into their oldest years, to use all spaces in an independent, inclusive, and equal way. [6]



Figure 5.24 Micromobility Example 1



Figure 5.25 Micromobility Example 2



Figure 5.26 Micromobility Example 3

[6] See https://issuu.com/urban-dweller/docs/21_0107_universal_design_final

Public Utilities and Services

Introduction

Due to the historically rural character of the KTMP area, water is currently served by on-site private domestic and/or irrigation wells. Sanitary/sewer is served with on-site private septic systems and no formal stormwater management system is in place. The overall capacity of the service providers for this planning area and general vicinity is sufficient to serve this area. However, significant improvements and expansion of the existing public utility infrastructure will be necessary to support the vision and associated development.

Base Conditions

WATER SYSTEM

The City of Tigard provides potable water service to the City of King City under an intergovernmental agreement (IGA) and has committed to supplying water for the KTMP area. Tigard's existing water supply facilities, including the Lake Oswego-Tigard Partnership (LOT) supply from the Clackamas River and Aquifer Storage and Recovery wells, with planned expansion of both supplies, are adequate to supply water to the KTMP area through 2050. The area is located at elevations within Tigard's 410 pressure zone. Existing infrastructure for the 410 pressure zone includes a large diameter pipe in SW Beef Bend Road that extends west to SW 150th Avenue, as shown in Figure 6.1.

Based on prior planning and the City of Tigard's Water System Master Plan (Murraysmith, 2020), the recommended strategy to serve the KTMP area includes main extensions and increased storage capacity. Tigard is currently working on an addendum to the Water Master Plan to further study the KTMP area. The study is expected to be complete in June 2023.

Large diameter backbone piping through the KTMP area will be needed to supply peak water demands and recommended fire flows. In general, piping should connect to the existing large diameter main in SW Beef Bend Road as well as planned large diameter mains that will extend south from the future River Terrace South development (URA 6C) north of SW Beef Bend Road.

Growth in the 410 pressure zone will require the addition of a new 410 pressure zone storage reservoir. The Water System Master Plan noted it should be located in the southwest portion of Tigard's water service area to accommodate growth, although the exact location of this reservoir is still to be determined. It currently is not anticipated to be located within the KTMP area. The City of Tigard's goal is to have the reservoir online to serve the pressure zone by 2030. Based on the findings of the City's master plan, they are confident that they can supply the initial phase of development in these growth areas.

Development will be required to meet the current Tigard Municipal Code Water System Rules and Regulations (Chapter 12.10) at the time of development, which describe standards for locating, sizing and installing public water system facilities, such as waterlines, fire hydrants, valves, and service connections.

SANITARY SEWER SYSTEM

The KTMP planning area local sanitary sewer system will connect to Clean Water Services' (CWS) existing regional sanitary system that also conveys wastewater from City of Tigard's River Terrace development area and the City of Beaverton's South Cooper Mountain development area. All public sanitary sewer improvements must be designed and constructed in accordance with current CWS Design & Construction Standards.

The regional sanitary sewer system starts on the south side of Cooper Mountain in Beaverton, flows south along the western flank of Bull Mountain, then east along the northern boundary of Kingston Terrace in the SW Beef Bend Road right-of-way before turning south into existing King City east of Kingston Terrace on its way to the CWS Durham Advanced Wastewater Treatment Facility, as shown in Figure 6.2. The regional system is designed to serve the entire KTMP area, with incremental capacity upgrades required as development occurs.

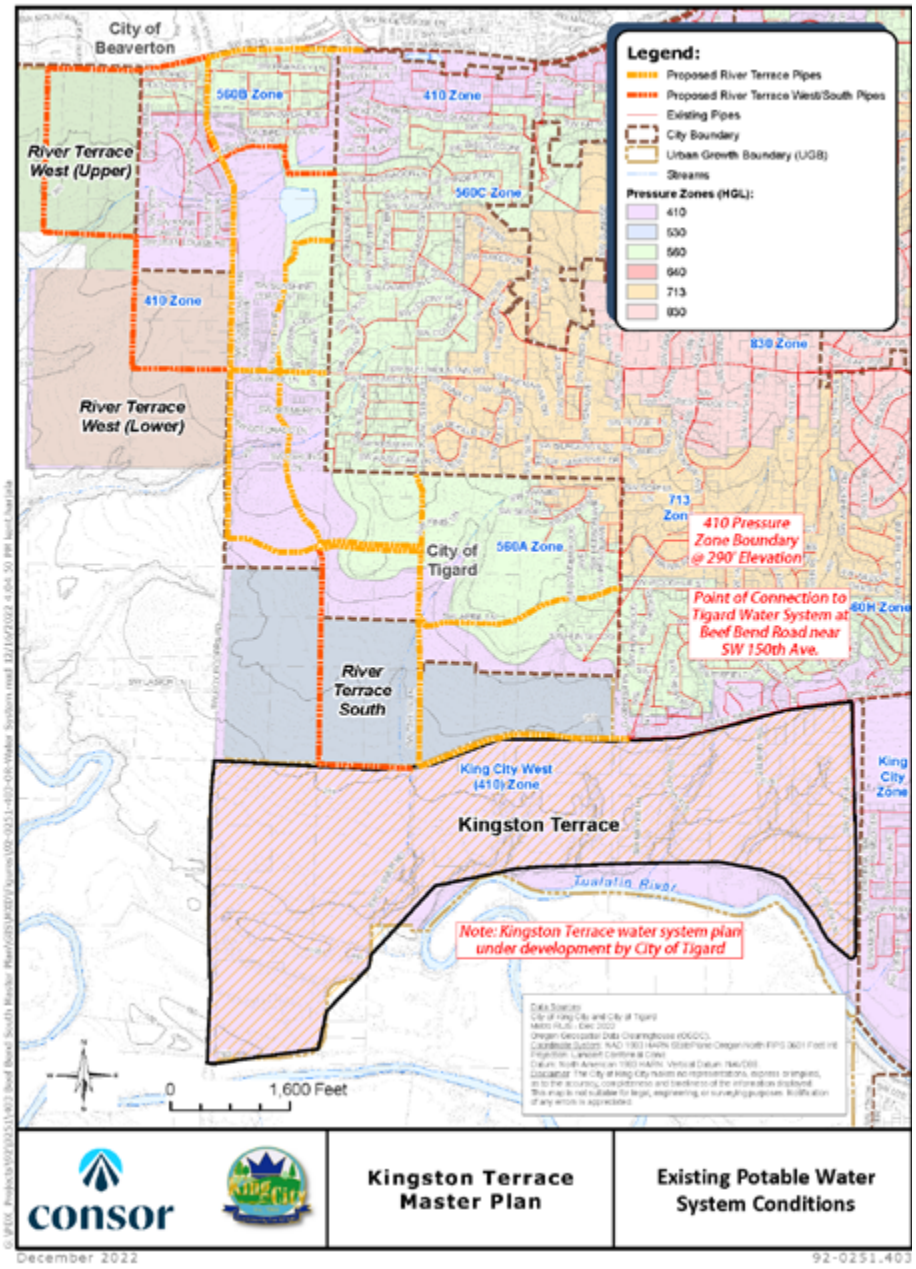


Figure 6.1. Existing KTMP Vicinity Water System

A key component of CWS' reginal sanitary system is the existing River Terrace South Pump Station, constructed in 2019 on SW Roy Rogers Road, between SW Beef Bend Road and SW Elsner Road. The station is designed to serve the western portion of the KTMP area along with upslope areas on the south and west side of Bull Mountain. It also currently serves as a regional pump station to convey flows from the River Terrace and Cooper Mountain developments north of the KTMP planning area. A force main connects the pump station to the CWS' regional gravity sanitary sewer system by traversing north along SW Roy Rogers Road, then east along SW Beef Bend Road, discharging to a manhole near SW Myrtle Avenue. In the future, as development continues in the region, CWS will construct new conveyance facilities to reroute flows around the River Terrace South Pump Station. This will free up pump station capacity to serve additional development in the sewer service area, including full buildout of the KTMP planning area.

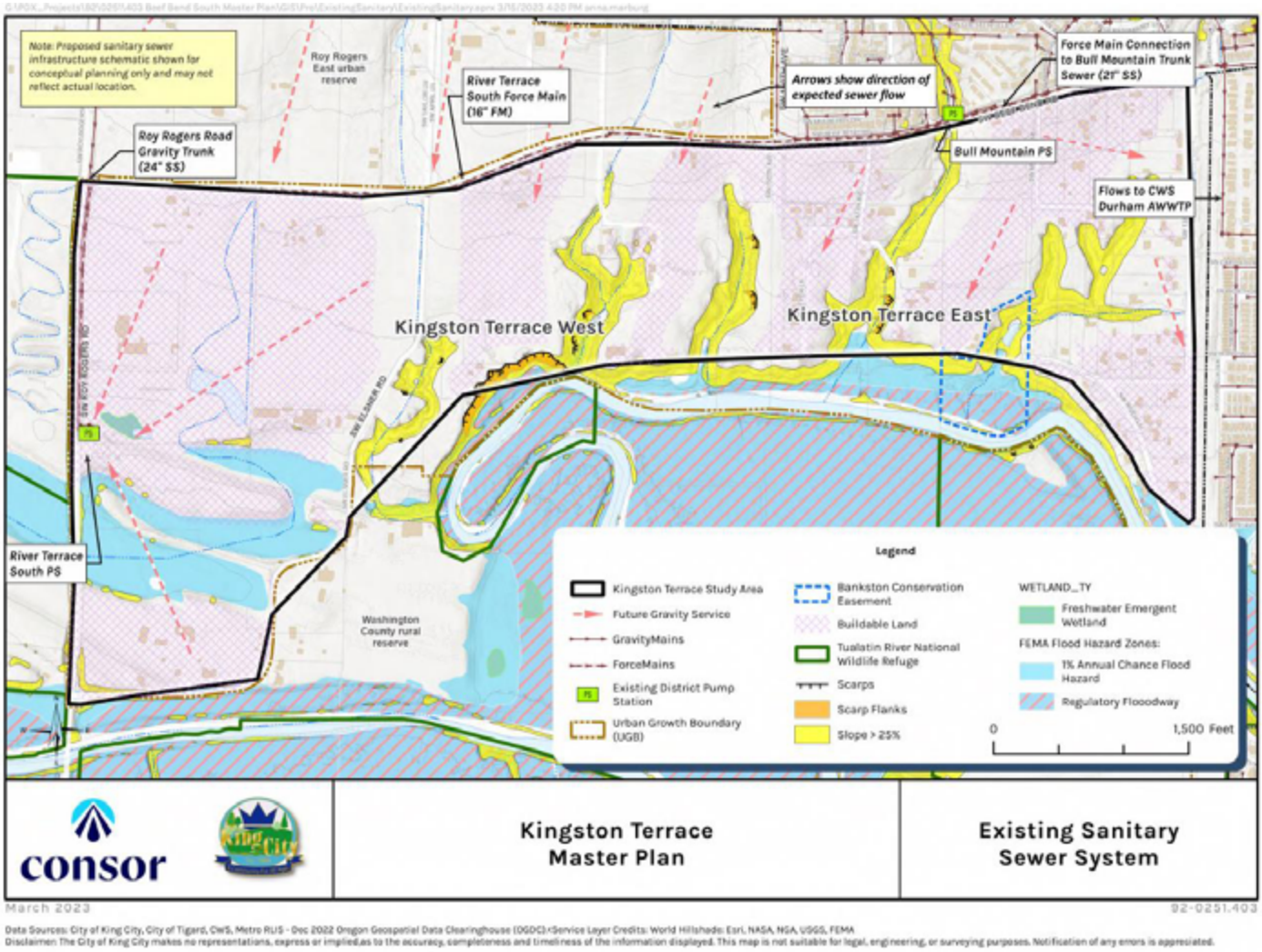


Figure 6.2. Existing KTMP Vicinity Sanitary Sewer System

Regional Sanitary Sewer Concept Plan

To properly plan and account for potential growth within the sanitary service area, CWS is conducting a study of potential alignments for future sanitary system improvements that allow for flexibility to meet the needs of the multiple jurisdictions. Options for potential alignments may include gravity service, multiple pump stations, or a combination of these approaches for sanitary service. The Regional Sanitary Sewer Concept Plan Concept Plan will be a framework for providing future service, not an engineering plan. Final alignments will be dependent on development patterns, timing for development, capacity needs, and other factors. See Figure 6.3 for a map of the regional sanitary sewer study area.

CWS will look for opportunities to co-locate its infrastructure with new roads, but this will not be the only factor considered. Other considerations may include but are not limited to, social impacts, environmental impacts, initial costs, long-term maintenance costs and logistics, as well as land suitability to avoid impacts such as landslides and active erosion.

This study and associated analysis are expected to be completed in June 2023. Once complete, recommendations from the CWS report will be incorporated into the KTMP, Comprehensive Plan, and Community Development Code when referencing and planning for sanitary sewer within the local planning area.Figure 6.2. Existing KTMP Vicinity Sanitary Sewer System

The KTMP generally envisions development to occur in two phases, with more immediate development in the western portion of Kingston Terrace, and slower, more incremental development in the eastern portion over a longer period of time. Recommendations for implementing local sanitary service for these two phases are further detailed below.

PHASE 1 – MORE IMMEDIATE DEVELOPMENT

The western portion of Kingston Terrace, which includes all of Main Street/Town Center and the western portion of the Beef Bend Neighborhood, will be served by the River Terrace South Pump Station. For the majority of Main Street/Town Center, a new gravity sanitary sewer trunk running east from the pump station will be necessary to collect sanitary flow in the neighborhood. The trunk sewer would generally follow the roadway network planned as part of the neighborhood development, as shown in Figure 6.4. To maximize the land that can be served by this trunk sewer and reduce or eliminate the need for pump stations to serve small areas of buildable lands near the Tualatin River, it should be planned for a depth and grade necessary to be extended east and north to the western portion of the Beef Bend Neighborhood south of the intersection of SW Beef Bend Road and SW 150th Avenue.

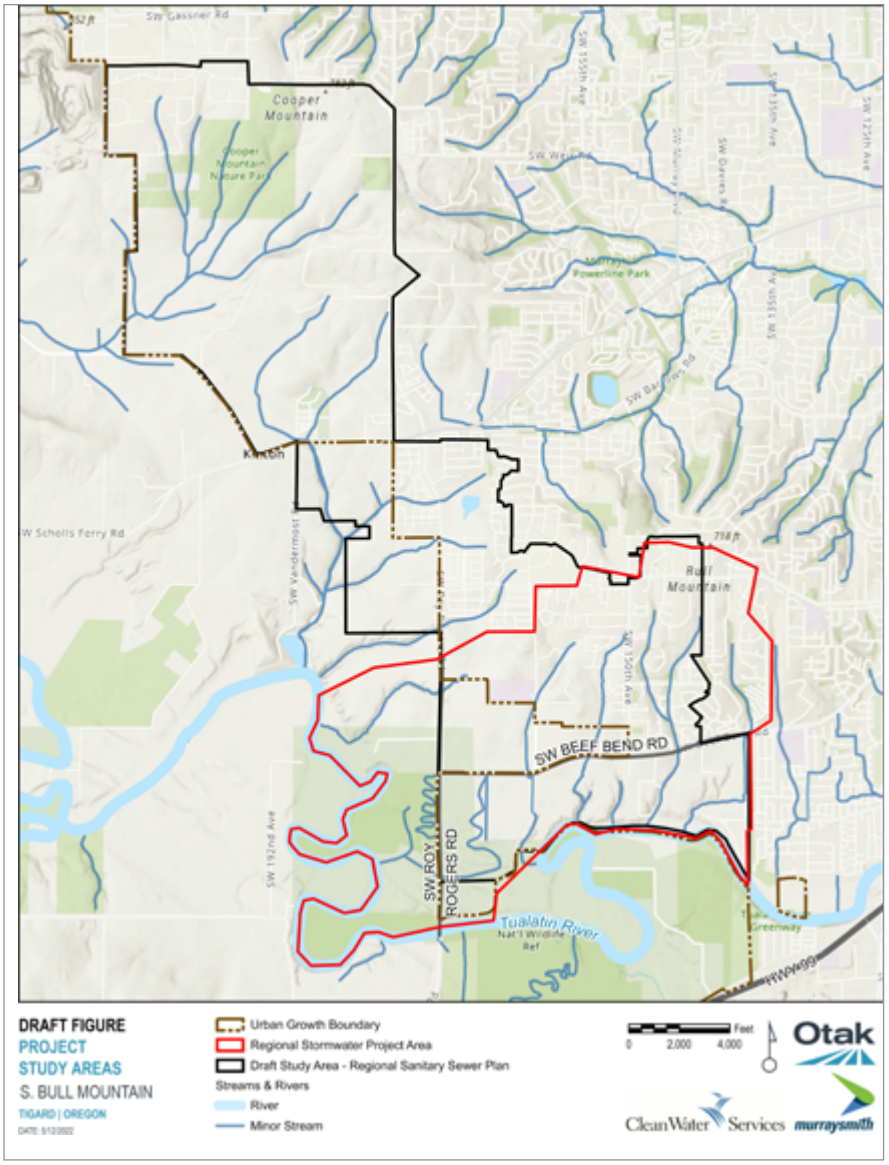


Figure 6.3. Clean Water Services Sanitary Sewer and Stormwater Study Areas

CWS may require portions of the trunk to be oversized to serve existing and future development north of SW Beef Bend Road that naturally flow south. Further details are being developed by CWS in a regional concept planning effort currently underway.

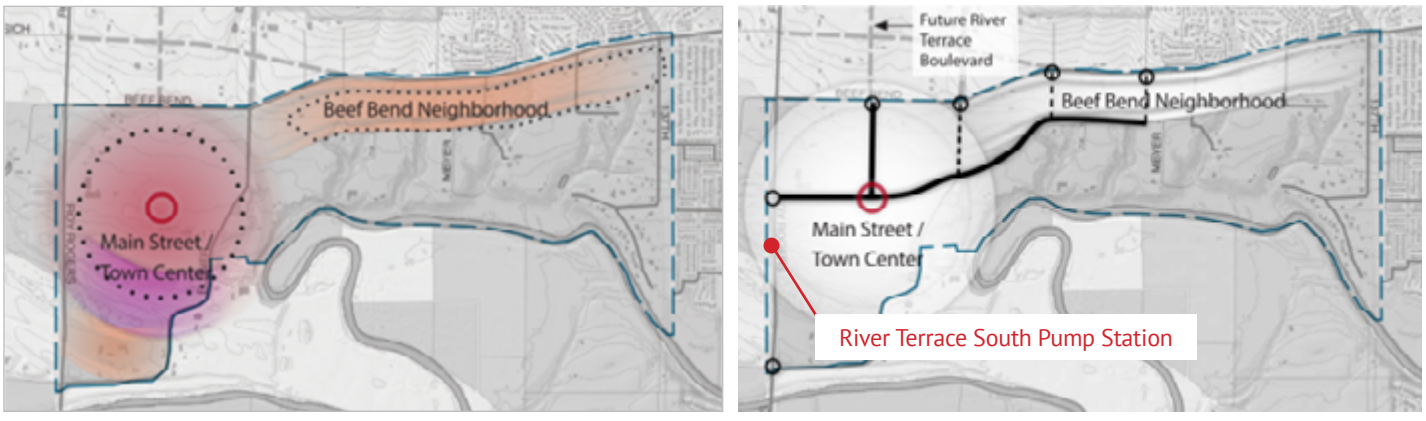


Figure 6.4. Phase 1 Map

An existing 24-inch gravity sewer in the SW Roy Rogers Road ROW that flows to the pump station may serve developments directly adjacent to it when determined to be feasible.

The most southwesterly area of KTMP has a small potentially buildable area identified in the master plan. It is located south of low-lying land that is wetted seasonally by the Tualatin River. A gravity sewer connection to the River Terrace South Pump Station appears difficult or infeasible due to the topography. Therefore, it is expected that a local pump station will be required to serve the area, likely located in the eastern end near SW Elsner Road. The station would require a force main along SW Elsner Road to pump to the gravity system in Main Street/Town Center.

The eastern portion of the Beef Bend Neighborhood is also expected to develop during Phase 1. This area includes developable lands along the south side of SW Beef Bend Road and east of the natural drainage located adjacent to SW 146th Avenue. Due to topography, this area would be served by a new gravity sewer running east parallel to and south of SW Beef Bend Road. The gravity sewer would connect to the existing CWS gravity sanitary system in King City east of SW 137th Avenue in conjunction with one of the new transportation facilities that cross the BPA utility easement.

PHASE 2 – INCREMENTAL DEVELOPMENT

The Central Neighborhood and Rural Character Neighborhoods are expected to develop slowly and incrementally over time. The Rural Character Neighborhood can be served by gravity through new sewers connecting into the existing sanitary system in King City east of the BPA easement on the east side of SW 137th Avenue. 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. These sewers could be co-located within new transportation connections to the City, as shown in Figure 6.5.

Crossing the deep drainages with gravity sewer is a significant challenge in the Central Neighborhood. Ability to implement will depend on a number of factors, including cost, topography, geotechnical conditions, natural resource constraints, and permitting requirements. The CWS study will investigate whether or not local pump stations are needed to serve the Central Neighborhood. Where feasible, gravity sewers may be co-located with new transportation facilities, as is planned for the Rural Character Neighborhood. If pump stations are needed, they would likely be smaller CWS facilities, 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. Each station will require a force main to pump to CWS' regional gravity system.

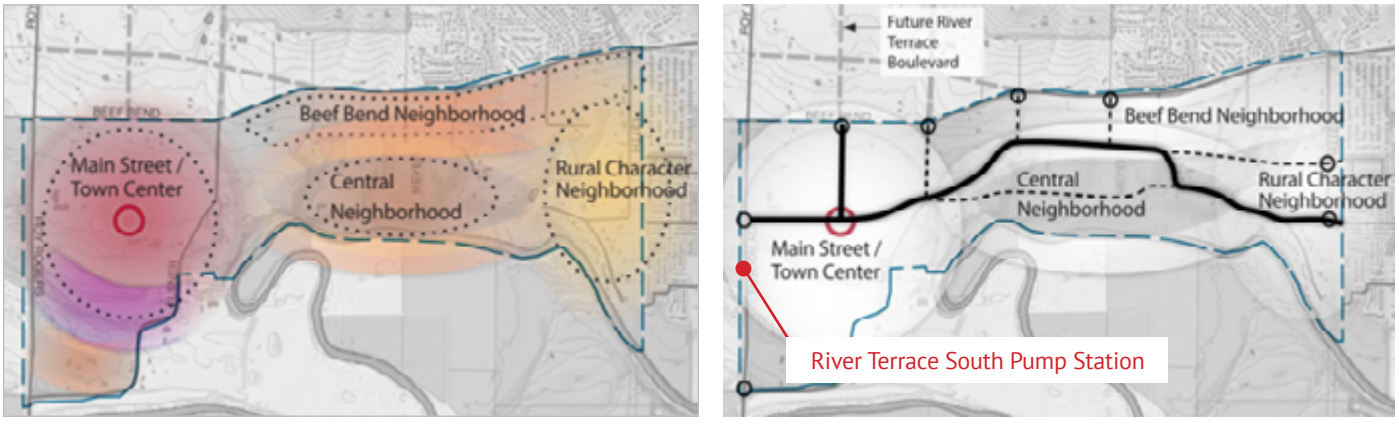


Figure 6.5. Phase 2 Map

Stormwater System

CWS is responsible for stormwater management throughout urbanized Washington County under a National Pollutant Discharge Elimination System (NPDES) – Municipal Separated Storm Sewer System (MS4) Permit. The KTMP area consists of natural stormwater infiltration and conveyance through natural drainage ways and stream corridors that generally flow from north to south, ultimately discharging to the Tualatin River. The existing drainage ways are susceptible to erosion and degradation from high flows. Future development within the planning area should be coordinated with current upstream planning efforts to mitigate high flow events and prevent further degradation of the existing drainage ways.

Stormwater & Conveyance

All new developments will have to comply with CWS' latest Design & Construction Standards (D&C Standards) related to their stormwater management systems. The D&C Standards provide details on, among other things, how development must address stormwater management as to minimize impacts to existing stream, wetlands, and other natural systems. These standards address implementation of "hydromodification" controls to address stormwater volume, which is associated with stream degradation via erosion, as well as standards related to water quality Typically, this will entail stormwater facilities on individual lots and development sites, but does not preclude the use of larger "regional" facilities.

CWS is currently preparing a study and associated analysis to address current and future stormwater management challenges in Kingston Terrace and River Terrace2.0. The study is exploring, among other approaches, the option of regional facilities that would address multiple developments. These facilities may include ponds, stream and corridor work, larger water quality facilities, and conveyance systems to provide the maximum benefit to developments. This is similar to the approach taken with stormwater management in the existing River Terrace development area.

In addition to regional facilities, CWS is also studying incorporating stormwater management into new and redeveloped roads, parks, and greenspaces. This approach would provide additional stormwater benefits particularly with regard to water quality. CWS will also perform a high-level analysis regarding infiltration potential which will be useful once new standards are handed down from the Oregon Department of Environmental Quality.

A final piece of the stormwater management portion on the study will focus on providing water quality treatment of existing impervious areas with a particular focus on hydromodification. Streams in the KTMP area have suffered from upstream development due to the increase in volume and velocity of stormwater runoff. While adhering to the standards in place at the time of development, inadequate measures to control stormwater volumes led to highly eroded streams that continue to degrade during larger rain events. Although retrofit opportunities may be limited, it will be important to identify those that are there to arrest existing stream degradation and provide better protection from future development. Future development within the planning area should be coordinated with current upstream planning efforts to mitigate high flow events and prevent further degradation of the existing drainage ways.

Due to factors such as topography, soils, interjurisdictional planning, and existing impacts, stormwater management will continue to present challenges and opportunities for existing and new development. Stormwater will generally continue to follow the existing gradient and drainage ways to ultimately reach the Tualatin River. However, the volume, rate, timing, and quality of that stormwater will need to be better managed in order to maintain and improve overall watershed health. To do this, CWS is looking at stormwater and conveyance best management practices and stream enhancement for the KTMP area.

Stream Enhancement

Many streams within the KTMP planning area are heavily degraded. CWS will provide recommendations to enhance streams from their current conditions back to a more "natural" state. This approach could include elements such as expanding floodplains, laying back of stream banks, raising the stream beds, installing grade control, and roughening of stream beds to slow runoff. CWS will look at these opportunities from stormwater management and stream resiliency perspectives, particularly for streams generally to the east of SW Elsner Road, which have suffered the most from existing development. The CWS study and associated analyses are expected to be completed in June 2023. Once complete, the CWS work should be assumed to be part of the KTMP.

Policies

1. TAKE ACTIONS TO REDUCE RUNOFF AND HEAL EROSION.

New development in Kingston Terrace will be designed so as not to create an adverse impact to the existing storm drainage systems. Stormwater management will be integrated throughout to mitigate existing erosion through better hydrological management and slope/stream bank stabilization. New development will also be coordinated with upstream planning efforts to mitigate high flow events and prevent further degradation of the existing drainage ways. Regional facilities, such as ponds, stream and corridor work, larger water quality facilities, and conveyance systems, will be used to provide the maximum benefit to multiple developments. The public drainage system will meet public needs, protect fish habitat, and comply with water quality standards affecting Tualatin River drainage.

2. COORDINATE PROVISION OF PUBLIC AND PRIVATE UTILITIES INFRASTRUCTURE.

King City will work with local and regional service providers to ensure that new infrastructure serves the region while benefitting King City and reducing the cost of local development. King City will seek opportunities to co-locate facilities in the public right-of-way. For example, if a new gravity trunk sewer is constructed through the Kingston Terrace area, it should be co-located with an east-west collector through-street where feasible to cross ravines and minimize the need for pump stations. Local and regional service providers include, but are not limited to the City of Tigard, Washington County, and Clean Water Services. King City will also coordinate with franchise utility providers including Portland General Electric, the Bonneville Power Administration, and Kinder Morgan. This is especially important when planning near the utility corridor that runs parallel to SW 137th Avenue.

Implementation Strategies

WATER

- Coordinate with the City of Tigard to ensure sustainable and efficient provision of water services.

SANITARY SEWER

- Implement recommendations from the CWS South Bull Mountain Sanitary Sewer Concept Plan. The sanitary sewer strategy will recommend where sanitary infrastructure may be best located to provide for future development. The analysis will include approaches to minimize impact to streams, private property, and habitat while providing for the best use of public investments for sanitary infrastructure.

STORMWATER REGULATIONS

- Through an intergovernmental agreement with CWS, King City will abide by regulations to reduce runoff and heal existing erosion damage to implement recommendations from the South Bull Mountain Stormwater Study. The stormwater study will determine what options are feasible for stormwater management in the Kingston Terrace area and recommendations to consider for stream enhancement and retrofits to mitigate existing impacts to local streams. All newly built facilities will be required to adhere to CWS Design & Construction standards. These standards were developed in 2019 to further minimize environmental impacts from new construction and prevent damage by development to streams and soil.
- Build on stormwater regulations used for Tigard River Terrace to ensure consistent stormwater practices throughout the Tualatin Basin.

Infrastructure Funding

Introduction

The Kingston Terrace area requires a variety of new infrastructure in order to develop in a manner that is consistent with the community Vision and Goals for the area and aligns with regional need and market potential. The following is a strategy for funding public infrastructure that is required to accommodate future growth. This analysis and subsequent set of recommendations are intended to address Metro Title 11 Functional Plan requirements for areas added to the Urban Growth Boundary, which require:

- Comprehensive plan provisions regarding the financing of local and state public facilities and services, along with proposed financing methods.
- Preliminary estimates of the costs of systems and facilities in sufficient detail to determine the feasibility of development and allow comparisons to other areas.

The funding strategy addresses these Metro requirements and is intended to provide a framework for adoption of specific actions that result in implementation of a realistic and feasible funding strategy for Kingston Terrace.

Base Conditions

METHODOLOGY AND ASSUMPTIONS

The infrastructure funding strategy was prepared through a coordinated work effort involving City staff, representatives of local and regional governments, consulting engineers/planners, property owners/developers, and service providers responsible for constructing and maintaining public facilities within the Kingston Terrace Master Plan area.

The process identified what infrastructure improvements would be required and the estimated capital investment. An assessment was also made regarding project delivery assumptions (public or private construction) with a discussion of which party would likely be responsible for the initial capital investment based on the type of facility provided. While this approach used an iterative process, the steps generally included:

1. **Land Capacity and Development Assumptions.** A range of potential development within the Kingston Terrace planning area was determined using an independent capacity analysis that was conducted as part of the concept plan with peer-review by FCS GROUP. The capacity analysis takes into account the level of net buildable land area (after accounting for environmental features and constraints), general land use categories, parcel size, land/building value, and other factors. The land capacity scenarios resulted in a low, high, and most likely level of net new development that is expected at buildout and over the next 20 years. This funding strategy conservatively assumes that approximately one-half of planned residential development (planned buildout) is attained by year 2043. In line with keeping the overall assumptions conservative, no commercial development is assumed to occur during the first 20 years. As indicated in Table 7.1, the buildout forecast for Kingston Terrace assumes that 3,576 dwellings will be added along with 86,000 SF of neighborhood commercial, office, and civic space over time.

This funding analysis assumes that 50% of the residential development program or 1,788 dwellings will be constructed during the next 20 years. That amount of development activity is projected to translate into nearly 5,000 new residents (population) by year 2043. Institute of Transportation Engineers (ITE) Handbook assumptions were applied to the land use program to forecast vehicle trip and person trips generated by Kingston Terrace residents and jobs by year 2043.

2. **Infrastructure Analysis.** Based on the level of new development, infrastructure conditions and service levels were evaluated to determine the public facilities necessary and identify their approximate size, general location, and capital cost for each improvement. All costs are assumed to be in year 2023 dollar amounts.

3. **Baseline Revenue Forecast.** An assessment was conducted to determine the potential revenue that would be generated based on current funding sources through the most likely level of development. The baseline forecast takes into account the level of net new demand generated by future Kingston Terrace residents and employees on systems (such as roads, parks, water and wastewater facilities) and the current system development charges assessed on new development in the area.

4. **Evaluation of Funding Options.** This step included a review of potential funding requirements, baseline revenues, and anticipated funding gaps. Potential new funding sources are identified and evaluated to fully fund required infrastructure in an equitable manner.

5. **Funding Strategy Coordination and Refinement.** A series of meetings were conducted with public and private stakeholders to ensure that various perspectives were understood, and this input was considered in the refinement of the locally preferred funding strategy.

Buildout Development Assumptons			
1,222	multi-family units		
560	SFA/townhomes/plexes		
1,794	SFD as folllows:		
		190	cottage units
		479	narrow lot units
		619	mid lot with ADU
		506	mid lot no ADU
86,000	SF		neighborhood commercial
Proj. New Development between 2023 and 2043*			
611	multi-family units		
280	SFA/townhomes/plexes		
897	single family detached		
Proj. Increase in Pop by 2043**			**PPDU**
1,528	multi-family		2.5
756	SFA/townhomes/plexes		2.7
2,691	single family detached		3.0
4,975	**Population**		
Proj. Peak Hour Vehicle Trip Forecast by 2043***			**PHVT**
312	multi-family		0.51
146	SFA/townhomes/plexes		0.52
843	single family detached		0.94
1,300	peak hour vehicle trips	(PHVT)	

Notes to table: SFD = reflects both single family detached homes and manufactured homes.

SFA = single family attached homes (2 to 4 units per structure)

ADU = accessory dwelling units

Table 7.1 Kingston Terrace Development Assumption

[8] The 2018 King City Concept plan development assumptions that reflect buildout of the planning area were also kept conservative by assuming a 20% "under-build" factor based on allowable zoned capacity of buildable lands in case development is less than anticipated.

[9] In order to allocate the costs of infrastructure to individual residential and commercial developments within the KTMP area, a land use program (the number and type of homes, offices, retail establishments, etc.) must be known or assumed. The land use program assumed for the funding plan is intentionally conservative regarding the ultimate amount of housing and commercial space. This is a precaution put in place in case the amount of development (and therefore fees generated) is less than anticipated.

CAPITAL FACILITY PLAN

This section addresses the need for major public facilities within the Kingston Terrace planning area. Focus is on transportation, trails, parks and open space, storm water facilities, water, and sanitary sewer facilities that would be needed to address future development.

The infrastructure requirements and funding assessment contained in this document are based on the level of development that is expected to occur within Kington Terrace over the next 20 years. Kingston Terrace is expected to accommodate 3,576 new dwelling units at buildout, including a mix of single family detached, townhomes/plexes, and multifamily (apartments and condominiums).

Public Facility Providers

The primary service providers for the Kingston Terrace Master Plan area are listed in Table 7.2.

PUBLIC FACILITY/ SERVICE	PRIMARY SERVICE PROVIDERS (after annexation)
Annexation & General Government Administration	City of King City
Land Use	City of King City
Transportation	King City, Washington County, TriMet
Stormwater and Natural Resources	Clean Water Services
Water	City of Tigard
Sanitary Sewer	Clean Water Services
Schools	Tigard-Tualatin School District
Parks	City of King City
Energy/Power	Portland General Electric
Police Services	City of King City
Fire and Emergency Services	Tualatin Valley Fire & Rescue

Table 7.2 Primary Service Providers

Public Facility Capital Costs

Unit costs were prepared based on local and regional experience with a variety of capital projects. While these costs are stated in 2023 dollars, the improvements will be phased over time, depending upon market conditions and the timing of funds. See Appendix B for supporting details regarding capital cost assumptions.

Transportation Facilities

Transportation is by far the largest public facility capital investment in most urbanizing areas and Kingston Terrace is no exception.

Public facility improvements for roads, traffic signals, and local utilities in urbanizing areas typically rely upon a mix of local and regional funding sources. Transportation improvements along Highway 99W have ODOT jurisdiction but no state funding has been committed at this time. Arterial and collector roadway improvements along SW Beef Bend Road, SW Elsner Road, and SW Roy Rogers Road have Washington County jurisdiction and are eligible for county funding through the Metropolitan Street Transportation Improvement Program (MSTIP) and the Washington County Transportation Development Tax (TDT) fund.

The City of King City will have jurisdiction over the planned collector streets, neighborhood streets, and most local streets. If these facility improvements add capacity and are privately financed, the developer of credit-eligible transportation facilities could potentially receive credits against future TDTs levied by Washington County as well as local King City System Development Charges (SDCs). SW Elsner Road is an existing collector street that would be improved to urban standards.

In some instances, Metro funding grants may be provided on a competitive basis, for major streets (including arterials streets, collector streets and neighborhood streets) and regional trail system improvements. Local streets will be funded and provided entirely by private developers, and constructed to City design standards, before being turned over to the City.



Planned Transportation System Improvements

Transportation system improvements have been identified within the *King City Transportation System Plan* (TSP by DKS Associates, Draft March 2023), as well as the *East/West Circulation Transportation Alternatives Analysis* for the Kingston Terrace Master Plan (by SCJ Alliance, September 2022).

This funding strategy focuses on the initial 20 years of transportation improvements that would be needed to accommodate the growth program described in Table 7.1. A preliminary list of high and medium priority projects within the Kingston Terrace planning area was derived based on the relative priority of each TSP project. For planning purposes, this analysis assumes that the Tier 1 projects and medium priority Tier 2 projects will be completed over the next 20 years (please refer to Appendix B).

As indicated in in Table 7.3, these early action (high priority and medium priority) transportation projects are estimated to cost approximately $131.3 million to construct. After accounting for potential funding from Washington County and Metro, the local City/Developer cost share of these projects is estimated at $44.3 million. The preliminary source of funding Washington County's cost share for the arterial improvements to SW Beef Bend Road, SW Roy Rogers Road and SW Elsner Road, and related intersections and bicycle and pedestrian improvements could be derived from various county funding sources, including but not limited to the Washington County Transportation Development Tax (TDT) and the county's MISTIP program.

King City can address the remaining local cost share through a set of policies and programs specifically focused on funding the projects that are required to serve future development in Kingston Terrace. Recommended local funding programs are discussed in more detail in the next section and include:

- A new city policy to allocate TDT revenues collected in Kingston Terrace to eligible projects located in Kingston Terrace.
- A new Kingston Terrace subarea transportation system development charge (TSDC).
- Leveraging regional grants from Metro and other non-city agencies.
- Developer construction of neighborhood routes, and provision of credits for construction of collector and arterial transportation improvements constructed by developers as a condition of development approval (may include on-site and off-site facilities).

PROJECT NAME/TYPE	PRELIMINARY PROJECT COST (2023 DOLLARS)*	PREIM. WA COUNTY OR METRO COST SHARE	DEVELOPER COST SHARE (MAY BE TDT/ TSDC CREDIT ELIGIBLE)	PRELIM. KING CITY COST SHARE	TDT ELIGIBLE?	POTENTIAL LOCAL TSDC ELIGIBLE?	PRELIM. KING CITY TDT COST BASIS	PRELIM. KING CITY TSDC COST BASIS
SW Beef Bend Roadway Improvements	$29,098,800	$28,610,532	$488,268		yes		$488,268	$0
Roy Rogers Roadway Improvements	$39,579,300	$39,579,300			yes		$0	$0
Elsner Roadway Improvements	$15,227,550	$12,792,375	$2,435,175		yes	yes	$2,435,175	$0
Fischer Roadway Improvements	$24,475,050		$24,475,050		yes		$0	$24,475,050
Other Collector Roadways	$7,552,125	$1,078,875	$6,473,250		yes	yes	$5,394,375	$1,078,875
Intersection Improvements	$4,438,800	$1,233,493	$3,205,307		yes		$3,205,307	$0
Bicycle/Pedestrian Facilities	$6,997,275	$92,475	$6,904,800			yes	$1,957,388	$4,947,413
Westside Trail along Tualatin River	$3,637,350	$3,273,615	$363,735	$363,735			$0	$0
Transit (Future Options Strategy)	$308,250	$277,425	$0	$30,825			$0	$0
Total	**$131,314,500**	**$86,938,090**	**$44,345,585**	**$394,560**			**$13,480,512**	**$30,501,338**

Source: King City Transportation System Plan, Sept. 2022, Review Draft, Table 13 excerpts; based Appendix A high and medium project assumptions.

Table 7.3 Kingston Terrace Transportation Capital Projects, Years 1-20

PARKS

The Kingston Terrace Master Plan is designed within a natural framework of environmental features shaped by the Tualatin River and surrounding topography and natural areas. Parks serve as important amenities and connections with existing and planned neighborhoods, service centers, and natural areas. Future parks will be managed and maintained by the City of King City. Local funding for the majority of new parks can be derived from local System Development Charges (SDCs) and developer dedications. It is also possible that local funding will help leverage Metro and State parks grants as an ancillary source of funding.

Planned Parks System Improvements

The parks facilities plan for Kingston Terrace includes a combination of open space, linear parks, community parks, neighborhood parks and pocket parks. As shown in Table 7.4, for funding analysis purposes, the identified parks improvements have been grouped into three tiers as follows:

Tier 1: Highest Priority – this represents the parks that are assumed to be constructed by the City over the initial 20 years of development.

Tier 2: Next Priority – represents planned improvements that are to be constructed by the City following completion of Tier 1 projects.

Tier 3: As Development Occurs – represents neighborhood and pocket parks that are to be delivered by a developer or developers as a condition of approval.

PARK CATEGORY	Unit Cost		Subtotal	Subtotal	Total	Planning
	Per SF	Acres	Improvement	Land	Cost	Priority
Open Space preservation		210	$2,286,900	*	$2,286,900	**Tiers 1-3**
Linear Park 1	$6	14	$3,659,040	$6,098,400	$9,757,440	**Tier 1**
Linear Park 2	$4	22	$3,833,280	$9,583,200	$13,416,480	Tier 2
Community Agriculture Park	$2	12	$1,045,440	$5,227,200	$6,272,640	**Tier 1**
Community Park 1	$12	15	$7,840,800	$6,534,000	$14,374,800	**Tier 1**
Community Park 2	$10	20	$10,454,400	$8,712,000	$19,166,400	Tier 2
Neighborhood Park 1	$6	3	$784,080	n/a	$784,080	Tier 3
Neighborhood Park 2	$6	4	$1,045,440	n/a	$1,045,440	Tier 3
Neighborhood Park 3	$6	5	$1,306,800	n/a	$1,306,800	Tier 3
Neighborhood Park 4	$6	3	$784,080	n/a	$784,080	Tier 3
Pocket Park 1	$16	0.5	$348,480	n/a	$348,480	Tier 3
Pocket Park 2	$16	0.5	$348,480	n/a	$348,480	Tier 3
Pocket Park 3	$16	1	$696,960	n/a	$696,960	Tier 3
Pocket Park 4	$16	1	$696,960	n/a	$696,960	Tier 3
Urban Plaza	$40	0.5	$871,200	$217,800	$1,089,000	**Tier 1**
Total			**$36,002,340**	**$36,372,600**	**$72,374,940**	

Table 7.4 Kington Terrace Parks Capital Improvements

WATER SYSTEMS

The City of King City does not directly provide water to its residents and businesses. Instead, The City purchases water from adjacent water utilities, primarily the City of Tigard, which is the expected provider of public drinking water for Kingston Terrace.

Planned Water System Improvements

Extension of transmission piping and possible development of additional storage facilities will be required to provide water service to Kingston Terrace. Preliminary cost estimates related to added water storage and transmission lines have been included in this funding plan. Further study by the City of Tigard is recommended to identify the extent of deficiencies, and the need for additional infrastructure and related funding mechanisms.

The total capital cost for planning/permitting and constructing major water systems have been estimated to be approximately $14.1 million (see Table 7.5).

Sanitary Sewer

Clean Water Services (CWS) provides wastewater collection, treatment and disposal service for the City of King City. Wastewater from King City is generally collected via 6-inch to 8- inch diameter sewer mains and then routed south across the Tualatin River and then east to the CWS Durham Wastewater Treatment Plant. Please see Chapter 6 for additional detail regarding planned improvements in the area.

Sanitary Sewer System Improvements

CWS recently completed a new River Terrace South Pump Station and force main that has been sized to address development within Kingston Terrace. New sanitary sewer improvements required for Kingston Terrace are still being developed by CWS, as described earlier. CWS may opt to construct improvements to their regional system that can also serve the local KT development. These would be location specific and will depend heavily on overall timing of development. Generally, developers will be responsible for construction of local sanitary sewers connecting developments to CWS' regional system.

	Total Cost	Notes
Major Sanitary Sewer		
Subdistrict Pump Stations/Force mains	$4,250,000	*Note 1*
Subtotal	**$4,250,000**	
Water		
Off-site Storage, Zone 410	$4,250,000	*Note 2*
Transmission: Beef Bend Road	$5,100,000	*Note 2*
Transmission: Roy Rogers Road	$4,760,000	*Note 2*
Subtotal	**$14,110,000**	
Stormwater		
Subdistrict Facilities (5)	not estimated	*Note 3*
On-site conveyance	included with roads	
Subtotal	not estimated	*Note 3*
School District (primary school)	**not estimated**	

Table 7.5 Kington Terrace Infrastructure Improvements

Notes: Derived from Appendix B

[1] Derived from Kingston Terrace Concept Plan, costs escalated to 2023 dollars.

[2] Water facility costs reflect preliminary estimates. City of Tigard is evaluating water system requirements and funding resources.

[3] Stormwater facilities to be financed by CWS or developers with repayment through Reimbursement Districts or Local Improvement Districts.

Storm Water Collection

CWS is the primary agency responsible for surface water management in King City through an intergovernmental agreement. The storm drainage system in and around King City is comprised of both underground piping, open channel drainage ditches, and natural drainage ways. Generally, storm water flows down gradient from north to south through the city, with ultimate discharge to the Tualatin River through numerous outfalls.

Kingston Terrace is mostly undeveloped and generally lacks improved stormwater conveyance and detention facilities. The existing natural drainage ways are susceptible to erosion and degradation during high flow runoff events.

Planned Storm Drainage Improvements

The City of Tigard and CWS are currently considering alternatives to manage high flows from upstream development by either diverting peak flows through a high flow bypass pipeline that would be constructed through the planning area or by constructing stream channel enhancements to reduce or prevent further degradation.

Future development within the planning area should be coordinated with current upstream planning efforts to mitigate high flow events and prevent further degradation of the existing drainage ways.

New development within Kington Terrace must meet CWS requirements, and it should occur in such a manner so as not to create an adverse impact to the existing drainage systems, in accordance with CWS' NPDES MS4 permit. CWS should be consulted on storm water management issues for new development in the KTMP area. Based on a review of CWS' current development standards, development within the planning area should conform to the following minimum requirements:

- **Impacts to Existing Wetlands** – Existing freshwater wetlands are present in the planning area and are part of the storm drainage system. Construction activities that impact existing wetlands, streams or sensitive areas may be subject to permitting through the Oregon Division of State Lands, the U.S. Army Corps of Engineers, and CWS. Wetland delineations will be required as part of the development process for properties containing potential wetlands to determine impacts and permitting requirements.
- **Drainage Channel Setbacks** – Development setback requirements will be required for drainage channels, wetlands, and sensitive areas.
- **Hydrologic & Hydraulic Analyses** – The development or redevelopments should evaluate the drainage basin(s) upstream and downstream of the site to determine the system capacity and verify that no adverse impacts will occur with increased storm water runoff.
- **Offsite Improvements** –Developers may be required to construct improvements to the storm drainage system outside of the planning area boundary to increase system capacity and mitigate adverse impacts created by development within the planning area.
- **Stormwater Detention** – On-site storm water detention should be expected if the proposed development adversely impacts upstream and/or downstream properties. Situations that might require detention include, but are not limited to, potential downstream flooding due to increased peak storm water flows, or potential upstream flooding due to high water levels in existing drainage channels. Existing natural areas may be a possible location to construct new stormwater detention facilities.
- **Water Quality** – Development of the planning area will need to conform to the storm water quality and treatment requirements set forth by CWS.

Policies

1. PROVIDE EQUITABLE INFRASTRUCTURE FEE SYSTEM THAT WORKS WITH PROPERTY OWNERSHIP AND DEVELOPMENT PACING.

Framework infrastructure is the focus of the funding plan because it is important to fairly and equitably allocate larger costs. In addition, unduly burdening some developers with a greater share of costs can significantly reduce the financial feasibility of developing their land. "Oversize cost" is a concept designed to more equitably distribute costs. This is the difference between the typical local infrastructure costs and the costs of larger frame-work infrastructure. Since all developers will be required to build and pay for local infrastructure to serve their properties, it is only the oversize cost that is allocated to developers throughout the district.

2. DEVELOP INFRASTRUCTURE PLANS THAT CAN BE PAID FOR BY THE DEVELOPMENT YIELD AND IS COMPARABLE TO DEVELOPMENT FEES IN NEARBY JURISDICTIONS.

Implementation Strategies

FUNDING PLAN

As with most successful large urbanizing areas, the Kington Terrace Master Plan area will be developed incrementally over time. To better understand future funding requirements, FCS inventoried current TDT and SDC charges that new development in King City must pay. A list of existing development funding mechanisms that are currently adopted for the area are shown in Tables 7.6 and 7.7.

FACILITY TYPE	Developer Agreements (Neighborhood facilities)	Citywide Parks SDC	WA County TDT	Regional Share (County MSTIP/TDT)	CWS SDCs & Rates	Tigard SDCs & Rates	Other (Metro, Non Profits, etc.)
Streets and Multimodal	✓		✓	✓			
Parks & Open Space		Note 1					✓
Water	✓					✓	
Sanitary Sewer	✓				✓		
Stormwater	✓				✓		

^Table 7.6 Primary Existing Infrastructure Funding Sources (Baseline Scenario)

	TRANSPORTATION	PARKS	WATER	SEWER	STORM	NOTE
Washington County TDT						
per SFD dwelling	$9,998					1
per Attached dwelling	$5,981					1
per Mult-unit dwelling	$6,542					1
City of King City						
Parks SDC per ERU*						2
Clean Water Services						
SDC per ERU				$6,625		3
Water Quality Fee per ERU			$288			4
Water Quantity Fee per ERU			$353			4

^Table 7.7 Existing Citywide SDCs and TDT Charges on New Development

Notes ERU = equivalent residential unit.

[1] derived from adopted Washington County TDT Rate Table FY 2022-23.
[2] derived from King City Master Fees & Charges, FY 2020-21.
[3] derived from Clean Water Services, Fees & Charges, FY 2022-23.
[4] derived from City of Tigard, Fees & Charges, FY 2022-23.
* Current east King City Parks SDC of $3,467 per dwelling does not apply to Kingston Terrace.

These current development charges are expected to generate a significant level of funding for the capital projects with revenue estimates shown by public facility type in Table 7.8.

	TRANSPORTATION	PARKS	WATER	SEWER	STORM	NOTE
Washington County TDT						
from SFD dwellings	$8,968,206					1
from Attached dwellings	$1,674,680					1
from Mult-unit dwellings	$3,997,162					1
City of King City						
Parks SDC rev.						2
Clean Water Services						
SDC rev.				$11,845,500	$10,370,400	3
Water Quality Fee rev.			$514,944			4
Water Quantity Fee rev.			$631,164			4
Total	**$14,640,048**	**-**	**$1,146,108**	**$11,845,500**	**$10,370,400**	

Table 7.8 Projected Revenue from Existing SDCs and TDT Charges, Years 2023-2043[5]

Revenue estimates derived from prior tables and stated development assumptions.

[1] derived from adopted Washington County TDT Rate Table FY 2022-23.

[2] King City would need to create a new citywide or subarea parks SDC that would apply to Kingston Terrace.

[3] derived from Clean Water Services, Fees & Charges, FY 2022-23.

[4] derived from City of Tigard, Fees & Charges, FY 2022-23.

[5] estimated revenue in 2022 dollars before credits are deducted, if any.

The next step includes an analysis of potential funding gaps by comparing projected TDT/SDC revenues and expected local public facility costs. As shown in Table 7.9, based on existing sources of funding and anticipated development levels, a need for supplemental funding sources is anticipated to fully address public facility needs. Under the baseline funding scenario, potential funding gaps are most likely to occur in parks, transportation, and water system facility improvements.

Facility Type	Estimated Capital Cost by Year 20	Estimated Kingston Terrace Cost Share	Projected Baseline TDT or SDC Revenue	Projected Funding Gap
Transportation	**$(131,314,500)**	**$(44,345,585)**	**$13,480,000**	**$(30,865,585)**
Parks				
Open Space and Linear Park 1	$(10,518,978)	$(10,518,978)	$-	$(10,520,000)
Community Parks & Urban Plaza	$(21,736,440)	$(21,736,440)		$(21,740,000)
Community Recreation Facility	$(35,000,000)	$(35,000,000)		$(35,000,000)
Sanitary Sewer	$(12,410,000)	$(6,455,405)	$11,845,500	$(564,500)
Water	$(14,110,000)	$(9,180,000)	$1,146,108	$(8,033,892)
Stormwater	tbd	*	*	*

Table 7.9. Baseline Infrastructure Funding Gap, Projected 2023-2043

RECOMMENDED FUNDING STRATEGY

FCS conducted a sensitivity analysis to determine the level of supplemental funding that may be needed to address potential funding gaps.

Transportation Funding Strategy

Several urbanizing areas within Washington County have adopted supplemental SDCs to address potential infrastructure funding gaps. Examples include Tigard River Terrace, South Hillsboro, Cooper Mountain, North Bethany, and others.

Cities in Oregon have the option of formulating and adopting a local supplemental transportation SDC that be implemented in one of three ways: (1) Citywide SDC; (2) subarea SDC; or (3) a combination of both. In most cases the supplemental TSDC is charged in addition to the Washington County TDT. However, the City of Wilsonville has opted to charge either the TDT or the SDC (whichever is higher) but also has adopted a supplemental mitigation fee for the Frog Pond West plan district.

For funding strategy analysis purposes, FCS evaluated two local TSDC options: 1) Kingston Terrace Subarea TSDC, and 2) Citywide TSCD.

Kingston Terrace TSDC Subarea Method. This charge would be in addition to the TDT imposed on new development that generated net new traffic as measured by peak hour vehicle trips. As shown in Table 7.10, the potential supplemental TSDC for Kingston Terrace could be on the order of $24,629 per peak hour vehicle trip. This analysis assumes that the improvements identified in Appendix B are 100% required for growth in Kingston Terrace and are 100% capacity related. The city would adopt a policy that allocates 100% of TDT revenue collected in Kingston Terrace to transportation projects listed in Appendix B. If the City were to adopt a policy of allocating less than 100% of TDT revenue collected in Kingston Terrace to projects listed in Appendix B, the supplemental TSDC would need to be higher than the amount shown in Table 7.10.

			NOTES
a	Local TDT/TSDC Cost Basis	$43,981,850	*derived from prior tables*
b	Less TDT Revenue*	$13,480,000	*derived from prior tabels*
c	Equals TSDC Cost Basis	$30,501,850	*calculated*
d	Proj. PHVT in Kingston Terrace	1,300	*derived from prior tables*
e	TSDC Cost Per Trip	$23,456	*calculated (c/d)*
f	*plus admin cost (@5%)*	$1,173	*allowance*
g	**Draft TSDC Cost per Trip**	**$24,629**	*calculated (e+f)*

Table 7.10 Preliminary Supportable TSDC Rate for Kingston Terrace

* Analysis assumes local policy assumption that 100% of the TDT revenue collected in Kingston Terrace is utilized for projects in the Kingston Terrace Plan Area.

Citywide TSDC Method. Alternatively, the City of King City could opt to adopt a citywide TSDC which would include other projects identified in the TSP and utilize citywide growth forecasts to determine the SDC amount. Such an approach may result in lowering the overall TSDC charge for Kingston Terrace, by increasing the combined TSDC/TDT charges elsewhere within the city.

Other techniques can be used to reduce the level of supplemental TSDCs that are required. These other techniques are described in Appendix C.

Transportation facilities that are needed to serve Kingston Terrace will require a mix of City, County and developer funding to fully address system requirements.

Parks Funding Strategy

Given the variety of planned improvements in Kingston Terrace, the funding strategy for parks will require a multifaceted approach. The strategy includes:

- A city policy that requires developers to construct and dedicate neighborhood parks and pocket parks to local design standard as a condition of approval for major subdivisions or planned developments.
- Adoption of a citywide parks SDC for community parks
- Adoption of a Kingston Terrace Parks SDC surcharge for planned linear parks and open space in Kingston Terrace
- Consider the creation of a new Kingston Terrace Urban Renewal District that would generate adequate revenue over time to fund the planned Community Recreation Center and other public benefit projects in Kingston Terrace.
- Utilize the above funding sources to leverage state and Metro grants for parks and open space.
- Work with non-profit organizations that acquire and dedicate open space and natural areas for public use and benefit.

The citywide parks SDC would provide the primary source of funding for community parks and the urban plaza as those facilities are designed to provide a citywide benefit. As shown in Table 7.11, based on the estimated $21.7 million cost for those facilities (Tier 1 projects) it is estimated that the citywide parks SDC would need to equate to approximately $7,784 per new dwelling over average to cover the cost of the community parks and urban plaza elements. When converted to a charge per dwelling unit, a supplemental parks SDC for Kingston Terrace would range from $8,200 per small home or apartment to $9,900 for a standard size single family home.

The anticipated $10.5 million cost of planned Tier 1 open space and linear park improvements can serve as the basis for a Kingston Terrace Parks SDC surcharge. As shown in Table 7.12, this preliminary analysis assumes that Kingston Terrace developments would add approximately 4,975 new residents and 1,788 new dwellings over the next 20 years. This potential supplemental parks SDC for Kingston Terrace would need to equate to an average of $5,560 per dwelling to fully address this funding gap. When converted to a charge per dwelling unit, a supplemental parks SDC for Kingston Terrace would range from $5,300 per small home or apartment to $6,300 for standard single family home.

The planned $35 million community recreation facility would be designed to provide a benefit to the entire city. The capital cost for this facility would likely require a mix of debt financing secured by general funds through LTGO bonds (which do not require voter approval) and/or tax increment financing bonds if a new urban renewal district is created. Alternatively, the City could seek to obtain voter approval for a citywide property tax levy that would pay the General Obligation (GO) bonds.

			NOTES
a	Citywide Parks SDC Cost Basis	$21,736,440	*derived from prior tables*
b	Less Non Local Revenue	$2,173,644	*derived from prior tabels*
c	Equals Parks SDC Cost Basis	$19,562,796	*calculated*
d	Proj. Change in Citywide Dwellings*	2,639	*derived from prior tables*
e	Parks SDC per Dwelling	$7,413	*calculated (c/d)*
f	*plus admin cost (@5%)*	$371	*allowance*
g	**Avg. Citywide Parks SDC Rate**	**$7,784**	*calculated (e+f)*

Table 7.11 Preliminary Supportable Citywide Parks SDC Analysis

* projected change over initial 20-year planning time frame.

			NOTES
a	Subarea Parks SDC Cost Basis	$10,518,978	*derived from Table x*
b	Less Non Local Revenue	$1,051,898	*estimated at 10%*
c	Equals Parks SDC Cost Basis	$9,467,080	*calculated*
d	Proj. Change in Subarea Dwellings*	1,788	*derived from Table 4*
e	Parks SDC per Dwelling	$5,295	*calculated (c/d)*
f	*plus admin cost (@5%)*	$265	*allowance*
g	**Avg. Subarea Parks SDC Surcharge**	**$5,560**	*calculated (e+f)*

Table 7.12 Preliminary Supportable Kingston Terrace Parks SDC Surcharge Analysis

* projected change over initial 20-year planning time frame.

A preliminary analysis of the City's current statutory debt capacity indicates that Limited GO Bonds (which do not require voter approval) could potentially cover the majority of the cost of the Recreation Center (Table 7.13). Based on current debt obligations of the City and estimated real estate market valuation levels, the City could issue up to $26 million in debt. As of December 14, 2022 tax free municipal bonds with a 20-year term and a rating of AA have an annual interest rate of 3.6%. Preliminary findings indicate that the annual debt service on a $35 million bond issuance at today's interest rates would require an annual payment of approximately $2.64 million over 20 years.

Alternatively, if the community recreation facility was funded through a voter-approved GO bond, the annual average property tax levy would need to increase by approximately $4.28 per $1000 in assessed value (AV). This would equate to approximately $1,500 per year ($125 per month) for a homeowner of a $350,000 home.

	CALCULATION
Total Taxable AV, FY 2021-2022	$513,542,247
RMV to AV Ratio	1.8
Estimated Real Market Value, 2022	$924,376,045
Statutory Capacity Rate*	3.0%
Total Statutory Capacity	$27,731,281
Capacity Used **	$1,260,133
Capacity Remaining	**$26,471,000**

Notes: *derived from Washington County Assessor and King City data.*

* LTGO capacity for non-voter approved bonds per ORS 287A.050

** King City Debt as of 12.31.2022 $1,260,133

Table 7.13 King City Statutory Authority for General Obligation Indebtedness

Alternatively, the City could consider creating a new urban renewal district to help fund the community recreation facility. Once approved by the City, the newly created Urban Renewal Agency can issue tax increment finance (TIF) bonds. A preliminary analysis indicates that a Kingston Terrace Urban Renewal Area would generate a significant increase in overall assessed valuation in comparison to current levels, and this net AV increment could generate over $43 million in maximum indebtedness before revenue sharing with local taxing districts. Once the urban renewal bonds are retired (by year 20) the district would sunset, and the net new AV created would likely result in a combination of increased revenues for local taxing entities and a decrease in average mil rates for local property owners.

	CALCULATION
Projected Net New Taxable AV, FY 2022-2042[1]	$581,100,000
Regular Levy Subject to TIF (mil rate per $1,000 AV)[2]	11.165
Initial Tax Increment Revenue in Year 1	$324,399
Proj. Cumulative Tax Increment Revenue: Years 1-10	$20,761,541
Proj. Cumulative Tax Increment Revenue: Years 1-20	$74,287,388
Est. Debt Capacity (NPV, 20 years @5% discount rate)	$46,214,039
Less Bond Issuance and URA Admin Costs (@5%)	**$(2,310,702)**
Estimated Maximum Indebtedness[3]	*$43,900,000*

[1] assumes 1,788 net new dwellings with avg. net new AV of $325,000 per DU.
[2] Tax Increment Financing capacity for TIF bonds per ORS 457.190
[3] Maximum indebtedness before revenue sharing with local tax districts.

Table 7.14 Kingston Terrace Preliminary Urban Renewal Analysis

Water System Funding Strategy

Water storage and transmission capital investments are critical initial investments that are required before significant development can occur in Kingston Terrace. Given the extent of system improvement requirements and potential for new funding sources to identify anticipated funding gaps (shown in Table 7.7), the City of King City will need to work closely with the City of Tigard to ensure that adequate water storage capacity can be provided along with new transmission lines along SW Roy Rogers Road, SW River Terrace Boulevard, and SW Beef Bend Road to provide redundant system capacity for future development.

The water system funding strategy will rely upon a partnership agreement between the two cities to ensure that supplemental water connection charges (SDCs) and utility rates will be sufficient in both River Terrace south and Kingston Terrace to amortize advance capital facility financing that will need to be secured by the City of Tigard.

Based on preliminary assumptions stated in this Memorandum, a supplemental water connection charge (SDC) of approximately $4,500 per dwelling unit would be required to fully address the projected funding gap for the Kingston Terrace share of water system development costs.

Sanitary Sewer Funding Strategy

As with water system improvements, early sanitary sewer system improvements are required before new development can occur in Kingston Terrace.

Continued coordination with CWS is needed as they complete planning for improvements to their regional sanitary sewer system. The River Terrace South pump station located in the west portion of Kingston Terrace adjacent to SW Roy Rogers Road will serve the Main Street Town Center neighborhood along with the western portion of the Beef Bend Neighborhood, in addition to other developments north of Kingston Terrace. Due to topography, CWS may require some new sanitary sewers in Kingston Terrace to be oversized to also handle flows from these areas to the north on their way to the regional system.

Based on preliminary assumptions stated in this Memorandum, existing sanitary sewer SDCs and rates should be sufficient to address the majority of anticipated costs associated with Kingston Terrace share of sanitary sewer system development costs.

Stormwater System Funding Strategy

The Kingston Village Master Plan includes new local stormwater detention and conveyance facilities that will be designed as part of subdivisions, roadways, and greenways to sufficiently manage the stormwater generated by new development.

While regional stormwater facilities can offer benefits (such as creation of wildlife and aquatic habitats and land use efficiencies) compared with on-site local detention, there are significant challenges to establishing, funding, and maintaining regional facilities. The main challenges to regional stormwater facilities include:

- **Siting and sizing regional facilities** in an equitable manner without the use of eminent domain. Regional facilities may require less overall land than individual local facilities, but each regional facility will require advance land acquisition and financing by developers and/or CWS.
- **Higher capital costs** associated with public construction at prevailing wage rates, which can increase construction costs by 30% or more.
- **Advance funding or financing.** New stormwater facilities must be created at the outset of future development impacts to address water runoff. This would require a public or private financing commitment to design and build the regional facility, which would likely cost $1-2 million (based on experience in North Bethany).
- **Ongoing cost.** Regional facilities, which are owned or maintained by CWS would require annual investment for inspections and maintenance (such as trash and noxious weed removal). Local private facilities would be the responsibility of the property owner or Homeowners' Association.

In light of the challenges listed above, it is recommended that stormwater facilities be funded in partnership between CWS and private developers as development occurs. At present, the City does not assess a local charge for stormwater impacts. However, CWS does assess a stormwater and surface water SDC per equivalent surface unit (ESU), and 1 ESU = 2,640 square feet of impervious surface area.

With CWS or private developer advance financing assistance and property owner participation, the City can also consider creating local improvement districts or reimbursement districts with special assessments to compensate CWS for its financial commitments associated with subregional stormwater facilities.

FUNDING IMPLEMENTATION PLAN

This funding plan is intended to provide a framework for structuring a future development agreement between the developer, affected property owners in the Master Plan area, and local and state agencies. It is recommended that the funding strategy be refined during the adoption of the concept plan and subjected to input from local citizens, property owners and key agencies (e.g., Washington County, TriMet, ODOT, CWS, etc.) to ensure that all interests are vetted and addressed before development can proceed.

Key components of the funding strategy are identified in Table 7.15.

FACILITY TYPE	EXISTING OR POTENTIAL FUNDING REQUIREMENT	STRATEGIES & ACTIONS
Transportation Arterials	Existing Washington County TDT funds and MSTIP funds, with potential Metro grants	City to work with Washington County and Metro to prioritize phased improvements along Roy Rogers Road, Beef Bend Road and Elsner Road. Note, buildout of Kingston Terrace could generate $20M in property tax revenue and $10M total in REET revenue for WA County over 30 years.
Transportation Collectors and Major Bicycle and Pedestrian Facilities	Existing TDT plus new Supplemental SDC is needed to fund collector roads	City to adopt TSDC for Kingston Terrace and consider citywide TSDC as well. City to consider policy of allocating TDT funds collected in Kingston Terrace to projects listed in Appendix B.
Local Streets (excluding collectors)	Developer Funded	Required as condition of approval
Parks: Community Parks, Linear Parks, Urban Plaza and Open Space	City to update its citywide Parks SDC, and consider supplemental Parks SDC for Kingston Terrace	City to consider adopting a Citywide SDC for parks.
Parks: Neighborhood Parks and Pocket Parks	Developer Funded	Required as condition of approval
Parks: Community Recreation Facility	New Urban Renewal Area for Kingston Terrace with advance financing through LTGO Bond issued by City	City to conduct Urban Renewal Feasibility Study and Finance Plan (year 1). City to adopt a new Urban Renewal Plan (year 2)
Storm drainage	City to support CWS in planning and financing subregional facilities	Developer or CWS to pay upfront costs and receive credits for the construction of eligible capital facility improvements. City can adopt LIDs or reimbursement districts with special assessments to compensate others for advance financing.
Sanitary sewer system	Existing SDCs and rates should cover capital cost	CWS and developers to pay upfront costs. Developers to receive credits for the construction of eligible capital facility improvements.
Water system	Existing SDCs along with supplemental connection charges required to fully cover cost of water systems	King City to partner with Tigard to finance water supply and transmission mains, with funding dedicated from rates and SDCs.
Local utility connections	Developer funded	Required as condition of approval

^Table 7.15 Potential Funding Sources for Kingston Terrace Master Plan Area

Cost Comparison with Other Plan Areas in the Metro UGB

The Kingston Terrace Master Plan area has the capacity of accommodating 3,576 dwelling units along with approximately 258 jobs in commercial, office and civic buildings. FCS applied a methodology consistent with the Metro Infrastructure Needs Analysis (prepared by FCS in 2011) to compare expected capital facility costs per equivalent dwelling unit (EDU) in each location. For consistency, capital costs were included for public roads and infrastructure investments identified in each of the adopted plans to accommodate 20 years of future development.

Planning level capital costs have been converted to 2023 dollars using the McGraw Hill Engineering News Record, Seattle Construction Cost Index. Consistent with the Metro study, for analysis purposes each additional dwelling unit equates to 1 EDU, and 1 EDU also equates to 5 jobs.

Based on these assumptions, the overall capital facility cost for Kingston Terrace compares favorably to other urbanizing areas within the greater Portland Region (Figure 7.1). However, it should be noted planning level cost estimates will change over time and one cannot always pinpoint when future public facilities are required nor the pace of demand for private development.

Source: analysis based on adopted local area concept plans and master plans, with costs adjusted to 2023 dollars.

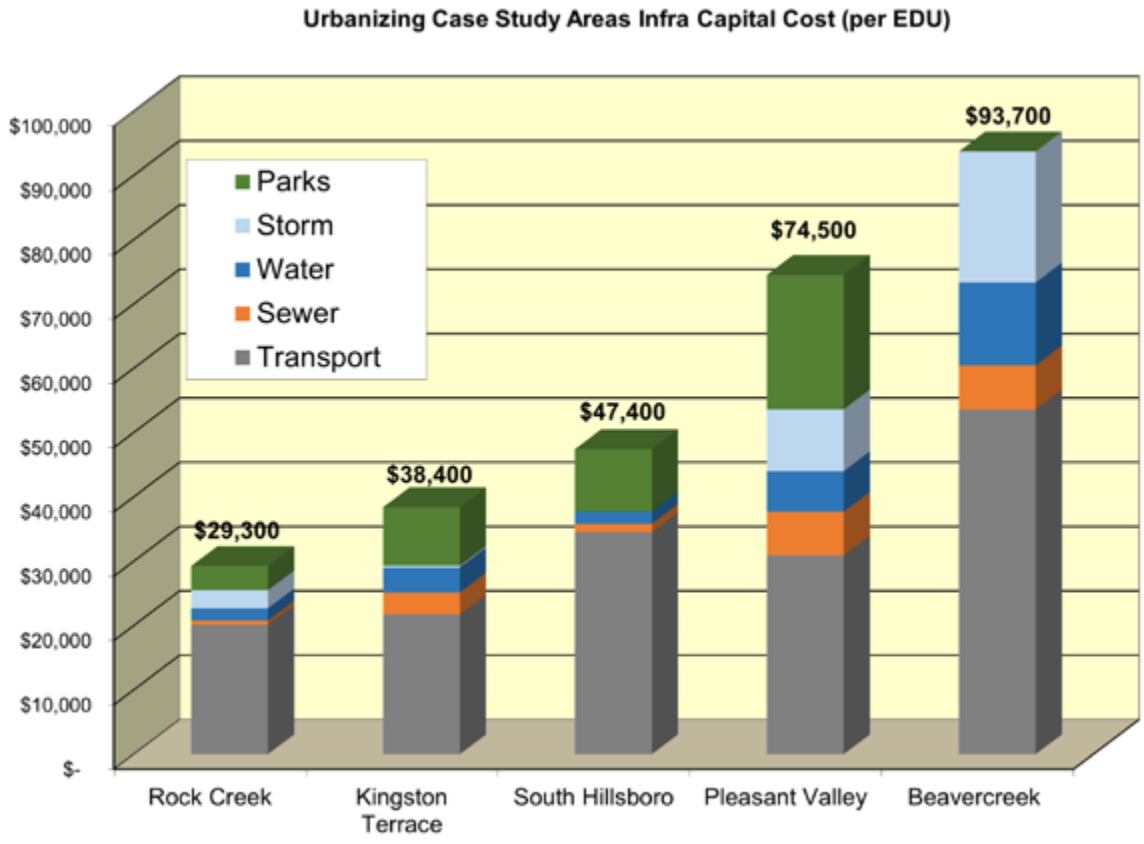


Figure 7.1 Comparison of Public Facility Costs Per Equivalent Dwelling Unit

Implementation

Introduction

Following adoption of the KTMP, its implementation will require the following:

1. Development phasing and annexation strategy.
2. Ensuring that new development is consistent with the KTMP.
3. Confirming planning roles for King City and partner jurisdictions.
4. Developing funding mechanisms for public infrastructure.

Development Phasing and Annexation Strategy

Prior to developing according to the KTMP, properties must be annexed to the city. Because a physical connection with the existing city is necessary, the general annexation and development phasing will generally progress from the current city limit to the west, Property owner interest in developing/ redeveloping has been strongest along the Beef Bend corridor and the western portion of the planning area. Following adoption of the KTMP, the city should:

- Clearly define the annexation process including the application and review procedure, noting that annexation will be initiated by the property owner.
- Describe how property will be rezoned from Washington County to city zoning designations consistent with the KTMP.
- Describe the circumstances under which development agreements would be required and what they could entail.
- Provide outreach to property owners within the KTMP area about the plan, the annexation and development process, and, what it potentially means for their property.

New Development Consistent with the KTMP

Once annexed, properties must be developed in a manner consistent with the KTMP. The implementation and enforcement provisions are primarily found in the King City Community Development Code, Title 16 of the King City Municipal Code. The Revised KTMP will cite Community Development Code chapters specific to the development process (e.g., zoning districts, subdivisions, site development, development standards)

Describe how the development review process will strive to implement the KTMP policies while allowing for flexibility during the development review process to accommodate developer preferences and site conditions.

In addition to city requirements, development will be subject to Clean Water Services standards pertaining to stormwater and environmental protection. State and federal agencies will also have regulatory authority regarding wetlands, riparian areas, and floodplains.

Planning Roles for King City and Partner Jurisdictions

Cooperation and coordination with partner jurisdictions will be essential including:

- Washington County. Transportation planning, design of streets under county jurisdiction (Roy Rogers Road, Elsner Road, and Beef Bend Road), and land use coordination.
- City of Tigard. Land use and transportation planning and coordination.
- Clean Water Services. Stormwater and sanitary sewer facilities and environmental protection.
- Tigard-Tualatin School District. Planning coordination and potential school siting.
- Tualatin Valley Fire and Rescue. Provision of effective emergency services and potential station siting.

Funding Mechanisms for Public Infrastructure

The city must develop and adopt a funding strategy for major infrastructure improvements in the KTMP including:

TRANSPORTATION FACILITIES.

- A new city policy to allocate TDT revenues collected in Kingston Terrace to eligible projects located in Kingston Terrace.
- A new Kingston Terrace subarea transportation system development charge (TSDC)
- Leveraging regional grants from Metro and other non-city agencies.

PARKS

- A city policy that requires developers to construct and dedicate neighborhood parks and pocket parks to local design standard as a condition of approval for major subdivisions or planned developments.
- Adoption of a citywide parks SDC for community parks
- Consideration of a Kingston Terrace Parks SDC surcharge for planned linear parks and open space in Kingston Terrace
- Consideration of a Kingston Terrace Urban Renewal District that would generate adequate revenue over time to fund the planned Community Recreation Center and other public benefit projects in Kingston Terrace.

WATER SYSTEMS

- Work with the city of Tigard to identify water system deficiencies, additional infrastructure needs, and related funding mechanisms.
- Sanitary Sewer and Stormwater Systems
- Coordinate with CWS regarding provision of sanitary sewer and stormwater facilities and environmental protection/ enhancement in the KTMP area.

FUNDING STRATEGY

Develop a funding strategy as described in Chapter 7.

Appendix A.

Kingston Terrace Master Plan Process

The Kingston Terrace Master Plan launched in Fall 2020. The process was initially designed to be completed by the end of 2021. Due to the COVID-19 pandemic and the need for an additional East-West Circulation Alternatives Analysis, the project timeline was lengthened from 16 to 32 months. The initial focus of the KTMP effort was to prepare the Community Engagement Plan and study existing conditions. Two committees were appointed by the City to help guide development of the KTMP. The Stakeholder Advisory Committee (SAC) was made up of community members, property owners, and other stakeholders with diverse perspectives about future growth and development in King City. The Technical Advisory Committee (TAC) was comprised of representatives from local, county, regional, and state agencies and nonprofit organizations.

The first round of community engagement took place in winter 2021. The focus of this round of engagement was to introduce the project purpose and process, review existing conditions, including the Concept Plan vision and framework, and discuss opportunities and constraints in the Kingston Terrace area. Community members also provided comments on the draft Community Engagement Plan. The first SAC and TAC meetings were held in February 2021 and were followed by a virtual public meeting in March 2021. Concurrently, interviews were conducted with a variety of key stakeholders, including elected officials, King City and KTMP study area and property owners and developers. English and Spanish versions of an online open house was open during the entire month of March for community members to review and recommend modifications to the Concept Plan vision and framework. Briefings with Planning Commission and City Council were held periodically throughout the process.

Round 2 of community engagement took place in spring 2021 and focused on design options for streets, parks, and the town center. The second SAC and TAC meetings were held in May 2021 and a community event was held in King City Park in June 2021. These activities were supplemented with an online survey in English and Spanish and direct outreach to King City's Korean community.

During the summer of 2021, in consultation with Washington County and Metro and in response to community requests, an analysis of east west circulation alternatives was added to the project scope. The East/West Circulation Study looked at alternative routes for a collector road to connect existing King City with the Kingston Terrace area from Highway 99E to Roy Rogers Road. During the remainder of 2021 a work plan for the analysis was developed and additional funding was secured from Metro.

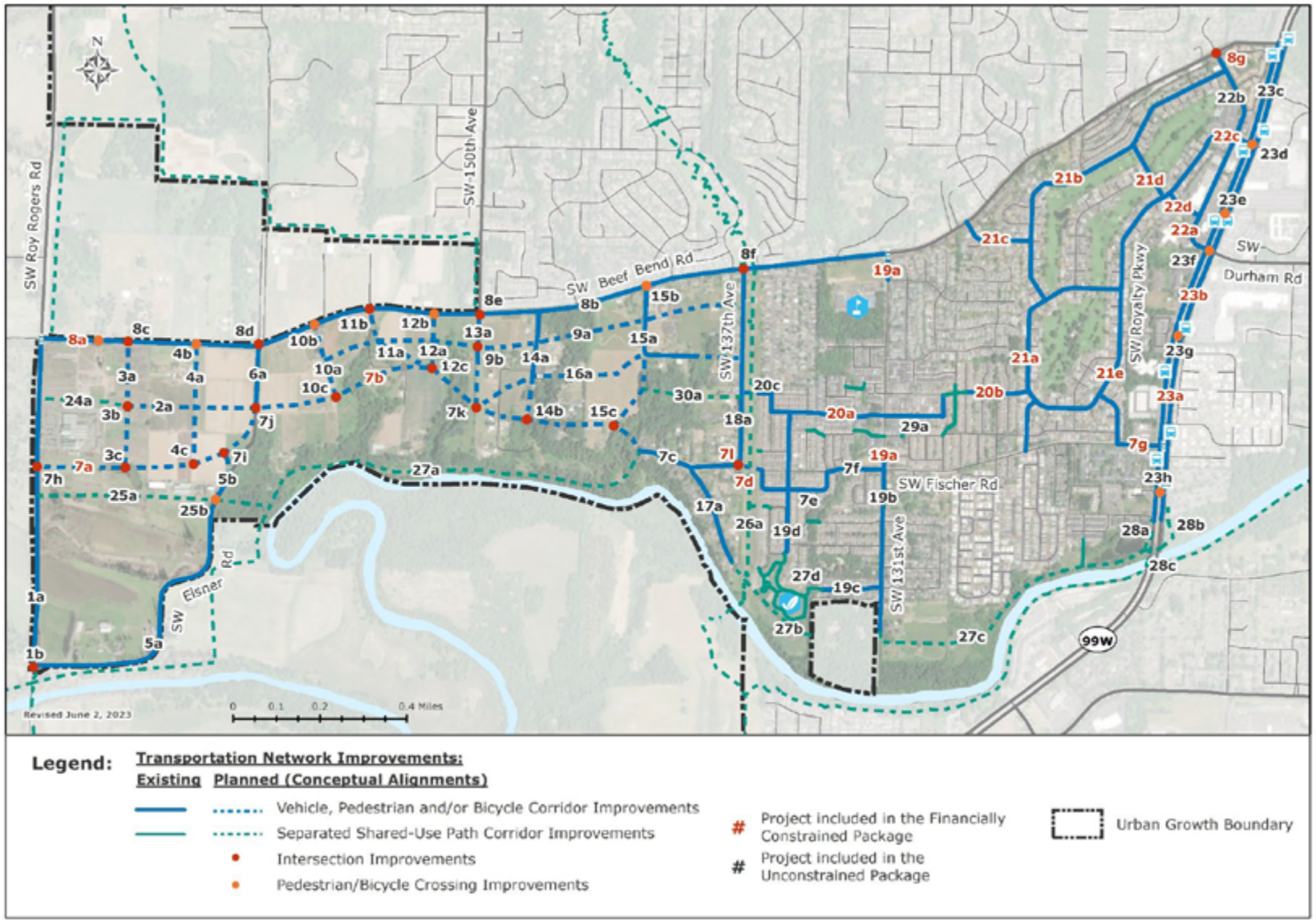
The East/West Circulation Study began in winter 2022. The focus of Round 3 of community engagement, conducted in spring and summer 2022, was to agree on factors that would be used to evaluate the alternatives, and which alternative routes to include in the study. The third SAC and TAC meetings took place in April 2022. A hybrid public meeting was held in May 2022 and was supplemented by an online survey. Due to technical issues and a lack of space in the meeting room, an online open house was held in June 2022. Results of the draft and final East/West Circulation Study were shared in Round 4 of community engagement. The fourth SAC and TAC meetings were held in August 2022 and an in-person public meeting was held in October 2022.

The draft KTMP was prepared during the fall of 2022. Round 5 of community engagement included the fifth SAC and TAC meetings in January 2023, and an in-person public meeting was held in February 2023. The public meeting was supplemented with an online survey. Revisions were made to the draft KTMP in January through March 2023, and the adoption process, including Planning Commission and City Council hearings, was conducted in spring and summer 2023.

Appendix B.

Funding Strategy Tables

TRANSPORTATION



High Priority Transportation Projects (Years 1-7)			Preliminary Assumptions						
Project ID	**Project Type**	**Preliminary Project Cost (2023 Dollars)***	**Preim. WA County or Metro Cost Share**	**Developer Cost Share (may be TDT/TSDC Credit eligible)**	**King City Cost Share**	**TDT Eligible?**	**Potential Local TSDC Eligible?**	**King City TDT Cost Basis**	**King City TSDC Cost Basis**
8a, 8b, 8d	Beef Bend Roadway (South Side)	$29,098,800	$28,610,532	$488,268		yes		$488,268	0
23b	New Roadway: SW Colyer & Peachtree Drive Realignment Connection with SW 137th	$2,157,750	$1,078,875	$1,078,875			yes		$1,078,875
4b, 4c, 7f	New Intersections/Signals	$3,452,400	$986,893	$2,465,507		yes		$2,465,507	$0
21a, 21c, 21e, 22c 22d	New Bicycle/Pedestrian Facilities	$2,990,025	$0	$2,990,025			yes		$2,990,025
A3	Transit/Other	$308,250	$277,425		$30,825				
	Total	**$38,007,225**	**$30,953,725**	**$7,022,675**	**$30,825**	**$0**	**$0**	**$2,953,775**	**$4,068,900**

Source: King City Transportation System Plan, Sept. 2022, Review Draft, Table 13 excerpts. Based on Tier 1 project list.

Medium Priority Transportation Projects (Years 7-14)			Preliminary Assumptions						
Project ID	**Project Type**	**Preliminary Project Cost (2023 Dollars)***	**Preim. WA County or Metro Cost Share**	**Developer Cost Share (may be TDT/TSDC Credit eligible)**	**King City Cost Share**	**TDT Eligible?**	**Potential Local TSDC Eligible?**	**Prelim. King City TDT Cost Basis**	**Prelim. King City TSDC Cost Basis**
1a, 1b	Roy Rogers Roadway Improvements	$39,579,300	$39,579,300			yes		$0	$0
6a, 6b, 4e, 7j	Elsner Roadway Improvements	$15,227,550	$12,792,375	$2,435,175		yes	yes	$2,435,175	$0
7a, 7b, 7c, 7d	Fischer Roadway Improvements	$24,475,050		$24,475,050		yes	yes		$24,475,050
12a	Local Collector Roadway	$5,394,375		$5,394,375		yes	yes	$5,394,375	$0
7k, 7l	Intersection Improvements	$986,400	$246,600	$739,800		yes	yes	$739,800	$0
10b, 11b, 14c, 21b, 21d, 22a, 22b	New Bicycle/Pedestrian Facilities	$4,007,250	$92,475	$3,914,775			yes	$1,957,388	$1,957,388
23	Westside Trail along Tualatin River	$3,637,350	$3,273,615	$363,735	$363,735				
	Total	**$93,307,275**	**$55,984,365**	**$37,322,910**	**$363,735**	**$0**	**$0**	**$10,526,738**	**$26,432,438**

Source: King City Transportation System Plan, Sept. 2022, Review Draft, Table 13 excerpts; based on Tier 1 & 2 (medium priority list).

Lower Priority Transportation Projects (Years 15-21+)			Preliminary Assumptions						
Project ID	**Project Type**	**Preliminary Project Cost (2023 Dollars)***	**Preim. WA County or Metro Cost Share**	**Developer Cost Share (may be TDT/TSDC Credit eligible)**	**King City Cost Share**	**TDT Eligible?**	**Potential Local TSDC Eligible?**	**King City TDT Cost Basis**	**King City TSDC Cost Basis**
	New Roadway Improvements	$46,453,275		$46,453,275		yes	yes	tbd	tbd
	Intersection Improvements	$24,043,500	$1,032,638	$23,010,863		yes	yes	tbd	tbd
	New Bicycle/Pedestrian Facilities	$4,870,350	$4,870,350			yes	yes	tbd	tbd
	Total	**$75,367,125**	**$5,902,988**	**$69,464,138**	**$0**			**tbd**	**tbd**

Source: King City Transportation System Plan, Sept. 2022, Review Draft, Table 13 excerpts; reflects other projects west of SW 137th Ave.

PARKS

PARK CATEGORY	Unit Cost		Subtotal	Subtotal	Total	Planning
	Per SF	Acres	Improvement	Land	Cost	Priority
Open Space preservation		210	$2,286,900	*	$2,286,900	**Tiers 1-3**
Linear Park 1	$6	14	$3,659,040	$6,098,400	$9,757,440	**Tier 1**
Linear Park 2	$4	22	$3,833,280	$9,583,200	$13,416,480	Tier 2
Community Agriculture Park	$2	12	$1,045,440	$5,227,200	$6,272,640	**Tier 1**
Community Park 1	$12	15	$7,840,800	$6,534,000	$14,374,800	**Tier 1**
Community Park 2	$10	20	$10,454,400	$8,712,000	$19,166,400	Tier 2
Neighborhood Park 1	$6	3	$784,080	n/a	$784,080	Tier 3
Neighborhood Park 2	$6	4	$1,045,440	n/a	$1,045,440	Tier 3
Neighborhood Park 3	$6	5	$1,306,800	n/a	$1,306,800	Tier 3
Neighborhood Park 4	$6	3	$784,080	n/a	$784,080	Tier 3
Pocket Park 1	$16	0.5	$348,480	n/a	$348,480	Tier 3
Pocket Park 2	$16	0.5	$348,480	n/a	$348,480	Tier 3
Pocket Park 3	$16	1	$696,960	n/a	$696,960	Tier 3
Pocket Park 4	$16	1	$696,960	n/a	$696,960	Tier 3
Urban Plaza	$40	0.5	$871,200	$217,800	$1,089,000	**Tier 1**
Total			**$36,002,340**	**$36,372,600**	**$72,374,940**	

UTILITIES

Infrastructure Type	Infrastructure Category	Project Name	Cost Estimate Total	Prelim. Cost Allocation			
				Min.Req.	Other Parties		Framework Oversize allocable to plan area
Major Sanitary Sewer *(SS Concept 2)*	Major Off-Site	River Terrace South Pump Station/Forcemain	$8,160,000		$5,954,595	River Terrace, CWS, Other	$2,205,405
	Subdistrict	Subdistrict Pump Stations/Forcemains	$4,250,000				$4,250,000
	Framework	Trunk Sewer (Concept 1 only)					NA
		Subtotal	**$12,410,000**		**$5,954,595**		**$6,455,405**
Water	Major Off-Site	Storage, Zone 410	$4,250,000				$4,250,000
	Framework	Transmission: Beef Bend Road	$5,100,000		$2,550,000	Other agencies	$2,550,000
	Framework	Transmission: Roy Rogers Road	$4,760,000		$2,380,000	Other agencies	$2,380,000
		Subtotal	**$14,110,000**				**$9,180,000**
Stormwater	Subdistrict	Subdistrict Facilities (5)	Not estimated		100%	Developers/CWS	
	Local	On-site management	Not estimated		100%	Developers/CWS	
School District	NA	Primary School	Not estimated		100%	School District	

Cost estimates and allocations derived from Kingston Terrace Concept Plan, costs escalated to 2023 dollars.

Major stormwater facilities to be included with roads or financed by CWS or developers with repayment through Reimbursement Districts or Local Improvement Districts.

TBD = to be determined.

Appendix C:

Description of Funding Techniques

In addition to the existing SDC funding sources there are several potential new funding tools and techniques that the City of King City can consider for addressing potential public facility funding gaps. Based on experience in other Oregon cities, these funding techniques include:

- Citywide SDCs
- Supplemental SDCs (within Town Center only)
- Utility Rates and surcharges
- Urban Renewal Area (Tax Increment Financing)
- Local Improvement Districts
- Reimbursement Districts
- Development Agreements with Special Assessments
- Debt Financing (public)

CITYWIDE SDCS

ORS 223.297 – 223.314 provides "a uniform framework for the imposition of system development charges by governmental units" and establishes "that the charges may be used only for capital improvements." An SDC can be formulated to include one or both of the following components: (1) a reimbursement fee, intended to recover an equitable share of the cost of facilities already constructed or under construction and (2) an improvement fee, intended to recover a fair share of future, planned, capital improvements needed to increase the capacity of the system. ORS 222.299 defines "capital improvements" as facilities or assets used for:

- Water supply, treatment and distribution;
- Wastewater collection, transmission, treatment and disposal;
- Drainage and flood control;
- Transportation; or
- Parks and recreation.

SDCs may include an "improvement fee" for new facilities and a "reimbursement fee" associated with capital improvements already constructed. SDCs cannot be used for operation or routine maintenance.

King City already collects SDCs for parks and may apply SDC funding to designated Town Center capital improvements that enhance capacity as required to address future growth needs. Potentially applicable facilities include streets, transit facilities, pedestrian and bicycle facilities, storm drainage and flood control improvements.

In order to enhance SDC revenues and allocate SDC funds, the city should consider updating its citywide SDC methodology reports for transportation, parks and storm water facilities. This would entail an update to the capital facilities program list, cost estimates, and calculation of improvement fee and reimbursement fee calculations. Key objectives of the SDC updates could focus on:

- **Full Cost Recovery** (with the inclusion of transportation projects identified in the current Town Center capital facilities plan).
- **Bike, pedestrian and transit facilities elements** (relates to Full Cost Recovery for street and pedestrian, bicycle and transit facility improvements).
- **Incentive-Based SDCs** (SDC adjustment/reduction with potentially lower trip generation rates for Town Center development due to on-site travel demand management techniques which lower peak-trip generation).

Oregon law requires that the city provide an SDC credit to developers who construct a qualified public facility improvement that has been adopted on the SDC project list. The amount of credit that is provided and the terms of how the credit is issued (cash or voucher) varies depending upon the facility type, location and level of private investment.

SUPPLEMENTAL SDCS

In addition to the citywide SDC charges, a special district or overlay charge may also be considered. These supplemental SDCs on new development will help the City generate additional revenue to address the cost of new infrastructure investments that are required to maintain current levels of service.

LOCAL IMPROVEMENT DISTRICT (LID)

Cities in Oregon have the statutory authority to establish local improvement districts and levy special assessments on the benefited property to pay for improvements. These are payable in annual installments for up to 30 years. LIDs are generally used for capital improvement projects that benefit numerous large tenants and/or private property owners. The formation of LID districts could be considered as a potential primary source of funding catalyst project improvements since the assessments would result in a more reliable source of annual revenue in comparison to SDCs.

The primary advantage of LIDs is the ability to attain a consistent level of revenue generation early in the development process. Financial intermediaries, such as banks, now view LIDs as a more reliable funding source than some funding sources (such as SDCs) and therefore are more apt to provide loans based on future LID revenue streams.

REIMBURSEMENT DISTRICT

Similar to LIDs, cities can negotiate public/private advance financing arrangements with developers, where a developer agrees to front capital improvements/investment within a designated zone of benefit district (ZBD). The developer is then partially reimbursed as new land use development approvals are granted within the ZBD over a period that usually extends 10-15 years. While ZBDs have been successfully utilized by CWS for regional storm water facilities in urbanization areas such as North Bethany, there is no guarantee that future revenues will be as steady and reliable as with the LID or property tax assessments.

UTILITY FEES AND CONNECTION CHARGES

Utility rates and connection charges are a common way to raise local revenues to pay for required infrastructure facilities and operations but require approval and adoption by the City (utility district) and must meet state and local regulations.

In light of the fact that the City of King City does not have direct control over water and sewer rates (in comparison to other cities in the greater Portland region), any rate overlay district that results in higher water or sewer rates may render the area less competitive and is not recommended at this time.

Given the significant level of funding gaps that are expected for water facilities in Kingston Terrace, the city may desire to implement a water SDC fee surcharge.

URBAN RENEWAL DISTRICT

There may be opportunities to utilize funding from the creation of a new Urban Renewal District (URD) for areas lacking infrastructure. In many cases, URD funds are combined with other local funding sources (e.g., SDCs) to leverage non-local grants or loans. A key advantage of URD funding is that it is less restrictive than SDCs with respect to the uses of funds. As such URDs can be used to fund almost any form of capital investment that is authorized by the adopted URD plan. This can include land acquisition, infrastructure investments and public parking facilities.

Maximum Indebtedness Requirements

After the passage of House Bill 3056 (passed by the Oregon Legislature in 2009) urban renewal agencies have new limits on the amounts of maximum indebtedness (MI) in an urban renewal plan adopted after January 1, 2010.

- If the total "frozen tax base" is $50 million or less, the total MI may not exceed $50 million. (This condition would apply to Kingston Terrace.)
- If the frozen base is more than $50 million, but less than or equal to $150 million, then MI may not exceed $50 million, plus ½ of the difference between $50 million and $150 million.
- If the total frozen base is greater than $150 million, the total MI may not exceed $100 million, plus 35% of the amount over $150 million (this is the case in the Town Center where the current tax base is approximately $173.9 million.

Revenue Sharing Possibilities

There are also new possibilities for revenue sharing with overlapping districts for plans adopted or substantially amended to increase MI after January 1, 2010.

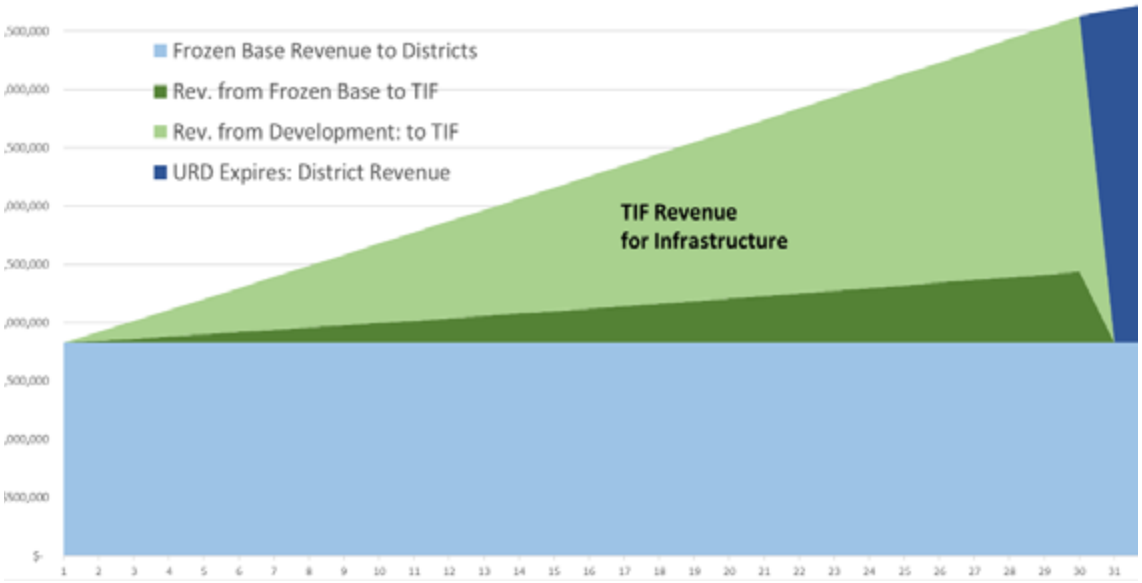
Revenue sharing among overlapping tax districts begins in the later of the 11th year after the initial plan was adopted, or when TIF collections equal or exceed 10% of the initial MI.

For any year when TIF collections equal or exceed 10% of the initial MI, but are less than 12.5% of the initial MI, the UR agency receives the 10%, plus 25% of the tax increment between 10% and 12.5%. Overlapping tax districts receive 75% of the tax increment between 10% and 12.5%.

For any year when TIF collections equal or exceed 12.5% of the initial MI, the UR agency receives the 12.5% tax increment, and any tax increment collections greater than 12.5% are distributed to overlapping taxing districts.

Concurrence Waivers

Variations in the maximum indebtedness requirements and the revenues sharing provisions can occur if the municipality obtains the written concurrence of the overlapping tax districts that impose at least 75% of the taxes imposed under the permanent rate limits in the URD.



The advantage of a urban renewal districts is usually tied to the creation of tax increment revenue that can be used to issue bonds issued by the Urban Renewal Agency. These bonds are used to fund strategic improvements that are identified in the locally adopted Urban Renewal Plan. As shown in the concept illustration below, the tax increment financing (TIF) revenue that is generated does not impact current tax rates nor revenues for affected customers and tax districts. Instead, as assessed value increases within the urban renewal district, the property tax payments generated by the net new AV is allocated to the Urban Renewal Agency. Districts sunset once Urban Renewal Agency projects are completed and the bonds are retired. At that point in time, the net new AV that was generated gets to be included in the calculation of local tax revenues and property tax mil rates. In many instances, this results in a slight decrease in average tax rates for citywide property owners.

DEBT FINANCING

The city or any of its partner agencies may incur debt to pay for capital facilities, such as water or sewer facilities and other "public" projects deemed to have a community benefit. The most typical forms of financing public infrastructure are through intergovernmental loans, bonds or bank loans. Bonds are a common means of financing projects whose benefits are not confined to a single local district.

Revenue bonds, for facilities such as water improvements, require an ongoing source of revenue that can be pledged to payment of debt service. A utility fee or local option levy combined with a Local Improvement District could generate payments for this purpose. A reserve requirement on revenue bonds would commit the City to maintain a bond reserve, which could be used to meet payments in the event pledged revenues fall short. This reserve is often set at the least of (a) 10 percent of the issue price of all new and outstanding parity bonds, (b) maximum annual debt service on all new and outstanding parity bonds, and (c) 1.25 times average annual debt service on all new and outstanding parity bonds. The reserve requirement is dictated by the terms of the bond resolution.

Limited General Obligation Bonds or Full faith and credit bonds do not require voter approval and they are not subject to debt service coverage requirements. However, like revenue bonds, an ongoing source of revenue would need to be pledged to protect the City's general fund from added risk.

DEVELOPMENT AGREEMENTS

The city of may use "Development Agreements" where a developer would agree to construct public facilities to local design standards as a condition of development. Development Agreements can provide the legal basis for significant public or private investments in infrastructure and can include special assessments (in lieu fees) in the event specified improvements are not constructed by the developer.

The Development Agreement also provides assurances to the city and to the developer that the land use regulations that apply will not change during the term of the agreement. Agreements usually identify provisions for reservation or dedication of land for public purposes; responsibilities for providing infrastructure and services; and construction expenditure provisions for public facility investments.

Key provisions of development agreements typically include:

- Voluntary Agreements between private and public entities
- Usually entails private dedication of land, easements, and/or public facilities in exchange for development entitlements
- Private construction of public facilities to City design standards and limited O&M responsibilities (1-3 years)
- Non-remonstrance towards current and future fees and charges
- Developer may agree to provide advance financing for a portion of the project and request formation of a LID or Reimbursement and/or SDC credit for a share of costs they incur
- Vested rights (time of performance)
- Security bond
- Flexibility (minor and major amendments to the agreement)

King City could consider a development agreement with a special assessment like the one recently enacted in Wilsonville for the Frog Pond West Planning Area. The Wilsonville City Council enacted a Development Agreement with a special assessment ($19,000 per dwelling unit) in the Frog Pond planning area. The special assessment is for road, sewer and parks improvements that are not part of the local SDC fee.

This special assessment approach is similar to the reimbursement district concept discussed above; whereas a developer that advances the financing for an eligible public facility could receive up to 100% reimbursement for their investment based on special assessment revenues that are generated over time. This approach tends to shift much of the infrastructure cost burden (and risk) onto the developer, yet allows the developer to potentially recoup their costs more fully than a typical SDC.

EXACTIONS AND DEDICATIONS

An exaction is a requirement that an owner give up a property right, such as an extra right-of-way, as a condition of approval of a land use decision. Local governments have the power to impose exactions based on zoning and regulatory power they possess. An exaction is constitutional if it complies with the test established in the landmark Dolan v. City of Tigard, 512 US 374, 114 Ct 2309, 129 L Ed 2d 304 (1994), which requires:

- The exaction must advance a legitimate public interest;
- The exaction must have an "essential nexus" to the state interest; and
- The exaction is "roughly proportional" to the impacts of the development being considered.

Dedications pertain to capital facility improvements that developers are required to construct and in-turn dedicate to the public for its use and/or ownership. On occasion, exactions and dedications can be used in combination, such as the requirement that a developer construct a public sidewalk along a roadway fronting their property when "major" improvements to the property are made.

Exactions and dedications are typically applied to "local facilities" such as streets and sidewalks or stormwater facilities that are directly related to a property being developed or improved. Other types of major public facilities, such as collector roads and water/sewer trunk lines and pump stations are better addressed (and funded) using one or more of the other funding techniques described herein.