

92-0251.040 March 13, 2017

Mr. Michael Weston City Manager - City of King City 15300 SW 116th Avenue King City, OR 97224

Re: King City Urban Reserve Area Concept Plan

Dear Mr. Weston:

As requested, MSA has prepare a revised draft of the Existing Public Utilities Baseline Memorandum in response to comments received from the project team and the Technical Advisory Committee. Please find enclosed a Comment Log documenting our response to the comments provided and a copy of the revised draft memorandum that incorporates changes that are acknowledged in the Comment Log. Please note that there are a number of comments that have not been directly addressed in the revised memorandum because they require further discussion with agency staff (City of Tigard or Clean Water Services) or we determined that they were not specifically relevant to documentation of the Baseline Conditions.

We look forward to reviewing the Comment Log and finalizing the memorandum with the project team following this week's charrette.

Please do not hesitate to contact us if you have any questions in this regard. Thank you.

Sincerely,

MURRAY, SMITH & ASSOCIATES, INC.

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Brian Ginter, P.E. Principal Engineer

Enclosures

COMMENT REVIEW LOG

Existing Public Utilities Baseline Memorandum Comments

Existing P	Public Utilities Baseline Report (MSA)		
Location	Comment		Response
General	I highly recommend that KC work with Tigard staff to improve the information about how stormwater will be conveyed through this area from RT. Review RT stormwater reports and incorporate information into your document.	JS	Reference to the Otak Memorandum to the Tigard City Engineer dated October 15, 2015 has been included. Additional coordination with City of Tigard is warranted for concept development.
General	CWS will manage one (1) PS for this area and everything will be served by gravity lineswe don't allow numerous sanitary PS, so remove sentences that state pump stations will be installed on the southern end.	JS	Based on coordination with CWS on current planning and design for the River Terrace South Pump Station, developer pump stations are expected to serve certain areas in the southern portion of the planning area.
General	Describe the water supply transmission infrastructure and the process to ascertain any potential capacity deficiencies.	SS	General description of infrastructure added. Per the Intergovernmental Agreement Regarding Water System Ownership and Water Service (12/9/2014), the City of Tigard is responsible for water system planning.
General	Add recommendations to evaluate the need for, and timing of, additional transmission infrastructure.	SS	Recommendations added. Per comment above, this will be the responsibility of the City of Tigard.
General	Describe 410-foot pressure zone existing reservoir locations and any deficiencies in supplying water to this area.	SS	Additional description added. There are no current deficiencies documented as water service to this area has not been considered in prior planning.
General	Add recommendations regarding what studies King City needs to complete in order to evaluate the need for, and timing of, additional 410-foot storage.	SS	Per the comment above, these additional studies are the responsibility of the City of Tigard. King City will provide estimates of water demand to support these studies, as required by the IGA.
General	Describe the issue of timing as it relates to the location of any new facilities under the current planned build out of the areas north and uphill of King City, i.e. if a reservoir is needed, where would it be located and is their available land with the current planned build out of River Terrace.	SS	Per the comment above, these additional studies are the responsibility of the City of Tigard. Kind City will provide estimates of water demand to support these studies, as required by the IGA.
General	Describe methods to finance studies, future facility plans, and upgrades to existing infrastructure.	SS	Per the comment above, these additional studies are the responsibility of the City of Tigard.
2-0251.040	Page 1 Murray Smith & Assoc	iates Ir	King City URA Concept Planc

Existing P	Public Utilities Baseline Report (MSA)		
Location	Comment		Response
General	Consider incorporating more detailed information regarding stormwater existing conditions and multijurisdictional issues as described in the Otak Memorandum to the Tigard City Engineer dated October 15, 2015.	SS	Reference to the Otak Memorandum to the Tigard City Engineer dated October 15,2015 has been included. Additional coordination with City of Tigard is warranted for concept development.
General	Consider applying River Terrace stormwater facility design standards in King City Concept Plan Area. Design standards are available here: <u>http://riverterracetigard.com/wp-content/uploads/2015/07/Stormwater-</u> <u>Management- Standards.pdf</u>	SS	Future development design standards are not included in the Baseline Conditions reporting and will be addressed at a later time.
1	Water: While not intended to serve King City, either directly or indirectly, should the Willamette Water Supply project be discussed?	JF	It has no direct bearing on water supply to King City and there are currently no existing facilities to include in "Baseline Conditions" memorandum.
3	Correction, second paragraph under Water Demands: no "d" in Rogers Rd.	JP	Corrected
Figure 1 (Water)	 Clarify water piping in River Terrace (much of what is shown has not yet been constructed) Remove fill color for Concept Plan Area to show water pressure zone Show existing and planned water reservoirs in/near the Concept Plan Area 	SS	Figure for final memorandum will be revised to address bullets 1 and 2. There are currently no existing or planned reservoirs in/near the Concept Plan area.
Figure 2 (Sewer)	Show existing trunk capacity limitationsShow existing gravity and force mains more clearly	SS	The specific limitation locations, if any, are currently unknown. Language in memorandum has been modified. Figure for final memorandum will be revised to address bullet 2.
Figure 3 (Storm water)	 Update map to show all layers (some habitat layers not showing) Identify Tigard and Unincorporated Washington County boundaries more clearly (this is especially important for understanding and managing stormwater issues) Label stream channels 	SS	Refer to Natural Resources Baseline Memorandum for additional habitat information. Figure for final memorandum will be revised to address bullets 2 and 3.
General	Consider incorporating more detailed information regarding stormwater existing conditions and multijurisdictional issues as described in the Otak Memorandum to the Tigard City Engineer dated October 15, 2015.	SS	Reference to the Otak Memorandum to the Tigard City Engineer dated October 15,2015 has been included. Additional coordination with City of Tigard is warranted for concept development.



DRAFT MEMORANDUM

DATE: March 13, 2017

DRAFT

PROJECT: 92-0251.040

- TO: Mr. Michael Weston City of King City - City Manager
- FROM: William S. Evonuk, P.E. Brian M. Ginter, P.E. Murray, Smith & Associates, Inc. City of King City - City Engineer
- **RE:** King City Urban Reserve Area Concept Plan Existing Public Utilities Baseline Memorandum

Introduction

This memorandum was prepared to provide an overview of the existing public utilities available for the King City Urban Reserve Area (URA). The public utilities of particular interest described in this memorandum include: water, sanitary sewer, and storm drainage. Overall, the URA planning area is not currently served by public utilities and development within the URA planning area will require facility upgrades.

The existing conditions of public utilities are summarized below followed by more detailed information in the remainder of this memorandum:

Water

- Developed parcels within the URA planning area are currently served with on-site private domestic and/or irrigation wells.
- The public drinking water provider for King City, including future development of the URA is the City of Tigard
- Extension of transmission piping and possible development of additional storage facilities will be required to provide water service to the King City URA. Further study by the City of Tigard is recommended to identify the extent of deficiencies, need for additional infrastructure and funding mechanisms.

• Development should be coordinated with the City of Tigard as the water service provider for the area within King City.

Sanitary Sewer

- Developed parcels within the King City URA are currently served with on-site private septic systems.
- Clean Water Services (CWS) is the service provider for sanitary service within the City of King City and future development in the URA.
- CWS is in the preliminary planning stage of installing a sanitary sewerage pump station adjacent to Roy Rogers Road to serve development to the north of the King City URA. In addition to the pump station, CWS is planning installation of a force main and gravity conveyance system improvements. This future pump station will also have the capacity to serve the western portion of the URA planning area.
- Natural topography and existing drainage ways limit the areas that can be served by gravity. It is expected that the southern half of the King City URA will require the installation of small developer pump stations as development occurs.
- Specific development should be coordinated with CWS to identify system needs based on the specific new development proposals.

Storm Drainage

- CWS is responsible for storm drainage throughout Washington County under a National Pollutant Discharge Elimination System (NPDES) Municipal Separated Storm Sewer System (MS4).
- The King City URA consists of natural stormwater infiltration and conveyance through natural drainage ways 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.
- 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.
- New development within the planning area must meet CWS requirements, and it should occur in such a manner so as not to create an adverse impact to the existing storm drainage systems, in accordance with CWS' NPDES MS4 permit.
- 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.

Water Supply

Existing System

The City of King City receives potable water supply from the City of Tigard, which serves Tigard, King City, Durham and the unincorporated Bull Mountain area. Under the terms of the Intergovernmental Agreement Regarding Water Service ownership and Water Service between the City of Tigard and the City of King City, dated December 9, 2014, the responsibilities for water service are sumamrized as follows:

- System Management: The City of Tigard is responsible for planning, designing, building, financing, operating, maintaining, repairing and replacing components of the water system within King City's boundaries. King City will provide information, as requested, to enable Tigard to prepare demand forecasts to support system planning and financing.
- Service Area: The City of Tigard will serve areas annexed to King City, areas added to the urban Growth Boundary and any designated urban Reserve where King City will ultimately be required to provide water service.
- Infrastructure Financing: The City of Tigard is responsible for setting rates and System Development Charges (SDCs) for the entire water service area for recovery of costs associated with system management and capital improvements.

King City is located in the 410-foot pressure zone of Tigard's distribution system. There are seven existing reservoirs that provide gravity water supply to this zone. The nearest 410-foot zone reservoirs are the Menlor Reservoir located south of the intersection of SW 154th Avenue and SW Barrows Road, and Reservoir No. 4 located north of the intersection of SW 122nd Avenue and SW Beef Bend Road. There are currently no 410-foot pressure zone reservoirs in the southwest portion of the Tigard water system service area.

The Urban Reserve Area is located southwest of existing water system infrastructure. Figure 1 shows the existing water distribution system adjacent to the planning area.

Water Demands

Development of the King City URA will likely result in an increase in water demands and an extension of service that was not projected in the Tigard Water System Master Plan (Carollo, May 2010) for the water system's 410-zone. This increase in demands may trigger the need for additional 410-foot pressure zone storage.

Future service to the King City URA will require updated water system planning by the City of Tigard. In particular, Tigard will need to evaluate the need for, and timing of, additional 410-foot pressure zone storage and extension of transmission piping west from SW Beef Bend Road and south from SW Roy Rogers Road to serve the planning area. It is recommended that the City of Tigard initiate studies to determine if additional storage and

transmission infrastructure will be required, especially as it pertains to the need for acquisition of property to site an additional 410-foot pressure zone reservoir.

Water System Constraints

Water system infrastructure within the planning area will likely consist of 8-inch and 12-inch diameter distribution mains for local domestic, irrigation, and fire suppression service. It is likely that this infrastructure will be located in existing and proposed rights-of-way and will be developed under and constructed to City of Tigard standards.

Sanitary Sewer

Existing System

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 8inch diameter sewer mains and then routed south across the Tualatin River and then east to the CWS Durham Wastewater Treatment Plant. Developed parcels within the URA planning area are currently served by private on-site septic systems. Figure 2 shows CWS' sanitary sewer collection and conveyance system in and around King City and the URA planning area.

Planned Sanitary Sewer System Improvements

CWS is currently planning a new waste water pump station to be located in the west of the King City URA adjacent to Roy Rogers Road. The pump station will serve River Terrace South and other development north of the King City URA. A force main will connect the proposed pump station to CWS' existing gravity system and will generally route north along Roy Rogers Road, then east along Beef Bend Road, as shown on Figure 2. Portions of the existing gravity conveyance system will be upgraded/upsized, if required, in conjunction with the construction of the new pump station. The pump station is being planned with the capacity to serve the King City URA.

Sanitary Sewer System Constraints

The natural topography and existing drainage ways within the King City URA limit the ability to serve the entire planning area by gravity. It is expected that the southern half of the planning area will require small developer pump stations to be installed as development occurs to pump swage into the existing gravity conveyance system to the east, or to the planned pump station to the west.

Storm Drainage

Existing System

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. The King City URA 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. Figure 3 shows the existing natural drainage network in and around King City and the URA planning area.

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. Additional information on current planning efforts can be obtained from the City of Tigard (River Terrace Area High Flow Conveyance Alternatives Memorandum, October 15, 2015). 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.

Existing Storm Drainage Constraints

New development within the King City URA 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 URA planning area. Based on a review of CWS' current development standards, development within the URA planning area should conform to the following minimum requirements:

- *Impacts to Existing Wetlands* Existing freshwater wetlands are present in the planning area and are shown on Figure 3. These wetlands 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* The developer or 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 area may be a possible location to construct new stormwater detention facilities.
- *Water Quality* Development of the subject area will need to conform to the storm water quality and treatment requirements set forth by CWS.

Conclusion

This memorandum presents an overview of the existing public utilities available for the King City URA, including water, sanitary sewer, and storm drainage. Next steps include coordinating with the utility owners to assist with concept planning for future utility improvements to serve the URA planning area.







January 2017

92-0251.040

Source: Base Mapping Metro-RLIS Nov 2016, Contours-Dogami.