



DAVID EVANS
AND ASSOCIATES INC.

MEMORANDUM

DATE: September 29, 2022

TO: Steve Faust
3J Consulting

FROM: Bill Hall (original memo dated March 18, 2021, minor methods clarification updates by Ethan Rosenthal September 29, 2022)

SUBJECT: Beef Bend South Natural Resources and Buffers

The King City Beef Bend South Master Plan process seeks more refined analysis of potential development constraints related to natural resources. This memorandum provides an analysis of the mapped resources on the site (including streams, wetlands, steep slopes, and vegetation) in relation to existing development standards.

Background

Metro's initial Goal 5 mapping appeared to use historical stream data from USGS topographic maps. These stream reaches were then classified as one of three levels of riparian habitat. There appeared to be no site-specific criteria for producing these riparian buffers. To be conservative these buffers were used to identify potential development limitations during previous planning efforts. There are currently no local land use regulations related specifically to these buffers.

Methods

This evaluation is based primarily on a desk top analysis using existing publicly available data, supplemented by limited field observations in spring of 2021. Data used included geographic information systems (GIS) layers associated with hydrography, fish presence, and local and national wetlands inventories. We used elevation data derived from recent lidar (light detection and range) data to determine slopes over 25 percent. In addition, wetland delineation reports for the area that had been submitted to and reviewed by the Oregon Department of State Lands were obtained and reviewed.

To better estimate potential buffers, stream characteristics were identified. The area drained, presence of fish, and presence of steep slopes were obtained through GIS data analysis. Characteristics regarding stream widths, flow regime (ephemeral, intermittent, or perennial), vegetation corridor width, and corridor condition were estimated based on professional judgment and aerial photograph interpretation.

To determine likely protective buffers, we used the current criteria provided in Chapter 3 of the Clean Water Services (CWS) development standards. The CWS standards are used in many local jurisdictions within Washington County and in those areas of unincorporated Washington County within CWS boundaries. The CWS standards rely on the presence of surface waters and wetlands. Washington County uses similar requirements for natural area protections. In addition to buffer width, CWS Chapter 3 development standards were also used to classify corridor condition as "good", "marginal", or "degraded." Chapter 3 defines these as follows. Good condition equals a combination of native trees, shrubs, and groundcover covering greater than 80 percent of the area and greater than 50 percent tree canopy exists. Marginal condition equals a combination of native trees, shrubs, and groundcover covering 50 to 80 percent of the area and 26 to 50 percent tree canopy exists. Degraded condition equals native trees, shrubs, and groundcover covering less than 50 percent of the area and less than 25 percent tree canopy exists.



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Results

Eight stream/riverine drainages consisting of 13 reaches are present. These were mapped through the GIS layers, lidar data, and wetland delineation reports. It is possible that additional drainages, particularly associated with roadway runoff are also present in the study area.

Four pond and emergent wetlands mapped by the USFWS NWI program are present in the area. A portion of one wetland (KCMP-W2) was delineated in 2017. For this wetland, the NWI and jurisdictional boundary was expanded to match existing topographic lines and wetland signatures seen on aerial photographs. For KCMP-W3, the boundary was modified based on an apparent delineation completed in 2017 but not submitted to DSL. This same delineation identified an apparent irrigation pond as a wetland. This type of resource can be difficult to accurately classify without field data and discussions with agencies. It is identified as a wetland at this time to be conservative. It is possible that other pond and emergent wetlands could also be present.

Based on these locations and the characteristics (see Tables 1 and 2), buffers were estimated. Buffers from the streams and wetlands ranged between 15 to 200+ feet on each side of the stream. In those areas that have steep slopes, buffers extended to the edge of the steep slopes plus 35 feet to meet CWS standards.

Buffers were then placed into a GIS environment and placed on a map of the study area (see Figure 1).

Discussion

As shown in Figure 1, the areas around known streams and wetlands contain vegetated corridors and buffers within the study area. The current development standards do not prohibit all impacts within these corridors, but they do substantially limit it and would require mitigation for impacts. Development in the form of roads, trails, utilities, and stormwater management ponds are allowed, but their footprints must be limited. In addition, for areas of redevelopment on large tracts, the vegetated corridor might be required to be segregated into a single tax lot for more robust, long-term protection. Further details on allowable impacts and required mitigation practices will require coordination with regulatory agencies once more details are known. Revisions to the King City code could streamline these processes while still providing natural resources protections when the City code takes precedence over CWS standards.



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Table 1. Mapped Stream Reaches within the King City Master Plan Study Area, their associated characteristics, and potential buffers.

SITE ID	STREAM LLID	AREA DRAINED (ACRES)	WIDTH (FT)	EPHEMERAL/ INTERMITTENT/ PERENNIAL	FISH PRESENCE MODELED	VEGETATED?	CORRIDOR CONDITION	>25% SLOPES	BUFFER (FT)
KCMP-1	Unknown	30+	1	Ephemeral?	No	No (sapling farm)	Degraded	No	0 to 15
KCMP-2a	17090010000509	280	3	Intermittent	Yes	Yes (minimal)	Marginal	No	50
KCMP-2b	17090010000509	280	5	Intermittent	Yes	Yes	Good	Yes	Slopes + 35
KCMP-3a	17090010018639	147	3	Intermittent	No	Yes (forested)	Good	Yes	Slopes + 35; 50
KCMP-3b	17090010018646	30	3	Ephemeral	No	Yes (forested)	Good	Yes	Slopes + 35
KCMP-4	17090010018649	70	3	Intermittent	No	Yes (forested)	Good	Yes	Slopes + 35; 50 feet
KCMP-5 (TRK-4)	17090010000507	325	8	Perennial	Yes	Yes	Good	Yes	Slopes + 35
KCMP-6a	17090010019010	>95	8	Intermittent	No	Yes	Good	Yes	Slopes + 35
KCMP-6b	17090010018645	~20	5	Intermittent	No	Yes	Good	Yes	Slopes + 35
KCMP-6c	17090010018643	~30	3	Intermittent	No	Yes	Good	Yes	Slopes + 35; 50
KCMP-6d	17090010018641	~10 to 100	2	Intermittent	No	Yes	Degraded	No	15
KCMP-7	N/A	<1	1	Ephemeral	No	Yes	Degraded	No	15
Tualatin R	17090010000036	400,000	125	Perennial	Yes	Yes	Good	Yes	125



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Table 2. Mapped Wetlands within the King City Master Plan Study Area, their associated characteristics, and potential buffers.

SITE ID	NWI SIZE	VEGETATED?	CORRIDOR CONDITION	>25% SLOPES	PROPOSED BUFFER (FT)
KCMP-W1	0.92	Yes	Marginal	No	50
KCMP-W2	0.21 ^a	Yes (crops)	Marginal	No	50
KCMP-W3	0.26	Yes	Good	No	50
KCMP-W4	N/A ^b	No	Degraded	No	50

^a This NWI wetland is contained within a wetland that is assumed to be much larger, of which the westernmost portion has been deemed a jurisdictional wetland by DSL.

^b This 1.86-acre pond is not identified in the NWI and could be deemed non-jurisdictional due to its status as an apparent irrigation pond. Further information on this pond will be required to determine its status under local, state, and federal criteria. It is listed here to be conservative.



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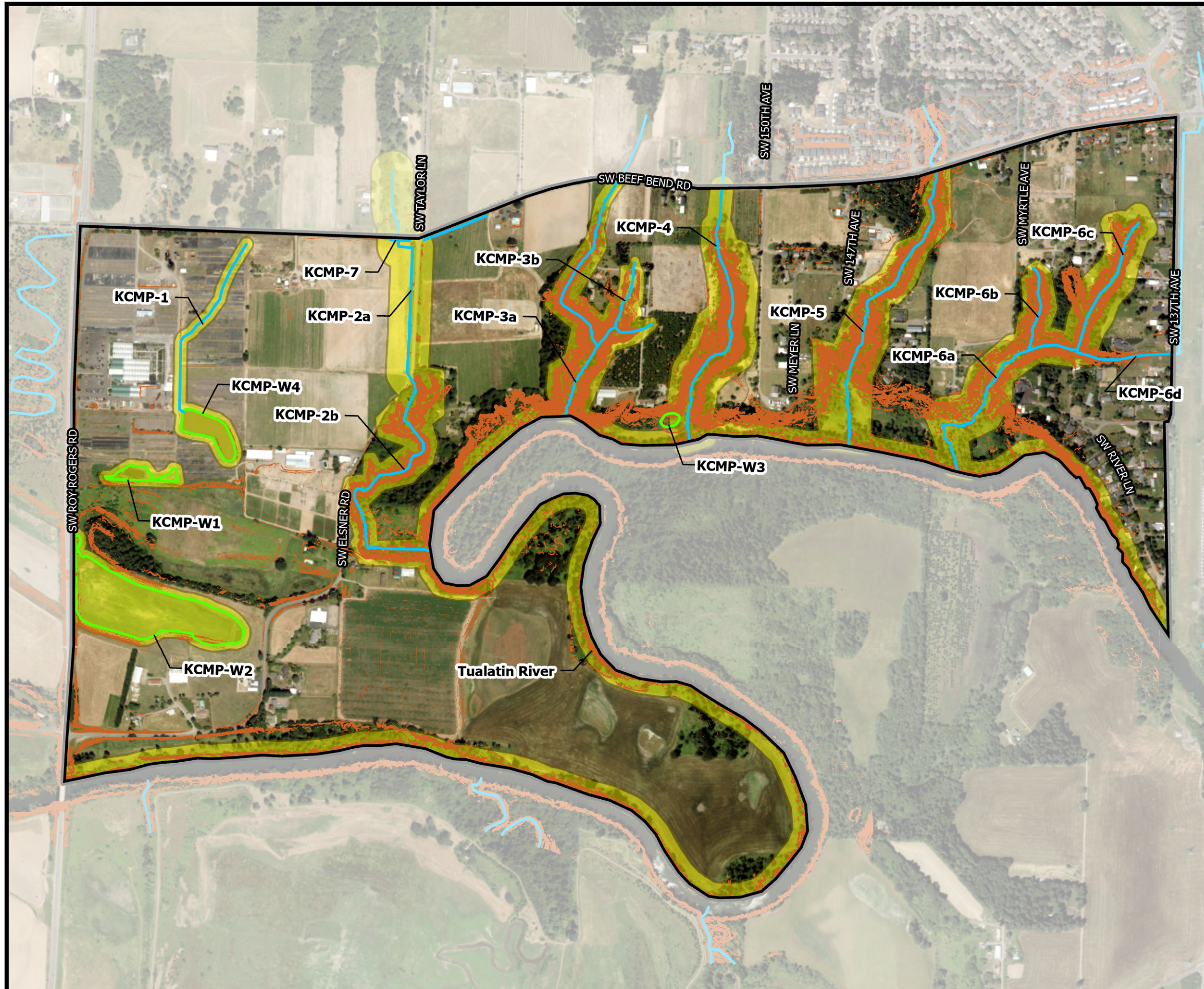
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Attachments/Enclosures: Figures

**Figure 1
Natural Resources Analysis Map**

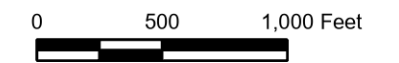
**King City
Beef Bend South
Master Plan**

**Estimated Sensitive Areas
and Protected Buffers**



Legend

- Study Area
- Project Stream
- Project Wetland
- Steep Slopes (>25%)
- Proposed Buffer Area
- Taxlot



Data Sources:
 Streets, Tax Lots: Metro RLIS 2021
 Hydrology: USGS NHD High Resolution 2021
 Wetlands: WWSP Delineation, USFWS NWI 2021



Information Current as of:
March 2021
 Printed on and Corrections as of:
March 2021