

APPENDIX H1
SHORELINE CHARACTERIZATION,
TOWN OF WILSON CREEK

The Town of Wilson Creek Shoreline Master Program Update Shoreline Inventory, Analysis, and Characterization Report

1 SHORELINE INVENTORY

Appendix H1 contains the Inventory, Analysis, and Characterization results for the Town of Wilson Creek (Town). This section describes the land use patterns of the Town, specifically detailing:

- Existing land use
- Planned land use based on the Town’s 2002 updated Comprehensive Plan
- Preferred use for shoreline areas based on the SMA
- Existing shoreline environment designations based on the Town’s current SMP, if one exists

Section 2 summarizes the land-capacity analysis results.

Section 3 summarizes the characterization of each shoreline reach within the Town of Wilson Creek. The following reaches are included:

- Upper Crab Creek (Reach 1)

1.1 Land Use Patterns

1.1.1 Existing Land Use

The Town of Wilson Creek and the Urban Growth Area (UGA) have about 97 acres in shoreline along Crab Creek and Wilson Creek. The Crab Creek shoreline area is privately owned along the southern edge of the Town limits. Wilson Creek runs through the Town and the UGA. Existing uses in the Town’s shoreline includes residential, commercial, and Agriculture based industrial. The shoreline also includes a pedestrian and bike trail.

Table 1
Shoreline Existing Land Use

Existing Land Use	Shoreline Area Acres (City)	% of Land Use (City)	Shoreline Area Acres (UGA)	% of Land Use (UGA)	% of Land Use (Total)

Existing Land Use	Shoreline Area Acres (City)	% of Land Use (City)	Shoreline Area Acres (UGA)	% of Land Use (UGA)	% of Land Use (Total)
Agricultural	4.21	6.2	0	0	4
Commercial	2.85	4.2	0	0	3
Recreational	0.60	0.9	0	0	1
Single-family residential	1.37	2.0	0	0	1
Transportation	5.74	8.4	0.15	0.5	6
Undeveloped	53.32	78.4	29.0	99.5	85
Total	68		29		100

1.1.2 Planned Land Use

The Town's Comprehensive Plan (plan) was originally adopted in 1994 and the latest revision was done in 2002. The plan guides the Town's long-term goals and provides guidance for future development. Key aspects of the Town's future vision are to maintain its desirable characteristics and promote desired changes. The plan's land use goal aims to "maintain and enhance the present pattern of land use through the establishment of clear and fair land use regulations." The plan's economic development goal promotes industrial development for economic diversification.

The land use/zoning types within the Town limits and UGA's shoreline are: industrial, ag-industrial, and airport development.

1.1.2.1 Agriculture

This use is suited for crop-agriculture, agriculture-related industries, and livestock.

1.1.2.2 Ag-Industrial

Industrial land use is concentrated around the railroad line. This includes agriculture-based industries such as grain elevators and heavy equipment storage. The purpose of the ag-industrial zone is to preserve areas for industrial uses that do not create compatibility issues with other uses.

1.2 SMA Use Preference

The SMA identifies water-oriented uses for shoreline as (173-26-020 WAC), “water-oriented use means a use that is water-dependent, water-related, or water-enjoyment, or a combination of such uses.” The SMP guidelines also require that non water-oriented uses be limited to areas where preferred uses are not appropriate or these uses contribute to the goals of the SMA [WAC 173-26-201(2)(d)].

Preferred uses for shoreline areas are listed in WAC 173-26-201(2)(d). The order of preference assigned to these uses is as follows:

- Protection and restoration of ecological function
- Water-dependent uses
- Water-related uses
- Other compatible water enjoyment uses
- Single-family residences

Most of Wilson Creek’s shoreline area had developed before a larger part of the Town was identified to be within the floodway area and, subsequently, within the shoreline jurisdiction. Therefore, many of the shoreline uses are not related to or are not influenced by the creeks. Typical water-oriented shoreline uses may not apply for the existing uses in Wilson Creek. However, a mix of industrial and agricultural uses would be consistent with the SMA preferred use.

1.3 Existing Shoreline Environment Designations

The Town of Wilson Creek does not have an existing SMP document.

2 LAND-CAPACITY ANALYSIS RESULTS

There are some vacant on the east and west ends of the city. However, no capacity is anticipated as the vacant land to the east has airport development land use. Ag-industrial land use could cause some SMA use conflict; however, most of the ag-industrial uses are near the railroad abutting portion of the shoreline. The airport area is away from the shoreline behind the existing railroad. Potential SMA use conflict in the shoreline is anticipated to be very limited.

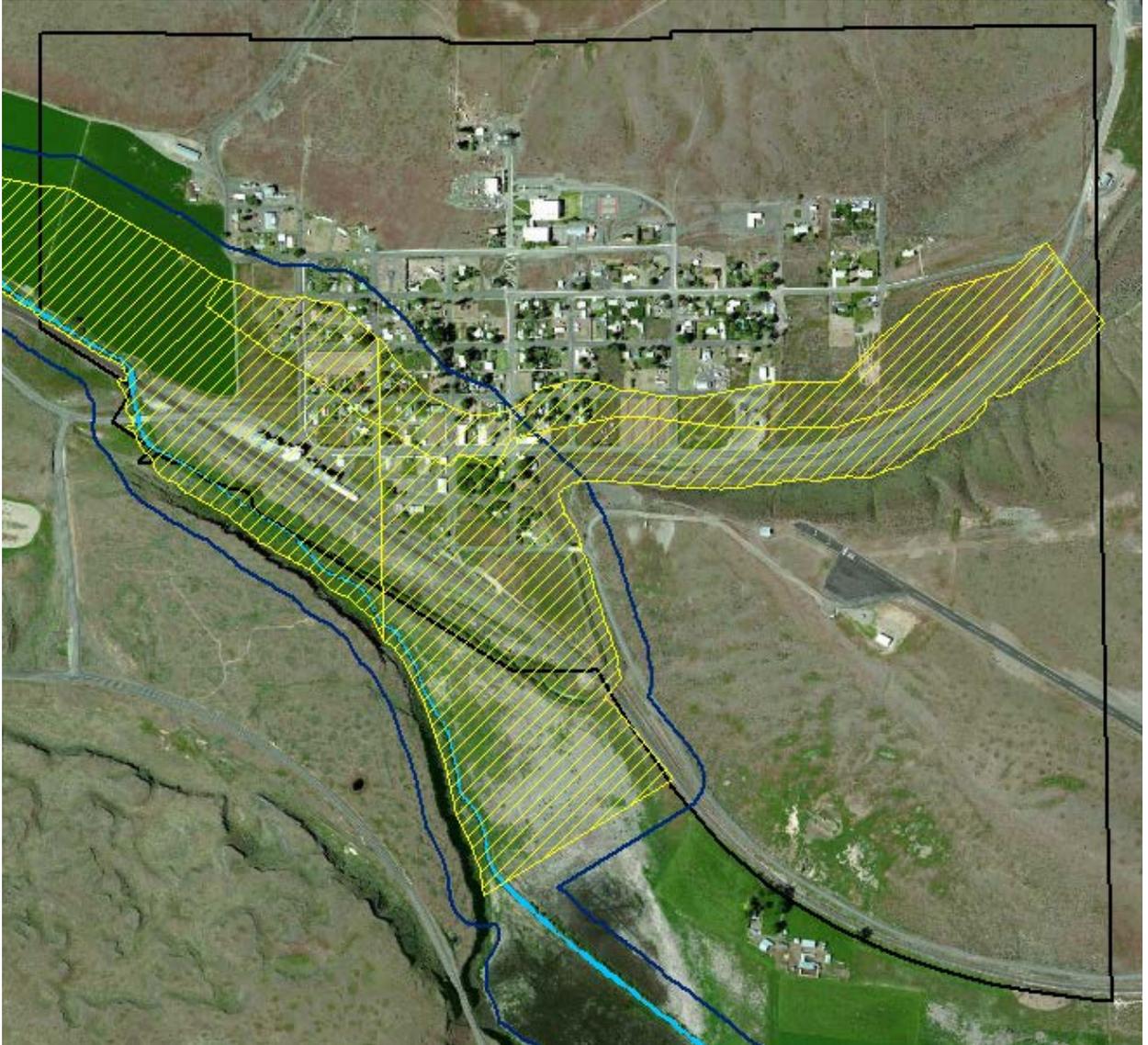
Table 2
Estimated Residential Land Capacity Summary

Reach	Net Developable Acre	Total Capacity in Residential Units
Upper Crab Creek	0	0

3 REACH CHARACTERIZATION TABLE

This section summarizes the characterization of Upper Crab Creek within the Town of Wilson Creek. The elements described include:

- Existing/physical descriptions
 - Reach location description
 - Reach length
 - Shoreline jurisdiction area
 - Ownership
 - Existing land cover
 - Geomorphic character
 - Flooding and geologic hazards
 - Land use and current SMP designations
 - Habitat types and presence of priority species and habitats
 - Existing public access
 - Vegetation characteristics
 - Major infrastructure
 - Water quality concerns
- Reach characterization and analysis
 - Water quantity
 - Water quality
 - Habitat
- Preliminary reach goals and environment designations
 - Protection goals
 - Restoration goals
 - Public access goals
- Identified development plans
 - Identified restoration measures
 - Identified public access improvements
 - Cumulative impact considerations

UPPER CRAB CREEK		TOWN OF WILSON CREEK
Reach 1/RM 38 to 37	Reach Length: 1.0 miles	
Shoreline Jurisdiction: 25.1 acres		
		
<p>Description: Upper Crab Creek and shorelands within Town of Wilson Creek, and floodway for Wilson and Crab Creeks. Blue line depicts preliminary shoreline jurisdiction.</p>		
<p>Subreaches (SR), see Figure 1: Not applicable</p>		
<p>PHYSICAL CHARACTERISTICS</p>		
<p>Ownership: The majority of this reach is owned by six private landowners (three inside UGA). The 0.6-mile stretch south of Railroad Street is owned by the Railroad.</p>		
<p>Existing Land Cover/Development: Mostly open space with an area of irrigated agriculture near RM 37.</p>		

UPPER CRAB CREEK	TOWN OF WILSON CREEK
<p>Land Use/Current SMP: Land use designation/Zoning: Ag-Industrial, 18.7 acres; Agricultural, 5.8 acres; Airport Development, .6 acres Current SMP environment designation: Not applicable</p>	
<p>Major Infrastructure: Railroad, highway, and significant portion of town development</p>	
<p>Geomorphic Character: The channel is located within an alluvial valley flanked by bedrock to the southwest and outburst flood gravels in to the southeast. The channel planform is straight to slightly sinuous and primarily located along the toe of the bedrock valley wall. Downstream of the confluence with Wilson Creek (RM 37.5), the width of the floodplain is confined by the railroad grade.</p> <p>Hardened banks: None identified</p> <p>Channel Migration Zone (CMZ) Characterization: Upper Crab Creek flows through an alluvial and bedrock valley through much of its extent, and the CMZ is limited by the railroad and State Highway 28 alignment along both the north and south side of the channel. Upstream of Wilson Creek, the CMZ widens as the valley widens and the stream flows through large ponded features. The thalweg appears to be confined to a distinct canal throughout the sub reach with flows overtopping and inundating wider floodplain areas. In and below Wilson Creek the highway and railroad make numerous crossings of the channel. The railroad is aligned immediately adjacent to the left bank for a large segment of the sub reach, limiting the CMZ along the left bank. Bedrock basalt along the southern valley margin defines the CMZ within and downstream of Wilson Creek.</p>	
<p>Flooding and Geological Hazards: A significant portion of the Crab Creek and Wilson Creek floodway covers the Town of Wilson Creek.</p>	
<p>REACH CHARACTERIZATION AND ANALYSIS</p>	
<p>Water Quantity and Sediment: The contributing drainage area to the reach is relatively large, approximately 1,200 square miles. This reach is not regulated; however, there are some irrigation diversions and increased groundwater well withdrawals upstream resulting in very low to non-existent flows during most of the year. Fine sediment inputs are likely transported to the stream during severe rain events.</p>	
<p>Water Quality: There are 303d listings for pH & dissolved oxygen. Low summer flows combined with high summer temperatures may contribute to water quality issues.</p>	
<p>Habitat Characteristics and PHS Species Presence:</p> <p>Riparian areas mostly consist of grasses (Great Basin rye) and shrubs and small trees including Nootka rose (<i>Rosa nutkana</i>) and willow species (<i>Salix sp.</i>). The vegetated areas reach widths of approximately 150 feet with larger vegetation areas upstream of the Upper Crab and Wilson Creek confluence. On the north side, the vegetation is constrained by railroad development; to the south, a steep slope constrains this habitat.</p> <p>When flowing the creek may support brown and rainbow trout, bass, and whitefish. Waterfowl concentrations are found in this area. There are no rare plants identified in the area.</p>	
<p>ECOLOGICAL FUNCTIONS ANALYSIS (BY SUBREACH)</p>	

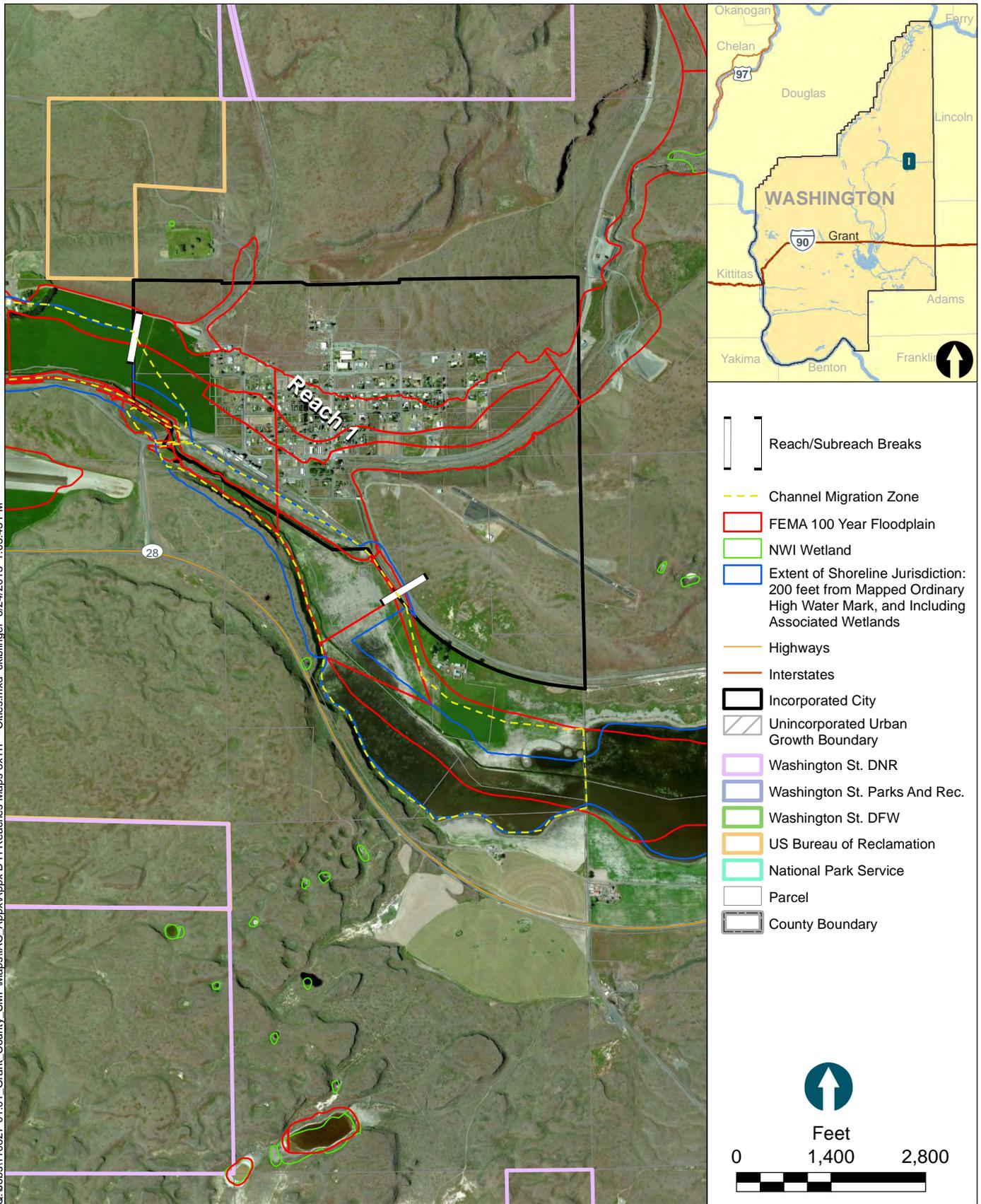
UPPER CRAB CREEK	TOWN OF WILSON CREEK
<p>Level of Existing Function: Partially functioning</p> <p>Stressors: Irrigation withdrawals upstream affecting flows, incised channel, railroad development, artificial fill within riparian areas</p> <p>Potential Stressors: Further irrigation activities and their impacts</p> <p>Potential Restoration Opportunities: Substrate enhancement to address sedimentation issues caused by periodic flooding and ice dams</p> <p>Potential Protection Opportunities: Stormwater controls consistent with Eastern Washington Stormwater manual.</p>	
<p>Preliminary Shoreline Environment Designation Considerations: Location specific designation (Wilson Creek – railroad) to address unique issues</p>	
PUBLIC ACCESS	
<p>Existing Public Access: City of Wilson Creek's Crab Creek shoreline area is privately owned on the western end of the city limits. The remaining Crab Creek shoreline is further south of the railroad. Wilson Creek runs through the city and the UGA. Wilson Creek Town Park abuts the shoreline on 4th Street N. The area along Wilson Creek (not an SMP shoreline jurisdiction waterbody) has a 4,325-foot-long pedestrian and bike trail along the shoreline.</p>	
<p>Existing Public Access Goals: City of Wilson Creek's Parks and Recreation goals aim to "provide park facilities and recreational opportunities. It also aims to enhance and preserve open space areas as the Town seeks to preserve, acquire and enhance open space areas" (Wilson Creek Planning Commission 2002).</p>	
<p>Identified Public Access Improvements: No public access improvements have been identified for this management area.</p>	
CUMULATIVE IMPACT CONSIDERATIONS	
<p>Cumulative Impact Considerations:</p> <p>The shoreline is largely separate from the town by the existing railroad and associated land. No additional development is planned in this area directly adjacent to the Creek (personal communication with Mayor Kathy Bohnet, May 2012). Therefore, no additional effects on riparian vegetation, stream water quality, or terrestrial habitat conditions are expected. From a watershed perspective, within the floodway, additional development and redevelopment will need to be pursued consistent with flood protection regulations.</p>	

4 REFERENCES

Wilson Creek (Town of Wilson Creek), 2002. *Comprehensive Plan*. Prepared by Wilson Creek Planning Commission, Highland Associates, Eads Consulting Services, and L. Barlow. Wilson Creek, Washington.

FIGURES

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Appendix H, Figure 1
Upper Crab Creek - Wilson Creek
Shoreline Inventory, Analysis and Characterization Report
Grant County Shoreline Master Program Update