

APPENDIX D
SHORELINE CHARACTERIZATION,
CITY OF ELECTRIC CITY

The City of Electric City Shoreline Master Program Update Shoreline Inventory, Analysis, and Characterization Report

1 SHORELINE INVENTORY

Appendix D contains the Inventory, Analysis, and Characterization results for the City of Electric City (City). This section describes the land use patterns of the City, specifically detailing:

- Existing land use
- Planned land use based on the City's 2006 Comprehensive Plan
- Preferred use for shoreline areas based on the Shoreline Management Act (SMA)
- Existing shoreline environment designations based on the City's current Shoreline Master Plan (SMP), if one exists

Section 2 summarizes the land capacity analysis results.

Section 3 summarizes the characterization of each shoreline reach within Electric City. The following reaches are included:

- Banks and Osborn Bay Lakes

1.1 Land Use Patterns

1.1.1 Existing Land Use

Electric City and the Urban Growth Area (UGA) have about 163 acres of shoreline land. Most of the shoreline is owned by federal, state, and local governments. Public ownership includes the following:

- U.S. Bureau of Reclamation
- Washington State Department of Natural Resources (DNR)

Existing land use within the shoreline includes commercial, recreational, single-family residential, and transportation. There is also undeveloped land within the City limits and the UGA.

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)
Commercial	1.37	2.7	21	19.9	14
Recreational	28.35	54.7	15.72	14.9	27
Single-family residential	0.88	1.7	4.37	4.2	3
Transportation	9.42	18.2	1.4	1.3	7
Undeveloped	11.77	22.7	62.78	59.6	49
Total	52		111		100

1.1.2 Planned Land Use

Electric City's Comprehensive Plan (plan) was adopted in 2006. The plan provides guidance for the community's future growth and also provides a legally recognized framework for the City's land use decisions. The plan's land uses goals aim to conserve and enhance the City's important natural, cultural and scientific resources. Its open space land use policy aims to protect natural shorelines and stream corridors. The plan's economic development aims to maximize the positive economic impact of tourism and recreational development. Its policies are to encourage visitor opportunities, and support scenic open space, cultural and heritage resources and are attractive for local residents and visitors.

The predominant future land use types within the City limits and UGA shoreline are: tourist commercial, public use, public use UGA, and residential medium density – UGA. Areas within the UGA would maintain the County's planned land use designations and purposes (Appendix D) until annexed to the City. All future land uses within the City and UGA shoreline jurisdiction and their general purpose and intent are discussed below.

1.1.2.1 Tourist Commercial

This land use designation provides amenities for tourism related business. This designation intends to provide existing and future areas for motels, recreational vehicle parks, resorts and other tourism related businesses and ensure their compatibility with residential uses at the

same time. This land use also allows tourist oriented retail, eating and drinking establishments, antique shops, and other neighborhood-scale retails.

1.1.2.2 Public Use

The purpose of the public use land use designation is to identify land which is under public ownership, management, and use. Public lands comprised primarily of the City-owned properties.

1.1.2.3 Residential Medium Density – UGA

This designation falls within the UGA boundary. The City’s residential medium density designation would apply once the area is annexed to the City. The purpose of the City’s residential medium density designation is to provide medium lot single-family residential development. This designation allows density from four to eight dwelling units per acre.

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

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)].

Based on existing land use data, residential and several other uses meet the definitions of water-oriented uses such as:

- Open space
- Recreational
- Commercial

1.3 Existing Shoreline Environment Designations

The City of Electric City does not have an existing SMP document.

2 LAND CAPACITY ANALYSIS RESULTS

Undeveloped land in this reach is located on the north bank of Osborn Bay, and is under DNR ownership. This area has mainly commercial development capacity under the City's tourist commercial land use designation. Tourist commercial land use allows multiple retail and commercial uses. SMA preferred uses could be maintained by placing water-oriented retail and commercial uses within the shoreline area.

Table 2
Estimated Commercial Land Capacity Summary

Reach	Net Developable Acres	Total Building Area Capacity in Square Feet (80% lot coverage)
Banks Lake – Electric City and UGA	30	840,656

3 REACH CHARACTERIZATION TABLE

This section summarizes the characterization of Banks and Osborn Bay lakes within the City of Electric City. 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

BANKS AND OSBORN BAY LAKES		ELECTRIC CITY
Banks Lake – 26,478 acres Osborn Bay Lake – 321 acres	Shoreline Jurisdiction: 163 acres	
		
Source: https://fortress.wa.gov/ecy/coastalatlantools/UICoastalAtlas/Tools/ShorePhotos.aspx		
<p>Description: The shoreline of Banks Lake within Electric City is located near the northeast end of the lake (portion viewed in above photo looking south).</p>		
<p>Subreaches (SR), see Figure 1:</p> <p>SR A: Begins at the southwest end of Osborn Bay Lake and extends approximately 16,500 feet around the Bay</p> <p>SR B: Extends approximately 4,500 feet around the Sun Lands Resort area to Banks Lake</p> <p>SR C: Extends approximately 6,500 feet to the northeast on Banks Lake</p> <p>SR D: Extends approximately 4,000 feet to the east on Banks Lake</p>		
<p>PHYSICAL CHARACTERISTICS</p>		
<p>Ownership: Federal (USBR) and DNR with some private parcels at the north end of the present incorporated city.</p>		
<p>Existing Land Cover/Development: Open space, residential developments, and recreational facilities. The shoreline contains several docks, though only a few are permitted; there are also a few public access points.</p>		
<p>Land Use/Current SMP:</p> <p>Land use designation:</p> <ul style="list-style-type: none"> • Incorporated: Public use, 103 acres; right of way, 7 acres; tourist commercial, 38 acres; residential medium density, 15 acres • UGA: None 		

BANKS AND OSBORN BAY LAKES	ELECTRIC CITY
Current SMP environment designation: Not applicable	
Major Infrastructure: Coulee Playland Resort (campground), public water access, dam, and CBP facilities nearby, fish pens, State Highway 155 nearby, and Sunbanks Resort	
Geomorphic Character: Banks Lake is a reservoir impounded by the Dry Falls Dam at the southwest end of the lake. The pool elevation is regulated by the dam and fluctuates seasonally. Osborn Bay Lake is a portion of Banks Lake that is cut off from the main water body by the highway. The banks are primarily bedrock mantled by loess. Hardened banks: Private docks and local infrastructure such as boat launches and boat slips along Banks Lake.	
Flooding and Geological Hazards: The pool levels of the lakes are regulated by the dam and not at risk of flooding. Shoreland soils are categorized as moderate and severe susceptibility to erosion and low liquefaction susceptibility. Steep slope hazards exist along portions of the north shore of Osborn Bay Lake.	
REACH CHARACTERIZATION AND ANALYSIS	
Water Quantity and Sediment: Water quantity is dependent on dam and pumping operations related to the Columbia Basin Project (CBP). The pool level of Banks Lake fluctuates approximately 5 feet; however, public input indicates that this range may increase to 8 feet based on current USBR proposals. Sediment sources to Banks Lake include lake shoreline erosion due to wind and wake driven currents exacerbated by lack of emergent wetland and riparian habitat. The Osborn Bay Lake shoreline is fairly protected by the causeway. Major soil and sediment erosion occurs near the Coulee Playland Resort area. There may be a wave eddy effect that is created by water pumping inputs at the northeast end of Banks Lake, which are redirected by a bathymetric ridge towards this portion of the shoreline.	
Water Quality: 303d listed for PCB and 2,3,7,8-TCDD; 305b listed for waters impaired by an invasive exotic species – Eurasian water-milfoil (<i>Myriophyllum spicatum</i>). Impervious areas, including the nearby campground and public access points may contribute stormwater runoff.	
Habitat Characteristics and PHS Species Presence by Subreach (SR): The lakeshore riparian zone is limited due to the climate and exacerbated by CBP operations. Public input suggests that the lakeshore once supported willow groves. Where riparian areas exist today, they consist of scattered trees immediately adjacent to the water. There are no rare plants identified here. Upland habitat includes shrub steppe with small patches of grassland along the city’s north shore. Processes are generally intact on undeveloped shorelines (SR A and C). Only a relatively small proportion (SR D) of the shoreline contains build-out directly adjacent to the water. The banks of Electric City consist of open-water lake habitat, supporting lake fish species such as burbot, large- and smallmouth bass, rainbow trout, kokanee, and walleye. Bald eagles are present along some shorelines and on nearby hills. Waterfowl concentrations (Canada geese, dabbling and diving ducks, Western grebes, coots, and migrant common loons) and rare birds are present in several areas. Cliff habitat and adjacent uplands support mule deer herds.	

BANKS AND OSBORN BAY LAKES	ELECTRIC CITY
ECOLOGICAL FUNCTIONS ANALYSIS (BY SUBREACH)	
SUBREACH A	
<p>Level of Existing Function: Partially functioning</p> <p>Stressors: Recreation area with boat ramp, highway crossing, campsite roads, and golf course; soil erosion associated with dirt roads; steeper slopes on northeast side of Osborn constrain future development and recreation infrastructure</p> <p>Potential Restoration Opportunities: Concentrate and better manage public access points, especially roads in order to limit impacts.</p> <p>Potential Protection Opportunities: Protect existing functions. Stormwater controls consistent with Eastern Washington Stormwater manual.</p>	
SUBREACH B	
<p>Level of Existing Function: Impaired</p> <p>Stressors: Resort development with potential redevelopment pressure, high intensity recreation, roads, and landscaping with fertilizer and irrigation</p> <p>Potential Restoration Opportunities: Incorporate aquatic habitat complexity (substrate, organic material, structural elements [e.g., large woody debris], and aquatic and riparian vegetation)</p> <p>Potential Protection Opportunities: Protect steep slope areas from runoff and sedimentation. Stormwater controls consistent with Eastern Washington Stormwater manual.</p>	
SUBREACH C	
<p>Level of Existing Function: Functioning</p> <p>Stressors: Rock terrace, limited function and riparian vegetation based on geomorphic/geologic template and hydrologic controls; some foot trails impacting shrub steppe vegetation; public input suggests that landowners are mowing part of USBR public land to provide adequate fire breaks for adjacent homes</p> <p>Potential Restoration Opportunities: Manage shrub steppe consistent with WDFW Management Recommendations for Shrub Steppe Priority Habitat; evaluate transition areas between development and open space to ensure health and safety objectives are maintained.</p> <p>Potential Protection Opportunities: BMPs to protect from further degradation; evaluate measures to limit recreation impacts on shrub steppe habitat.</p>	
SUBREACH D	
<p>Level of Existing Function: Impaired</p> <p>Stressors: Development at shoreline, armoring at top of bank but wind/wave erosion lower on bank due to reservoir operations, overwater structures, and boat ramp</p> <p>Potential Restoration Opportunities: Identify causes for head cutting and evaluate whether corrective actions are feasible, Evaluate opportunities for soft shoreline/riparian stabilization techniques. If public access is</p>	

BANKS AND OSBORN BAY LAKES	ELECTRIC CITY
<p>redeveloped, consider opportunities to increase aquatic habitat complexity (substrate, organic material, structural elements [e.g., large woody debris], and aquatic and riparian vegetation).</p> <p>Potential Protection Opportunities: Stormwater controls consistent with Eastern Washington Stormwater Manual.</p>	
<p>Preliminary Shoreline Environment Designation Considerations: Urban conservancy except for core downtown shoreline area between Coulee City Playland and beginning of public use-designated land, which would be high intensity.</p>	
PUBLIC ACCESS	
<p>Existing Public Access :</p> <p>Almost all of Electric City SMP shoreline jurisdiction is under public ownership, with the majority of this land in recreational use. The Bureau of Reclamation owns the major portion of the shoreline. WDNR also owns shoreline on the northern bank of the Osborn Bay Lake. Almost the entire shoreline has public access by roads and trails. This management area has multiple formal recreational facilities leased to and operated by private parties. Sunbank Resort on the northwest bank of the Osborn Bay Lake is a waterfront recreational resort that includes boat moorage and launch, campgrounds, RV facilities, cabins, banquets, recreational rental facilities and parking. On the northeast, Coulee Playland Resort also has boat moorage and launch, campgrounds and RV facilities. The southern bank of Osborn Bay Lake also has a golf course, boat launch, and parking area. Public use of open space areas within shoreline include the following:</p> <ul style="list-style-type: none"> • Coulee Playland Resort – 7.6 acres • USBR owned, wildlife refuge managed – 87.7 acres • WDNR owned land (includes Sunbank Resort and undeveloped area along Osborn Bay Lake) – 46 acres <p>Specific facilities in this management area include:</p> <ul style="list-style-type: none"> • Boat Ramp – improved – 3 • Boat Ramp – unimproved – 1 • Campground – 4 • Private docks – 4 	
<p>Existing Public Access Goals:</p> <p>The City of Electric City's Comprehensive Plan land use goal states that "the City should identify and protect open space corridors within and between urban growth areas. These corridors should include trails and other lands useful for recreation, while emphasizing wildlife habitat, and connection of critical areas, where feasible." The land use goal also aims to "promote coordination among the County, State Parks and other agencies, cities, Grant County PUD, BoR, and other appropriate jurisdictions in order to protect linked greenbelts, parks, and open spaces" (City of Electric City 2006).</p> <p>The USBR's Banks Lake Resource Management Plan (USBR 2001) indicates multiple recreational resource management goals as follows:</p> <ul style="list-style-type: none"> • Provide a diverse range of recreation opportunities and services consistent with public use trends 	

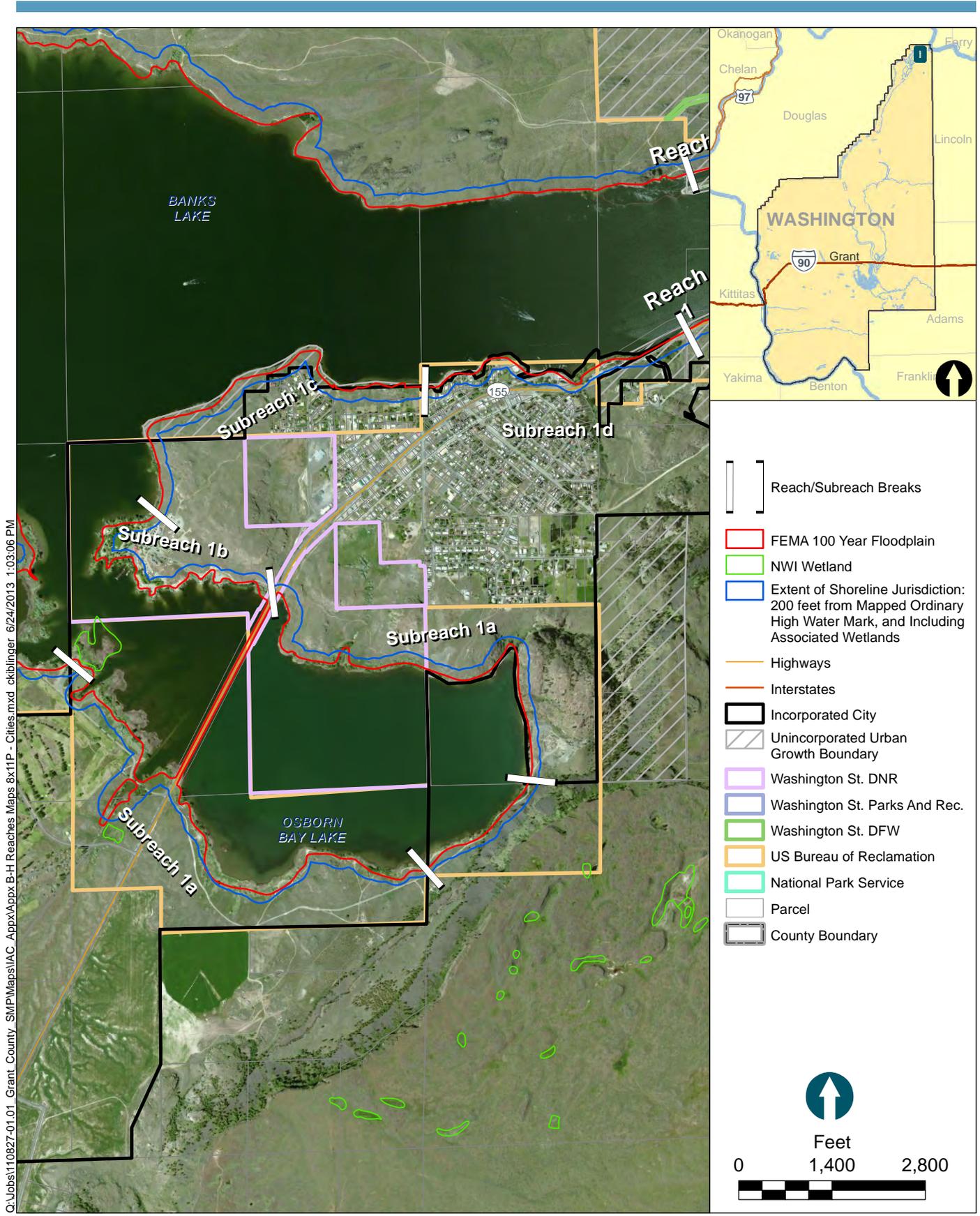
BANKS AND OSBORN BAY LAKES	ELECTRIC CITY
<ul style="list-style-type: none"> • Protect and enhance recreational importance and visitor experience • Ensure compatibility between motor vehicle traffic and natural/cultural resource protection, land use compatibility/suitability conflicts, and public safety concerns • Limit or eliminate motorized travel or recreation activity on soils sensitive to compaction, have a high soil erosion potential rating, and/or exhibit existing accelerated erosion problems (USBR 2001). 	
<p>Identified Public Access Improvements: No additional public access improvements have been identified for this management area. This area appears to have adequate public access opportunities.</p>	
<p>CUMULATIVE IMPACTS ANALYSIS</p>	
<p>Watershed level: The SMP has limited influence on the Columbia Basin Project operations.</p> <p>Reach level:</p> <ul style="list-style-type: none"> • Impervious surfaces leading to habitat loss and runoff rather than infiltration • Vegetation alterations removing organic material and exacerbating soil erosion • Water quality contamination from runoff from nearby development • Structural effects on habitat including fragmentation by roads and overwater structures 	

4 REFERENCES

Electric City (City of Electric City), 2006. *Comprehensive Plan*.

USBR (U.S. Bureau of Reclamation), 2001. *Banks Lake Resource Management Plan*. Grant County, Washington. July 2001.

FIGURES



Appendix D, Figure 1
 Banks and Osborn Bay Lakes - Electric City
 Shoreline Inventory, Analysis and Characterization Report
 Grant County Shoreline Master Program Update