

**WALLA WALLA COUNTY  
GRANT NO. G1400495**

**CUMULATIVE IMPACTS ANALYSIS**

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**FOR THE WALLA WALLA COUNTY SHORELINE MASTER PROGRAM**

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# CUMULATIVE IMPACTS ANALYSIS

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## WALLA WALLA COUNTY SHORELINE MASTER PROGRAM

# 1 INTRODUCTION

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## 1.1 Background and Purpose

This Cumulative Impacts Analysis (CIA) is a required element of Walla Walla County's Shoreline Master Program (SMP) update process. The State Master Program Approval/Amendment Procedures and Master Program Guidelines (SMP Guidelines; WAC 173-26-186(8)(d)) state that, "To ensure no net loss of ecological functions and protection of other shoreline functions and/or uses, master programs shall contain policies, programs, and regulations that address adverse cumulative impacts and fairly allocate the burden of addressing cumulative impacts." The CIA is intended to demonstrate that an SMP will not result in degradation of shoreline ecological functions over a 20-year planning horizon. This CIA can help Walla Walla County (County) make adjustments where appropriate in its proposed SMP if there are potential gaps between maintaining and degrading ecological functions.

In accordance with the SMP Guidelines, this CIA addresses the following:

- i. "current circumstances affecting the shoreline and relevant natural processes [Chapter 2 below and Final Shoreline Analysis Report for Shorelines in Walla Walla County and the Cities of Walla Walla, Prescott and Waitsburg (The Watershed Company, BERK and the Walla Walla Basin Watershed Council 2014)];
- ii. reasonably foreseeable future development and use of the shoreline [Chapter 3 below and Shoreline Analysis Report]; and
- iii. beneficial effects of any established regulatory programs under other local, state, and federal laws." [Chapter 4 below]

The CIA assesses the policies and regulations in the draft SMP to determine whether no net loss of ecological function will be achieved as new development occurs. The baseline against which changes in ecological function are measured

is the current shoreline conditions documented in the Final Shoreline Analysis Report for Shorelines in Walla Walla County and the Cities of Walla Walla, Prescott and Waitsburg (Shoreline Analysis Report, The Watershed Company, BERK, and the Walla Walla Basin Watershed Council 2014). For those projects or activities that result in degradation of ecological functions, the proposed SMP requires mitigation which must return the resultant ecological function back to the baseline. This is illustrated in Figure 1-1.

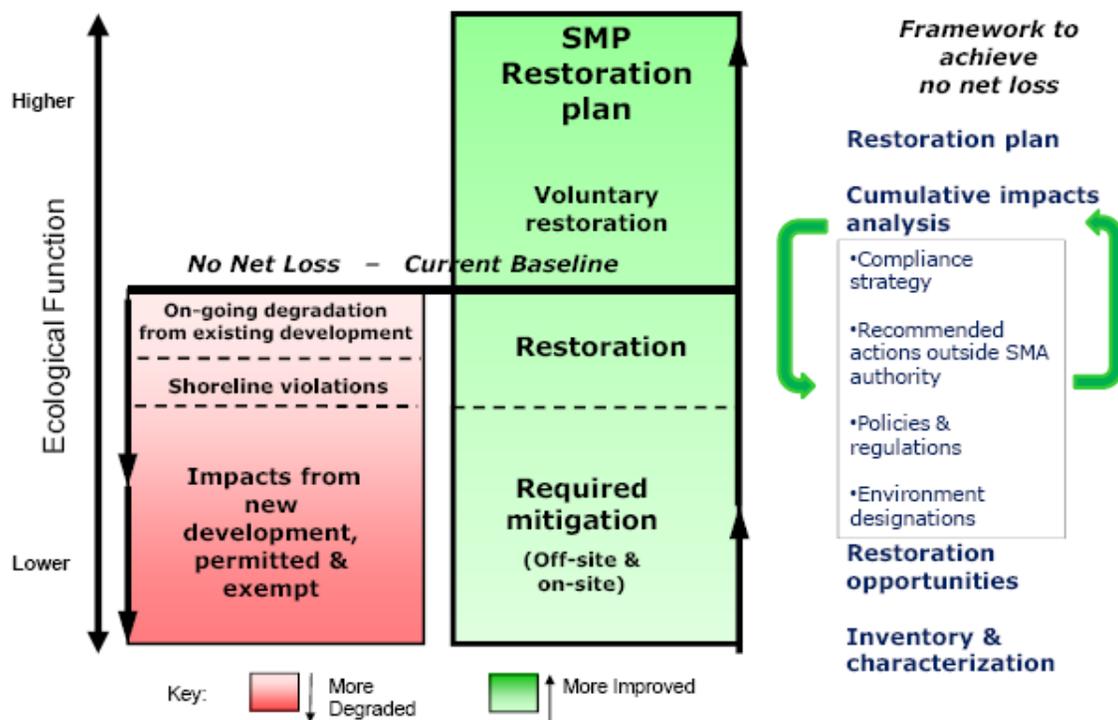


Figure 1-1. Framework for achieving no net loss of shoreline ecological functions (Source: Department of Ecology)

Despite SMP regulations that require avoidance, minimization, and mitigation for any unavoidable losses of function, some uses and developments cannot be fully mitigated. This could occur when mitigation is out-of-kind, meaning that it offsets a loss of function through an approach that is not directly comparable to the proposed impact. A loss of functions may also occur when impacts are sufficiently minor on an individual level, such that mitigation is not required, but are cumulatively significant. Unregulated activities (such as operation and maintenance of existing legal developments) may also degrade baseline conditions. Additionally, the Walla Walla County SMP applies only to activities in shoreline jurisdiction, yet activities upland of shoreline jurisdiction or upstream in the watershed may have offsite impacts on shoreline functions.

Together, these different project impacts may result in cumulative, incremental, and unavoidable degradation of the overall baseline condition unless additional restoration of ecological function is undertaken. Accordingly, the Shoreline Restoration Plan is intended to be a source of ecological improvements implemented voluntarily that may help bridge a gap between minor cumulative, incremental, and unavoidable damages and no net loss of shoreline ecological functions.

## 1.2 Approach

This CIA was prepared consistent with direction provided in the SMP Guidelines as described above. Existing conditions were first evaluated using the information, both textual and graphic, developed and presented in the Shoreline Analysis Report. Likely development identified in the Shoreline Analysis Report was addressed further to understand the extent, nature, and general location of potential impacts.

The effects of likely development were then evaluated in the context of SMP provisions, as well as other related plans, programs, and regulations. For the purpose of evaluating impacts, areas with a likelihood of high densities of new development or redevelopment were evaluated in greatest detail. Cumulative impacts were analyzed quantitatively where possible. A qualitative approach was used where specific details regarding redevelopment likelihood or potential were not available at a level that could be assessed quantitatively or the analysis would be unnecessarily complex to reach a conclusion that could be derived more simply.

While some documents including the initial Analysis Report and Shoreline Restoration Plan were conducted regionally, the County and the cities of Walla Walla, Prescott and Waitsburg will each be developing separate proposed SMPs and separate CIAs are being prepared for each. The discussion in this CIA pertains only to unincorporated Walla Walla County, including the Attalia Industrial Urban Growth Area (UGA) and Burbank UGA along the Columbia River, as well as the City of Prescott, City of Waitsburg and City of Walla Walla UGAs.

## **2 SUMMARY OF EXISTING CONDITIONS**

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Walla Walla County's shoreline jurisdiction encompasses approximately 225 miles of river shoreline, including the Columbia and Snake Rivers, the Walla Walla and Touchet Rivers, Mill Creek, and lower Yellowhawk Creek. Shoreline jurisdiction also includes the shoreline of Bennington Lake. The total acreage of upland shorelands regulated by the Walla Walla County SMP is 18.9 square miles, which, in accordance with state law, includes lands within 200 feet of the ordinary high water mark (OHWM) of the above listed shorelines, as well as floodways, floodplain areas within 200 feet of a mapped floodway, and associated wetlands.

The following summary of existing baseline conditions in shoreline jurisdiction is based on the final Shoreline Analysis Report. More detailed information on specific shoreline areas is provided in the full report.

### **2.1 Walla Walla WRIA (32)**

The majority of Walla Walla County is located within Water Resource Inventory Area (WRIA) 32, the Walla Walla watershed. The Walla Walla River originates in the Blue Mountains in Oregon at an elevation of approximately 6,250 feet. Major tributaries to the Walla Walla River within Walla Walla County include the Touchet River and Mill Creek, including Yellowhawk Creek, which is a distributary braid of Mill Creek. The Touchet River drains the northern portion of the Walla Walla watershed. Mill Creek drains the majority of the southern portion of the watershed within Walla Walla County.

Precipitation is concentrated in the winter months, and varies depending on location in the watershed. Most flooding results from rain-on-snow events in the late winter and early spring. Many of the streams that are not fed by snowmelt dry up in the summer months.

The majority of the Walla Walla watershed consists of steppe or shrub-steppe vegetation. Common trees and shrubs in riparian areas of the Walla Walla watershed include cottonwood, alder, willow, and red osier dogwood (Snake River Salmon Recovery Board 2011). Riparian vegetation is usually restricted to narrow strips along rivers and streams. In the recent past the Conservation Reserve Enchantment Program (CREP) has led to native tree and shrub plantings, including some coniferous species, along many stream corridors.

Uplands and foothills are dominated by dryland agriculture, with areas of intensive irrigated croplands adjacent to waterways. The Blue Mountains plateau and headwaters regions is predominantly dense conifer forests interspersed with steep grasslands sloping down to headwater streams.

### 2.1.1 Walla Walla River

#### *Environmental*

The Walla Walla River flows into Walla Walla County from Oregon just south of College Place, then flows east until it joins the Columbia north of the Wallula Gap. The Shoreline Analysis Report documented moderate to high shoreline functions throughout all the reaches in the county due to largely unaltered banks, floodway and floodplain connectivity, riparian vegetation and channel complexity.

Mapped floodplain ranges from 83% to 98% of each reach. Floodway ranging from 37% to 75% of the reach is mapped in Reach 3 (near the Touchet confluence) and Reaches 5, 6 and 7 from just east of Lowden to the State line. Channel migration zone (CMZ) data is not available for Walla Walla County; therefore, for the Analysis Report, the 100 year floodplain was used as a proxy for the CMZ except where areas are separated from the channel by a legally existing artificial structure. Based on this methodology, and the extensive floodplain present, much of the Walla Walla River's shoreline jurisdiction is within the channel migration zone.

The width of intact riparian vegetation varies greatly from just a few feet in places to over 300 feet in others. Overall, moderate vegetation function is present. Riparian forested and scrub-shrub vegetation is present along the shoreline in almost all places and provides filtration and stabilization functions. The shoreline also includes several areas of forested and scrub-shrub wetlands. Summer steelhead and Spring Chinook are documented throughout all reaches, as well as bull trout in some areas (WDFW Salmonscape 2014).

Highest shoreline functions are found in the Smith's Harbor reach from the confluence with the Columbia River to just north of Game Depot Road. This reach is part of the McNary National Wildlife Refuge. The mouth of the river and its slow-moving delta on the Columbia River provide extensive wetland and backwater habitat. Reaches further upstream of the Smith's Harbor reach are more impacted by rural-density residential development and agricultural use.

However, stream banks and the immediate shoreline are generally well vegetated throughout the County. Little armoring is present and the channel has many meanders with large areas of wetland in all reaches. One diversion dam, Burlingame Dam, is present between McDonald Road and Detour Road (Image 2-1).

Agricultural uses are the primary modification along the lower reaches of the Walla Walla River (river mouth to Touchet River). Agricultural land use

practices provide a source of fine sediments to the river. Reduced stream channel complexity and floodplain function caused by channel straightening, incision, and loss of riparian forests have led to a reduction in habitat diversity and key habitats.



Image 2-1. Burlingame Dam (source: Google Earth)

Stream flow has been improving through better coordination efforts among state planners and irrigators, as well as irrigation efficiency and aquifer recharge; however, it remains a factor limiting available habitat and stream temperature in the lower reaches. Upstream of the Touchet River, encroachment on the floodplain caused by rural residential development continues to threaten floodplain and riparian function. Burlingame Dam presents a fish passage obstruction in the mainstem for Spring Chinook and summer steelhead (WWWPU & WWBWC 2004).

A detailed analysis and functional scoring by reach on the Walla Walla River can be found in Table 5-7 of the Shoreline Analysis Report.

### ***Land Use***

Based on Walla Walla County Assessor data for parcels completely or partially located within shoreline jurisdiction, the most prevalent land use along the Walla Walla River shoreline is resource production and extraction, primarily in the form of agriculture. The category accounts for approximately 86% of the shoreline jurisdiction and occupies a substantial percentage of the land along the entire length of the river. The next largest land use category is government-owned land, which accounts for only 7% of the shoreline jurisdiction. This land

use category is near the mouth of the river at Smith's Harbor and consists mostly of land that is part of the McNary Wildlife Refuge. Rural residential uses account for approximately 4% of the shoreline jurisdiction and are concentrated in the area upstream of the confluence with the Touchet River. Other use categories account for very small (less than 1% each) proportions of the overall shoreline jurisdiction.

Water-dependent uses on the Walla Walla River consist of a boat launch facility at Smith Harbor. Water-related uses include irrigation pumping and diversion structures, and water-enjoyment uses include parks, a boat launch, and trails.

Transportation infrastructure in the Walla Walla River shoreline area includes U.S Highway 12, SR 125, and a variety of county roads and private access roads. U.S. 12 crosses the Walla Walla River at its mouth on the Columbia River, then turns east and crosses the river again approximately 6 miles northwest of Touchet. SR 125 crosses the river south of College Place, approximately 4 miles north of the Oregon state line. County and private roads along the river serve primarily agricultural and low-density residential development.

Railroad infrastructure along the Walla Walla River includes a railroad crossing at the mouth of the River on the Columbia, as well as an east-west Union Pacific line that roughly parallels the river and U.S. 12 through the town of Touchet before eventually arriving in Walla Walla. The east-west rail line remains on the north side of the river and periodically passes in and out of shoreline jurisdiction.

Utilities in the shoreline environment include irrigation structures and piping, as well as water, power, and possibly septic infrastructure serving residences on the shoreline.

### **2.1.2 Touchet River**

#### ***Environmental***

The Touchet River flows through the middle of Walla Walla County. It enters from Columbia County and flows west through the Cities of Waitsburg and Prescott before turning south and eventually joining the Walla Walla River in the southwest portion of the County, just southwest of the unincorporated town of Touchet. Shoreline functions are generally moderate to high throughout all reaches due to hydrologic complexity including floodway, wetlands, meanders and backwater areas and space and conditions supporting fish and wildlife

species. Presence of anadromous fish species is documented throughout the river including Spring Chinook and Summer steelhead, as well as presumed presence of bull trout in some reaches. WDFW Priority Habitat and Species (PHS) regions are mapped throughout a high percentage of all the reaches.

Extensive floodplain is mapped in all reaches, ranging from 87% to 98% of the reach. Floodway is also mapped in Reach 1 (Touchet Area, 73%), Reach 3 (between Lyons-Ferry Road and Waitsburg, 8%) and Reach 9 (east of Waitsburg, 39%). Channel migration zone (CMZ) data is not available for Walla Walla County; therefore, for the Analysis Report, the 100 year floodplain was used as a proxy for the CMZ except where areas are separated from the channel by a legally existing artificial structure. Based on this methodology, and the extensive floodplain present, much of the Touchet River's shoreline jurisdiction is within the channel migration zone. A small area of levee is present in Reaches 3 and 9, and Hofer Dam, an irrigation diversion dam is located in Reach 2 between Conrad Road and Touchet North Road (Image 2-2).



Image 2-2. Hofer Dam. (Source: Google Earth)

Riparian vegetation is generally present separating the channel from uplands and stabilizing banks, though vegetation is very narrow in many areas, particularly through Reach 2 which comprises the majority of

the north-south portion of the river. However, CREP plantings have been recently installed along several portions of Reach 2. The CREP areas will improve vegetative function over time by increasing the width of the functioning riparian area, aiding in filtration of upland inputs, bank stabilization and habitat availability.

The greatest impairments are found in the agricultural areas in the lower reaches. In these areas, stream temperature and sediment load is impacted by poor riparian habitat, confinement, and poor floodplain and channel function. Since 1977, the entire river has been closed to further summer surface water

withdrawals to maintain sufficient summer flows (Snake River Salmon Recovery Board 2011).

Water quality in portions of the Touchet River is impaired, most commonly by pH. Several reaches in the County also have Category 4a listings for temperature (Reaches 1, 2 and 3), dissolved oxygen (Reaches 1 and 2) and bacteria (Reaches 1 and 3), which includes the water downstream of Prescott which is entirely on a septic system. Reach 1, near the Town of Touchet, also has a Category 5 listing for turbidity. Of the County reaches only Reach 9, east of Waitsburg to the County line, does not have any water quality listing. See the full Analysis Report for complete water quality listing information by reach.

A detailed analysis and functional scoring by reach on the Touchet River can be found in Table 5-8 of the Shoreline Analysis Report.

### ***Land Use***

Based on Walla Walla County Assessor data for parcels completely or partially located within shoreline jurisdiction, current land use along the Touchet River is overwhelmingly agricultural in nature. This category accounts for approximately 95% of the shoreline jurisdiction in unincorporated Walla Walla County. The next largest land use category is rural-density residential, which is concentrated in the vicinity of the town of Touchet, and which accounts for approximately 3% of the shoreline jurisdiction. Transportation facilities and undeveloped land each account for approximately 1% each. The land use pattern in the unincorporated portion of the shoreline jurisdiction along the Touchet River is therefore characterized by a very low intensity of development, primarily occupied by agriculture.

Water-dependent and water enjoyment uses along the Touchet River are limited due to the almost exclusively agricultural nature of the area. Water-related uses include pumping stations and water diversion structures for irrigation.

Transportation infrastructure in the Touchet River shoreline includes U.S. and State highways, as well as county roads, local city streets, and private access roads. U.S. 12 crosses the river just west of the town of Touchet and crosses it again in Waitsburg. SR 124 parallels the river for approximately 15 miles before crossing it approximately 3 miles west of Waitsburg. SR 125 crosses the river at its junction with SR 124, just west of Prescott. County roads and private roads provide access to agricultural and rural residential development.

A Port of Columbia rail line crosses the river on a small bridge just south of Prescott and roughly parallels the river eastward, periodically entering and leaving the shoreline environment between Prescott and Waitsburg.

Utilities in the shoreline environment consist primarily of agricultural irrigation infrastructure, overhead power transmission and distribution lines, and water lines serving residential development. Some sewer or septic lines may cross the shoreline environment in populated areas, such as Touchet and Waitsburg.

### 2.1.3 Mill Creek

#### *Environmental*

Mill Creek is a tributary to the Walla Walla River originating in the Blue Mountains. The conditions in the upper Mill Creek watershed, located within the National Forest (Reach 15), are vastly different from the conditions of the lower reaches in the County (Reaches 1 and 2 and 12-14.). From S. Gose Street, through the City of Walla Walla to the Mill Creek diversion dam, the Mill Creek channel is highly modified from a U.S. Army Corps of Engineers (Corps) project to control flooding (Note that as identified in the Analysis Report, Reaches 4- 10 are within the City of Walla Walla and are discussed in the CIA for the City of Walla Walla's SMP). In contrast, the headwaters portion of the Mill Creek watershed is nearly pristine and has very limited access. The uppermost reach (Reach 15), located within the National Forest, is managed as a municipal watershed to protect the city of Walla Walla's municipal water supply. No development occurs and an extensive, intact riparian corridor is present in Reach 15.

In the County reaches east and west of the flood control project (Reach 1 and Reaches 12-14), the main modification to the Mill Creek shoreline is agricultural and rural residential uses which have modified the shoreline vegetation, and the Corps flood control project which alters flows downstream of Reach 12. The flood control project has modified the channel structure in Reaches 2 and 3. The width of intact riparian vegetation varies greatly from just a few feet in places, to over 200 feet in others. Reach 13, from the Diversion Dam to the Kooskookie Commons area, generally has the highest vegetation function, due to a vegetated buffer of 100 feet or greater in most places.

In the County reaches west of the City of Walla Walla, Reach 1- from the confluence with the Walla Walla River to S. Gose Street, has extensive floodplain (81% of reach) and floodway (49% of reach) present. Channel migration zone

(CMZ) data is not available for Walla Walla County; therefore, for the Analysis Report, the 100 year floodplain was used as a proxy for the CMZ except where areas are separated from the channel by a legally existing artificial structure. Based on this methodology, and the extensive floodplain present, much of Reach 1 is considered to be within the channel migration zone. The levee associated with the Army Corps projects begins in Reach 2. East of the City of Walla Walla, floodplain and floodway are also present in Reach 12 (floodplain- 49% of reach, floodway- 42% of reach), Reach 13 (floodplain 78%, floodway 50%) and Reach 14 (floodplain 46%, floodway 33%). Reach 15, in the National Forest, has no floodplain or floodway mapped.

Documented presence of spawning bull trout occur in the most unaltered reach in the very southeast, mountainous portion of the county within the National Forest (Reach 15). Bull trout, rearing and spawning Spring Chinook and Summer steelhead are documented throughout all reaches in the County outside of the National Forest. However, significant fish passage barriers exist in the Mill Creek system, especially through the Corps flood control project. While highly modified, reaches within the flood control project are recognized as important for migration and rearing of salmonids. Several springs bring in cold water to the concrete channel and allow rearing for salmonids. Fish passage corrective actions are currently taking place and will continue (Burns et al. 2009).

A Memorandum of Understanding exists between the Corps and Ecology regarding the Corps ability to assist Ecology with requests for dividing water between Mill Creek, Yellowhawk and Garrison Creeks. A diversion dam just east of the City of Walla Walla limits flood waters from entering Yellowhawk and Garrison Creeks but the Corps and Ecology have also developed a general schedule for regulating flows during non-flood periods to maintain adequate flows to sustain fish and fish habitat (MOU between Corps and Ecology 2012).

A detailed analysis and functional scoring by reach on the Snake River can be found in Table 5-11 of the Shoreline Analysis Report.

### ***Land Use***

In unincorporated Walla Walla County, existing land use is predominantly agricultural, which accounts for approximately 66% of the shoreline jurisdiction. Rural residential uses are the next largest category (20%) and are mostly concentrated west of the Walla Walla city limits near Garrett and in pockets east

of the City of Walla Walla such as the Kooskooskie Commons. Most of this residential development consists of relatively large lot rural residences (minimum 5 acres) or agricultural residences. However, some isolated pockets of residential development, particularly the Kooskooskie Commons, have significantly smaller lots (under 1 acre) that would not be allowed if platted under current land use regulations.

Most of the remaining land area in shoreline jurisdiction consists of government property and undeveloped land, each of which account for approximately 7% of the land area. Public land is primarily located east of the City of Walla Walla near the Mill Creek diversion dam operated by the Army Corps of Engineers. Additional public land is located at the site of the Whitman Mission at the confluence of Mill Creek with the Walla Walla River.

Water-dependent uses on Mill Creek include stormwater outfalls in urbanized areas near the City of Walla Walla. The U.S. Army Corps of Engineers also maintains a flood control diversion dam just east of the city limits. This dam regulates water levels in Bennington Lake to the south and prevents flooding of downtown Walla Walla.

Transportation infrastructure in the Mill Creek shoreline environment in the County is limited to county roads and private access roads. A railroad crossing is present near its mouth on the Walla Walla River.

Utilities in the County shorelines utilities consist of overhead power lines, irrigation intake structures, and possibly water lines serving rural residential development.

#### **2.1.4 Yellowhawk Creek**

##### ***Environmental***

Yellowhawk Creek is a tributary to the Walla Walla River, entering the river just west of Old Milton Highway. It originates as a distributary of Mill Creek at the Corps-operated diversion structure located just south of Walla Walla Community College. Downstream from the diversion structure three tributaries enter Yellowhawk Creek (Caldwell, Russell, and Cottonwood Creeks, respectively). Shoreline jurisdiction along Yellowhawk Creek begins at the confluence with Cottonwood Creek, and extends downstream to the confluence with the Walla Walla River.

Floodplain is mapped over 68% of the Yellowhawk shoreline jurisdiction. The Mill Creek diversion dam operated by the Corps limits flood flows from entering Yellowhawk Creek but may also be adjusted to regulate flows during non-flood periods to maintain adequate flows to sustain fish and fish habitat. The Corps and Ecology have developed a general schedule for non-flood flow regulation (MOU between Corps and Ecology 2012). Spring Chinook are documented throughout all of Yellowhawk Creek. Spawning habitat for Summer steelhead is also documented (WDFW Salmonscape 2015).

In addition to flow regulation from the diversion dam, flow in Yellowhawk Creek is also affected by water withdrawals for agricultural uses. However, the amount of water withdrawal has not been quantified.

The width of riparian tree and shrub vegetation is limited along Yellowhawk Creek due to agricultural and rural residential development. Despite agricultural and rural residential development impacts, dense bands of forested and shrub vegetation exist along the banks of the channel in most places. Based on assessment of aerial imagery using Geographic Information System (GIS) software, the width of intact riparian vegetation typically ranges between 50 and 100 feet along the creek within shoreline jurisdiction, though depending upon the precise stream channel location and adjacent land use, some existing vegetated buffers may be less than 50 feet or greater than 100 feet. Vegetative functions provided by the riparian area include the contribution of large woody debris (LWD) and other organic matter to the creek, shading to reduce temperature increases, filtration of upland inputs, including excess nutrients, fine sediment, and toxic substances, bank stabilization and wildlife habitat. No wetlands are mapped in the shoreline jurisdiction of Yellowhawk Creek.

### ***Land Use***

Based on Walla Walla County Assessor data for parcels completely or partially located within shoreline jurisdiction, the Yellowhawk Creek shoreline is characterized primarily by agricultural uses. Agriculture accounts for approximately 70% of the shoreline land area, followed by rural residential uses at 25%. Agricultural uses occur throughout the reach, while rural residential uses are concentrated on the northern bank of the creek west of SR 125.

Water-oriented uses on Yellowhawk Creek consist primarily of water diversion structures for irrigation and drainage channels from agricultural fields. No dams, docks, boat-launches, or parks are present on this portion of the creek.

Transportation infrastructure in the vicinity of Yellowhawk Creek includes one state highway, several county roads, and a number of private access roads. SR 125 and Old Milton Highway are the two major thoroughfares in the area, and both cross Yellowhawk Creek via vehicular bridges.

Utilities along Yellowhawk Creek include the following:

- Electrical power transmission lines along roads, specifically SR 125 and Old Milton Highway, where they cross the creek.
- Electrical power distribution lines to residential development along the creek.

### 2.1.5 Bennington Lake

#### *Environmental*

Bennington Lake is a 68-acre off-stream reservoir of the Army Corps Mill Creek diversion project. The majority of the lake shoreline is vegetated with forested or scrub/shrub vegetation. The width of the vegetated riparian area varies from less than 10 to over 100 feet. The typical width in most areas is around 50 feet. The riparian vegetation separates the lake from surrounding uplands. The lake is highly functioning for its designed purpose of flood control. It also provides some vegetation and habitat functions, though these are slightly impaired by the recreational uses present.

#### *Land Use*

The Bennington Lake shoreline is primarily classified as being in public use. While approximately 14 acres of the shoreline environment are classified by the Walla Walla County Assessor as resource production and extraction, these areas are federally-owned and are not actively farmed. In practice, the entire shoreline area is devoted to recreational uses and flood management by the U.S. Army Corps of Engineers.

Bennington Lake is entirely zoned Exclusive Agriculture (120 acres). Due to the presence of the federal flood control facility and the large minimum lot size required under zoning regulations, future development in this area is anticipated

to be minimal and would, in all likelihood, be directly related to flood control or recreation.

Bennington Lake is the only public lake within 45 miles of the City of Walla Walla and is a popular location for recreation. Recreational development includes a boat launch, picnic areas and several multipurpose trails.

## **2.2 Lower Snake River WRIA (33)**

### **2.2.1 Environmental**

The northern/western portion of the County lies within WRIA 33, the Lower Snake watershed. The Snake River flows along the majority of the northwestern border of the County and is the only shoreline waterbody in the County within WRIA 33. The Snake River contributes about 20 percent of the Columbia River flow (Snake River Salmon Recovery Board 2011). Streamflows are controlled by the hydropower system, as well as seasonally variable flows in smaller tributaries corresponding with winter precipitation and spring snowmelt. It is an important transportation corridor and has significant barge traffic on the river and train traffic along the shoreline. A 14-foot navigational channel is authorized to be maintained through dredging throughout the river. The riparian vegetation in the Lower Snake subbasin includes herbaceous vegetation with some shrubs and trees. In some areas, the riparian trees are as tall as 30 feet and the buffer as wide as 40 feet (Kuttel 2002). Riparian conditions have improved in the last decade, as a result of implementation of the CREP program where nearly 80% of all CREP-eligible/salmon bearing streams now have riparian buffers. Numerous native and introduced fish species use the Lower Snake sub basin including U.S. Endangered Species Act (ESA) listed chinook salmon and steelhead populations.

In Walla Walla County, conditions along the upper reaches are impacted from the Union Pacific Railroad which parallels the shoreline. Two dams, Ice Harbor and Lower Monumental, are present. Dam operations retain sediment and result in seasonal and daily fluctuations in water levels. The channel in most areas has steeply sloped banks or is within steep-sided canyons with limited vegetation.

The lower reaches of the Snake River within Walla Walla County tend to have less armoring and more wetlands, islands and shoreline vegetation compared to the upper reaches in the County; however, more residential development also occurs near the shoreline in the lower Snake reaches, particularly in the shoreline

areas around Burbank. Some industrial development is also present at the Port of Walla Walla just north of the confluence with the Columbia River.

A detailed analysis and functional scoring by reach on the Snake River can be found in Table 5-5 of the Shoreline Analysis Report.

### **2.2.2 Land Use**

Based on Walla Walla County Assessor data for parcels completely or partially located within shoreline jurisdiction, the most prevalent land use along the Snake River shoreline is resource production and extraction, primarily in the form of agriculture. This land use category accounts for approximately 41% of the land in shoreline jurisdiction. Undeveloped land accounts for approximately 13% of jurisdiction and transportation/communication/utility facilities occupy approximately 7% of the shoreline. Approximately 33% of the Snake River shoreline is listed by the Walla Walla County Assessor as “Unclassified.” However, review of aerial photography indicates that most of this land is federally-owned and occupied by either transportation infrastructure or is adjacent to a U.S. Army Corps-operated dam facility. A small amount of residential development is present on the Snake River in the Burbank area, but this use category only accounts for about 1% of the overall Snake River shoreline jurisdiction.

Along the Snake River, water-dependent uses include the Ice Harbor and Lower Monumental Dams, docks supporting barge traffic on the river, and recreational boat launches. Industrial docks and barge slips are concentrated in the Burbank area, where the Port of Walla Walla operates the Burbank Industrial Park and Burbank Business Park. The Port also operates a grain shipping facility at the Sheffler site, located roughly halfway between the Ice Harbor and Lower Monumental dams, under lease from the Army Corps of Engineers. The Sheffler facility was recently expanded and serves as the primary grain shipping site for farmers in this portion of Walla Walla County.

Water-related uses include hydroelectric power production and irrigation facilities, such as withdrawal pumping stations and canals. Water-enjoyment uses consist primarily of recreational uses, including parks, boat launches, trails, campsites, and open space.

Transportation facilities along the Snake River include state and U.S. highways, county roads, private access roads, and railroads. Goods and materials, primarily

grain and wood products, are also transported by barge on the Snake River itself, and the U.S. Army Corps of Engineers maintains a dredged navigation channel for barge traffic. In Walla Walla County, the Snake River is dammed at two locations, Ice Harbor Dam and Lower Monumental Dam, to facilitate navigation and generate hydroelectric power.

SR 124 and U.S. 12 cross the Snake River immediately upstream of its confluence with the Columbia River near Burbank; this is the only vehicular bridge crossing of the Snake River in Walla Walla County. All other roadways along the Snake consist of County roads and private roadways that provide access to agricultural, residential, and industrial areas along the river, including access roads for the federally-maintained dams.

The Union Pacific Railroad follows the south bank of the Snake River from the Ice Harbor Dam all the way to the northeastern corner of the county, finally crossing the river north into Franklin County, a distance of over 50 miles. The railroad ultimately connects to the cities of Cheney, Spokane, and Coeur d'Alene. Materials transported by rail along the Snake River include grain, coal, and closed shipping containers for miscellaneous goods.

Utility systems along the Snake River consist mostly of the hydroelectric generation facilities located at the Ice Harbor and Lower Monumental dams, but also include the following:

- Water and sewer utilities serving residential development in the Burbank area.
- Electric transmission and distribution lines serving shoreline development in the Burbank area.
- Electric power transmission infrastructure serving hydroelectric generation projects on the river, including a Bonneville Power Administration (BPA) substation located adjacent to the Lower Monumental Dam.

## **2.3 Columbia River**

### **2.3.1 Environmental**

The Columbia River completes Walla Walla County's western border from the confluence with the Snake River to the Oregon border. It is the largest river in the

Pacific Northwest, and the fourth largest river in the United States by volume. Habitat within the Columbia River shoreline jurisdiction ranges from diverse and complex riparian and wetland habitat including sloughs, ponds and islands, to narrow bands of upland shrub-steppe vegetation through primarily agricultural fields in the upper watersheds. Hundreds of fish and wildlife species reside in or migrate through the Columbia River. At least 51 species of fish, including thirty native species, have been reported from the mainstem Columbia River between Wanapum and The Dalles Dams (Ward et al. 2001). Fall Chinook salmon are the dominant salmonids during spring in nearshore areas. All 13 ESA-listed evolutionary significant units (ESUs) of salmon (*Oncorhynchus* spp.) and steelhead (*O. mykiss*) in the Columbia basin use the mainstem Columbia River for migration to and from freshwater natal areas to the Pacific Ocean (National Marine Fisheries Service (NMFS) 2009). Most of the ESA-listed species spawn and incubate in tributaries, but some populations of fall Chinook and chum salmon spawn in the mainstem itself.

In Walla Walla County the conditions along the Columbia River within shoreline jurisdiction vary from armored roadbed and railroad to extensive wetland habitat and public reserve. Shoreline jurisdiction reaches are mostly undeveloped other than transportation infrastructure and some commercial and industrial development in the Attalia UGA, and the Wallula Gap Industrial Park-Shipping Terminal. Generally functions are limited by armoring along most of the river. Numerous overwater structures are also present. However, the area just south of the confluence of the Columbia and Snake Rivers, near Burbank, includes the Burbank Slough and extensive off-channel ponds, islands and wetlands as well as a portion of the McNary National Wildlife Refuge extending from the confluence of the Snake River to the mouth of the Walla Walla River, and downstream into Oregon. Bluffs also provide unique upland habitat. Dam regulation and dredging throughout the Columbia impact natural hydrologic processes. However, extensive backwater areas and islands around the McNary National Wildlife Refuge allow for sediment deposition and off-channel habitat.

A detailed analysis and functional scoring by reach on the Columbia River can be found in Table 5-6 of the Shoreline Analysis Report.

### **2.3.2 Land Use**

The Columbia River shoreline in Walla Walla County is characterized by a mix of industrial, resource production and extraction, and government-owned public

uses. The largest land use category is Unclassified, which consists of properties to which the Assessor has not assigned a land use value and accounts for approximately 37% of the shoreline jurisdiction. Review of aerial photography indicates that most of this land is occupied by federally-owned property associated with Corps-managed parks or the McNary National Wildlife Refuge. Resource production and extraction, primarily in the form of agriculture, is the next largest land use category on the Columbia, accounting for 31% of the shoreline jurisdiction. Government-owned land (not counting federal property included in the Unclassified category) accounts for approximately 15% of the land area.

Manufacturing and industrial land uses account for approximately 2% of the shoreline jurisdiction. The Port of Walla Walla manages several industrial properties along the Columbia River shoreline, including the following:

- Ady Industrial Site – Located just south of the Burbank Rural Activity Center, the Port owns approximately 110 acres of industrially-zoned shoreline property. The majority of the land is underwater, and the limited upland areas are currently vacant.
- Dodd Road Industrial Park – Located in the Attalia Industrial UGA north of Wallula, the Dodd Road Industrial Park encompasses approximately 289 acres zoned for heavy industry. Most of the industrial park is currently vacant, but Railex, LLC owns approximately 53 acres and operates a produce and wine distribution facility. The remainder of the park is currently Port owned.
- Attalia Industrial Site – Located within the Attalia Industrial UGA and south of the Dodd Road Industrial Park, the Port of Walla Walla owns approximately 90 acres of vacant shoreline property zoned for heavy industry and agricultural industrial uses. The majority of this land is underwater, and limited upland area is available for development.
- Wallula Industrial Park-Shipping Terminal – Located at the mouth of the Walla Walla River, the Port owns approximately 41 acres zoned for rural commercial and industrial development, as well as agriculture. The property is currently vacant, but it is located adjacent to an existing Northwest Grain Growers grain elevator facility, which includes a public barge slip.

Water-dependent uses on the Columbia River include docks and wastewater outfalls for industrial development, as well as private docks for recreational boating. As described under current land use, the Port of Walla Walla owns and manages several industrial parks and shipping facilities along the Columbia River that include barge slips and docks. Water-related uses include irrigation pumping stations and maintenance/access roads for railroad facilities. Water enjoyment uses occupy a large amount of the shoreline, consisting of the McNary National Wildlife Refuge, several USFWS wildlife habitat management units, and riverside parks and trails.

Transportation facilities along the Columbia River include U.S. highways, county roads, private access roads, and railroads. Goods and materials are also transported by barge on the Columbia River itself. All of the Columbia River shoreline in Walla Walla County consists of the man-made Lake Wallula, and no dams are present on this stretch of the river.

Highways on the Columbia River include U.S.12, which follows the river south from Burbank to Smiths Harbor before turning east along the Walla Walla River. U.S. 730 continues from this junction and follows the east bank of the river south into Oregon. No vehicular bridges cross the Columbia River in Walla Walla County. Other vehicular transportation infrastructure includes county and private roads providing access to residential, commercial, industrial, and public access uses along the Lake Wallula shoreline.

Railroads parallel the Columbia River shoreline along its entire length in Walla Walla County. The BNSF railroad crosses the Snake River confluence, terminating at Burbank. The Union Pacific connects at this point and follows the Columbia south. A second Union Pacific line crosses the Columbia from Benton County north of Foundation Island and joins the rail corridor. These rail lines primarily serve the Attalia Industrial UGA.

Utility systems along the Columbia River include:

- Water utilities serving residential development in the Burbank and Wallula areas.
- On-site septic systems serving residential development in the Burbank area.

- Electric transmission and distribution lines serving shoreline development in the Burbank area and the Attalia Industrial UGA.

## 3 REASONABLY FORESEEABLE FUTURE DEVELOPMENT

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This section estimates potential future development within and along the shorelines of Walla Walla County. Consistent with the State Guidelines (WAC 173-26-201), this estimate will identify reasonably foreseeable future development over the next 20 years. The estimate was derived using a land capacity analysis method which identified the total (or gross) vacant and underutilized land area. Future potential residential development on these vacant and underutilized lands was estimated based on local development regulations for density and minimum lot size; potential for future commercial and industrial development is discussed qualitatively.

The analysis considered both the area within shoreline jurisdiction only (shoreline) and the total area of all parcels that touch the shoreline jurisdiction (shoreline parcels). The analysis included vacant parcels identified by the Walla Walla County Assessor information and underutilized parcels, which are parcels where zoning allows subdivision and higher density development. Parcels were considered as potentially subdividable if the parcel was two times larger than the minimum lot size of the zone. The results of the analysis are presented for each shoreline environment designation within each jurisdiction.

### 3.1 Walla Walla County

As described in the *Shoreline Analysis Report*, Walla Walla County's shoreline areas are primarily characterized by agricultural uses, open space, and government-owned property. Commercial, industrial, and residential uses occur in some areas, but they account for a small percentage of the overall acreage within the shoreline jurisdiction. As a result, future shoreline development is unlikely to cause substantial changes to the overall character of the shoreline, and the effects of future land use changes will be relatively localized.

Shoreline zoning in the unincorporated areas of Walla Walla County consists primarily of Primary Agriculture (40 acres), which accounts for approximately 51% of the land in shoreline jurisdiction and 71% of the land in shoreline parcels.

Public Reserve covers 18% of the shoreline jurisdiction and 8% of the land in shoreline parcels. Agriculture Residential 10 (10 acres) accounts for 12% of shoreline jurisdiction and 8% of land in shoreline parcels. The Primary Agriculture 40 and Agriculture Residential 10 zones are intended primarily for agricultural uses, though single-family residences are allowed. The Public Reserve zone is intended for public open space, such as parks, playgrounds, greenbelts and wildlife habitat; public facilities such as schools, fire stations, libraries, and recreation centers; and limited low intensity general service uses such as utilities, cemeteries and mausoleums. Residential, commercial, and industrial uses are not allowed.

Table 3-1 presents the acreage of vacant and subdividable land in shoreline jurisdiction in unincorporated Walla Walla County. As reported in Table 3-1, subdividable acreage is limited to residential, rural, and small-lot agricultural (10 acres) zones. Walla Walla County does not establish minimum lot sizes for commercial, industrial, or public reserve zones, so land in these zones is not included in subdividable acreage. Further, agricultural zones with large minimum lot sizes (Primary Agriculture 40 and Exclusive Agriculture 120) are unlikely to experience significant, widespread subdivision. Where land in these zones is subdivided, the primary use would remain agriculture, and subdivision of large properties would not serve as an impetus for residential, commercial, or industrial growth.

Table 3-1. Walla Walla County Shoreline Vacant and Subdividable Lands

Shoreline Environment Designation	Acres Vacant		Acres Subdividable	
	Shoreline	Shoreline Parcels	Shoreline	Shoreline Parcels
<b>Columbia River</b>				
Natural	104.63	236.07	-	-
High Intensity	4.95	31.81	-	-
Rural Conservancy	58.38	149.68	-	-
<b>Columbia Total</b>	<b>167.96</b>	<b>417.57</b>	-	-
<b>Snake River</b>				
High Intensity	40.53	384.71	-	-
Rural Conservancy	157.51	371.05	12.90	980.89 <sup>1</sup>
<b>Snake Total</b>	<b>225.23</b>	<b>809.47</b>	<b>12.90</b>	<b>980.89</b>
<b>Walla Walla River</b>				
Natural	1.06	3.27	-	-
Rural Conservancy	8.01	18.04	448.09	2,951.00

Shoreline Environment Designation	Acres Vacant		Acres Subdividable	
	Shoreline	Shoreline Parcels	Shoreline	Shoreline Parcels
Rural Residential	0.77	1.91	34.44	233.66
<b>Walla Walla Total</b>	<b>9.84</b>	<b>23.23</b>	<b>482.53</b>	<b>2,184.66</b>
<b>Touchet River</b>				
Rural Conservancy	16.36	38.31	81.69	210.94
High Intensity	20.25	25.78	-	-
<b>Touchet Total</b>	<b>36.61</b>	<b>64.09</b>	<b>81.69</b>	<b>210.94</b>
<b>Mill Creek</b>				
High Intensity	-	-	3.30	6.00
Natural	-	-	-	1,362.85
Rural Conservancy	25.08	61.74	104.01	2,785.07
Rural Residential	46.63	121.07	74.81	1,512.84
Urban Conservancy	-	-	-	4.52
Urban Residential	-	-	13.98	18.20
<b>Mill Creek Total</b>	<b>71.71</b>	<b>182.81</b>	<b>196.10</b>	<b>5,689.50</b>
<b>Yellowhawk Creek</b>				
Rural Conservancy	-	-	-	56.58
Rural Residential	3.82	17.71	11.32	325.68
<b>Yellowhawk Total</b>	<b>3.82</b>	<b>17.71</b>	<b>11.32</b>	<b>382.26</b>
<b>Grand Total</b>	<b>515.16</b>	<b>1,514.88</b>	<b>784.54</b>	<b>10,448.24</b>

<sup>1</sup> This large amount of subdividable land along the Snake River consists of a cluster of large parcels zoned Agriculture Residential 10 that each have a very small proportion of their overall area located within shoreline jurisdiction. At present, the properties are actively farmed but could be subdivided for residential development, though the collective area within shoreline jurisdiction would be very small.

### 3.1.1 Residential Growth

Because the majority of shoreline areas in unincorporated Walla Walla County are zoned for agriculture, residential growth in these areas is projected to be quite limited and is anticipated to occur primarily on vacant land, not as a result of subdivision of land that is already developed. However, some vacant parcels are large enough to be subdivided into multiple lots; this analysis assumes maximum development of such properties.

Vacant parcels were identified through review of Walla Walla County Assessor records and then further refined to eliminate those parcels in zoning districts that do not allow residential uses, as well as properties owned by government entities, including the county, cities, state and federal agencies, and local school districts. The remaining properties represent the highest potential for residential

shoreline development in the unincorporated county. The largest concentration of these parcels (18 properties) is located along Mill Creek in the Rural Residential environment designation.

Table 3-2 shows the number of vacant lots and corresponding acreage in each environment designation by waterbody and potential new residential units within shoreline jurisdiction only (shoreline) and on all parcels that touch the shoreline jurisdiction (shoreline parcels).

Table 3-2. Walla Walla County Shoreline Potential New Residential Units

	Number of Vacant Parcels	Acres Residential Allowed (Shoreline)	Acres Residential Allowed (Shoreline Parcels)	Potential New Units (Shoreline)	Potential New Units (Shoreline Parcels)
<b>Snake River</b>					
Rural Residential	5	1.80	3.45	5	5
<b>Walla Walla River</b>					
Rural Conservancy	4	7.58	14.77	4	5
Rural Residential	1	0.77	1.91	1	1
<b>Touchet River</b>					
Rural Conservancy	5	15.45	19.44	5	5
<b>Mill Creek</b>					
Rural Conservancy	7	23.13	58.58	7	7
Rural Residential	22	49.63	121.01	25	37
<b>Yellowhawk Creek</b>					
Rural Residential	9	3.82	17.71	9	9
<b>Total</b>	<b>53</b>	<b>99.41</b>	<b>238.26</b>	<b>56</b>	<b>69</b>

As shown in Table 3-2, the greatest potential for future residential growth along county shorelines would be in the Rural Residential environment designation along Mill Creek east and west of the City of Walla Walla (37 units). Because residential zoning along Mill Creek generally requires 5-acre lots or larger, relatively little subdivision would occur.

### 3.1.2 Commercial and Industrial Growth

As described in the Inventory and Characterization Report, relatively little land in the County’s shoreline jurisdiction is occupied by commercial or industrial development. Areas where commercial and industrial uses are allowed are concentrated on the Columbia River and in the Burbank area on the Snake River, including the following:

- Burbank Industrial Park –The Port of Walla Walla has planned substantial improvements and renovations to the industrial park over the next 10 years, as documented in the Port’s comprehensive plan, adopted in 2012. Planned improvements include new commodity storage buildings, barge slip improvements, improvements to existing grain facilities, expansion of water and sewer systems, and construction of a new rail line connection to the industrial park.
- Ady Industrial Site – Located just south of the Burbank Rural Activity Center, the Port of Walla Walla owns approximately 110 acres of industrially-zoned shoreline property. The majority of the land is underwater, but the limited upland areas are currently vacant.
- Dodd Road Industrial Park – Located in the Attalia Industrial UGA north of Wallula, the Dodd Road Industrial Park encompasses approximately 289 acres zoned for heavy industry. Most of the industrial park is currently vacant, but Railex, LLC owns approximately 53 acres and operates a produce and wine distribution facility. The remainder of the park is currently owned by the Port of Walla Walla.
- Attalia Industrial Site – Located within the Attalia Industrial UGA and south of the Dodd Road Industrial Park, the Port of Walla Walla owns approximately 90 acres of vacant shoreline property zoned for heavy industry and agricultural industrial uses. The majority of this land is underwater, and limited upland area is available for development.
- Wallula Industrial Park-Shipping Terminal – Located at the mouth of the Walla Walla River, the Port owns approximately 41 acres zoned for rural commercial and industrial development, as well as agriculture. The property is currently vacant, but it is located adjacent to an existing Northwest Grain Growers grain elevator facility, which includes a public barge slip.

As noted above, many of these industrial sites contain vacant properties or have capacity to expand their current operations, though most of this developable area lies landward of the shoreline jurisdiction. Future industrial development along the county’s shoreline is anticipated to continue, though it will be confined to a relatively small number of locations and account for a small proportion of the county’s overall shoreline usage.

## **4 EFFECTS OF ESTABLISHED REGULATORY PROGRAMS**

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### **4.1 Current County Regulations and Programs**

All development activity within the County is required to comply with the Walla Walla County Code (WWCC). Provisions in the WWCC that potentially affect how future development is implemented and the extent of potential ecological impacts include critical area regulations, zoning, and stormwater management regulations. The following are descriptions of these relevant regulations and how they help to maintain shoreline functions.

#### **4.1.1 Critical Areas Regulations**

County critical area regulations, which will continue to apply outside of shoreline jurisdiction after adoption of the SMP are detailed in Walla Walla County Code (WWCC) Chapter 18.08. These regulations were adopted in 1995, and subsequently revised in 2008. They require reach-specific minimum buffer widths of 35 to 100 feet (WWCC 18.08.650) on waterways in fish and wildlife habitat conservation areas. The regulations also require wetland buffers between 25 and 250 feet based on wetland category and intensity of proposed land use (WWCC 18.08.340). The County's Critical Areas regulations also apply to geologically hazardous areas, critical aquifer recharge areas, and frequently flooded areas. An additional body of regulations governing flood damage prevention (Flood Damage Prevention Ordinance, WWCC Chapter 18.12) is intended to protect human welfare and limit flood-related financial damages, but also has incidental benefits to protection of ecological functions.

#### **4.1.2 Zoning Code**

County zoning standards direct the location of uses, building bulk, and scale. These standards are important in planning for future growth and focusing development in a sustainable manner. The majority of the County is zoned Primary Agriculture 40, though a variety of other zoning designations are also present in shoreline jurisdiction including Rural Residential 5, Agriculture Residential 10, Public Reserve and Industrial Agriculture Heavy. R-96 zoning occurs in the Prescott UGA on the Touchet River and along Mill Creek in portions of the City of Walla Walla UGA. Each zone has different permitted uses

which help to concentrate development in areas appropriate and suitable for similar uses (WWCC Title 17).

#### **4.1.3 Stormwater Management Regulations**

Title 11 of the WWCC pertains to stormwater management. 11.01.020 states that Walla Walla has adopted the 2004 State Department of Ecology's Stormwater Management Manual for Eastern Washington (SMMEW) and any successor document. Specific stormwater management regulations are contained in chapter 11.07. These provisions direct the County to evaluate how proposed stormwater drainage facilities will affect water quality and ground water quantities, locations and flow patterns, as well as the aesthetic quality of waters and safety concerns. By reviewing drainage, flooding, and erosion implications of a proposed project, the County helps to avoid development that will have an adverse impact on hydrologic conditions.

### **4.2 State Agencies/Regulations**

Aside from the Shoreline Management Act, State regulations most pertinent to moderation of ecological impacts of development in the County's shoreline include the State Hydraulic Code, the Growth Management Act, State Environmental Policy Act (SEPA), tribal agreements and case law, and Water Resources Act. A variety of agencies (e.g., Washington Department of Ecology, Washington Department of Fish and Wildlife, Washington Department of Natural Resources) are involved in implementing these regulations or managing state-owned lands. The Department of Ecology reviews all shoreline projects that require a shoreline permit, but has specific regulatory authority over Shoreline Conditional Use Permits and Shoreline Variances. Other agency reviews of shoreline developments are typically triggered by in- or over-water work, discharges of fill or pollutants into the water, or substantial land clearing. During the comprehensive SMP update, the County has considered other State regulations to ensure consistency as appropriate and feasible with the goal of streamlining the shoreline permitting process. A summary of some of the key State regulations by agency responsibilities follows.

#### **4.2.1 Washington Department of Natural Resources**

Projects on state-owned aquatic lands may be required to obtain an Aquatic Use Authorization from Washington Department of Natural Resources (WDNR) and enter into a lease agreement. WDNR will review lease applications to determine

if the proposed use is appropriate, and to ensure that proposed mitigation for impacts to aquatic resources are sufficient.

WDNR is also responsible for administering the Surface Mining Act. The Act requires a permit for each mine that: 1) results in more than 3 acres of mine-related disturbance, or 2) has a high-wall that is both higher than 30 feet and steeper than 45 degrees. A reclamation plan is required that describes how the site will be restored following mining activity to maintain stable slopes, diverse landscape features, and dense, native vegetation. In coordination with SMP standards, the Act helps ensure that mining activities do not result in long-term adverse effects on shoreline functions.

#### **4.2.2 Washington Department of Ecology**

The Washington Department of Ecology may review and condition a variety of project types, including any project that needs a permit from the U.S. Army Corps of Engineers (see below), any project that requires a Shoreline Conditional Use Permit or Shoreline Variance, and any project that disturbs more than 1 acre of land. Project types that may trigger Ecology involvement include pier and shoreline modification proposals and wetland or stream modification proposals, among others. Ecology's three primary goals are to: 1) prevent pollution, 2) clean up pollution, and 3) support sustainable communities and natural resources (<http://www.ecy.wa.gov/about.html>). Ecology may comment on local SEPA review if it is an agency of jurisdiction.

#### **4.2.3 Washington Department of Fish and Wildlife**

The Washington Department of Fish and Wildlife (WDFW) has the authority to review, condition, and approve or deny "any construction activity that will use, divert, obstruct, or change the bed or flow of State waters." Practically speaking, these activities include, but are not limited to, installation or modification of piers, shoreline stabilization measures, culverts, and bridges. WDFW typically conditions such projects to avoid, minimize, and/or mitigate for damage to fish and other aquatic life, and their habitats.

### **4.3 Federal Agencies/Regulations**

Federal review of shoreline development is in most cases triggered by in- or over-water work, or discharges of fill or pollutants into the water. Depending on the nature of the proposed development, federal regulations can play an important role in the design and implementation of a shoreline project, ensuring

that impacts to shoreline functions and values are avoided, minimized, and/or mitigated. A summary of some of the key federal regulations follows.

#### 4.3.1 Clean Water Act

Section 404 of the federal Clean Water Act requires the Corps to regulate “discharge of dredged or fill material into waters of the United States, including wetlands.” The Corps reviews and approves wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. For any of the above projects, the Corps requires mitigation sequencing documenting avoidance, minimization, restoration, and compensation of impacts.

Section 303(d) of the Clean Water Act requires the state to develop a list of waters that do not meet water quality standards. Shoreline waterbodies and the impaired (Category 5) water quality parameters in Walla Walla County are listed in Table 4-1. A Total Maximum Daily Load, or TMDL, must be developed for impaired waters. Table 4-2 provides a list of those waterbodies and water quality parameters for which a TMDL is in place. The Inventory Data Summary Table in Appendix C of the Shoreline Analysis Report identifies impaired water quality listings in Walla Walla County by shoreline reach.

Table 4-1. Category 5 Waterbodies (Impaired)

River	Turbidity	Total Phosphorus	Chlorine	Dissolved Oxygen	PCB	Pesticides	Temperature
Columbia							X
Snake		X		X	X	X	X
Touchet	X						
Walla Walla			X				

Table 4-2. Category 4 Waterbodies with a TMDL

River	Bacteria	Temperature	Dissolved Oxygen	Dioxin	Chlorine	Ammonia-N	pH
Columbia				X			

Snake			X	X			
Touchet	X	X	X				X
Walla Walla	X	X	X				X
Yellowhawk Creek	X	X					
Mill Creek *	X	X	X		X	X	X

\*Mill Creek also has a Category 4C listing for in-stream flow, a non-pollutant impairment which cannot be addressed through a TMDL

#### 4.3.2 Rivers and Harbors Act, Section 10

Proposals to construct new or modify existing in-water structures (including piers, marinas, bulkheads, breakwaters), to excavate or fill, or to “alter or modify the course, location, condition, or capacity of” navigable waterbodies must be reviewed and approved by the Corps. Similar to its authorities under Section 404, the Corps may condition development to avoid, minimize, and mitigate for impacts to navigation, access, and ecological functions.

#### 4.3.3 Federal Endangered Species Act (ESA)

Section 9 of the Endangered Species Act prohibits “take” of federally listed species (see Table 3-1 in the Shoreline Analysis Report), and this prohibition applies to all parties anywhere that those listed species may be found, both in and outside of shoreline jurisdiction. Per Section 7 of the ESA, the Corps must consult with the National Marine Fisheries Service and the U.S. Fish and Wildlife Service on any projects that fall within Corps jurisdiction (e.g., Section 404 or Section 10 permits) that could affect species listed under the Federal Endangered Species Act. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats.

#### 4.3.4 McNary Shoreline Management Plan

The majority of the Lake Wallula shoreline, located above McNary Dam, is owned and managed by the Corps. In 2012, the Corps updated the 1983 McNary Shoreline Management Plan for management and permitting of private use on Lake Wallula and Corps-managed lands with frontage on Lake Wallula (US Army Corps of Engineers 2012). Most of Walla Walla County’s unincorporated shoreline area governed by the McNary Shoreline Management Plan is designated by the Corps as “Protected Lakeshore,” or “Prohibited Access.” A couple of locations are designated as “Public Recreation,” and one area, near Burbank is designated “Limited Development.” The updated McNary Shoreline Management Plan provides criteria for design and construction of existing private docks (including “special status” docks, or “grandfathered” docks), new

community and private docks, and vegetation modification. The plan does not apply to public docks. The plan allows for a total of 100 private docks on Lake Wallula, including existing docks, assigning priority to new community docks that jointly serve multiple users. As of July 2013, only 11 new, private docks can be permitted in areas designated under the McNary Shoreline Management Plan for “Limited Development.” In Walla Walla County one such Limited Development area is designated along a small portion of the Lake Wallula shoreline in Burbank. Since Walla Walla County only composes a portion of the McNary Shoreline Management Plan management area, some portion of the 11 possible docks is expected to occur in Walla Walla County. In addition to SMP standards, any new docks constructed on Lake Wallula must comply with standards of the McNary Shoreline Management Plan. These standards are substantively consistent with the dock standards proposed in the Walla Walla County SMP.

#### **4.3.5 Pacific Northwest Electric Power Planning and Conservation Act**

Congress established the Northwest Power Act in 1980, which established the Northwest Power and Conservation Council with the goals of preparing and adopting (1) a regional conservation and electric power plan and (2) a program to protect, mitigate, and enhance fish and wildlife. As a member of the Walla Walla Watershed Planning Unit, Walla Walla County contributed to the preparation of the Walla Walla Subbasin Plan in 2004, prepared for the Northwest Power and Conservation Council. The Subbasin Plan describes to the Council the most effective ways that the Council and the Bonneville Power Administration (BPA) can meet their obligations in the Walla Walla Subbasin to mitigate the impacts on fish and wildlife resources from the construction and operation of the Federal Columbia River Power System (FCRPS). Because dam impacts are ongoing and integrated into the analysis of the environmental baseline conditions, as mitigation for dam impacts is implemented, the environmental baseline conditions are expected to improve (see Shoreline Restoration Plan for more specific description of proposed actions).

## **5 APPLICATION OF THE SMP**

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This section describes how, based on the foreseeable development, the proposed SMP protects shoreline functions. The following components of the SMP are

integral to ensuring no net loss of shoreline functions. Each of these components is discussed in further detail below.

- Shoreline environment designations are based on existing shoreline conditions. Allowed uses focus higher-intensity development in areas with a high level of existing alterations, while limiting future uses in areas where ecological functions and processes are more intact.
- SMP standards require applicants to avoid, minimize, and then compensate for unavoidable impacts to shoreline functions. Where SMP standards do not provide specific, objective measures that clarify avoidance, minimization, and mitigation measures, a mitigation sequencing analysis is required.
- Shoreline critical areas regulations are consistent with recommended state guidance to maintain ecological functions.
- Specific policies and regulations govern shoreline uses and modifications and ensure that potential impacts are regulated to avoid a net loss of ecological function, while also meeting the requirements of the Shoreline Management Act pertaining to public access, prioritization of shoreline uses, and private property rights.

## 5.1 Environment Designations

The assignment of environment designations can help minimize cumulative impacts by concentrating development activity in lower functioning areas or areas with more intensive existing development that are not likely to experience significant function degradation with incremental increases in new development or redevelopment. According to the SMP Guidelines (WAC 173-26-211), the assignment of environment designations must be based on the existing use pattern, the biological and physical character of the shoreline, and the goals and aspirations of the community as expressed through a comprehensive plan.

Consistent with SMP Guidelines, the County's environment designation system is based on the existing use pattern, the biological and physical character of the shoreline, and community interests. The Shoreline Analysis Report provided information on shoreline conditions and functions that informed the development of environment designations. The proposed environment designations include: High Intensity, Urban Residential, Urban Conservancy,

Rural Residential, Rural Conservancy, Mill Creek Flume, Natural, and Aquatic, generally listed in order by decreasing intensity of allowed use. Criteria for each environment designation are provided in Table 5-1.

Table 5-1. Environment designation criteria

Environment Designation	Classification Criteria
High Intensity	Areas within urban growth areas and existing industrial or commercial areas if they currently support high-intensity uses related to commerce, transportation or navigation; or are suitable and planned for high-intensity water-oriented uses
Urban Residential	Areas of the County within non-industrial urban growth areas that include existing residential development, or are planned or platted for residential development.
Urban Conservancy	Areas of the County within urban growth areas that: <ol style="list-style-type: none"> <li>1. Are planned for development that is compatible with the principles of maintaining or restoring the ecological functions of the area;</li> <li>2. Are suitable for water related and water-enjoyment uses;</li> <li>3. Are open space or floodplain;</li> <li>4. Are areas that retain important ecological functions which should not be more intensively developed.</li> </ol>
Rural Residential	Areas or properties that: <ol style="list-style-type: none"> <li>1. Lie outside of city limits or non-industrial urban growth areas;</li> <li>2. Have existing residential development occurring on parcels five acres in size or less, or are planned or platted for residential development to occur on parcels five acres in size or less;</li> <li>3. Are adjacent to other parcels developed with, or planned for, similar uses.</li> </ol>
Rural Conservancy	Areas outside of incorporated municipalities, urban growth areas, and limited areas of more intense rural development (LAMIRD) characterized by: <ol style="list-style-type: none"> <li>1. Resource lands and large lot rural areas;</li> <li>2. Commercial agricultural potential;</li> <li>3. High recreational value or unique historic or cultural resources; or</li> <li>4. Roads which run parallel to the shoreline, railroads, canals, levees or other alterations in shoreline jurisdiction that limit shoreline ecological functions.</li> </ol>
Mill Creek Flume	Areas within the U.S. Army Corps of Engineers Mill Creek Flood Control Project between the Rooks Park Spillway and Gose Street which are not designed to promote physical access to the water. For areas of the Flood Control Channel which contain a concrete flume, the landward extent of the designation extends to the landward edge of the flume. For all other areas, the landward extent ends at the OHWM.
Natural	Areas that: <ol style="list-style-type: none"> <li>1. Have ecologically intact shoreline and therefore currently perform an important, irreplaceable function or ecosystem-wide process; or</li> <li>2. Are considered to represent ecosystems and geologic types that are of</li> </ol>

Environment Designation	Classification Criteria
	particular scientific and educational interest.
Aquatic	Areas waterward of the ordinary high-water mark.

Approximately 65 percent of the shoreline area within Walla Walla County occurs in the Rural Conservancy environment designation (Figure 1), which is designed to give priority to agricultural activities and lower intensity development that will be compatible with the rural character. Another quarter of the shoreline area is in the Natural environment designation, where allowed uses are even more restricted. The Rural Residential designation makes up 7% of the shoreline area, mainly along Yellowhawk Creek and Mill Creek near the City of Walla Walla where there are stretches of predominantly small lot residential uses in rural and agricultural areas.

The High Intensity designation makes up just two percent of the shorelines and is limited to parcels on the Columbia and Snake Rivers that contain operations associated with the dams or other existing industrial activities. The Mill Creek Flume designation includes the other intensively developed area of the County adjacent to Mill Creek’s flood control works just outside of the City of Walla Walla. The Urban Conservancy designation is limited to the Burbank and Attalia UGAs along the Columbia, totaling less than one percent of the shorelines. The Urban Residential designation is limited to areas in the City of Walla Walla UGA which have an R-96 Suburban Residential zoning designation, also totaling less than one percent of the shorelines.

The proposed environment designations reflect the highly rural-agricultural nature of the County. The environment designations appropriately focus potential high intensity development activity in existing disturbed areas with higher levels of alterations and lower ecological functions compared to other reaches. Those existing disturbed shorelines are not likely to experience significant function degradation with incremental increases in new development. The Urban Conservancy and Natural designations help protect the less developed, more agricultural and rural shorelines where some shoreline functions are more intact.

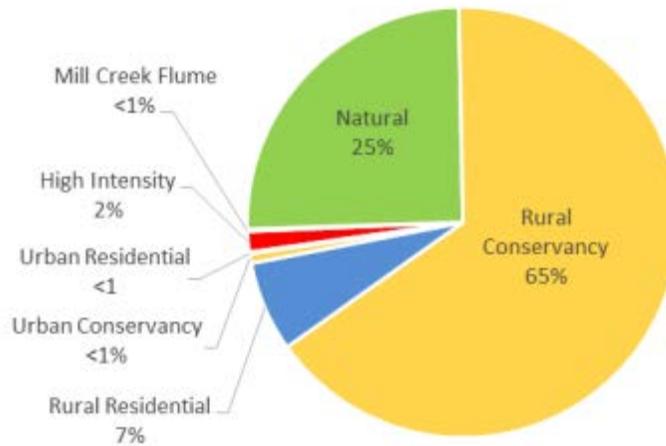


Figure 5-1. Distribution of Upland Environment Designations by Area

## 5.2 Effects of Critical Areas Regulations

The SMP includes policies and regulations to avoid cumulative effects to critical areas. The SMP incorporates the County's existing critical areas regulations (WWCC 18.08) as an appendix, minimally revised to be compliant with SMA requirements and the most current, accurate and complete scientific and technical information available. These regulations will apply to all critical areas within shoreline jurisdiction while the original WWCC 18.08 will continue to apply outside of shoreline jurisdiction. The SMP requires mitigation sequencing for all shoreline critical areas including wetlands; critical aquifer recharge areas; frequently flooded areas; geologically hazardous areas; and fish and wildlife habitat conservation areas, which includes streams. SMP regulations proposed for wetlands and streams include standard buffer areas, which are discussed in greater detail below.

### 5.2.1 Wetlands

The SMP requires vegetated buffers for all shoreline wetlands. Mitigation sequencing is required for impacts to wetland buffers, as well as to wetlands. The proposed standard wetland buffer widths are based on the wetland category and intensity of proposed land use and are consistent with Ecology's "Wetlands in Washington State-Volume 2: Guidance for Protecting and Managing Wetlands," modified to use with the 2014 Washington State Rating System for Eastern

Washington (Granger et al. 2005, modified 2014) which relies on the most current technical and scientific information available. Buffer averaging may be permitted to improve wetland protection, provided that the averaging will not result in degradation of the wetland's functions (SMP Appendix A, Section 3.7). The SMP Administrator may increase the width of the standard buffer width on a case-by-case basis, based on a critical area report, when a larger buffer is required to protect the wetland (SMP Appendix A, Section 3.8). The SMP Administrator also has the authority to reduce standard wetland buffer widths provided mitigation sequencing is followed and the buffer reduction does not adversely affect the functions and values of the adjacent wetlands (SMP Appendix A, Section 3.9). As each individually permitted project must prove no adverse effect to function, the cumulative effect of these regulations will be to maintain, or enhance the baseline condition. Mitigation for impacts must also include five years of monitoring to ensure success of the mitigation's goals, objectives and performance standards (SMP Appendix A, Section 3.11(D)). These proposed SMP standards should ensure that wetland functions are maintained over time.

### 5.2.2 Streams and Lakes

Regulations for streams and lakes are contained within the Fish and Wildlife Habitat Conservation Areas section of the SMP critical areas regulations. The proposed SMP establishes riparian habitat buffers on shoreline streams that are consistent with those in the County's existing critical areas regulations for the following waterbodies:

- For the Columbia, Snake, Touchet and Walla Walla Rivers a 100 foot buffer is proposed,
- For Mill Creek, within the flood control project where shorelines are highly modified and the existing shoreline function is low, a 35 foot buffer is proposed. Outside of the flood control project a 100 foot buffer is proposed (SMP Appendix A Section 6.5(B)(2) and Table 6.5-1).

A buffer for Bennington Lake is not included in the critical areas regulations, though by definition it would be considered a fish and wildlife habitat conservation area. The SMP development standards table proposes a buffer of 50 feet (SMP Table 6-2).

For non-shoreline tributaries within shoreline jurisdiction, buffers range from 35 to 100 feet depending on the existing conditions and targeted functions of the waterbody.

Stream buffer averaging may be allowed on a case by case basis provided certain criteria are met (SMP Appendix A, Section 6.10). Stream buffers may also be reduced, on a case by case basis, provided that certain criteria are met including that the buffer reduction shall not adversely affect the habitat functions and values of the adjacent habitat conservation area or other critical area, and that a habitat enhancement plan is prepared by a qualified professional. The habitat enhancement plan must demonstrate that it will improve riparian functions over existing conditions (SMP Appendix A, Section 6.12).

Water dependent developments have no buffer requirement due to the nature of the activity which necessitates that the development be adjacent to the shoreline. However, mitigation sequencing must still be followed which will ensure no net loss of function through compensation of unavoidable impacts (See Section 5.3, below).

Within regulated buffer areas, only limited, minimally invasive modifications are allowed, including a 4-foot-wide residential access pathway to the water, water-dependent uses and certain accessory uses, and water oriented public access and recreation facilities provided that the design applies mitigation sequencing and appropriate mitigation is provided to ensure no net loss of ecological functions (SMP Appendix B, Section 6.5(B)(5)).

In addition to the buffers discussed above, a five foot building setback, starting from the landward edge of the critical area buffer of a shoreline waterbody, is also proposed (SMP Section 6.2(D)). Further discussion of the implications of specific buffer and setback regulations in relation to anticipated shoreline uses is integrated into Section 5.5, below.

### ***Yellowhawk***

For Yellowhawk Creek, the SMP establishes a buffer width of 75-100 feet. (This differs from the buffer that is established in the County's existing critical areas regulations. The CAO buffer will continue to apply to Yellowhawk Creek outside of shoreline jurisdiction while the SMP buffer will apply within shoreline jurisdiction.)

**5.3 Per SMP Appendix A Section 6.5.B.5, development along Yellowhawk Creek requires the completion of a Riparian Habitat Buffer Determination or establishment of a standard 100-foot wide buffer. A Riparian Habitat Buffer Determination shall be completed by a qualified professional according to the provisions laid out in the SMP. In lieu of a Riparian Habitat Buffer Determination, a standard 100-foot wide buffer shall be established.**

**Mitigation Sequencing**

The proposed SMP includes general regulations requiring projects to be designed, located, sized, constructed and maintained to achieve no net loss of shoreline ecological functions (SMP Section 5.1(A), Ecological Functions). Mitigation sequencing standards apply to all projects in shoreline jurisdiction. In some cases, specific provisions are applied by the SMP that stipulate objective standards for avoiding (e.g., placement), minimizing (e.g., size, materials, and design standards), and compensating for unavoidable impacts (e.g. specific planting requirements). Where these objective standards are not specified in the SMP, a description of the analysis of mitigation sequencing is required with any shoreline application (SMP Sections 5.1(C), Mitigation Requirement and 5.1(D), Mitigation Sequence). The application of mitigation sequencing standards should help ensure that shoreline uses and modifications achieve no net loss of shoreline ecological functions.

**5.4 Unregulated, Illegal and Exempt Development**

*Unregulated Uses*

Unregulated shoreline activities include activities that are not “development” and do not require any sort of shoreline permit, including a shoreline exemption. Typically, these unregulated activities involve everyday maintenance and use of shoreline lands in conjunction with an approved land use (e.g., applying fertilizer in a residential yard, driving a car on a road along the shoreline, using a boat that is moored at a dock or launched at a boat ramp). Because these activities are associated with legally permitted land uses, the potential effects of these unregulated uses are addressed in concert with the analysis of land uses below.

### ***Illegal Uses***

Illegal activities are expected to occur infrequently in shoreline jurisdiction. Where illegal actions are identified, they are required to be rectified. Where illegal actions are not recognized, they may result in an incremental loss of shoreline functions. These incremental losses are expected to be offset by mitigation requirements for approved shoreline modifications that result in minor improvements over time, as well as by voluntary restoration actions identified in the Shoreline Restoration Plan.

### ***Exempt Development***

Development and activities that are exempt from requirements for a shoreline substantial development permit are specified in WAC 173-27-040. The SMP explicitly states that development qualifying for a shoreline exemption must still comply with all SMP policies and regulations. Because the SMP provides specific design standards for many exempt developments (such as shoreline stabilization to protect a residence, or a dock) and require that all exempt development types avoid, minimize, and compensate for shoreline impacts, exempt development is not expected to result in a net loss of shoreline functions.

## **5.5 Effects of SMP Standards on Commonly Occurring Foreseeable Uses**

The SMP contains numerous shoreline use regulations intended to protect the ecological functions of the shoreline and prevent adverse cumulative impacts (See SMP Chapter 6.0, Shoreline Use and Modification Policies and Regulations as well as general regulations under Subsections 5.1- Ecological Protection and Critical Areas, 5.2-Water Quality and 5.3-Vegetation Conservation). As discussed previously, WAC 173-26-186(8)(d) directs local SMPs to evaluate and consider cumulative impacts of “reasonably foreseeable future development on shoreline ecological functions.” Although future development may include other less common types of development, the location, timing, and impacts of less common uses and development projects are less predictable. WAC 173-26-201(3)(d)(iii) states:

*For those projects and uses with unanticipatable or uncommon impacts that cannot be reasonably identified at the time of master program development, the master program policies and regulations should use the permitting or conditional use permitting processes to ensure that all impacts are addressed and that there is not net loss of ecological function of the shoreline after mitigation.*

Results of the analysis of foreseeable future development in Section 3 indicate that due to the agricultural nature of the County, future development is likely to be limited in terms of overall acreage in shoreline jurisdiction and is unlikely to cause substantial changes to the overall character of the shoreline. The most commonly anticipated changes in shoreline development involve rural residential, commercial and industrial development, and associated utilities, and/or access roads, though the effects of such future land use changes are expected to be relatively localized.

The following sections summarize how these commonly foreseeable potential activities may impact ecological functions, and how SMP provisions address those potential effects to avoid cumulative impacts. A complete review of the potential impacts of all shoreline uses and modifications included in the SMP, including those less commonly anticipated to occur, and the SMP standards that manage the resulting impacts, can be found in Appendix A of this CIA.

### **5.5.1 Residential Development**

Within Walla Walla County, residential development could occur as new development on existing single-family lots, redevelopment of existing residences, or through subdivision of large lots. The land use analysis in Section 3.0 indicated that five new residential units could potentially be developed on the vacant lots in shoreline jurisdiction along the Snake River, five on the Walla Walla River, five on the Touchet River, 32 on Mill Creek and nine on Yellowhawk Creek.

A summary of potential effects of residential development on shoreline ecological functions is described in Appendix A. Potential effects of shoreline modifications that may be considered accessory to residential development, including private moorage, shoreline stabilization, accessory utilities, and access roads, are also addressed in general terms in Appendix A.

The SMP addresses the potential impacts of residential development through regulations that guide the siting of new structures, require conservation of vegetation, and help to maintain water quality conditions through stormwater and sewage management requirements. Critical area regulations that establish standard vegetated buffer widths are particularly important for maintaining vegetative, hydrologic, and water quality functions of the shoreline despite increasing development. Additionally, SMP Section 6.2, Development Standards,

requires certain dimensional limitations on new development. For all new residential development in the Rural Conservancy environment, the total amount of impervious surface associated with residential development shall be limited to ten percent of the lot area within SMP jurisdiction. New buildings in all environment designations must have a 5 foot building setback, beginning at the landward boundary of the critical area buffer of a SMP waterbody.

The highest potential for residential shoreline development in the unincorporated county is located along Mill Creek in the Rural Residential environment designation. The SMP proposes a 100 foot standard buffer width for nonwater-related uses in this area. The wide buffer is expected to help maintain existing riparian habitat and water quality functions by having more intensive development farther from the shoreline.

The area with the second most potential for new residential shoreline development is the Rural Residential designation along Yellowhawk Creek. Of the 57 parcels located within shoreline jurisdiction, all but one are zoned Rural Residential 5. This zoning designation could allow for future subdivision of existing parcels currently in agricultural use if they are greater than 10 acres. Based on an estimate of potential subdivision of land, minimum lot frontage requirements in County zoning standards, and the presence of an expansive 100-year floodplain, up to 12 new lots would intersect shoreline jurisdiction if all available lands were subdivided. Based on the current agricultural land use and past rate of land division, it is unlikely that many of these lots would be subdivided in the near future.

Vacant properties along Yellowhawk Creek are each typically well under 5 acres and therefore considered legal non-conforming lots. Combined, vacant properties total approximately 18 acres, of which approximately 4 acres are within shoreline jurisdiction. In total, up to 9 new single family homes could be built on these lots, though most of the vacant properties have less than an acre of area within shoreline jurisdiction. As a result, most of these new homes are not likely to be located in shoreline jurisdiction.

The proposed standard shoreline buffer width for Yellowhawk Creek is 75- 100 feet. As described in Section 5.2.2 above, development along Yellowhawk Creek requires the completion of a Riparian Habitat Buffer Determination to determine the exact riparian buffer width required or establishment of a standard 100-foot wide buffer. A Riparian Habitat Buffer Determination shall be determined by a

qualified professional or a representative of the Washington State Departments of Fish and Wildlife or Ecology according to the provisions laid out in the SMP. In such cases, buffer averaging and buffer reduction would not be allowed. . Reduction below a width of 75 feet is not allowed. The Riparian Habitat Buffer Determination process allows flexibility for the buffer width to be based on site specific existing conditions, providing more protection where warranted because of a larger intact buffer being present, and allowing a narrower buffer where less function is currently provided.

In lieu of the Riparian Habitat Buffer Determination process, an applicant can opt to establish a standard 100-foot wide buffer. This buffer would be subject to the normal buffer averaging and buffer reduction provisions in the regulations.

Because the majority of shoreline areas in unincorporated Walla Walla County are zoned for agriculture, residential growth in these areas is projected to be quite limited and is anticipated to occur primarily on vacant land, not as a result of subdivision of land that is already developed. However, some vacant parcels are large enough to be subdivided into multiple lots. Proposed SMP critical areas regulations (SMP Appendix A, Section 6.6) prohibit land that is located wholly within a habitat conservation area or its buffer from being subdivided. Land that is located partially within a habitat conservation area or buffer may only be divided if the developable portion of each new lot and its access is located outside of the habitat conservation area or its buffer. Where subdivision is feasible within shoreline jurisdiction, resulting lots may not require shoreline stabilization or structural flood protection measures.

Shoreline stabilization measures are occasionally associated with residential development in Walla Walla County. Stabilization measures have potentially significant impacts on sediment transport processes and instream habitat. Through its strict permitting criteria, the proposed SMP substantially limits the development of new shoreline stabilization structures. The proposed SMP ensures that new and replacement structures evaluate and implement the stabilization approach with the least potential for impacts to shoreline functions (See Appendix A of this CIA). Mitigation for unavoidable impacts from new or replacement stabilization measures would be required through mitigation sequencing.

Private residential docks occasionally occur on shorelines in Walla Walla County, primarily the Columbia River. As identified in Section 4.3.4, as of July 2013, the

McNary Shoreline Management Plan allows for an additional 11 residential docks on the Columbia River in Lake Wallula (spans Columbia and Walla Walla Counties as well), and the Plan provides specific standards that any new docks must meet. The proposed SMP dock standards are generally consistent with the McNary Shoreline Management Plan for the Columbia River, as well as WDFW standard requirements for docks on the Columbia River. Dock standards require specific measures to avoid, minimize and mitigate effects on sediment transport, water quality, and shoreline habitat. Any dock replacements will be required to meet the standards for a new dock under the SMP. This provision is expected to help to improve conditions related to overwater structures as docks are replaced over time.

In summary, residential development is expected to occur along the County's shorelines. The proposed SMP includes regulations that will maintain riparian functions and ensure that shoreline functions are not degraded from changes in stormwater, as well as in- and over-water structures that may be associated with increased residential development.

### **5.5.2 Commercial and Industrial Development**

Commercial and industrial development is most likely to occur on the Columbia River and in the Burbank area on the Snake River. Both of these areas have existing high-intensity industrial development interspersed with undeveloped lands. These areas have a High Intensity environment designation and include several properties owned by the Port of Walla Walla. Potential impacts from the infill of industrial development in these areas may include increased stormwater runoff, impaired water quality associated with contaminants found on those impervious surfaces or applied to the landscape and erosion from vegetation clearing, and a loss of riparian and limited wetland habitats.

Consistent with SMP guidelines, the proposed SMP establishes a preference for water-dependent industrial development (rather than nonwater-related industrial development). Water-dependent industrial development may have a number of specific potential effects on shoreline functions.

- First, water-dependent uses do not have a required setback, so riparian vegetation functions may be affected by new water-dependent development. Consistent with SMP Section 5.3(D) (Shoreline Vegetation Conservation), any unavoidable removal of vegetation that would cause

adverse impacts to the shoreline would require mitigation and monitoring.

- Second, water-dependent industrial development may affect shoreline functions through the need for new overwater structures, stabilization, in-water structures, or new or maintenance dredging of the shoreline. The proposed SMP requires mitigation sequencing for all of the above activities. For example, new development must be sited to avoid, then minimize the need for new or maintenance dredging. Similarly, the size of overwater structures must be the minimum necessary for the approved use. Where impacts remain, they must be mitigated and monitored.

Where nonwater-dependent industrial development is proposed within shoreline jurisdiction as a part of a mixed-use development or where navigation is already severely limited, public access or ecological restoration must be provided (SMP Section 6.15(B)(1)). Additionally, nonwater-dependent development must comply with required buffers (100 feet on the Columbia and Snake Rivers). These provisions help to maintain remaining riparian vegetation and allow for a possibility that new industrial development will provide some improvement of existing shoreline functions.

Most new industrial developments are expected to result in an increase in impervious surface coverage. The proposed SMP requires that new development and re-development manage short-term and long-term stormwater runoff to avoid and minimize potential adverse effects on shoreline ecological functions. Any development would need to comply with the most recent Stormwater Management Manual for Eastern Washington, and best management practices (BMPs) are required for any development.

In summary, although infill industrial or commercial development may occur in specific locations along the County's shoreline, the SMP standards address the likely impacts of such development and require mitigation for any anticipated impacts.

### **5.5.3 Transportation**

Roads and railroads are common features along the County's shoreline. Both roads and railroads tend to impair habitat and hydrologic connectivity, and stormwater runoff can have a substantial impact on water quality conditions. The majority of anticipated transportation-related work involves maintenance

and repair of the existing network of transportation infrastructure. The proposed SMP establishes standards to guide ongoing maintenance of the existing transportation infrastructure, as well as development of new infrastructure.

Proposed SMP standards require that new highways and railroads are constructed outside of shoreline jurisdiction where feasible (See Appendix A of this CIA). Where routing a road or railroad outside of jurisdiction is not possible, the SMP provides design standards to avoid and minimize potential impacts. Mitigation would be required for impacts resulting from clearing and grading, dredging or fill, shoreline stabilization, or vegetation removal, any of which might be related to development of transportation infrastructure. In summary, no net loss of shoreline functions is anticipated to result from the maintenance or development of transportation uses.

#### **5.5.4 Utilities**

The proposed SMP includes a policy requiring utilities to be located within existing transportation or utility corridors or existing cleared areas to the greatest extent feasible (SMP Section 6.22, Policy 2). This standard, in addition to standards requiring no net loss of functions, and restoration of disturbed areas (see Appendix A of this CIA) should help ensure that utilities associated with new development do not result in a net loss of functions.

### **5.6 Shoreline Restoration Plan**

One of the key objectives that the SMP must address is “no net loss of ecological functions necessary to sustain shoreline natural resources” (Ecology 2011). Although the implementation of restoration actions to restore historic functions is not required by SMP provisions, the SMP Guidelines state that “master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions. These master program provisions should be designed to achieve overall improvements in shoreline ecological functions over time, when compared to the status upon adoption of the master program” (WAC 173-26-201(2)(f)).

The Shoreline Restoration Plan (TWC 2015) represents a long-term vision for restoration that will be implemented over time, resulting in a gradual improvement over the existing conditions. Although the SMP is intended to achieve no net loss of ecological functions through regulatory standards alone, practically, an incremental loss of shoreline functions at a cumulative level may

occur through minor, exempt development; illegal development; failed mitigation efforts; or a temporal lag between the loss of existing functions and the realization of mitigated functions. The Shoreline Restoration Plan, and the voluntary actions described therein, can be an important component in making up that difference in ecological function.

Major Shoreline Restoration Plan components that are expected to contribute to improvement in ecological functions in the foreseeable future are summarized below:

- Implementation of best management practices.
- Project design to improve stream flow, fish passage and floodplain connectivity.
- Coordination with landowners to implement voluntary riparian and floodplain enhancement projects through acquisition, easement, or conservation agreements.
- Improvement of floodplain connectivity, fish passage and habitat restoration on the Columbia River through restoration of off-channel habitats and instream complexity and enhancement of connectivity to small tributaries.
- Ongoing management and mitigation measures to minimize impacts of ongoing Columbia River dam operations.

## **6 NET EFFECT ON ECOLOGICAL FUNCTION**

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This CIA indicates that future growth is likely to be targeted in specific environment designations, waterbodies, and shoreline reaches. This analysis can help inform the County of potential future shoreline impacts and the importance of specific proposed SMP provisions.

The proposed SMP is expected to maintain existing shoreline functions within Walla Walla County while accommodating the reasonably foreseeable future shoreline development. Other local, state and federal regulations, acting in concert with this SMP, will provide further assurances of maintaining shoreline

ecological functions over time. The Shoreline Restoration Plan, and actions described therein, will ensure that incremental losses that could occur despite SMP provisions do not result in a net loss of functions, and these restoration actions may result in a gradual improvement in shoreline functions.

As discussed above, major elements of the SMP that ensure no net loss of ecological functions fall into four general categories: 1) environment designations, 2) general policies and regulations, 3) shoreline critical areas regulations, and 4) shoreline use and modification provisions. The Shoreline Restoration Plan identifies ongoing and planned voluntary restoration that will provide an opportunity to improve shoreline conditions over time.

Environment designations: The Shoreline Analysis Report provided the information necessary to assign environment designations by segment to each of the shoreline waterbodies (**SMP Section 4.0**).

General provisions: **SMP Section 3.0** contains a number of goals pertaining to the protection and restoration of ecological functions. **SMP Section 5.0** contains policies and regulations designed to achieve those goals. These regulations include provisions that provide the basis for achieving no net loss of shoreline functions, such as mitigation sequencing and vegetation conservation standards.

Shoreline modification and use provisions: **SMP Section 6.0** contains a number of regulations that contribute to protection and restoration of ecological functions. Shoreline uses and modifications were individually determined to be either permitted (as substantial developments or conditional uses) or prohibited in each environment designation. The most uses and modifications are allowed in areas with the highest level of existing disturbance.

Shoreline modification regulations emphasize minimization of size of structures, and use of designs that do not degrade and may even enhance shoreline functions. Use regulations prohibit uses that are incompatible with the existing land use and ecological conditions, and emphasize appropriate location and design of the various uses.

Critical Areas Regulations: The shoreline critical areas regulations (**Appendix A of the SMP**) apply within shoreline jurisdiction. Shoreline critical area regulations ensure that vegetated buffers are retained on wetlands, fish and wildlife conservation areas (including all shorelines), and geologically hazardous

areas. The County's flood hazard regulations require that vegetation, flood capacity, and water quality are maintained, and that where feasible, buildings are located outside of the floodway. Combined, these regulations help ensure that the most sensitive areas of the County's shorelines are protected.

Shoreline Restoration Plan: The Shoreline Restoration Plan identifies a number of project-specific opportunities for restoration on both public and private properties inside and outside of shoreline jurisdiction, and also identifies ongoing County programs and activities, restoration partners, and recommended actions consistent with a variety of watershed-level efforts.

Given the above provisions of the SMP, including the key features listed above, implementation of the proposed SMP is anticipated to achieve **no net loss of ecological functions in the shorelines of Walla Walla County.** Voluntary actions identified and prioritized in the Shoreline Restoration Plan will provide the opportunity to enhance and restore shoreline functions over time.

## 7 REFERENCES

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- Burns, B., Powers, P. Waterfall Engineering, LLC, Bates, K.K., and Kidder, J. Chinook Engineering. 2009. Mill Creek Fish Passage Assessment. Final Report, produced for Tri State Steelheaders. Walla Walla, WA.
- National Marine Fisheries Service (NMFS). 2009. Middle Columbia River Steelhead Distinct Population Segment ESA Recovery Plan.
- US Army Corps of Engineers and WA Department of Ecology. 2012. Memorandum of Understanding Signed 7.24.12 Regarding Mill Creek Flow Diversion.
- Walla Walla County. November 2015. Walla Walla County Shoreline Master Program Draft, Revised per preliminary Ecology review.
- Washington Department of Fish and Wildlife. Electronic Reference. Salmonscape. <http://wdfw.wa.gov/mapping/salmonscape/index.html>. Accessed October 8, 2015.
- The Watershed Company. June 2015. Shoreline Restoration Plan for Shorelines in Walla Walla County and the Cities of Walla Walla, Prescott, and Waitsburg. Prepared for Walla Walla County, Walla Walla, WA.

The Watershed Company, BERK, and the Walla Walla Basin Watershed Council.  
September 2014. Shoreline Analysis Report for Shorelines in Walla Walla County  
and the Cities of Walla Walla, Prescott and Waitsburg. Prepared for Walla Walla  
County, Walla Walla, WA.



## **APPENDIX A**

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# Summary of Potential Impacts and SMP Standards that Help Maintain No Net Loss of Functions



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This appendix provides brief summaries of potential changes in shoreline uses and modifications, the potential impacts of those changes, and how SMP standards address these impacts to avoid a net loss of functions. Those use provisions relating to the most commonly anticipated development are discussed in greater detail in the body of the County’s Cumulative Impacts Analysis (CIA).

## A-1 General Standards

The following general standards help to ensure that shoreline functions are maintained for all shoreline uses and modifications.

Table A-1. Summary of general SMP provisions that protect ecological functions.

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
Ecological Protection and Critical Areas, 5.1	Ecological Functions. Uses and developments must be designed, located, sized, constructed and maintained to achieve no net loss of shoreline ecological functions. (A)
	Protection of Critical Areas and Buffers. Critical areas and their buffers are protected by specific provisions contained in SMP Appendix A. (B)
	Mitigation Requirement. If a proposed shoreline use or development is not entirely addressed by specific, objective standards in the SMP, then the mitigation sequencing analysis is required. (C)
	Mitigation sequencing is required. To ensure no net loss applicants must first avoid and minimize impacts and must compensate for unavoidable impacts and monitor the compensation project. (D)
Water Quality, 5.2	Maintain ecological functions. Incorporate measures to protect and maintain surface and groundwater quantity and quality, so that there is no net loss of ecological functions. (A)
	New development and re-development shall manage stormwater runoff in compliance with latest adopted edition of the Stormwater Management Manual for Eastern Washington. If thresholds are not met to trigger compliance, best management practices (BMPs) must still be employed. (C)(1)
	Sewage management. Any new development, or failing septic system will be required to connect to an existing municipal sewer if feasible, or install an approved on-site septic system or make system corrections. (D)
Vegetation Conservation, 5.3	Vegetation clearing must be limited to the minimum necessary. Mitigation sequencing must generally be applied and the County may require minor site plan alterations to achieve maximum tree retention. (C)
	Where vegetation removal results in adverse impacts to shoreline functions, a mitigation plan is required. (D)
	Removal of invasive species is encouraged. (J)

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
Flood Protection, 5.5	New flood hazard reduction measures shall not result in channelization of normal stream flows, interfere with natural hydraulic processes such as channel migration, or undermine existing structures or downstream banks. (C)
	New development, including the subdivision of land, shall not be permitted if it is reasonably foreseeable that the development or use would require structural flood hazard reduction measures within the channel migration zone or floodway. (D)

## A-2 Agriculture

As described in the Shoreline Analysis Report (TWC, BERK and the WWBWC 2014), the predominant current land use in the County’s shoreline jurisdiction is agriculture, including pasture and rangeland. Agricultural uses can have a number of potential impacts to shoreline functions, as summarized in Table A-2. Ongoing agriculture is not regulated under the SMA, and ongoing uses are not expected to degrade ecological functions relative to existing conditions. Based on recent land use trends and available land in shoreline jurisdiction, it is unlikely that significant areas of new agriculture will be developed in shoreline jurisdiction. However, where new agricultural uses occur in shoreline jurisdiction, the proposed SMP includes standards to minimize potential ecological effects. These regulations ensure that new agricultural uses implement best management practices, including vegetated buffers (Table A-3).

Table A-2. Summary of potential impacts from agriculture.

Functions	Potential Impacts to Functions
Hydrologic	Agricultural irrigation from wells may affect ground water.
	Direct irrigation withdrawals may affect base flows.
Water Quality	Increased erosion from removal of trees or tilling of soil.
	Potential for livestock waste, pesticides, herbicides, and fertilizers to enter waterbodies through runoff.
Vegetative/ Habitat	Reduction in native and riparian cover associated with conversion of lands to agricultural uses.
	Unscreened irrigation diversion can entrap small fish.

Table A-3. Summary of key agriculture regulations that protect ecological functions.

Location in SMP	Key SMP Provision Providing Protection of Ecological Functions
Environment Designations-Use and Modifications Matrix, 6.1	New agriculture activities may only be permitted by a conditional use permit in the Natural designation.
Agriculture, 6.4	New feedlots, stockyards, manure lagoons, commercial dairying, poultry farming and hog ranching are prohibited. (F)
	Agricultural uses and activities, including single-family residences associated with agricultural uses, shall be located and designed to ensure no net loss of shoreline ecological function. (D)
	Diversion of water for agricultural purposes shall be consistent with federal and state water rights laws and rules. (G)

### A-3 Aquaculture

Aquaculture standards included in the SMP are designed to ensure that if salmon recovery-related aquaculture activities are proposed, the SMP would facilitate such a use. Potential impacts from aquaculture are summarized below in Table A-4. Key regulations in the proposed SMP that address potential aquaculture impacts are listed below in Table A-5.

Table A-4. Summary of potential impacts from aquaculture.

Functions	Potential Impacts to Functions
Hydrologic	Alteration in hydrologic and sediment processes associated with aquaculture structures.
Water Quality	Reduction in water quality from substrate modification, supplemental feeding practices, pesticides, herbicides, and antibiotic applications.
Vegetative/Habitat	Accidental introduction of non-native species or potential interactions between wild and artificially produced species.

Table A-5. Summary of key regulations related to aquaculture that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Environment Designations-Use and	Commercial aquaculture is prohibited in all designations, except for High Intensity and Rural Conservancy, in which it is a conditional use.

Modifications Matrix, 6.1	
Aquaculture, 6.5	<p>Aquaculture facilities must be designed and located to avoid:</p> <ul style="list-style-type: none"> <li>• The spreading of disease to native aquatic life;</li> <li>• Introducing new non-native species;</li> <li>• Conflicting with navigation and other water-dependent uses;</li> <li>• A net loss of ecological functions</li> <li>• Impacting the aesthetic qualities of the shoreline (A)</li> </ul> <p>Aquaculture structures and activities that do not require a waterside location must be located landward of the shoreline buffers required by this SMP. (B)</p>

#### A-4 Boating Facilities and Private Moorage

Boating facilities typically include upland impervious surfaces along with in- and over-water structures. Potential impacts from these structures are summarized below in Table A-6. Standards relating to boating facilities and private moorage are designed to ensure that such facilities avoid, minimize, and mitigate for potential impacts (Table A-7). Where applicable, specific design standards are proposed.

Table A-6. Summary of potential impacts from boating facilities and private moorage.

Functions	Potential Impacts to Functions
Hydrologic	Alteration of currents and sediment transport.
Water Quality	Increase in contaminants (e.g. metals, petroleum hydrocarbons) associated with the use of boating facilities and private moorage structures.
	Leaching of chemical treatments associated with overwater structures.
Vegetative/ Habitat	Increased shading in shallow-water habitat areas resulting from dock and pier construction can limit growth of aquatic vegetation and alter habitat for and behavior of aquatic organisms, including juvenile salmon.
	Disturbance of riparian vegetation.
	Simplification of shallow-water habitat by boat launch facilities.

Table A-7. Summary of key regulations related to boating facilities and private moorage that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Boating and Moorage Facilities, 6.6	For all new residential development of two or more waterfront dwelling units, subdivisions or other divisions of land, only community docks may be allowed. (B)(3)
	No more than one private, non-commercial dock is permitted per platted or subdivided residential shoreline lot. (B)(4)
	Design, construction, and use must: minimize degradation of aquatic habitats; not impede any juvenile or adult salmonid life stage; and not enhance habitats used by potential salmonid predators. (B)(7)
	All boating facilities must be the minimum size necessary and be designed to avoid and minimize potential adverse impacts. All unavoidable adverse impacts must be mitigated. (B)(8)
	New and expanded facilities must be located to minimize the need for new or maintenance dredging and to eliminate the need for new shoreline stabilization, if feasible. (C)(3 and 4)
	Boating facilities shall be built with materials that do not leach preservatives or other chemicals. No treated wood, paint, stain or preservation shall be applied. (D)(1-3)
	SMP dimensional standards are designed so that piers, ramps, and floats avoid damaging shallow water habitats. Piers and ramps must be the minimum size necessary and are grated. (E)
	Specific dimensional standards for residential docks help avoid and minimize potential impacts. (G)
	Industrial, commercial, recreational, and aquaculture facilities or public access must minimize the size of overwater and in-water structures and associated stabilization measures. (H)
	Dimensional standards and best management practices for water quality apply to new, enlarged, or replacement marinas. (I)
	New public boat launch ramps may be approved only if they provide public access to waters that are not adequately served by existing access facilities. (J)(1)
Boat launch ramps must be located where there is adequate water mixing and flushing and where water depths are adequate to eliminate or minimize the need for dredging or filling. Boat launch ramps must be located to minimize the obstruction of currents, alteration of sediment transport, and the accumulation of drift logs and debris. (J)(4)	

## A-5 Breakwaters, Weirs, and Groins

Breakwaters, weirs and groins are usually intended to alter currents or to deflect or dissipate wave energy. These structures have the potential to cause unintended impacts on natural bank erosion, sediment transport processes, and habitat. Potential impacts from these structures are summarized below in Table A-8.

Based on proposed SMP standards (Table A-9), few, if any, new breakwaters, jetties, or groins should be anticipated. Where new structures are permitted, they would need to demonstrate no net loss on an individual project basis. Infrequent repair and replacement of existing structures may be expected, and mitigation sequencing would apply for these structures.

Table A-8. Summary of potential impacts from breakwaters, weirs, and groins.

Functions	Potential Impacts to Functions
Hydrologic	Potential interference with movement of sediments, altering substrate composition.
Water Quality	Reduced circulation and associated changes in water quality.
Vegetative/ Habitat	Instream habitat alterations and shading.

Table A-9. Summary of key regulations related to breakwaters, weirs, and groins that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Environment Designations- Use and Modifications Matrix, 6.1	Breakwaters, jetties, and groins are permitted when they are designed to restore ecological functions or to maintain existing water-dependent uses.
	For all other uses, breakwaters, jetties, and groins are a conditional use.
Breakwaters, Weirs, and Groins 6.7	New, expanded or replacement structures shall only be allowed if they will not result in a net loss of shoreline ecological functions and that they support water-dependent uses, public access, shoreline stabilization, or other specific public purpose. (A)
	Shall be limited to the minimum size necessary. (B)
	Must be designed to protect critical areas, and shall implement mitigation sequencing. (C)
	Proposed designs for new or expanded structures shall be designed by qualified professionals. (D)

## A-6 Commercial Development

Potential effects of commercial development and mitigation actions of the SMP are discussed in detail in Section 5.5.2 of the CIA. A summary is provided below.

Common effects of commercial development include increased impervious surfaces, increased traffic, and vegetation clearing (Table A-10). New commercial development is expected to be limited in the unincorporated County, but may occur most commonly in the port areas along the Columbia River and in the Burbank area on the Snake River. The proposed SMP includes provisions requiring commercial uses to ensure that these facilities do not result in a net loss of shoreline ecological functions (Table A-11).

Standards for shoreline uses and modifications elsewhere in the proposed SMP also apply to commercial development, including vegetation conservation, boating facilities, shoreline stabilization and dredge and fill, among others. A full summary of regulations that protect ecological functions specific to each specific use or modification which could be associated with a commercial development proposal are found in the corresponding use and modification specific sections of this Appendix A.

Table A-10. Summary of potential impacts from commercial development.

<b>Functions</b>	<b>Potential Impacts to Functions</b>
<b>Hydrologic</b>	Increase in stormwater runoff and discharge in association with more impervious surfaces
	Disruption of shoreline wetlands
<b>Water Quality</b>	Increase in contaminants associated with the creation and use of new impervious surfaces (e.g. metals, petroleum hydrocarbons)
	Water quality contamination from use and storage of toxic substances
	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing
<b>Vegetative/ Habitat</b>	Reduced shoreline habitat complexity and increased water temperatures
	Loss of or disturbance to riparian habitat during upland development
	Lighting effects on both fish and wildlife.

Table A-11. Summary of key commercial use regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Environment Designations- Use and Modification Matrix, 6.1	Commercial development is prohibited in the Natural environment designation except on sites physically separated from the shoreline where it is a conditional use.
Commercial Development, 6.8	Commercial development shall be designed to achieve no net loss of ecological functions. (D)
	Non-water-oriented commercial uses may be permitted where located on a site physically separated from the shoreline by another property in separate ownership or by a public right-of-way, such that access for water-oriented use is precluded. All other non-water-oriented industrial uses are prohibited in the shoreline unless the use provides significant public benefit with respect to public access or ecological restoration, and is part of a mixed use project that includes a water-oriented use or where navigability is severely limited. (B)
	Only those portions of water-dependent commercial uses that require over-water facilities shall be permitted to locate waterward of the OHWM, provided they are limited to the minimum size necessary to support the structure’s intended use. Non-water dependent commercial uses shall not be allowed over water except when accessory to, and located within the same building as, a water-dependent use. (C)
Development Standards, 6.2	Dimensional development standards, including shoreline buffers, are provided in Table 6-2. For water-dependent developments, no buffer or building setback is required. However, mitigation sequencing must be applied to avoid and minimize adverse impacts during development siting.

Standards for specific shoreline uses and modifications found elsewhere in the proposed SMP also apply when proposed as part of a commercial development. Those most commonly expected to apply include shoreline vegetation conservation (see A-1), boating facilities (see A-4), shoreline stabilization (see A-14), water quality (see A-1), and dredge and fill (see A-7), among others.

## A-7 Dredging and Dredge Material Disposal

Dredging can have significant effects on sediment transport, short-term effects on water quality, and by creating deep water, dredging can eliminate valuable shallow-water edge habitat. Potential impacts from dredging and dredge material disposal are summarized below in Table A-12. The proposed SMP requires mitigation of the impacts from dredging and dredge disposal, to help ensure that no net loss of functions is achieved on a project-by-project basis (Table A-13).

Table A-12. Summary of potential impacts from dredging and dredge material disposal.

Functions	Potential Impacts to Functions
Hydrologic	Alteration of hydrologic and sediment processes.
Water Quality	Reduction in water quality from turbidity and in water dredge material disposal.
Vegetative/ Habitat	Disruption of benthic community and submerged aquatic vegetation.
	Reduction in shallow-water habitat.

Table A-13. Summary of key dredge and dredge disposal regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Environment Designations-Use and Modifications Matrix, 6.1	Dredging for reasons other than water-dependent uses, navigation, flood capacity maintenance, public access, habitat restoration, or implementation of a dredging maintenance plan, is a conditional use.
	Disposal of dredge material for any purpose other than in-water habitat restoration is a conditional use.
Dredging and Dredge Material Disposal, 6.9	New development must be sited and designed to avoid or, if that is not possible, to minimize the need for new and maintenance dredging. (B)
	Dredging and dredge material disposal must avoid or minimize significant ecological impacts. Impacts that cannot be avoided must be mitigated. (C)
	Dredging for the primary purpose of obtaining fill material is prohibited, except when the material is necessary for the restoration of ecological functions. (E)
	Dredge disposal within shoreline jurisdiction is permitted only if: <ul style="list-style-type: none"> <li>• Shoreline functions and processes will be preserved, restored or enhanced; and</li> <li>• Erosion, sedimentation, floodwaters or runoff will not increase adverse impacts to functions and processes or property. (F)</li> </ul>
	Dredge material disposal in open waters may be approved only when authorized by applicable state and federal agencies, and when land disposal is infeasible, less consistent with this SMP, or prohibited by law. (G)

## A-8 Fill and Excavation

Fills and excavations within the floodway, floodplain, or channel migration zone can alter natural processes, affecting downstream functions. Fill and excavation would most likely be proposed over relatively small areas of shoreline jurisdiction as part of other shoreline uses or modifications. Potential impacts from fill and excavation are summarized below in Table A-14. The proposed

SMP requires physical, chemical, and biological evaluation of the impacts of proposed dredging, as well as avoidance, minimization, and mitigation of the impacts from dredge disposal and fill, to help ensure that no net loss of functions is achieved on a project-by-project basis (Table A-15).

Table A-14. Summary of potential impacts from fill.

<b>Functions</b>	<b>Potential Impacts to Functions</b>
Hydrologic	Alteration of hydrologic and sediment processes.
Water Quality	Reduction in water quality from turbidity and in water dredge material disposal.
Vegetative/ Habitat	Disruption of benthic community and submerged aquatic vegetation.
	Reduction in shallow-water habitat.

Table A-15. Summary of key regulations pertaining to fill and excavation that protect ecological functions.

<b>Location in SMP</b>	<b>SMP Provision Providing Protection of Ecological Functions</b>
Environment Designations-Use and Modifications Matrix, 6.1	Fill and excavation waterward of the OHWM require a Shoreline Conditional Use Permit, except to restore shoreline functions.
Fill and Excavation, 6.10	All fills and excavations shall be located, designed and constructed to protect shoreline ecological functions and ecosystem-wide processes, including channel migration. Any adverse impacts to shoreline ecological functions must be mitigated. (A)
	All fills, except fills for the purpose of shoreline restoration, must be designed to be the minimum size necessary; to fit the topography of the site; to not adversely affect hydrologic conditions or increase the risk of slope failure. (D)
	A temporary erosion and sediment control (TESC) plan, including BMPs shall be provided for all proposed fill activities. Disturbed areas shall be immediately protected from erosion using weed-free straw, mulches, hydroseed, or similar methods, and revegetated, as applicable. (F)

## **A-9 Ports and Industrial Development**

Potential effects of industrial development and mitigation actions of the SMP are discussed in detail in Section 5.5.2 of the CIA. A summary is provided below.

The potential for industrial development along the County’s shorelines is concentrated in the port properties along the Columbia River and the Burbank area along the Snake River. Tables A-16 and A-17 summarize the potential impacts and the SMP provisions relating directly to industrial development.

Standards for shoreline uses and modifications elsewhere in the proposed SMP also apply to industrial development, including boating facilities, shoreline stabilization and dredge and fill, among others. A full summary of regulations that protect ecological functions specific to each specific use or modification which could be associated with an industrial development proposal are found in the corresponding use and modification specific sections of this Appendix A.

Table A-16. Summary of potential impacts from industrial development.

<b>Functions</b>	<b>Potential Impacts to Functions</b>
Hydrologic	Increase in stormwater runoff and discharge in association with more impervious surfaces.
	Disruption of shoreline wetlands.
Water Quality	Increase in contaminants associated with the creation of new impervious surfaces (e.g. metals, petroleum hydrocarbons).
	Water quality contamination from use and storage of toxic substances.
	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing.
Vegetative/ Habitat	Reduced shoreline habitat complexity, increased water temperatures, and less LWD.
	Loss of or disturbance to riparian habitat during upland development.
	Lighting effects on both fish and wildlife.

Table A-17. Summary of key regulations related industrial development that protect ecological functions.

<b>Location in SMP</b>	<b>SMP Provisions Providing Protection of Ecological Functions</b>
Ports and Industrial Development, 6.15	New industrial development shall be located, designed and constructed in a manner that assures no net loss of shoreline functions and minimizes disruption of other shoreline resources and values. (C)
	Shoreline setback and buffer areas shall not be used for storage of industrial equipment, materials, or waste disposal. (D)
	Non-water-oriented industrial uses may be permitted where located on a site physically separated from the shoreline by another property in separate ownership or a major transportation corridor such that access for water-oriented use is

	precluded. All other non-water-oriented industrial uses are prohibited in the shoreline environment unless they are part of a mixed-use development or navigability is severely limited, and the proposed development will provide significant public benefit with respect to public access or ecological restoration. (B)
Development Standards, 6.2	Dimensional development standards, including shoreline buffers, are provided in Table 6-2. For water-dependent developments, no buffer or building setback is required. However, mitigation sequencing must be applied to avoid and minimize adverse impacts during development siting.

Standards for specific shoreline uses and modifications found elsewhere in the proposed SMP also apply when proposed as part of a commercial development. Those most commonly expected to apply include shoreline vegetation conservation (see A-1), boating facilities (see A-4), shoreline stabilization (see A-14), water quality (see A-1), and dredge and fill (see A-7), among others.

## A-10 In-Stream Structures

Potential impacts from in-stream structures are summarized in Table A-18. Small and large-scale in-stream structures intended to produce energy and/or moderate flooding are found in Walla Walla County, including Ice Harbor and Lower Monumental Dams in the Snake River, the Mill Creek Flood Control Project and Bennington Lake Diversion Dam, Hofer Dam in the Touchet River and Burlingame Dam in the Walla Walla River. There are also a number of irrigation diversion and discharge structures in many waterbodies. Diversions of water from one basin to another to support improved seasonal flow conditions may require in-stream structures. Regulations accommodate anticipated new diversion structures, as well as repair/maintenance and possible expansion of existing projects, while protecting ecological functions (Table A-19).

Table A-18. Summary of potential impacts from instream structures.

Functions	Potential Impacts to Functions
Hydrologic	Alteration in flows.
Water Quality	Effects to circulation and associated changes in water quality.
Vegetative/ Habitat	Migration barriers and stranding potential for aquatic species.
	Instream habitat alterations.

Table A-19. Summary of key regulations related to instream structures that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Instream Structures, 6.13	In-stream structures shall provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources. (A)
	Natural in-stream features, such as snags, uprooted trees, or stumps, shall be left in place unless it can be demonstrated that they are actually causing bank erosion or higher flood stages or pose a hazard to navigation or human safety. (E)

## A-11 Mining

Commercial mining has the potential to significantly impact erosion processes, water quality, and instream habitat (Table A-20). Very little mining actively occurs within Walla Walla County.

Any proposals for new mining would require a Shoreline Conditional Use Permit, which requires that the project demonstrate no net loss on an individual and cumulative basis, and requires review and approval from Ecology.

Because any new mining application will be required to demonstrate no net loss on an individual project basis, no net loss of shoreline ecosystem functions is expected from mining uses. See Table A-21 for a summary of key SMP provisions.

Table A-20. Summary of potential impacts from mining.

Functions	Potential Impacts to Functions
Hydrologic	Channel bank and bed instability upstream and downstream through accelerated erosion, river channelization, channel incision, disruption in sediment transport
	Pit capture of gravel mining pits adjacent to the river, resulting in stranding of fish during floods
Water Quality	Reduction in water quality from turbidity and material disposal
Vegetative/ Habitat	Reduction in riparian and emergent vegetation

Table A-21. Summary of key mining regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Environment Designations-Use and Modifications Matrix, 6.1	All new mining is prohibited except in the High Intensity designation, where it requires a Shoreline Conditional Use Permit.
Mining, 6.14	Mining shall not be permitted in designated fish and wildlife habitat areas except as a part of an approved flood control program or in conjunction with a habitat restoration or enhancement plan, provided that such mining activities are demonstrated to be water-dependent. (B) New mining activities in the shoreline jurisdiction shall be sited, designed, conducted, and mitigated in a manner that results in no net loss of shoreline ecological function. The determination of no net loss shall be based on an evaluation of a reclamation plan required for the site. (F and G)

## A-12 Recreation

Existing parks and public open spaces are present along several County shorelines, particularly the Snake and Columbia Rivers and Bennington Lake. Additional opportunities for improved public access to the shorelines are being identified as part of the SMP planning process and development of new recreational areas is possible. Tables A-22 and A-23 summarize the potential impacts and the SMP provisions relating directly to recreational development. Standards for shoreline uses and modifications elsewhere in the proposed SMP also apply to recreational development, including boating facilities, among others.

Table A-22. Summary of potential impacts from recreational development.

Functions	Potential Impacts to Functions
Hydrologic	Increase in stormwater runoff and discharge in association with more impervious surfaces
Water Quality	Increase in contaminants associated with the creation of new impervious surfaces (e.g. metals, petroleum hydrocarbons)
	Increase in pesticide and fertilizer use
	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing
Vegetative/Habitat	Reduced shoreline habitat complexity and increased water temperatures
	Loss of or disturbance to riparian habitat during upland development

Table A-23. Summary of key recreational use regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Recreational Development, 6.16	Recreation facilities shall be designed and located to take maximum advantage of and enhance the natural character of the shoreline area, and ensure no net loss of shoreline ecological functions. (C)
	Recreational facilities shall incorporate means to prevent erosion, control the amount of runoff and prevent harmful concentrations of chemicals and sediment from entering water bodies. (D)

### A-13 Residential

The potential effects of residential development along the County’s shorelines and mitigation SMP provisions are addressed in more detail in Section 5.5.1 of the CIA. A summary is provided below.

Tables A-24 and A-25 summarize the potential impacts and the SMP provisions relating directly to residential development. Standards for shoreline uses and modifications elsewhere in the proposed SMP also apply to residential development, including boating facilities, shoreline stabilization, water quality, and vegetation conservation, among others. A full summary of regulations that protect ecological functions specific to each specific use or modification which could be associated with a residential development proposal are found in the corresponding use and modification specific sections of this Appendix A.

Table A-24. Summary of potential impacts from residential development and accessory development.

Functions	Potential Impacts to Functions
Hydrologic	Increase in stormwater runoff and discharge in association with more impervious surfaces
Water Quality	Increase in contaminants (e.g. metals, petroleum hydrocarbons) and decrease in infiltration potential associated with the use and creation of new impervious surfaces
	Water quality contamination from failed septic systems
	Increase in pesticide and fertilizer use
	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing
Vegetative/ Habitat	Reduced shoreline habitat complexity and increased water temperatures
	Loss or disturbance of riparian habitat during upland development

Table A-25. Summary of key residential use regulations that protect ecological functions.

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
Environment Designations-Use and Modification Matrix, 6.1	Single-family residential development is prohibited in the High Intensity designation and is a conditional use in the Natural designation.
Development Standards, 6.2	Maximum allowable impervious surface is limited to 10% in the Rural Conservancy designation. (E and Table 6-2) Shoreline buffers apply or non-water dependent developments (C).
Residential Development, 6.17	Residential development shall be designated and located in a manner that does not require the construction of new shoreline stabilization features or flood control measure to protect the proposed residences, for the life of the structure. (B) Residential development shall be sufficiently set back from steep slopes and erosion hazard areas so that structural improvements are not required to protect proposed residences, for the life of the structure. Minimum buffer distances are contained in the critical areas regulations in SMP Appendix A. (C) Residential development shall be designed and configured in a manner that does not result in a net loss of ecological functions. (D)
Standards for specific shoreline uses and modifications found elsewhere in the proposed SMP also apply when proposed as part of a residential development. Those most commonly expected to apply include shoreline vegetation conservation (see A-1), shoreline stabilization (see A-14) and water quality (see A-1), among others.	

## A-14 Shoreline Stabilization

New shoreline stabilization has the potential to significantly impact hydrologic and sediment processes, and nearshore habitat (Table A-26). Standards relating to shoreline stabilization are designed to ensure that development first avoid the need for stabilization, and where stabilization is necessary, that potential impacts are minimized and mitigated (Table A-27).

Table A-26. Summary of potential impacts from shoreline stabilization.

Functions	Potential Impacts to Functions
Hydrologic	Increase in flow energy at the shoreline resulting in increased bank erosion downstream.

	Disruption of shoreline wetlands.
Water Quality	Water quality impacts associated with construction.
	Removal of shoreline vegetation increases erosion and water temperatures.
Vegetative/ Habitat	Simplification of shoreline habitat complexity.

Table A-27. Summary of key shoreline stabilization regulations that protect ecological functions.

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
Shoreline Stabilization 6.19	New development must be located and designed to avoid the need for future shoreline stabilization, if feasible. This includes subdivisions and development adjacent to steep slopes. (A)
	New development that would require shoreline stabilization that would cause significant impacts to adjacent or down-current properties and shoreline areas is prohibited. (B)
	Soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings, and businesses. (C)
	All proposals for shoreline stabilization structures, both individually and cumulatively, must not result in a net loss of ecological functions, and must be the minimum size necessary. (D)

## A-15 Transportation

The potential effects of transportation facilities along the County's shorelines are addressed in Section 5.5.3 of the CIA. Tables A-28 and A-29 summarize the potential impacts and the SMP provisions relating directly to transportation development. Standards for shoreline uses and modifications elsewhere in the proposed SMP also apply to transportation development, including shoreline stabilization, stormwater, and vegetation conservation, among others.

Table A-28. Summary of potential impacts from transportation facilities.

Functions	Potential Impacts to Functions
Hydrologic	Increase in stormwater runoff and discharge in association with more impervious surfaces
	Potential for crossings to limit passage of flood flows.
Water Quality	Increase in contaminants associated with the creation of new impervious surfaces (e.g. metals, petroleum hydrocarbons)
Vegetative/	Greater potential for increased erosion, bank instability, and turbidity associated

Functions	Potential Impacts to Functions
Habitat	with vegetation clearing
	Fish passage impacts associated with stream crossings.

Table A-29. Summary of key transportation facility regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Transportation and Circulation, 6.21	When it is necessary to locate transportation infrastructure within shoreline jurisdiction, such facilities should be designed to minimize the amount of land area consumed and located as far landward from the shoreline as possible. (A)
	Design, location, and construction of road and railroad facilities should minimize erosion and maintain slope stability, permit the natural movement of water, prevent the entry of pollutants or waste materials into the water body and use existing topography and preserve natural conditions to the greatest practical extent. (B.1-4)
	To the greatest extent feasible, accessory parking shall be located landward of the building or use it serves. (G)
	Transportation facilities shall be constructed of materials which will not adversely affect water quality or aquatic plants and animals over the long-term. (D)

## A-16 Utilities

Utilities can have a substantial, often linear impact on shoreline vegetation and habitat (Table A-30). The proposed SMP requires that primary utilities ensure no net loss of functions (Table A-31). Primary utility facilities may be developed to supply existing undeveloped areas with utilities, or to upgrade utilities to existing developed areas.

Table A-30. Summary of potential impacts from utilities.

Functions	Potential Impacts to Functions
Hydrologic	Where utilities require shoreline armoring, associated hydrologic impacts are likely
	Erosion at stormwater outfall locations can alter sediment transport processes
Water Quality	Potential for contaminant spill or leakage
	Unfiltered stormwater or sewage discharge into shoreline waterbodies will degrade water quality conditions.
Vegetative/Habitat	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing

Table A-31. Summary of key utility infrastructure regulations that protect ecological functions.

<b>Location in SMP</b>	<b>SMP Provision Providing Protection of Ecological Functions</b>
Utilities 6.22	Upon completion of installation or maintenance, projects on shoreline banks should be restored to pre-project configuration, including restoration of vegetation as required under Section 5.1.3 (A)
	Wherever possible, multiple utilities shall be co-located in a shared corridor. (D)
	Utilities applications should demonstrate how the location, design and use achieves no net loss of shoreline ecological functions and incorporates appropriate mitigation. (F)