

**WALLA WALLA COUNTY
GRANT No. G1400495**

CUMULATIVE IMPACTS ANALYSIS

FOR THE CITY OF WALLA WALLA SHORELINE MASTER PROGRAM

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DRAFT CUMULATIVE IMPACTS ANALYSIS

CITY OF WALLA WALLA SHORELINE MASTER PROGRAM

1 INTRODUCTION

1.1 Background and Purpose

This Cumulative Impacts Analysis (CIA) is a required element of the City of Walla Walla 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 the City of Walla Walla (City) 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.

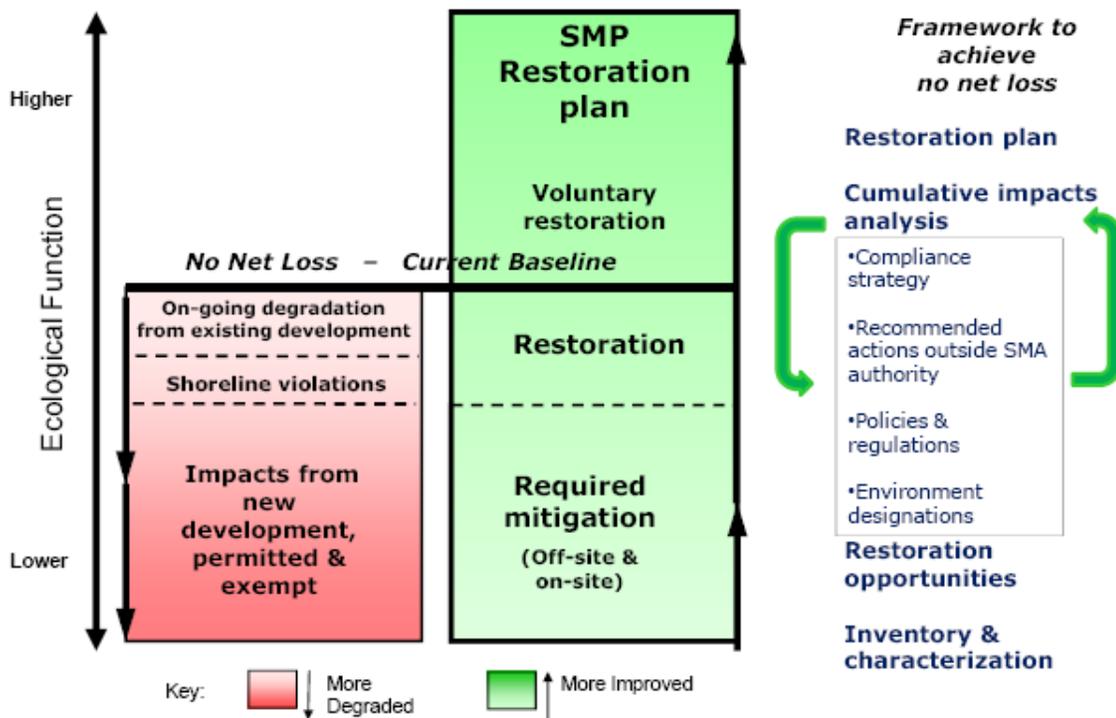


Figure 1-1. Framework for achieving no net loss of shoreline ecological functions (Source: Department of Ecology)

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 City of Walla Walla 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 the initial Shoreline Analysis Report was conducted regionally, the cities of Walla Walla, Prescott and Waitsburg will each be developing separate proposed SMPs and will have separate CIAs prepared for each. The discussion in this CIA pertains only to the incorporated City of Walla Walla. The City of Walla Walla Urban Growth Area (UGA) is addressed in the County CIA.

2 SUMMARY OF EXISTING CONDITIONS

Mill Creek is the only shoreline waterbody in the City of Walla Walla. The reaches of Mill Creek that flow through the City are part of the U.S. Army Corps of Engineers Mill Creek Flood Control Project and the majority are contained in a concrete flume. A portion of Mill Creek through the City is confined in an artificial, underground channel.

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 Environmental

2.1.1 Watershed Overview

The City of Walla Walla is located within Water Resource Inventory Area (WRIA) 32, the Walla Walla watershed. Mill Creek is one of the major tributaries to the Walla Walla River originating in the Blue Mountains. It drains the majority of the southern portion of the Walla Walla watershed within the 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.

The conditions in the upper Mill Creek watershed, located within the National Forest, are vastly different from the conditions of the lower reaches in the County

and through the City of Walla Walla. 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. In contrast, the headwaters portion of the Mill Creek watershed is nearly pristine and has very limited access. The upper most County reach, located within the National Forest, is managed as a municipal watershed to protect the city of Walla Walla's municipal water supply.

In the County reaches east and west of the flood control project the main modification to the Mill Creek shoreline is agricultural and residential uses which have modified shoreline vegetation, and the Corps flood control project which alters flows downstream of the project.

Bull trout, rearing and spawning Spring Chinook and Summer Steelhead are documented throughout Mill Creek. 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 salmonid fish. 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).

For the purpose of the Analysis Report Mill Creek was divided into 15 reaches. Reaches 4 through 10 are in the City of Walla Walla, the rest are in the unincorporated County. City of Walla Walla UGA is encompassed in Reaches 3 and 11. Conditions of the City reaches are discussed further below. A detailed analysis and functional scoring for all reaches can be found in the Shoreline Analysis Report.

2.1.2 City of Walla Walla

The City of Walla Walla is the most developed area of the watershed and the majority of City shorelands are impacted by urban development. Also, as noted

above, through the City of Walla Walla the Mill Creek channel is highly modified from a U.S. Army Corps of Engineers (Corps) project to control flooding.

The flow diversion upstream causes very low flows during the summer months. Fish and wildlife habitat is greatly limited due to both flow and channel modifications and barriers, as well as surrounding land use impacts.

Levees are present along 100% of the city shorelines. The upstream portion of Reach 5 and all of Reaches 6, 8 and 9 flow through a narrow concrete flume. Mill Creek flows through an underground pipe (Reach 7) between N. 3rd Avenue and S. Colville Street. The upstream portion of the creek within the City is wider, though still confined in a constructed channel (Reaches 10).



Functions are highest in Reach 10 where the channel is not in a narrow concrete flume and the shoreline is less developed, or where there is still some vegetation present. Shallow alluvial soils are mapped for almost 100% of the city reaches which could help provide hyporheic function in the shorelines that are not covered with impervious surfaces. PHS habitat is mapped over some portion of all reaches except 6-9. Reach 9 is predominantly residential development and includes a park and several areas of trees and pervious surface among the houses which slightly raises its vegetative and habitat scores as compared to the other city reaches.

Functions are lowest in Reaches 5, 6 and 8, which cover the downtown core and industrial areas, where much of the channel is in the flume and little shoreline vegetation is present. However, Reach 5 does have some undeveloped areas, including one stretch of fairly wide forested and scrub shrub vegetation. Functions are essentially nonexistent in the underground section, other than the actual transmittal of flow.

Reach 4 falls in the middle of the functional rankings. Reach 4 is the parcel encompassing the Walla Walla water treatment plant. While the shorelines in

this reach are not entirely built out, they are heavily impacted from industrial activity and very little vegetation is present.

2.2 Land Use

Land uses along Mill Creek as it flows through the City of Walla Walla are perhaps more diverse than any other water body in Walla Walla County. The City's shoreline jurisdiction includes residences, industrial development, commercial uses, undeveloped land, utility facilities, and even agriculture. Residential development is the largest land use category, accounting for approximately 28% of the shoreline jurisdiction's land area. Residential uses are concentrated along the portion of the creek immediately east of downtown. Commercial uses (services and trade) account for approximately 19% of the shoreline jurisdiction and are concentrated in Downtown Walla Walla, where Mill Creek is confined to an artificial flood control channel is piped in several locations. Because of the artificial nature of the channel along this portion of the creek, development is often located very near the edge of the stream, or in the case of the piped sections, above the stream.

Undeveloped land accounts for approximately 18% of the shoreline jurisdiction and is concentrated at the eastern and western ends of the city. These areas are also the primary locations for the small amount of agriculture present in the City's shoreline jurisdiction (10%). Cultural and civic uses, such as various city parks and Walla Walla Community College, are also located along Mill Creek and account for approximately 8% of the shoreline jurisdiction. A small cluster of industrial and manufacturing uses is located just west of downtown and accounts for about 2% of the shoreline jurisdiction.

Water-dependent uses in the City of Walla Walla consist mostly of flood control, stormwater management, and utility infrastructure. Water enjoyment uses include a series of parks, such as Wildwood Park, Washington Park, Eastgate Lions Park, the Mill Creek Sports Complex, and the campus of Walla Walla Community College.

Transportation infrastructure in the shoreline jurisdiction consists of an extensive network of local access streets, including numerous bridge crossings and surface streets above the portion of the creek that is piped underground through Downtown Walla Walla.

3 REASONABLY FORESEEABLE FUTURE DEVELOPMENT

3.1 Methods

This section estimates potential future development within and along the shorelines of the City of Walla Walla. 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.

3.2 City of Walla Walla

As described in the *Shoreline Analysis Report*, the City of Walla Walla's shorelines are characterized by a wide variety of development, including residential, commercial, industrial, recreational and open space uses. Commercial and industrial uses are concentrated near downtown, while residential, recreation, and open space uses are more common in the outlying areas.

3.2.1 Residential Growth

The greatest potential for new residential shoreline growth would be in the eastern areas of the City's shoreline jurisdiction, particularly in the Urban Residential environment designation. Tables 3-3 and 3-4 show the vacant and subdividable residential acreage along Mill Creek within the City of Walla Walla and the number of potential new residential units, based on minimum lot sizes established in the City of Walla Walla zoning code. All new residential units

reported in Tables 3-3 and 3-4 are single-family residences; none of the vacant parcels in shoreline jurisdiction zoned for multifamily residential uses meet the minimum size requirements of the City’s zoning code to be developed for multifamily use.

Table 3-3. City of Walla Walla Potential New Residential Units – Vacant

	Number of Vacant Parcels	Acres Residential Allowed (Shoreline)	Acres Residential Allowed (Shoreline Parcels)	Potential New Units (Shoreline)	Potential New Units (Shoreline Parcels)
Mill Creek					
High Intensity	5	0.34	0.73	6	8
Urban Residential	21	3.5	4.08	32	36
Total	26	3.84	4.81	38	44

Table 3-4. City of Walla Walla Potential New Residential Units – Subdividable

	Number of Subdividable Parcels	Acres Residential Allowed (Shoreline)	Acres Residential Allowed (Shoreline Parcels)	Potential New Units (Shoreline)	Potential New Units (Shoreline Parcels)
Mill Creek					
High Intensity	3	0.41	1.14	4	10
Urban Residential	26	13.01	15.45	90	109
Total	29	13.42	23.81	94	119

In addition to land zoned for residential use, the City’s zoning code allows multifamily residential development as a conditional use in the Highway Commercial (CH) zone. There is currently one undeveloped shoreline parcel zoned CH in the High Intensity environment designation. Because the City’s code does not establish a minimum lot size or residential density limit for the CH zone, any estimate of the number of multifamily units that could be built on this property would be speculative. Given the size of the property (approximately 5.3 acres), it is possible that the site could be developed for a moderately-sized apartment complex, though the primary purpose of the CH zone is for commercial development.

3.2.1 Commercial and Industrial Growth

Vacant land zoned for commercial and industrial uses in the City’s shoreline jurisdiction is primarily located in the areas west of downtown. Compared to the overall size of the City’s shoreline jurisdiction, the amount of land available for new commercial and industrial development is relatively small. As shown in Table 3-5, these vacant properties consist mostly of land zoned Highway Commercial, Heavy Industrial, and Light Industrial/Commercial.

Table 3-5. City of Walla Walla Shoreline Vacant Commercial/Industrial Land

	Number of Vacant Parcels	Acres Commercial/Industrial Allowed (Shoreline)	Acres Commercial/Industrial Allowed (Shoreline Parcels)
Mill Creek – High Intensity			
Central Commercial	2	0.38	0.38
Highway Commercial	1	3.67	5.35
Heavy Industrial	4	3.00	3.06
Light Industrial/Commercial	3	3.47	6.70
Total	10	10.52	15.48

In addition to vacant commercial and industrial properties, some capacity for additional commercial and industrial development may exist on developed properties that are currently underutilized. Future growth in these areas may occur through redevelopment of existing uses, expansion of current uses, or through subdivision.

4 EFFECTS OF ESTABLISHED REGULATORY PROGRAMS

4.1 Current City of Walla Walla Regulations

All development activity within the City is required to comply with the Walla Walla Municipal Code (WWMC). Provisions in the WWMC 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 Area Regulations

City critical area regulations, which will continue to apply outside of shoreline jurisdiction after adoption of the SMP are detailed in Walla Walla Municipal Code (WWMC) Chapter 21.04. These regulations have a recommended 35-foot minimum streamside buffer width for waterways within the City, except for Yellowhawk Creek from Russell to Mill Creeks, which has a minimum 50-foot buffer (WWMC 21.04.650). Wetland buffers between 25 and 250 feet are required based on wetland classification (per the Washington State Wetland Rating System for Eastern Washington, as amended) and intensity of proposed land use (WWMC 21.04.340). The City'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 (Chapter 21.10 Floodplain Management of the Walla Walla Municipal Code) 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

City 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. A variety of zoning designations are present in shoreline jurisdiction through the City of Walla Walla including Central Commercial, Heavy Industrial, Highway Commercial, Light Industrial/Commercial, Multi-Family Residential, Single Family Residential, and Public Reserve. Each zone has different permitted uses which help to concentrate development in areas appropriate and suitable for similar uses. (WWMC Title 20).

4.2 State Agencies/Regulations

Aside from the Shoreline Management Act, State regulations most pertinent to moderation of ecological impacts of development in the City'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 City 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 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.

4.2.2 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 Mill Creek Levee Management

4.3.2 On September 9, 2015 a Finding of No Significant Impact (FONSI) was approved for U.S. Army Corps of Engineers' plan to perform vegetation maintenance on the Corps-managed section of the federal levee system along Mill Creek in Walla Walla. In order to ensure the levees perform as designed and to complete repairs, a 15-foot vegetation free zone will be established on the landward side of the levee. The Corps will remove about 6 acres of woody vegetation to establish this zone. Grasses will be planted in the area after maintenance is complete. The City of Walla Walla does not have regulatory authority over this activity. Clean Water Act

Major components of the Clean Water Act include Section 404, Section 401, 303(d) and the National Pollutant Discharge Elimination System (NPDES).

Section 404 provides the Corps, under the oversight of the U.S. Environmental Protection Agency, with authority to regulate “discharge of dredged or fill material into waters of the United States, including wetlands” (http://www.epa.gov/owow/wetlands/pdf/reg_authority_pr.pdf). The extent of the Corps' authority and the definition of fill have been the subject of considerable legal activity. As applicable to the City's shoreline jurisdiction, however, it generally means that the Corps must review and approve many activities in streams, lakes and wetlands. These activities may include wetland fills, stream and wetland restoration, and culvert installation or replacement, among others. The Corps requires projects to avoid, minimize, and compensate for impacts.

A Section 401 Water Quality Certification is required for any applicant for a federal permit for any activity that may result in any discharge to waters of the United States. States and tribes may deny, certify, or condition permits or licenses based on the proposed project's compliance with water quality standards. In Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of this program.

The NPDES is similar to Section 401, and it applies to ongoing point-source discharge. Permits include limits on what can be discharged, monitoring and reporting requirements, and other provisions designed to protect water quality. Examples of discharges requiring NPDES permits include municipal stormwater

discharge, wastewater treatment effluent, or discharge related to industrial activities or aquaculture facilities.

Section 303(d) of the Clean Water Act requires the state to develop a list of waters that do not meet water quality standards. A Total Maximum Daily Load, or TMDL, must be developed for impaired waters. Mill Creek has a TMDL for bacteria, temperature, dissolved oxygen, chlorine, Ammonia-N and pH. Mill Creek also has an impaired listing for in-stream flow, a non-pollutant impairment which cannot be addressed through a TMDL.

The Inventory Data Summary Table in Appendix C of the Shoreline Analysis Report identifies impaired water quality listings in the City by shoreline reach.

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 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

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 City’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 Downtown, Mill Creek Flume, Urban Residential and Urban Conservancy, 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
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.
Urban Downtown	The piped sections of Mill Creek approximately between Colville Street and Third Avenue, where the stream route is primarily underground and thereby removed from interaction with adjacent surface-level land uses and development. The Urban Downtown environment designation may also be applied to daylighted portions of the stream between piped sections, provided that the stream is confined to an artificial channel in these locations.
High Intensity	Areas that currently support or are planned for high-intensity uses related to multi-family residences, commerce, transportation, or industry.
Urban Residential	Areas within city limits or UGAs that include existing residential development, or are planned or platted for residential development.
Urban Conservancy	Areas within city limits or UGAs that: <ol style="list-style-type: none"> 1. Are planned for development that is compatible with the principles of maintaining or restoring the ecological functions of the area; 2. Are suitable for water related and water-enjoyment uses; 3. Are open space or floodplain; 4. Are areas that retain important ecological functions which should not be more intensively developed.

The majority of the Mill Creek shorelines in the City of Walla Walla are already developed to some extent and shoreline functions are highly altered.

Approximately 35 percent of the shoreline area occurs in the High Intensity designation (Figure 1), which is designed to accommodate the commercial and industrial uses currently present. Another 18 percent of the shoreline area is in the Mill Creek Flume designation, an intensively developed environment adjacent to Mill Creek's flood control project. Another 6 percent of the City's shoreline occurs where Mill Creek flows partially or fully confined in artificial, underground channels. This environment, assigned an Urban Downtown designation, is designed to provide for a variety of urban uses. Because this environment designation is characterized by an artificial stream channel and is physically separated from upland development by virtue of being located underground, areas within the Urban Downtown environment designation are not subject to the shoreline use preferences established in RCW 90.58.020, nor the use priorities established in WAC 173-26-201(2)(d). Likewise, the General Policies and Regulations contained in Chapter 5 of the SMP do not apply to these areas.

21 percent of the shoreline occurs in the Urban Residential designation, mainly between South Park Street and Wilbur Ave. More protective management policies and restrictive allowed uses and modifications apply to the Urban Conservancy designation which occur in the less intensively developed areas of the City (20% of total shoreline area), where the highest functioning shorelines are present. This is generally the area approaching the eastern City limits.

The proposed environment designations reflect the highly altered nature of the City's shorelines. 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 designation helps to protect the more rural areas on the outskirts of the City where existing shoreline functions are less altered.

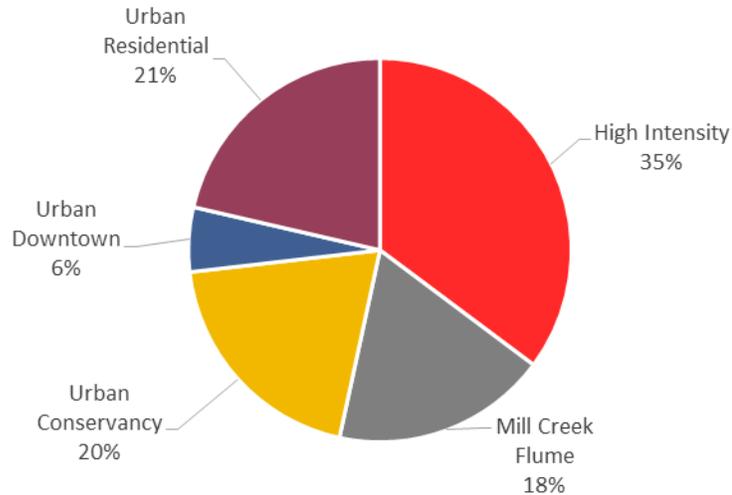


Figure 5-1. Distribution of upland environment designations in the City of Walla Walla by area

5.2 Effects of Critical Areas Regulations

The SMP includes policies and regulations to avoid cumulative effects to critical areas. The SMP incorporates the City’s existing critical areas regulations (WWMC 21.04) 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 WWMC 21.04 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, intensity of proposed land use and in some cases, habitat scores or type of special characteristics present. Buffer widths 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 3.12(E)). These proposed SMP standards should ensure that wetland functions are maintained over time.

5.2.2 Streams

Regulations for streams 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 existing City critical areas regulations. Mill Creek within the City limits is entirely within the flood control project where shorelines are highly modified and the existing shoreline function is low. Therefore, a 35 foot buffer is proposed. This buffer width is expected to be adequate to maintain existing ecological conditions given the highly altered and low functioning system (SMP Appendix A Section 6.5(C)(2) and Table 6.5-1).

For non-shoreline tributaries within the City's shoreline jurisdiction, buffers range from 35 to 50 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 6.5(C)(5)). 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

demonstrates that it will improve riparian functions over existing conditions (SMP Appendix A Section 6.5(C)(6)).

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 accessories, 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 (Appendix B, Section 6.5(C)(7)).

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.

5.3 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 (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 ((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). 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) 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 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 the most commonly anticipated changes in shoreline development involve residential, commercial and industrial development, though the effects such future land use changes are expected to be relatively localized, as much of the shoreline is already developed.

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 the City of Walla Walla, 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 indicated that the greatest potential for new residential shoreline growth would be in the eastern areas of the City’s shoreline jurisdiction in the Urban Residential environment designation where 32 new residential units could potentially be developed on the vacant lots. All foreseeable residential development in this area would be single family residences as none of the vacant parcels in shoreline jurisdiction zoned for multifamily residential uses meet the minimum size requirements of the City’s zoning code to be developed for multifamily use.

A summary of potential effects of residential development on shoreline ecological functions is described in Appendix A of this report. Potential effects of shoreline modifications that may be considered accessory to residential development, including 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. Vegetation conservation standards that establish standard vegetated buffer widths are particularly important for maintaining vegetative, hydrologic, and water quality functions of the shoreline despite increasing development.

Mill Creek is in a concrete flume through most of the area most likely to see future residential development. Given the highly altered channel and functional impairment related to the flood control project and the level of adjacent existing development, the proposed 35-foot standard buffer width for Mill Creek should be sufficient to protect the existing level of shoreline ecological function.

In addition to new development that may occur on vacant lots, some shoreline parcels are large enough to be subdivided into multiple lots which could be developed. 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 presumed to rarely be associated with residential development in Walla Walla due to the flume system. 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. Mitigation for unavoidable impacts from new or

replacement stabilization measures would be required through mitigation sequencing.

In summary, residential development is expected to occur along the City'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 in the areas west of downtown. Compared to the overall size of the City's shoreline jurisdiction, the amount of land available for new commercial and industrial development is relatively small. However, in addition to vacant commercial and industrial properties, some capacity for additional commercial and industrial development may exist on developed properties that are currently underutilized. These areas have a High Intensity environment designation.

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 Section 5.3(D) (Shoreline Vegetation Conservation) of the SMP, 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. 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.

Potential impacts from repair and maintenance activities are generally temporary in nature, including such effects as turbidity and other temporary water quality impacts. Repair and maintenance activities are exempt from a Shoreline Substantial Development Permit, but SMP standards still apply. Therefore, ongoing maintenance and repair activities shall be conducted consistent with the SMP provisions.

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

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 include implementation of best management practices and design projects to protect and improve stream flow and fish passage.

6 NET EFFECT ON ECOLOGICAL FUNCTION

This CIA indicates that ecological function in the City’s shorelines is greatly impacted by the flood control project and surrounding urban development and that future growth is likely to be targeted in specific areas of the shoreline. This analysis can help inform the City of potential future shoreline impacts and the importance of specific proposed SMP provisions.

The proposed SMP is expected to maintain existing shoreline functions within the City of Walla Walla 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 City's shoreline critical areas regulations (**Appendix A**) 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 City'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 City'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 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 the City of Walla Walla**. Voluntary actions identified and prioritized in the Shoreline Restoration Plan will provide the opportunity to enhance and restore shoreline functions over time.

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APPENDIX A

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 City’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 City may require minor site plan alterations to achieve maximum tree retention. (C)

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
	Where vegetation removal results in adverse impacts to shoreline functions, a mitigation plan is required. (D)
	Removal of invasive species is encouraged. (J)
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

Limited agriculture currently exists in the City limits and is not an appropriate use for new development. New or expanded agricultural activities are prohibited within shoreline jurisdiction (SMP Section 6.4).

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. Aquaculture for commercial propagation is prohibited. Potential impacts from aquaculture are summarized below in Table A-2. Key regulations in the proposed SMP that address potential aquaculture impacts are listed below in Table A-3.

Table A-2. 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-3. Summary of key regulations related to aquaculture that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Use and Modifications Matrix, 6.2	Commercial aquaculture is prohibited.
Aquaculture, 6.5	Aquaculture facilities must be designed and located to avoid: <ul style="list-style-type: none"> • The spreading of disease to native aquatic life; • Introducing new non-native species; • Conflicting with navigation and other water-dependent uses; • A net loss of ecological functions • Impacting the aesthetic qualities of the shoreline (A)
	Aquaculture structures and activities that do not require a waterside location must be located landward of the shoreline buffers required by this SMP. (B)

A-4 Boating Facilities and Private Moorage

Boating facilities are not an appropriate or feasible use in the City of Walla Walla’s shoreline jurisdiction. New or expanded boating and moorage facilities are prohibited (SMP Section 6.3).

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-4.

Based on proposed SMP standards (Table A-5), 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-4. 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-5. Summary of key regulations related to breakwaters, weirs, and groins that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Use and Modifications Matrix, 6.1	Breakwaters, jetties, and groins are permitted in all designations when they are designed to protect or restore ecological functions. They are also permitted when designed to maintain existing water-dependent uses in the Urban Downtown and Mill Creek Flume designations.
	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

Common effects of commercial development include increased impervious surfaces, increased traffic, and vegetation clearing (Table A-6). Potential likelihood and effects of commercial and industrial development, and the SMP provisions that would mitigation potential impacts, are addressed in detail in Section 5.5.2 of the CIA. A summary is provided below.

The proposed SMP includes provisions requiring commercial uses to ensure that these facilities do not result in a net loss of shoreline ecological functions. Tables

A-6 and A-7 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 commercial development, including vegetation conservation, boating facilities, 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 residential development proposal are found in the corresponding use and modification specific sections of this Appendix A.

Table A-6. Summary of potential impacts from commercial development.

Functions	Potential Impacts to Functions
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 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
Vegetative/ Habitat	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-7. Summary of key commercial use regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
Commercial Development, 6.8	Commercial development shall be designed to achieve no net loss of ecological functions. (D)

Location in SMP	SMP Provision Providing Protection of Ecological Functions
	<p>Water-enjoyment uses shall be given preference over nonwater-oriented commercial uses along Mill Creek. Non-water oriented commercial uses may be permitted if included in a mixed-use project that includes a water-oriented uses or if public access to the shoreline is incorporated into the project design. (A)</p> <p>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)</p>
Water Quality, 5.2	<p>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)</p>
	<p>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)</p>
Vegetation Conservation, 5.3	<p>Vegetation clearing must be limited to the minimum necessary. Mitigation sequencing must generally be applied and the City may require minor site plan alterations to achieve maximum tree retention. (C)</p>
	<p>Where vegetation removal results in adverse impacts to shoreline functions, a mitigation plan is required. (D)</p>

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-8. 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-9).

Table A-8. 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-9. Summary of key dredge and dredge disposal regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
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"> • Shoreline functions and processes will be preserved, restored or enhanced; and • Erosion, sedimentation, floodwaters or runoff will not increase adverse impacts to functions and processes or property. (F)
	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-10. 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-11).

Table A-10. Summary of potential impacts from fill.

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-11. Summary of key regulations pertaining to fill and excavation that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
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 commercial and industrial development, and the SMP provisions that would mitigation potential impacts, are addressed in detail in Section 5.5.2 of the CIA. A summary is provided below.

The potential for industrial development along the City’s shorelines is concentrated near the western end of the City. Tables A-12 and A-13 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 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 residential development proposal are found in the corresponding use and modification specific sections of this Appendix A.

Table A-12. Summary of potential impacts from industrial development.

Functions	Potential Impacts to Functions
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-13. Summary of key regulations related industrial development that protect ecological functions.

Location in SMP	SMP Provisions Providing Protection of Ecological Functions
Ports and	New industrial development shall be located, designed and constructed in a

Industrial Development, 6.15	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)
Water Quality, 5.2	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 City 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)

A-10 In-Stream Structures

Potential impacts from in-stream structures are summarized in Table A-14. The most likely in-stream structures in Walla Walla would be related to the Corps flood control project. Regulations accommodate anticipated new structures, as well as repair/maintenance and possible expansion of existing projects, while protecting ecological functions (Table A-15).

Table A-14. 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-15. 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

Mining activities are prohibited (SMP Section 6.14).

A-12 Recreation

Water-oriented recreational development is a priority in the shoreline jurisdiction. While water-dependent uses, such as swimming, fishing, and boating are not appropriate or feasible due to shoreline conditions in most areas of the City, water-enjoyment uses, such as trails and passive parks may be appropriate. Tables A-16 and A-17 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.

Table A-16. 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-17. 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 likelihood and effects of residential development along the City’s shorelines, and the SMP provisions that would mitigation potential impacts, are addressed in more detail in Section 5.5.1 of the CIA. A summary is provided below.

Tables A-18 and A-19 summarize the potential impacts and the SMP provisions relating directly to residential development. Standards for shoreline uses and modifications and general provisions elsewhere in the proposed SMP also apply to residential development, including shoreline stabilization, stormwater, 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-18. 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

Functions	Potential Impacts to Functions
	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-19. Summary of key residential use regulations that protect ecological functions.

Location in SMP	Key SMP Provisions Providing Protection of Ecological Functions
Use and Modification Matrix, 6.1	Residential development is prohibited in the Urban Conservancy environment.
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)
Water Quality, 5.2	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 City 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)

A-14 Shoreline Stabilization

New shoreline stabilization has the potential to significantly impact hydrologic and sediment processes, and nearshore habitat (Table A-20). 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-21).

Table A-20. 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-21. 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

Tables A-22 and A-23 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-22. 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/ Habitat	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing
	Fish passage impacts associated with stream crossings.

Table A-23. 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-24). The proposed SMP requires that primary utilities ensure no net loss of functions (Table A-25). Primary utility facilities may be developed to supply existing undeveloped areas with utilities; however, these are not expected to be a common new development or to upgrade utilities to existing developed areas.

Table A-24. 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-25. Summary of key utility infrastructure regulations that protect ecological functions.

Location in SMP	SMP Provision Providing Protection of Ecological Functions
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)