

**WHITMAN COUNTY
GRANT No. G1400494**

CUMULATIVE IMPACTS ANALYSIS

FOR THE TOWN OF ROSALIA SHORELINE MASTER PROGRAM

Prepared for:

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TABLE OF CONTENTS

	Page #
1 Introduction	1
1.1 Background and Purpose	1
1.2 Approach.....	4
2 Summary of Existing Conditions	4
2.1 Ecological.....	4
2.2 Land Use	6
3 Effects of Established Programs	7
3.1 Current Town Regulations and Programs.....	7
3.2 State Agencies/Regulations.....	8
3.3 Federal Agencies/Regulations	9
3.4 Shoreline Restoration Plan	10
4 Application of the SMP	11
4.1 Environment Designations.....	12
4.2 Effects of Critical Areas Regulations	14
4.3 Mitigation Sequencing.....	16
4.4 Effects of SMP Standards on Commonly Occurring Foreseeable Uses .	16
5 Net Effect on Ecological Function	27
6 References	28

LIST OF FIGURES

	Page #
Figure 1-1. Framework for achieving no net loss of shoreline ecological functions (Source: Department of Ecology)	2
Figure 1-2. Rosalia’s shoreline jurisdiction (orange shading).....	3
Figure 4-1. Distribution of Upland Environment Designations in the Town of Rosalia by Area (<i>excludes potential annexation areas</i>).....	14

LIST OF TABLES

	Page #
Table 4-1. Environment designation criteria	12

CUMULATIVE IMPACTS ANALYSIS

TOWN OF ROSALIA SHORELINE MASTER PROGRAM

1 INTRODUCTION

1.1 Background and Purpose

This Cumulative Impacts Analysis (CIA) is a required element of the Town of Rosalia (Town or Rosalia) 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 Town 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 Whitman County; the Cities of Colfax, Palouse, Pullman, Tekoa, and the Towns of Albion, Malden, and Rosalia* (The Watershed Company and Berk 2014)];
- ii. Reasonably foreseeable future development and use of the shoreline [Chapter 4 below and *Shoreline Analysis Report*]; and
- iii. Beneficial effects of any established regulatory programs under other local, state, and federal laws.” [Chapter 3 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 *Shoreline Analysis Report*. For those projects or activities that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the baseline. This is illustrated in Figure 1-1.

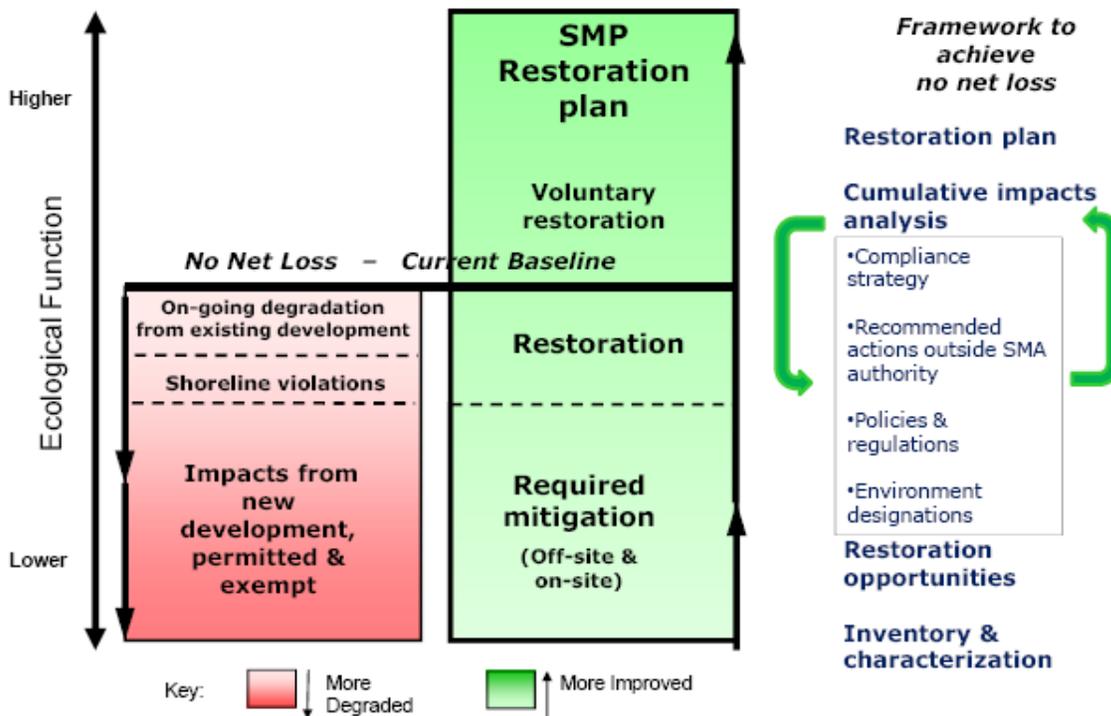


Figure 1-1. Framework for achieving no net loss of shoreline ecological functions (Source: Department of Ecology)

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, Rosalia’s SMP applies only to activities in shoreline jurisdiction (see Figure 1-2), yet activities upland of shoreline jurisdiction or upstream in the watershed may have offsite impacts on shoreline functions.

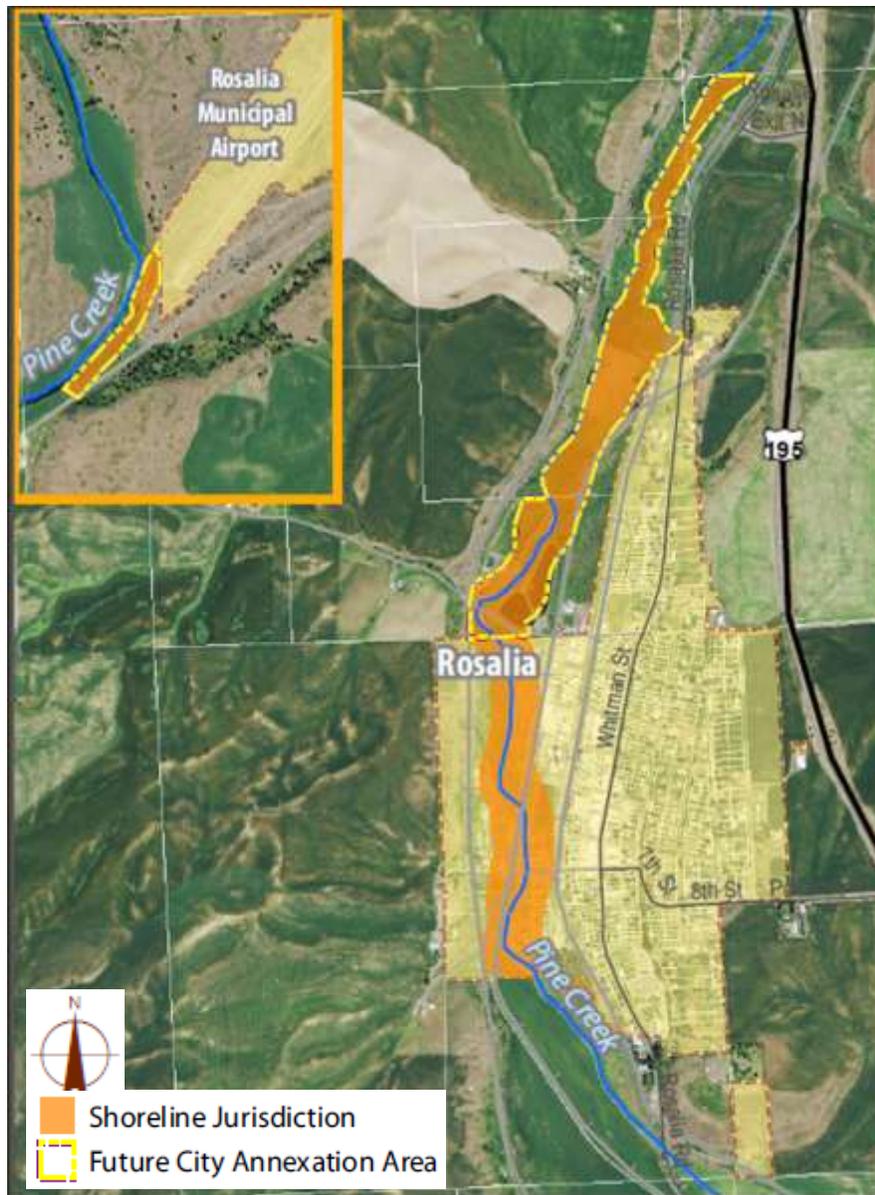


Figure 1-2. Rosalia’s shoreline jurisdiction (orange shading).

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* (The Watershed Company 2015) is intended to be a source of ecological improvements implemented voluntarily that may help to bridge a gap between minor cumulative, incremental, and unavoidable damages and ensure 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.

2 SUMMARY OF EXISTING CONDITIONS

The following summary of existing conditions is based on the *Shoreline Analysis Report*. More detailed information on specific shoreline areas is provided in the *Shoreline Analysis Report*.

2.1 Ecological

Rosalia is located in the Palouse watershed (WRIA 34), along Pine Creek. WRIA 34 covers the majority of Whitman County. The Palouse River originates in the Bitterroot Mountains in northern Idaho, and flows westerly into Whitman County before joining the Snake River at the Whitman/Franklin County line. The topography of the Palouse watershed transitions from mountainous terrain in Idaho to rolling hills composed of basalt covered with loess in the central portion of the watershed. The far western portion of the watershed is in an area called the Channeled Scablands. This area was shaped by massive floods over the past million years, which left behind exposed channels of the underlying basalt amongst islands of loess (HDR and EES 2007).

Precipitation primarily occurs in the winter months, and ranges from 10 inches in the west to 50 inches in the eastern portion of the watershed (HDR and EES 2007). Many of the smaller stream channels are dry in the summer. Major tributaries in the watershed include the North and South Forks, Rebel Flat Creek, Rock Creek, Pine Creek, Union Flat Creek and Cow Creek.

Pine Creek flows north through the western half of Rosalia. It then briefly enters Spokane County before turning and continuing back southwest into Whitman County toward Malden. This southwest flowing portion of Pine Creek shoreline jurisdiction encompasses a small piece of the parcel containing the Town of Rosalia airport located directly west of the Town. This small portion of shoreline jurisdiction is not contiguous with the river channel. Its condition does affect the function of the southwest flowing portion of Pine Creek, but a County reach separates the Town jurisdiction from the channel. Three other Pine Creek reaches were delineated for purposes of the *Shoreline Analysis Report*, all within the northern flowing section of Pine Creek within Rosalia city limits: a residential/open space reach, a city park reach, and an agriculture reach.

Historically, the dominant vegetation in the Palouse watershed was a bunchgrass association. Much of that vegetation has been converted to dryland agriculture or altered by rangeland uses. Soil erosion resulting from stormwater runoff has been a continuing problem throughout WRIA 34 as a result of land conversions to agriculture. An estimated 40 percent of the topsoil in the Palouse has been lost to erosion during this time (HDR and EES 2007). Most livestock grazing occurs in the westernmost portion of the basin, within the Channeled Scablands. Urban development makes up just a small portion of the watershed. In Rosalia agriculture is the dominant documented land use in the northern half of shoreline jurisdiction. More development is present in the central and southern part of shoreline jurisdiction, though the majority of the shorelines are undeveloped.

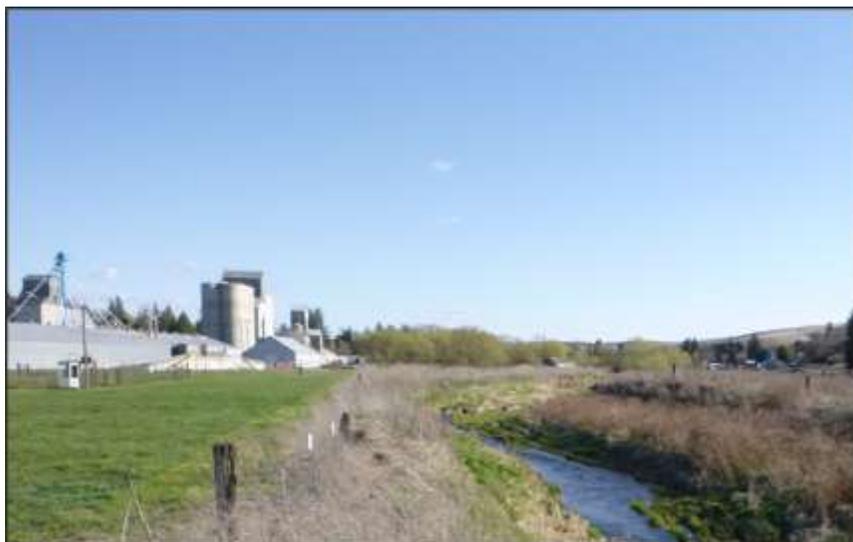
Water quality concerns are primarily from non-point sources throughout most of the watershed, including erosion, livestock, fertilizers, and septic systems, which contribute sediment, fecal coliforms, and nutrients. Temperature is also a concern in many of the waterbodies in the watershed. The agriculture reach of Pine Creek through Rosalia has a Category 5 (impaired) water quality listing for bacteria and dissolved oxygen.

Although there are no man-made dams on the Palouse River, the 185-foot Palouse Falls, approximately 6 miles upstream from the River's confluence with the Snake River, prevents anadromous salmon passage (Golder Associates, Inc 2009). There are no ESA-listed salmonids or other listed aquatic species above the Palouse Falls. Resident fish species above the falls include rainbow trout, brown trout, smallmouth bass, sculpin, largescale sucker, northern squawfish, shiner perch and speckled dace (HDR and EES 2007). Trout are less common in the lower portions of the watershed, presumably as a result of temperature and water quality constraints in the lower watershed.

Rosalia's shorelands are primarily undeveloped with some smaller areas of residential and recreational development. Functions are lowest in the agricultural area to the north where

mowed fields and cultivated crops dominate the shoreline. The residential/open space reach is most impacted from development and roads, but also has the most woody vegetation present upland of the channel. In most areas however, a narrow but dense band of herbaceous vegetation separates the channel from surrounding open space fields and residential development. Extensive floodplain and floodway are present throughout all reaches. No armoring and moderate slopes provide good connectivity to the floodplain. However, no wetland or unique in-stream features are present and the channel form is simple.

2.2 Land Use



Rosalia has a population of 557 and is located along the east and west banks of Pine Creek, roughly a mile and a half from the northern County boundary. The shoreline jurisdiction includes 46 acres along three quarters of a mile of shoreline. As described above, from south to north, Pine Creek flows through

agricultural areas, residential and park areas, and then light industrial areas before leaving town. Shoreline jurisdiction includes some residential development and some industrial development in the form of grain silos. Current land uses along the Town's shoreline are classified primarily as agriculture or open space land.

Current Land Use

Rosalia's shoreline jurisdiction contains predominantly agricultural uses on the west side of Pine Creek. Significant uses on the east side of the creek include Rosalia City Park and the Rodeo Grounds. Residential uses are located throughout the Town's shoreline in a low-density configuration. Most



of the smaller residential parcels are located west of the creek in the southern end of shoreline jurisdiction.



The Town's wastewater treatment facility and pond (photo to left) is located just outside of the Town limits in a potential annexation area north of West First Street.

No current zoning data for Rosalia was available for this analysis. Ownership data shows no state or federal ownership in shoreline jurisdiction.

Water-Oriented Uses

Water-oriented uses within Rosalia are limited.

Pine Creek is not commercially navigable. Waters are typically too shallow to allow water transportation. Some fishing and swimming occurs. The wastewater treatment facility and outfall to Pine Creek are also considered water-oriented.

Transportation and Utilities

There is just over one-half mile of abandoned rail within the shoreline reaches of the Town of Rosalia. There is nearly one-quarter mile of road within shoreline jurisdiction. All roads are classified as rural local access roads. There is one bridge within shoreline jurisdiction on a minor road where West 7th Street crosses Pine Creek. The Town also includes an airfield in an isolated parcel of Town jurisdiction west of town.

Public Access

Rosalia City Park provides access to Pine Creek. It includes a swimming pool, ball fields, and open space. The John Wayne Trail follows Pine Creek on the west side of the Creek. The rail offers visual access to the Creek.

3 EFFECTS OF ESTABLISHED PROGRAMS

3.1 Current Town Regulations and Programs

All development activity within the Town is required to comply with the Rosalia Municipal Code (RMC). Provisions in the RMC that potentially affect how future development is implemented and the extent of potential ecological impacts include critical areas and zoning

regulations. The following are descriptions of these relevant regulations and how they help to maintain shoreline functions.

Critical Areas Regulations

The Town critical area regulations require wetland buffers of between 50 and 250 feet based solely on wetland category. No stream buffer widths are specified, although the regulations require preparation of a habitat management plan based on best available science and a demonstration that a project would not degrade functions and values of the habitat. The Town's critical areas regulations also apply to geologically hazardous areas, critical aquifer recharge areas, and frequently flooded areas.

Zoning Code

Town zoning standards direct the location of uses, building bulk, and scale. These standards are important in planning for future growth and focusing development in a sustainable manner. The current zoning code was not available for further analysis at the time of this report.

3.2 State Agencies/Regulations

Aside from the Shoreline Management Act (SMA), state regulations most pertinent to moderation of ecological impacts of development in the Town'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 Town 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.

Washington Department of Natural Resources

Projects on state-owned aquatic lands may be required to obtain an Aquatic Use Authorization from Washington Department of Natural Resources (WDNR) and enter into a lease agreement. WDNR will review lease applications to determine if the proposed use is appropriate, and to ensure that proposed mitigation for impacts to aquatic resources are sufficient.

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.

Washington Department of Fish and Wildlife

Via the Hydraulic Code (chapter 77.55 RCW), 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.

3.3 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.

Clean Water Act

Major components of the Clean Water Act include Section 404, Section 401, 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 Town'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.

Endangered Species Act (ESA)

Section 9 of the ESA prohibits "take" of listed species. Take has been defined in Section 3 as: "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The take prohibitions of the ESA apply to everyone, so any action that results in a take of listed fish or wildlife would be a violation of the ESA and is strictly prohibited. Per Section 7 of the ESA, activities with potential to affect federally listed or proposed species and that either require federal approval, receive federal funding, or occur on federal land must be reviewed by the National Marine Fisheries Service (NOAA Fisheries) and/or U.S. Fish and Wildlife Service (USFWS) via a process called "consultation." Activities requiring a Section 404 permit also require such consultation if these activities occur in waterbodies with listed species.

3.4 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* represents a 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 projects to:

- Restore instream habitat complexity
- Set back dikes
- Implement best management practices to improve water quality conditions

The Rosalia City Park provides a good opportunity for restoration of the Pine Creek shorelines within the town. Few shrubs and trees are present in this reach and there is little riparian vegetation separating the channel from surrounding uses. Extensive floodplain and floodway is present in this area. Restoration opportunities include protecting connectivity to the floodway, increasing in-stream habitat features, and planting riparian vegetation. There is also the opportunity for public involvement and education through the use of interpretive signs.

4 APPLICATION OF THE SMP

This section describes how 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 high-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 government shoreline uses and modifications 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.

4.1 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 Town’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 upland environment designations include: Rural Industrial, Shoreline Parks, Shoreline Residential, and Urban Conservancy generally listed in order by decreasing intensity of allowed use. All areas waterward of the OHWM are designated Aquatic. Criteria for each environment designation are provided in Table 4-1.

Table 4-1. Environment designation criteria

Environment Designation	Classification Criteria
Rural Industrial	Areas that currently support high-intensity uses related to commerce, transportation or navigation; or are suitable and planned for high-intensity uses.
Shoreline Parks	Those areas: <ul style="list-style-type: none"> • Within existing or planned public parks or public lands intended to accommodate public access and recreational developments; • Suitable for water-related or water-enjoyment uses; • That are open space, floodplain or other sensitive areas that should not be more intensively developed; • That have potential for ecological restoration; • That retain important ecological functions, even though partially developed; or

Environment Designation	Classification Criteria
	<ul style="list-style-type: none"> • That have the potential for development that is compatible with ecological restoration.
Shoreline Residential	Areas that are predominantly single-family or multi-family residential development or are planned and platted for residential development.
Urban Conservancy	Those areas: <ul style="list-style-type: none"> • Planned for development that is compatible with the principals of maintaining or restoring the ecological functions of the area, • Suitable for water-enjoyment uses, • That are open space or floodplains, or • That retain important ecological functions which should not be more intensively developed.
Aquatic	Lands waterward of the ordinary high-water mark.

Approximately 63 percent of the shoreline area in Rosalia is designated as Urban Conservancy (Figure 4-1). Approximately 27 percent of the shoreline area is designated as Shoreline Parks and 10 percent as Shoreline Residential. Less than one percent of the shorelines are designated as Rural Industrial, which is a designation limited to a small area associated with the Rosalia Municipal Airport, outside of the Town limits. Those existing disturbed shorelines are not likely to experience significant function degradation with incremental increases in new development.

Rosalia’s proposed environment designations reflect the generally rural-agricultural nature of the town and the extensive floodplain and floodway present. The environment designations protect those areas with the highest existing shoreline function under the Urban Conservancy designation. The Shoreline Parks designation also protects open space and sensitive areas that are not suitable for more intense development, but which can provide public access and recreational enjoyment of the shorelines.

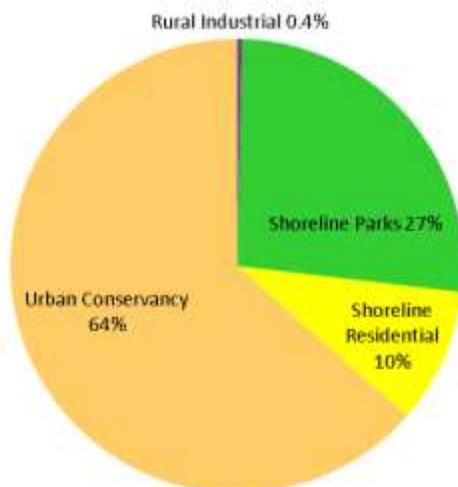


Figure 4-1. Distribution of Upland Environment Designations in the Town of Rosalia by Area (*excludes potential annexation areas*)

Not included in the breakdown of environment designations presented in Figure 4-1 and discussed above are two potential annexation areas: approximately 4.7 acres adjacent to the Rosalia Municipal Airport and 50.7 acres north of current Town limits on the northwest side of Town. These areas have also been pre-assigned environment designations based on the existing conditions and projected use of the areas after annexation. The 4.7 acres between Pine Creek and Pine City-Malden Road, west of the airport parcel, are pre-designated as Urban Conservancy. This area is currently undeveloped and development is not anticipated in the future. Approximately 9.5 acres immediately north of the current Town limits along West First Street, including the existing wastewater treatment plant and ponds, is designated Rural Industrial. Anticipated future use of this area includes high intensity development related to the Town's wastewater treatment plant. An additional 41.2 acres north and west of this area currently in predominantly agricultural use is pre-designated Urban Conservancy. Section 4.4 below further discusses the specific uses and modifications anticipated in these future annexation areas, and how and when the SMP provisions would apply.

4.2 Effects of Critical Areas Regulations

The SMP includes policies and regulations to avoid cumulative effects to critical areas (SMP Appendix B). Mitigation sequencing is required for all shoreline critical areas including wetlands; fish and wildlife habitat conservation areas, including streams and riparian areas; critical aquifer recharge areas; frequently flooded areas; and geologically hazardous areas. SMP regulations proposed for wetlands and streams include standard buffer areas, which are discussed in greater detail below.

Wetlands

The SMP requires vegetated buffers for all shoreline wetlands. Mitigation sequencing analysis (see Section 4.3) and compensatory mitigation are required for impacts to wetland buffers as well as to wetlands. The proposed standard wetland buffer widths are based on the wetland category and habitat scores and are consistent with Ecology's "Wetlands in Washington State- Volume 2: Guidance for Protecting and Managing Wetlands," modified to use with the 2014 Washington State Rating System for Eastern Washington (Granger et al. 2005). Use of the standard buffer widths also requires implementation of measures to minimize impacts of adjacent land use. If the prescribed minimization measures are not applied, the buffer width must be increased (Appendix B, Section 3.C). The SMP Administrator may increase buffer widths on a case-by-case basis if larger widths are determined to be necessary to protect certain functions (Appendix B, Section 3.D). Buffer averaging is not permitted. These proposed SMP standards should ensure that wetland functions are maintained over time.

Streams

Pine Creek, as well as non-shoreline streams occurring in shoreline jurisdiction, are designated as Fish and Wildlife Habitat Conservation Areas. As such, buffers are required to protect stream function. Stream and stream buffer regulations are contained in the Fish and Wildlife Habitat Conservation Area section of the critical areas regulations (Appendix B, Section 5). The buffer on Pine Creek is developed to be consistent with existing conditions, as generally described as part of the *Shoreline Analysis Report*, and varies based on environment designation as follows:

- In the Urban Conservancy environment designation, a buffer the lesser of 100 feet or the waterward edge of an improved public road is proposed.
- In the Shoreline Residential environment designation, a buffer of 75 feet is proposed.
- In the Shoreline Parks environment designation, a buffer of 60 feet is proposed.

For all environment designations, water-dependent developments have no buffer 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 4.3).

For non-shoreline tributaries within shoreline jurisdiction, a buffer of 50 feet is proposed. Buffers on non-shoreline streams within shoreline jurisdiction help ensure that riparian functions are maintained at ecologically significant confluence areas.

Under certain circumstances, the buffer width may be increased if the standard buffer is insufficient to protect the functions of the habitat area. Buffer width averaging may also be permitted under certain circumstances provided that the overall stream and habitat functions are not decreased (Appendix B, 5.D(3)(e and f)).

4.3 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. The mitigation sequence is a series of measures that can be applied to a project to ensure that it achieves no net loss of ecological function (SMP subsection 4.3(B)(3) and (4)). Mitigation sequencing applies to all projects in shoreline jurisdiction.

For some development activities, provisions in the SMP stipulate specific, objective standards for avoiding impacts (e.g. placement), minimizing impacts (e.g. size), and compensating for unavoidable impacts (e.g. planting requirements). If a proposed shoreline use or development is entirely addressed by such standards, then further mitigation sequencing analysis is not required.

However, in the following situations, applicants must provide an analysis of how the project will follow the mitigation sequence:

- If a proposed shoreline use or modification is addressed in any part by discretionary standards (such as standards requiring a particular action “if feasible” or requiring the minimization of development size) contained in the City’s shoreline regulations, then the mitigation sequence analysis is required for the discretionary standard(s).
- When an action requires a Shoreline Conditional Use Permit or Shoreline Variance Permit.
- When specifically required by a provision in the Town’s SMP.

The application of mitigation sequencing standards will help ensure that shoreline uses and modifications achieve no net loss of shoreline ecological functions.

4.4 Effects of SMP Standards on Commonly Occurring Foreseeable Uses

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.

Anticipated new development in Rosalia is expected to be limited in terms of location and extent. New development would likely be limited to mainly residential or recreational uses. However, based on growth trends, which have seen a decline in population and housing unit numbers in recent years, significant new private development is unlikely in the near future. Extensive floodplain and floodway also limit shoreline development potential. Ongoing agricultural activities on existing agricultural land are not subject to the SMP, however some new uses or modifications could be proposed (for example, adding or expanding agricultural equipment) and would be subject to the SMP.

The Town is working with State Parks to identify an access area for the John Wayne Trail (known also as the Iron Horse Trail). Such access would include road access and parking. A site near First Street is one of the sites being considered. The other sites would not be within shoreline jurisdiction.

New development is also expected in the potential annexation area that includes a portion of the existing wastewater treatment facility. Plans for this area include a series of constructed wetlands for wastewater treatment. Construction actions will likely include fill and excavation and construction of a levee.

In addition to these changes in shoreline development, replacements, repair, and maintenance of existing structures are likely to occur. Additionally, even without a change in use, some level of change to vegetation and shoreline modifications may be anticipated. The following discussion further addresses the extent to which future changes to shoreline land uses and modification are anticipated, and describes how the SMP would apply to each of these changes to help maintain no net loss of functions.

All of the potential new uses and modifications would be required to comply with the shoreline buffer provisions in Appendix B, subsection 5.D(3).

Agriculture

Likelihood of development: Agricultural uses are currently present along some of Rosalia's shorelines. Given the land use trends in the surrounding area, these uses are expected to continue. It is unlikely that additional lands will be converted to agriculture. However, it is possible, although not commonly anticipated, that existing agricultural lands could be converted to a non-agricultural use.

Application of the SMP: The SMP provisions do not limit or require modification to ongoing agricultural activities. SMP provisions apply to new agricultural activities or expansion of such activities on land not meeting the definition of agricultural land and to conversion of agricultural lands to non-agricultural uses. In such cases, shoreline buffers consistent with SMP Appendix B Subsection 5.D(3), as well as other standards applicable to the proposed use and any proposed modifications would apply. Development in support of agricultural uses shall be consistent with the environment designation intent and management policies, located and designed to assure no net loss of ecological functions, and shall not have a significant adverse impact on other shoreline resources and values (Subsection 5.1(B)(8)).

Aquaculture

Likelihood of development: There are no existing aquaculture facilities in the Town and no new aquaculture facilities are anticipated; however, it is possible that a new hatchery or associated rearing or transfer facility could be developed.

Application of the SMP: Only non-commercial aquaculture may be permitted. Any new aquaculture facility would need to be designed and located to avoid a net loss of ecological functions (Subsection 5.2(B)(1)(d)). Aquaculture structures and activities that do not require a waterside location must be located landward of the shoreline management buffers (Subsection 5.2(B)(3)). Mitigation sequencing, as described above, would apply.

Boating Facilities

Likelihood of development: No boating facilities currently exist in Rosalia and no new boating facilities are anticipated.

Application of the SMP: The SMP prohibits all new boating facilities (Section 4.10, Shoreline Use and Modification Table).

Commercial Development

Likelihood of development: Few commercial uses currently exist in shoreline jurisdiction. The most likely type of commercial development to occur in the future would be recreation-related. Such development could be related to the Rodeo Grounds.

Application of the SMP: Common effects of commercial development include increased impervious surfaces, increased traffic, and vegetation clearing. Under the proposed SMP, water-oriented recreation concessions are the only type of commercial development permitted by a Shoreline Substantial Development Permit in all environment designations except Shoreline Residential, where they are a conditional use. Most other types of water-oriented and nonwater-oriented commercial development are also considered a conditional use except in the Rural Industrial environment designation. Nonwater-oriented uses are prohibited in the Urban Conservancy and Shoreline Residential designations (Section 4.10). All types of commercial development shall be located, designed, and constructed in a way that ensures no net loss of shoreline ecological functions and without significant adverse impacts to other preferred land uses and public access opportunities (Subsection 5.3(B)(7)).

Forest Practices

Likelihood of development: Forestry practices are not a common shoreline use in Whitman County and do not currently occur in Rosalia. Future forest practices in shoreline jurisdiction are not anticipated.

Application of the SMP: The SMP prohibits all new forest practices (Section 4.10, Shoreline Use and Modification Table).

In Stream Structural Uses

Likelihood of development: Existing in-stream uses in the town limits appear to be limited to those associated with existing agricultural practices. Maintenance and repair of existing structures is anticipated. New in-stream structures would likely be limited to new irrigation diversion or discharge structures.

Application of the SMP: Instream structures are typically intended to modify flows, which can result in alterations to circulation patterns, water quality, and habitat access and conditions.

The SMP permits in-stream structures that protect public facilities; protect, restore, or monitor ecological functions or processes; or support agriculture. All other structures are a conditional use, except in the Rural Industrial environment designation. Per Subsection 5.4(B)(1), in-stream structures must provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources, including, but not limited to, fish and fish passage, priority habitats and species, other wildlife and water resources, shoreline critical areas, hydrogeological processes, and natural scenic vistas. In addition, natural in-water 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 (Subsection 5.4(B)(5)). In-stream structures shall comply with the Environmental

Protection regulations in Section 4.3(B) and shall ensure no net loss of ecological function. Consistent with requirements for mitigation sequencing (4.3(B)(4)), all structures must be the minimum size necessary and designed to avoid and then minimize potential adverse impacts. All unavoidable adverse impacts must be mitigated, and a mitigation plan submitted.

Mining

Likelihood of development: Mining does not currently occur in Rosalia. Future mining is not anticipated.

Application of the SMP: The SMP prohibits all new mining (Section 4.10, Shoreline Use and Modification Table).

Industrial Uses

Likelihood of development: A small portion of the parcel that contains the Rosalia Municipal Airport is located in shoreline jurisdiction. It is possible new industrial development associated with the airport could be proposed in this area. The most likely occurrence of new industrial development is in the potential annexation area north of West First Street encompassing the existing wastewater treatment facility. A system of constructed wetlands used to treat wastewater is proposed for this area. This development will likely include fill and excavation and may include construction of a levee.

Application of the SMP: Common effects of industrial development include increased impervious surfaces, increased risk of contaminant spills and water quality contamination, and shoreline modifications, which may affect instream habitat. The draft SMP includes provisions to minimize the effects of new or redeveloped industrial uses. Industrial development is prohibited in all environment designations except Rural Industrial. Thus, any new industrial development would be limited to the airport parcel and potential annexation area. Subsection 5.5(B)(2)(a) would require that industrial development be located, designed, constructed, and operated in a manner that minimizes impacts to the shoreline, provides for no net loss of shoreline ecological function. Additionally, industrial development and redevelopment shall be encouraged to locate where environmental cleanup and restoration of the shoreline area can be incorporated (Subsection 5.5(B)(2)(f)).

Construction of a levee in support of new industrial development within the floodplain would be required to meet the regulations of Subsection 4.6(B) (Flood Hazard Reduction) as well as Section 6 (Frequently Flooded Areas) of Appendix B. 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 (Subsection 4.6(B)(4)).

Recreational Development

Likelihood of development: Over a quarter of Rosalia's shorelines are designated as Shoreline Parks. Rosalia City Park currently provides access to Pine Creek and includes a swimming pool and ball fields. Renovations to these existing structures and uses and/or new development could occur in this park. As discussed above, the Town is also working with State Parks to identify an access area for the John Wayne Trail. Such access would include road access and parking. A site near First Street within shoreline jurisdiction is one of the sites being considered.

Application of the SMP: Recreational development can result in increased impervious surfaces, increased use of pesticides and fertilizers, and increased potential for riparian degradation. Per SMP Subsection 5.6(B)(1), recreational development shall demonstrate achievement of no net loss of ecological functions. Water-oriented recreational development may be permitted by a Shoreline Substantial Development permit in all environment designations. Nonwater-oriented recreational development would be required to obtain a conditional use permit and is prohibited in the Aquatic designation. New development and redevelopment of water-oriented recreation structures are allowed in buffers provided the applicant can demonstrate that the design applies mitigation sequencing and appropriate mitigation is provided to ensure no net loss of ecological functions. Applicants must submit a management plan that specifically addresses compliance with Sections 4.3 (Environmental Protection), 4.4 (Shoreline Vegetation Conservation), 4.5 (Water Quality, Stormwater and Nonpoint Pollution), and Appendix B (Shoreline Critical Areas Policies and Regulations) (Appendix B Subsection 5(D)(3)(i)(ii)).

Improvements to existing park structures would likely be categorized as routine maintenance and repair activities, which does not require a Shoreline Substantial Development Permit (see Redevelopment, Repair, and Maintenance section below) and has little potential impact on shoreline functions. New development of access roads and parking for the John Wayne Pioneer Trail would need to comply with the transportation regulations in SMP Section 5.8, discussed below.

Residential Development

Likelihood of development: Existing residential development in shoreline jurisdiction is concentrated between East 7th Street and East 9th Street. It is possible that new residential development could occur in the future. However, based on population trends in the area, significant residential growth is not anticipated in the Town. Extensive floodway and floodplain also limit development potential.

Application of the SMP: Rural residential development typically is associated with an increased potential for water quality contamination from failed septic systems, as well as increased use of

household chemicals, and disturbance of riparian corridors. New single-family developments are permitted with a Shoreline Substantial Development permit in Rural Industrial, Urban Conservancy, and Shoreline Residential designations. New multi-family developments are conditional uses in Rural Industrial, Urban Conservancy, and Shoreline Residential designations. New residential development is prohibited in Shoreline Park and Aquatic environment designations.

Subsection 5.7(B)(3) requires that new residential lots created through land division shall comply with all applicable subdivision and zoning regulations, assure that no net loss of ecological functions result from the plat or subdivision at full build-out of lots, prevent the need for new shoreline stabilization or flood hazard reduction measures. Similarly, new residential development shall be located to avoid the need for shoreline stabilization and located, designed, and constructed in a manner that assures no net loss of shoreline ecological functions (Subsection 5.7(B)(4)). Residential development will also need to comply with buffer and critical area requirements, which provide additional protection for natural resources.

Transportation and Parking

Likelihood of development: Existing transportation infrastructure in shoreline jurisdiction includes local roads, parking areas, abandoned rail line, and one bridge. An isolated Town property west of town contains the Town's airfield; only a portion of the property is in shoreline jurisdiction, and that portion does not include any airport facilities. As a result of Federal Aviation Administration requirements, the Town is pursuing property acquisition to preserve the required runway protection zone (RPZ). This enlargement of the airfield parcel and Town jurisdiction into the shoreline area would not be accompanied by any new development that would alter shoreline conditions.

New transportation facilities are not generally anticipated, but are possible. Replacement, repair, and maintenance of existing facilities are likely to occur.

Application of the SMP: New transportation and parking facilities are associated with increased stormwater discharge, increased shoreline crossing structures, and riparian disturbance. The SMP limits development of new transportation facilities or parking areas in shoreline jurisdiction if other options outside of shoreline jurisdiction are available and feasible (Subsection 5.8(B)(4)). When new roads, road expansions, or railroads are unavoidable, proposed transportation facilities shall be planned, located, and designed to minimize possible adverse effects on unique or fragile shoreline and maintain no net loss of shoreline ecological functions and implement mitigation standards of this SMP (Subsection 5.8(B)(3-4)).

Repair and maintenance of transportation facilities are addressed below under “Redevelopment, Repair, and Maintenance.”

Utilities

Likelihood of development: Rosalia’s existing wastewater treatment lagoons are located just north of the current Town limits, but are within a potential annexation area and have been pre-designated as part of this SMP update. Since 2006, the Town has been working with Department of Ecology per Agreed Administrative Orders to address a variety of water quality issues. Phase I improvements have been completed, and the Town is currently planning for Phase II.

The Phase II work would result in a long series of constructed wetlands from the lagoons extending approximately three-quarter mile downstream. The treatment wetlands have not been designed yet, but would likely entail substantial grading and clearing of the existing agricultural area, revegetation with emergent and/or aquatic plants, and construction of a berm along the creek to prevent flooding of the treatment wetlands. The objective of the constructed wetlands is to provide secondary treatment of the lagoon effluent, and eliminate any discharge from the wastewater treatment facility directly into the creek. After construction of the wetlands, future operations-related activities would likely include mowing to periodically remove pollutant-loaded vegetation and other maintenance to ensure proper function.

Although short-term construction activities increase the potential for water quality impacts on the creek and loss of the low-functioning riparian vegetation, the long-term benefits outweigh those effects. As stated in *Constructed Wetlands for Wastewater Treatment and Wildlife Habitat: 17 Case Studies* (U.S. Environmental Protection Agency 1993), “...these systems can provide valuable wetland habitat for waterfowl and other wildlife, as well as areas for public education and recreation.”

Other primary utility facilities may be developed to supply existing undeveloped areas with utilities or to upgrade utilities to existing developed areas; however, these are not expected to commonly occur. Regular maintenance and repair of existing utilities is anticipated throughout shoreline jurisdiction.

Application of the SMP: Utilities have the potential to disrupt shoreline functions through an associated need for shoreline armoring; the potential for spills or leakage; and disturbance to riparian areas. In order to limit the spatial extent of any impacts from new utilities, under Subsection 5.9(B)(4) of the proposed SMP, preference shall be given to utility systems contained within the footprint of an existing right-of-way or utility easement over new locations for utility systems. Additionally, transmission lines, cables, pipelines, and nonwater-oriented components

of production and processing facilities shall be located outside of shoreline jurisdiction, where feasible (Subsection 5.9(B)(2-3)). Utility projects allowed within shoreline jurisdiction shall be designed to achieve no-net-loss of shoreline ecological function, preserve the natural landscape, and minimize conflicts with present and planned land and shoreline uses (Subsection 5.9(B)(1)).

Repair and maintenance of utilities facilities are addressed below under “Redevelopment, Repair, and Maintenance.”

Redevelopment, Repair, and Maintenance

Likelihood of development: The majority of activities within shoreline jurisdiction will likely fall under repair and maintenance. For example, roads, utilities, and structures all require regular maintenance and repair.

Application of the SMP: 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. Where expansion or redevelopment is proposed, the required provisions shall be related to and in proportion to the proposal, as determined by the SMP Administrator (Subsection 5.10(B)(3)).

Breakwaters, Jetties, Weirs, and Groins

Likelihood of development: Few, if any, new breakwaters, jetties, weirs or groins are anticipated. Infrequent repair and replacement of existing structures may be expected.

Application of the SMP: Breakwaters, jetties, 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. Structures for all purposes other than to protect or restore ecological functions, or maintain existing water-dependent uses are permitted in all environment designations only as a conditional use. Where new structures are permitted, they must be the minimum size necessary, must be designed to protect critical areas, and implement mitigation sequencing to achieve no net loss of ecological functions (Subsection 6.2(B)(2-3)).

Dredging and Dredge Material Disposal

Likelihood of development: There are no known plans for new significant dredging or dredge material disposal. It is possible that smaller dredging projects could be proposed as part of other shoreline uses or developments.

Application of the SMP: Dredging activities have potential short-term and long-term effects on the aquatic environment. Temporary effects include elevated turbidity and direct habitat disturbance. Long-term effects stem from the alteration of currents and sediment transport processes, both to on-site and downstream areas.

Subsection 6.3(B)(3) requires that dredging and dredge material disposal be done in a manner that avoids or minimizes significant ecological impacts. Impacts that cannot be avoided must be mitigated in a manner that assures no net loss of shoreline ecological functions. Additionally, dredge disposal is only permitted if shoreline ecological functions and processes will be preserved, restored, or enhanced, and erosion, sedimentation, floodwaters, or runoff will not increase adverse impacts to shoreline ecological functions and processes or property (Subsection 6.3(B)(6)).

Fill and Excavation

Likelihood of development: Fill and excavation would most likely occur over relatively small areas of shoreline jurisdiction, except to implement the wastewater treatment improvements described under Utilities, above.

Application of the SMP: Fill and excavation can result in a change in habitat conditions and temporary effects to water quality. In some cases, these actions can be used to restore habitats that have been degraded as a result of altered watershed processes or past practices. 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 (Subsection 6.4(B)(1)). Fills and excavations may only be permitted when associated with an approved use, and fills in wetlands, floodways, channel migration zones or waterward of the OHWM are further limited in application under the proposed SMP (Subsection 6.4(B)(2-3)).

Shoreline Restoration and Enhancement

Likelihood of development: Several restoration opportunities were identified in the *Shoreline Restoration Plan*. Many of these opportunities originated in planning documents on a watershed scale and would require voluntary actions on the part of the shoreline land owners. Restoration opportunities exist within Rosalia City Park and the potential development of The John Wayne Pioneer Trail also offers great restoration potential, including providing opportunities for public involvement and education. Depending on the final design of the constructed wetlands north of the wastewater treatment lagoons, that project may result in an improvement of shoreline conditions from a water quality and possibly a habitat perspective.

Application of the SMP: SMP Policy 6.5(A)(1) identifies the intent to promote restoration and enhancement actions that improve shoreline ecological functions and processes and target the needs of sensitive plant, fish and wildlife species. Shoreline restoration and enhancement projects must be designed using the best available scientific and technical information, and implemented using best management practices (Subsection 6.5(B)(2)). Long-term maintenance and monitoring must also be included in restoration or enhancement proposals (Subsection 6.5(B)(5)). In order to eliminate disincentives to restoration resulting from any landward shifts in the OHWM, relief may be granted under RCW 90.58.580.

Shoreline Stabilization

Likelihood of development: New shoreline stabilization is not anticipated to commonly occur, but it is possible it may be proposed. Existing shoreline stabilization structures are not common, but repair and replacement of those that do exist are expected on a regular basis.

Application of the SMP: Shoreline stabilization measures tend to result in the simplification of shoreline habitat complexity and increased flow velocities along the shoreline. The occurrence of new stabilization measures will be limited because new development must be located and designed to avoid the need for future shoreline stabilization, if feasible (Subsection 6.6(B)(1)), and new stabilization shall only be permitted to protect an existing primary structure or new structure that cannot be placed so as to avoid the need for stabilization (Subsection 6.6(B)(4)). 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. Soft approaches shall be used unless demonstrated not to be sufficient to protect primary structures, dwellings, and businesses (Subsection 6.6(B)(3)).

An existing shoreline stabilization structure, hard or soft, may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents or waves. While replacement of shoreline stabilization structures may meet the criteria for exemption from a Shoreline Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 6.6(B)(6)).

Repair and maintenance of existing shoreline stabilization measures may be allowed. Repair and maintenance includes modifications to an existing shoreline stabilization measure that are designed to ensure the continued function of the measure. Any additions to, increases in the size of, or waterward encroachment of existing shoreline stabilization measures shall be considered new structures. Areas of temporary disturbance within the shoreline buffer shall be expeditiously restored to their pre-project condition or better. While repair and maintenance of shoreline stabilization structures may meet the criteria for exemption from a Shoreline

Substantial Development Permit, such activity is not exempt from the policies and regulations of the SMP (Subsection 6.6(B)(7)).

5 NET EFFECT ON ECOLOGICAL FUNCTION

This CIA indicates that future growth is likely to be limited. In instances where new development is proposed, this analysis can help inform the Town of potential future shoreline impacts and the importance of specific proposed SMP provisions.

Plans exist for new industrial development in the potential annexation area that encompasses the existing wastewater treatment facility. Any other new development would most likely consist of residential development in the Shoreline Residential environment designation and recreational improvements in the Shoreline Parks environment designation. Improvements to existing agricultural uses and regular maintenance and repair of existing facilities is also likely.

The proposed SMP is expected to maintain existing shoreline functions within Rosalia 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 that focus development on specific areas with existing development and shoreline alterations; 2) shoreline critical areas regulations that protect sensitive areas through appropriate science-based buffers and limitations on new uses; 3) mitigation sequencing, which directs potential development to first avoid, then minimize, and finally mitigate for unavoidable impacts; and 4) shoreline use and modification provisions, which ensure that likely development is guided by regulations that will protect existing functions while allowing priority shoreline activities to occur. The *Shoreline Restoration Plan* identifies ongoing and planned voluntary restoration that will provide an opportunity to improve shoreline conditions over time.

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 Town of Rosalia. Voluntary actions identified and prioritized in the *Shoreline Restoration Plan* will provide the opportunity to enhance and restore shoreline functions over time.

6 REFERENCES

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