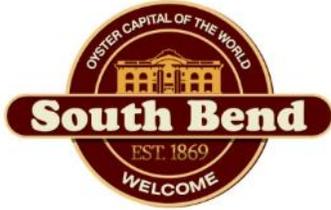


**CITY OF SOUTH BEND
GRANT No. 1400508**

CUMULATIVE IMPACTS ANALYSIS

City of South Bend's Shoreline Master Program

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This report was funded in part
through a grant from the
Washington Department of Ecology.

January 2016

The Watershed Company
Reference Number:
130729

Cite this document as:

The Watershed Company. January 2016. Cumulative Impacts Analysis of the City of South Bend's Shoreline Master Program. Prepared for the City of South Bend, WA.

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CUMULATIVE IMPACTS ANALYSIS

CITY OF SOUTH BEND SHORELINE MASTER PROGRAM

1 INTRODUCTION

This Cumulative Impacts Analysis (CIA) assesses the proposed City of South Bend (City) Shoreline Master Program (SMP) policies and regulations in relation to current shoreline conditions documented in the Shoreline Analysis Report (SAR) (TWC et al. 2014) to assess if future development approved under the proposed SMP could achieve no net loss of ecological function. This CIA can help the City make adjustments where appropriate in its proposed SMP if there are potential gaps between maintaining and degrading ecological functions.

1.1 Background

The State Master Program Approval/Amendment Procedures and Master Program Guidelines (SMP Guidelines; WAC 173-26) require local shoreline master programs to regulate new development to “achieve no net loss of ecological function.” The Guidelines 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” (WAC 173-26-186(8)(d)).

The Guidelines further elaborate on the concept of no net loss as follows:

When based on the inventory and analysis requirements and completed consistent with the specific provisions of these guidelines, the master program should ensure that development will be protective of ecological functions necessary to sustain existing shoreline natural resources and meet the standard. The concept of “net” as used herein, recognizes that any development has potential or actual, short-term or long-term impacts and that through application of appropriate development standards and employment of mitigation measures in accordance with the mitigation sequence, those impacts will be addressed in a manner necessary to assure that the end result will not diminish the shoreline resources and values as they currently exist. Where uses or development that impact ecological functions are necessary to achieve other objectives of RCW 90.58.020, master program provisions shall, to the greatest extent feasible, protect existing ecological functions and avoid new impacts to habitat and ecological functions before implementing other measures designed to achieve no net loss of ecological functions. [WAC 173-26-201(2)(c)]

In short, updated SMPs shall contain goals, policies and regulations that prevent degradation of ecological functions relative to the existing conditions as documented in that jurisdiction’s inventory and characterization report. For those projects that result in degradation of ecological functions, the required mitigation must return the resultant ecological function back to the

baseline. Figure 1-1, below, illustrates this concept. The jurisdiction must be able to demonstrate that it has accomplished that goal through an analysis of cumulative impacts that might occur through implementation of the updated SMP. Evaluation of such cumulative impacts should consider:

- (i) current circumstances affecting the shorelines and relevant natural processes [Chapter 2, “Summary of Existing Conditions,” below, and the Shoreline Analysis Report];
- (ii) reasonably foreseeable future development and use of the shoreline [Chapter 3, “Future Development,” below, and the Shoreline Analysis Report]; and
- (iii) beneficial effects of any established regulatory programs under other local, state, and federal laws. [Chapter 5, “Effects of Other Regulatory Programs,” below]

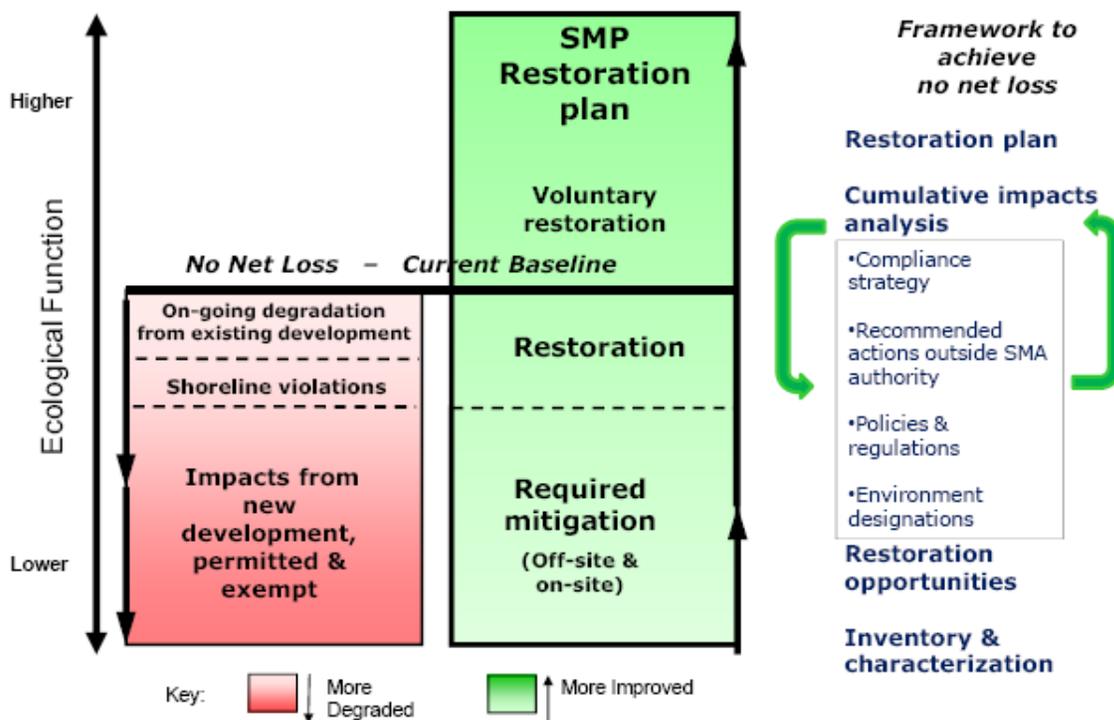


Figure 1-1. Framework to achieve no net loss of ecological function. (Department of Ecology)

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. SMP regulations fundamentally rely on the concept of mitigation sequencing to avoid, minimize, and mitigate for any unavoidable losses of function. An accompanying component of the SMP process that can bring environmental conditions to an improved level is the Shoreline Restoration Plan (SRP), which identifies and prioritizes potential actions and programs that may be implemented

on a voluntary basis. These actions, intended to improve existing environmental conditions through a combination of enhancement, restoration, and protection, cannot be required by SMP regulations. However, according to Section 173-26-201(2)(f) of the Guidelines, “master programs shall include goals, policies and actions for restoration of impaired shoreline ecological functions.” In certain communities or shoreline areas, the SMP may not be able to achieve no net loss of functions through regulations alone. For example, a community may expect a significant reduction in riparian vegetation coverage to accommodate a water-dependent use. Compensatory mitigation would be implemented to offset unavoidable impacts, perhaps through replanting of riparian vegetation in an adjacent site; however, it may take many years before the benefits from the compensatory mitigation are realized. In such a circumstance, as for others, the SRP may help bridge the gap between the SMP-required mitigation outcome and no net loss of ecological function.

As the SMP is implemented, the City will need to identify methods to track shoreline conditions, permit activity, and policy and regulatory effectiveness. City planning staff will be required to track land use and development activity, including exemptions, within shoreline jurisdiction, and may incorporate actions and programs of the other departments as well. With each project application, staff should consider whether implementation of the SMP is meeting the basic goal of no net loss of ecological functions relative to the baseline condition established in the SAR. A complete reassessment of conditions, policies and regulations will be considered every eight years, during the scheduled SMP update (concurrent with the Comprehensive Plan update). To conduct a valid reassessment of the shoreline conditions, the City will need to identify metrics and then monitor, record, and maintain key environmental metrics to allow a comparison with baseline conditions. As monitoring occurs, the City should assess environmental effects of development and restoration objectives. With this level of attention to conditions, permitted development, and adaptive management as needed in the long term, the City should be able to ensure that the regulations and mitigation sequencing required by the SMP will maintain shoreline functions over time.

1.2 Document Approach and Overview

This CIA was prepared consistent with direction provided in the SMP Guidelines as described above. The ultimate goal of this document is to determine whether future development in the City’s shorelines taking place under the proposed SMP would result in no net loss of ecological functions relative to the baseline conditions documented in the SAR. To the extent that existing information was sufficiently detailed and assumptions about possible new or re-development could be made with reasonable certainty, the following analysis is quantitative. The analysis in this document is focused on the jurisdictional boundaries of the City of South Bend.

Existing conditions were first evaluated using the information, both textual and graphic, developed and presented in the SAR. A summary of existing conditions, including ecological conditions and land use, is provided in Chapter 2. More detailed analysis of specific shoreline functions, uses, and public access can be found in the SAR.

To understand what future development activities in the City's shorelines might occur that could alter existing conditions, Chapter 3 presents the brief results of an assessment of likely future development. This assessment is based on existing land use conditions, growth trends, and zoning. This approach is based on the rationale that future changes in land use trends will be roughly comparable to past trends. This approach helps provide a realistic estimate of the level of foreseeable development.

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 were evaluated in greatest detail. Chapter 4 summarizes this evaluation, describing how foreseeable development could affect shoreline conditions, and what specific provisions of the proposed SMP will help maintain existing conditions in spite of likely future development. Chapter 5 describes the beneficial effects that other established regulatory programs may have on the City's shorelines.

Finally, Chapter 6 synthesizes the information from the previous chapters to assess anticipated cumulative impacts and summarize whether and how the SMP ensures no net loss of ecological functions for shorelines in South Bend.

2 SUMMARY OF EXISTING CONDITIONS

This summary of existing conditions is intended to provide an overview of conditions in the City's shorelines, and is based on the SAR. The City is located in Pacific County (County), just west of the City of Raymond and the unincorporated area of Eklund Park, approximately six miles upstream from the mouth of the Willapa River. The City's shoreline jurisdiction includes approximately 192 acres over approximately 7.3 miles. Along the western and eastern borders of the City are the Potter and Skidmore Sloughs. The northern boundary of the city is occupied by a large wetland. A natural construction point in the Willapa River, called "The Narrows," is located just east of the City.

Flows in the Willapa River have historically dictated development in the City. In the past 60 years, annual peak flows just upstream from the City in the unincorporated area of Willapa have ranged from 2,000 to 15,000 cfs, with low flows typically occurring in the months of July through September and ranging from 20 to 150 cfs. Most of the City's commercial development, and approximately one-quarter of its residential neighborhoods, are on level land, ranging from 10 to 40 feet in elevation. The City's hillsides along the southern border are generally undeveloped forest areas at an elevation of 200 feet.

Tidal range in the City is approximately 10 feet, with tidal currents near the City at about 2.0 feet per second. Localized flooding tends to occur during combinations of high precipitation and occurrences such as spring tides, blocked stormwater drains or overwhelmed undersized culverts.

2.1 Environmental Conditions

Shorelines of the State within the City include the Willapa River and the Skidmore Slough. For the purposes of the SAR, city shoreline characteristics were addressed by “reach,” with a total of five reaches on the Willapa River and two reaches on Skidmore Slough. Maps of the reaches, and more detailed information on specific shoreline areas, are provided in the SAR.

Willapa River Reach 1 runs parallel to Highway 101, which limits the tidal connectivity to the south. Reach 1 does not have shoreline armoring or overwater structures, and includes extensive tidal wetlands associated with the mouth of Potter Slough. Reach 1 includes the greatest forested riparian coverage in the City, ranging from approximately 200 to 1,000 feet wide. The wildlife habitat associated with the riparian forested vegetation and tidal wetlands is owned and managed by the Washington Department of Fish and Wildlife (WDFW) and provides diverse habitat opportunities for waterfowl and salmonids. There are several derelict piles in the southeastern portion of the reach.

Willapa River Reach 2 is armored with riprap, and several derelict piles are located along the northwestern and southwestern ends of the reach. The northern portion of the reach includes the Ron Craig Boat Launch with a boat launch and public pier. The mouth of Mill Creek is located just south of the boat launch and public pier. A small strip of wetland/riparian habitat is present along the highway and allows for a limited habitat benefit for this reach.

Riparian vegetation in the southern portion of the reach consists of a narrow band (approximately 20 feet wide) of shrubs. Riparian vegetation at the Ron Craig Boat Launch is mostly mowed lawn. Vegetation provides some level of filtration, but does not contribute significantly to large woody debris or organic matter recruitment. Due to the limited size, hyporheic activity is not expected to play a major role in this reach.

Willapa River Reach 3 runs adjacent to Highway 101 for approximately 850 feet. Predominant features along the shoreline include overwater structures associated with Coast Seafoods’ and South Bend Products’ seafood processing uses, as well as the City’s public pier. The habitat value for fish within this reach is limited by these overwater developments. Similarly, upland habitat is limited by the lack of vegetated corridors. In addition to armoring limiting the hyporheic zone, the City’s developed commercial waterfront is along this reach and shoreline functions are generally impaired.

Parcels along the shoreline are armored by riprap or vertical bulkheads, and many structures are built on piles over the water. There is evidence of recent bank failure and localized scour. While there is not a timeline established for repairing and protecting the road, the Washington Department of Transportation (WSDOT) has proposed using dolos to protect the road while minimizing instream habitat impacts.

Willapa River Reach 4 contains many derelict piles and structures; however, the majority of the reach is unarmored which allows for vegetated shorelines and some habitat functions. The upland habitat is limited by the lack of vegetated corridors. The East Point Seafoods facility is located along this reach and includes two piers and is mostly overwater, which limits the habitat value of the reach for fish. There are some light industrial uses along this reach, while

the northern portion of the reach is vacant land that is owned by the County. Many derelict piles and structures are located along the shoreline. A large derelict pier was removed from the shoreline in 2013.

Willapa River Reach 5 comprises undeveloped tidal wetlands and upland areas associated with the former waste water treatment plants (WWTP) detention ponds. There is no other development noted within this reach. The dike road limits full connectivity between the Willapa River and the tidal marsh complex to the northwest. However, a tidal connection to the marsh is maintained northwest in unincorporated Pacific County. This tidal marsh provides limited vegetative functions along the southern (Willapa River) side of the dike, access by salmonids (during high tide), significant export of organic detritus and nutrient filtration functions, and foraging and nesting habitats for waterfowl. The tidal marsh system is expected to provide water storage and support of hyporheic functions.

Skidmore Slough Reach 1 is characterized by a lack of tidal influence because of both a lack of natural tidal connectivity and its association with two berms with tide gates located in Raymond, which restrict tidal influence and hydraulic connectivity. A small forested wetland is located north of the slough south of Highway 101, which provides habitat for small mammals and birds. This reach has also experienced clearing of riparian vegetation associated with upland development of residential and light intensity industrial uses, which limits functions of this reach.

Skidmore Slough Reach 2, similar to Skidmore Slough Reach 1, experiences restricted tidal influence and hydraulic connectivity because it does not have any natural connectivity and has the two berms and tidal gates that restrict water flow, located in Raymond. There are no overwater structures or armoring present and the area is mostly composed of mowed field with approximately 20-foot-wide bands of shrubby vegetation along the remaining sloughs. Land east of the slough is undeveloped and is owned by the Port of Willapa Harbor. Existing wetlands consisting of scrub-shrub and forested wetland located in the southern portion of the reach have been conserved. In 2009, a restoration project replaced blocking culverts with a 70-foot-wide bridge under South Bend-Raymond Road. Additionally, tide gates at the mouth of the slough were also replaced to improve fish passage.

2.2 Land Use

The City's shoreline jurisdiction encompasses 192 upland acres and approximately 7.3 shoreline miles. According to the Pacific County Assessor, major land uses in the City's shoreline jurisdiction are identified as Government/Institutional (56%), Vacant/Undeveloped (11%), Residential (9%), and Forestry (7%). Agriculture, Commercial, Quasi Public and Manufacturing/Industrial uses represent small portions of the land. Generally, the development pattern in South Bend has been low-density and features two parks, two boat launches, and one marina that offer public access to the Willapa River.

Willapa River

The Willapa River shoreline jurisdiction in the City includes 137 acres (upland of the OHWM) along just over five miles of shoreline. Development in the City is concentrated on the southern bank of the river, with mostly commercial and residential uses. The northern shoreline contains the City's former WWTP. The rest of the land on the north shore of the Willapa River in South Bend is undeveloped.

The Willapa River shoreline has historically supported water-dependent uses, such as commercial shellfish, fishing and boat shops and products. Other uses along the shoreline that accompany these uses include several cafes and restaurants. Also present along the shoreline is a former wastewater outfall on the north shore of the Willapa River (Willapa River Reach 5), which is no longer in operation. Public access to the shoreline is provided by the City's public parks, trails, viewpoints, docks, and boat launches.

Generally, the Willapa River's 137 acres of shoreline land are classified as Government/Institutional (59%), Forestry (8%) and Vacant/Undeveloped (7%). Agricultural, Commercial, and Residential uses make up smaller portions of the City's Willapa River shoreline. The large amount of public land is under the ownership of local, County and State entities.

Land ownership along the shoreline consists of a mix of public and private uses, including ownership by the WDFW of the undeveloped shoreline to the west of the Ron Craig Boat Launch. Farther east towards the downtown area of the city, parcels along the shore are mainly under private ownership and include a notable presence of the seafood industry. However, the eastern stretch of the Willapa River contains a large tract of land owned by the County.

Skidmore Slough

Skidmore Slough Reach 1 in the City includes 55 acres (upland of the OHWM) along just over 2.1 miles of shoreline. Ownership of the shorelines in this reach are mostly public (40%), while the other portion of the shoreline is composed of low-density residential on the western side of the slough (20%), Forestry (5%) and Manufacturing/Industrial (less than 1%). A large undeveloped tract of 27 acres on the eastern side of Skidmore Slough is owned by Port of Willapa Harbor and is designated as open space. The only water-oriented use identified in the Skidmore Slough shoreline in South Bend is the public accessible Willapa Hills Trail, which a portion of Skidmore Slough crosses at Highway 101.

Skidmore Slough Reach 2 has a significant portion (41%) dedicated to environmental protection per the City's Comprehensive Plan. Additionally, a large portion of the shoreline in this reach falls outside of existing zoning designations. As such, the City is undergoing a comprehensive plan update which would categorize land not currently zoned into an Environmental Protection District, allowing conservation, forestry and agriculture designations within the Skidmore Slough.

3 FUTURE DEVELOPMENT

State SMP guidelines (WAC 173-26) require that jurisdictions preparing SMP updates conduct an analysis to estimate the future demand for shoreline space (WAC 173-26-201(3)(D)). To fulfill this requirement, this section draws on several sources of information to understand potential new shoreline development in the City.

To access the likelihood and magnitude of new development, the following is a review of future development activities in the City's shorelines that could occur and alter existing conditions. The analysis includes the City's population, dwelling unit forecasts, and land capacity analysis from the South Bend SAR.

New shoreline developments and new shoreline uses would occur on vacant lands or as a result of redevelopment or expansion on previously developed land. There are 193 undeveloped or vacant parcels that are either wholly within or partially within the shoreline jurisdiction, representing a total of 146 acres of land with the potential for future development. Vacant lands in shoreline jurisdiction are summarized by zoning designation in Table 3-1, below.

Growth and development are also influenced by population trends. The average annual growth rate for the City between 1990 and 2013 has remained neutral, at 0.002 percent, with a marginal population increase of 0.05 percent. The trend for housing units is consistent with population growth, reflecting an average growth rate of 0.1 percent. Population forecasts for 2030 anticipate an annual growth rate of 0.01 percent, or 2.3 percent for the entire 20-year period. As such, a significant amount of new residential development along the City's shoreline is unlikely.

There are 23 acres of vacant land that are zoned for use as water-oriented commercial or industrial developments. Vacant agricultural lands represent 111 acres of vacant land. These lands are unlikely to be developed as the majority contain a large wetland complex on the north shore of the Willapa River, while the remaining portions contain the former South Bend WWTP.

Development along the shoreline is also limited due to the potential to encounter historic properties. The City has 12 historic sites located within the shoreline area along the Willapa River, eleven of which are within Reach 3 of the Willapa River. The remaining site (the East Point Cannery) is located in Reach 4 of the Willapa River. Further, archaeological features are expected to be present as the area has supported several thousands of years of tribal presence, and a number of archaeological resources have been identified in and adjacent to the City's shorelines.

Table 3-1. Land Use Types and Vacant Land Available (Acres and Number of Parcels)

Shoreline Reach	Agriculture	Commercial	General Residential (R-2)	Residential Single Family (R-1)	Industrial	Not Coded	Total Acres (No.)
Willapa River Reach 1	-	6 (1)	-	-	-	-	6 (1)
Willapa River Reach 2	-	-	-	<1 (3)	-	-	< 1 (3)
Willapa River Reach 3	-	13 (67)	< 1 (2)	< 1(3)	-	-	14 (72)
Willapa River Reach 4	-	-	-	-	3 (4)	<1 (1)	3 (5)
Willapa River Reach 5	111 (6)	-	-	-	-	-	111 (6)
Skidmore Slough Reach 1	-	-	-	< 1 (6)	-	10 (53)	10 (59)
Skidmore Slough Reach 2	-	-	-	-	-	2 (47)	2 (47)
Total Acres (No.)	111 (6)	20 (68)	< 1 (2)	1 (12)	3 (4)	12 (101)	146 (193)

Source: Table 6-4, City of South Bend Shoreline Analysis Report. 2014.

4 APPLICATION OF THE SMP

This chapter describes how foreseeable development could affect shoreline conditions, and what specific provisions of the proposed SMP will help maintain existing conditions despite future development. This chapter begins, in Section 4.1, with a summary of the City’s proposed environment designation scheme and a discussion of how the scheme allocates allowed uses by relating environment designations to ecological functions. Section 4.2 presents key general standards and regulations in the SMP intended to protect the ecological functions of the shoreline. Sections 4.3 and 4.4 include the following for each specific use (Section 4.3) or modification (Section 4.4) listed in the SMP:

- An assessment of the future development potential for the use or modification, if allowed by available data;
- A summary of the potential impacts that could result from future development of the specific use or modification; and
- A summary of key regulations in the SMP that would avoid, minimize, or mitigate potential impacts.

4.1 Shoreline Environment Designations

The first line of protection of the City's shorelines is the shoreline overlay district environment designation assignments. According to the 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.

The assignment of environment designations can help minimize cumulative impacts by concentrating development activity in lower functioning areas that are not likely to experience significant function degradation with incremental increases in new development or redevelopment.

Consistent with the Guidelines, the City's environment designation system is based on a combination of the existing use pattern, the biological and physical character of the shoreline, and community interests as expressed through the City's comprehensive plan. The SAR provided information on shoreline conditions and functions that informed the development of environment designations for each of the shoreline waterbodies. The proposed upland environment designations are as follows:

- Aquatic Environment (A)
- Commercial Waterfront Environment (CW)
- Urban Conservancy Environment (UC)

The proposed environment designations are described in more detail below.

The purpose of the **Aquatic Environment** is to protect, restore and manage the unique characteristics and resources of the areas waterward of the OHWM. This environment is defined as the area waterward of the OHWM of all streams and rivers, and other water bodies constituting shorelines of the state together with their underlying lands and their water column; but does not include associated wetlands and other shorelands upland of the OHWM.

The purpose of the **Commercial Waterfront Environment** recognizes traditional development patterns along South Bend's waterfront that includes a mix of commercial, industrial, residential and recreational water-oriented and nonwater-oriented uses. It also encourages new development opportunities that give preference to water-oriented development over nonwater-oriented development. Approximately 47.3 acres, or 25 percent, of the City's shorelines are designated Commercial Waterfront.

The purpose of the **Urban Conservancy Environment** is to protect and restore ecological functions of open space, floodplains, and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses including recreational areas, facilities, and utilities. Activities permitted are intended to have minimal adverse impacts upon the shoreline. This designation is appropriate for areas where development could occur while maintaining or having the ability to restore ecological functions of the area, and that are not generally suitable for intensive water dependent uses. Approximately 145.1 acres, or 75 percent, of the City's shorelines are designated Urban Conservancy.

In addition to the shoreline environment designations described above, the Permitted, Conditional, and Prohibited uses by Shoreline Environment table (SMP, Table 1) identifies the prohibited and allowed uses and modifications in each of the shoreline environments. The allowed and prohibited uses established in this table help minimize cumulative impacts by concentrating high intensity development activity in lower functioning areas that are less likely to experience significant function degradation with incremental increases in development. Additionally, allowed uses are subject to the general provisions of the SMP, as well as the provisions specific to that use or modification. These provisions are intended to minimize adverse impacts from shoreline uses, and help ensure that such uses result in no net loss of ecological functions.

4.1.1 Potential Use Conflicts

In general, the proposed SMP permits and prohibits uses by environment designations, limiting potential conflicts between neighboring uses and ensuring that uses are consistent with comprehensive plan and zoning.

Although there is potential for future use conflict, particularly in land use zones that support a wide variety of land uses, the proposed SMP provides guidance and a regulatory framework that helps minimize or avoid future use conflicts in shoreline jurisdiction. Similarly, the proposed SMP provides a framework for allowing and/or encouraging shoreline preferred uses in the shoreline jurisdiction.

4.2 General Shoreline Regulations

Shoreline Critical Areas

The proposed SMP adopts, by reference and with exceptions, Chapter 14.15 of the South Bend Municipal Code (SBMC), Critical Areas, for protection of critical areas in shoreline jurisdiction. The SMP includes the following exceptions which take precedence over Chapter 14.15 of the SBMC in shoreline jurisdiction: developments and uses requiring a variance within a critical buffer, water-oriented uses within critical area buffers, and nonconforming development within critical areas. Each of these types of developments within shoreline critical areas are must comply with the specific regulations outlined in the SMP. Critical areas include: wetlands, fish and wildlife habitat conservation areas, frequently flooded areas and geologically hazardous areas.

Wetlands

Under SBMC 14.15.030(B), buffers for wetlands in shoreline jurisdiction could range from 25 to 300 feet, depending on the wetland rating (as determined by Washington State Wetland Rating System for Western Washington, Ecology Publication #14-06-029, or as revised).

A reduction of buffer widths is allowed in situations where wetlands are adjacent to high intensity land uses and can be substituted for moderate intensity uses under certain conditions; wetlands that score less than 20 points for habitat functions; or the development proposes implementing measures that minimize impacts. Buffer averaging is allowed provided specific criteria are met, including averaging to improve wetland protection and averaging to allow reasonable use of a parcel.

Fish and Wildlife Habitat Conservation Areas

Fish and wildlife habitat conservation areas under Chapter 14.15.050 of the SBMC include shorelines and are designated and protected through specific standards depending on the type and area of development. Any non-exempt development activity in a habitat conservation area may require a Habitat Management Plan, prepared by a qualified expert and submitted to the City.

Buffer requirements for fish and wildlife habitat conservation areas are obligatory and vary depending on the proposed development activity. Development along the Willapa River, from the eastern city limits downstream to the City of South Bend Ron Craig Boat Ramp, requires an upland buffer of native vegetation ranging from 25-50 feet. Development along other shorelines requires buffers of 150 feet, and non-shoreline streams within shoreline jurisdiction require buffers between 50 and 150 feet depending on stream type.

Geologically Hazardous Areas

Geologically hazardous areas within shoreline jurisdiction include areas susceptible to erosion, sliding, earthquakes, tsunamis, or other geologic events (SBMC 14.15.040). These geologically hazardous areas are identified through the *Soil Survey of Grays Harbor County Area, Pacific County, and Wahkiakum County, Washington*; the Washington Department of Natural Resources Geologic Information Portal Interactive maps; and the *Washington Department of Natural Resources, Tsunami Evacuation Brochure for Raymond and South Bend*. If a geologically hazardous area is shown on any of these references, performance standards specific to geologically hazardous areas apply in order to minimize and manage risks and ecological impacts. Any non-exempt development in a geologically hazardous area may require a geotechnical evaluation by a qualified professional.

Flood Hazard Management

As described above in Chapter 2, localized flooding tends to occur during combinations of high precipitation, high spring tides, blocked stormwater drains or overwhelmed undersized culverts. Additionally, climate change and sea level rise are expected to increase coastal

flooding. Subsequently, future demand for flood hazard management facilities may increase. Per Section 3.4 of the proposed SMP, flood hazards would be reduced through limiting development in flood-prone areas and minimizing development that requires the need for structural flood hazard reduction measures. Development, including subdivision of land, should not increase flood hazards and those that would require future structural flood hazard reduction measures during the life of the project would not be permitted (SMP 3.4.2.C.). Additionally, new structural flood hazard reduction measures must assure no net loss of ecological functions (SMP 3.4.3).

Shorelines of Statewide Significance

Section 3.7 of the proposed SMP gives priority to protection of shorelines of statewide significance, as defined in RCW 90.58.150. Under the proposed SMP, management of shorelines of statewide significance should give preference to developments that recognize statewide interest over local interest, and that protect the resources and ecology of such shorelines. All rivers that have a mean annual flow of 1,000 cfs or greater, as well as their shorelands, are considered shorelines of statewide significance. In South Bend, the Willapa River meets the definition of a shoreline of statewide significance.

Water Quality and Quantity

Section 3.8 of the proposed SMP includes provisions intended to protect water quality. These provisions apply to all shoreline uses and modifications, and would require that all shoreline uses and activities incorporate measures to protect and maintain surface and groundwater quality and stormwater control, including those measures in the Department of Ecology's Stormwater Management Manual for Western Washington (SMP Section 3.8.2.A). This section also defines development standards for new development and uses in the Commercial Waterfront Environment, including low impact development measures (3.8.2.B).

Mitigation Sequencing

Developments within the shoreline must protect the existing shoreline functions. The proposed SMP includes general regulations requiring projects to be designed, located, sized, constructed and maintained to achieve no net loss of shoreline ecological functions (SMP 3.2.3). The SMP also includes mitigation sequencing, a series of measures that can be applied to a project where avoidance is not possible, in order to help ensure that it achieves no net loss of ecological function. Mitigation sequencing can be applied to all projects in shoreline jurisdiction and are prioritized to reduce impacts in the following order: minimize, rectify, reduce or compensate (SMP 3.3.3.C.).

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

- 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 shoreline regulations, then the mitigation sequence analysis is required for the discretionary standard(s);
- When an action requires a Shoreline Conditional Use Permit;
- When an action requires a Shoreline Variance Permit;
- When specifically required by a provision in the SMP.

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

4.3 Shoreline Use Provisions

The following two sections (4.3 and 4.4) provide a brief summary of the primary potential ecological impacts that may arise from various shoreline uses and modifications, as well as a summary of the proposed SMP regulations intended to protect ecological functions and prevent cumulative adverse impacts. The sections are organized according to the document structure of the proposed SMP. Where appropriate, tables are included to summarize potential impacts and key provisions in the proposed SMP that address those impacts.

Regulations that help ensure that impacts are avoided, minimized, and mitigated can be separated into the following three general categories: (1) provisions that allow, condition, or prohibit specific types of development depending on Shoreline Environment Designation; (2) provisions that apply specific standards that help avoid and minimize potential impacts; and (3) provisions that require mitigation of impacts and/or demonstration of no net loss of functions.

The potential impacts described in the sections below account for the more significant or most likely impacts, but may not account for the full suite of potential impacts from a given use or modification. These less-significant or less-likely impacts, while not specifically discussed below, would be addressed during the permitting process through mitigation sequencing requirements. Also, the listing of potential impacts does not mean that these impacts occur in every instance of a certain use or modification.

Chapter 4 of the proposed SMP includes goals, policies, and regulations that apply to specific types of shoreline uses.

4.3.1 Agriculture

Potential impacts from agriculture are summarized below in Table 4-1. Key regulations in the proposed SMP that address potential impacts from agriculture are listed below in Table 4-2. These regulations apply to new or improved agriculture development.

Table 4-1. Summary of potential impacts from agriculture.

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

Table 4-2. Summary of key agriculture regulations that protect ecological functions.

Location in South Bend SMP	Key Provision Providing Protection of Ecological Functions
Agriculture (Section 4.2)	New agricultural lands shall assure no net loss of ecological functions. (4.2.3.B)

4.3.2 Aquaculture

The Willapa River in South Bend has historically been used for aquaculture industries. Potential impacts from aquaculture are summarized below in Table 4-3. Key regulations in the proposed SMP that address potential impacts from aquaculture are listed below in Table 4-4. Aquaculture uses are permitted in the Aquatic and Urban Conservancy environments, but prohibited in the Community Waterfront environment.

Table 4-3. 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 phytoplankton concentrations through bivalve filtration.
Vegetative/Habitat	Creation of habitat structure for epibenthic invertebrates and fish.
	Reduction in density of eelgrass, but increasing growth rate and size.
	Accidental introduction of non-native species.

Table 4-4. Summary of key aquaculture regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Aquaculture (Section 4.3)	Use of water area shall be consistent with pollution control. (4.3.2.A)
	Net pens for finfish shall not result in a net loss of shoreline ecological function. (4.3.2.D)
	New aquatic species not previously cultivated within the city require written approval of the Directors of the WDFW and WDOH before introduction to any aquatic environment designation. (4.3.2.E)

4.3.3 Boating Facilities

Boating facilities are sparsely distributed as overwater structures along the Willapa Bay. Existing boating facilities would be required to comply with the proposed SMP regulations. This could occur through modifications, repair and appropriate permitting. Modifications to boating facilities that would cause further noncompliance would not be permitted. Potential impacts from boating facilities are summarized below in Table 4-5. Key regulations in the proposed SMP that address potential impacts from boating facilities are listed below in Table 4-6. Boating facilities are permitted in the Aquatic and Community Waterfront environments, but prohibited in the Urban Conservancy environment.

Table 4-5. Summary of potential impacts from boating facilities and mooring structures.

Functions	Potential Impacts to Functions
Hydrologic	Potential interference with movement of sediments, altering substrate composition.
Water Quality	Water quality impacts associated with construction of docks and other in-water structures (e.g. spills, harmful materials use) and related uses of new docks (e.g. boat maintenance and operation).
Vegetative/ Habitat	Increased shading in shallow-water habitat areas resulting from dock and pier construction can limit growth of aquatic vegetation and alter habitat for and behavior of aquatic organisms, including juvenile salmon.
	Disturbance of substrate from pilings and anchors.
	Nighttime lighting effects on fish behavior.
	Loss of habitat for benthic community, less LWD for habitat complexity.

Table 4-6. Summary of key boating facilities regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Boating Facilities (Section 4.4)	Materials used for the design of new boating facilities and construction shall be approved by applicable state agencies; operational plans will accompany new or expanded boating facilities in order to address fuel handling and storage, sewage and waste collection and disposal, parking and storage, access to emergency services and provisions for live-aboard boaters. (4.4.3.A-C)

4.3.4 Commercial development

Commercial development is concentrated along the City’s shorelines. This pattern of development is anticipated to continue in the future.

Potential impacts from commercial development are summarized below in Table 4-7. Key regulations in the proposed SMP that address potential impacts from in-stream are listed below in Table 4-8. Commercial development is permitted in the Water-oriented and Commercial Waterfront environments, but prohibited in Urban Conservancy environments unless they are home occupations under Title 16 of the SBMC. Nonwater-oriented Commercial Development is permitted over water if located within an existing structure or in support of water-dependent uses.

Table 4-7. 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 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 4-8. Summary of key commercial development regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Commercial Development (Section 4.5)	Commercial development is not water-dependent, water-related or of water-enjoyment use until the Administrator determines that the proposed design, layout, and operation of the use or development is consistent with the definition and intent under the SMP. (4.5.3.A)

Location in SMP	Key Provision Providing Protection of Ecological Functions
	Non-water-oriented commercial uses shall be prohibited unless part of a mixed-use project that includes water-dependent uses and provides a significant public benefit such as public access and/or ecological restoration; or navigability is severely limited at the proposed site and the use provides a significant public benefit; or where physically separated from the shoreline by another property or public right-of-way. (4.5.3.B)
	Non-water-oriented commercial development shall not locate over water except if located within an existing structure or in support of water dependent uses. (4.5.3.C)

4.3.5 Forest Practices

Commercial forestry uses are not regulated under the SMP, but are regulated under the Forest Practices Act (WAC 173-26-241(3)(e)). SMP standards are applied to the conversion of existing shoreline forest uses to non-forest uses. Potential impacts from forest practices are summarized below in Table 4-9. Key regulations in the proposed SMP that address potential impacts from forest practices are listed below in Table 4-10. Forest practices are permitted as a conditional use in the Urban Conservancy environment.

Table 4-9. Summary of potential impacts from forest practices.

Functions	Potential Impacts to Functions
Hydrologic	Reduced infiltration associated with forestry actions resulting in flashier hydrology.
	Increase in stormwater runoff and discharge in association with more impervious surfaces from non-forestry uses following conversion.
Water Quality	Increased erosion from removal of trees.
	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing.
	Increase in contaminants associated with the creation of new impervious surfaces (e.g. metals, petroleum hydrocarbons) for non-forestry uses following conversion.
Vegetative/Habitat	Reduction in forest cover associated with conversion of lands from forestry uses.
	Loss of or disturbance to riparian habitat during upland development.

Table 4-10. Summary of key forest practices regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Forest Practices (Section 4.6)	Selective commercial timber cutting (up to 30% of merchantable trees harvested in any ten-year period) shall be within 200 ft abutting landward of the OHWM, given that other timber harvesting methods may occur in limited instances where the topography, soil conditions, or silviculture practices necessary for

Location in SMP	Key Provision Providing Protection of Ecological Functions
	regeneration make selective logging ecologically detrimental; and clear cutting may occur if it is solely incidental to the preparation of land for other uses. (4.6.3.C)
	Conversion of forestlands within shoreline jurisdiction to a different use shall protect shoreline ecological functions consistent with the provisions in Section 3.2 of the SMP. (4.6.3.F)

4.3.6 Industrial development

Industrial development along the shoreline is prioritized for those uses which are water-oriented. Future development of new industrial uses in shoreline jurisdiction would occur in areas where practical water-dependent industrial development is feasible.

Potential impacts from industrial development are summarized below in Table 4-11. Key regulations in the proposed SMP that address potential impacts from industrial development are listed below in Table 4-12. These regulations apply to new or improved industrial development, which is permitted in the commercial-waterfront environment, but prohibited in the Aquatic and Urban Conservancy environments.

Table 4-11. 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 4-12. Summary of key industrial development regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Industrial Development (Section 4.7)	New nonwater-oriented industrial development is permitted only when part of a mixed-use project that includes water-dependent uses and provides public access and/or ecological restoration, or navigability is severely limited and the development provides public access and/or ecological restoration, or where the site is physically separated from the shoreline by another property or right-of-way. (4.7.3.B)
	Existing non-water-oriented industrial development may expand landward only if the expansion is consistent with the provisions of the South Bend SMP (Section 4.7.3.C)

4.3.7 In-stream Structures

Small-scale in-stream structures, such as tide gates, occur within the City. In-stream development will likely continue to occur.

Potential impacts from in-stream structures are summarized below in Table 4-13. Key regulations in the proposed SMP that address potential impacts from in-stream structures are listed below in Table 4-14. These regulations apply to new or improved in-stream structures, which are permitted as a conditional use in the Aquatic and Urban Conservancy environments.

Table 4-13. Summary of potential impacts from in-water 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 4-14. Summary of key in-stream structure regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Instream Structures (Section 4.8)	Instream structures shall be permitted only when a qualified professional demonstrates that: the proposed in-stream structure addresses a need for public safety or infrastructure; nonstructural measures are not feasible; impacts to ecological functions and critical areas are avoided or mitigated. (4.8.3.A)
	New or expanded instream structural developments shall provide adequate fish passage and avoid loss of habitat. (4.8.3.B)

Location in SMP	Key Provision Providing Protection of Ecological Functions
	Applicants for breakwaters and jetties shall demonstrate that the structure is necessary for protecting water-dependent uses; and adverse impacts to water circulation, sediment transport, fish and wildlife migration and aquatic vegetation can be avoided or mitigated. (4.8.3.D)

4.3.8 Recreational Development

Recreational development, on both publicly-owned and privately-owned properties, provides opportunities for residents and tourists to enjoy the City’s shorelines. The development, replacement, and maintenance of park facilities should be anticipated.

Potential impacts from recreational development are summarized below in Table 4-15. Key regulations in the proposed SMP that address potential impacts from recreational development are listed below in Table 4-16. These regulations apply to new or improved recreational development, which is permitted in the Aquatic and Commercial Waterfront environments, but prohibited in the Urban Conservancy environment.

Table 4-15. Summary of potential impacts from recreational development.

Functions	Potential Impacts to Functions
Hydrologic	Increase in storm water 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, increased water temperatures, and less LWD.
	Loss of or disturbance to riparian habitat during upland development.
	Lighting effects on both fish and wildlife in nearshore areas.

Table 4-16. Summary of key recreational development regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Recreational Development (Section 4.9)	Recreation facilities shall make adequate provisions for: conserving natural features of the shoreline (critical areas, vegetation conservation corridors and water quality). (4.9.3.C)

4.3.9 Residential Development

Residential development along the City’s shoreline would be limited by shoreline setbacks and buffers, lot coverage limits, and height limits and would only be permitted (including accessory structures) if the development would not require shoreline stabilization.

Potential impacts from residential development are summarized below in Table 4-17. Key regulations in the proposed SMP that address potential impacts from residential development are listed below in Table 4-18. These regulations apply to new or improved residential development, permitted in the Commercial Waterfront and Urban Conservancy environments, and in the Aquatic environment if the residential development is in an existing overwater structures.

Table 4-17. Summary of potential impacts from residential development.

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

Table 4-18. Summary of key residential development regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Residential Development (Section 4.10)	New residential subdivisions creating more than four parcels shall incorporate provisions for low-impact development techniques to protect shoreline water quality. (4.10.3.C)
	The footprint expansion of residential structures (over water or wetlands), including decks and balconies is prohibited. (4.10.3.E)
	All new residential lots created through subdivisions shall be designed such that no structural flood hazard reduction or shoreline stabilization measures are necessary for the life of the structure. (4.10.3.B)
	New overwater residences, including floating homes, are prohibited in all shoreline environments. (4.10.3.D)

4.3.10 Transportation and Parking

Highway 101 runs parallel to the city shoreline. Smaller roads and forest roads also run perpendicular to Highway 101. Continued development, replacement, and maintenance of existing transportation facilities should be anticipated.

Potential impacts from transportation and parking are summarized below in Table 4-19. Key regulations in the proposed SMP that address potential impacts from transportation and

parking are listed below in Table 4-20. Key regulations in the proposed SMP that address potential impacts from transportation and parking are listed below in Table 4-20. These regulations apply to new or improved transportation and parking facilities. Transportation development is permitted as a conditional use in aquatic environments. Parking as a primary use is prohibited in commercial waterfront developments but permitted as a conditional use in urban conservancy areas.

Table 4-19. Summary of potential impacts from transportation and parking.

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)
Vegetative/ Habitat	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing
	Fish passage impacts associated with stream crossings

Table 4-20. Summary of key transportation regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Transportation and Parking: Development (Section 4.11)	Major street and highway improvements within shoreline jurisdiction shall include low-impact development techniques to protect, maintain, or improve water quality. (4.11.3.A)
	Parking as a primary use is prohibited within shoreline jurisdiction. (4.11.3.B)
	Parking as an accessory use to an authorized use shall locate as far upland from the shoreline as possible and use low impact development measures to protect water quality. (4.11.3.C)

4.3.11 Utilities

Maintenance of existing utility facilities should be anticipated. The Pacific County Public Utility District provides utility services throughout Pacific County, including the City of South Bend. In order to address potential new demand in the City of South Bend, and to improve service reliability throughout the county, the Pacific County Public Utility District may have plans for utility improvements, which may be located in South Bend’s shoreline jurisdiction. Potential impacts from utilities development are summarized below in Table 4-21. Key regulations in the proposed SMP that address potential impacts from transportation and parking are listed below in Table 4-22. Utilities development is permitted as a conditional use in the Aquatic and Urban Conservancy environments and permitted in the Commercial Waterfront environment.

Table 4-21. 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.
	Water quality impacts from waste and stormwater outfalls.
Vegetative/ Habitat	Greater potential for increased erosion, bank instability, and turbidity associated with vegetation clearing.

Table 4-22. Summary of key utilities regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Utilities (Section 4.12)	New public or private utilities are prohibited in shoreline jurisdiction unless: the utility requires a location adjacent to the water; alternative locations are not feasible; utilities are necessary for a permitted shoreline development or use consistent with the South Bend SMP. (4.12.3.A.i-iii)
	The need for structural shoreline modification shall be avoided to the greatest extent when considering the location and design of utilities. (4.12.3.D)

4.4 Shoreline Modification Provisions

Chapter 5 of the proposed SMP includes goals, policies, and regulations that apply to specific types of shoreline modifications.

4.4.1 General Requirements

In addition to regulations for specific shoreline modifications, Chapter 5 of the proposed SMP requires that all shoreline modifications be allowed only when impacts are avoided, minimized, and mitigated to assure no net loss of shoreline ecological functions (SMP 5.2.1). Any in-water work must be scheduled to protect biological productivity, including fish runs, spawning, and benthic productivity (SMP 5.2.2).

4.4.2 Dredging and Dredge Materials Disposal

Dredging can have significant effects on sediment transport, short term effects on water quality, and by creating deep water, can eliminate significant shallow, nearshore habitat (Table 4-23).

Dredging would be allowed in instances where it would provide for navigation, utility development, environmental restoration and/or public access. Disposal of dredged material would require consultation with the Dredged Materials Management Office (DMMO) prior to permit approval. These regulations apply to new dredging projects or maintenance-related dredging projects. Minor dredging and maintenance dredging for the purpose of facilitating

restoration is exempt per Sections 5.3.3.A and B of the SMP in aquatic environments. Dredging is permitted as a conditional use in urban conservancy environments. Open water disposal is permitted, but upland disposal of dredged material is permitted as a conditional use in the Commercial Waterfront environment and prohibited in the Urban Conservancy environment.

Table 4-23. 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 4-24. Summary of key dredging regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Dredging and Dredge Material Disposal (5.3)	On-going maintenance dredging of existing navigation channels, basins, and boating facilities is limited to previously authorized location, depth, and width . (5.3.3.A)
	Minor dredging for environmental restoration, enhancement or remediation is allowed if consistent with this SMP and other restoration strategies. (5.3.3.B)
	Aquatic disposal shall only be permitted at aquatic disposal sites identified by the Washington Dredged Material Management Program, except allowed in Section 5.3.3.B. (5.3.3.C)
	Dredging for the primary purpose of obtaining fill material is not allowed except when the material is necessary for the restoration of ecological functions. Where allowed, must be placed waterward of the OHWM and either associated with a MTCA or CERCLA habitat restoration project, or a significant habitat enhancement project if approved through a shoreline conditional use permit. (5.3.3.D)

4.4.3 Fill and Grading

Clearing and grading are commonly associated with development projects. Potential impacts from clearing and grading are summarized below in Table 4-25. Filling and grading is a permitted activity in aquatic environments and is prohibited in urban conservancy environments. In the Community Waterfront environment, filling is permitted as a conditional use if it is waterward for ecological restoration. Key regulations in the proposed SMP that address potential impacts from clearing and grading are listed below in Table 4-26.

Table 4-25. Summary of potential impacts from fill and excavation.

Functions	Potential Impacts to Functions
Hydrologic	Alteration of existing water runoff patterns due to topographical alterations.
	Alterations in the stormwater retention timing and infiltration due to the loss of vegetation.
Water Quality	Short-term and long-term increases in turbidity related to vegetation removal and soil disturbance.
	Reduced biofiltration of stormwater resulting from vegetation removal.
Vegetative/ Habitat	Loss of functions due to removal or disturbance.
	Increased water temperatures due to vegetation removal.

Table 4-26. Summary of key fill and excavation regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Fill and Grading (Section 5.4)	Shall be permitted only in conjunction with a specific use already permitted through this SMP (5.4.3.A)
	Fill placement waterward of the OHWM shall only be permitted if required in conjunction with a permitted water-dependent development; associated with a mitigation action, ecological restoration or enhancement project; aquaculture operations to improve production; expansion or alteration of transportation facilities of statewide significance or currently located on the shoreline; or a water-oriented public access or recreation. (5.4.3.B.i-v)
	Fill waterward of the OHWM require a conditional use permit, except for ecological restoration projects. (5.4.3.C)
	Fill shall avoid critical areas and critical area buffers to the greatest extent feasible (5.4.3.D)
	Fill material used in shoreline areas shall be free of contaminated materials. (5.4.3.E)

4.4.4 Docks, Piers, Floats and Boat Launches

In South Bend, docks, piers, floats and boat launches serve residential, commercial and recreational uses. Docks and piers are permitted in the Aquatic, Commercial Waterfront and Urban Conservancy environments. See Table 4-5 for a summary of potential impacts from boating facilities and mooring structures.

Table 4-27. Summary of key fill and excavation regulations that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Docks, Piers, Floats and Boat Launches (Section 5.5)	New docks, piers, and floats shall be permitted only for water-dependent uses or public access. A dock associated with a single-family residence is considered a water dependent use if it is used as an access to watercraft and complies with this SMP. (5.5.3.A)
	A single-family residence shall not have more than one single-use pier or dock per lot. (5.5.3.B)
	Docks and piers for commercial, industrial, and transportation uses shall only serve water-dependent uses and shall be the minimum size necessary. Larger structures may be permitted if they demonstrate the need for future expansion within 10 years. (5.5.3.C)
	The design of all new residential docks, piers, and floats shall be the minimum necessary for the intended use and shall follow all applicable dimensional standards outlined in 5.5.3.D.i-v.
	Docks existing before the adoption of this SMP that are not in compliance may be repaired with appropriate permitting without changing the dimensions or configuration. The modification of a non-compliant dock may not exceed existing nonconformity. (5.5.3.E)
	The design and construction of new or expanded docks shall consist of materials approved by applicable state agencies. (5.5.3.G)
	No pier or dock shall be used as a residence. (5.5.3.H)
	The storage of fuel, oils, and other toxic materials is prohibited on residential docks and piers. (5.5.3.I)

4.4.5 Shoreline Habitat and Natural System Enhancement Projects

Healthy fish and wildlife populations are an important part of the City of South Bend’s shorelines, and their maintenance and enhancement are encouraged in the SMP and permitted in the Aquatic, Commercial Waterfront and Urban Conservancy environments. Implementation and restoration strategies are discussed below in Section 4.5, as well as in the City of South Bend Restoration Plan (TWC 2015).

Table 4-28. Summary of key habitat and natural system enhancement measures that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Shoreline Habitat and Natural System Enhancement Projects (Section 5.6)	Shoreline habitat or natural enhancement projects shall not create adverse impacts to ecological functions or present safety hazards to people and property. (5.6.3.A)
	Shoreline habitat or natural enhancement projects shall be based on state and federally approved best management practices and/or reliable sources of science. (5.6.3.B)

4.4.6 Shoreline Stabilization

Shoreline stabilization measures have potentially significant impacts on sediment transport processes and floodplain connectivity. A list of potential impacts from shoreline stabilization is provided below in Table 4-29.

Under the proposed SMP, the need for shoreline stabilization measures would be expected to be avoided or minimized. The proposed SMP substantially limits the development of new shoreline stabilization structures by establishing strict permitting criteria. The proposed SMP further ensures that new and replacement structures evaluate and implement the stabilization approach with the least potential for impacts to shoreline functions. Shoreline stabilization is permitted as a conditional use in the Aquatic environment and permitted in the Urban Conservancies and Commercial Waterfront environments. Key regulations in the proposed SMP that address potential impacts from shoreline stabilization are listed below in Table 4-30.

Table 4-29. 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.
	Reduction in floodplain connectivity.
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 4-30. Summary of key shoreline stabilization measures that protect ecological functions.

Location in SMP	Key Provision Providing Protection of Ecological Functions
Shoreline Stabilization (Section 5.7)	Stabilization measures shall be nonstructural unless insufficient. Prior to selecting an appropriate shoreline stabilization measure, a geotechnical analysis shall evaluate the effectiveness of alternatives. (5.7.3.A)
	New structural shoreline stabilization shall not be allowed except when determined necessary and following all requirements to protect an existing primary structure, to support a new nonwater-dependent development, to support a water-dependent development, when protecting projects for the restoration of ecological functions or hazardous substance remediation projects, or the replacement of an existing shoreline stabilization structure with a similar structure. (5.7.3.B.i-v)
	When allowed, structural shoreline stabilization shall meet the following requirements: i. Impacts can be mitigated to ensure no net loss of ecological functions; ii. The size shall be limited to the minimum necessary to protect the primary structure or use, and the structure shall be designed by a licensed engineer or geologist; iii. The structure shall be constructed and maintained in a manner that does not degrade water quality; and iv. No demolition debris or other

Location in SMP	Key Provision Providing Protection of Ecological Functions
	solid waste shall be used for shoreline stabilization. (5.7.3.D)

4.5 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 SRP (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, an incremental loss of shoreline functions at a cumulative level may occur. Minor actions such as: exempt development, illegal development, failed mitigation efforts, or a temporal lag between impacts and mitigation may result in a loss of shoreline ecological functions over time. The SRP, and the voluntary actions described therein, can be an important component in rectifying this difference in ecological function.

The SRP lists the following goals for restoration in the City:

- Reclaim and restore degraded areas to restore natural processes to the extent feasible;
- Preserve estuarine areas for fisheries and wildlife protection;
- Monitor and control invasive, noxious weeds with all due diligence; and
- Continue to improve water quality conditions in the City’s shorelines, in accordance with the established Total Maximum Daily Loads (TMDLs).

Major SRP opportunities that are expected to contribute to achieving these goals and improving ecological functions in the foreseeable future are summarized below:

- Storm Water Quality Management Plan;
- Removal of derelict piles and in-water structures;
- Riparian vegetation enhancement;
- Restoration of intertidal marsh vegetation along the Willapa River;
- Softening of bank armoring with bioengineered approaches;
- Continued monitoring and control of Spartina; and
- Outreach and education measures.

Avenues for funding would either be through public grant-funded sources (Washington State Recreation and Conservation Office, Washington Department of Fish and Wildlife, Washington

Department of Ecology, US Fish and Wildlife Service) or from private sources (National Fish and Wildlife Foundation, the Burning Foundation, Fish America Foundation, the Konsgaard-Goldman Foundation, The Northwest Fund for the Environment, Washington State Parks Foundation). More information regarding funding and the focus of each funding avenue can be found in the Final SRP (TWC 2015). The SRP is a non-regulatory component of the SMP and represents a vision for restoration that will be implemented over time as funding opportunities permit.

5 EFFECTS OF OTHER REGULATORY PROGRAMS

This chapter describes the beneficial effects that other regulatory programs may have on the City's shorelines.

5.1 City Regulations and Programs

The City's Comprehensive Plan, last updated in 2014, is a statement of goals and policies that guides growth and development throughout the city. In addition to the basic elements required by the Growth Management Act (GMA), such as environment, land use and rural lands, critical areas and resource lands, housing, transportation, capital facilities, and utilities, the City's Comprehensive Plan establishes an overall land use pattern. It provides the general distribution, location, and extent of the commercial, industrial, residential, and natural resource land uses.

The Comprehensive Plan is implemented through development regulations. All development activity within the city is required to comply with the SBMC. Provisions in the SBMC that potentially affect how future development is implemented and the extent of potential ecological impacts, include critical area and zoning regulations.

5.1.1 Critical Area Regulations

Growth Management Act requires the City to designate and protect critical areas. The City of South Bend's critical areas regulations are detailed in the SBMC, Chapter 14.15: Critical Areas (2012).

5.1.2 Zoning Ordinance

Codified in Section 16.05 of the SBMC, the Zoning Ordinance of the City of South Bend, originally adopted in 1974, provides development standards to carry-out the General Plan's Goals, Policies and Objectives relating to zoning, critical areas, and land division. More specifically, the Zoning Ordinance determines the size, use, location, density and character of development within the City.

5.2 State Agencies/Regulations

Aside from the Shoreline Management Act (SMA), State regulations most pertinent to development in the City's shorelines include the State Hydraulic Code, the Growth Management Act, State Environmental Policy 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. 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.

Depending on the nature of the proposed development, State 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 State regulations and/or State agency responsibilities follows.

5.2.1 Washington Department of Natural Resources (WDNR)

Washington Department of Natural Resources (WDNR) is charged with protecting and managing use of State-owned aquatic lands. Toward that end, water-dependent uses waterward of the ordinary high water mark require review by WDNR to establish whether the project is on State-owned aquatic lands. If WDNR has jurisdiction, the project may be required to obtain an Aquatic Use Authorization from WDNR and enter into a lease agreement. Certain project activities, such as single-family or two-party joint-use residential piers, on State-owned aquatic lands are exempt from these requirements. WDNR recommends that all proponents of a project waterward of the ordinary high water mark contact WDNR to determine jurisdiction and requirements.

5.2.2 Washington Department of Ecology

The Washington Department of Ecology may review and condition a variety of project types, including any project that needs a permit from the U.S. Army Corps of Engineers, 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>). Their authority comes from the State SMA, Section 401 of the Federal Clean Water Act, the Water Pollution Control Act, the Federal Coastal Zone Management Act of 1972, the State Environmental Policy Act (SEPA), the GMA, and various RCWs and WACs of the State of Washington.

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 (TMDL), must be developed for impaired waters.

Also as a component of the Clean Water Act, in Washington State, the Department of Ecology has been delegated the responsibility by the U.S. Environmental Protection Agency for managing implementation of the National Pollutant Discharge Elimination System (NPDES) program.

5.2.3 Washington Department of Fish and Wildlife

Chapter 77.55 RCW (the Hydraulic Code) gives the WDFW 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, bridges and footbridges. These types of projects must obtain a Hydraulic Project Approval from WDFW, which will contain conditions intended to prevent damage to fish and other aquatic life, and their habitats. In some cases, the project may be denied if significant impacts would occur that could not be adequately mitigated.

5.2.4 Ocean Resources Management Act

The Ocean Resources Management Act establishes policies that are intended to protect the functions and values of the State’s ocean resources. The Act establishes criteria for federally, state, or locally permitted uses or activities that will adversely impact renewable resources, marine life, fishing, aquaculture, recreation, navigation, air or water quality, or other existing ocean or coastal uses. The provisions for coastal ocean uses and modifications in the Draft SMP are consistent with the policies of the Ocean Resources Management Act.

5.2.5 State Forest Practices Act

Activities related to growing, harvesting, or processing timber are regulated under Washington’s State Forest Practices Act (WAC 222) administered by Washington State DNR and are not regulated under the SMA unless the land is being converted to another use besides growing trees or the commercial harvest is within 200 feet of a shoreline of statewide significance and exceeds the harvest limits established in the SMA. Conversions must comply with the provisions in the SMP for the new use.

5.2.6 Surface Mining Act

The Surface Mining Act is a reclamation law administered by WA DNR that requires a permit for each mine that: 1) results in more than 3 acres of mine-related disturbance, or 2) has a high-wall that is both higher than 30 feet and steeper than 45 degrees. The DNR is responsible for reviewing and approving site reclamation plans to achieve the following goals:

- Segmental or progressive reclamation;
- Preservation of the topsoil;

- Slope restoration such that high-walls are rounded in plan and section for all mines;
- Stable slopes;
- Final topography that generally comprises sinuous contours, chutes and buttresses, spurs, and rolling mounds and hills, all of which blend with adjacent topography to a reasonable extent; and
- Effective revegetation with native multi-species ground cover and trees depending on the municipality-approved subsequent use designated for the site.

5.3 Federal Agencies/Regulations

Federal regulations most pertinent to development in the City's shorelines include the Endangered Species Act, the Clean Water Act, and the Rivers and Harbors Appropriation Act. Other relevant federal laws include the National Environmental Policy Act, Anadromous Fish Conservation Act, Clean Air Act, and the Migratory Bird Treaty Act. A variety of agencies (e.g., U.S. Army Corps of Engineers [Corps], National Marine Fisheries Service, U.S. Fish and Wildlife Service) are involved in implementing these regulations, but review by these agencies of shoreline development in most cases would be 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 and/or agency responsibilities follows.

5.3.1 Clean Water Act

Major components of the Clean Water Act include Section 404, Section 401, NPDES, and Section 303(d).

Section 404 provides the Corps, under the oversight of the U.S. Environmental Protection Agency (EPA), with authority to regulate "discharge of dredged or fill material into waters of the United States, including wetlands." As applicable to the City's shoreline jurisdiction, this generally means that the Corps must review and approve most activities in streams and wetlands. These activities may include wetland fills, stream and wetland restoration, culvert installation or replacement, or 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, Ecology has been delegated the responsibility by the EPA for managing implementation of this program.

The NPDES is similar to Section 401, and 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.

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. Ecology is working with the City and other partners to implement water quality improvement projects as part of TMDLs.

5.3.2 Rivers and Harbors Act, Section 10

Section 10 of the federal Rivers and Harbors Appropriation Act of 1899 provides the Corps with authority to regulate activities that may affect navigation of “navigable” waters. Designated “navigable” waters in South Bend include:

- Willapa River (including tidal waters associated with Potter Slough and Mailboat Slough)
- Skidmore Slough

Proposals to construct new or modify existing over-water structures (including bridges), to excavate or fill, or to “alter or modify the course, location, condition, or capacity of” navigable waters must be reviewed and approved by the Corps.

5.3.3 Federal 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 attempt to engage in any such conduct.” 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, as described above) that could affect species listed under the ESA. These agencies ensure that the project includes impact minimization and compensation measures for protection of listed species and their habitats.

5.3.4 Coastal Zone Management Act (CZMA)

Section 307 of the CZMA, the “federal consistency” provision, requires that federal actions that have reasonably foreseeable effects on any coastal use or resource be consistent with the enforceable policies of a state’s federally approved coastal management program. Federal agency activities must be consistent to the maximum extent practicable with the enforceable policies of a state coastal management program. To the extent that the City’s SMP establishes enforceable policies for uses and modifications in the marine environment, the SMP can be a tool to help ensure that federal actions are consistent with the City’s marine management objectives.

5.3.5 Dredged Material Management Program

Dredging projects typically involve multiple agencies at the local, state, and federal levels. Before applying for a permit, an applicant must obtain a Suitability Determination or other

decision document from the interagency Dredged Material Management Program that evaluates the proposed project. Applicants for new dredging projects must also obtain permits from the Corps, Ecology, WDFW, and the local government with jurisdiction. As part of the Corps process, ESA consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service will be conducted. If in-water disposal is proposed, a Site Use Authorization from WDNR is also required.

6 NET EFFECT ON ECOLOGICAL FUNCTIONS

This CIA indicates that future growth in the City of South Bend's shoreline would be minor, and provides analysis that can help inform the City of potential future shoreline impacts and importance of provisions in the SMP.

This CIA considered the rate of anticipated development in South Bend, which is expected to remain low in the foreseeable future. Future land uses within shoreline jurisdiction of the Willapa River are anticipated to generally be in the Commercial or Environmental Protection District zones, while future land uses within the shoreline jurisdiction of the Skidmore Slough are anticipated to be mainly residential. Water-dependent and water-oriented uses are expected to continue to predominate the land uses along the City shorelines. Maintenance and repair of existing shoreline and aquatic facilities is also anticipated.

Irrespective of new land use changes, the City faces several challenges in maintaining shoreline functions. The SMP is expected to maintain existing shoreline functions within the City while accommodating reasonably foreseeable future shoreline development. Other local, state, and federal regulations, acting in concert with the SMP, will provide further mechanisms and assurances of maintaining shoreline ecological functions over time. The SRP, and the voluntary actions described therein, will ensure that incremental losses that could occur despite SMP provisions do not result in a net loss of functions. Per the SRP, strategies to improve shoreline functions include: restoring degraded areas to their natural processes, preserving estuarine areas, controlling non-native and invasive species, improving water quality conditions in accordance with established TMDLs.

As discussed, major elements of the SMP that help ensure no net loss of ecological functions fall into four general categories: 1) environment designations, 2) general policies and regulations, 3) critical areas regulations, and 4) shoreline use and modification regulations.

Environment designations: Shoreline environment designations were assigned to shorelines to minimize use conflicts and designate appropriate areas for specific uses and modifications (SMP Chapter 2).

General policies and regulations: Chapter 3 of the proposed SMP contains general policies and regulations designed to maintain shoreline ecological functions. These regulations apply to all

shoreline uses and modifications, and they provide the basis for achieving no net loss of shoreline ecological functions, such as mitigation sequencing, flood hazard regulations, and water quality standards. For protection of critical areas in shoreline jurisdiction, Section 1.5 of the proposed SMP incorporates by reference the City's critical areas code (Chapter 14.15 SBMC). The City's critical areas ordinance addresses wetlands (SBMC 14.15.030), geologically hazardous areas (SBMC 14.50.040), fish and wildlife habitat conservation areas (SBMC 14.15.050), and frequently flooded areas (SBMC 14.15.060). The critical areas code sets forth standard buffers, buffer requirements, and other protective standards for critical areas, including those that fall within shoreline jurisdiction.

Shoreline use, shoreline modification, permit procedures and enforcement: SMP Sections 4 and 5 contain a number of policies and regulations that contribute to the maintenance of ecological functions. Shoreline uses and modifications were individually determined to be permitted, conditionally permitted, or prohibited in each environmental designation. More uses and modifications are permitted in those areas with higher levels of existing disturbance, and allowed uses and modifications are more limited in areas with lower levels of disturbance. Regulations prohibit uses that are incompatible with the existing land use and ecological conditions, and emphasize appropriate location and design of various uses.

Shoreline Restoration Plan: The SRP may enable the City of South Bend to ensure that the minimum requirement of no net loss of shoreline ecological function is achieved on a city-wide basis, regardless of any shortcomings of individual projects or activities. Without restoration and protection measures to offset them, these impacts can result in cumulative, incremental and unavoidable degradation of the overall baseline condition. The SRP serves as a guide for ecological restoration and protection activities implemented voluntarily by the city and other government agencies, developers, non-profit groups, and property owners within the shoreline jurisdiction.

Given the provisions and key features described above, implementation of the proposed SMP is anticipated to achieve **no net loss of ecological functions in the shorelines of South Bend**. Voluntary actions identified and prioritized in the SRP will provide the opportunity to enhance and restore shoreline functions over time.

7 REFERENCES

City of South Bend Municipal Code (SBMC). Chapter 14.15. Available:

<http://www.codepublishing.com/WA/SouthBend/html/SouthBend14/SouthBend1415.html>.

The Watershed Company. April 2015. Shoreline Restoration Plan for Shorelines in the City of South Bend. Prepared for the City of South Bend, WA.

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