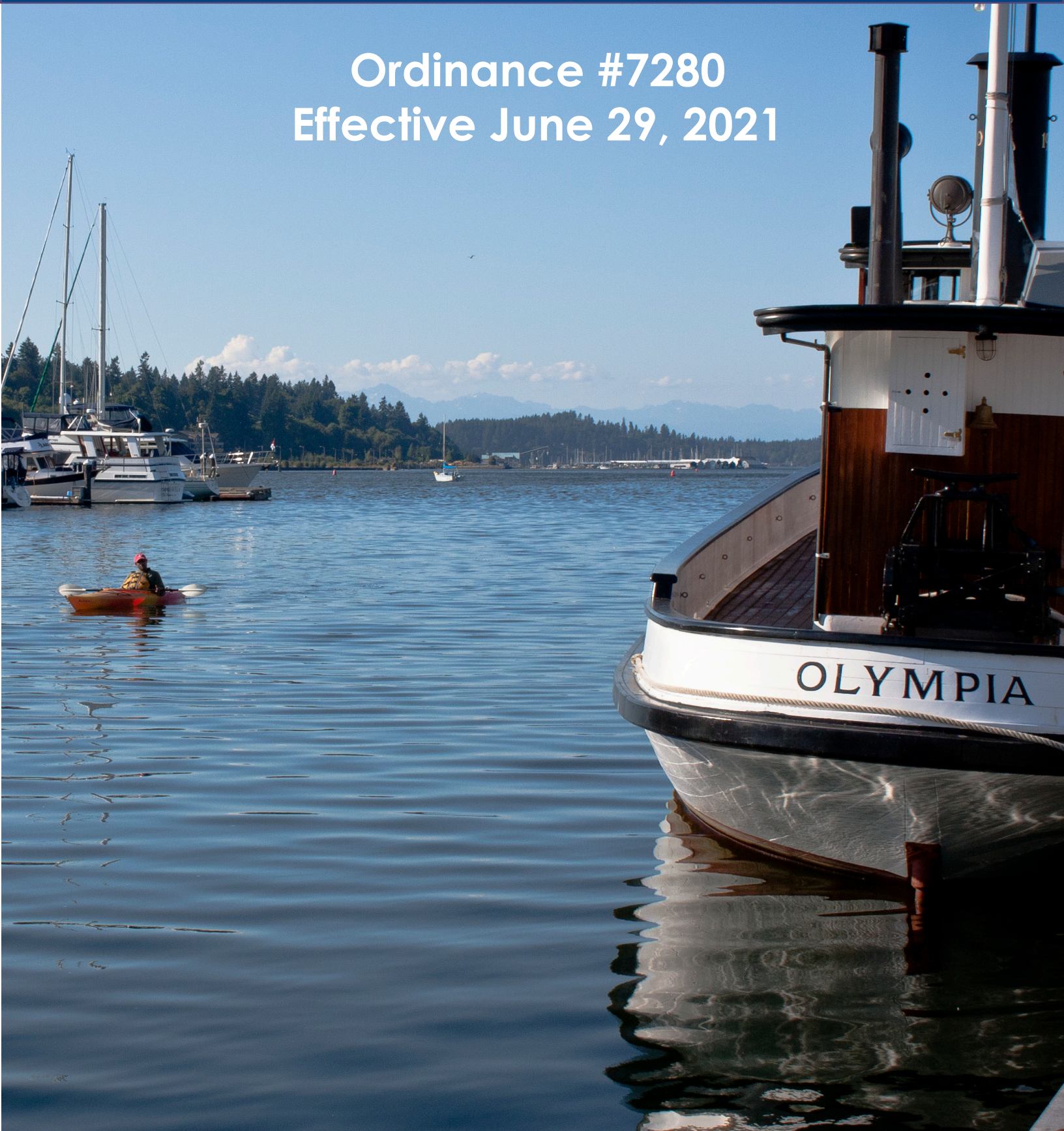


ECOLOGY APPROVED Shoreline Master Program

Ordinance #7280
Effective June 29, 2021



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Shoreline Master Program

Effective June 29, 2021

ECOLOGY APPROVED City of Olympia Shoreline Master Program

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Section 1

General Provisions

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1.1. Introduction

The shorelines of Olympia have great social, ecological, recreational, cultural, economic and aesthetic value. Grass Lake, Capitol Lake, Ward Lake, Ken Lake, Percival Creek, and Olympia's marine shoreline areas provide citizens and the community with clean water; a deepwater port and industrial sites; habitat for a variety of fish and wildlife including salmon, shellfish, forage fish, and waterfowl; archaeological and historical sites; open space; and areas for boating, fishing, and other forms of recreation. However, Olympia's shoreline resources are limited and irreplaceable. Use and development of shoreline areas must be carefully planned and regulated to ensure that these values are maintained over time.

The City of Olympia Shoreline Master Program (SMP or the Program) is a result of Washington State legislation requiring all jurisdictions to adequately manage and protect shorelines of the State.

Washington's Shoreline Management Act (SMA or Act) (Revised Code of Washington [RCW] 90.58) was passed by the Legislature in 1971 and adopted by the public in a 1972 referendum. The goal of the SMA is "to prevent the inherent harm of uncoordinated and piecemeal development of the State's shorelines." The Act specifically states:

It is the policy of the State to provide for the management of the shorelines of the State by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner, which, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the State and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto.

The City of Olympia prepared this SMP to meet the requirements of the Washington State Shoreline Management Act. This SMP provides goals, policies, and regulations for shoreline use and protection and establishes a permit system for administering the Program. The goals, policies, and regulations contained herein are tailored to the specific geographic, economic, and environmental needs of the City of Olympia and its varied shorelines.

The Shoreline Management Act and its implementing legislation (Washington Administrative Code [WAC] 173-26 or Shoreline Guidelines) establish a broad policy giving preference to shoreline uses that:

- Depend on proximity to the shoreline ("water-dependent uses"),
- Protect biological and ecological resources, water quality and the natural environment, and
- Preserve and enhance public access or increase recreational opportunities for the public along shorelines.

The overall goal of this SMP is to:

Develop the full potential of Olympia's shoreline in accord with the unusual opportunities presented by its relation to the City and surrounding area, its natural resource values, and its unique aesthetic qualities offered by water, topography, views, and maritime character; and to develop a physical environment which is both ordered and diversified and which integrates water, shipping activities, and other shoreline uses with the structure of the City while achieving a net gain of ecological function.

In implementing this Program, the public's opportunity to enjoy the physical and aesthetic qualities of shorelines of the State shall be preserved to the greatest extent feasible. Implementing the SMP must protect the ecological functions of shorelines and, at a minimum, achieve 'no net loss' of ecological functions. Single-family residences; ports; shoreline recreational uses (including but not limited to parks, marinas, piers, and other improvements); water-dependent industrial and commercial developments; and other developments that depend on a shoreline location shall be given priority. Permitted shoreline uses shall be designed and conducted to minimize damage to the ecology of the shoreline and/or interference with the public's use of the water and, where consistent with public access planning, provide opportunities for the general public to have access to the shorelines.

The City of Olympia last updated its SMP in 1994. Since that time, there have been substantial changes in the way shorelines are regulated. New scientific data and research methods have improved our understanding of shoreline ecological functions and their value in terms of fish and wildlife, water quality and human health. This information also helps us understand how development in these sensitive areas impacts these functions and values. The new Shoreline Guidelines, upon which this SMP is based, reflect this improved understanding and place a priority on protection and restoration of shoreline ecological functions.

In order to protect the public interest in the preservation and reasonable use of the shorelines of the State, the Shoreline Management Act establishes a planning program coordinated between the State and local jurisdictions to address the types and effects of development occurring along the State's shorelines. By law, the City is responsible for the following:

The City of Olympia's Role in Implementing the Shoreline Management Act

- A. Development of an inventory of the natural characteristics and land use patterns along "shorelines of the State" within the City's territorial limits. This inventory provides the foundation for development of a system that classifies the shoreline into distinct "environments." These environments provide the framework for implementing shoreline policies and regulatory measures.
- B. Preparation of a "Shoreline Master Program" to determine the future of the shorelines. This future is defined through the goals developed for the following land and water use elements: economic development, public access, circulation, recreation, shoreline use, conservation, historical/cultural protection, and floodplain management. Local government is encouraged to adopt goals for any other elements, which, because of present uses or future needs, are deemed appropriate and necessary to implement the intent of the Shoreline Management Act. In addition, policy statements are developed to provide a bridge between the goals of the Master Program and the use and modification regulations developed to address different types of activities and development along the shoreline.
- C. Development of a permit system to further the goals and policies of both the Act and the local Master Program.

Local governments have the primary responsibility for initiating the planning program and administering the regulatory requirements. The City of Olympia Shoreline Master Program must be consistent with the policies and requirements of the Shoreline Management Act and the State Shoreline Guidelines. The role of the Department of Ecology is to provide support and review of the Shoreline Master Program and subsequent shoreline development permits and approvals.

The Shoreline Management Act defines a Master Program as a "comprehensive use plan for a described area." The shoreline planning process differs from the more traditional planning process in that the emphasis is on protecting the shoreline environment through management of uses.

How to Use This Document

The City of Olympia's SMP includes goals, policies and regulations. The SMP is a comprehensive plan for how shorelines should be used and developed over time. Goals, policies and regulations provide direction for shoreline users and developers on issues such as use compatibility, setbacks, public access, building height, parking locations, mitigation, and the like.

The following summary provides an overview of the Olympia Shoreline Master Program (SMP or Program) contents with a brief explanation of its general format and procedures.

SMP Section 1 introduces the purposes and intent of the Program, explains the City's authority to regulate shorelines and explains the Program's relationship to other ordinances and laws. Section 1 also explains the types of development the Program has jurisdiction over.

Section 2 provides goals and policies for the SMP. These goals and policies will become part of the City of Olympia's Comprehensive Plan.

Section 3 provides general policies and regulations that apply throughout the shoreline, in all shoreline districts and environment designations. Some of the key provisions of this section address shoreline use, site planning, building heights and setbacks, marine shoreline and critical areas protection, public access, vegetation conservation, views and aesthetics, water quality and the effect of the SMP on existing uses and structures.

The SMP also includes a Restoration Plan as Appendix A. The Restoration Plan is intended to identify shorelines, or areas upland that impact shorelines, that need to be restored to a healthy and functioning condition. The Plan is for the purpose of identifying potential projects and programs that would contribute or achieve restoration for those degraded areas, and can serve as a resource for those who need or want to identify potential restoration projects.

If you intend to develop or use lands adjacent to a shoreline (“shoreline jurisdiction” generally includes water areas and lands within 200 feet of the Ordinary High Water Mark – see Section 3.16 for the complete definition), consult first with the City of Olympia’s Community Planning and Development Department to determine if you need a shoreline permit; they will also tell you about other necessary government approvals.

Initial Procedures

Although your proposal may be permitted by Program regulations or even exempt from specific permit requirements, all proposals must comply with all relevant policies and regulations of the entire Program as well as the general purpose and intent of the SMP.

For development and uses allowed under this Program, the City must find that the proposal is generally consistent with the applicable policies and regulations, unless a variance is to be granted. When your proposal requires a “Letter of Exemption,” submit the proper application to the City’s Community Planning and Development Department.

1.2 Other Policy and Regulatory Tools

The SMP is a fundamental regulatory tool that the City of Olympia uses to manage development along its shoreline. While not explicitly part of the SMP, it is the City’s intent to employ other regulatory tools to work in concert with the SMP to form the City’s policy and regulatory framework for the shoreline and the rest of the City, thereby achieving the purpose and intent of the various policies and incentives established in this program. Within the jurisdiction of the shoreline, these other tools will be exercised in a manner which promotes and aligns with the implementation of this SMP. The table below provides a list of these regulations and a summary of some of the key issues they address. In addition to the policy and regulatory tools noted below the City also has a series of master plans, such as the Parks, Arts and Recreation Plan, the Utility Plan and the West Bay Master Plan that help to shape policy and regulations.

Summary of Regulatory and Policy Tools that Impact Development Along the Shoreline and Throughout the City										
Issue	SMP	Comp Plan	Zoning Code	EDDS	Storm Water Manual	CAO	Flood Plain	SEPA	CFP	Bldg. Codes
Shoreline Uses	X	X	X			X ¹				
Setbacks	X		X							
Heights	X	X	X							
View Protection	X	X	X					X		
Sea Level Rise	X	X	X	X			X	X	X	
No Net Loss	X	X			X	X		X		
Vegetation Preservation	X	X	X ²			X				
Liquefaction										X
Development Review Process	X		X					X		
Nonconformities	X		X							
Vision	X	X								
Public Access	X	X	X					X		
Trails	X	X	X	X						
<i>SMP = Shoreline Master Program</i> <i>EDDS = Engineering Development & Design Standards</i> <i>CAO = Critical Areas Ordinance</i> <i>SEPA = State Environmental Policy Act</i> <i>CFP = City's Capital Facilities Plan</i> <i>X = Primary Function</i>										

1.3. Purpose and Intent

The purpose of Olympia's Shoreline Master Program is:

- A. To guide the future development of shorelines in the City of Olympia in a positive, effective, and equitable manner consistent with the Washington State Shoreline Management Act of 1971 (Act) as amended (RCW 90.58);

¹ CAO applies to the shoreline and is a separate regulatory document: however following adoption of the SMP, the CAO was incorporated into the SMP by reference.

² And the Tree Protection and Replacement Code, OMC Chapter 16.60.

- B. To promote the public health, safety, and general welfare of the community by providing long-range, comprehensive policies and effective, reasonable regulations for development and use of Olympia's shorelines; and
- C. To ensure, at a minimum, no net loss of shoreline ecological functions and processes and to plan for restoring shorelines that have been impaired or degraded by adopting and fostering the policy contained in RCW 90.58.020, Legislative Findings for shorelines of the State.

1.4 Title

This document together with the Restoration Plan (Appendix A) shall be known as the Olympia Shoreline Master Program or Shoreline Program.

1.5 Adoption Authority

This Shoreline Master Program is adopted under the authority granted by RCW 90.58 and WAC 173-26.

1.6 Regulations Adopted by Reference

The Critical Areas regulations adopted by Council, contained in the Olympia Municipal Code (OMC) Chapters 18.32 and 16.70 are integral and applicable to this Shoreline Program, and are hereby adopted by reference as described in Section 18.20.420 A. Similarly, Section 18.06.100 A.2.C -- West Bay Drive Building Height and View Blockage Limits (Ordinance 6646, passed on July 14, 2009), is hereby adopted by reference to the extent that the height and use regulations identified therein are applicable to the shoreline jurisdiction area.

1.7 Severability

The Act and this Shoreline Program adopted pursuant thereto comprise the basic State and City regulations for the use of shorelines in the City. In the event the provisions of this Shoreline Program conflict with other applicable City policies or regulations, the more restrictive shall prevail. Should any section or provision of this Shoreline Program be declared invalid, such decision shall not affect the validity of this Shoreline Program as a whole.

1.8 Effective Date

This Shoreline Program and any amendments thereto shall become effective fourteen (14) days following the date of written notice of final action by the Washington State Department of Ecology.

2.1 Shoreline Master Program Goals and Policies

The goals, policies and regulations of Olympia's Shoreline Master Program are based on the governing principles in the Shoreline Master Program Guidelines, WAC 173-26-186 and the policy statement of RCW 90.58.020. It is the policy of the City to provide for the management of the shorelines of Olympia by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner which, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the State and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto.

- A. The interest of all of the people shall be paramount in the management of those areas of Puget Sound lying seaward from the line of extreme low tide. Within this area the City will give preference to uses in the following order of preference which:
 - 1. Recognize and protect the state-wide interest over local interest;
 - 2. Preserve the natural character of the shoreline;
 - 3. Result in long-term over short-term benefit;
 - 4. Protect the resources and ecology of the shoreline;
 - 5. Increase public access to publicly-owned areas of the shorelines;
 - 6. Increase recreational opportunities for the public in the shoreline;
 - 7. Provide for any other element as defined in RCW 90.58.100 as deemed appropriate or necessary.
- B. The policies of Olympia's Shoreline Program may be achieved by diverse means, one of which is regulation. Other means may include but are not limited to acquisition of lands and/or easements by purchase or gift, incentive programs, and implementation of capital facility and/or non-structural programs.
- C. Regulation of private property to implement Shoreline Program goals such as public access and protection of ecological functions and processes must be consistent with all relevant constitutional and other legal limitations.
- D. Regulatory or administrative actions must be implemented consistent with the Public Trust Doctrine and other applicable legal principles as appropriate and must not unconstitutionally infringe on private property rights or result in an unconstitutional taking of private property.
- E. The regulatory provisions of this Shoreline Program are to be limited to shorelines of the State, whereas the planning functions of the Program may extend beyond the designated shoreline boundaries.

- F. The policies and regulations established by this Shoreline Program are to be integrated and coordinated with the other goals, policies and rules of the Olympia Comprehensive Plan and development regulations adopted under the Growth Management Act (GMA).
- G. The policies and regulations of Olympia's Shoreline Program are intended to protect shoreline ecological functions by:
 - 1. Requiring that current and potential ecological functions be identified and understood when evaluating new or expanded uses and developments;
 - 2. Requiring adverse impacts to be mitigated in a manner that ensures no net loss of shoreline ecological functions. Mitigation shall include avoidance as a first priority, followed by minimizing, and then replacing/compensating for lost functions and/or resources;
 - 3. Ensuring that all uses and developments, including preferred uses and uses that are exempt from a shoreline substantial development permit, will not cause a net loss of shoreline ecological functions;
 - 4. Preventing, to the greatest extent practicable, cumulative impacts from individual developments;
 - 5. Fairly allocating the burden of preventing cumulative impacts among development opportunities; and
 - 6. Including incentives to restore shoreline ecological functions where such functions have been degraded by past actions.
- H. The policies and regulations of Olympia's Shoreline Program should provide resilience for shoreline ecosystems, functions, and developments in response to sea level rise.

2.2 Shoreline Ecological Protection and Mitigation Goals

- A. The Shoreline Management Act and the Shoreline Master Program Guidelines place a primary emphasis on the protection of shoreline ecological functions and system-wide processes. In accordance with the Guidelines (WAC 173-26), Olympia's Shoreline Program must insure that shoreline uses, activities, and modifications will result in no net loss to these processes and functions.
- B. The protection, restoration and enhancement of shoreline ecological functions and system-wide processes, especially as they pertain to the long-term health of Budd Inlet, are high priorities of Olympia's Shoreline Program. The policies and regulations established therein are to be applied to all uses, developments and activities that may occur within the shoreline jurisdiction.
- C. The City recognizes that there are many existing sources of untreated stormwater within the shoreline jurisdiction and that these sources of nonpoint pollution have negative impacts on shoreline ecological functions. The City's Drainage Design and Erosion Control Manual of Olympia is the primary regulatory tool that addresses stormwater treatment and is periodically updated in response to changing guidelines from the Department of Ecology and changes in best management practices.

2.3 Shoreline Ecological Protection and Mitigation Policies

- A. All shoreline use and development should be carried out in a manner that avoids and minimizes adverse impacts so that the resulting ecological condition does not become worse than the current condition. This means assuring no net loss of ecological functions and processes and protecting critical areas that are located within the shoreline jurisdiction.

- B. Natural features of the shoreline and nearshore environments that provide ecological functions and should be protected include but are not limited to marine and freshwater riparian habitat, banks and bluffs, beaches and backshore, critical saltwater and freshwater habitat, and wetlands and streams. Shoreline processes that should be protected include but are not limited to erosion and accretion, sediment delivery, transport and storage, organic matter input, and large woody debris recruitment. See WAC 173-26-201(2)(c).
- C. Preserve and protect important habitat including but not limited to the Port Lagoon, Priest Point Park, Ellis Cove, Grass Lake, Chambers Lake, and Percival Canyon.
- D. Development standards for density, setbacks, impervious surface, shoreline stabilization, vegetation conservation, critical areas, and water quality should protect existing shoreline functions and processes. During permit review, the Administrator should consider the expected impacts associated with proposed shoreline development when assessing compliance with this policy.
- E. Where a proposed use or development creates significant adverse impacts not otherwise avoided or mitigated by compliance with Olympia's Shoreline Program, mitigation measures should be required to ensure no net loss of shoreline ecological functions and system-wide processes.
- F. The City should work with other local, state, and federal regulatory agencies, tribes, and non-government organizations to ensure that mitigation actions carried out in support of the Olympia Shoreline Program are likely to be successful and achieve beneficial ecological outcomes. This includes such measures as mitigation banks, fee in lieu programs, and assisting applicants/proponents in planning, designing, and implementing mitigation.
- G. The City should develop a program to periodically review conditions on the shoreline and conduct appropriate analysis to determine whether or not other actions are necessary to protect and restore shoreline ecology to ensure no net loss of ecological functions.
- H. Allow offsite mitigation when doing so would serve to better accomplish the goals and objectives of the Shoreline Management Act to protect and preserve ecological functions, or provide public access, or promote preferred shoreline uses, provide for appropriate development incentives and/or alternative mitigation options.
- I. The City should encourage innovative mitigation strategies to provide for comprehensive and coordinated approaches to mitigating cumulative impacts and restoration rather than piecemeal mitigation. For example, the approach identified in the West Bay Environmental Restoration Assessment Report suggested restoration for specific reaches of shoreline.
- J. When available and when appropriate to the situation, the City should allow for offsite mitigation approaches, including Advance Mitigation, Fee-In Lieu, and Mitigation Banking.
- K. As part of the next update of the Drainage Design and Erosion Control Manual of Olympia, the City will consider methods and measures to encourage existing development, redevelopment and new development within the shoreline jurisdiction to comply with the City's Drainage Design and Erosion Control Manual of Olympia and best management practices.

2.4 Shoreline Use and Development Policies

- A. The City should give preference to those uses that are consistent with the control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon uses of the State's shoreline areas.

- B. The City should ensure that all proposed shoreline development will not diminish the public's health, safety, and welfare, as well as the land or its vegetation and wildlife, and should endeavor to protect property rights while implementing the policies of the Shoreline Management Act.
- C. The City should reduce use conflicts by prohibiting or applying special conditions to those uses which are not consistent with the control of pollution and prevention of damage to the natural environment or are not unique to or dependent upon use of the State's shoreline. In implementing this provision, preference should be given first to water-dependent uses, then to water-related uses and water-enjoyment uses.
- D. The City should continue to develop information about the impacts of sea level rise on the shoreline and other affected properties; the City should develop plans to address the impacts of sea level rise in collaboration with impacted property owners, the community and the Department of Ecology. These plans should include at minimum flood prevention approaches, shoreline environment impact considerations and financing approaches. The City should amend the Shoreline Master Program and other policy and regulatory tools in the future as necessary to implement these plans.
- E. The City should consider the impacts of sea level rise as it plans for the rebuild of Percival Landing and other shoreline improvements and it should be designed to provide for a reasonable amount of sea level rise consistent with the best available science and the life cycle of the improvements.
- F. The City should collaborate with private property owners, business owners and citizens in the implementation of the Shoreline Master Program to explore creative ways to reduce ecological impacts and mitigate for impacts from sea level rise when new development or redevelopment is proposed. This objective may best be accomplished by developing flexible approaches to shoreline development where the total environmental benefit is enhanced through such measures. Opportunities for collaboration may include:
 - 1. Provision of advanced stormwater management and treatment within the shoreline.
 - 2. The restoration, repair and replacement of Percival Landing where appropriate.
 - 3. Provision of direct physical access to the water where appropriate.
 - 4. Provision of a shoreline trail where feasible and consistent with applicable laws.
 - 5. Provision of native vegetation preservation and restoration where appropriate.
 - 6. Bulkhead removal and replacement of hardened shoreline with soft structural stabilization measures water-ward of Ordinary High Water Mark (OHWM) where appropriate.
 - 7. Provision of water related recreation, active playgrounds, and significant art installations, performance space, or interpretive features where appropriate.
- G. Space for preferred shoreline uses should be reserved. Such planning should consider upland and in-water uses, water quality, navigation, presence of aquatic vegetation, existing shellfish protection districts and critical wildlife habitats, aesthetics, public access and views.

2.5 Aquatic Environment Management Policies

- A. The *Aquatic* environment designation should apply to lands water-ward of the Ordinary High Water Mark.
- B. Allow new or expanded overwater structures only for water-dependent uses, public access, or ecological restoration.
- C. The size of new overwater structures should be the minimum necessary to support the structure's intended use.
- D. In order to reduce the impacts of shoreline development on shoreline ecological functions, multiple uses of overwater facilities should be encouraged.
- E. All development and uses on navigable waters or their beds should be located and designed to minimize interference with surface navigation, to consider impacts to public views, and to allow for the safe, unobstructed passage of fish and wildlife, particularly forage fish habitat and those species dependent on migration.
- F. Uses that adversely impact the ecological functions of critical saltwater and freshwater habitats should not be allowed except where necessary to achieve the objectives of RCW 90.58.020, and then only when their impacts are mitigated according to the sequence described in WAC 173-26-201(2)(e) as necessary to assure no net loss of ecological functions.
- G. Shoreline uses and modifications should be designed and managed to prevent degradation of water quality and alteration of natural hydrographic conditions.
- H. Soft shore stabilization methods or habitat restoration approaches should be encouraged when ecological functions can be improved, such as through restoration as envisioned in the West Bay Environmental Restoration Assessment Report for some reaches.

2.6 Natural Environment Management Policies

- A. The *Natural* environment designation should be assigned to shoreline areas if any of the following characteristics apply:
 - 1. The shoreline is ecologically intact and therefore currently performing an important, irreplaceable function or ecosystem-wide process that would be damaged by human activity;
 - 2. The shoreline is characterized by ecosystems and geologic types that are of particular scientific and educational interest; or
 - 3. The shoreline is unable to support new development or uses without significant adverse impacts to ecological functions or risk to human safety.
- B. Priest Point Park is one of a few shorelines along Budd Inlet that is ecologically intact. Therefore, any use or modification that would substantially degrade the ecological functions or natural character of this shoreline area should not be allowed.
- C. Scientific, historical, cultural, educational research uses, and water-oriented recreation access may be allowed provided that no significant ecological impacts on the area will result. Recreation uses should be limited to trails and viewing areas.
- D. Uses should be highly restricted and allowed only with a conditional use permit for water-oriented recreational uses.
- E. New roads, utility corridors, and parking areas should be located outside of the shoreline jurisdiction.

2.7 Urban Conservancy Environment Management Policies

- A. The *Urban Conservancy* environment designation should be applied to shoreline areas appropriate and planned for development that is compatible with maintaining or restoring ecological functions of the area, that are not generally suitable for water-dependent uses and that lie in incorporated municipalities and urban growth areas if any of the following characteristics apply:
 - 1. They are suitable for water-related or water-enjoyment uses;
 - 2. They are open space, flood plain or other sensitive areas that should not be more intensively developed;
 - 3. They have potential for ecological restoration;
 - 4. They retain important ecological functions, even though partially developed; or
 - 5. They have potential for development that is compatible with ecological restoration.
- B. Uses that preserve the natural character of the area or promote preservation of open space or critical areas should be the primary allowed use. Uses that result in the restoration of ecological functions should be allowed if the use is otherwise compatible with the purpose of the *Urban Conservancy* environment and the setting.
- C. Standards should be established for shoreline stabilization measures, vegetation conservation, water quality, and shoreline modifications. These standards should ensure that new development does not result in a net loss of shoreline ecological functions or further degrade shoreline values.
- D. Public access trails and public passive recreation should be provided whenever feasible and significant ecological impacts can be mitigated.
- E. Water-oriented uses should be given priority over non-water oriented uses. For shoreline areas adjacent to commercially navigable waters, water-dependent uses should be given highest priority.
- F. Restoration and protection of shorelands, stream openings and associated wetlands within the *Urban Conservancy* environment should be given high priority.

2.8 Waterfront Recreation Environment Management Policies

- A. The *Waterfront Recreation* environment designation should be assigned to shoreline areas that are or are planned to be used for recreation, or where the most appropriate use is for recreation open space or habitat conservation.
- B. Development standards should take into account existing improvements and character of park areas, allow for development of low-intensity recreational uses, and restoration of shorelines. Low intensity recreation should be non-motorized and not significantly alter the landscape, such as running and walking, bicycling, wildlife viewing, picnicking, nature study, and quiet contemplation and relaxation. Associated facilities might include trails, open fields and lawn areas, picnic shelters, public art, interpretive exhibits and supporting parking and restrooms.
- C. Trails, water access, interpretive sites, viewing platforms and passive recreation areas should be allowed within setbacks and vegetation buffers when significant ecological impacts can be mitigated.
- D. Preferred uses include trails, water-related recreation, active playgrounds, and significant art installations, performance space, interpretive features, open lawn areas, play equipment, shelters, picnic areas, launch ramps, viewing platforms and accessory uses. Special events may take place.

- E. Shoreline restoration should be a priority. All development should ensure no net loss of shoreline ecological functions.

2.9 Marine Recreation Environment Management Policies

- A. The *Marine Recreation* environment designation should be assigned to areas on the Port Peninsula that are used or planned to be used for boating facilities, water-oriented recreation and commercial uses. Preferred uses include:
 - 1. Boating facilities including marinas, launch ramps, boat moorage, maintenance and repair, and upland boat storage; together with offices and other associated facilities;
 - 2. Water-oriented recreation such as trails, viewing areas, and recreational camping facilities; water access, water-related recreation, active playgrounds, and significant art installations, performance space, or interpretive features; and
 - 3. Water-oriented commercial uses.
- B. Operation and management of the *Marine Recreation* environment should be directed towards maintaining and enhancing water-oriented services, while ensuring that existing and future activity does not degrade ecological functions.
- C. All development should ensure no net loss of shoreline ecological functions.
- D. Innovative approaches to restoration and mitigation should be encouraged, including incentive and alternative mitigation programs such as Advance Mitigation and Fee In-lieu.
- E. Encourage bulkhead removal and replacement of hardened shoreline with soft structural stabilization measures.
- F. The City recognizes the Port's responsibility to operate its marine facilities and to plan for this area's future use through the development and implementation of its Comprehensive Scheme of Harbor Improvements.
- G. The City recognizes that the Marine Recreation shoreline (Reach 5C) and the adjoining Urban Conservancy/Urban Intensity shoreline in Reach 6A provide a variety of benefits to the community including boat moorage, utility transmission, transportation, public access, water enjoyment, recreation, wildlife habitat and opportunities for economic development. These benefits are put at risk by continued shoreline erosion. The City recognizes that there exists a need to develop a detailed plan for shoreline restoration and stabilization for Reaches 5C and 6A and encourages the Port to partner in this effort.
 - 1. This plan may include:
 - a. Measures to enhance shoreline stabilization through the introduction of bioengineered solutions.
 - b. Measures to incorporate habitat restoration water-ward of the OHWM.
 - c. Measures to incorporate public access and use through trails, public art, parks and other pedestrian amenities.
 - d. Measures to incorporate sea level rise protection.

- e. Setbacks, building heights and building design considerations.
- 2. Upon completion of a jointly developed shoreline restoration and stabilization plan for Reaches 5C and 6A, the City will initiate a limited amendment to the SMP to implement this Plan.

2.10 Shoreline Residential Environment Management Policies

- A. The *Shoreline Residential* environment designation should be applied to shoreline areas if they are predominantly single-family or multi-family residential development or are planned and platted for residential development.
- B. Establish standards for density or minimum frontage width, setbacks, lot coverage limitations, buffers, shoreline stabilization, vegetation conservation, critical area protection, and water quality, taking into account the environmental limitations and sensitivity of the shoreline area, the level of infrastructure and services available, and other comprehensive planning considerations.
- C. Multi-family development and subdivisions of land into more than nine (9) parcels should provide public access.
- D. Commercial development should be limited to water-oriented uses and not conflict with the character in the *Shoreline Residential* environment.
- E. Water-oriented recreational uses should be allowed.
- F. Encourage restoration of degraded shorelines in residential areas and preservation of existing vegetation.
- G. Encourage bulkhead removal and replacement of hardened shoreline with soft structural stabilization measures.

2.11 Urban Intensity Environment Management Policies

- A. The *Urban Intensity* environment should be assigned to shoreline areas if they currently support high intensity uses related to commerce, industry, transportation or navigation, and high-density housing; or are suitable and planned for high-intensity water-oriented uses.
- B. Olympia's shoreline is characterized by a wide variety of "urban" uses and activities, including commercial, industrial, marine, residential, and recreational uses. Together, these uses and activities create a vibrant shoreline that is a key component of Olympia's character and quality of life. These types of uses should be allowed within the *Urban Intensity* environment, with preference given to Water-Dependent and Water-Enjoyment uses. Shorelines in this Shoreline Environment Designation (SED) are highly altered and restoration opportunities are limited. The City's own Percival Landing is a good example of how the immediate shoreline in the Urban Intensity SED should be redeveloped with a focus on public access and enjoyment, sea level rise protection and restoration of shoreline environmental function where feasible.
- C. Nonwater-oriented uses may be allowed where they do not conflict with or limit opportunities for water-oriented uses or on sites where there is no direct access to the shoreline.
- D. Preferred uses include water-oriented recreation such as trails and viewing areas, water access, water-related recreation, active playgrounds, and significant art installations, performance space, or interpretive features.
- E. Support the restoration, repair and replacement of Percival Landing including consideration of sea level rise protection.

- F. Policies and regulations should assure no net loss of shoreline ecological functions as a result of new development or redevelopment. Where applicable, development should include environmental cleanup and restoration of the shoreline to comply with any applicable state and federal law.
- G. Visual and physical public access should be required as provided for in WAC 173-26-221(4)(d) and this shoreline program. Additional requirements for views in and across the Downtown area are also specified in OMC 18.120.
- H. Aesthetic objectives should be implemented by means such as sign control regulations, appropriate development siting, screening and architectural standards, design guidelines, and vegetation conservation measures.
- I. Innovative approaches to restoration and mitigation should be encouraged, including incentive and alternative mitigation programs such as Advance Mitigation and Fee In-lieu.
- J. Encourage bulkhead removal and replacement of hardened shoreline with soft structural stabilization measures.

2.12 Port Marine Industrial Environment Management Policies

- A. The *Port Marine Industrial* environment should be assigned to the shoreline area located within the portion of the Port of Olympia that supports uses related to water-oriented commerce, transportation or navigation, or are planned for such uses.
- B. Highest priority should be given to water-dependent and water-related industrial uses.
- C. The preferred location for non-water-dependent industrial uses is in industrial areas as far from the shoreline as feasible.
- D. Coordinate planning efforts to ensure that there is adequate land reserved for water-dependent industrial uses to promote economic development, and to minimize impacts upon adjacent land uses.
- E. Encourage growth and re-development in areas that are already developed.
- F. Industrial use and development should be located, designed, and operated to avoid or minimize adverse impacts upon the shoreline and achieve no net loss of shoreline ecological functions and processes.
- G. Industrial uses and related development projects are encouraged to locate where environmental cleanup can be accomplished.
- H. Encourage the cooperative use of docking, parking, cargo handling and storage facilities on industrial properties.
- I. Innovative approaches to restoration and mitigation should be encouraged, including incentive and alternative mitigation programs such as Advance Mitigation and Fee In-lieu.

2.13 Archaeological, Historic, and Cultural Resources Policies

- A. The destruction or damage to any site having any archaeological, historic, cultural, scientific, or educational value as identified by the appropriate authorities, including affected Indian tribes, and the Office of Archaeology and Historic Preservation, should be prevented.

2.14 Parking Policies

- A. Motor vehicle parking is not a preferred use within the shoreline jurisdiction and should be allowed only as necessary to support authorized uses.

- B. Where feasible, parking for shoreline uses should be located in areas outside the shoreline jurisdiction; otherwise locate parking as far landward of the Ordinary High Water Mark as feasible.
- C. Parking facilities or lots within the shoreline jurisdiction should utilize low impact development best management practices where feasible to reduce stormwater impacts.
- D. Design and construct parking facilities or lots to be compatible with adjacent uses and to avoid impacts to the shoreline environment.
- E. Provide walkways between parking areas and the buildings or uses they serve. Such walkways should be located as far landward of the Ordinary High Water Mark as feasible.

2.15 Public Access Policies

- A. Protect and maintain existing visual and physical public access so that the public may continue to enjoy the physical, visual, and aesthetic qualities of the shoreline.
- B. Incorporate public access into all new development or redevelopment if it creates or increases a demand for public access. Public access should also be required if the proposed use or development impairs existing legal access or rights.
- C. Protect the rights of navigation and space necessary for water-dependent uses when identifying locations for public access.
- D. Public access should be commensurate with the scale and character of a proposed use or development. Requirements should be reasonable, effective and fair to all affected parties including but not limited to the landowner and the public.
- E. Developments, uses, and activities on or near the shoreline should not impair or detract from the public's use of the water or rights of navigation.
- F. Impacts resulting from public access improvements should be mitigated in order to avoid a net loss of shoreline ecological processes and functions.
- G. Public access should be designed to provide for public safety and comfort, and to limit potential impacts to private property.
- H. Public access should be designed with provisions for persons with disabilities.
- I. Public access should connect to public areas, undeveloped rights-of-way, and other pedestrian or public thoroughfares.
- J. Public access and interpretive displays should be provided as part of publicly-funded projects.
- K. On-site public access may not be required by a new development or redevelopment if adequate public access already exists in the immediate vicinity, per 18.20.450 and .460.

2.16 Scientific and Educational Activity Policies

- A. Encourage scientific and educational activities related to shoreline ecological functions and processes, including sea level rise resilience.

2.17 Signage Policies

- A. Signs should not block or otherwise interfere with visual access to the water or shorelands.
- B. Signs should be designed and placed so that they are compatible with the aesthetic quality of the existing shoreline and adjacent land and water uses

2.18 Vegetation Conservation Area Policies

- A. Developments and activities within the shoreline jurisdiction should be planned and designed to protect, conserve and establish native vegetation in order to protect and restore shoreline ecological functions and system-wide processes occurring within riparian and nearshore areas such as:
 - 1. Providing shade necessary to maintain water temperatures required by salmonids, forage fish, and other aquatic biota;
 - 2. Regulating microclimate in riparian and nearshore areas;
 - 3. Providing organic inputs necessary for aquatic life, including providing food in the form of various insects and other benthic macro invertebrates;
 - 4. Stabilizing banks, minimizing erosion and sedimentation, and reducing the occurrence or severity of landslides;
 - 5. Reducing fine sediment input into the aquatic environment by minimizing erosion, aiding infiltration, and retaining runoff;
 - 6. Improving water quality through filtration and vegetative uptake of nutrients and pollutants;
 - 7. Providing a source of large woody debris to moderate flows, create hydraulic roughness, form pools, and increase aquatic diversity for salmonids and other species; and
 - 8. Providing habitat for wildlife, including connectivity for travel and migration corridors.
- B. Restrict clearing and grading within vegetation conservation areas in order to maintain the functions and values of the shoreline environment, including protection of habitat, steep slopes and shoreline bluffs. Any alterations should be the minimum necessary to accommodate an authorized use or development.
- C. The composition, structure and density of the vegetation should replicate the functions of a natural, unaltered shoreline to the greatest extent feasible.
- D. Maintaining a well-vegetated shoreline with native species is preferred over clearing vegetation to create views or provide lawns. Limited and selective clearing for views and lawns, or for safety, may be allowed when slope stability and ecological functions are not compromised, but landowners should not assume that an unobstructed view of the water is guaranteed. Trimming and pruning are preferred over removal of native vegetation. Property owners should be encouraged to avoid or minimize the use of fertilizers, herbicides and pesticides.
- E. Property owners should be encouraged to preserve and enhance woody vegetation and native groundcovers to stabilize soils and provide habitat. Maintaining native plant communities is preferred over non-native ornamental plantings because of their ecological value.
- F. Develop educational materials and establish a public outreach program to educate shoreline landowners and citizens about the importance of protecting and enhancing vegetative buffers along the shoreline, including education about the appropriate and proper usage of fertilizers and pesticides along the shoreline.

2.19 View Protection Policies

- A. Preserve views and vistas to and from the water, by public and private entities, to ensure that the public may continue to enjoy the physical and aesthetic qualities of the shoreline, including views of the water and views of shoreline areas from the water and the iconic views of the State Capitol and Olympic Mountains.

- B. Development should be designed to preserve and enhance the visual quality of the shoreline, including views over and through the development from the upland side of the subject property, and views over and through the development from the water.

2.20 Water Quality Policies

- A. All shoreline uses and activities should be located, designed, constructed, and maintained to avoid impacts to water quality.
- B. Stormwater management facilities for new uses and development should be designed, constructed, and maintained in accordance with the current Olympia Drainage Design and Erosion Control Manual of Olympia. To the extent feasible, low impact development best management practices should be incorporated into every project along the shoreline.
- C. To reduce impacts to water quality, the use of chemical fertilizers, pesticides or other similar chemical treatments should be avoided. Landscaping should be designed to avoid or minimize the use of such products. Maintenance activities should use integrated pest management best practices. Pesticide free areas should be encouraged.
- D. Uses and activities that pose a risk of contamination to ground or surface waters should be prohibited.

2.21 Agriculture Policies

- A. Recognize existing agricultural uses within the City and allow them to continue operating.
- B. New agricultural uses should be prohibited.

2.22 Aquaculture Policies

- A. Aquaculture should not be permitted in areas where it would result in a net loss of ecological functions, adversely impact eelgrass and microalgae, or significantly conflict with navigation and other water-dependent uses.
- B. Aquaculture facilities should be designed and located so as not to spread disease to native aquatic life, establish new non-native species which cause significant ecological impacts, or significantly impact the aesthetic qualities of the shoreline.

2.23 Boating Facilities Policies

- A. Boating facilities, such as marinas and launch ramps, are water-dependent uses and should be given priority for shoreline location.
- B. Boating facilities and their accessory uses should be located, designed, constructed and maintained to achieve the following:
 - 1. Protect shoreline ecological functions and system-wide processes. When impacts cannot be avoided, mitigate to assure no net loss to shoreline ecological functions;
 - 2. Maintain use of navigable waters, public access areas, and recreational opportunities, including overwater facilities;
 - 3. Minimize adverse impacts to adjacent land uses such as noise, light and glare, aesthetics, and public visual access; and
 - 4. Minimize adverse impacts to other water-dependent uses.

- C. Development of new boating facilities should be coordinated with public access and recreation plans and should be collocated with Port or other compatible water-dependent uses where feasible. Affected parties and potential partners should be included in the planning process.
- D. Boating facilities should provide physical and visual public shoreline access and provide for multiple uses including water-related uses, to the extent compatible with shoreline ecological functions and processes.
- E. Upland boat storage is preferred over new in-water moorage.
- F. Encourage design elements that increase light penetration to the water below existing or new moorage facilities, such as increasing the structure's height, modifying orientation and size, and use of grating as a surface material. New covered moorage and boathouses should be prohibited.
- G. Pilings treated with creosote or other similarly toxic materials should be replaced with steel or concrete pilings to minimize adverse impacts to water quality. Unused or derelict pilings should be removed.

2.24 Commercial Policies

- A. Give preference to water-dependent commercial uses, then to water-related, and then water-enjoyment commercial uses in shoreline jurisdiction. Non-water-oriented commercial uses should require a conditional use permit if located within 100 feet of the water.
- B. The preferred location for non-water-oriented commercial uses is in commercial areas no closer than 30 feet from the shoreline.
- C. Coordinate planning efforts between the City and the Port to promote economic development in downtown Olympia.
- D. Commercial development should be located, designed, and operated to avoid and minimize adverse impacts on shoreline ecological functions and processes.
- E. Commercial development should provide public access to shoreline beaches, docks, walkways, or viewing areas unless such improvements are demonstrated to be incompatible due to reasons of safety, security, or impact to the shoreline environment.
- F. Commercial development should be designed to be visually compatible with adjacent and upland properties and so that the height, bulk, and scale do not impair views.
- G. Commercial development should implement low impact development techniques to the maximum extent feasible.

2.25 Industrial Policies

- A. Give preference to water-dependent industrial uses first, then to water-related industrial uses over non-water-oriented industrial uses.
- B. Non-water oriented industrial uses should be prohibited within the shoreline jurisdiction.
- C. Coordinate planning efforts between the City and the Port to ensure that there is adequate land reserved for water-dependent industrial uses, to promote economic development, and to minimize impacts upon adjacent land uses.
- D. Locate water-dependent or water-related industrial marine uses in areas already established or zoned for industrial use.

- E. Industrial use and development should be located, designed, and operated to avoid and minimize adverse impacts on shoreline ecological functions and processes.
- F. Transportation and utility corridors serving industrial uses should be located away from the water's edge to minimize ecological impacts and reduce the need for waterfront signs and other infrastructure.
- G. Industrial uses and related development projects are encouraged to locate where environmental cleanup can be accomplished.
- H. Encourage the cooperative use of docking, parking, cargo handling and storage facilities on industrial properties.
- I. Design port facilities to permit viewing of harbor areas from viewpoints, waterfront restaurants, and similar public facilities which would not interfere with Port operations or endanger public health or safety.

2.26 Recreation Policies

- A. Public recreation is a preferred use of the shoreline. Recreational uses and developments that facilitate the public's ability to reach, touch, and enjoy the water's edge, to travel on the waters of the State, and to view the water and shoreline are preferred. Where appropriate, such facilities should be dispersed along the shoreline in a manner that supports more frequent recreational access and aesthetic enjoyment for a substantial number of people.
- B. Water-oriented recreational uses, such as boating, swimming beaches, and wildlife viewing, should have priority over non-water oriented recreation uses, such as sports fields. A variety of compatible recreation experiences and activities should be encouraged to satisfy diverse recreational needs.
- C. Recreational developments and plans should promote the conservation and restoration of the shoreline's natural character, ecological functions, and processes.
- D. Plan, design, and implement shoreline recreational development consistent with the growth projections, level-of-service standards, and goals established in Olympia's Comprehensive Plan and Parks, Arts and Recreation Plan.
- E. Hiking paths, sidewalks, and bicycle paths in proximity to or providing access to the shoreline are encouraged.
- F. Recreation facilities should be integrated and linked with linear systems, such as hiking paths, sidewalks, bicycle paths, easements, and/or scenic drives.
- G. Recreation facilities should incorporate public education and interpretive signs regarding shoreline ecological functions and processes, historic and cultural heritage.
- H. Recreation facilities should be designed to preserve, enhance, or create scenic views and vistas.
- I. Commercial recreation facilities should be consistent with the provisions for commercial development (see commercial policies above).

2.27 Residential Policies

- A. All residential developments should be located, designed, and properly managed to avoid damage to the shoreline environment and avoid cumulative impacts associated with shoreline armoring, overwater structures, stormwater runoff, septic systems, vegetation clearing, and introduction of pollutants.

- B. The overall density of development, lot coverage, setbacks, and height of structures should be appropriate to the physical capabilities of the site.
- C. Residential development, including the division of land and the construction of residential units, should be designed and located with consideration of sea level rise projections and so that shoreline armoring and flood hazard measures will not be necessary to protect land or structures.
- D. Dwelling units and accessory structures should be clustered to preserve natural features and minimize overall disturbance of the site.
- E. New residential development should provide opportunities for public access.
- F. New residential development should minimize impacts upon views from adjacent residential areas, in keeping with the Shoreline Management Act.
- G. 'Live-aboard' vessels associated with marinas may be allowed, but all other overwater residential development including floating homes should be prohibited. A floating home permitted or legally established prior to January 1, 2011 and floating on-water residences legally established prior to July 1, 2014 will be considered conforming uses.
- H. Whenever possible, non-regulatory methods to protect, enhance and restore shoreline ecological functions should be encouraged for residential development.

2.28 Transportation Policies

- A. New roads and railroads, and expansions thereof should not be built within the shoreline jurisdiction. Where this is not feasible, such improvements should be located and designed to have the least possible adverse effect on the shoreline, account for sea level rise projections, not result in a net loss of shoreline ecological functions, or adversely impact existing or planned water-oriented uses, public access, and habitat restoration and enhancement projects.
- B. Maintenance and repair of existing roads and railroads should avoid adverse impacts on adjacent shorelines and waters.
- C. Transportation facilities should be designed and located to minimize the need for the following:
 - 1. Structural shoreline protection measures;
 - 2. Modifications to natural drainage systems; and
 - 3. Waterway crossings.
- D. Planning for transportation and circulation corridors should consider location of public access facilities, and be designed to promote safe and convenient access to those facilities.
- E. Pedestrian trails and bicycle paths are encouraged where they are compatible with the natural character, resources, and ecology of the shoreline.
- F. Piers and bridges for roads, pedestrian trails, bicycle paths, and railroads are preferred over the use of fill in upland and aquatic areas.
- G. When transportation corridors are necessary, joint use corridors are preferred and encouraged for roads, utilities, and all forms of transportation/circulation.

2.29 Utility Policies

- A. Utility facilities should be designed, located and maintained to minimize harm to shoreline ecological functions, account for sea level rise projections, preserve the natural landscape, and minimize

conflicts with present and planned land and shoreline uses while meeting the needs of future populations in areas planned to accommodate growth.

- B. Expansion of existing sewage treatment, water reclamation, substations, and power plants should be compatible with recreational, residential, or other public uses of the water and shorelands.
- C. Where water crossings are unavoidable, they should be located where they will have the least adverse ecological impact.
- D. New utilities should use existing transportation and utility sites, rights-of-way and corridors, rather than creating new corridors.
- E. Utilities should be located and designed to avoid impacts to public recreation and public access areas, as well as significant historic, archaeological, cultural, scientific or educational resources.
- F. Encourage the use of utility rights-of-way for public access to and along shorelines.
- G. Design and install utilities in such a way as to avoid impacts to scenic views and aesthetic qualities of the shoreline area.

2.30 Shoreline Modification Policies

- A. Locate and design all new development in a manner that prevents or minimizes the need for shoreline modifications.
- B. Regulate shoreline modifications to assure that individually and cumulatively, the modifications do not result in a net loss of shoreline ecological functions.
- C. Give preference to those types of shoreline modifications that have a lesser impact on ecological functions.
- D. Require mitigation of impacts resulting from shoreline modifications.
- E. Plan for the enhancement of impaired ecological functions while accommodating permitted uses. Incorporate all feasible measures to protect ecological functions and ecosystem-wide processes in the placement and design of shoreline modifications. To avoid and reduce ecological impacts, use mitigation sequencing set forth in WAC 173-26-201(2)(e) and Section 3.21 of the SMP.
- F. Give preference to nonstructural flood hazard reduction measures over structural measures, where feasible.

2.31 Dredging Policies

- A. Design and locate new development to minimize the need for dredging.
- B. Allow dredging for water-dependent uses or essential public facilities or both, only when necessary and when significant ecological impacts are minimized and appropriate mitigation is provided.
- C. Allow dredging in locations where a comprehensive management plan has been evaluated and authorized by local, state, and federal governmental entities.
- D. Plan and conduct dredging to minimize interference with navigation and adverse impacts to other shoreline uses and properties.
- E. Allow maintenance dredging of established navigation channels and basins.
- F. Conduct dredging and disposal in a manner to minimize damage to natural systems, including the area to be dredged and the area where dredged materials will be deposited. Disposal of dredge materials

on land away from the shoreline is preferred over open water disposal. Disposal of dredge materials near water should be conducted in a manner to avoid and minimize impacts to water quality.

- G. Re-use of uncontaminated dredge material is encouraged for beneficial uses such as restoration and enhancement.
- H. Dredging and dredge disposal should not occur where they would interfere with existing or potential ecological restoration activities.
- I. Allow dredging for ecological restoration or enhancement projects, beach nourishment, public access or public recreation provided it is consistent with the policies and regulations of the Master Program.

2.32 Fill Policies

- A. Fill should be located, designed, and constructed to protect shoreline ecological functions and system-wide processes. The quantity and extent of fill should be the minimum necessary to accommodate a permitted shoreline use or development.
- B. Fill landward of the Ordinary High Water Mark should be permitted when necessary to support permitted uses, and when significant impacts can be avoided or mitigated.
- C. Fill should be allowed to accommodate berms or other structures to prevent flooding caused by sea level rise, when consistent with the Olympia Sea Level Rise Response Plan and the flood hazard reduction provisions in this Shoreline Program. Any such fill should include mitigation assuring no net loss of ecological functions and system-wide processes.
- D. Fill for the maintenance, restoration, or enhancement of beaches or mitigation projects should be permitted.
- E. Fill water-ward of the Ordinary High Water Mark should be permitted only to accommodate water-dependent uses, public access, cleanup of contaminated sites, ecological restoration, the disposal of dredge materials associated with a permitted dredging activity, or other water-dependent uses that are consistent with the goals and policies of Olympia's Shoreline Program.
- F. Fill for the purpose of creating new uplands should be prohibited unless it is part of an authorized restoration activity.
- G. Fill should not adversely impact navigation.
- H. Fill should not be allowed where structural shoreline stabilization would be required to maintain the materials placed.

2.33 Moorage Policies

- A. New moorage should be permitted only when it can be demonstrated that there is a specific need to support a water-dependent or public access use.
- B. Moorage associated with a single-family residence is considered a water-dependent use provided it is designed and used as a facility to access watercraft, and other moorage facilities are not available or feasible.
- C. Allow shared moorage for multi-family uses or as part of a mixed use development when public access is provided.
- D. Give preference to buoys over piers, docks, and floats; however, discourage the placement of moorage buoys where sufficient dock facilities exist.

- E. Give preference to shared moorage facilities over single-user moorage where feasible. New subdivisions of more than two lots and new multi-family development of more than two dwelling units should provide shared moorage.
- F. Moorage facilities should be sited and designed to avoid adversely impacting shoreline ecological functions and processes, and should mitigate for unavoidable impacts to ecological functions.
- G. Moorage facilities should be spaced and oriented in a manner that minimizes hazards and obstructions to public navigation rights and corollary rights including but not limited to boating, swimming, and fishing.
- H. Encourage the cooperative use of docking facilities in industrial areas instead of new facilities.
- I. Moorage facilities should be restricted to the minimum size necessary to meet the needs of the proposed use. The length, width and height of piers, docks and floats should be no greater than required for safety and practicality for the primary use.
- J. Encourage design elements that increase light penetration to the water below existing or new moorage facilities, such as increasing the structure's height, modifying orientation and size, and use of grating as a surface material. No new over-water covered moorage or boathouses should be allowed.
- K. Moorage facilities should be constructed of materials that will not adversely affect water quality or aquatic plants and animals in the long-term.

2.34 Restoration and Enhancement Policies

- A. Olympia recognizes the importance of restoration of shoreline ecological functions and processes and encourages cooperative restoration efforts and programs between local, state, and federal public agencies, tribes, non-profit organizations, and landowners to address shorelines with impaired ecological functions and processes.
- B. Restoration actions should restore shoreline ecological functions and processes as well as shoreline features and should be targeted towards meeting the needs of both sensitive and locally important plant, fish and wildlife species as well as the biologic recovery goals for State and federally listed species and populations.
- C. Coordinate restoration and enhancement with other natural resource management efforts and plans.
- D. Consider restoration actions outside of the shoreline jurisdiction that have a system-wide benefit.
- E. When prioritizing restoration actions, the City will give highest priority to measures that have the greatest chance of re-establishing shoreline ecological functions and processes.
- F. Incorporate restoration and enhancement measures into the design and construction of new uses and development, public infrastructure (e.g., roads, utilities), and public recreation facilities.
- G. Shoreline restoration and enhancement should be considered as an alternative to structural stabilization and protection measures where feasible.
- H. All shoreline restoration and enhancement projects should protect the integrity of adjacent natural resources including aquatic habitats and water quality.
- I. Design, construct, and maintain restoration and enhancement projects in keeping with restoration priorities and other policies and regulations set forth in Olympia's Shoreline Program.
- J. Design restoration and enhancement projects to minimize maintenance over time.

- K. Shoreline restoration and enhancement should not extend water-ward more than necessary to achieve the intended results.
- L. Permanent in-stream structures should be prohibited except for restoration and enhancement structures, and transportation and utility crossings as described elsewhere in this Program. In-stream structures should provide for the protection and preservation of ecosystem-wide processes, ecological functions, and cultural resources. The location and planning of in-stream structures should give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitat and species.
- M. Restoration and enhancement projects, such as those envisioned in the West Bay Environmental Restoration Assessment Report for some shoreline reaches, may include shoreline modification actions provided the primary purpose of such actions is clearly restoration of the natural character and ecological functions of the shoreline.

2.35 Shoreline Stabilization Policies

- A. Preserve remaining unarmored shorelines and limit the creation, expansion and reconstruction of bulkheads and other forms of shoreline armoring.
- B. New development requiring structural shoreline armoring should not be allowed. Shoreline use and development should be located and designed in a manner so that structural stabilization measures are not likely to become necessary in the future, including a consideration of sea level rise.
- C. Structural shoreline armoring should only be permitted when there are no feasible alternatives, and when it can be demonstrated that it can be located, designed, and maintained in a manner that minimizes adverse impacts on shoreline ecology and system-wide processes, including effects on the project site, adjacent properties, and sediment transport.
- D. The reconstruction or expansion of existing hard armoring should only be permitted where necessary to protect an existing primary structure or legally existing shoreline use that is in danger of loss or substantial damage, and where mitigation of impacts is sufficient to assure no net loss of shoreline ecological functions and processes.
- E. Encourage the removal of bulkheads and other hard armoring and restore the shoreline to a more natural condition. Where stabilization is necessary for the protection of private or public property or to increase sea level rise resilience, alternative measures that are less harmful to shoreline ecological functions should be employed. An example of such an approach is included in the West Bay Environmental Restoration Assessment report for some shoreline reaches.
- F. Nonstructural stabilization measures, including relocating structures, increasing buffers, enhancing vegetation, managing drainage and runoff, and other measures, are preferred over structural shoreline armoring.
- G. Failing, harmful, unnecessary, or ineffective structures should be removed. Shoreline ecological functions and processes should be restored using non-structural methods.
- H. Shoreline stabilization and shoreline armoring for the purpose of leveling or extending property, or creating or preserving residential lawns, yards, or landscaping should not be allowed.
- I. Shoreline stabilization measures, individually or cumulatively, should not result in a net loss of shoreline ecological functions or system-wide processes. Preference should be given to structural

shoreline stabilization measures that have a lesser impact on ecological functions, and mitigation of identified impacts resulting from said modifications should be required.

- J. The City should promote non-regulatory methods to protect, enhance, and restore shoreline ecological functions and other shoreline resources. Examples of such methods include public facility and resource planning, technical assistance, education, voluntary enhancement and restoration projects, land acquisition and restoration, and other incentive programs.
- K. Jetties, breakwaters, or groin systems should not be permitted unless no other practical alternative exists. If allowed, they should be located, designed, and maintained to avoid impacts to shoreline ecological functions and system-wide processes.

Section 3

Regulations

Chapter 18.20 Shoreline Master Program Regulations

3.1 18.20.100 - Applicability

- A. All proposed uses and development occurring within Olympia's shoreline jurisdiction shall comply with Olympia's Shoreline Program and RCW 90.58, Shoreline Management Act (Act). The Shoreline Program applies to all uses and developments within shoreline jurisdiction whether or not a shoreline permit or statement of permit exemption is required.
- B. Olympia's Shoreline Program shall apply to all of the lands and waters in the City of Olympia that fall under the jurisdiction of the Act (see OMC 18.20.300 - Shoreline Jurisdiction).
- C. The Shoreline Program shall apply to every person, individual, firm, partnership, association, organization, corporation, local or state governmental agency, public or municipal corporation, or other non-federal entity which develops, owns, leases, or administers lands, wetlands, or waters that fall under the jurisdiction of the Act.
- D. Federal agency actions on shorelines of the state are required to be consistent with this Master Program and the Act, as provided by the Coastal Zone Management Act (Title 16 United States Code §1451 et seq.; and §173-27-060(1) WAC, Applicability of RCW 90.58, Shoreline Management Act, to federal lands and agencies).
- E. The permit requirements established under the Shoreline Program apply to all non-federal activities; and to development and uses undertaken on lands not federally owned but under lease, easement, license, or other similar property right of the federal government.

3.2 18.20.110 - Relationship to Other Plans and Regulations

- A. Uses, developments and activities regulated by Olympia's Shoreline Program may also be subject to the provisions of the City of Olympia Comprehensive Plan, the Olympia Municipal Code (OMC), the Olympia Engineering Design and Development Standards, the Washington State Environmental Policy Act (SEPA, RCW 43.21C and WAC 197-11), and various other provisions of local, state, and federal law.
- B. Project proponents are responsible for complying with all applicable laws prior to commencing any use, development, or activity.
- C. In the event Olympia's Shoreline Program conflicts with other applicable City policies or regulations, all regulations shall apply and unless otherwise stated, the provisions most protective of the resource shall prevail.
- D. Any inconsistencies between a Shoreline Program and the Shoreline Management Act must be resolved in accordance with the Act.

3.3 18.20.120 - Interpretation and Definitions

- A. As provided for in RCW 90.58.900, the Act is exempt from the rule of strict construction. The Act and all aspects of Olympia's Shoreline Program shall therefore be liberally construed to give full effect to the purposes, goals, objectives, and policies for which the Act and Olympia's Shoreline Program were enacted and adopted.

B. For purposes of this Chapter, the City hereby adopts by reference the definitions of the following terms as set forth in the Revised Code of Washington 90.58.030 and the Washington Administrative Code 173-27-030 and 173-26-020:

- Agricultural activities,
- Agricultural land,
- Aquaculture,
- Average grade level,
- Development,
- Ecological functions or shoreline functions,
- Extreme low tide,
- Feasible,
- Fill,
- Flood plain,
- Geotechnical report or geotechnical analysis,
- Guidelines,
- Marine,
- Nonwater-oriented uses,
- Ordinary High Water Mark (OHWM),
- Priority habitat,
- Priority species,
- Restore, restoration or ecological restoration,
- Shoreline modification,
- Shorelines,
- Shorelines of statewide significance,
- Shorelines of the state,
- Structure,
- Substantial development,
- Substantially degrade,
- Water-dependent use,
- Water-enjoyment use,
- Water-oriented use,
- Water-related use, and
- Wetlands.

C. For the purposes of this Chapter, the terms defined below shall have the meaning ascribed to them below. Terms not defined in this Chapter nor listed in subsection B above shall be interpreted as set forth in WACs 173-18-030, 173-20-030 and 173-22-030 or OMC 18.02. When the definitions in this Chapter conflict with the definitions set forth in OMC 18.02, the definitions herein shall govern for purposes of this Chapter.

Access, direct: Physical access that is convenient, of relatively short distance, and does not require extraordinary physical dexterity.

Access, physical: The right and facilities needed to enter upon shoreline areas, such as that access provided by a trail, float, dock, promenade, bridge, or boat ramp.

Accessory: Customarily incidental and subordinate.

Administrator: That person designated by the City of Olympia to administer the provisions of Olympia's Shoreline Program. References to 'the City' in this Shoreline Program may be construed as referring to the Administrator.

Alteration: Any human-induced change in existing conditions on a shoreline, critical area and/or its buffer. Alterations include, but are not limited to excavation, grading, filling, channelization (straightening, deepening, or lining of stream channels except dredging of sediment or debris alone), dredging, clearing vegetation, draining, constructing structures, compaction, or any other activity that changes the character of a site.

Appurtenance: A structure or development that is necessarily connected to the use and enjoyment of another structure. Common appurtenances include a garage, deck, driveway, utilities, fences, and grading which does not exceed two hundred and fifty cubic yards. For purposes of this chapter appurtenances are limited to upland areas.

Backshore: The zone of accretion or erosion lying landward of the Ordinary High Water Mark, wetted by tides during storm events.

Beach: The zone along the shoreline where there is continuous movement of sediment both laterally and vertically. This zone extends from the daily low tide mark to where the permanent line of vegetation begins.

Beach Nourishment: The process of replenishing a beach by artificial means, for example, by the deposition of sand and gravel; also called beach replenishment or beach feeding.

Berm: One or several linear deposits of sand and gravel generally paralleling the shore at or landward of the Ordinary High Water Mark.

Boat ramp: A slab, plank, rail, or graded slope used for launching boats by means of a trailer, hand, or mechanical device.

Boathouse: A structure designed for storage of vessels located over water or in upland areas.

Boating facilities: Marinas located both landward and water-ward of the Ordinary High Water Mark (dry storage and wet-moorage types), boat ramps, covered and uncovered moorage, and marine travel lifts. Boating facilities do not include docks serving four or fewer single-family residences.

Breakwater: An offshore structure generally built parallel to the shore that may or may not be connected to the land. Breakwaters may be fixed (e.g., a rubble mound or rigid wall), open-pile, or floating. Their primary purpose is to protect harbors, moorages and navigation activity from wave and wind action by creating a still-water area along the shore. A secondary purpose is to protect shorelines from erosion caused by wave action.

Bulkhead: A wall usually constructed parallel to the shoreline or at the Ordinary High Water Mark for the primary purpose of containing and preventing the loss of soil or structure caused by erosion or wave action. Bulkheads are typically constructed of rock, poured-in-place concrete, steel or aluminum sheet piling, wood, or wood and structural steel combinations. Structural foundation walls are not bulkheads unless located at the Ordinary High Water Mark.

Camping Facilities: Short-term overnight accommodations (generally 1-15 nights per guest) in organized facilities with amenities designed for guests and their enjoyment of the waterfront. Such facilities require amenities such as restrooms and may include opportunities for cooking, connection to electricity, and potable water. Amenities should be appropriate for the proposed use, such as electricity for recreational vehicles.

Compensation Project: Projects that compensate for unavoidable impacts by replacing or providing substitute resources environments.

Conditional Use: A use, development, or substantial development which is classified as a shoreline conditional use or not otherwise classified in this chapter. Shoreline conditional uses are not synonymous with zoning conditional uses.

Covered Moorage: Boat moorage, with or without walls, that has a solid roof to protect the vessel and is attached to the dock itself or the substrate of the water body. Overwater boathouses are a type of covered moorage.

Critical Habitat: Habitat areas within which endangered, threatened, sensitive or monitored plant, fish, or wildlife species have a primary association (e.g., feeding, breeding, rearing of young, migrating). Such areas are identified herein with reference to lists, categories, and definitions promulgated by the Washington Department of Fish and Wildlife as identified in WAC 232-12-011 or WAC 232-12-014; in the Priority Habitat and Species (PHS) program by the Department of Fish and Wildlife; or by rules and regulations adopted by the U.S. Fish and Wildlife Service, National Marine Fisheries Service, or other agency with jurisdiction for such designations.

Critical Saltwater Habitat: All kelp beds, eelgrass beds, spawning and holding areas for forage fish, such as herring, smelt and sandlance; subsistence, commercial and recreational shellfish beds; mudflats, intertidal habitats with vascular plants, and areas with which priority species have a primary association.

Cumulative impacts or cumulative effects: The impact on the environment or other shoreline functions or uses which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a long period of time. See WAC 173-26-186(8)(d).

Dike or Levee: A natural or man-made embankment, including any associated revetments, to prevent flooding by a stream or other water body.

Dock: A structure built from the shore extending out over the water to provide moorage for commercial or private recreation vessels that does not include above water storage. A dock may be built either on a fixed platform or float on the water.

Dredging: The removal, displacement, or disposal of unconsolidated earth material such as sand, silt, gravel, or other submerged materials, from the bottom of water bodies, ditches, or wetlands; maintenance dredging and/or support activities are included in this definition.

Ecologically Intact Shorelines: Those shoreline areas that retain the majority of their natural shoreline functions and values, as evidenced by vegetation and shoreline configuration. Generally, but not necessarily, ecologically intact shorelines are free of structural shoreline modifications, structures, and intensive human uses.

Enhancement: Actions performed within an existing degraded shoreline, critical area and/or buffer to intentionally increase or augment one or more functions and values of the existing area. Enhancement actions include, but are not limited to, increasing plant diversity and cover, increasing wildlife habitat and structural complexity (snags, woody debris), installing environmentally compatible erosion controls, or removing invasive plant or animal species.

Erosion: A process whereby wind, rain, water, and other natural agents mobilize, and transport, and deposit soil particles.

Fair market value: The open market bid price for conducting the work, using the equipment and facilities, and purchase of the goods, services, and materials necessary to accomplish the development. This would normally equate to the cost of hiring a contractor to undertake the development from start to finish, including the cost of labor, materials, equipment and facility usage, transportation, and contractor overhead and profit. The fair market value of the development shall include the fair market value of any donated, contributed or found labor, equipment, or materials.

Float: A floating platform similar to a dock that is anchored or attached to pilings and which does not connect to the shore. A float may serve as a temporary moorage facility but is not intended to be used for boat storage. Floats are also used for swimming, diving, or water skiing.

Floating home: A building on a float used in whole or in part for human habitation as a single-family dwelling that is moored, anchored, or otherwise secured in waters, and is not a vessel, even though it may be capable of being towed.

Floating on water residence: Any floating structure other than a floating home that: (i) is designed or used primarily as a residence on the water and has detachable utilities; and (ii) whose owner or primary occupant has held an ownership interest in space in a marina, or has held a lease or sublease to use space in a marina, since a date prior to July 1, 2014.

Flood hazard reduction measure: Flood hazard reduction measures may consist of nonstructural measures, such as setbacks, land use controls, wetland restoration, dike removal, use relocation, biotechnical measures, and stormwater management programs, and of structural measures, such as dikes, levees, revetments, floodwalls, channel realignment, and elevation of structures consistent with the National Flood Insurance Program (NFIP).

Floodway: The “floodway” area that has been established in Federal Emergency Management Agency rate maps not including those lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the state, or a political subdivision of the state.

Functional Disconnect: An existing, legally established public road or other substantially developed surface which effectively eliminates the capacity for upland areas to provide shoreline ecological functions, as defined in WAC 173-26-201(2)(c). As used in this definition, “substantially developed surface” can include public infrastructure such as roads, and private improvements such as commercial structures. A “substantially developed surface” shall not include paved trails, sidewalks, private driveways, or accessory buildings that do not require a building permit.

Gabions: Structures composed of masses of rocks, rubble, soil, masonry, or similar material held tightly together usually by wire mesh, fabric, or geotextile so as to form layers, blocks or walls. Sometimes used on heavy erosion areas to retard wave action or as foundations for breakwaters or jetties.

Groin: Structure built seaward at an angle or perpendicular to the shore for the purpose of building or preserving an accretion beach by trapping littoral sand drift. Generally narrow and of varying lengths, a groin may be built in a series along the shore.

Harbor Area: The area of navigable waters determined as provided in Article XV, Section 1 of the State Constitution, which shall be forever reserved for landings, wharves, streets, and other conveniences of navigation and commerce.

Height (of Structure): The difference between the average grade level and the highest point of a structure (not including temporary construction equipment); provided, that television antennas, chimneys, and similar appurtenances shall not be used in calculating height except where such appurtenances obstruct the view of the shoreline from a substantial number of residences on areas adjoining such shorelines.

Instream structure: A structure placed by humans within a stream or river water-ward of the Ordinary High Water Mark that either causes or has the potential to cause water impoundment or the diversion, obstruction, or modification of water flow. In-stream structures may include those for hydroelectric generation, irrigation, water supply, flood control, transportation, utility service transmission, fish habitat enhancement, or other purpose.

Jetty: A structure generally perpendicular to the shore, extending through or past the intertidal zone. Jetties are built singly or in pairs at harbor entrances or river mouths to prevent accretion of littoral drift in an entrance channel. Jetties also protect channels and inlets from storm waves and cross-currents and to stabilize inlets through barrier beaches. Most jetties are of riprap mound construction.

Joint-use: Sharing of facilities such as docks, piers, floats, and similar structures by more than one property owner or by a homeowners' association or similar group.

Limited Master Program Amendment: A master program amendment that addresses specific procedural and/or substantive topics and which is not intended to meet the complete requirements of a comprehensive master program update.

Littoral drift: The mud, sand or gravel material moved parallel to the shoreline in the nearshore zone by waves and currents.

Live-aboard vessel: A vessel primarily used as a residence, and if used as a means of transportation or recreation, said transportation or recreation is a secondary or subsidiary use. Any vessel used for overnight accommodation for more than fifteen (15) nights in a one-month period shall be considered a residence.

Marina: A facility with water-dependent components for storing, servicing, fueling, berthing, launching and/or securing boats but at minimum including piers, buoys, or floats to provide moorage for five (5) or more boats. Marinas may provide eating, sleeping, and retail facilities for owners, crews, and guests. Those aspects located landward of the Ordinary High Water Mark are referred to as "backshore." Backshore marinas include wet-moorage that is dredged out of the land to artificially create a basin and dry moorage with upland storage that uses a hoist, marine travel lift or ramp for water access. Marina features located in the intertidal or offshore zone water-ward of the Ordinary High Water Mark, including any breakwaters of open type construction (floating breakwater and/or open pile work) and/or solid type construction (bulkhead and landfill), are referred to as "foreshore."

May: The action is acceptable, provided it conforms to the provisions of the SMP.

Mean Higher High Water (MHHW): The average of the higher high water height of each tidal day observed over the National Tidal Datum Epoch.

Mean Lower Low Water (MLLW): The average of the lower low water height of each tidal day observed over the National Tidal Datum Epoch.

Mitigation: Measures prescribed and implemented to avoid, minimize, lessen, or compensate for adverse impacts. Explicit in this definition is the following order of preference:

1. Avoiding an impact altogether by not taking a certain action or parts of actions;
2. Minimizing impacts by limiting the degree or magnitude of an action and its implementation;
3. Rectifying impacts by repairing, rehabilitating, or restoring the affected environment;
4. Reducing or eliminating an impact over time by preservation and maintenance operation during the life of the action;
5. Compensating for an impact by replacing or providing substitute resources or environments; and
6. Monitoring the mitigation and taking remedial action when necessary.

Mitigation plan: A plan for alleviating or lessening the adverse impacts of an activity or development, including measures such as avoiding, minimizing, or compensating for impacts. Mitigation plans should include a description and evaluation of existing environmental conditions, functions, and values; be prepared by a qualified person; list proposed and any alternative mitigation measures including any continuing activities and long-term performance assurance; evaluate the likelihood of success of those measures; and include a proposed means of monitoring and evaluating the success of the mitigation.

Mixed use: The use of a parcel or structure with two or more different land uses, such as a combination of residential, office, manufacturing, retail, public, or entertainment in a single or physically integrated group of structures.

Moorage Buoy: A floating device anchored to the bottom of a water body to provide tie-up capabilities for vessels or watercraft.

Must: A mandate; the action is required.

Natural Topography or Existing Topography: The topography of a lot, parcel, or tract of real property immediately prior to any site preparation or grading, including excavation or filling.

No Net Loss: The maintenance of the aggregate total of shoreline ecological functions over time. The no net loss standard contained in WAC 173-26-186 requires that impacts of shoreline use and/or development, whether permitted or exempt from permit requirements, be identified and mitigated such that there are no resulting impacts on ecological functions or processes.

Nonconforming Development or Nonconforming Structure: An existing structure that was lawfully constructed at the time it was built but is no longer fully consistent with present regulations such as setbacks, buffers, vegetation conservation areas, or yards; area; bulk; or height standards due to subsequent changes to the master program.

Nonconforming Lot: A lot that met dimensional requirements of the applicable master program at the time of its establishment but now contains less than the required width, depth, or area due to subsequent changes to the master program.

Nonconforming Use: An existing shoreline use that was lawfully established prior to the effective date of the act or the applicable master program, but which does not conform to present use regulations due to subsequent changes to the master program.

Overwater: Location above the surface of the water or water-ward of the Ordinary High Water Mark, including placement of buildings on piling or floats.

Pier: A fixed platform structure supported by piles in a water body that abuts the shore to provide landing for water dependent recreation or moorage for vessels or watercraft and does not include above water storage.

Port: When capitalized, that government agency known as the Port of Olympia; when lower-case, a center for water-borne commerce and traffic.

Primary Structure: The structure on a lot or parcel occupied by the principal use.

Public Access: The ability of the general public to reach, touch, and enjoy the water's edge, to travel on the waters of the state, and to view the water and shoreline from adjacent locations. See WAC 173-26-221(4).

Public Interest: The interest shared by the citizens of the state or community-at-large in the affairs of government, or some interest by which their rights or liabilities are affected such as an effect on public property or on health, safety, or general welfare resulting from a use or development. See WAC 173-27-030(14).

Recreation: Activities and associated facilities for public or private use for refreshment of body and mind through play, amusement or relaxation including hiking, swimming, canoeing, photography, fishing, boat ramps, playgrounds, and parks.

Restoration plan: A plan to reestablish or upgrade impaired ecological shoreline processes or functions. Such plan may be to restore a site or shoreline area to a specific condition, or to reestablish functional characteristics and processes which have been lost due to alterations, activities, or catastrophic events. Restoration plans should identify the degraded site or area or impaired ecological function(s); establish specific restoration goals and priorities; describe the timing, elements, benchmarks, and other details of proposed restoration activities; include mechanisms or strategies to ensure successful implementation; and provide for monitoring and evaluation of the success of the restoration. Note: the term "Restoration Plan" may also refer to the shoreline Restoration Plan (Appendix A) that is a part of Olympia's Shoreline Master Program.

Revetment: A sloped wall constructed of riprap or other suitable material placed on stream banks or other shorelines to retard bank erosion and minimize lateral movement. The slope differentiates it from a bulkhead, which is a vertical structure.

Riprap: Dense, hard, angular rock free from cracks or other defects conducive to weathering often used for bulkheads, revetments, or similar slope/bank stabilization purposes.

Sea Level Rise: An increase in the elevation of marine waters associated with changes in the state of the climate and which can be identified by changes in the mean and/or variability of its properties and that persists for decades or longer.

Shall: A mandate; the action must be done.

Shorelands or Shoreland areas: Lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the Ordinary High Water Mark, floodways, and contiguous floodplain areas landward two hundred feet from such floodways, and all wetlands and river deltas associated with the streams, lakes, and tidal waters designated by the Department of Ecology as subject to the Shoreline Management Act.

Shoreline Master Program or Shoreline Program of Olympia: Specified goals and policies of the Olympia Comprehensive Plan together with specified use regulations and including maps, diagrams,

charts, or other descriptive material and text, a statement of desired goals, and standards adopted in accordance with the policies of the Shoreline Management Act.

Shoreline Setback: The horizontal distance required between an upland structure or improvement and the Ordinary High Water Mark; usually measured in feet. (Note that in general setbacks are only applicable to structures having a height greater than 30 inches.) Shoreline setbacks outlined in Table 6.3 include and are not in addition to the VCAs outlined in Table 6.3

Shoreline Stabilization or Protection: Protection of shoreline upland areas and shoreline uses from the effects of shoreline wave action, flooding, or erosion through the use of structural and non-structural methods. See OMC 18.20.860 for examples.

Should: The particular action is required unless there is a demonstrated, compelling reason, based on policy of the Shoreline Management Act and this chapter, against taking the action.

Stair Tower: A structure twelve (12) feet or taller in height typically consisting of one (1) or more flights of stairs, usually with landings to pass from one level to another.

Submerged Lands: Areas below the Ordinary High Water Mark of marine waters, lakes and rivers.

Tideland: The land on the shore of marine water bodies between Ordinary High Water Mark (OHWM) or mean higher high tide (MHHW) and the line of extreme low tide which is submerged daily by tides.

Transportation Facilities: Streets, railways, bicycle lanes, sidewalks, and shared use paths consistent with the City of Olympia Engineering Design and Development Standards.

Variance, Shoreline: A means to grant relief from specific bulk, dimensional or performance standards set forth in this chapter or related state regulations pursuant to the criteria of WAC 173-27-170; such may not vary a use of a shoreline.

Vegetation Conservation: Activities to protect and restore vegetation along or near shorelines that minimize habitat loss and the impact of invasive plants, erosion, and flooding, and contribute to ecological functions of shoreline areas. Vegetation conservation provisions include the prevention or restriction of plant clearing and earth grading, vegetation restoration, and the control of invasive weeds and non-native species.

Vegetation Conservation Area: That area within which vegetation conservation actions take place, as required by this Chapter. Vegetation management provisions may be independent of a permit or approval requirement. VCAs outlined in Table 6.3 are measured from the Ordinary High Water Mark and are located within the shoreline setbacks outlined in Table 6.3.

Visual Access: Access with improvements that provide a view of the shoreline or water but that do not allow physical access to the shoreline.

Weir: A device placed in a stream or river to raise or divert the water.

3.4 18.20.200 - General Permit and Authorization Provisions

- A. To be authorized, all uses, and development shall be carried out in a manner that is consistent with the Olympia Shoreline Master Program and the policies of the Shoreline Management Act as required by RCW 90.58.140(1), regardless of whether a shoreline permit, statement of exemption, shoreline variance, or shoreline conditional use permit is required.
- B. No use, alteration, or development shall be undertaken within the regulated shorelines by any person without first obtaining permits or authorization.

- C. Applicants shall apply for shoreline substantial development, variance, and conditional use permits on forms provided by the City. Applications shall contain information required in WAC 173-27-180.
- D. All permit applications shall be processed in accordance with the rules and procedures set forth in OMC Titles 14, 16, 17 and 18 and WAC 173-27. Where in conflict state law shall prevail.
- E. The City shall document all project review actions in shoreline jurisdiction. The City shall review this documentation and evaluate the cumulative effects of authorized development on shoreline conditions as part of the 8-year periodic review cycle identified in RCW 90.58.080 (4).

3.5 18.20.210 - Shoreline Substantial Development Permits

- A. A Shoreline Substantial Development Permit shall be required for all proposed use and development of shorelines unless the proposal is specifically exempted in accordance with WAC 173-27-040 and RCW 90.58.
- B. In order to be approved, the decision maker shall find that the proposal is consistent with the following criteria:
 - 1. The policies and procedures of RCW 90.58 and provisions of WAC 173-27-150; and
 - 2. All policies and regulations of this Shoreline Program appropriate to the shoreline environment designation and the type of use or development proposed shall be met, except any bulk or dimensional standards that have been modified by approval of a shoreline variance.
- C. Conditions may be attached to the approval of permits as necessary to assure consistency of the project with the Act and this Shoreline Program.
- D. The City is the final authority for a Shoreline Substantial Development Permit unless an appeal is filed with the State Shorelines Hearings Board.

3.6 18.20.215 - Exceptions to Local Review

- A. Requirements to obtain a Substantial Development Permit, Conditional Use Permit, Variance, exemption, or other review to implement the Shoreline Management Act do not apply to the following:
 - 1. Remedial actions. Pursuant to RCW 90.58.355, any person conducting a remedial action at a facility pursuant to a consent decree, order, or agreed order issued pursuant to chapter 70.105D RCW, or to the department of ecology when it conducts a remedial action under chapter 70.105D RCW.
 - 2. Boatyard improvements to meet NPDES permit requirements. Pursuant to RCW 90.58.355, any person installing site improvements for storm water treatment in an existing boatyard facility to meet requirements of a national pollutant discharge elimination system storm water general permit.
 - 3. WSDOT facility maintenance and safety improvements. Pursuant to RCW 90.58.356, Washington State Department of Transportation projects and activities meeting the conditions of RCW 90.58.356 are not required to obtain a Substantial Development Permit, Conditional Use Permit, Variance, letter of exemption, or other local review.
 - 4. Projects consistent with an environmental excellence program agreement pursuant to RCW 90.58.045.
 - 5. Projects authorized through the Energy Facility Site Evaluation Council process, pursuant to chapter 80.50 RCW.

3.7 18.20.220 - Exemptions from Shoreline Substantial Development Permit

- A. Certain developments are exempt from the requirement to obtain a Substantial Development Permit. Such developments still may require a Shoreline Variance or Conditional Use Permit, and all development within the shoreline is subject to the requirements of this Shoreline Program, regardless of whether a Substantial Development Permit is required. Developments which are exempt from the requirement for a Substantial Development Permit are identified in WAC 173-27-040, RCW 90.58.030(3)(e), RCW 90.58.147 and RCW 90.58.515.
- B. Whenever a development is exempt from the requirement to obtain a Shoreline Substantial Development Permit and the development is subject to one or more of the following federal permits, a letter of exemption is required pursuant to WAC 173-27-050:
 - 1. A U.S. Army Corps of Engineers Section 10 Permit under the Rivers and Harbors Act of 1899; or
 - 2. A Section 404 Permit under the Federal Water Pollution Control Act of 1972.

3.8 18.20.230 - Shoreline Conditional Use Permits

- A. The purpose of a Shoreline Conditional Use Permit is to provide a system which allows flexibility in the application of use regulations in a manner consistent with the policies of RCW 90.58.020. In authorizing a Shoreline Conditional Use Permit, special conditions may be attached by the City or the Department of Ecology to control any undesirable effects of the proposed use and to assure consistency with the Shoreline Management Act and Olympia's Shoreline Program.
- B. Uses which are classified in this Chapter as conditional uses may be authorized provided that the applicant can satisfy the criteria set forth in WAC 173-27-160:
 - 1. That the proposed use will be consistent with the policies of RCW 90.58.020 and the Shoreline Program;
 - 2. That the proposed use will not interfere with the normal public use of public shorelines;
 - 3. That the proposed use of the site and design of the project is compatible with other authorized uses within the area and with uses planned for the area under the Comprehensive Plan and Shoreline Program;
 - 4. That the proposed use will cause no significant adverse effects to the shoreline environment in which it is to be located; and
 - 5. That the public interest suffers no substantial detrimental effect.
- C. In the granting of all Shoreline Conditional Use permits, consideration shall be given to the cumulative impact of additional requests for like actions in the area. For example, if Shoreline Conditional Use Permits were granted for other developments in the area where similar circumstances exist, the total of the conditional uses shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.
- D. Other uses which are not specifically classified as a permitted or conditional use in this Shoreline Program may be authorized as a shoreline conditional use provided that the applicant can satisfy the criteria set forth in WAC 173-27-160 (see B above).
- E. Uses that are specifically prohibited by this Chapter shall not be authorized.

3.9 18.20.240 - Shoreline Variances

- A. The purpose of a shoreline variance is strictly limited to granting relief from specific bulk, dimensional, or performance standards set forth in this chapter where there are extraordinary circumstances relating to the physical character or configuration of property such that the strict implementation of Olympia's Shoreline Program will impose unnecessary hardships on the applicant or thwart the policies set forth in RCW 90.58.020.
- B. Shoreline Variance Permits should be granted in circumstances where denial of the permit would result in a thwarting of the policy enumerated in RCW 90.58.020. In all instances the applicant must demonstrate that extraordinary circumstances exist, and the public interest will suffer no substantial detrimental effect.
- C. Variances from the use regulations of this Shoreline Program are prohibited.
- D. Land shall not be subdivided to create parcels that are buildable only with a shoreline variance or would be considered non-conforming.
- E. Variances for development and/or uses that will be located landward of the Ordinary High Water Mark and/or landward of any associated wetland may be authorized provided the applicant can demonstrate all of the following:
 - 1. That the strict application of the bulk, dimensional or performance standards set forth in this chapter precludes, or significantly interferes with, reasonable use of the property;
 - 2. That the hardship described above is specifically related to the property, and is the result of unique conditions such as irregular lot shape, size, or natural features and the application of the Olympia Shoreline Program, and not, for example, from deed restrictions or the applicant's own actions;
 - 3. That the design of the project is compatible with other authorized uses within the area and with uses planned for the area under the Comprehensive Plan and Shoreline Program and will not cause adverse impacts to the shoreline environment;
 - 4. That the variance will not constitute a grant of special privilege not enjoyed by other properties in the area;
 - 5. That the variance request is the minimum necessary to afford relief; and
 - 6. That the public interest will suffer no substantial detrimental effect.
- F. Variance permits for development and/or uses that will be located water-ward of the Ordinary High Water Mark, or within any wetland may be authorized provided the applicant can demonstrate all of the following:
 - 1. That the strict application of the bulk, dimensional or performance standards set forth in this Shoreline Program precludes all reasonable use of the property not otherwise prohibited by this Shoreline Program;
 - 2. That the proposal is consistent with the criteria established under Section E above; and
 - 3. That the public rights of navigation and use of the shoreline will not be adversely affected.
- G. In the granting of any shoreline variance, consideration shall be given to the cumulative impact of additional requests for like actions in the area. In other words, if Shoreline Variance Permits were granted for other developments in the area where similar circumstances exist, the total of the

variances shall also remain consistent with the policies of RCW 90.58.020 and shall not produce substantial adverse effects to the shoreline environment.

3.10 18.20.250 - Unclassified Uses

- A. Other uses not specifically classified or set forth in this chapter may be authorized as shoreline conditional uses provided the applicant can satisfy the Shoreline Conditional Use Permit criteria set forth above.
- B. Uses that are specifically prohibited by this chapter cannot be authorized by a Shoreline Conditional Use permit.

3.11 18.20.260 - Submittal Requirements

All development proposals under the jurisdiction of this chapter shall satisfy the application submittal requirements set forth in OMC Titles 16, 17 and 18.

3.12 18.20.270 - Inspections

Pursuant to RCW 90.58.200, the Administrator or authorized representatives may enter land or structures to enforce the provisions of the Shoreline Program. Such entry shall follow the provisions set forth in OMC 8.24.120.

3.13 18.20.280 - Shoreline Permit Procedures

- A. Applications for Shoreline Substantial Development Permits, Conditional Use Permits, and Variance Permits are subject to and shall be processed pursuant to WAC Chapter 173-27, as now or hereafter amended, and as provided below.
- B. Applications for Shoreline Substantial Development, Conditional Use, and Variance Permits shall be submitted to the Planning Department on forms supplied by the Department. The application shall contain the information required by WAC 173-27-180 and such other information as may be required by the Department. The applicant shall pay to the Department the application fee prescribed by the approved fee schedule. In addition to the application fee, the applicant shall pay fees for environmental analysis, and for other necessary actions or approvals.
- C. Applications for Shoreline Substantial Development Permits or shoreline exemptions are decided by the Administrator, unless elevated by the Administrator to a Hearing Examiner decision because the proposal is extraordinarily complex, has significant impacts beyond the immediate site, is of a community wide interest, or is of a controversial nature. The Hearing Examiner shall hold a public hearing and render a decision for all Conditional Use Permit and Variance Permit applications. Consistent with RCW 90.58.140 (10), the Department of Ecology must approve or disapprove Shoreline Conditional Use Permits and shoreline variances issued by the City.
- D. Pursuant to WAC 173-27-110, notice of the application and hearing shall be published in the manner prescribed therein, and mailed to the latest recorded real property owners as shown by the records of the county assessor within at least three hundred feet of the boundary of the subject property, fifteen (15) days before the hearing. In addition, the Planning Department, in its discretion, may give notice in any other additional manner deemed appropriate.
- E. The decision of the Administrator may be appealed to the hearings examiner per OMC 18.20.290. The Hearing Examiner decision may be appealed to the Shorelines Hearing Board pursuant to WAC 173-27-220.

- F. Pursuant to WAC 173-27-090 and 173-27-100, the Administrator shall review and decide requests for time extensions and permit revisions. Any permit revision approval must be submitted to the Department of Ecology. The decision of the Administrator may be appealed pursuant to OMC 18.20.290. If the revision to the original permit involves a Conditional Use Permit or Variance, the City shall submit the revision to the Department of Ecology for its final decision. Conditional Use Permit or Variance decisions may be appealed to the Shoreline Hearings Board pursuant to WAC 173-27-220.
- G. When developing an administrative interpretation of this Master Program, the City shall consult with the Department of Ecology to ensure that any formal written interpretations are consistent with the purpose and intent of the Act and the SMP Guidelines.

3.14 18.20.285 - Amendments

- A. Amendments to the Shoreline Master Program, including changes in mapped environmental designations, shall be processed pursuant to Chapter 173-26-100 WAC as now or hereafter amended, and as provided below. All such amendments are required to be approved by the Department of Ecology.
- B. Applications for proposed amendments shall be submitted to the Planning Department on forms supplied by the Department. The applicant shall pay to the Department the application fee and fees for environmental analysis pursuant to RCW 43.21C (SEPA), and for other necessary actions or approvals.
- C. The City Council shall hold the public hearing prescribed by WAC [173-26-100](#)(1). At any time, the Council may refer a proposed amendment to the Planning Commission for a recommendation. If the Planning Commission elects to hold a public hearing, a notice of the hearing shall be given in the same manner as the hearing held by the Council.
- D. The City may utilize the optional joint review process for SMP amendments according to the procedures prescribed in WAC 173-26-104.
- E. If the proposed amendment is a map change of environmental designation, regardless of the size or number of parcels affected, or regardless of whether the applicant is a private person or governmental agency, notice of the proposed amendment shall be mailed to all the owners of the property which is proposed for redesignation, as shown by the records of the county assessor. In addition, notice shall be mailed to all the owners of property which lies within three hundred feet of the boundary of the property proposed for designation. The applicant shall furnish to the Planning Department the names and addresses of property owners who are to receive notice.

3.15 18.20.290 - Appeals of Administrative Decisions

- A. Any aggrieved person may appeal an administrative decision made pursuant to the Master Program by filing a written appeal with the Planning Department within fourteen (14) calendar days from the date of decision. The appeal shall be filed on forms prescribed by the Department and the appellant shall pay to the Department the appeal fee prescribed by the approved fee schedule.
- B. Appeals of administrative decisions shall be decided by the hearings examiner, after appeal hearing, and shall be subject to the provisions of OMC 18.75. Notice of the hearing shall be mailed to the appellant and may be mailed to any other person who the Planning Department believes may be affected by or interested in the appeal. Notice shall be mailed not later than ten (10) days before the hearing.

3.16 18.20.295 - Fees

For purposes of this chapter, the fee schedule in Section 4.40.010 of the Olympia Municipal Code is considered the “approved fee schedule.”

3.17 18.20.300 - Shoreline Jurisdiction

- A. The provisions of this Chapter shall apply to all shorelines of the state, all shorelines of statewide significance and shorelands as defined in RCW 90.58.030, within the City of Olympia. These areas are collectively referred to herein as ‘shorelines’.
- B. Olympia’s “shorelands” include lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the Ordinary High Water Mark, floodways, and contiguous floodplain areas landward 200 feet from such floodways, and all wetlands and river deltas associated with the following bodies of water. The City has chosen not to regulate ‘optional’ shorelands as described in RCW 90.58.030 through this Shoreline Program. Within its municipal boundaries, the City of Olympia shall have authority over the shorelines (water areas) and associated shorelands of Budd Inlet, Capitol Lake, Chambers Lake, Grass Lake, Ken Lake, Ward Lake, Black Lake Ditch and Percival Creek, including those waters of Budd Inlet seaward of extreme low tide which are shorelines of statewide significance.
- C. In circumstances where the shoreline jurisdiction does not include an entire parcel, only that portion of the parcel within shoreline jurisdiction and any use, activity, or development proposed on that portion of the parcel is subject to the City’s Shoreline Master Program regulations. When a structure is partially in and partially out of the shoreline jurisdiction, the entire structure must comply with the Shoreline Master Program. When development on a parcel is completely outside of the shoreline jurisdiction it does not need to comply with the SMP.

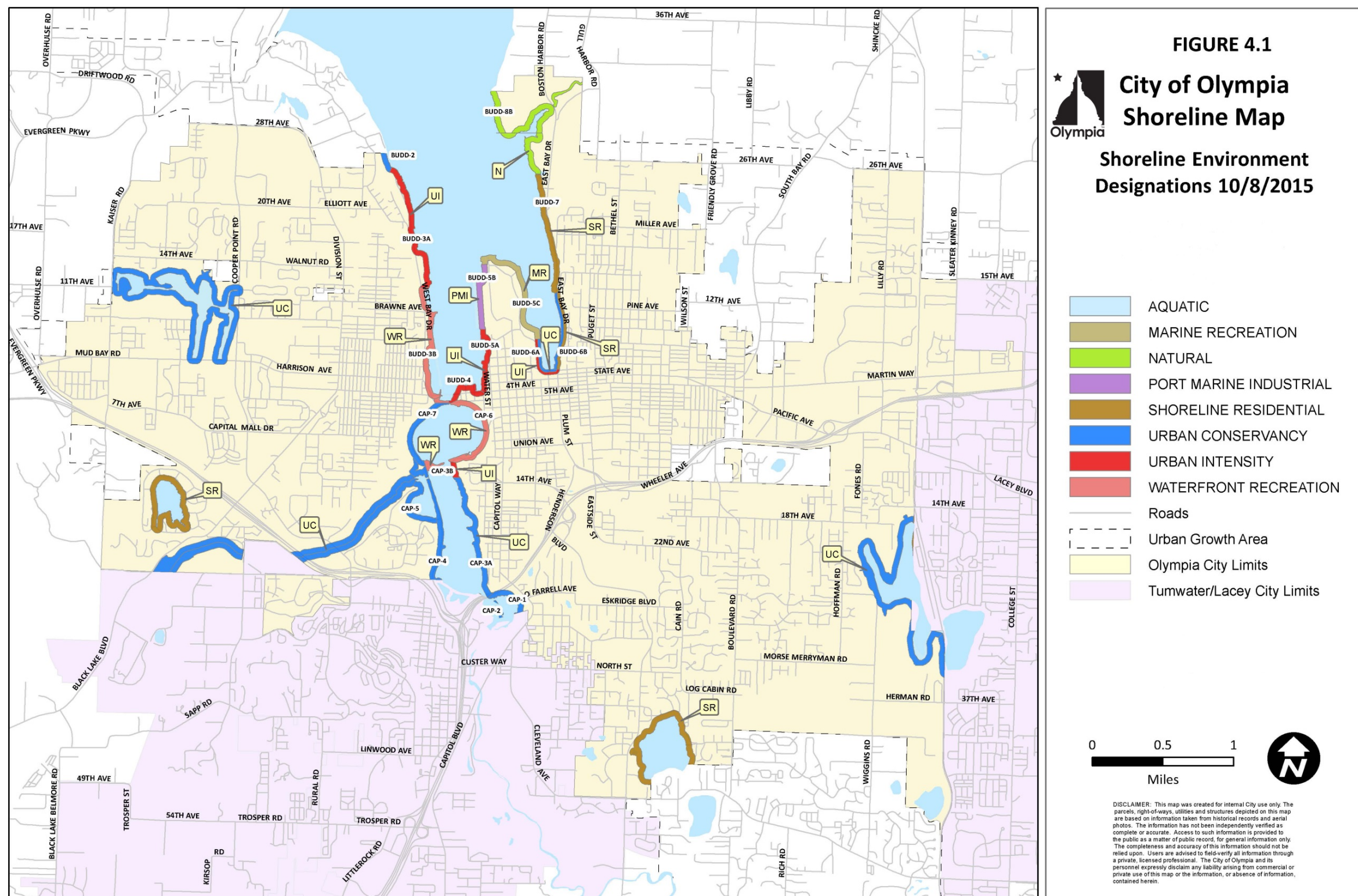
3.18 18.20.310 - Official Shoreline Map

- A. Shoreline Environment Designations have been established and are delineated on the “City of Olympia Shoreline Map” (Shoreline Map) hereby incorporated by reference. The official copy of this map shall reside with the Washington State Department of Ecology.
- B. The Shoreline Map (Figure 4.1) identifies shoreline environment designations and the approximate extent of shoreline jurisdiction within City boundaries. It does not identify or depict the lateral extent of shoreline jurisdiction or associated wetlands and floodplains. The lateral extent of the shoreline jurisdiction shall be determined on a case-by-case basis by the project applicant or a qualified professional, as necessary by the project applicant or a qualified professional, as necessary. The actual extent of shoreline jurisdiction requires a site-specific evaluation to identify the location of the Ordinary High Water Mark (OHWM) and associated wetlands and/or floodplains.
- C. Where uncertainty or conflict occurs in the exact location of a shoreline designation boundary, the Administrator shall interpret the boundaries based upon:
 - 1. The coordinates listed in *Shoreline Environmental Designations for the City of Olympia*;
 - 2. Boundaries indicated as approximately following lot, tract, or section lines;
 - 3. Boundaries indicated as approximately following roads or railways shall be construed to follow their centerlines; and
 - 4. Boundaries indicated as approximately parallel to or extensions of features indicated in 2 or 3 above shall be so construed.

- D. In the event of a mapping error, the City will rely on the criteria in the statute and the WAC pertaining to the determination of shorelines.

3.19 18.20.320 - Shoreline Environment Designations

- A. The Olympia Comprehensive Plan sets forth the designation and management policies for the shoreline environment designations established in the Olympia Shoreline Program.
- B. Areas within shoreline jurisdiction that are not mapped and/or designated are automatically assigned an *Urban Conservancy* environment designation until the shoreline can be designated through a Shoreline Program amendment.



Map Figure 4.1

3.20 18.20.330 - Shoreline Environment Purposes

Aquatic – The purpose of the *Aquatic* environment is to protect, restore and manage the unique characteristics and resources of the areas water-ward of the Ordinary High Water Mark.

Natural – The purpose of the *Natural* environment is to protect those shoreline areas that are relatively free of human influence or that include intact or minimally degraded shoreline functions intolerant of human use. These systems require that only very low intensity uses be allowed in order to maintain the ecological functions and ecosystem-wide processes. Consistent with the policies of the designation, Olympia will plan for restoration of degraded shorelines within this environment.

Urban Conservancy – The purpose of the *Urban Conservancy* environment is to protect and restore ecological functions of open space, flood plain and other sensitive lands where they exist in urban and developed settings, while allowing a variety of compatible uses.

Waterfront Recreation – The purpose of the *Waterfront Recreation* environment is to provide recreational and public access opportunities and to maintain and restore shoreline ecological functions and preserve open space. This designation is generally intended for appropriate public parks.

Marine Recreation – The purpose of the *Marine Recreation* environment is to establish provisions for boating facilities and water-oriented recreational and commercial uses and to restore shoreline ecological functions and preserve open space.

Shoreline Residential – The purpose of the *Shoreline Residential* environment is to accommodate residential development and appurtenant structures that are consistent with Olympia's Shoreline Program. An additional purpose is to provide public access and recreational uses.

Urban Intensity – The purpose of the *Urban Intensity* environment is to provide for high-intensity water-oriented commercial, transportation, industrial, recreation, and residential uses while protecting existing ecological functions and restoring ecological functions in areas that have been previously degraded, and to provide public access and recreational uses oriented toward the waterfront.

Port Marine Industrial – The purpose of the *Port Marine Industrial* environment is to allow the continued use and development of high-intensity water-oriented transportation, commercial and industrial uses. This area should support water-oriented marine commerce balanced with the protection of existing ecological functions and restoration of degraded areas.

3.21 18.20.400 - General Regulations – Intent

OMC Sections 18.20.400 through 18.20.510 set forth regulations that apply to all uses and activities, as applicable, in all shoreline environments. These regulations are to be used in conjunction with the OMC 18.20.600, et seq.

3.22 18.20.410 - No-Net-Loss and Mitigation

- A. All shoreline uses and development, including preferred uses and uses that are exempt from shoreline permit requirements, shall be located, designed, constructed, and maintained in a manner that maintains shoreline ecological functions and processes.
- B. Applicants/proponents of new shoreline use, and development shall demonstrate that all reasonable efforts have been taken to avoid adverse environmental impacts. Mitigation shall occur in the following order of priority:
 - 1. Avoiding the adverse impact altogether by not taking a certain action or parts of an action, or moving the action;

2. Minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology and engineering, or taking affirmative steps to avoid or reduce adverse impacts;
 3. Rectifying the adverse impact by repairing, rehabilitating, or restoring the affected environment;
 4. Reducing or eliminating the adverse impact over time by preservation and maintenance operating during the life of the action;
 5. Compensating for the adverse impacts by replacing, enhancing, or providing similar substitute resources or environments; and
 6. Monitoring the impact of the compensation projects and taking appropriate corrective measures.
- C. In determining appropriate mitigation measures, lower priority measures shall be applied only when higher priority measures are determined to be infeasible or inapplicable.
- D. Mitigation actions shall not have a significant adverse impact on other shoreline ecological functions.
- E. The City may require applicants to prepare special reports as necessary to address the impacts of proposed development on shoreline ecological functions or to demonstrate that avoidance is not feasible.
- F. When mitigation measures are required, all of the following shall apply:
1. The quality and quantity of the replaced, enhanced, or substituted resources shall be the same or better than the affected resources;
 2. The mitigation site and associated vegetative planting shall be nurtured and maintained such that healthy native plant communities can grow and mature over time;
 3. The mitigation shall be informed by pertinent scientific and technical studies, including but not limited to the Shoreline Inventory (TRPC, June 2009), Shoreline Analysis and Characterization Report (ESA Adolfson, December 2008), Olympia's Shoreline Restoration Plan (Appendix A to the Master Program) and that of other jurisdictions, and other background studies prepared in support of this Program;
 4. The mitigation plan shall include contingencies should the mitigation fail during the monitoring/maintenance period;
 5. Compensatory mitigation shall be done prior to or at the same time as the impact; and
 6. The mitigation activity shall be monitored and maintained to ensure that it achieves its intended functions and values. Mitigation sites shall be monitored for ten (10) years in accordance with the provisions in OMC 18.32.
- G. The applicant may be required to post a financial surety such as an assignment of savings or bond that is 125 percent of the estimated cost of the mitigation to guarantee performance. Estimates shall be prepared in accordance with OMC 18.32. Sureties shall only be released upon acceptance of the mitigation project by the City. If the mitigation project has not performed as prescribed in the mitigation plan, the City shall have the authority to extend the monitoring and surety period, and require additional monitoring reports and maintenance activities beyond the 10-year monitoring period. This requirement applies to all projects where mitigation is used.

- H. Mitigation measures shall occur in the immediate vicinity of the impact. If this is not feasible as determined through the mitigation sequence process (OMC 18.20.410(B)), mitigation may occur offsite if it provides greater improvement to shoreline ecological functions and values. The City may also approve use of alternative mitigation practices such as in-lieu fee programs, mitigation banks, and other similar approaches provided they have been approved by the Department of Ecology, the Department of Fish and Wildlife, or the Army Corps of Engineers.
- I. Type and Location of Mitigation:
1. The Administrator shall give preference to mitigation projects that are located within the City of Olympia. Prior to mitigating for impacts outside City of Olympia jurisdiction, applicants must demonstrate to the Administrator that the preferences herein cannot be met within City boundaries.
 2. Natural, Shoreline Residential, Urban Conservancy, Waterfront Recreation, and Aquatic Environments: Compensatory mitigation for ecological functions shall first be in-kind and onsite, or second in-kind and within the same reach, sub-basin, or drift cell, except when all of the following apply:
 - a. It is demonstrated to the satisfaction of the Administrator that there are no reasonable onsite or in sub-basin opportunities (e.g., onsite options would require elimination of high functioning upland habitat), or onsite and in sub-basin opportunities do not have a high likelihood of success based on a determination of the natural capacity of the site to compensate for impacts. Considerations should include anticipated marine shoreline/wetland/stream mitigation ratios, buffer conditions and proposed widths, available water to maintain anticipated hydrogeomorphic classes of wetlands or streams when restored, proposed flood storage capacity, potential to mitigate riparian fish and wildlife impacts (such as connectivity); and
 - b. Offsite mitigation has a greater likelihood of providing equal or improved shoreline ecological functions than the impacted shoreline.
 3. Urban Intensity, Marine Recreation and Port Marine Industrial Environments:
 - a. The preference for compensatory mitigation is for innovative approaches that would enable the concentration of mitigation into larger habitat sites in areas that will provide greater critical area or shoreline function.
 - b. The Administrator may approve innovative mitigation projects including but not limited to activities such as advance mitigation, fee in-lieu, mitigation banking and preferred environmental alternatives subject to the mitigation sequencing process contained in Section 18.20.410. Innovative mitigation proposals must offer an equivalent or better level of protection of shoreline ecological functions and values than would be provided by a strict application of onsite and in-kind mitigation. The Administrator shall consider the following for approval of an innovative mitigation proposal:
 - 1) Creation or enhancement of a larger system of natural areas and open space is preferable to the preservation of many individual habitat areas;
 - 2) Consistency with Goals and Objectives of the Shoreline Restoration Plan and the Goals and Objectives of this Program;
 - 3) The applicant demonstrates that long-term management and protection of the habitat area will be provided;

- 4) There is clear potential for success of the proposed mitigation at the proposed mitigation site;
- 5) Restoration of marine shoreline functions or critical areas of a different type is justified based on regional needs or functions and processes;
- 6) Voluntary restoration projects.

J. Fee in Lieu:

1. To aid in the implementation of offsite mitigation, the City may develop a formal program which prioritizes shoreline areas included in the Restoration Plan for use as mitigation and/or allows payment in lieu of providing mitigation on a development site. This program shall be developed and approved through a public process and be consistent with state and federal rules. The program should address:
 - a. The identification of sites within the City that are suitable for use as offsite mitigation and are consistent with the Shoreline Restoration Plan. Site suitability shall take into account shoreline ecological functions, potential for degradation, and potential for urban growth and service expansion; and
 - b. The use of fees for mitigation on available sites that have been identified as suitable and prioritized for restoration and/or enhancement
 - c. Any offsite mitigation would have to be consistent with the goals and objectives of the Shoreline Restoration Plan.
2. If a fee-in-lieu program is approved by the City then in cases where mitigation pursuant to this section is not possible, or where the maximum possible onsite mitigation will not wholly mitigate for anticipated impacts, or where an alternative location, identified in an adopted restoration plan, would provide greater ecological function, the Administrator may approve a payment of a fee in lieu of mitigation. The fee shall be reserved for use in high value restoration actions identified through the Shoreline Restoration Plan.

K. Advance Mitigation

1. Advance mitigation is a form of permittee responsible compensatory mitigation constructed in advance of a permitted impact.
2. To aid in the implementation of advance mitigation, the City may develop a formal advance mitigation program. This program shall be developed and approved through a public process and be consistent with state and federal rules as defined in the Interagency Regulatory Guide: Advance Permittee-Responsible Mitigation (December 2012). At a minimum, the program should address:
 - a. Credit value of advance mitigation proposals
 - b. Credits can only be used by the same applicant
 - c. Establish performance standards
 - d. Establish baseline conditions
3. Any advance mitigation project shall be consistent with the goals and objectives of the Shoreline Restoration Plan.

L. Effect on Building Setbacks

1. No building shall be rendered nonconforming with respect to building setbacks as a result of shoreline restoration or mitigation conducted in accordance with this SMP.

3.23 18.20.420 - Critical Areas

- A. All uses and development occurring within the shoreline jurisdiction shall comply with the critical areas regulations adopted by the City Council as of May 18, 2021 (Ordinance 7280) and codified in Chapter 18.32 (critical area regulations) and Chapter 16.70 (flood damage prevention), except as modified in (C) below.
- B. If there are any conflicts or unclear distinctions between this chapter and Olympia's critical area or flood damage prevention regulations, the requirements that are the most consistent with the Shoreline Management Act or Washington Administrative Code pertaining to shoreline management shall apply.
- C. Regardless of other provisions in Chapter 18.32, to ensure consistency with the Shoreline Management Act critical areas within shoreline jurisdiction shall be subject to the following:
 1. In shoreline jurisdiction, critical area review and permit procedures will be incorporated into and conducted consistently with the associated shoreline permit or exemption review and approval.
 2. Stream and Important Riparian Area buffer reductions beyond twenty-five percent (25%) within shoreline jurisdiction shall require a shoreline variance.
 3. Stormwater facilities may be allowed in the outer twenty-five percent (25%) of Category III and IV wetland buffers in shoreline jurisdiction (OMC 18.32.525(I)) and only when no other location is feasible.
 4. Utility lines may be allowed in the outer twenty-five percent (25%) of Category III and IV wetland buffers in shoreline jurisdiction (OMC 18.32.525(L)).
 5. Locating stormwater facilities or utilities within wetlands or within any wetland buffer other than those specified in numbers 3 and 4 above shall require a shoreline variance (OMC 18.32.530(E) and (G)).
 6. Wetland buffer reductions beyond twenty-five percent (25%) within shoreline jurisdiction shall require a shoreline variance.
 7. Reasonable use exceptions (OMC 18.66.040) are not available for relief from critical area standards within the shoreline jurisdiction. Instead, applicants seeking relief from the critical area standards shall apply for a shoreline variance.
 8. New development or the creation of new lots that would cause foreseeable risk from geological conditions during the life of the development is prohibited.
 9. Uses and activities that may be authorized within floodways are limited to those listed in WAC 173-26-221 (3)(c)(i).
 10. Priority riparian area buffers are set forth in OMC 18.32.435 Streams and Priority Riparian Areas— Buffers.

3.24 18.20.430 - Archaeological, Historic, and Cultural Resources

- A. Archaeological sites located both in and outside shoreline jurisdiction are subject to RCW 27.44 (Indian Graves and Records) and RCW 27.53 (Archaeological Sites and Records).
- B. Development or uses that impact such sites shall comply with WAC 25-48 (Archaeological Excavation and Removal Permit) as well as the requirements of OMC 18.12, Historic Preservation, and the applicable requirements of this chapter.
- C. Shoreline use and development on sites having archaeological, historic, or cultural resources shall be designed and constructed in a manner that prevents impacts to the resource and provides educational benefits to the public, where appropriate.
- D. In accordance with OMC 18.12 and WAC 173-26-221, developers and property owners shall immediately stop work and notify the City, the Office of Archaeology and Historic Preservation and affected Indian tribes if archaeological resources are uncovered during excavation.
- E. Development that is proposed in areas documented to contain archaeological resources shall have a site inspection or evaluation by a professional archaeologist in coordination with affected Indian tribes during the development review process.

3.25 18.20.440 - Parking

- A. Parking facilities or lots within the shoreline jurisdiction shall be allowed only to support authorized uses.
- B. Commercial parking facilities or lots as a primary use are prohibited within the shoreline jurisdiction.
- C. Parking facilities or lots shall be located landward of the principal building, except when the parking facility is within or beneath the structure and adequately screened or in cases when an alternate orientation would have less adverse impact on the shoreline.
- D. Parking facilities or lots shall be designed and landscaped to minimize adverse impacts upon adjacent shorelines and abutting properties. Landscaping shall comply with OMC 18.36 and the vegetation conservation standards of OMC 18.20.495.
- E. Parking facilities or lots shall provide safe and convenient pedestrian circulation within the parking area to the building or use it serves, and shall be located as far landward of the Ordinary High Water Mark as feasible.
- F. To the extent feasible, new parking lots shall include the most effective stormwater treatment and 'best management' practices. At minimum, such treatment shall conform to the 'Enhanced Menu' issued by the Washington Department of Ecology's "Runoff Treatment BMPs" of August 2012.

3.26 18.20.450 - Public Access

- A. Public access shall be required for the following types of development, unless waived pursuant to Section C.
 - 1. Residential developments of more than nine residential lots or dwelling units;
 - 2. Commercial or industrial developments; and
 - 3. Shoreline developments proposed or funded by public entities, port districts, state agencies, or public utility districts.

- B. Where a development or use will interfere with an existing public access, the development or use shall provide public access to mitigate this impact. Impacts to public access may include blocking access or discouraging use of existing onsite or nearby public access.
- C. The public access requirement, when related to development not publicly funded, may be waived by the Administrator where one or more of the following conditions are present:
 - 1. Unavoidable health or safety hazards to the public exist which cannot be prevented by any practical means;
 - 2. Constitutional or other legal limits apply;
 - 3. Inherent security requirements of the use cannot be satisfied through the application of alternative design features or other solutions such as limiting hours of use;
 - 4. Adverse impacts to shoreline ecological processes and functions that cannot be mitigated will result; in such cases, offsite and alternative access may be required to mitigate impacts;
 - 5. The development site is disconnected from the shoreline by an existing, legally established public road or public space such as Percival Landing;
 - 6. Save and convenient public access already exists in the immediate vicinity, and/or adequate public access is already documented at the property. The Administrator will consider the following to determine if adequate public access is provided in immediate vicinity:
 - a. Public access areas occur along the shoreline within 1/8 mile of the development site or within ¼ mile when seating is provided along the route; and
 - b. Safe pedestrian access from the site to the public access areas along or to the shoreline is provided; or
 - 7. The cost of providing the access, easement, or an alternative amenity is unreasonably disproportionate to the cost of the proposed development.
- D. Public access provisions shall run with the land and be recorded via a legal instrument such as an easement, or as a dedication on the face of a plat or short plat. Such legal instruments shall be recorded with the Thurston County Auditor prior to issuance of a certificate of occupancy or final plat approval, whichever comes first.
- E. Public access sites shall be constructed and available for public use at the time of occupancy of the use or activity or in accordance with other provisions for guaranteeing installation through a monetary performance assurance.
- F. Public access facilities shall be available to the public from dawn to dusk unless specific exceptions are granted through a shoreline substantial development or other permit.
- G. Public access facilities shall be maintained over the life of the use or development. Future actions by successors in interest or other parties shall not diminish the usefulness or value of required public access areas and associated improvements.
- H. Maintenance of public access facilities on private property shall be the responsibility of the property owner, unless an accepted public or non-profit agency agrees to assume responsibility through a formal agreement recorded with the Thurston County Auditor. Where appropriate, this responsibility may be required of a future homeowners' association, or other entity approved by the City.

- I. Signage indicating the public's right of access and hours of access shall be installed and maintained by the owner, developer, or assignee. Such signs shall be posted in conspicuous locations at public access sites.
- J. Public access areas shall be approved by the Administrator during review of the shoreline permit. If exempt from a shoreline permit, public access areas may be required by the Administrator.

3.27 18.20.460 - Design of Public Access

- A. Public access shall be located, designed, and maintained in accordance with all of the following:
 - 1. The size and configuration of public access areas shall be at least the minimum necessary based on location, intended use, compatibility with adjacent uses, and proximity to other public access areas.
 - 2. Trails and shared uses paths (including access paths) shall be buffered from sensitive ecological features and provide limited and controlled access to sensitive features and the water's edge where appropriate (for example, when part of an interpretive or educational site). Fences may be used to control damage to vegetation and other sensitive ecological features. If used, fences shall be designed and constructed of materials that complement the setting, as well surrounding features, or structures, and allow for wildlife movement.
 - 3. Where feasible, public access shall be located adjacent to other public areas, accesses and connecting trails, with connections to the nearest public street, or trail.
 - 4. Where physical access to the water's edge is not feasible, a public viewing area shall be provided. This requirement may be waived by the Administrator where all of the following conditions are present:
 - a. The development site is disconnected from the shoreline by an existing, legally established public road or public space such as Percival Landing;
 - b. Public access areas occur along the shoreline within 1/8 mile of the development site or within ¼ mile when seating is provided along the route; and
 - c. Safe pedestrian access from the site to the public access areas along or to the shoreline is provided.
 - 5. Public access shall be designed to minimize intrusions on privacy and conflicts between users. For example, provide a physical separation between public and private spaces, orient public access away from windows or private outdoor spaces, or provide a visual screen such as a fence or vegetation.
 - 6. Public access shall be designed to provide for the comfort and safety of users. Such spaces shall be visible from the street or adjacent uses, have adequate lighting, and be designed to discourage offensive or illegal conduct.
 - 7. Public amenities such as, but not limited to, a covered shelter, benches, or picnic table shall be provided in public access areas.
 - 8. Where feasible, public access areas shall be barrier free for the physically disabled in accordance with the Americans with Disabilities Act (ADA).
- B. The design and layout of public access shall conform to applicable City design standards and procedures, such as the width of public access easements or dedications for trails and shared-use paths and trail classification and corresponding corridor widths set forth in the Olympia Engineering

Design and Development Standards (EDDS). Any deviation shall be the minimum necessary to achieve the intended purpose of such deviation. It is not the intent of the City to authorize informal trails and the standards contained herein are not intended to address them.

3.28 18.20.470 - Scientific and Educational Activities

- A. Scientific and educational uses and activities are limited to those which will:
 - 1. Not jeopardize existing wildlife populations or organisms;
 - 2. Not permanently alter the character of biological habitats; and
 - 3. Not degrade the character of the shoreline environment in which they are located.
- B. Temporary disruption of biological systems may be permitted when a scientific activity will result in their restoration or improvement, and only when a restoration plan is approved by the City and other agencies with jurisdiction.
- C. Permits for scientific or education activities that will span an extended period of time may be granted; limits on the duration of the use or activity may be established as a condition of approval.
- D. Structures associated with scientific and educational activities such as museums, schools, or visitor centers may be allowed subject to the use provisions of OMC 18.20.620.
- E. Temporary facilities used in conjunction with the scientific or educational project shall be removed at the conclusion of the project.

3.29 18.20.480 - Signage Regulations

Signage shall conform to OMC 18.42, Sign Regulations. In addition, the following provisions shall apply within the shoreline jurisdiction:

- A. All offsite signs, except for directional signs, shall be prohibited;
- B. All signs shall be located and designed to avoid interference with vistas, viewpoints, and visual access to the shoreline;
- C. Signs shall be designed and placed so that they are compatible with the aesthetic quality of the existing shoreline and adjacent land and water uses;
- D. Over water signs and signs on floats or pilings, except as needed for navigational purposes, shall be prohibited;
- E. Where lighted signs and illuminated areas are permitted, such illuminating devices shall be shaded and directed so as to minimize, to the extent feasible, light and glare from negatively impacting neighboring properties, streets, public areas, or water bodies. Lighted signs shall be designed to reduce glare when viewed from surrounding properties or from the water. Lighting shall not shine directly upon or cast a glare on the water; and
- F. All signs shall be located in such a manner that they minimize interference with public views. Free standing signs which may disrupt views to the water shall be placed on the landward side of development.

3.30 18.20.490 - Vegetation Conservation Areas - Intent

- A. Vegetation conservation includes activities to protect and restore upland vegetation along or near marine or fresh water bodies to minimize habitat loss and the impact of invasive plants, erosion and flooding and contribute to the ecological functions of shoreline areas. The provisions of this section

establish vegetation conservation areas, and set forth regulations for the prevention or restriction of native vegetation removal, grading, vegetation restoration, control of invasive weeds and non-native species, and tree maintenance adjacent to the shoreline.

- B. However, unless otherwise stated, vegetation conservation does not include those activities expressly authorized by the Washington State Forest Practices Act, but does include conversion to other uses and those other forest practice activities over which the City has authority.

3.31 18.20.492 - General Vegetation Conservation Regulations

- A. Vegetation conservation provisions apply to all shoreline developments as required in Table 6.3. All vegetation conservation in these areas shall conform to the regulations and standards below.
- B. Parcels fronting on lakes, marine waters, streams, or wetlands shall preserve or provide native vegetation within vegetation conservation areas, also known as VCAs or buffers, upland of and adjacent to the Ordinary High Water Mark as required in Table 6.3. If present on a parcel, note that critical area buffers may be larger than or may encompass VCAs.
- C. Except as provided herein, applicants for new development, expansion, or redevelopment shall protect and preserve existing native vegetation within the vegetation conservation area.
- D. Mitigation in the form of restoration or creation of vegetation conservation area may be required as a condition of development approval consistent with mitigation sequencing priorities in OMC 18.20.410(B). Further, an applicant may propose such restoration for reductions in required setbacks or for encroachments into required vegetation conservation areas as provided in OMC 18.20.493 and/or for water dependent uses as provided in Table 6.3.
- E. Where applicable, nonconforming and water dependent uses that cannot provide a vegetation conservation area due to the nature of the use or activity shall provide comparable mitigation. For example, if it is not feasible to provide vegetation onsite due to constraints such as lot size, topography, or existing site improvements, vegetation may be provided offsite in accordance with the provisions of OMC 18.20.410(H).

3.32 18.20.493 - Permitted Uses and Activities within Vegetation Conservation Areas

A. Subject to other limitations of this chapter and if also allowed within the applicable shoreline environment designation, the following uses and activities are permitted within vegetation conservation areas without a variance.

1. Transportation facilities and utilities within existing rights-of-way only when it has been determined that alternative upland locations are not feasible;
2. Public access viewpoints, pedestrian access from upland areas to the shoreline, piers, docks, launch ramps, viewing platforms, wildlife viewing blinds and other similar water-oriented uses;
3. Public recreation trails identified in adopted plans and those located on existing road or railroad beds;
4. Educational facilities such as viewing structures and platforms, wildlife viewing blinds and interpretive sites;
5. Equipment necessary for conducting water-dependent uses such as boat travel lifts for boat maintenance and upland storage, and loading equipment for transport of logs and natural resource materials. Where logs or natural resource materials are loaded directly from the shoreline to a vessel, impacts to the shoreline shall be minimized by:

- a. Constructing designated loading areas;
 - b. Maintaining equipment to avoid fuel or oil leaks; and
 - c. Implementing best management practices to reduce erosion and discharge of untreated stormwater directly into the water.
- 6. Removal of noxious weeds or hazardous trees;
- 7. Removal and thinning of trees and vegetation on public property to maintain public view corridors identified in Section 18.20.500;
- 8. Improvements that are part of an approved enhancement, restoration, vegetation management or mitigation plan;
- 9. Shoreline stabilization only when it is part of an approved project;
- 10. The following facilities, fixtures and furnishing shall be allowed within the VCA of public parks and water related recreation areas: 1. paved or unpaved trails, bridges and pedestrian access; 2. picnic shelters, tables and pads not greater than 400 square feet in size; 3. seating, benches, drinking fountains, garbage cans and other site furnishing; 4. public art and art installations; 5. signs, environmental interpretive facilities and information kiosks, and interpretive exhibits; 6. wildlife viewing structures; 7. play equipment and other similar passive parks furnishing and fixtures; 8. restrooms, when no suitable location outside of the VCA exists; and
- 11. Water dependent uses as authorized in OMC 18.20.620 Table 6.3.
- B. Appurtenant and accessory structures other than those described above or in OMC 18.20.690(C) are prohibited within the vegetation conservation area.

3.33 18.20.494 - Alterations to Existing Development

Alterations to existing development, including accessory structures, decks, patios, sport courts, and walkways, shall protect existing native vegetation within the vegetation conservation area. If the minimum vegetation conservation area is not present when a site alteration is proposed, the Administrator may require establishment of such vegetation conservation area where required by Table 6.3 that is necessary to prevent adverse impacts to the shoreline ecological functions that may result from any proposed alterations.

3.34 18.20.495 - Vegetation Conservation Area Standards

- A. Speculative clearing, grading, or vegetation removal is prohibited. Clearing, grading and vegetation removal within shoreline setbacks and Vegetation Conservation Areas shall be the minimum necessary for the authorized use or development.
- B. The minimum width of Vegetation Conservation Areas is set forth in Table 6.3 and measured perpendicular to the Ordinary High Water Mark along the entire shoreline of the property. To account for site conditions and to create a more natural Vegetation Conservation Area, the minimum widths may be reduced by 50% by the Administrator upon finding that the total VCA of the parcel is equivalent to the minimum area that would result from the standard minimum width and such reduction will not result in adverse impacts to the shoreline functions; such reductions also known as 'VCA averaging.' Vegetation Conservation Areas exceeding minimums may be proposed or required if necessary to ensure no net loss of shoreline ecological functions will result from proposed shoreline development.

- C. In general, protected, and restored Vegetation Conservation Areas shall be composed of native vegetation comparable in species density and diversity to an ecologically similar undisturbed area. Such species density and diversity shall be determined by the Administrator based on best available science. Provided, however, that up to 33% (one-third) of the Vegetation Conservation Area may be utilized for authorized uses and activities described in OMC 18.20.493 provided that impervious surfaces shall not exceed 25% of the VCA. In no case shall the width of a required VCA be less than 10 feet. Encroachment of an authorized use or activity shall require an equivalent area elsewhere onsite be set aside as a VCA and shall not result in a net loss to shoreline ecological functions.
- D. When restoring or enhancing shoreline vegetation, applicants shall use native species that are of a similar diversity, density and type commonly found in riparian areas of Thurston County. The vegetation shall be nurtured and maintained to ensure establishment of a healthy and sustainable native plant community over time.
- E. Lawns are prohibited within the Vegetation Conservation Area due to their limited erosion control value, limited water retention capacity, and associated chemical and fertilizer applications.
- F. Trimming of trees and vegetation is allowed within the Vegetation Conservation Area subject to:
 - 1. This provision does not allow clearing of trees or vegetation except as provided below and elsewhere in this chapter;
 - 2. The limbing or crown-thinning of trees larger than three inches in caliper shall comply with National Arborist pruning standards, unless the tree is a hazard tree as defined in OMC 16.60, Tree Protection and Replacement. No more than 25% of the limbs on any single tree may be removed and no more than 25% of the canopy cover in any single stand of trees may be removed for a single view corridor.
 - 3. Trimming does not directly impact the nearshore functions and values including fish and wildlife habitat;
 - 4. Trimming is not within a critical area of Chapter 18.32 or associated buffer; and
 - 5. Tree topping is prohibited.
- G. Vegetation shall be maintained over the life of the use or development.
- H. Vegetation conservation areas shall be placed in a separate tract in which development is prohibited; protected by execution of an easement dedicated to a conservation organization or land trust; or similarly protected through a permanent mechanism acceptable to the City.

3.35 18.20.496 - Vegetation Management Plan

- A. Clearing and grading within the shoreline jurisdiction is only permitted upon approval by the Administrator of a Vegetation Management Plan prepared by the applicant. If mitigation measures are required as outlined in OMC 18.20.410(F), the Vegetation Management Plan may be combined with the Mitigation Plan, and must be prepared by a qualified professional. The Vegetation Management Plan shall include:
 - 1. A map illustrating the distribution of existing plant communities in the area proposed for management. The map must be accompanied by a description of the vegetative condition of the site, including plant species, plant density, any natural or manmade disturbances, overhanging vegetation, and the functions served by the existing plant community (e.g., fish and wildlife values, slope stabilization);

2. A description of how mitigation sequencing was used and how the plan achieves no net loss of shoreline ecological functions the vegetation is providing;
3. An inventory of existing vegetation, including a description of vegetation overhanging the shoreline;
4. A detailed plan indicating which areas will be preserved and which will be cleared, including tree removal;
5. Drawings illustrating the proposed landscape scheme, including the species, distribution, and density of plants. Any pathways or non-vegetated portions and uses shall be noted;
6. A description of any vegetation introduced for the purposes of fish and wildlife habitat;
7. Installation of vegetation shall meet the following standards:
 - a. Native species that are of a similar diversity, density and type commonly found in riparian areas of Thurston County shall be used, unless non-native substitutes are authorized by the Administrator based on availability of native materials and said materials are appropriate to soil and climate conditions;
 - b. On public property, vegetation shall be selected and located to maintain public views identified in approved plans;
 - c. At the time of planting, plant materials shall be consistent with the standards in OMC 18.36, Landscaping and Screening;
 - d. The applicant may be required to install and implement an irrigation system to insure survival of vegetation planted. For remote areas lacking access to a water system, an alternative watering method may be approved;
 - e. Planting in the fall or early spring is preferred over summer for purposes of plant establishment; and
 - f. For a period of 10 years after initial planting, the applicant shall replace any unhealthy or dead vegetation as part of an approved vegetation management plan.
- B. Loss of wildlife habitat shall be mitigated onsite. If onsite mitigation is not feasible, offsite mitigation shall be permitted in accordance with OMC 18.20.410; and
- C. The Administrator may waive some but not all of the vegetation installation requirements in this section when the applicant demonstrates that the proposal will result in no net loss of shoreline functions by improving shoreline ecological functions of the shoreline, such as the removal of invasive species, shoreline restoration/enhancement, or removal of hard armoring.
- D. For other applicable regulations, see OMC Chapters 16.60, 18.32, and 18.36.
- E. In addition to A to D above all required vegetation installation shall conform to the standards of section 18.20.410(F) and (G) of this SMP.

3.36 18.20.500 - View Protection - Intent

Over 50 percent of Olympia's marine shoreline is publicly owned. Much of this shoreline, such as at Percival Landing, West Bay Park, Priest Point Park, and the East Bay area, provide opportunities for the public to enjoy the views of Mount Rainier, the Capitol, Budd Inlet, and the Olympic Mountains. The future may provide even greater opportunities for the public to enjoy the scenic qualities of the area.

The protection of these public views from the shoreline is an important objective of Olympia's Shoreline Program. Protection of such views to and from the shoreline can be achieved through multiple strategies including public ownership and use of shorelands, the inclusion of public access and viewpoints in private development, establishing key view corridors, establishing height limits and design standards, vegetation management standards, and visual assessment where views may be impacted.

Private uninterrupted views of the shoreline, although considered, are not expressly protected. Property owners concerned with the protection of views from private property are encouraged to obtain view easements, purchase intervening property and/or seek other similar private means of minimizing view obstruction.

3.37 18.20.504 - View Protection Regulations

- A. No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five (35) feet above average grade level that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where Olympia's Shoreline Program does not prohibit the same and then only when overriding considerations of the public interest will be served.
- B. All development within the shoreline jurisdiction shall comply with the view protection standards of OMC 18.110.060.
- C. Public shoreline views shall be protected by the use of measures, including but not limited to, maintaining open space between buildings, clustering buildings to allow for broader view corridors, and minimizing building height and total lot coverage.
- D. When there is an irreconcilable conflict between water-dependent uses and physical public access and maintenance of views from adjacent properties, the water-dependent uses and physical public access shall have priority, unless there is a compelling reason to the contrary.
- E. Buildings shall incorporate architectural features that reduce scale such as increased setbacks, building modulation (vertical and horizontal), pitched roofs, angled facades, and reduced massing.
- F. New development uses and activities shall locate trash and recycling receptacles, utility boxes, HVAC systems, electrical transformers, fences and other appurtenances to minimize interference with public views.
- G. Design and install utilities and accessory structures in such a way as to avoid impacts to scenic views and aesthetic qualities of the shoreline area.
- H. Communication and radio towers shall not obstruct or destroy scenic views of the water. This may be accomplished by design, orientation and location of the tower, height, camouflage of the tower, or other features consistent with utility technology.
- I. Fences, walls, hedges, and other similar accessory structures in the VCA shall be limited to four (4) feet in height between the Ordinary High Water Mark and primary structures. Outside of the VCA the fencing provisions in OMC 18.40 shall apply.
- J. Where on-going maintenance of vegetation on public property to protect public views is necessary, a Vegetation Management Plan shall be approved by the Administrator prior to any work. At a minimum, the Vegetation Management Plan shall identify the viewshed to be preserved, the areas where vegetation will be maintained (including tree removal), and percent of vegetation to be retained. If trees are removed, they shall be replaced with three trees for each tree removed up to a minimum density of 220 trees per acre.

3.38 18.20.507 - Visual Impact Assessment

The applicant of a building or structure that exceeds 35 feet to the highest point above average grade level shall prepare and submit a visual analysis in conjunction with any development permit. At a minimum, the analysis shall address how the proposed project impacts views protected under RCW 90.58.320 and OMC 18.110.060. The Administrator may require additional information such as photo-simulations showing proposed buildings in relation to impacted views. If the analysis shows the proposed building or structure would block or significantly compromise the view of a substantial number of residences in adjoining areas or views protected under OMC 18.110.060, the City may place conditions on the development to prevent the loss of views.

3.39 18.20.510 - Water Quality

- A. Septic systems for new development within the shoreline jurisdiction are prohibited.
- B. Stormwater management facilities for new uses and development shall be designed, constructed, and maintained in accordance with the Olympia Drainage Design and Erosion Control Manual of Olympia. To the extent feasible, low impact development best management practices shall be incorporated into every project along the shoreline. All redevelopment and new development within Reaches 4 and 5A shall require compliance with the Drainage Design and Erosion Control Manual of Olympia without consideration to the thresholds established therein.
- C. The use of wood treated with creosote, copper, chromium, arsenic, or pentachlorophenol shall only be approved upon a finding of no feasible alternative.
- D. All structures that come in contact with water shall be constructed of materials that will not adversely affect water quality or aquatic plants or animals.
- E. Uses and activities that pose a risk of contamination to ground or surface waters shall be prohibited in shoreline jurisdiction. Such uses include, but are not limited to the following:
 - 1. Storage, disposal, or land application of waste (excluding secondary/tertiary treated effluent from municipal sewer systems), including solid waste landfills;
 - 2. Operations for confinement feeding of animals;
 - 3. Agricultural activities that involve the application of fertilizers, pesticides, or other chemical treatments;
 - 4. Junk yards and auto wrecking yards;
 - 5. Storage of hazardous or dangerous substances within a floodplain; and
 - 6. Alterations to structures and uses served by septic systems that do not meet local or state requirements.
- F. Dredging and dredge disposal activities must employ appropriate best management practices to prevent water quality impacts or other environmental degradation.

3.40 18.20.600 - Shoreline Use and Development – Intent

The purpose of OMC Section 18.20.600 through 18.20.710 is to set forth regulations for specific common uses and types of development that occur within Olympia's shoreline jurisdiction. Where a use is not listed on Table 6.1, the provisions of OMC 18.20.250, Unclassified Uses, shall apply. All uses and activities shall be consistent with the provisions of the shoreline environment designation in which they

are located and the general regulations in OMC 18.20.400 through 18.20.510 and the shoreline modification provisions in OMC 18.20.800 through 18.20.930.

3.41 18.20.610 - General Use and Development Provisions

- A. Developments that include a mix of water-oriented and nonwater-oriented uses may be approved if the Administrator finds that the proposed development avoids impacts to shoreline ecological functions, provides public access, and otherwise enhances the public's ability to enjoy the shoreline.
- B. All uses not explicitly permitted in this chapter shall require a Shoreline Conditional Use Permit. The Hearing Examiner may impose conditions to ensure that the proposed development meets the policies of Olympia's Shoreline Program.
- C. All development and uses must conform to all applicable provisions of this Shoreline Program, including the shoreline use table and the development standards table in OMC 18.20.600 through 18.20.710, unless otherwise stated or upon approval of a shoreline variance.
- D. Except as required by state or federal regulations or explicitly authorized by this chapter, forestry practices, mining and solid waste uses, and activities are prohibited in all shoreline areas.

3.42 18.20.620 - Use and Development Standards Tables

- A. Table 6.1 identifies allowed uses and activities by shoreline environment designation. Table 6.2 establishes building heights by shoreline environment designation. Table 6.3 establishes development standards by shoreline environment designation including shoreline setbacks and Vegetation Conservation Areas. These tables shall be used in conjunction with the written provisions for each use. Table footnotes provide additional clarification or conditions applicable to the associated uses or development regulation.
- B. Maximum Shoreline Building Heights are not applicable to light and utility poles; nor to equipment used for loading and unloading such as conveyors and cranes within the Port Marine Industrial environment and adjacent Aquatic environment.
- C. Upon finding that such structures will not result in a net loss of shoreline functions and are otherwise consistent with Olympia's Shoreline Program, the Administrator may authorize small buildings and other structures within the "building setback" area but outside of the VCA, if locating such structures outside of shoreline jurisdiction is not feasible. Any such structures shall not exceed a total 800 square feet within each development, shall not be located within critical areas or their buffers unless authorized in OMC 18.20.420, shall not be closer than 30 feet to the Ordinary High Water Mark or the width of the VCA whichever is greater, and shall not exceed a height of 20 feet. To ensure protection of shoreline functions and views, the Administrator may attach conditions to approval of the permits as necessary to assure consistency of the project with the Act and this Shoreline Program.
- D. Setback reductions shall be allowed as provided in Table 6.3 and subject to the following:
 - 1. Incentives for setback reductions noted herein are cumulative up to the maximum reduction allowed. Incentive eligible restoration projects may be completed in association with, or in addition to, required mitigation projects, however, no setback reductions shall be allowed for required mitigation projects. Prior to the Administrator approving setback reduction incentives, the applicant shall demonstrate compliance with the mitigation sequence at a site level as provided in Section 18.20.410 of the SMP. Restoration incentives must be achieved onsite unless the Administrator finds this is not feasible or would have significantly less ecological

benefit than offsite restoration. Offsite restoration shall be consistent with the objectives for mitigation outlined in OMC 18.20.410(H) and (I). Should no offsite restoration option be available, onsite restoration shall be required to obtain the associated setback reduction incentive.

2. Preferred public access shall be physical access to the marine shoreline from the public right-of-way via a sidewalk or paved trail on a publicly dedicated easement no less than six (6) feet in width and constructed to City standards as included in the City's Engineering Design and Development Standards. Other forms of indirect access such as viewing towers and platforms may be considered where direct access to the shoreline is deemed dangerous due to the nature of the use of the property or the conditions at the shoreline. Existing access meeting the standards described herein may be used to meet setback incentive provisions.
3. Trail shall be a commuter multi-use trail on a public easement no less than twelve (12) feet in width and providing no less than a 12-foot wide clear travel path, providing continuous public access across the site and shall be placed upland of the Ordinary High Water Mark and constructed to commuter multi-use trail standards as included in the City's Engineering Design and Development Standards. Existing trails meeting the requirements described herein may be used to meet setback incentive provisions. To receive setback reduction credit the trail must be built on the site.
4. Vegetation restoration shall be planting of native shoreline vegetation in excess of that required to achieve no net loss of environmental function from unavoidable impacts associated with a development proposal. Plantings shall substantially mimic undisturbed native shorelines in the South Puget Sound in plant species, species mixture and plant density. Vegetation restoration shall be accomplished through an approved Vegetation Management Plan. Restoration ratios shall begin at 2 square feet of restoration for every one (1) square foot reduction of the required setback area and demonstrate no net loss of environmental function.
5. Removal of bulkhead shall be the physical removal of a vertical structure and replacement with a softened shoreline treatment. Measures may include use of shoreline contouring, gravels, cobbles, limited use boulders, logs, and vegetation in a manner that promotes native aquatic species and protects the shoreline from erosion.
6. Replacement of a hardened shoreline shall be the physical removal of rip rap or other non-vertical shoreline protection and replacement with a softened shoreline treatment. Measures may include use of shoreline contouring, gravels, cobbles, limited use boulders, logs, and vegetation in a manner that promotes native aquatic species and protects the shoreline from erosion.
7. Water Dependent uses may encroach into the required setback and vegetation conservation area as described in Table 6.3 in accordance with the mitigation sequence in OMC 18.20.410. Reductions to less than a 20-foot setback shall only be allowed where the following two requirements have been met:
 - a. Alternative public access has been provided sufficient to mitigate the loss of direct public access to the shoreline and in no case shall public access be less than twelve (12) feet as described in paragraph 3 above;

- b. The shoreline bulkhead removal or hardening replacement requirements of 5 or 6 above are met for each linear foot of shoreline impacted and the applicant demonstrates that a reduced setback would not result in the need for future shoreline stabilization.
- 8. No setback shall be required in the Port Marine Industrial shoreline environmental designation; however, mitigation shall be required to offset any impacts determined through the mitigation sequencing process to ensure no net loss of environmental function and to mitigate for loss of public access.
- 9. Shoreline setbacks shall not apply to areas that are disconnected from the shoreline by an existing, legally established public road or other substantially developed surface which results in a functional disconnect from the shoreline. The applicant shall provide a biological assessment by a qualified professional that demonstrates the area is functionally isolated. The City shall consider the hydrologic, geologic, and/or biological habitat connection potential and the extent and permanence of the physical separation.

Table 6.1 – Uses and Activities

LEGEND: P = Permitted C = Shoreline Conditional Use Permit X = Prohibited

C/P = A Shoreline Conditional Use Permit or Shoreline Substantial Development Permit is required. A Shoreline Conditional Use Permit is required if any portion of the use or development activity is wholly or partially located within 100 feet of the OHWM; when all uses and activities are located more than 100 feet from the OHWM a Shoreline Substantial Development Permit is required.

Primary Use of Building or Structure	Urban Intensity	Port Marine Industrial	Shoreline Residential	Urban Conservancy	Waterfront Recreation	Marine Recreation	Natural	Aquatic ¹
Agriculture								
Agriculture	X	X	X	X	X	X	X	X
Aquaculture								
Restoration and Recovery of Native Populations	P	P	P	P	P	P	P	P
Commercial Aquaculture	C	C	C	C	C	C	X	C
Boating Facilities								
Marinas	P	P	X	X	X	P	X	C
Launch Ramps	P	P	P	P	P	P	X	P
Upland Boathouses & Storage Structures	P	P	P	P	P	P	X	X
Overwater Covered Moorage and Boathouses	X	X	X	X	X	X	X	X
Commercial								
Water Dependent	P	P	C	X	C	P	X	C
Water Related and Enjoyment	P	P	C	X	C	P	X	X
Non-water Oriented	C	C	X	X	X	C	X	X
Industrial/Light Industrial								
Water Dependent	P	P	X	X	X	C	X	P
Water Related	P	P	X	X	X	C	X	X
Nonwater Oriented	X	X	X	X	X	X	X	X

Primary Use of Building or Structure	Urban Intensity	Port Marine Industrial	Shoreline Residential	Urban Conservancy	Waterfront Recreation	Marine Recreation	Natural	Aquatic ¹
Recreation								
Water Dependent & Enjoyment, and All Other Water Related, e.g., viewing platforms, wildlife blinds, interpretive areas	P	X	P	P	P	P	C	C
Non-water Oriented	C/P	X	C/P	X	C	X	X	X
Residential								
Residential	P	X	P	P	X	X	X	X
Transportation								
Roads/Railroads	C/P	C/P	C/P	C/P	C/P	C/P	C/P	C
Trails and Shared Use Paths	P	P	P	C/P	P	P	C/P	P
Parking	P	P	P	C/P	C/P	P	C/P	X
Utilities								
Utility Lines, Buildings and Facilities	C/P	C/P	C/P	C/P	C/P	C/P	C/P	C
Other								
All Other Uses Not Listed Above	C	C	C	C	C	C	X	C
Mixed Use	C ² /P	C	C	C	C	C ² /P	X	X

¹ Uses listed as permitted or conditional in the Aquatic designation are allowed only if not prohibited in the adjacent upland shoreline designation.

² If all of the proposed uses are permitted, the mix of said permitted uses is also permitted. However, if one or more of the proposed uses is conditionally permitted, then the proposed mix would trigger a Shoreline Conditional Use Permit.

Table 6.2 – Development Standards (Heights)

Shoreline Environment	Shoreline Reach	Maximum Standard Building Height
Aquatic	All	20 feet
Natural	All	15 feet
Waterfront Recreation	Budd Inlet	42 feet
	Capitol Lake	35 feet
Urban Conservancy	All	35 feet
Shoreline Residential	All	35 feet
Marine Recreation	Budd Inlet	40 feet; 25 feet within 75 feet of OHWM
Urban Intensity	Budd – 3A*	42 feet to 65 feet*
	Budd 6A & Capitol – 3B	65 feet
	Budd-4 and Budd-5A	35 feet water-ward of streets; 90 feet remainder
Port Marine Industrial	All	65 feet

*Subject to the provisions of the West Bay Drive regulations 18.06.100(A)(2)(C).

Table 6.3 – Setbacks and Incentives

Shoreline Environment	Shoreline Setback	Vegetation Conservation Area	Setback and VCA with maximum reduction– Non-water dependent	Incentive eligible provisions – See 18.20.620(D)(1)	Shoreline Setback and VCA reduction	Required Standards
Aquatic	N/A	N/A	N/A	N/A	N/A	N/A
Natural	200’	200’	N/A	N/A	N/A	N/A
Urban Conservancy	100’	50’	N/A	N/A	N/A	N/A
Shoreline Residential - Ward Lake	75’	20’	N/A	N/A	N/A	N/A
Shoreline Residential – Ken Lake, Budd Inlet	30’	20’	N/A	N/A	N/A	N/A
Marine Recreation – Budd 5C	75’	30’	50’	Physical Access	7’	See 18.20.620(D)(2)
				Trail	7’	See 18.20.620(D)(3)
				Restoration of vegetation	Up to 7’	See 18.20.620(D)(4)
				Bulkhead Removal >50% frontage	10’	See 18.20.620(D)(5)
				Bulkhead Removal <50% frontage	5’	See 18.20.620(D)(5)
				Replacement of hardened shoreline with soft structural stabilization measures water-ward of OHWM.	12.5’	See 18.20.620(D)(6)
Water Dependent Uses Reduce from 75’ to 20’ or 0’.				Water Dependent Use	55’ or 100% (75’)	See 18.20.620(D)(7)
Waterfront Recreation – Budd 3B	50’ or the east side of West Bay Drive whichever is less.	50’ or the east side of West Bay Drive whichever is less.	50’	N/A	N/A	N/A

Shoreline Environment	Shoreline Setback	Vegetation Conservation Area	Setback and VCA with maximum reduction– Non-water dependent	Incentive eligible provisions – See 18.20.620(D)(1)	Shoreline Setback and VCA reduction	Required Standards
Water Dependent Uses Reduce from 30' to 0'				Water Dependent Use	100% (30')	See 18.20.620(D)(7)
Waterfront Recreation – Cap 6	30'	30'	30'	N/A	N/A	N/A
Water Dependent Uses Reduce from 30' to 0'				Water Dependent Use	100% (30')	See 18.20.620(D)(7)
Waterfront Recreation Cap-7 (Marathon Park)	30'	30'	30'	N/A	N/A	N/A
Water Dependent Uses Reduce from 30' to 0'				Water Dependent Use	100% (30')	
Urban Intensity - Budd 3A	30'	30'	30'	N/A	N/A	N/A
Water Dependent Uses Reduce from 30' to 0'				Water Dependent Use	100% (30')	
Urban Intensity - Budd 4	30'	0'	30'	N/A	N/A	N/A
Water Dependent Uses Reduce from 30' to 0'				Water Dependent Use	100% (30')	
Urban Intensity - Budd 5A	30'	0'	30'	N/A	N/A	N/A
Water Dependent Uses Reduce from 30'-0'				Water Dependent Use	100% (30')	
Urban Intensity - Budd 6A	100'	0'	100'	N/A	N/A	N/A
Port Marine Industrial – Budd 5B	0'	0'	0'	N/A	N/A	See 18.20.620(D)(8)

3.43 18.20.630 - Agriculture

- A. The creation of new agricultural lands and/or activities is prohibited.
- B. Confinement lots, feeding operations, lot wastes, stockpiles of manure solids and storage of noxious chemicals are prohibited.
- C. Existing agricultural activities shall be allowed to continue subject to:
 - 1. Expansion or modification of existing agricultural uses shall be conducted in a manner that avoids impacts to shoreline ecological functions and processes and shall comply with critical areas regulations set forth in this chapter; and
 - 2. Appropriate farm management techniques shall be used to prevent contamination of nearby water bodies and adverse effects on plant, fish, and animal life from the application of fertilizers and pesticides.
- D. Development on agricultural land that does not meet the definition of agricultural activities and the conversion of agricultural land to nonagricultural uses shall be consistent with the environment designation, and general and specific use regulations applicable to the proposed use and not result in a net loss of shoreline ecological functions.

3.44 18.20.640 - Aquaculture

- A. Aquaculture is dependent on the use of the water area and, when consistent with control of pollution and prevention of damage to the environment, is a preferred use of the water area.
- B. Commercial aquaculture shall conform to all applicable state and federal regulations. The City may accept application documentation required by other permitting agencies for new and expanded aquaculture uses and development to minimize redundancy in permit application requirements. Additional studies or information may be required by the City, which may include but is not limited to monitoring and adaptive management plans and information on the presence of and potential impacts to, including ecological and visual impacts, existing shoreline, or water conditions and/or uses, vegetation, and overwater structures.
- C. Aquaculture activities and facilities shall be located where they do not adversely impact native eelgrass and microalgae species or other critical saltwater habitats, priority species or species of concern, or habitat for such species as defined in OMC 18.20.120. Aquaculture uses and activities shall observe all upland and aquatic buffers or setbacks required by applicable state or federal regulations. Larger buffers or other protections may be required if supported by relevant resource agencies in coordination with the Administrator. Aquaculture shall not be permitted in areas where it would result in a net loss of shoreline ecological functions, or where adverse impacts to critical saltwater habitats cannot be mitigated according to OMC 18.20.410(B).
- D. Aquaculture for the recovery of native populations is permitted when part of an approved restoration or habitat management plan complying with this Chapter.
- E. In addition to other requirements in this chapter, applications for commercial geoduck aquaculture shall meet all minimum permit requirements and contain all of the items identified in WAC 173-26-241(3)(b)(iv)(F).

3.45 18.20.650 - Boating Facilities - General Regulations

- A. Boating facilities which will adversely impact shoreline ecological functions and system-wide processes, especially in highly sensitive areas such as estuaries and other wetlands, forage fish habitat, and other critical saltwater habitats, are prohibited.
- B. Marinas and launch ramps shall be located in areas where there is adequate water mixing and flushing, and shall be designed not to retard or negatively influence flushing characteristics.
- C. Marinas and boat launch ramps shall be located only on stable shorelines where water depths are adequate to avoid the net loss of shoreline ecological functions and processes, and eliminate or minimize the need for offshore or foreshore channel construction dredging, maintenance dredging, spoil disposal, filling, beach feeding and other river, lake, harbor, and channel maintenance activities.
- D. All boating facilities, including marinas and boat yards, shall utilize effective measures to prevent the release of oil, chemicals, or other hazardous materials into the water.
- E. Marinas and boat launches shall provide physical and visual public access. This requirement may be waived by the Administrator if the applicant demonstrates that public access is not feasible in accordance with the provisions of OMC 18.20.450.
- F. Locate boating facilities where parking and access can be provided without causing adverse impacts to adjacent properties.
- G. Restrooms and garbage facilities shall be provided at marinas and boat launching facilities.
- H. Lighting for boating facilities shall be designed to minimize light and glare, especially where it is visible to adjacent properties and properties across the water. Illumination levels shall be the minimum necessary for the intended use. All light fixtures shall be fully shielded and oriented to avoid shining directly on the water and to prevent spillover offsite.
- I. Mooring of boats for extended periods shall comply with applicable state regulations.

3.46 18.20.652 - Boat Launch Ramps

- A. Boat launch ramps shall be located, designed, constructed, and maintained to reduce impacts to the shoreline. Preferred ramp designs, in order of priority, are:
 - 1. Open grid designs with minimum coverage of beach substrate;
 - 2. Seasonal ramps that can be removed and stored upland; and
 - 3. Structures with segmented pads and flexible connections that leave space for natural beach substrate and can adapt to change in beach profile.
- B. Ramps shall be located, constructed, and maintained where alterations to the existing foreshore slope can be avoided or minimized.

3.47 18.20.654 - Marinas

- A. New marinas are allowed only when they are consistent with Olympia's Shoreline Program and only when the proponent demonstrates that all of the following conditions are met:
 - 1. The proposed location is the least environmentally damaging alternative. Shallow water embayments, areas of active channel migration where dredging would be required, and areas of intact shoreline ecological functions and processes shall be avoided;

2. To the extent feasible, hard armoring is avoided (see Section C below);
 3. Potential adverse impacts on shoreline processes and ecological functions are mitigated to achieve no net loss;
 4. The area has adequate water circulation and flushing action, and the marina is designed so that it does not negatively influence flushing characteristics;
 5. The proposed location will not require excavation and/or filling of wetlands or stream channels; and
 6. Suitable public infrastructure is available, or can be made available by project completion, to support the marina.
- B. Where permitted, marinas shall be designed, constructed, and operated as follows:
1. Floating structures shall be designed to prevent grounding on tidelands. Floats shall not rest on the substrate at any time. Stoppers or stub pilings shall be used to keep the bottom of the float at least one foot above the level of the substrate;
 2. Piers and other structures shall be located, sized, and designed to minimize shading of nearshore aquatic habitats and impacts to species that use these areas;
 3. Solid structures shall be designed to provide fish passage through and along the shallow water fringe;
 4. Marina development shall be required to provide public access amenities pursuant to OMC 18.20.450, Public Access. The location and design of public access shall be determined based on a given location and the public access needs in the vicinity of the marina. Existing public access shall not be adversely impacted;
 5. Impacts to navigation shall be avoided; where unavoidable, impacts shall be mitigated;
 6. New floating homes and on water residences are prohibited. This provision shall not apply to live-aboard vessels expressly approved as part of a marina. A floating home permitted or legally established prior to January 1, 2011 and floating on water residences legally established prior to July 1, 2014 will be considered conforming uses.
 7. Live-aboard vessels are permitted in marinas only as follows:
 - a. Adequate solid waste and sanitary sewer disposal facilities are provided and maintained;
 - b. Vessels must be for residential use only;
 - c. Slips occupied by live-aboard vessels shall not exceed 20 percent of the total slips in the marina; and
 - d. Vessels must be operational for cruising.
 8. Liveaboard vessels must comply with all marine regulations, policies and procedures of the U.S. Coast Guard, and any other federal and state government agencies that pertain to health, safety and/or environmental protection. Proof of seaworthiness of the vessel and the adequacy of the mooring arrangement must be provided and laws of the City must be obeyed.
 9. Marinas shall provide restrooms and solid waste receptacles to accommodate marina users, and shall have facilities and established procedures for the collection of solid waste or sewage, other than discharge into the water;

10. Marinas shall provide pump-out, holding and/or treatment facilities for sewage contained on boats or vessels;
 11. Marina operators shall post all regulations pertaining to handling and disposal of waste, sewage, fuel and oil or toxic materials where they can be easily read by all users;
 12. Marinas shall have facilities and established procedures for the containment and recovery of spilled petroleum or toxic products; and
 13. Marina buildings shall conform to the setbacks established in Table 6.3.
- C. Where allowed, marinas that involve breakwaters shall meet all of the following design criteria:
1. Breakwaters built water-ward in a perpendicular plane to the shoreline shall not be allowed as a continuous one-piece structure;
 2. The toe of the breakwater may not extend water-ward of the Ordinary High Water Mark more than 250 feet from mean higher high water;
 3. Breakwaters shall be built so that the side slopes shall not be steeper than 1-1/2-foot horizontal to 1-foot vertical slope;
 4. The opening between a shore breakwater and an isolated breakwater shall not be less than 20 feet in width as measured at the toe of the slope;
 5. Openings must be maintained at project depth at all times in order to ensure proper circulation and fish passage;
 6. Openings may be either offset or in-line design;
 7. Openings may also be used as navigational channels;
 8. The opening must be sized (depth and/or width) so as to ensure proper circulation inside the marina configuration and exchange with the outside bay. To facilitate this exchange, the volume of the tidal prism (water present between mean low and mean high tide) shall be not less than 50 percent of the total volume of the basin;
 9. The depth of the openings shall be at least as deep as the average depth of the marina; and
 10. Openings may be baffled to protect the marina against wave action but in no instance should the baffling impede water circulation or fish movement.

3.48 18.20.656 - Boat Storage

- A. Boat storage shall be located upland unless:
1. No suitable upland locations exist for such facilities;
 2. It can be demonstrated that wet moorage would result in fewer impacts to ecological functions and processes; or
 3. It can be demonstrated that wet moorage would enhance public use of the shoreline.
- B. Marinas that provide dry upland storage shall use a launch mechanism that protects shoreline ecological functions and processes and minimizes use of shoreline areas.
- C. Dry moorage and other storage areas shall be located away from the shoreline and be landscaped with native vegetation to provide a visual buffer for adjoining dissimilar uses or scenic areas.

- D. Boathouses/Boat Storage Buildings above and landward of the Ordinary High Water Mark are permitted, and must comply with all the following:
 - 1. A view corridor of not less than 35 percent of the width of the property shall be maintained between the abutting street and waterway;
 - 2. The structure does not exceed the maximum height set forth on Table 6.2; and
 - 3. The structure shall be visually compatible with the surrounding environment.

3.49 18.20.658 - Covered Moorage

- A. New overwater covered moorage and the expansion of existing covered moorage is prohibited.

3.50 18.20.660 - Commercial Use and Development – General

- A. The construction of new and the expansion of existing overwater commercial buildings is prohibited, except construction or expansion for an authorized water dependent commercial use.
- B. Public access shall be provided for all commercial use and development pursuant to OMC 18.20.450.
- C. Vegetation conservation areas, as required per Table 6.3, shall be provided, and planted pursuant to the provisions in Section 18.20.492.
- D. Commercial development shall not impact the rights of navigation.
- E. Home occupations are not considered to be commercial uses.

3.51 18.20.663 - Water-Oriented Commercial Use and Development

- A. Water-oriented commercial use and development shall demonstrate that:
 - 1. There will be no net loss of shoreline ecological functions or processes;
 - 2. There will be no significant adverse impact on other shoreline uses, resources and/or values such as navigation, recreation, public access, and design compatibility; and
 - 3. The design, layout, and operation of the use or development meet the definition of water-oriented uses.

3.52 18.20.667 - Non-Water-Oriented Commercial Use and Development

Non-water-oriented uses may be allowed only if they are part of a mixed use development that include water-oriented uses, provide public access, and shoreline enhancement/restoration. The applicant shall demonstrate that the project will result in no net loss to shoreline ecological functions or processes. In areas zoned for commercial use, nonwater-oriented commercial development may be allowed if the site is physically separated from the shoreline by another property or right-of-way.

3.53 18.20.670 - Industrial Development

- A. Water-dependent or water-related industrial development shall be permitted when the applicant demonstrates that:
 - 1. It will not cause a net loss of shoreline ecological functions or processes;
 - 2. It will not have significant adverse impacts on other shoreline uses, resources and/or values such as navigation, recreation, and public access; and
 - 3. The design, layout, and operation of the use or development meet the definition of water-dependent or water-related uses.

- B. The construction of new non-water oriented industrial uses is prohibited. The expansion of existing non-water-related or non-water dependent industrial uses shall require a Shoreline Conditional Use Permit in accordance with OMC 18.20.250(A). Any setback area may be used for additional public access or shoreline restoration.
- C. Cooperative use of docking, parking, cargo handling and storage facilities on industrial properties shall be provided where feasible.
- D. Design port facilities to permit viewing of harbor areas from viewpoints, waterfront restaurants, and similar public facilities which would not interfere with port operations or endanger public health or safety.
- E. Industrial use or development shall be located and designed to minimize the need for initial or recurrent dredging, filling or other harbor and channel maintenance activities.
- F. Industrial use or development shall include the capability to contain and clean-up spills, leaks, discharges, or pollutants, and shall be responsible for any water or sediment pollution they cause.
- G. Water storage and handling of logs shall be limited to the marine shoreline and shall be subject to the following standards:
 - 1. Permits shall contain provisions for the cleanup of log dumping and rafting areas, and disposal of solid wastes;
 - 2. Bark and wood debris controls, together with collection and disposal facilities, must be employed at log dumps, raft building areas, and mill handling areas; and
 - 3. Permits for 'free-fall' dumping of logs shall not be issued unless the applicant can demonstrate that this method will create fewer adverse impacts than the 'gradual' method. The use of log bundling and other devices shall be used to reduce adverse impacts.
- H. Dry-land storage of logs shall be limited to the marine shoreline and shall be subject to the following standards:
 - 1. Unpaved storage areas underlain by permeable soils shall have at least a four (4) foot separation between the ground surface and the winter water table; and
 - 2. Dikes, drains, vegetative buffer strips or other means shall be used to ensure that surface runoff is collected and discharged in a manner least detrimental to water quality from the storage area. The applicant shall demonstrate that water quality standards or criteria will not be violated by such runoff discharge under any conditions of flow in nearby water sources.
- I. Sites for the storage and/or distribution of natural resource materials (e.g., rock, sand, and gravel) shall be located, designed, and operated in accordance with the provisions of Olympia's Shoreline Program. Loading areas at the water's edge shall be the minimum necessary and shall include measures to reduce erosion of the shoreline, damage to vegetation, and impacts to water quality.
- J. The construction of new, or the expansion of existing, overwater industrial buildings is prohibited, except construction or expansion for an authorized water-dependent industrial use.

3.54 18.20.680 - Recreation

- A. Water-oriented recreation uses and development are preferred shoreline uses and shall be allowed when the applicant demonstrates that they:
 - 1. Will not cause a net loss of shoreline ecological functions or processes; and

2. Will not have significant adverse impacts on other shoreline uses, resources and/or values such as navigation and public access.
- B. Park and recreation facilities may be used for events and temporary uses when the proposed use will not damage the shoreline. Structures associated with such uses shall be located as far landward as feasible and shall be removed immediately after the event is over. Shoreline areas shall be returned to pre-event conditions.
 - C. Recreational use and development shall include appropriate mitigation to minimize light and noise impacts on adjoining properties. Such measures shall include, but not be limited to, fencing, vegetative screening, increased setbacks, limited hours of operation, and other appropriate measures. Where lighting is used, the illumination levels shall be the minimum needed for the intended use. Lighting must be shielded to avoid light and glare on the water and to prevent spillover offsite.
 - D. The construction of new trails or the expansion of existing trails shall be subject to the mitigation sequencing process and shall be designed to minimize impacts to the ecological functions of the shoreline while providing access and waterfront enjoyment to the public.
 - E. All commercial recreation facilities shall conform to this section and OMC sections 18.20.660, 18.20.663, and 18.20.667.
 - F. Recreational facilities shall be located, designed, and operated in a manner consistent with the purpose of the environment designation in which they are located.

3.55 18.20.690 - Residential Use and Development

- A. New residential development, including additions to existing structures, shall meet the development standards set forth on Tables 6.2 and 6.3 particularly and this title in general.
- B. Residential development shall be designed to:
 1. Maintain or improve ecological functions and processes;
 2. Preserve and enhance native shoreline vegetation; or if vegetation is degraded or none is present, restore or enhance in accordance with the provisions of OMC 18.20.492;
 3. Control erosion and impacts to slope stability;
 4. Avoid the use of shoreline armoring at the time of construction and in the future;
 5. Preserve shoreline aesthetic character; and
 6. Minimize structural obstructions to normal public use and views of the shoreline and the water.
- C. A small waterfront deck or patio can be placed along the shoreline provided:
 1. The waterfront deck or patio and associated access path, covers less than 25 percent of the VCA and native vegetation covers a minimum of 75 percent of the VCA;
 2. Within 25 feet of the Ordinary High Water Mark, for every one square foot of waterfront deck or patio in the VCA, three square feet of vegetation shall be provided in the VCA;
 3. The total area of the waterfront deck or patio shall not exceed 400 square feet;
 4. Pervious materials are used;
 5. The deck or patio is setback a minimum of five feet from the Ordinary High Water Mark; and

- 6. The upper surface of the deck or patio is no more than two feet above grade and is not covered.
- D. Overwater residential development shall be prohibited. This provision shall not apply to live-aboard vessels expressly approved as part of a marina.
- E. New residential development of more than nine lots or units shall provide public access for use by residents of the development and the general public. Public access shall be located, designed, and managed in accordance with the provisions of OMC 18.20.450.
- F. To preserve views of the water, fences shall not be allowed within Vegetation Conservation Areas. Fences within the shoreline setback area are permitted provided they do not exceed 48 inches in height.
- G. When two or more undeveloped single-family legal building sites are contiguous within shorelines, only a single joint-use dock with a common access easement is permitted for use by those two or more residential units.
- H. For new multi-unit residential developments, only one single joint-use dock shall be allowed for the entire development.
- I. Plats and subdivisions shall be designed, configured, and developed in a manner that assures no net loss of shoreline ecological functions will occur as a result of full build out of all lots and in a manner that prevents the need for new shoreline stabilization or flood hazard reduction measures.

3.56 18.20.700 - Transportation and Trail Facilities

- A. The following provisions apply to trail, road, and railroad expansions:
 - 1. The improvements shall be located as far landward as feasible;
 - 2. The construction shall be designed to protect the adjacent shorelands against erosion, uncontrolled or polluting drainage, and other factors detrimental to the environment both during and after construction;
 - 3. The proposed width shall be the minimum necessary for the proposed improvements;
 - 4. The project shall be planned to fit the existing topography as much as feasible, thus minimizing alterations to the natural environment;
 - 5. Streams or natural drainage ways within the road corridor shall be protected, and fish passage shall not be impaired;
 - 6. All debris, overburden and other waste materials from construction shall be disposed of to prevent their entry into the adjoining water body;
 - 7. The location and design of roadway expansions shall not compromise existing and planned shoreline public access or compromise existing and planned habitat restoration or enhancement projects; and
 - 8. The project shall not result in the net loss of shoreline ecological functions or processes.
- B. Transportation facilities shall be designed to cross shoreline areas by the shortest, most direct route feasible.
- C. Access roads and/or drive lanes serving shoreline parcels shall be the minimum width necessary.
- D. Bridges may be permitted within sensitive fish and wildlife habitat only if the following conditions are met:

1. An alternative alignment is not feasible;
 2. The project is located or designed to minimize its impacts on the environment;
 3. Adverse impacts are mitigated to achieve no net loss of shoreline ecological functions and system-wide processes;
 4. Open-piling and piers required to construct the bridge may be placed water-ward of the Ordinary High Water Mark if no alternative method is feasible; and
 5. All other applicable provisions of this chapter and OMC Chapter 18.32, Critical Areas, are met.
- E. Trails and shared use paths are considered transportation facilities and are allowed within the shoreline setback, vegetation buffer, and overwater. As such, they are subject to the provisions herein including OMC 18.20.410(B). Where feasible new public trails and shared use paths shall use abandoned rail corridors to minimize disturbance of the shoreline.
- F. Special procedures for WSDOT projects:
1. Pursuant to RCW 47.01.485, the Legislature established a target of ninety (90) days review time for local governments.
 2. Pursuant to RCW 90.58.140, Washington State Department of Transportation projects that address significant public safety risks may begin twenty-one (21) days after the date of filing if all components of the project will achieve no net loss of shoreline ecological functions.

3.57 18.20.710 - Utilities

- A. Utility facilities and lines shall be designed and located to avoid net loss of shoreline ecological functions, preserve the natural landscape, and minimize conflicts with existing and planned land and shoreline uses.
- B. New public or private utilities, including both lines and associated facilities, shall be located as far landward of the Ordinary High Water Mark as feasible, preferably outside of the shoreline jurisdiction, and be located at least 30 feet landward of the OHWM, unless:
1. The utility requires a location adjacent to the water, such as a stormwater outfall; or
 2. Alternative locations are infeasible; or
 3. Utilities are serving uses and activities permitted by this chapter.
- C. Onsite utilities serving a primary use, such as a water, sewer, communication, electric, or gas line to a residence, are accessory utilities and shall be considered part of the primary use.
- D. Utilities that need water crossings shall be placed deep enough to avoid the need for bank stabilization and stream/riverbed filling both during construction and in the future due to flooding and bank erosion that may occur over time. Boring, rather than open trenches, is the preferred method of utility water crossings.
- E. Where no other options exist, in-water utility corridors may be allowed provided the corridor is located and designed to minimize impacts to shoreline ecology and processes, and adverse impacts are mitigated.
- F. When feasible, utility lines shall use existing rights-of-way, corridors and/or bridge crossings and shall avoid duplication and construction of new parallel corridors in all shoreline areas.
- G. Utility facilities shall be constructed using techniques that minimize the need for shoreline fill.

- H. New utility installations shall be planned, designed, and located to eliminate the need for structural shoreline armoring or flood hazard reduction measures.
- I. Vegetation clearing during utility installation and maintenance shall be minimized, and disturbed areas shall be restored or enhanced following project completion.
- J. Pipes that outfall directly into the water shall be designed and located to minimize adverse impacts on shoreline ecological functions and processes.
- K. Utility corridors shall be located and designed to protect scenic views. Where feasible, utilities shall be placed underground or alongside or under bridges, unless doing so would cause greater ecological impact or harm.
- L. Stormwater facilities are prohibited where alternatives are feasible. Any stormwater facility located within a minimum width vegetation conservation area shall be landscaped consistent with 'VCA' requirements.
- M. To the greatest extent feasible, new utility systems shall be co-located with other existing or planned utilities, roadways and/or railways and/or placed within already-disturbed corridors whenever feasible.

3.58 18.20.800 - Shoreline Modifications – General Provisions

- A. Shoreline modifications are structures or actions that permanently change the physical configuration or quality of the shoreline, particularly at the point where land and water meet. Shoreline modifications include, but are not limited to structures such as dikes, breakwaters, piers, docks, weirs, dredge basins, fill, bulkheads, or other actions such as clearing, grading, application of chemicals, or vegetation removal. Generally, shoreline modifications are undertaken to prepare for a shoreline use, support an upland use, or to provide stabilization or defense from erosion.
- B. Proposals for shoreline modifications are to be reviewed for compliance with the applicable use policies and regulations in OMC 18.20.600 through 18.20.710 and the applicable shoreline modification regulations of this chapter. Deviations from the minimum development standards may only be approved under a shoreline variance unless specifically stated otherwise. Shoreline modifications listed as prohibited are not eligible for consideration as a shoreline variance.
- C. Only shoreline modifications that support or protect an allowed primary structure or a legally existing shoreline use are allowed. All others are prohibited.
- D. Shoreline modifications shall not result in the loss of shoreline ecological functions or ecosystem wide processes. All proposals for shoreline modifications shall take measures to avoid or reduce ecological impacts in accordance with the mitigation sequencing priorities set forth in OMC 18.20.410(B).
- E. Shoreline modifications individually and cumulatively shall not result in a net loss of shoreline ecological functions and ecosystem-wide processes. This shall be achieved by giving preference to those types of shoreline modifications that have a lesser impact on ecological functions and requiring mitigation of identified impact resulting from said modifications.
- F. Shoreline modifications shall comply with critical area and vegetation conservation standards in this chapter.
- G. New structural flood hazard reduction measures shall only be allowed when a geotechnical analysis demonstrates that they are necessary to protect existing development, that nonstructural measures

or other protection alternatives are not feasible, and that impacts to ecological functions and priority habitats and species can be successfully mitigated so as to assure no net loss.

- H. New structural flood hazard reduction measures shall be placed landward of associated wetlands and designated Vegetation Conservation Areas, except for actions that increase ecological functions.
- I. New public structural flood hazard reduction measures shall dedicate and improve public access pathways except when public access would cause unavoidable safety or health hazards to the public, unavoidable security or use conflicts, ecological impacts that cannot be avoided or mitigated, or disproportionate and unreasonable cost.

3.59 18.20.810 - Permitted Shoreline Modifications

Shoreline modifications may be allowed by shoreline environment designation as listed in Table 7.1. Aquatic environment provisions are based on the adjacent environment designation, including permitted with a Shoreline Substantial Development Permit or exemption (P), Shoreline Conditional Use permit (C), or prohibited outright (X). This table shall be used in conjunction with the written provisions for each use. Column notes provide additional clarification and identify other applicable City regulations.

Table 7.1 – Shoreline Modifications

P – Permitted C – Conditional Use X – Prohibited X/P – Permitted only in specific cases. X/C – Allowed by conditional use only in specific cases.	Natural	All other Shoreline Environments	Aquatic (Same as adjacent shoreline environment designation)	Notes & Applicable Regulations
Dredging	C (Only for Ecological Restoration/ Enhancement Projects)	P	←	See OMC 18.20.820
Fill	C (Only for Ecological Restoration/ Enhancement Projects)	P	←	See OMC 18.20.830 through 837
Piers, Docks, Floats and Buoys	X	P	←	See OMC 18.20.840 through 18.20.848

P – Permitted C – Conditional Use X – Prohibited X/P – Permitted only in specific cases. X/C – Allowed by conditional use only in specific cases.	Natural	All other Shoreline Environments	Aquatic (Same as adjacent shoreline environment designation)	Notes & Applicable Regulations
Ecological Restoration and Enhancement	P	P	←	See OMC 18.20.850 through 18.20.855
Instream Structures	P	P	←	See OMC 18.20.857
Shoreline Stabilization Hard Armoring	X	X/P See OMC 18.20.864	←	See OMC 18.20.860 through 18.20.870
Shoreline Stabilization Soft Armoring	P	P	←	See OMC 18.20.860 through 18.20.870
Breakwaters, Jetties, Groins, and Weirs	X	X/C See OMC 18.20.874	←	See OMC 18.20.872 through 18.20.874
Stair Towers	X	X	←	Prohibited

3.60 18.20.820 - Dredging

- A. New development shall be located and designed to avoid or, if avoidance is not feasible, to minimize the need for new dredging and maintenance dredging. Where permitted, dredging shall be limited to the minimum necessary for the proposed use.
- B. Dredging is permitted for the following activities (see Table 7.1 for permit type):
 1. In conjunction with a water-dependent use;
 2. In conjunction with a bridge, navigational structure or wastewater treatment facility for which there is a documented public need and where other feasible sites or routes do not exist;
 3. Maintenance of irrigation reservoirs, drains, canals, or ditches for agricultural and stormwater purposes;
 4. Establishing, expanding, relocating, or reconfiguring navigation channels and basins where necessary to assure safe and efficient accommodation of existing navigational uses;

5. Maintenance dredging of established navigation channels and basins is restricted to maintaining previously dredged and/or existing authorized location, depth, and width. Dredging in Capitol Lake may be authorized upon approval of a management plan by agencies with jurisdiction;
 6. Restoration or enhancement of shoreline ecological processes and functions benefiting water quality and/or fish and wildlife habitat;
 7. Public access and public water-oriented recreational development and uses, including the construction of piers, docks, and swimming beaches for public use; or
 8. Trenching to allow the installation of necessary underground pipes or cables if no alternative, including boring, is feasible, and:
 - a. Impacts to fish and wildlife habitat are avoided to the maximum extent feasible; and
 - b. The utility installation does not increase or decrease the natural rate, extent, or opportunity of channel migration.
- C. Dredging and dredge material disposal activities must employ appropriate best management practices to prevent water quality impacts or other environmental degradation, in accordance with OMC 18.20.510.
- D. Dredging is prohibited in the Natural shoreline environment designation and in Aquatic designated areas adjacent to shorelands with the Natural designation except where associated with ecological restoration projects.
- E. Dredging and dredge disposal is prohibited on or in archaeological sites that are listed on the Washington State Register of Historic Places until such time that they have been released by the State Archaeologist.
- F. Dredging for the primary purpose of obtaining material for landfill is prohibited.
- G. The disposal of dredge materials in open water or on upland sites within shoreline jurisdiction is prohibited unless for beneficial uses such as shoreline restoration or enhancement.
- H. Prohibit any dredging which will damage shallow water habitat used by fish species for migration corridors, rearing, feeding and refuge, unless the project proponent demonstrates that all of the following conditions are met:
1. An alternative alignment or location is not feasible;
 2. The project is designed to minimize its impact on the environment; and
 3. The facility is in the public interest.
- I. If the project creates significant unavoidable adverse impacts, the impacts shall be mitigated by creating in-kind habitat near the project. Where in-kind replacement mitigation is not feasible, rehabilitating degraded habitat may be required. Mitigation shall be in accordance with the mitigation priorities set forth in OMC 18.20.410(B).

3.61 18.20.830 - Fill

Fill is the addition of soil, sand, rock, gravel, sediment, earth retaining structure, or other material to an area water-ward of the Ordinary High Water Mark, in wetlands or other critical areas, or on shorelands in a manner that raises the elevation or creates land above the elevation of the Ordinary High Water

Mark. Any fill activity conducted within the shoreline jurisdiction must comply with the following provisions.

3.62 18.20.833 - Shoreland Fill

- A. Fill shall be the minimum necessary to accommodate the proposed use or development or protect it from flooding, and allowed only in conjunction with approved shoreline use and development activities that are consistent with Olympia's Shoreline Program.
- B. Fill shall be permitted only when it can be demonstrated that the proposed action will not:
 - 1. Result in significant damage to water quality, fish, shellfish, and wildlife habitat;
 - 2. Adversely alter natural drainage and circulation patterns, currents, river, and tidal flows or significantly reduce flood water capacities; or
 - 3. Alter channel migration, geomorphic, or hydrologic processes.
- C. Except for beach feeding, fill shall be designed, constructed, and maintained to prevent, minimize and control all material movement, erosion, and sedimentation from the affected area.
- D. Fill for the construction of transportation facilities is allowed only when there is a demonstrated purpose and need, there are no feasible alternatives, and impacts are mitigated in accordance with mitigation priorities in OMC 18.20.410(B).
- E. Fill shall not be used as a means to increase the allowable building height by increasing the natural or finished grade, except as authorized to meet the flood elevation requirements of OMC Chapter 16.70.
- F. Fill for the sole purpose of creating land area is prohibited.
- G. The excavation of beach material for fill is prohibited.
- H. Fill within critical areas and/or critical area buffers shall comply with this chapter and the critical areas provisions of Chapter 18.32.
- I. Perimeters of fill shall be designed to eliminate the potential for erosion and be natural in appearance. Perimeter slopes shall not exceed 1 foot vertical for every 3 feet horizontal unless an engineering analysis has been provided, and the Administrator determines that the landfill blends with existing topography.
- J. Fill shall consist of clean material including sand, gravel, soil, rock, or similar material approved by the City. The use of contaminated material or construction debris is prohibited.
- K. Fill shall not be located where shoreline stabilization will be necessary to protect materials placed or removed. Disturbed areas shall be immediately stabilized and revegetated to avoid erosion and sedimentation.
- L. Fill within the shoreline jurisdiction shall be allowed in response to increases in sea level subject to all other provisions of this Master Program and the mitigation sequencing process.

3.63 18.20.837 - Fill Water-ward of Ordinary High Water Mark

- A. Fill water-ward of the Ordinary High Water Mark shall be permitted for the following purposes only, with due consideration given to specific site conditions and only as part of an approved use or development:

1. Port development for water dependent uses where other upland alternatives or structural solutions, including pile or pier supports is infeasible;
 2. Expansion or alteration of transportation facilities where there are no feasible upland alternatives;
 3. Ecological restoration or enhancement such as beach nourishment, habitat creation, or mitigation when consistent with an approved restoration or mitigation plan;
 4. Disposal of dredge material in accordance with the Dredge Material Management Program (DMMP) of the Department of Natural Resources;
 5. Construction of protective berms or other structures to prevent the inundation of water resulting from sea level rise shall be allowed subject to all other provisions of this Master Program and the mitigation sequencing process when there are no other feasible options to protect existing development;
 6. Public access; or
 7. Cleanup of contaminated sites.
- B. Fill shall be the minimum necessary for the intended use or activity.

3.64 18.20.840 - General Moorage (Piers, Docks, Floats, and Buoys) Provisions

- A. All new or modified structures shall be allowed only in support of an allowed water-dependent or public access use and must comply with all applicable local, state, and federal regulations.
- B. New docks, piers and floats shall be located, designed, and constructed in accordance with the mitigation sequencing priorities in OMC 18.20.410(B).
- C. Moorage shall be designed and located so as not to constitute a hazard to navigation or other public uses of the water. Docks, piers and floats are prohibited on lakes or marine water bodies where the distance to the opposite shore is 150 feet or less.
- D. The length, width and height of piers, docks and floats shall be no greater than that required for safety and practicality of the intended use. They shall be spaced and oriented in a manner that avoids shading of substrate below and do not create a 'wall' effect that would impair wave patterns, currents, littoral drift, or movement of aquatic life forms.
- E. Those projects which are found to block littoral drift or cause new erosion of down-drift shoreline shall be required to establish and maintain an adequate long-term beach feeding program. This may include artificially transporting sand to the down-drift side of an inlet with jetties; or artificial beach feeding in the case of breakwaters, groins, and weirs.
- F. All piers, docks, floats, or similar structures shall float at all times on the surface of the water or shall be of fixed pile construction. Floating structures shall at no time be grounded on the substrate.
- G. All moorage facilities shall be constructed and maintained in a safe and sound condition. Abandoned or unsafe structures shall be removed or promptly repaired by the owner.
- H. Docks, piers, and floats shall be constructed of materials that will not adversely affect water quality or aquatic plants and animals over the long-term. Materials for any portions of the structure that come in contact with the water shall be approved by the appropriate state agency.

- I. Lighting associated with moorage facilities shall be beamed, hooded, or directed to avoid glare on adjacent properties or water bodies. Illumination levels shall be the minimum necessary for safety. Artificial night time lighting shall be the minimum necessary for public safety.
- J. New overwater covered moorage is prohibited.
- K. The design, construction and maintenance of piers and docks shall not restrict any public access or ability to walk along the shoreline. If unavoidable, alternate means of access, such as stairs and/or upland pathways, shall be provided.
- L. Any expansion, alteration, or modification of any moorage structure which results in any increase in horizontal area of the facility shall conform to all requirements of this chapter.

3.65 18.20.842 - Moorage Buoys

- A. Moorage buoys shall use neutral buoyancy rope, mid-line float, helical anchors, or other state approved designs that have minimal adverse effects on aquatic ecosystems.
- B. In marine waters, moorage buoys shall not be located water-ward of the outer harbor line or within designated navigation channels where established by the Washington Department of Natural Resources or the U.S. Coast Guard.
- C. Only one moorage buoy shall be allowed per waterfront lot except that a shoreline variance may be sought for additional buoys for public waterfront parks or residential subdivisions where individual lots do not front on the shoreline.
- D. In lakes, moorage buoys shall not be located farther water-ward than existing buoys, or established swimming areas, and shall not interfere with navigation or use of the water.
- E. Moorage buoys must be discernible under normal daylight conditions at a minimum distance of 300 feet and must have reflectors for nighttime visibility.

3.66 18.20.844 - Residential Docks, Piers or Floats

- A. Shared residential moorage is required unless the applicant demonstrates why shared moorage is not feasible prior to approval of a residential pier, dock, or float. Considerations include but are not limited to proximity to other docks and willingness of adjoining property owners to participate in shared moorage.
- B. Where moorage is proposed for new subdivisions of more than two lots, or new multi-family development of more than two dwelling units, moorage shall be shared between lots or units.
- C. Shared moorage proposed for lease to five or more upland property owners shall be reviewed as a marina in accordance with the provisions of OMC 18.20.654.
- D. Where individual moorage is allowed, only one type of moorage facility shall be allowed per waterfront lot. The use of residential boat lifts is permitted.
- E. A new joint use pier, dock, or float may be permitted on a community recreation lot shared by a number of waterfront or upland lots. Individual recreational floats (not for moorage) are permitted as long as they are not located farther water-ward than existing floats or established swimming areas.
- F. If moorage is anticipated after initial residential development (including plats, multi-family developments, and mixed use developments), the applicant shall specifically identify and reserve an area for the future moorage.

- G. All docks, piers, and floats shall be painted, marked with reflectors, or otherwise identified so that they are visible during day or night.
- H. Placing fill water-ward of the Ordinary High Water Mark for purposes of constructing a dock or pier is prohibited.

3.67 18.20.846 - Marine Docks and Piers

- A. In marine waters, the maximum length of new or expanded piers or docks for private or recreational use shall not exceed 100 feet as measured from the mean higher-high water mark and not exceed a depth of -3 feet as measured from mean lower low water mark. If this is not sufficient depth to reach the desired depth for moorage, a buoy shall be used.
- B. The location, design, and construction of new or repaired private or recreational piers or docks in marine waters shall comply with all applicable state and federal regulations and the following standards:
 - 1. Docks and piers shall be set back from the side property line twenty (20) feet on marine waters, unless designated for shared use between adjacent property owners;
 - 2. Residential piers shall not exceed 4 feet in width. The dock/pier surface must be grated at the percentage required by the Department of Fish and Wildlife in WAC 220-660-380;
 - 3. The width of ramps connecting the pier and dock shall not exceed 4 feet in width and shall consist of a 100 percent grated surface;
 - 4. Docks shall not rest on the tidal substrate at any time. Stoppers on the pilings anchoring the dock or stub pilings shall be installed so that the bottom of the dock's flotation is a minimum of 1 foot above the level of the beach substrate;
 - 5. If a dock is positioned perpendicular to the ramp, a small dock may be installed to accommodate the movement of the ramp due to tidal fluctuations. The dimensions of the small dock shall not exceed 6 feet in width and 10 feet in length;
 - 6. New or modified residential piers and docks as well as watercraft operation and moorage shall be located to avoid physical impacts to aquatic habitat. At a minimum pier and dock proposals shall ensure that structures are designed and located to protect critical saltwater habitat, and saltwater habitats of special concern as defined by the Department of Fish and Wildlife in WAC 220-660-310;
 - 7. Construction materials shall not include wood treated with creosote, pentachlorophenol, or other similarly toxic materials.
- C. There is no maximum length and width for commercial or industrial piers or docks; however, such piers and docks may not exceed the minimum size necessary for the intended use. The applicant must demonstrate that the proposed size and configuration is the minimum necessary and complies with all other provisions of this chapter.
- D. Docks, piers, floats and mooring buoys shall not intrude into or over critical saltwater habitats except when the following conditions are met and documented:
 - 1. Avoidance by an alternative alignment or location is not feasible.

2. Including any required mitigation, the project shall not result in a net loss of ecological functions associated with critical saltwater habitat.
3. For public or commercial docks, the public's need for such a structure must be clearly demonstrated.
4. All over-water and near shore developments in marine waters shall conduct an inventory of the site and adjacent beach sections to assess the presence of critical saltwater habitats and functions. Project-specific inventory and survey work shall follow scientifically accepted survey protocols and take place during the appropriate time of the year depending on species present, based on input from resource agencies.

3.68 18.20.847 - Fresh Water Docks and Piers

- A. In fresh water, the length of new or expanded piers or docks for private or recreational use shall not exceed fifty (50) feet as measured from the Ordinary High Water Mark.
- B. The location, design, and construction of new or repaired private or recreational piers or docks in fresh waters shall comply with all applicable state and federal regulations and the following standards:
 1. Only piers or ramps can be located within the first thirty (30) feet water-ward of the Ordinary High Water Mark;
 2. Pier and dock surface coverage shall not exceed the following:
 - a. 480 square feet for single use structures;
 - b. 700 square feet for two-party joint use; and
 - c. 1,000 square feet for residential pier/docks serving three or more residences.
 3. Docks and piers shall not exceed four feet in width, except an additional two (2) feet of width can be allowed without a variance for a property owner with a condition that qualifies for state disability accommodation. The dock/pier surface area must be grated at the percentage required by the Department of Fish and Wildlife in WAC 220-660-140;
 4. Docks shall not rest on the fresh water substrate at any time. Stoppers on the pilings anchoring the dock or stub pilings shall be installed so that the bottom of the dock's flotation is a minimum of one foot above the level of the beach substrate;
 5. Except for docks with floats, the bottom of all structures shall be a minimum of one and one-half feet above the water level established by the Ordinary High Water Mark;
 6. Floats or ells shall be oriented and grated at the percentage as required in a Hydraulic Permit Approval (HPA) from the Department of Fish and Wildlife.
 7. Construction materials shall be limited to untreated wood, approved plastic composites, concrete, or steel.
- C. Docks and piers shall be setback from the side property line ten (10) feet on fresh water.
- D. The required side yard setbacks may be waived with a shared use moorage facility for two or more property owners. The applicant or proponents shall file with the Thurston County Auditor a legally enforceable joint use agreement or other legal instrument that addresses the following as a condition of permit approval:

1. Apportionment of construction and maintenance expenses;
2. Maintenance responsibilities for the facility and associated upland area in perpetuity by identified responsible parties;
3. Easements and liability agreements;
4. Use restrictions; and
5. The easement must acknowledge that each property owner is giving up the right to construct a separate single-family pier.

3.69 18.20.848 - Float Standards

- A. Single property owner recreational floats shall not exceed 64 square feet. Multiple property owner recreational floats shall not exceed 96 square feet.
- B. The standards for private recreational floats are as follows:
 1. Floats anchored offshore and used for residential recreational uses shall comply with the following standards:
 - a. Applicants shall contact the Washington Department of Natural Resources to inquire on the need for an aquatic lease for locating recreational floats within state aquatic areas; and
 - b. When feasible floats shall be removed seasonally and placed in an appropriate unvegetated upland location.
 2. Floats shall be located as close to shore as feasible without interfering with natural beach processes or negatively affecting aquatic vegetation.
 3. Floats shall not rest on the substrate at any time. In marine waters, floats shall be located (anchored) at sufficient depth to maintain a minimum of one foot of draft between the float and the beach substrate at low tide.
- C. Public recreational floats shall be the minimum size and dimensions necessary for the intended use, e.g., boat moorage, swimming area, public access. In no case shall a single float exceed 200 square feet.
- D. Public and private recreational floats shall comply with the following standards:
 1. Float orientation and the incorporation of functional grating into the float surface area shall be in accordance with Department of Fish and Wildlife requirements in WAC 220-660-140 for freshwater floats or WAC 220-660-380 for marine floats.
 2. For recreational floats anchored utilizing an embedded anchor; anchor lines shall not rest on or disturb the substrate at any time.
- E. Recreation floats must be discernible under normal daylight conditions at a minimum of 100 yards and must have reflectors for nighttime visibility.
- F. Only one recreational float shall be allowed per waterfront lot except that a shoreline variance may be sought for additional floats for public waterfront parks or residential subdivisions where individual lots do not front on the shoreline.

3.70 18.20.850 - Shoreline Restoration and Enhancement – Intent

Restoration is the reestablishment or upgrading of impaired ecological shoreline processes or functions. This may be accomplished through measures including, but not limited to, revegetation, removal of intrusive shoreline structures, and removal or treatment of toxic materials. Restoration does not imply a requirement for returning the shoreline area to original or pre-European settlement conditions.

Enhancement includes actions performed within an existing degraded shoreline, critical area and/or buffer to intentionally increase or augment one or more functions or values of the existing area. Enhancement actions include, but are not limited to, increasing plant diversity and cover, increasing wildlife habitat and structural complexity (snags, woody debris), installing environmentally compatible erosion controls, or removing non-indigenous plant or animal species. The 2016 West Bay Environmental Restoration Assessment provides conceptual restoration approaches for some shoreline reaches.

3.71 18.20.855 - Shoreline Restoration and Enhancement - General Provisions

- A. Restoration and enhancement shall be allowed on all shorelines, and carried out by the applicant/proponent in accordance with an approved restoration/enhancement plan. Such plans shall be designed, constructed and maintained in accordance with the policies and regulations of Olympia's Shoreline Program. Restoration and enhancement projects restore the natural character and ecological functions of the shoreline; and must be consistent with the implementation of a comprehensive restoration plan approved by the City and/or Department of Ecology, or the Administrator must find that the project provides an ecological benefit and is consistent with Olympia's Shoreline Program.
- B. The City shall coordinate with other local, state, and federal regulatory agencies, tribes, and non-government organizations to ensure that mitigation actions are likely to be successful and achieve beneficial ecological outcomes.
- C. Shoreline property owners that remove hard-armoring or otherwise restore the shoreline prior to development may apply such restoration toward any mitigation required at the time of development provided that:
 - 1. The applicant/property owner can provide conclusive evidence of the pre- and post-restoration conditions using photographs, reports, plans, affidavits, or similar evidence;
 - 2. The City can confirm via site inspection, photographs, affidavits, or other evidence that the restoration actions have improved shoreline conditions;
 - 3. The work has occurred on the same site within five years of the proposed development; and
 - 4. The applicant/property owner provides assurances that the restoration area will be preserved in perpetuity. Such assurance can be in the form of a notice on title, conservation easement, or similar mechanism.
- D. Shoreline restoration and enhancement may be permitted if the applicant demonstrates that no significant change to sediment transport will result and that the restoration or enhancement will not adversely affect shoreline ecological processes, water quality, properties, or habitat.
- E. Shoreline restoration and enhancement projects shall use best available science and management practices.

- F. Restoration shall be carried out in accordance with an approved shoreline restoration plan and in accordance with the policies and regulations of Olympia's Shoreline Program.
- G. Restoration and enhancement projects shall be designed to minimize maintenance over time.
- H. Restoration and enhancement projects shall be designed, constructed, and maintained to avoid the use of shoreline stabilization measures. Where such measures cannot be avoided, bioengineering shall be used rather than bulkheads or other stabilization measures, unless it can be demonstrated that there are no feasible options to achieve the intended result. Restoration and enhancement projects that include shoreline modification actions shall be authorized provided the primary purpose of such actions is clearly restoration of the natural character and ecological functions of the shoreline.
- I. Restoration and enhancement projects shall not extend water-ward more than the minimum necessary to achieve the intended result and shall not result in the creation of additional upland area.
- J. In accordance with RCW 90.58.580, a Substantial Development Permit is not required for development on land that is brought under shoreline jurisdiction due to a shoreline restoration project. However, projects are still required to comply with the regulations of this Master Plan.
- K. Projects taking place on lands that are brought into shoreline jurisdiction due to a shoreline restoration project that caused a landward shift of the OHWM may apply to the Administrator for relief from the SMP development standards and use regulations under the provisions of RCW 90.58.580. Any relief granted shall be strictly in accordance with the limited provisions of RCW 90.58.580, including the specific approval of the Department of Ecology.

3.72 18.20.857 - Instream Structures

Instream structures are permitted only when necessary for a restoration or enhancement project, to improve fish passage, or for permitted transportation or utility crossings and subject to the following requirements:

- A. Instream projects shall be evaluated for their potential adverse impacts upon the physical, hydrological, and biological characteristics as well as effects on instream/riparian habitat;
- B. Instream structures and associated facilities shall be designed, constructed, and maintained in a manner that will not degrade the quality of affected waters or instream/riparian habitat value, and minimizes adverse impacts to surrounding areas;
- C. The location and design of instream structures shall give due consideration to the full range of public interests, watershed functions and processes, and environmental concerns, with special emphasis on protecting and restoring priority habitats and species;
- D. Instream structures shall be designed based on an analysis of the reach or reaches to avoid the need for structural shoreline armoring; and
- E. Instream structures and associated facilities shall provide for the protection and preservation of natural and cultural resources including but not limited to, sensitive areas such as wetlands, waterfalls, erosion/accretion shore forms, and natural scenic vistas.

3.73 18.20.860 - Shoreline Stabilization - Intent

Shoreline stabilization includes actions taken to address erosion impacts to property, dwellings, businesses, or structures caused by natural processes such as current, flood, tides, wind, or wave action.

These include structural and nonstructural methods. Nonstructural methods include building setbacks, relocation of the structure to be protected, erosion and groundwater management, and planning and regulatory measures to avoid the need for structural stabilization. Structural methods include 'hard' and 'soft' measures, defined as:

- A. Hard structural shoreline stabilization (also referred to as 'hard' armoring) means erosion control measures using hardened structures that armor and stabilize the shoreline from further erosion. Examples of hard armoring include concrete, boulders, dimensional lumber, or other materials to construct linear, sometimes vertical, faces. These include bulkhead, rip-rap, groins, revetments, and similar structures.
- B. Soft structural shoreline stabilization (also referred to as 'soft' armoring) means erosion control practices that contribute to restoration, protection, or enhancement of shoreline ecological functions. Examples of soft armoring include a mix of gravel, cobbles, boulders, logs, and native vegetation placed to provide stability in a non-linear, sloping arrangement.

3.74 18.20.862 - Shoreline Stabilization - New Development

- A. New shoreline use and development including new lots shall be located and designed to eliminate the need for concurrent or future shoreline stabilization to the extent feasible. Lots created through subdivision processes shall not require shorelines stabilization for reasonable development to occur, as demonstrated through a geotechnical analysis of the site and shoreline characteristics. New development that would require shoreline stabilization which results in significant impacts to adjacent or down current properties will not be allowed.
- B. New non-water dependent development, including single-family residences, that includes new structural shoreline stabilization will not be allowed unless all of the conditions below can be met:
 - 1. The need to protect the primary structure from damage due to erosion is demonstrated through a geotechnical report. The damage must be caused by natural processes, such as tidal actions, currents, and waves;
 - 2. The erosion is not being caused by upland conditions such as loss of vegetation and drainage;
 - 3. Nonstructural measures such as placing the development further from the shoreline, planting vegetation, or installing onsite drainage improvements are not feasible or sufficient; and
 - 4. The erosion control structure will not result in a net loss of shoreline ecological functions or processes.
- C. New water dependent development or new structural shoreline stabilization for existing water dependent development will not be allowed unless all of the conditions in B above are met. However, the considerations of placing the development further from the shoreline and erosion being caused by natural processes do not apply to water dependent development that can demonstrate its need for a waterfront location due to the nature of its operations.

3.75 18.20.864 - New or Expanded Shoreline Stabilization Measures

- A. New or enlarged structural stabilization measures are prohibited except where necessary to protect or support legally existing primary structures or shoreline uses, in support of water dependent uses, for human safety, for restoration or enhancement activities, or remediation of contaminated sites.
- B. Structural shoreline armoring for the sole purpose of leveling or extending property or creating or preserving residential lawns, yards, or landscaping shall be prohibited. Where hard shoreline

armoring already exists, property owners are encouraged to remove it and replace with soft armoring, or if conditions allow, return the shoreline to a natural condition.

- C. New or enlarged structural shoreline stabilization measures to protect legally existing primary structures or shoreline uses are prohibited unless there is conclusive evidence, documented by a geotechnical analysis that the structure is in danger from shoreline erosion caused by tidal action, currents, or waves. Further:
 - 1. Normal sloughing, erosion of steep bluffs, shoreline erosion of steep bluffs, or shoreline erosion itself, without a scientific or geotechnical analysis that demonstrates a danger exists to an existing development or residence, is not a demonstration of need;
 - 2. The geotechnical analysis shall evaluate onsite drainage issues and address drainage problems away from the shoreline edge before considering structural shoreline stabilization;
 - 3. The design of the stabilization structure shall take into consideration erosion rates, onsite drainage issues, vegetation enhancement, and low-impact development measures as a means of reducing erosion;
 - 4. The analysis must demonstrate that nonstructural measures, planting vegetation, or installing onsite drainage improvements are not feasible or not likely to be sufficient; and
 - 5. The erosion control structure shall not result in a net loss of shoreline ecological functions.
 - 6. In geologically hazardous areas, stabilization structures or measures may only be allowed when no alternative, including relocation or reconstruction of existing structures, is found to be feasible and less expensive than the proposed stabilization measure.
- D. The use of hard structural stabilization measures such as bulkheads are prohibited unless demonstrated in a geotechnical analysis that soft structural stabilization measures (bioengineering) or non-structural measures (increased setbacks) are not feasible.
- E. Where structural shoreline stabilization measures are necessary, the size of the stabilization structure shall be the minimum necessary. The Administrator may require that the size and design of the structure be modified to reduce impacts to ecological functions.
- F. Where adverse impacts to shoreline ecological functions cannot be avoided, mitigation shall be required in accordance with mitigation sequence priorities set forth in OMC 18.20.410(B).
- G. In order to determine appropriate mitigation measures, the Administrator may require environmental information and analysis, including documentation of existing conditions, ecological functions, and anticipated impacts, along with a mitigation plan outlining how proposed mitigation measures would result in no net loss of shoreline ecological functions.
- H. Shoreline stabilization measures that incorporate ecological restoration or enhancement through the placement of rocks, sand or gravel, and native shoreline vegetation are strongly encouraged. Soft shoreline stabilization that restores ecological functions may be permitted.
- I. Following completion of shoreline modification activities, disturbed areas shall be restored using native vegetation (see OMC 18.20.495 for specific provisions).
- J. Publicly financed or subsidized erosion control measures shall not restrict public access except where such access is inappropriate or infeasible, and shall incorporate public access and ecological restoration to the extent feasible.

3.76 18.20.866 - Shoreline Stabilization - Replacement and Repair

- A. For purposes of this section, “replacement” means the construction of a new structure to perform a shoreline stabilization function to replace an existing structure which no longer adequately serves its purpose. Additions to or increases in size of existing shoreline stabilization measures shall be considered new structures.
- B. An existing shoreline stabilization structure may be replaced with a similar structure if there is a demonstrated need to protect principal uses or structures from erosion caused by currents, tidal action, or waves. The Administrator may waive the requirement for a geotechnical analysis if the applicant demonstrates through the use of photographs, site or grading plans, or other evidence that nonstructural measures are not feasible.
- C. The replacement structure shall be designed, located, sized, and constructed to assure no net loss of shoreline ecological functions.
- D. Replacement walls or bulkheads shall not encroach water-ward of the Ordinary High Water Mark or existing structure unless the residence was occupied prior to January 1, 1992, and there are over-riding safety or environmental concerns. In such cases, the replacement structure shall abut the existing stabilization structure. Where a net loss of ecological functions associated with critical saltwater habitat would occur by leaving the existing structure, it must be removed as part of the replacement measure.
- E. Soft shoreline stabilization measures that provide restoration of shoreline ecological functions may be permitted water-ward of the Ordinary High Water Mark.

3.77 18.20.868 - Design of Shoreline Stabilization Measures

- A. Shoreline stabilization measures shall be designed by a Professional Engineer, registered as such in the State of Washington and shall conform to all applicable City and state policies and regulations, including the Washington State Department of Fish and Wildlife criteria governing the design of shoreline stabilization.
- B. The size of shoreline stabilization structures shall be the minimum necessary to protect the primary use or structure.
 - 1. Within the project area of the Olympia Sea Level Rise Response Plan (2019), consideration of sea level rise projections may be used to determine the minimum necessary size of shoreline stabilization structures in accordance with the plan.
- C. To protect their structural integrity, shoreline stabilization measures shall be designed, constructed, and maintained to allow drainage of surface or groundwater away from the structures.
- D. Shoreline stabilization structures shall be located to tie in flush with existing bulkheads on adjacent properties, except when adjoining bulkheads do not comply with the standards set forth in this Chapter.
- E. Stairs may be built as an integral component of a bulkhead but shall not extend water-ward of the bulkhead unless necessary to directly access a pier or dock.
- F. Materials used for shoreline stabilization structures shall be durable, erosion resistant, and not harmful to the environment. The following materials shall be prohibited: demolition debris, derelict vehicles, tires, concrete rubble, or any other materials that contain toxic substances or create visual blight along the shoreline.
- G. Where hard armoring is approved, materials shall be used in the following order of priority:

1. Large stones, with vegetation planted in the gaps. Stone should not be stacked any steeper than a 3:1 slope;
 2. Timbers or logs that have not been treated with toxic materials;
 3. Stacked masonry block;
 4. Cast-in-place reinforced concrete.
- H. Bioengineering is a preferred method of protecting upland property and structures or to maintain access to an authorized shoreline use. Bioengineering combines structural, biological, and ecological concepts to construct living structures that stabilize the soil to control erosion using live plant materials as a main, but not only, structural component.
1. Bioengineering shall generally be used when a geotechnical analysis confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as within three years.
 2. Bioengineering projects shall incorporate all of the following:
 - a. All bioengineering projects shall use a diverse variety of native plant materials, including trees, shrubs, and grasses, unless demonstrated infeasible for the particular site;
 - b. All cleared areas shall be replanted following construction and irrigated (if necessary) to ensure that all vegetation is fully re-established within three years. Areas that fail to adequately reestablish vegetation shall be replanted with approved plant materials until such time as the plantings are viable;
 - c. If no VCA is established in OMC 18.20.620 Table 6.3, a minimum five (5) foot vegetated buffer shall be provided landward of the project limits to allow bank protection plantings to become established. The buffers shall not be disturbed for a minimum of three years.
 - d. All bioengineering projects shall be monitored and maintained, as necessary. Areas damaged by pests and/or the elements shall be promptly repaired; and
 - e. All construction and planting activities shall be scheduled to minimize impacts to water quality, fish and wildlife, and aquatic and upland habitat and to optimize survival of new vegetation.
- I. Structural stabilization shall be located, designed, and constructed in accordance with mitigation sequencing in OMC 18.20.410(B) to minimize adverse impacts to shoreline ecological functions and processes. Protection of adjacent property and existing development shall also be considered in the design and location of structural stabilization measures.

3.78 18.20.870 - Shoreline Stabilization Reports

- A. Geotechnical reports prepared pursuant to this section that address the need to prevent potential damage to a primary structure shall address the necessity for shoreline stabilization by estimating time frames and rates of erosion and report on the urgency associated with the specific situation. As a general matter, hard armoring solutions should not be authorized except when a report confirms a significant possibility that such a structure will be damaged within three years as a result of shoreline erosion in the absence of such hard armoring measures, or where waiting until the need is immediate would foreclose the opportunity to use measures that avoid impacts on ecological functions.

- B. Where the geotechnical report confirms a need to prevent potential damage to a primary structure, but the need is not as immediate as three years, the report may still be used to justify more immediate authorization to protect against erosion using soft armoring.

3.79 18.20.872 - Breakwaters, Jetties, Groins, and Weirs - General Provisions

- A. Jetties and breakwaters are prohibited except as an integral component of a water-dependent use such as a marina or port, and only when there is a documented need for the protection of navigation, a harbor, water dependent industrial activities, a marina, fisheries or habitat enhancement project, or a comprehensive beach management plan.
- B. Where permitted, floating, portable, or submerged breakwater structures, or smaller discontinuous structures shall be used only when it has been demonstrated that they will not impact shoreline ecology or processes such as littoral drift or cause erosion of down drift beaches.
- C. The location and design of breakwaters, jetties, groins, and weirs shall be subject to mitigation sequencing outlined in OMC 18.20.410(B).
- D. The design of breakwaters, jetties, groins and weirs shall conform to all applicable requirements established by the Washington Department of Fish and Wildlife and the U.S. Army Corps of Engineers.
- E. The design of breakwaters, jetties, groins and weirs shall be certified by a registered civil engineer.
- F. Breakwaters, jetties, groins and weirs shall not intrude into critical salt water habitats or into salmon and steelhead habitats unless the following conditions are met:
 - 1. An alternative location or alignment is not feasible;
 - 2. The project is designed to minimize its impacts on the environment;
 - 3. All adverse impacts will be mitigated;
 - 4. The project, including associated mitigation, will result in no net loss of ecological functions associated with the critical saltwater habitat;
 - 5. The facility is in the public interest and consistent with the state's interest in resource protection and species recovery, and
 - 6. If the project results in significant unavoidable adverse impacts, the impacts are mitigated by creating in-kind replacement habitat near the project. Where in-kind replacement mitigation is not feasible, rehabilitating degraded habitat may be required as a substitute.
- G. Breakwaters, jetties, groins, and weirs shall be constructed of suitable materials. The use of solid waste, junk or abandoned automobiles, asphalt or any building demolition debris is prohibited.
- H. The movement of sand or beach materials shall be evaluated during permit review for breakwaters, jetties, groins and weirs. Those projects which are found to block littoral drift or cause new erosion of down-drift shoreline shall be required to establish and maintain an adequate long-term beach feeding program. This may include artificially transporting sand to the down-drift side of an inlet with jetties; or artificial beach feeding in the case of breakwaters, groins, and weirs.
- I. Breakwaters, jetties, groins, and weirs shall incorporate provisions for public access when feasible.
- J. Breakwaters, jetties, groins and weirs shall be designed to protect critical areas and shall provide for mitigation according to the mitigation sequence in OMC 18.20.410 (B).

3.80 18.20.874 - Breakwaters, Jetties, Groins, and Weirs - Environment Designations

Breakwaters, jetties, groins and weirs are permitted only adjacent to the Urban Intensity and Port Marine Industrial shoreline environments, are subject to a shoreline conditional use permit, and shall be approved only when there is a documented need for the protection of navigation, a harbor, water dependent industrial activities, a marina, fisheries, or habitat enhancement project.

3.81 8.20.900 - Existing Buildings and Uses within Shorelines

- A. Subject to the provisions of this Chapter, a use, lot, or structure lawfully existing prior to the effective date of this Shoreline Program or any amendment thereto, which is rendered nonconforming by this Shoreline Program may continue and may also be repaired, remodeled, and/or replaced in the manner and to the extent that it existed upon the effective date of this Shoreline Program. Such structures may also be expanded in accordance with the provisions of this Section 18.20.910.
- B. In addition to and independent of the provisions below, existing roads, trails, utility lines and similar linear facilities, together with any associated facilities such as pump stations or stormwater treatment ponds, which do not conform to the provisions of OMC Chapter 18.20 may expand within existing easements and rights-of-ways. Modification or expansion outside of existing easements or rights-of-way which would otherwise be prohibited may be authorized by the decision maker upon finding there is no feasible alternative, the development is necessary for the public welfare, as proposed and designed includes appropriate mitigation, and the development is not likely to result in a net loss of shoreline ecological functions.

3.82 18.20.910 - Alteration of Nonconforming Structures in Shoreline Jurisdiction

- A. Shoreline Structures – The following regulations apply to nonconforming structures located in shoreline jurisdiction. Alterations pursuant to this section shall not result in a net loss of shoreline ecological functions and processes. The applicant shall obtain all required permits or approvals prior to construction. All alterations shall comply with applicable development regulations.
 - 1. Structures within Shoreline Setbacks - Alteration of structures located landward of the Ordinary High Water Mark within a required shoreline setback is limited to:
 - a. For structures located partially within the shoreline setback, alterations shall be limited to the addition of height and expansion into areas outside the shoreline setback.
 - b. For structures located entirely within the shoreline setbacks, alterations shall be allowed for the addition of height, or expansion on the upland side of the structure, or both.
 - c. Interior and exterior remodels and the addition of upper stories are permitted. Except as provided above, such additions shall not extend beyond the existing or approved building footprint. Any expansion of nonconforming structures that further encroach on the Ordinary High Water Mark setback by decreasing the distance between the structure and the Ordinary High Water mark shall require a shoreline variance.
 - 2. Overwater Structures – Alteration of structures located water-ward of the Ordinary High Water Mark is prohibited except:
 - a. Alterations to the footprint or building envelope may be permitted when required by Washington State Department of Natural Resources for light penetration;

- b. Alterations that do not increase or expand the building footprint nor increase the height are permitted; and
 - c. Existing covered moorage may be maintained, repaired, or replaced pursuant to WAC 173-27-040.
 - 3. Structures within Vegetation Conservation Areas. Alteration of structures located landward of the Ordinary High Water within a required Vegetation Conservation Area (VCA) that include expansion of the building footprint is prohibited. Only interior and exterior remodels and the addition of upper stories are permitted.
 - 4. Structurally raising the floor elevation of an existing legally established nonconforming structure, which is necessary to protect the structure from flooding due to sea level rise, shall be allowed in accordance with the height limits set forth in Table 6.2. Raising the floor elevation is not allowed for legally established nonconforming overwater structures.
- B. Unintentionally damaged or destroyed nonconforming structures.
- 1. In the event that a structure or building that does not conform to the shoreline setback is damaged or destroyed by fire, explosion, act of nature, or act of public enemy, the structure may be reconstructed within the existing footprint. Any modifications outside of the existing footprint must comply with OMC 18.20.910.
 - 2. In order to take advantage of this section, a complete application for a building permit must be submitted within one year of the unintended event that caused the destruction of the structure. The applicant loses their rights under this subsection if the building permit lapses without construction of the structure proposed under the building permit.

3.83 18.20.920 - Existing Nonconforming Shoreline Uses

- A. Conversion and discontinuation of nonconforming uses in shoreline jurisdiction shall be governed by OMC 18.37.060(A) and (E).
- B. Expansion of nonconforming shoreline uses. The hearings examiner may authorize expansion of a use that does not conform to the Shoreline Master Program if the applicant demonstrates all of the following:
 - 1. The use clearly requires a specific site location on the shoreline not provided for under this chapter, and
 - 2. Extraordinary circumstances preclude reasonable use of the property in a manner consistent with this chapter. Provided, however, that expansion of uses in shoreline jurisdiction that are also nonconforming with zoning use restrictions are not authorized by this section. See OMC 18.37.060(B).

3.84 18.20.930 - Existing Nonconforming Shoreline Lots

- A. An undeveloped lot, tract, parcel, site, or division of land located landward of the Ordinary High Water Mark which was established in accordance with local and state subdivision requirements prior to the effective date of the Shoreline Master Program which does not conform to the present lot size standards of the Program may be developed if the lot conforms with OMC 18.37.080 and the development conforms to all other requirements of the Master Program.

Appendix A – Restoration Plan

See [separate document](#), dated June 12, 2012
Posted on City webpage at olympiawa.gov/smp

Appendix B - Shoreline Environmental Designations - Boundary Descriptions

See [separate document](#)
Posted on City webpage at olympiawa.gov/smp

APPENDIX A: RESTORATION PLAN

June 12, 2012



ACKNOWLEDGEMENTS

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CHAPTER 1: INTRODUCTION

For cities containing any shorelines with impaired ecological functions, Shoreline Master Programs shall include goals, policies, and actions for restoration of such impaired ecological functions (WAC 173-26-186(8)(c).) Specific goals and actions for restoration, as well as existing policies and programs contributing to restoration, shall be identified in an implementable document with a scientifically based prioritization framework. For the City of Olympia, this document is intended to be supportive of planning efforts, and it is expected that this document will be dynamic and able to be updated and amended as existing conditions, scientific data, lead entities, and funding sources develop and evolve.

Restoration is defined under the shoreline guidelines as *“reestablishment or upgrading of impaired ecological shoreline processes or functions.”* While the plan is intended to achieve overall improvements in shoreline ecological functions over time, it is important to note that is in reference to status upon adoption of the master program, and does not imply returning shoreline areas to aboriginal or pre-European settlement conditions.

The existing *Shoreline Master Program for the Thurston Region* was adopted in 1976, and was comprehensively updated in 1984 and 1990. The existing Program does not address restoration in a specific chapter or component. The minimal restoration requirements that were addressed were primarily included in the Urban Waterfront Plan (1993) as Mitigation and Enhancement regulations.

To meet current Shoreline Master Program requirements, at a minimum the Restoration Plan must consider and address the following subjects (WAC 173-26-201(2)(f)):

- Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;
- Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;
- Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;
- Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;
- Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;
Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

Inclusive of the elements listed above, the Restoration Plan is intended to identify shoreline, or areas upland that impact shorelines, that need to be restored to a healthy and functioning condition. The Plan is for the purpose of identifying potential projects and programs that would contribute or achieve restoration for those degraded areas, and can serve as a resource for government agencies, non-profit organizations, new development contractors, and others who need or want to identify potential restoration projects.

CHAPTER 2: SHORELINE INVENTORY SUMMARY

A Shoreline Inventory prepared by Thurston County Regional Planning Council (TRPC) and Shoreline Analysis and Characterization Report prepared by ESA (2008) for TRPC, provide the technical and scientific basis for establishing restoration goals, objectives, and priorities. Specifically, the Shoreline Analysis & Characterization Report provides documentation that assists in identifying existing conditions, evaluating existing functions and values of shoreline resources, and exploring the opportunities for conservation and restoration.

2.1. Shoreline Jurisdiction

The provisions of the Shoreline Program apply to all shorelines of the state, all shorelines of statewide significance and shorelands as defined in RCW 90.58.030. Shorelines under SMA jurisdiction within the City of Olympia, not including Olympia Urban Growth Area (UGA), include: Budd Inlet, Black Lake Drainage Ditch, Percival Creek, Capitol Lake, Chambers Lake, Grass Lake, Ken Lake, and Ward Lake.

2.2. Inventory

A. Budd Inlet

Budd Inlet is located at the southernmost end of South Puget Sound. It encompasses both the West Bay and East Bay sub-basins within the Deschutes River watershed, and includes several marinas and an international shipping port. For the surrounding community, Budd Inlet is a source of economic and tourism revenue, outdoor recreation, cultural identity, and a visually stunning backdrop for daily life.

1. Existing Land Use

Land uses within city limits along Budd Inlet vary greatly. The shoreline of Budd Inlet is zoned into multiple land-use categories, including commercial, government (Port of Olympia), industrial, moderate density single-family residential, multifamily residential, and parks.

Future development is shifting from industrial uses to mixed-use residential and commercial predominantly along West Bay Drive, and the eastern portion of the Port Peninsula. Redevelopment downtown is also likely to occur. The largest parcels of undeveloped or underdeveloped property exist along West Bay drive, approximately half of which have been light or heavy industrial uses that are no longer in use. Other lands are either owned by the City of Olympia Parks, Arts and Recreation Department, or the Port of Olympia.

2. Parks and Open Space/ Public Access

Priest Point Park: Priest Point Park is a 314-acre city park that came into city ownership in 1905. Priest Point has the most intact natural shoreline conditions found in lower Budd Inlet. In particular, the steep slopes along the shoreline provide beach sediment for forage fish, the Ellis Cove estuary is relatively intact with a salmon-bearing stream, there are approximately 4.4 acres of wetland, and quality riparian vegetation is found along the shoreline.

The park offers a combination of formal landscaped areas with play areas, picnic shelters, a rose garden, and miles of trails through predominantly second-growth forest. Visitors also have access to beaches with views of downtown and west Olympia.

West Bay Park: West Bay Park is 17-acres located along the shoreline on the west side of West Bay. A Washington Wildlife and Recreation Program Water Access Grant and an Aquatic Lands Enhancement Grant helped to fund acquisition, development and shoreline enhancement of intertidal and riparian areas. Public access includes a hand held boat launch.

Percival Landing: Percival Landing is a prominent pedestrian boardwalk shoreline path located on the east side of Budd Bay in downtown Olympia. Constructed in 1978, the wooden timbered boardwalk is one of Olympia's premier attractions and main venues for public access to Budd Inlet.

In 2004, the Percival Landing boardwalk structure was inspected by marine engineers who found that the wooden creosote pilings, framing and planks were succumbing to rot and marine organisms. In 2006, a Percival Landing Concept Plan was approved by the Olympia City Council to redesign the park to withstand periods of inundation due to sea-level rise, and to restore the environmental, cultural, and historic values of the shoreline. Planned improvements include a new boardwalk, multiuse flex-space, two interpretive pavilions, and restroom facilities. Additionally, overwater structures will be reduced, and over an acre of shoreline habitat will be restored.

East Bay Waterfront Park: This 1.86-acre park offers benches, interpretive signage, and views of Budd Inlet. Some riparian vegetation restoration efforts are underway to improve the shoreline.

Public Access: Other access points to Budd Inlet include a number of Port of Olympia and privately owned marinas, Port Plaza, the 5th Ave dam, and Seven Oars Art Site, a pocket park located near the west end of the 4th Ave Bridge, and a viewing area on East Bay Drive.

3. Shoreline Modifications

As a heavily developed shoreline with a functioning international port, over 90% of the shoreline of Budd Inlet within the city is significantly modified with armoring, and a large portion of downtown is located directly on fill. As noted above, the Percival Landing boardwalk is an overwater structure. West Bay has been modified with historical industrial uses and other development projects from the base of Budd Inlet to the West Bay Marina. The majority of East Bay Drive private residences have armored shorelines. Budd Inlet includes ten small docks, and three significant and three additional smaller marinas.

4. Biological Resources and Critical Areas

Budd Inlet, despite being highly modified includes a variety of critical areas, and critical saltwater habitat. Priest Point Park has the highest levels of intact and beneficial critical areas and saltwater habitat, including salt marsh, riparian shoreline, estuarine conditions, steep slopes and beach sediment, and a salmon bearing stream.

Salmon have been confirmed in Mission, Moxlie, and Schneider Creeks, which all empty into Budd Inlet. Forage fish spawning grounds and habitat is along Priest Point Park and

small sections of the west shoreline. The Port Lagoon, a functioning wetland with patchy salt marsh, is subject to a Federal Fish and Wildlife conservation easement.

B. Freshwater Streams and Rivers

The only freshwater streams and rivers regulated under SMA in Olympia are Black Lake Drainage Ditch and Percival Creek. Black Lake Drainage Ditch was constructed in 1922 to drain potential agricultural land north of Black Lake. Black Lake Meadows refers to an adjacent city-owned stormwater facility and natural area. Originating from Black Lake, the ditch captures stormwater discharge from many of the commercial districts in west Olympia including from Yauger Park stormwater pond.

Percival Creek is fed by Black Lake Drainage Ditch and empties into Percival Cove, adjacent to Capitol Lake. Percival Creek was significantly altered by the construction of a section of Burlington Northern Santa Fe Railroad in the 1890's, and discharged directly into Budd Inlet until the construction of Capitol Lake in 1951. The railroad line still runs along the north edge of the creek from Percival Cove to Mottman Road. Percival Creek runs through the campus of South Puget Sound Community College, however, only the portion of the creek below its confluence with Black Lake Drainage Ditch and outside the campus is within the jurisdiction of SMA.

1. Existing Land Use

The land-use designations surrounding Black Lake Drainage Ditch are limited to open space, Black Lake Meadows, a storm pond and open space tract owned and managed by the City of Olympia Storm and Surface Water Utility, and a small amount of industrial and residential parcels.

The shorelines along the 1.2 miles of Percival Creek within SMA jurisdiction include a wide variety of land-use categories, including Open Space, High Density Residential, Commercial, and Industrial. Outside the canyon, much of the land in the vicinity of Percival Creek is developed.

2. Parks and Open Space/ Public Access

The shorelines of Black Lake Drainage Ditch are primarily located within an open space and storm pond tract owned and managed by the City of Olympia. No formal public access is available. There are currently no plans to establish a park or public access. Shorelines not under public ownership are adjacent to private property. Ease of access and proximity to west Olympia commercial centers allows for the establishment of homeless encampments within the riparian corridor.

There is no existing formal public access to Percival Creek. Future plans include transitioning the existing privately owned Burlington Northern Santa Fe Railroad into a shared-use trail for public use and access to the Percival Creek canyon. Due to already existing ease of access to the canyon from Deschutes Parkway, a significant number of homeless people establish camps within the riparian corridor.

3. Shoreline Modifications

Black Lake Drainage Ditch is an artificial drainage ditch, and largely functions as a stormwater capture for many of the commercial districts in West Olympia. As noted previously, the construction of the Burlington Northern Santa Fe Railroad in the 1890s

was the first major alteration of the Percival Creek stream channel. The railroad defines the northern edge of the creek. The construction of Black Lake Ditch in 1922 greatly increased the amount of flow into Percival Creek. An estuary at the mouth of the Creek as it discharged into Budd Inlet was lost with the construction of Capitol Lake in 1951. Surrounded by urban development, Percival Creek is highly altered by a system of stormwater ponds and pipes conveying surface water throughout the basin. Highway 101 and Cooper Point Rd. cross over Percival Creek on high bridges, and one mile from Percival Cove, there is a pedestrian bridge crossing.

4. Biological Resources and Critical Areas

Very few critical areas are associated with Black Lake Drainage Ditch within the City of Olympia. While over 160 acres of wetlands are associated with the Ditch in Tumwater, the shorelines under Olympia's jurisdiction are only adjacent to a constructed stormwater facility. The Ditch has been identified as supporting Chinook, Coho, and Chum, with an occasional sighting of a Sockeye salmon. Black Lake Meadows is rich in bird diversity, with a large variety of pond and nesting habitat.

The Percival Creek Canyon is dominated by steep slopes on the south side of the creek, which at times exceed 60%. North of the railroad grade, the slopes are more moderate. Emergent wetlands are colonizing new fill at the mouth of the creek, which was greatly modified with the construction of Capitol Lake. Percival Creek has been identified as supporting Chinook, Coho, Chum salmon, and Cutthroat trout. The Chinook are of hatchery origin.

C. Lakes

Capitol Lake, Ken Lake, Chambers Lake, Grass Lake, and Ward Lake are regulated as SMA shorelines. The area that is now Capitol Lake was once an integral part of Budd Inlet, consisting of intertidal mudflats that typically form at the mouths of estuaries. An earthen dam, concrete spillway, and bridge were constructed in 1951, blocking the tidal exchange with Budd Inlet and flooding the mudflats to form Capitol Lake.

Ken Lake and Ward Lake have a high level of surrounding residential development. Chambers Lake within Olympia is buffered by an extensive wetland, however the shoreline within the City of Lacey is intensely residential. Grass Lake, which is also almost entirely within the city's Grass Lake Refuge, is also surrounded predominantly by a system of wetlands.

1. Existing Land Use

As a focal point for the City of Olympia, and an integral aspect of the Capitol Campus, Capitol Lake is currently surrounded by a variety of land-use designations including commercial, mixed-use, government (Capitol Campus), Parks, and Moderate to High Density Residential. Sixty-seven percent of the shoreline is managed by Washington State General Administration. Future development is expected to increase commercial and residential densities in the downtown core near the lake.

Chambers Lake and Ward Lake are both currently surrounded by a variety of land-uses that include low to moderate density single-family residential, agriculture land, and park and open space. More residential development is expected near these lakes. A 105-acre Urban Village, Briggs Village, will add an additional 234 lots (a mix of residential,

commercial, and multi-family) to the west side of Ward Lake. A city park is planned for a portion of the southern end of the lake.

The shoreline of 26-acre Ken Lake is entirely low to moderate density residential or single-family homes, including two private community beaches. This is unlikely to change in the future.

The 64-acre Grass Lake and Lake Louise system is almost entirely within Grass Lake Refuge, owned and managed by the City of Olympia as a park and open space. Those shorelines not within the refuge are rural, moderate, and high density residential, or commercial. Residential development will continue in the surrounding areas, but will be limited to “low impact” development.

2. Parks and Open Space/ Public Access

The shoreline of Capitol Lake has an extensive network of parks, trails, and viewpoints. Public access is encouraged and integral to the management of the lake. Parks, trails, and other access points include the Capitol Lake Interpretive Center in Tumwater, Heritage Park, Marathon Park, and the 5th Avenue Dam, which provides overlooks to the lake. All public access points are owned and managed by Washington State General Administration.

Chambers Lake is accessed by the public at a Washington Department of Fish & Wildlife (WDFW) Boat Launch. With the City of Lacey, the Chehalis-Western Trail, a former railroad that has been converted to a regional trail, bisects the west and east basins of the lake.

Ward Lake also has one (WDFW) Boat Launch, and three privately owned accesses for residential developments: Holiday Hills, The Cove, and Briggs Village. The City of Olympia owns undeveloped property on the southern end of the lake to be developed as a future park.

Access to Ken Lake is limited to the residents of Lakemoor Homeowner’s Association, who jointly own two private community beaches.

As noted previously, Grass Lake and Lake Louise are almost entirely within Grass Lake Refuge, owned and managed by the City of Olympia as a park and open space. A walking trail circulates through the refuge, and includes a view point for Lake Louise. Plans include future installation of a shared-use trail with interpretive signage, an outdoor instruction area, and a wildlife viewing blind.

3. Shoreline Modifications

Capitol Lake has extensive shoreline modifications. Interstate 5 crosses the lake on a bridge and fill. Deschutes Parkway lies on fill on the west side of the lake. The shoreline of Heritage Park is a concrete bulkhead. Burlington Northern Santa Fe railroad track and trail on fill separates the North and Middle Basins, including an adjacent pedestrian bridge. Three small docks currently exist, and a public pier is located at the Interpretive Center.

With the exception of the former railroad right-of-way, very little shoreline modifications have taken place at Chambers Lake. Ward Lake and Ken Lake have both been modified with the addition of residential landscaped yards and 48 and 32 private docks, respectively. Additionally, Ken Lake was originally dredged with construction of the surrounding subdivision to enhance recreation in the lake. A portion of Grass Lake known as Lake Louise was once mined as a peat bog, but has since been left to return to a natural system.

4. Biological Resources and Critical Areas

High quality riparian shoreline exists along the east shore of the Middle Basin of Capitol Lake, and the west shore of Percival Cove. The wooded hillside of Capitol Lake is the largest connected habitat unit within Olympia. Bald eagle habitat is located within the basin. Heritage Park has been designed and landscaped to provide flood protection to downtown Olympia. Steep slopes can be found along the eastern shore of the middle basin, and the west shore of Percival Cove. Steep slopes are also found west of Deschutes Parkway in the middle and north basins, and to the southeast and south of Heritage Park in the north basin. Capitol Lake has been found to support populations of Chinook, Coho, Steelhead, and Cutthroat salmon. Also identified are Stihel barb and mud minnow.

In 2001, Eurasian water milfoil, an exotic aquatic plant, was discovered in the lake. In summer 2004, the herbicide triclopyr was applied to the lake to control the milfoil infestation. In 2005, some surviving milfoil plants were discovered in the south basin and in the wetland near the Interpretive Center. A number of different agencies, including Washington State General Administration and WDFW are currently responding to the discovery of the New Zealand mud snail in late 2009. Large populations of the 1/8-1/4 inch long snails can consume up to half of the available food in a water body, starving out insects essential to trout and salmon.

Chambers Lake has an extensive variety of wetland habitats surrounding it. Emergent wetlands surround the south isthmus between the basins and the south and east shore of the West Basin. Much of the west shore of the West Basin is surrounded by scrub shrub wetland. The northwest arm of the West Basin supports a unique wetland with acidic organic soils.

As a kettle lake, Ward Lake is spring-fed, occupying a closed pothole with no surface feeder streams, and no surface outlet. Steep slopes can be found on the west, north, and eastern shores of the lake. There exists over a half acre forested wetland in the southeast corner of the lake.

Ken Lake has no noted biological resources or critical areas.

Grass Lake Refuge, surrounding Grass Lake and Lake Louise, is one the largest intact habitat units within Olympia. Wood ducks, mud minnow, and a two-acre stand of Quaking Aspen have been identified as priority habitat and species within the refuge. Along the shorelines there is extensive scrub shrub wetland interspersed with forested, smaller patches of emergent and open water habitats. The lakes and refuge are habitat for a rich variety of bird species.

CHAPTER 3: RESTORATION GOALS AND OBJECTIVES

The goals identified in this Restoration Plan reflect an effort to achieve no net loss and overall improvements in shoreline ecological functions over time ([WAC 173-26-221](#)). Due to Olympia's location at the southernmost tip of Puget Sound, the goals and objectives identified are significantly influenced by the existing conditions of the marine shorelines of Budd Inlet.

As the largest shoreline city in Thurston County, Olympia plays a key role in the condition of Budd Inlet, and recent evaluations of Puget Sound describe a heavily altered and vulnerable biological system. Due to its location at the terminus of Puget Sound, Budd Inlet is especially susceptible to water quality impacts. Northern areas of Puget Sound benefit from strong hydrologic and chemical interactions with the Pacific Ocean. South Puget Sound, including Budd Inlet, is unique in that it provides extensive areas of shallow waters in concert with complex, lengthy shorelines; consequently, adjacent lands interact with and influence the south sound more readily and to a greater degree.

Understanding that the overall health of Budd Inlet also correlates directly to the condition of those shorelines (lakes, streams, wetlands, etc.) that drain into the inlet, the goals listed below, while seemingly focused solely on marine shorelines, simultaneously apply to freshwater river, stream, and lake shorelines as well.

3.1. Restoration Overall Goals

- a) ***Improve water quality in Budd Inlet and its tributaries.*** Improving water quality is necessary to protect and enhance native wildlife and vegetation habitat, restore opportunities for aquaculture, and ensure safe and healthy recreation opportunities. Improving water quality will require a comprehensive, multi-pronged, proactive approach that incorporates a variety of tools including stormwater treatment retrofits, public education, low impact development, sanitary sewer expansion, community-based programs, and site-specific restoration efforts.
- b) ***Improve natural sediment processes.*** Improving natural sediment processes is necessary for healthy aquatic habitat, and is achieved in part by minimizing bulkheads, protecting and enhancing estuaries, creating salt marsh environments, and re-vegetating shorelines.
- c) ***Preservation and restoration of wildlife habitat.*** The South Puget Sound's diverse shoreline habitat and numerous stream corridors support or have the potential to support populations of native fish, shellfish, amphibians, and birds. With ready access to natural areas and educational programming, Olympians desire protection of existing wildlife habitat and restoration of those areas that have the potential to support or promote the recovery of a native wildlife population.
- d) ***Restore shorelines as opportunities for humans to connect with the natural environment.*** When designing and implementing restoration of shorelines, consider the desire and potential for human inclusiveness; provide access and learning experiences for people to feel welcome, engaged, and invested in the natural and restored environment.

3.2. Restoration Objectives for Budd Inlet

- a) Preserve and restore estuarine habitat. Subtidal and intertidal mudflats and salt marshes provide transition habitat between fresh and salt water environments.
- b) Enable natural wave energy attenuation, which is restricted by the hardening of shorelines with bulkheads, revetments, docks, etc.

- c) Improve sediment generation and transport. Bluff erosion processes have been modified as structures (roads, railroads, piers, docks, and bulkheads) at the toe have reduced the frequency of tidal and wave interaction with bluffs.
- d) Improve water quality. Reduction in wetland area has reduced contact time of water with soil, lowering the potential for filtering and cycling of pollutants, which adhere to soil particles. Reduce or eliminate upland sources of pollutants, which have increased as a result of urban and industrial land uses within and near the shoreline, and subsequently, are the result of an increase in stormwater runoff.
- e) Preserve and restore wildlife habitat. Shoreline vegetation provides habitat for invertebrates, birds, amphibians, reptiles, and mammals.
- f) Increase sources and delivery of large woody debris. Removal of mature trees from riparian areas, and from surrounding bluffs has significantly reduced the source of large woody debris to the shoreline.

3.3. Restoration Objectives for Rivers and Streams

- a) Preserve and restore estuarine habitat. Shoreline modifications, such as the introduction of fill, culverts, and dams, have disrupted naturally occurring estuaries. Changes in flow regime due to changing land uses have modified timing and quantities of freshwater flows.
- b) Regulate seasonal flows. Upstream land uses and development have resulted in less water flowing during the summer low-flow periods.
- c) Restore natural sediment generation and transport processes. Due to build-up and wash-off from urban, agricultural industrial land uses, an increasing amount of fine sediment is being transported. An increase in local impervious surfaces is contributing to greater and more frequent flood events, which results in an increase in incidents of stream bank erosion and channelization.
- d) Improve water quality. Upland sources of pathogens and toxins have increased significantly as a result of urban and industrial land uses. Potential storage has decreased through the loss of wetlands and subsequently a reduction in water to soil contact. The increasing installation of impervious surfaces also results in more urban flooding, often resulting in urban stormwater runoff flowing directly into rivers and streams.
- e) Preserve and restore wildlife habitat. Vegetation provides structure for invertebrates, birds, amphibians, reptiles, and mammals.
- f) Increase sources and delivery of large woody debris. Removal of mature trees from riparian areas has significantly reduced the source of large woody debris, which provides structure for streams, readily utilized by fish and other wildlife.

3.4. Restoration Objectives for Lakes

- a) Restore natural sediment retention patterns. Fine sediment loading is elevated due to land cover alterations and increased impervious surface.
- b) Improve water quality. Reduction in wetland area and lacustrine floodplain connection has reduced water contact time with soil, lowering the potential for filtering and cycling of pollutants. Upland sources of pathogens and toxins have increased significantly as a result of urban and industrial land uses, resulting in the growth of invasive aquatic plants and algae, phosphorous loading, and increased water temperatures.
- c) Preserve and restore wildlife habitat. Vegetation provides structure for invertebrates, birds, amphibians, reptiles, and mammals.
- d) Increase sources and delivery of large woody debris. Removal of mature trees has significantly reduced the source of large woody debris.

CHAPTER 4: EXISTING AND ONGOING RESTORATION PROJECTS AND PROGRAMS

4.1. Comprehensive Plan Policies

The City of Olympia's current Comprehensive Plan was adopted by the City Council in 1994 after a three-year community involvement effort. Olympia is currently undergoing an extensive periodic update process, which is slated to be completed in 2012. The Shoreline Master Program update currently underway, and will be made consistent with the update of the Comprehensive Plan in 2012.

The existing Comprehensive Plan contains a number of general and specific goals and policies that direct the City to permit and condition development with consideration for the enhancement and preservation of the natural environment, as well as the preservation and development of public access opportunities. Specific relevant goals and policies include:

Land Use

- Policy 6.6 Provide incentives for restoring degraded wetlands, stream corridors, estuarine shorelines, and other important natural systems.
- Policy 6.7 Protect the viability and productivity of Budd Inlet's marine habitat, water quality, water-dependent uses, public access, and views, from degradation and loss.
- a. Permit over-the-water construction on a limited basis, consistent with the Shoreline Master Program for the Thurston Region and the Urban Waterfront Plan.
- b. Protect Budd Inlet from unnecessary landfills:
- (1) Allow minimal filling of tidelands, consistent with the Shoreline Master Program for the Thurston Region, only as required to: a) Promote access for recreational uses; or b) Make the MacFarland-Cascade site environmentally safe; or c) Allow construction of a fourth shipping berth at the north end of the Port Peninsula; or d) To accomplish a project expressly approved by the City upon finding that:
- (a) The project is a water-dependent or water-related use (as defined by the Shoreline Master Program for the Thurston Region), or is necessary to solve environmental degradation problems;
- (b) The size of the proposed area to be filled is the minimum possible to accomplish the project;
- (c) The benefits of filling cannot reasonably be achieved by other alternatives;
- (d) The predicted community benefits exceed the project's environmental impacts, including any adverse impacts upon affected neighborhoods; and
- (e) Any loss of habitat is appropriately mitigated.
- (2) When evaluating the need for filling a tideland, consider such factors as whether the proposed fill would:

- (a) Lead to increased traffic congestion;
- (b) Detract from Olympia's waterfront orientation and the potential for tourism;
- (c) Further limit the flushing action of Budd Inlet, making it harder to protect water quality, especially respective of the LOTT treatment plant outfall and recreational uses;
- (d) Intensify residential and industrial conflicts;
- (e) Reduce or degrade fish and wildlife habitat, particularly for rearing and migrating salmon;
- (f) Impede the public's right of navigation; or
- (g) Harm the environment.

Any such adverse impacts may be grounds for mitigation or denial of a proposal.

(3) It is the intent of the provisions above to end acceptance of landfill as the inevitable fate of Budd Inlet and to impose on any proposed landfill project the standards of "highest necessity."

c. Regulate development so that it does not prevent or unduly impede established or planned public access to Budd Inlet, particularly in the vicinity of the Port Lagoon on West Bay.

Policy 6.8	Reduce the rate of impervious surface expansion in the community.
Policy 6.9	Olympia will consider and as appropriate may require mitigation of environmental impacts to other public agencies and jurisdictions that may result from development actions within the City.
Policy 18.13	The Port should exercise environmental stewardship. This entails: (a) Assuring that all activities which involve the Port are conducted in a manner which protects the environment; (b) Cleaning up areas or sources of pollution on Port property; (c) Participating in the restoration of the natural environment on and around Port property, where appropriate; (d) Acquiring and protecting such properties as may serve the goals of the Port for mitigation, enhancement, and restoration; and (e) By implementing a pollution prevention program.
Policy 18.14	The Port should work closely with Olympia to offset the risks of contamination to Budd Inlet by Port activities.
<u>Environmental</u> Goal 3	Regional surface and groundwater is conserved, protected, and meets or exceeds all standards for quality and sustainable supply.

Policy 3.10 Carefully control shoreline development to prevent or minimize shoreline erosion, prevent pollution discharges into marine waters, and protect shoreline aesthetics and habitat, as consistent with the Shoreline Master Program, and other local, state, and Federal regulations and policies.

Goal 6 Olympia fully cooperates with inter-jurisdictional and regional efforts to manage natural resources and address common environmental issues.

Policy 6.1 Participate in cooperative storm and surface water, groundwater management and protection efforts among federal, tribal, state, local jurisdictions and community organizations on an aquifer, watershed or regional basis.

Parks, Arts and Recreation

Goal 4 Preserve open space or unique landforms as part of the Olympia area's landscape, character, and overall contribution to urban form and character.

Policy 4.3 Preserve undeveloped lands that provide public access to fresh and marine water beaches.

Policy 4.6 Design open space to define the community, to create outdoor spaces, to protect wildlife habitat and the natural environment, and to create public and civic spaces.

Goal 5 Manage City-owned open space and parks as beneficial places for wildlife.

Policy 5.3 Incorporate habitat considerations in design and development of new parks, parks scheduled for renovation, and in approvals for private developments. Encourage use of plants that attract wildlife to City-owned parks, open space, and landscaping areas.

Policy 6.3 Increase public access to all major water bodies regulated under the Shoreline Master Program for the Thurston Region.

A specific section of the Comprehensive Plan is dedicated to West Bay Drive due to the existing and potential environmental, cultural, and economic benefits of the shoreline:

"Conditions in the West Bay Drive area represent a challenging mix of opportunities and constraints. The shallow waters along this shoreline provide crucial habitat for young salmon when they first leave the Deschutes River basin and enter salt water. Birds, marine mammals, upland mammals and other wildlife species are relatively common for this urban location. Several sites along the shore are significant in Squaxin Island Tribal cultural history...Today's waterfront businesses include a mix of industry and recreation. This plan's ambitious vision is for a vibrant mix of light industrial, office, restaurant, commercial, recreational, and residential uses for this urban waterfront location, along with improved habitat for fish and wildlife."

4.2. Critical Areas Regulations

The City of Olympia Critical Areas Regulations can be found in Olympia Municipal Code Chapter 18.32. Critical areas protection was originally adopted in 1992 and revised in 2005. The intent of the Critical Areas Ordinance is to implement the State of Washington Growth Management Act and its guidelines, the Countywide Planning Policies, and the Olympia Comprehensive Plan by accomplishing the following related to environmental preservation:

1. Protecting critical areas and the functions they perform by regulating their development;
2. Maintaining groundwater recharge and preventing the contamination of groundwater resources;
3. Minimizing damage due to landslides, seismic events, erosion or flooding;
4. Protecting natural flood control and stormwater storage from alterations to drainage or stream flow patterns;
5. Protect wildlife habitat and species where possible throughout the City;
6. Controlling siltation, protecting nutrient reserves and maintaining stream flows and stream quality for fish and marine shellfish;
7. Protecting areas with high potential for marine aquaculture activities from degradation by other types of uses;
8. Minimizing turbidity and pollution of wetlands, streams and fish-bearing waters and maintaining their associated wildlife habitat; and
9. Achieving no overall net loss in acreage and functions of the City's remaining wetlands.

The current regulations categorize streams into five types based on documented salmonid fish use, with standard buffers ranging from 50 feet for streams in ravines to 250 feet for Type 1 streams (shorelines of the State). Standard wetland buffers now range from 50 to 250 feet and are classified using the Department of Ecology's latest *Washington State Rating System for Western Washington*. Management of the City's critical areas using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. These Critical Areas Regulations are one important tool that will help the City meet its protection and restoration goals. The City's Critical Areas Regulations are adopted by reference into the Shoreline Master Program to regulate critical areas found within the shoreline area, and, if there is a conflict, the more restrictive regulation would apply.

4.3. Shoreline Master Program

The existing *Shoreline Master Program for the Thurston Region* was adopted in 1976, and was comprehensively updated in 1984 and 1990. Thurston Regional Planning Council authored and up until recently, maintained the regional shoreline master program for Olympia and six neighboring jurisdictions.

While not distinguished as a required component of the existing Shoreline Master Program, restoration requirements are addressed in an Urban Waterfront Plan (1993) as Mitigation and Enhancement regulations. The Urban Waterfront Plan addressed only overwater development on the shorelines of Budd Inlet. Specific policies and subsequent regulations addressing mitigation and enhancements are outlined in Section 4 (I) and Section 5 (10), and include the following:

1. All adverse impacts to fish and wildlife habitat, its functions, values, and acreage, should be mitigated and enhancements made such that the net result of the project is not worsening such conditions

2. Guidelines and standards for mitigation and enhancements should be established in order of preference.
3. A project proposal that includes a less preferred mitigation approach should meet a comprehensive set of standards that assure the public interest is served by the proposal such that the net result is no net loss of habitat function, value, or acreage.
4. The applicant is financially responsible for additional mitigation and enhancement action should any element of the Mitigation and Enhancement Plan fail.
5. The City of Olympia should establish a Habitat Advisory Committee, consisting of experts in the disciplines of fish or wildlife habitat, to review required habitat Mitigation and Enhancement Plans in a consistent and coordinated manner and make recommendations regarding approval to the Olympia Environmental Review Officer.
6. Where habitat is altered, the project applicants should restore or create equivalent areas of habitat in order to compensate for habitat losses.
7. The City should approve a Mitigation and Enhancement Plan as a condition of issuance of any permit which impacts habitat.
8. Mitigation should generally be implemented concurrently with the regulated activity under the permit.
9. In general, on-site mitigation should be required.
10. If adverse impacts cannot be mitigated, permits should be denied.

In 2003, the Washington State Department of Ecology adopted guidelines which required that all local jurisdictions in the state update their Shoreline Master Programs. Ecology sequenced the adoption of the SMP's to fit the seven year comprehensive plan update cycle required by the state Growth Management Act. The deadline for all local jurisdictions within the Thurston region to update their SMP's is December 2011. The SMP update is currently underway, and will be made consistent with the update of the Comprehensive Plan in 2012.

4.4. Storm and Surface Water Utility

Stormwater in Olympia is handled through a system of storm drains, pipes, ponds, and drainage ditches, and much of the water eventually reaches one of the City's eight stream systems, four major lakes, or Budd Inlet. Subsequently, the City of Olympia Storm and Surface Water Utility ("Utility") plays a significant role in ensuring the protection and restoration of Olympia's water bodies. The three goals of the Utility are to:

- Reduce the frequency and severity of flooding so hazards are eliminated, except during major storm events. The Utility will minimize potential flooding associated with new development through regulations for on-site stormwater systems. Flooding arising from existing inadequate public infrastructure will be addressed in a timely manner.
- Improve water quality in all degraded streams and wetlands while maintaining high quality conditions in Green Cove basin. Improvements in water quality will be measurable and result in improved stream health. Olympia drainage basins are managed based on the degree to which water quality is currently impacted by human actions. Unique management approaches are designed to minimize specific impacts in each basin.
- Slow the decline of aquatic habitat health in all degraded streams and wetlands, while protecting healthy habitat from additional impacts as measured by levels of biotic diversity. The relationship between aquatic habitat conditions and land use impacts in urbanizing basins is scientifically complex and managerially challenging. Efforts include protecting high quality habitats while providing tangible improvements to other systems. Community engagement in

environmental issues and the incorporation of innovative development techniques is key to achieving success in Olympia's aquatic habitat goals.

A. Operations and Maintenance

Olympia's stormwater operations crews clean and maintain approximately 130 miles of storm pipe, 3,000 storm drains, and 40 public stormwater retention facilities. Additionally, city staff oversees a program that requires commercial property owners with private stormwater systems to perform regular maintenance and cleaning of their system. The Utility regulates and provides technical assistance to Homeowner's Associations and Neighborhood Associations, who are pond owners as well. These combined actions result in fewer pollutants and sediments entering Olympia's waterways. In addition to the Utility's maintenance and operations activities, the following programs specifically contribute to cleaner water in Olympia's streams, lakes, and Puget Sound.

B. Western Washington Phase II Municipal Stormwater Permit

All stormwater runoff flowing through Olympia's pipes, ponds, and ditches is managed according to the requirements of a permit issued by the Washington State Department of Ecology in January of 2007. The Permit stems from the federal Clean Water Act and shares its intent to restore and maintain the chemical, physical, and biological integrity of our nation's waters. Each year, the permit requires the City to take actions like; educating the public and encouraging non-polluting behaviors, looking for illegal dumping and cross-connections, enforcing erosion and sediment control at construction sites, and using best practices for land management and stormwater system maintenance.

C. 2009 Drainage Design and Erosion Control Manual

Olympia adopted its 2009 Drainage Design and Erosion Control Manual in compliance with the Phase II Municipal Stormwater Permit issued by the Washington State Department of Ecology. The manual fulfills permit requirements for equivalency with the 2005 WDOE Manual. The objectives of the manual are to provide the requirements and design guidance for new and redevelopment stormwater quantity and quality control, so the stormwater generated by these developments complies with water quality standards and sustains healthy fish and wildlife habitat in receiving waters.

D. Public Education

The Utility supports a robust public involvement and education program. The program provides educational and volunteer opportunities for the Olympia community. A few specific programs include:

- Involvement in Stream Team, an inter-jurisdictional education-to-action program for citizens interested in protecting and enhancing local streams, lakes, and Puget Sound. Stream Team frequently implements educational planting activities for participants.
- OLYWater Schools Program for 4th or 5th graders focuses on providing education and training opportunities to improve students' knowledge of local water resources, as well as motivate them to change behaviors that adversely affect water and habitat quality.
- Salmon Stewards trains and organizes volunteers to provide interpretive information about salmon life cycle and recovery at key locations during salmon migrations.

E. Critical Habitat Land Acquisition and Management

The Utility purchases and manages parcels of land throughout Olympia that contribute to water quality and the preservation of critical aquatic habitat. For successful acquisition, the Utility seeks to utilize opportunities to partner with other agencies and willing property sellers to acquire land. Parcels are identified for acquisition because of a unique or valuable aspect of habitat, including wetlands, which

when intact and functioning or when restored are integral to the management of stormwater. Altogether, approximately 15 acres have been acquired for preservation.

F. Seasonal Vegetation Management Crew

The Utility annually hires seasonal staff who implement vegetation management and maintenance practices aimed at restoring or improving the habitat and natural function of these properties. Those practices include invasive vegetation removal, riparian vegetation installation, and maintenance of stormwater facilities to ensure ongoing function.

G. Restoration Projects and Invasive Species Removal

The Utility has been involved in many restoration projects at numerous locations and scales. Often utilizing volunteers and students, projects have included re-vegetating and maintaining vegetation in riparian areas and invasive species removal in riparian and upland areas. Other projects have replaced deteriorating instream culverts and stabilized erosive landslide areas adjacent to streams. Specific recent projects include the following:

- The City of Olympia retrofitted a rain garden on Division Street to improve water quality to Schneider Creek. Completed in 2008, the benefits include: flood flow retention, removal of pollutants and sediment, and increased vegetation for habitat. Rain gardens also promote groundwater recharge.
- The City of Olympia has installed a substantial amount of native plantings on a portion of West Bay Park designated as the 4th Ave Bridge mitigation site. Revegetation with native plantings promotes flood flow retention, and provides erosion control and storage of phosphorus and nitrogen while providing habitat for wildlife.
- The City of Olympia purchased and enhanced 42 acres of impacted wetlands adjacent to Black Lake Drainage Ditch in 1995. Properly functioning wetlands promote flood flow retention, as well as removal of pollutants/sediment through sedimentation and adsorption, thus mitigating upland sediment generation. Wetlands also contribute to groundwater recharge and low summer flows while providing shoreline habitat for wildlife such as invertebrates, birds, amphibians, reptiles, and mammals.
- In partnership with Washington Trout and the Thurston Community Salmon Fund, the City of Olympia installed four small log structures adjacent to the bank of Black Lake Drainage Ditch. Providing a source of large woody debris for the ditch promotes habitat complexity and provides a sink for sediment.
- Five rain gardens have been installed on public land in Olympia, and the Utility continues to support their installation by private property owners by offering educational trainings and often providing small grants.
- In 2010, the City removed invasive vegetation, stabilized slopes, and re-vegetated with native vegetation 4,500 sq. ft. of land at the headwaters of Garfield Creek. Prior to the restoration, the undeveloped lot was riddled with garbage from illegal dumping and homeless encampments.
- In 2010, the City completed a succession planting of native species over 120,000 sq. ft. of stream bank along Black Lake Drainage Ditch, and installed live stakes along 25,000 square feet of stream bank.

H. Capital Improvement Projects

The Utility has also designed and implemented a number of infrastructure improvement projects that will result in improved water quality or stormwater management. Completed in 2008 with a percentage of funds from the Dept. of Ecology, the Decatur low impact development project retrofitted stormwater management along 600 feet of Decatur Street, which flows to Schneider Creek. Low impact roadway development contributes to the infiltration properties of the underlying soil. Additionally, in 2001, an improvement project to R.W. Johnson Road included installation of pervious pavement and an improved culvert to enhance salmon access to Black Lake Drainage Ditch.

Constructed in 2011, the Yauger Park Expansion Phase 1 project expanded the stormwater storage capacity of Yauger Park. New development on the west side of Olympia has necessitated the expansion of the stormwater facility. The expansion restored the disturbed area with landscaping, providing for the recreational use of the facility and expansion area during dry periods. Landscaping will primarily be composed of native vegetation. A future second phase of expansion is planned.

I. Stream Monitoring

Local stream monitoring is performed through a regional water quality program supported by Olympia and its neighboring jurisdictions and administered by Thurston County. The program focuses on high priority streams, collecting water quality data, precipitation and creek flow data, and macro invertebrate samples. City staff collects additional macro invertebrate and water quality data from lower priority streams using volunteer help from students and citizens. Thurston County prepares a biannual report that includes data, trend analysis and comparisons with State water quality standards. This information aids the Utility in determining priority areas for possible habitat restoration or stormwater treatment projects.

J. Low Impact Development Research and Planning

Olympia has been a leader in the state for researching, developing, and implementing new low impact technologies, such as porous and pervious pavements, and bioswale and rain garden installations. The Decatur Street LID Project was completed in 2005 and tested the performance and costs of three different low impact street paving designs. A Porous Sidewalk Maintenance Comparison Study and an Impervious Surface Reduction Study have also been completed.

Currently, with the help of the City's Utility Advisory Committee, the City is evaluating priorities to better meet long-term goals of flood management, water quality improvement, and aquatic habitat enhancement utilizing a detailed GIS analysis of impervious surfaces, forest cover, water quality, macro invertebrate health, and other parameters. With this work, the many traits of the City and its natural environment that affect Budd Inlet have been quantified.

The City recently completed a comprehensive summary of existing low-impact development (LID) projects in Olympia, LID projects in other cities, and draft Department of Ecology (Ecology) requirements. Staff also completed a detailed analysis of the strengths and challenges associated with specific LID techniques in Olympia and recommended implementation.

K. Sea-Level Rise Analysis and Planning

January 2012, City of Olympia staff presented a sea-level rise update to the community. The update contained findings from the first phase of an in-depth analysis of the anticipated affects of sea-level rise

on the Olympia shoreline and potential engineering-based solutions. Work thus far has determined that Olympia is most vulnerable downtown due to increased instances of urban flooding. Future phases are anticipated to include continued analysis of solutions and funding resources.

4.5. Septic to Sewer Conversion Program

There are approximately 4,200 existing septic systems in Olympia and its Urban Growth Areas. Septic systems can pose a threat to public and environmental health, particularly when systems are damaged or poorly maintained. In order to gradually convert onsite sewage systems to gravity sewer service, the City of Olympia Wastewater Utility implements a septic to sewer conversion program. The program is voluntary and provides incentives for residential connection of septic systems to sanitary sewer as well as cost recovery mechanisms for the City to make sewer extension projects possible. The City waives the sewer general facility charge for properties that make a connection within two years of notification of sewer's availability. The first conversion under this program was implemented in 2010.

4.6. Olympia Arts, Parks and Recreation

A. Parks Stewardship Program

The Parks Stewardship Program offers City of Olympia community members opportunities to volunteer for work parties. Tools, gloves, and refreshments are provided for volunteers who participate in maintaining trails, removing invasive species (such as ivy, Scot's Broom, and Himalayan blackberry), and planting new trees and shrubs. There is also a growing offering of recreational and environmental outdoor experiences and classes that focus heavily on environmental stewardship.

B. Integrated Pest Management & Chemical Free Parks

The mission of Parks, Arts & Recreation Pest Management Program is to control pests that are harmful to the health or aesthetic value of park plantings in a manner that is cost effective, safe, and environmentally responsible. The City Council adopted an Integrated Pest Management Plan for park facilities in 2006. Since implementation, the Department has reduced reliance on chemicals once thought to be critical to maintaining parks. At present, the Department uses limited amounts of glyphosate (Round-Up) and synthetic fertilizers on some parks, while many parks are now "chemical free" with no herbicides, pesticides, or synthetic fertilizers used at all. The City also works closely with the Thurston County Noxious Weed Program to eradicate noxious weeds, some of which must be removed under county mandate.

C. Park Development & Renovation

Acquisition and development of the new 4-acre West Bay Park on the west shoreline of Budd Inlet included extensive shoreline intertidal and riparian habitat reconstruction and enhancement, invasive vegetation removal, improved public access, and toxic clean-up. Phase II will include similar enhancements to the remaining undeveloped 13 acres in the future.

In 2004, the City performed a structural analysis of Percival Landing that revealed the need for major repairs and replacements. This created an opportunity for the City to look at not only repairing the Landing but enhancing it. A Concept Design Plan was completed in January 2006. That incorporated input from consultants, a project artist, staff, the community, advisory committees, and the Squaxin Island Tribe. Phase I is complete, which included the removal of the existing overwater boardwalk structure, approximately 200 creosoted pilings, impervious surface area, and included over an acre of reconstructed shoreline to function as a native habitat.

4.7. LOTT Alliance

The LOTT Alliance is a partnership between Lacey, Olympia, Tumwater, and Thurston County to provide wastewater management and reclaimed water production services for the urbanized area of north Thurston County. LOTT invests in capital projects to help preserve and protect public health, the environment, and water resources. LOTT specifically invests in water conservation, water quality and habitat improvement projects in the Deschutes River watershed, including Budd Inlet, as compensation for being allowed to increase wintertime discharges from the treatment plant to Budd Inlet. The Gull Harbor Estuary is an example of a specific mitigation site in which LOTT has been involved in restoration and preservation activities.

4.8. Squaxin Island Tribe

The Squaxin Island Tribe is a historic steward and a conscientious co-manager and protector of natural resources. The Tribe works in cooperation with numerous federal, state and county government agencies and organizations to participate in natural resources enhancement and protection programs.

The Squaxin Island Tribe recently completed an extensive assessment of nearshore habitat restoration opportunities in Budd Inlet. The assessment builds on prior studies and was guided by an expert panel of scientists very knowledgeable on the unique conditions in Budd Inlet. The analysis considers the dynamic interplay of the shoreline and upland contributing areas, and assesses likelihood of success for restoration projects over time. The work emphasizes the importance of physical improvements to the shoreline (minimize bulkheads, re-establish estuaries, re-vegetate) that will enhance marine sediment transport mechanisms as well as water quality improvements in upland areas.

Over 100 recommended restoration projects were identified across the inlet. In heavily urbanized areas, where both shoreline and upland areas have been highly modified, the analysis suggested that clustering of restoration projects is necessary to increase likelihood of successful outcomes. City and Tribal staff met in 2010 to review the Tribe's analysis and discuss implementation opportunities. Restoration projects identified by the Tribe were integrated into Chapter 5: Additional Projects and Programs to Achieve Local Restoration Goals.

4.9. Thurston Conservation District

The Thurston Conservation District promotes voluntary stewardship among private landowners in Thurston County. Conservation Districts (CDs) are legal subdivisions of state government that administer programs to conserve natural resources. The Thurston County District conducts, oversees and participates in various restoration projects throughout Thurston County. Specifically, the district works to restore 'riparian habitats' (any habitats near water) since these areas are crucial for the health of all wildlife, especially 'salmonids' (salmon and trout).

The Conservation District and the City of Olympia have partnered multiple times to restore riparian habitat at city-owned and managed stormwater ponds. Revegetation with native species helps promote flood flow retention, provides erosion control, wildlife habitat, and storage of phosphorus and nitrogen with potential for future large woody debris deposits.

In addition, Thurston Conservation District serves as the Lead Entity for Water Resource Inventory Area (WRIA) 13. Under the Washington Administrative Code 173-500-040 and the Water Resources Act of 1971, Revised Code of Washington 90.54, the major watershed basins of Washington State were divided into 62 WRIA's. The Lead Entity works at the watershed level to develop a strategic plan to guide the

selection and ranking of restoration and protection projects based on the input of a technical committee (made up of local experts that are knowledgeable about the local watershed, habitat and fish conditions) and a citizens committee (made up of local, state, federal and tribal government representatives, community groups, environmental and fisheries groups, conservation districts and regional fisheries enhancement groups).

The Lead Entity serves a critical role as the bridge that combines science based priorities and community priorities to effectively determine projects for proposals that will result in the most balanced socio-economic and technical information regarding salmon habitat protection and restoration.

4.10. Port of Olympia

A. Shipping Berth Pilot Interim Cleanup Action

The Washington Department of Ecology (Ecology) and the Port of Olympia (Port) agreed to allow the Port to remove a portion of dioxin-contaminated sediment from two shipping berths. The two agencies are partnering on efforts to continue testing of Budd Inlet sediments along the nearshore. Higher concentrations of dioxin, as anticipated, are being found nearest the Port berths and stormwater outfalls. The Port, as part of an updated agreement with Ecology in early 2012, is now conducting additional sediment investigations in the East and West Bays. Testing will lead to development of a cleanup plan.

B. Cascade Pole

Cascade Pole operated a wood treatment plant on the site from the 1930s to the 1980s. Creosote, a mixture of several different chemicals used to preserve wood, was released to the environment during the plant's operation. Soil and groundwater were contaminated as a result. The Port has been working on cleaning up the Cascade Pole site for several years. Ecology and Cascade Pole entered into a legal agreement in 1990 to begin cleaning up pollution at the site. Since that time, the Port of Olympia has taken over responsibility for the cleanup. Ecology and the Port have entered into several legal agreements to continue with cleanup efforts. The Port implemented interim actions to remove and cover contaminated soil in the North Point area in 2010, including installation of a new \$3.5 million dollar on-site treatment plant.

4.11. Budd Inlet Restoration Partnership

The Budd Inlet Restoration Partnership is a collaboration of the cities of Olympia and Tumwater, Thurston County, Port of Olympia, and the LOTT Clean Water Alliance, aimed at improving the health and vitality of Budd Inlet. Phase I work, including an assessment of current efforts and solicitation of public input, was completed in 2008.

The Partnership is now working under a Phase II grant from Ecology. Key activities covered under the Phase II scope of work include:

- Support for the nearshore habitat assessment completed by the Squaxin Island Tribe;
- Development of an integrated map of Budd Inlet showing habitat types, public access and recreation points, cleanup sites, zoning, and development activity;
- Identification of approaches to off-site, out-of-kind, and in-kind aquatic permit mitigation; and
- Evaluation of potential structural models for regional restoration efforts.

The future focus and vision for the Budd Inlet Restoration Partnership is still a work in progress. Staff is hopeful that the work under Phase II will help set the stage for more regional leadership and coordination on restoration efforts.

4.12. South Puget Sound Salmon Enhancement Group

The South Puget Sound Salmon Enhancement Group (SPSSEG) is a 501(c)(3) non-profit organization committed to protecting and restoring salmon populations and aquatic habitat with an emphasis on ecosystem function through scientifically informed projects, community education, and volunteer involvement. Part of their mission is to seek out and work in cooperation with other organizations to help plan, fund, carry out, and monitor fishery enhancement and habitat restoration projects. Habitat improvement projects have included: engineered log jams, bulkhead removal, installation of riparian plantings, culvert removal, and other fish passage barrier removals.

The SPSSEG has completed fish passage inventories for WRIA's 13 (Olympia) and 14. The inventories provided a comprehensive survey of all in-stream structures, including culverts, dams, fish-ways, etc., on public and private lands. SPSSEG used the Washington Department of Fish and Wildlife's (WDFW) Fish Passage criteria to determine barrier status. These inventories are the basis for prioritization of fish passage barrier removal projects.

4.13. Salmon Recovery Funding Board

Created in 1999 by the Washington State Legislature, the Salmon Recovery Funding Board (SRFB) provides grant funds to protect or restore salmon habitat and assist in related activities. It works closely with local watershed groups known as lead entities. The board is composed of five citizens appointed by the Governor and five state agency directors. SRFB supports salmon recovery by funding habitat protection and restoration projects. It also supports related programs and activities that produce sustainable and measurable benefits for fish and their habitat. SRFB has helped finance over 900 projects.

4.14. Puget Sound Partnership

The Puget Sound Partnership is a community effort of citizens, governments, tribes, scientists, and businesses working together to restore and protect Puget Sound. Its Action Agenda prioritizes cleanup and improvement projects, coordinates federal, state, local, tribal, and private resources, and encourages jurisdictions, non-governmental organizations, and other entities to work cooperatively toward a shared set of goals. A draft Action Agenda and Biennial Science Work Plan was released for public comment in December 2011, with the final document scheduled for completion in April 2012. The Action Agenda will focus on strategies for reducing five pressures on Puget Sound: land development, shoreline alteration, runoff from the built environment, wastewater, and loss of floodplain function.

4.15. Capitol Land Trust

The Capitol Land Trust conserves important wildlife habitat and natural areas by accepting donations of conservation easements and gifts of land, or by working with partners to purchase lands. Since 1989, Capitol Land Trust has been instrumental in permanently conserving 3,796 acres in Mason, Grays Harbor and Thurston Counties, with 859 of those acres acquired in 2009. The Capitol Land Trust strategic goals specify preservation of marine shorelines, estuaries, and wetlands. A focus area for the organization has

been conserving marine shoreline along Eld Inlet, and wetlands within the Green Cove Basin west of Olympia.

4.16. People for Puget Sound

People for Puget Sound is actively leading efforts to re-vegetate 450 linear feet of marine shoreline on the east bay of Budd Inlet in Olympia. The non-profit organization has engaged the East Bay Neighborhood Association and community volunteers in native plant installations and invasive vegetation control at the site since 2008, and are currently partnering with the City to develop onsite educational signage. People for Puget Sound has also been involved in early efforts supporting future restoration of the Deschutes Estuary and other South Sound restoration sites located on Eld Inlet, Henderson Inlet, and in Tacoma.

4.17. Department of Ecology

A. Deschutes/Capitol Lake/Budd Inlet TMDL process

The Deschutes River/Capitol Lake/Budd Inlet system is classified as an impaired water body under Section 303d of the federal Clean Water Act. In response, the Washington State Department of Ecology (Ecology) initiated technical evaluations in 2003 to determine the main sources of pollution and to determine how much water quality needs to be improved to keep the watershed healthy. This involves setting Total Maximum Daily Loads (or TMDLs) for contaminants of concern, including nutrients, fecal bacteria, temperature, dissolved oxygen, and fine sediment.

The technical evaluations set the stage for the development of a cleanup plan and related public review process. Once the cleanup is approved by EPA, provisions within the plan will be binding. City Storm and Surface Water staff is actively participating in Ecology's TMDL process, along with staff from other regional jurisdictions.

B. Toxics Cleanup Program

Accidental spills of dangerous materials and past business practices have contaminated land and water throughout the state. The Washington State Toxics Cleanup Program works to remedy these situations, which range from cleaning up contamination from leaking underground storage tanks, to large, complex projects requiring engineered solutions. Clean-up sites located in or near Olympia shorelines are listed in Table 4.17.

Table 4.17: Department of Ecology Toxics Clean-up Sites Located Within or near City of Olympia Shorelines.

Site	Date Added to List	Affected Shoreline	Status
West Bay Marina (2100 West Bay Drive NW)	January 2008	Budd Inlet	Remedial investigation underway
Hardel Mutual Plywood (1210 West Bay Drive NW)	July 2007	Budd Inlet	Contaminated soil and free product removal (Summer 2010)
Reliable Steel (1218 West Bay Drive NW)	May 2006	Budd Inlet	Remedial investigation underway
Industrial Petroleum (1117 West Bay Drive NW)	1998	Budd Inlet	Remedial investigation underway
Solid Wood Incorporated	July 2008	Budd Inlet	Interim actions

(900 West Bay Drive NW)			completed on 4 acres (West Bay Park Phase I)
East Bay Redevelopment (915 Washington Street NE)	February 2008	Budd Inlet	Interim Actions underway
Cascade Pole (1503 Marine Dr.)	1990	Budd Inlet	Soil excavation and capping (Summer 2010)
Budd Inlet Sediments Investigation	September 2010	Budd Inlet	Sediment sampling near Priest Point Park (Summer 2010)
Briggs Nursery (4407 Henderson Boulevard SE)	2004	Ward Lake	Site cleanup nearly complete.

4.18. Puget Sound Nearshore Estuary Restoration Project (PSNERP)

PSNERP is a large-scale General Investigation (GI) funded by the U.S. Army Corps of Engineers and the Washington State Department of Fish and Wildlife, with support from other state and local entities. Its mission is to restore and protect the nearshore habitat of Puget Sound, with goals to identify, fund, and undertake construction projects that restore ecosystem health.

PSNERP is currently in its feasibility study phase, having identified a broad list of candidate habitat restoration projects across Puget Sound. A total of five projects were identified in Budd Inlet; the largest being the Deschutes River Estuary Restoration. Three of the five projects fall on City of Olympia property. As the property owner, City staff is currently working with PSNERP on the further scoping and feasibility work on:

- Restoration of the Garfield Creek estuary adjacent to West Bay Park;
- Creation of salt marsh beds at the mouth of Indian/Moxlie Creek in East Bay; and

Removal of a berm across the mouth of Mission Creek is moving forward with the Port of Olympia as the lead partner and funding source. Once scoping and feasibility work is complete on the remaining two projects, PSNERP plans to take a proposal to Congress for possible federal funding. Most recently, PSNERP published a restoration and protection planning model for managing Puget Sound nearshore ecosystems: [Strategies for Nearshore Protection and Restoration in Puget Sound](#).

CHAPTER 5: ADDITIONAL PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

The following additional projects and programs are organized into three categories: Budd Inlet, Freshwater Streams and Rivers, and Lakes. For each, a general discussion of potential programs precedes a table that lists specific identified projects. Projects and programs identified vary in scale, feasibility, and potential lead entity. The projects listed are not inclusive of every potential restoration project that would benefit the health and condition of shorelines, but are those that have been identified at this time that are scientifically sound, beneficial, and reasonably feasible within the next ten years. The following projects lists are also not limited to within 200 feet of a shoreline, but may be implemented elsewhere and still have significant impact on the health and viability of a shoreline, lake, river, or Budd Inlet.

5.1. Restoration Projects for Budd Inlet

A comprehensive list of projects intended at restoring Budd Inlet was identified by the Squaxin Island Tribe and included in the report *Budd Inlet Restoration and Conservation Planning* (2010). As noted in Section D, the Squaxin Island Tribe completed an extensive assessment of nearshore habitat restoration opportunities in Budd Inlet. The assessment built on prior studies and was guided by an expert panel of scientists very familiar with the unique conditions in Budd Inlet. Of those projects, 53 were identified in or within 500 feet of the City of Olympia.

Of those 53 projects, Table 5.1 includes 27 that have been identified as potentially feasible for evaluation or implementation within the next 10 years with the City of Olympia as the lead or partner agency. The three projects being studied for feasibility by PSNERP are also included. See Figure 5.1 for project locations.

Table 5.1: Budd Inlet Restoration Projects Which May be Implemented Within 10 Years.
The projects included in this table are a subset of restoration projects identified for implementation in Budd Inlet by the Squaxin Island Tribe, and documented in [Budd Inlet Restoration and Conservation Planning \(2010\)](#).

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
West Bay (1)	Reconstruct the mouth of Garfield Creek and estuary.	Feasibility completed in 2011, with implementation to be determined by funding availability	Puget Sound Nearshore Estuary Restoration Project (PSNERP)	Provide transition habitat and improve water quality.
West Bay (2)	Daylight 250 feet of Garfield Creek through West Bay Park.	2014-2020	City of Olympia—Parks, Arts & Recreation	Restore natural sediment generation and transportation processes, enhance fish passage, increase delivery of large woody debris.

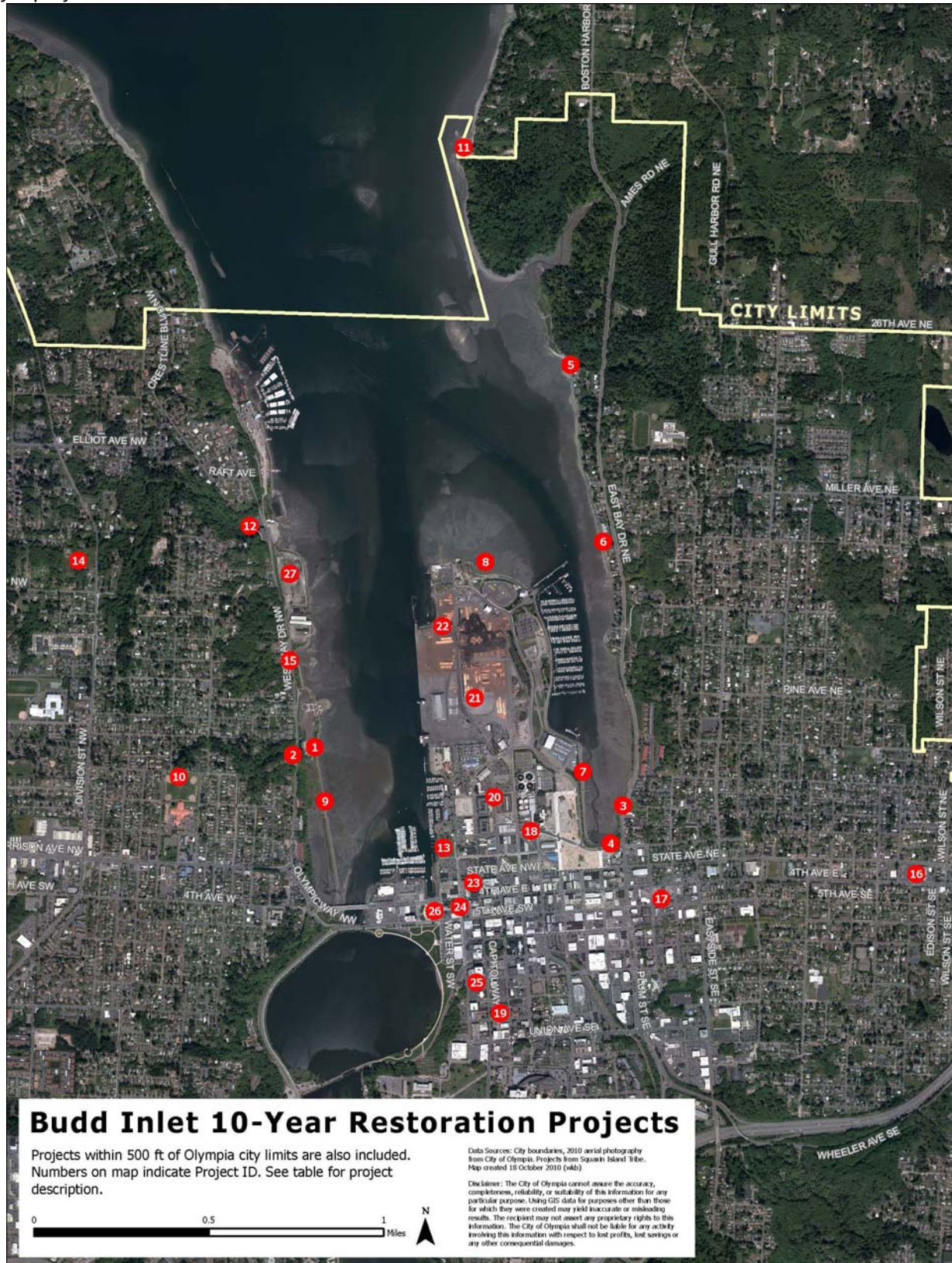
Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
East Bay (3)	Plant 2,300 linear feet of shoreline to create a functional riparian zone.	To be determined by funding availability	City of Olympia—Storm and Surface Water Utility	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (4)	Reconstruct the mouth of Indian/Moxlie Creek and estuary.	Feasibility completed in 2011, with implementation to be determined by funding availability	Puget Sound Nearshore Estuary Restoration Project (PSNERP)	Provide transition habitat and improve water quality.
East Shoreline (5)	Restore the Mission Creek estuary.	Feasibility completed in 2011, with implementation in 2012	Port of Olympia	Provide transition habitat and improve water quality.
East Bay (6)	Plant approximately 1,500 feet of nearshore riparian vegetation along East Bay Drive.	To be determined by funding availability	City of Olympia	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (7)	Plant approximately 4,200 linear feet of riparian vegetation.	To be determined by funding availability	City of Olympia	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (8)	Add mussel rafts and Olympia	To be determined by funding	City of Olympia	Preserve and restore wildlife habitat, and

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
	oyster beds to test effects of nutrient removal and reestablish populations. May also be implemented at other suitable locations.	availability		improve water quality.
West Bay (9)	Evaluate the planting of approximately 2,600 linear feet of vegetation along public property to create a functional riparian zone.	2010-2014	City of Olympia—Parks, Arts & Recreation	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
West Olympia (10)	Install a stormwater demonstration project.	2010-2014	City of Olympia—Storm and Surface Water Utility	Improve water quality.
East Shoreline (11)	Remove 378 feet of shoreline armoring and add large woody debris.	2011	City of Olympia/Thurston County	Provide priority habitat and a sediment source for a forage fish spawning beach.
West Bay (12)	Stabilize 3,000 ft. of channel to prevent erosion in Schneider Creek.	To be determined by funding availability	City of Olympia—Storm and Surface Water Utility	Improve water quality.
West Bay (13)	Plan for clean-up of toxics at Percival Landing.	To be determined by funding and/or redevelopment	City of Olympia-Parks, Arts, & Recreation	Improve water quality.
West Olympia (14)	Plan for clean-up of toxics at Division Nursery site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
West Bay (15)	Plan for clean-up of toxics at Petroleum Distributors site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
East Olympia (16)	Plan for clean-up of toxics at East Side Laundry.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
East Olympia (17)	Plan for clean-up of toxics at Capitol City Studios.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (18)	Plan for clean-up of toxics at Unocal site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (19)	Plan for clean-up of toxics at Clarion.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (20)	Plan for clean-up of toxics at Warehouse One site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (21)	Plan for clean-up of toxics at Cascade Pole site.	Ongoing	Port of Olympia	Improve water quality.
West Bay (22)	Plan for clean-up of toxics at Texaco.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Port of Olympia	Improve water quality.
Downtown (23)	Plan for clean-up of toxics at Key Shop site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (24)	Plan for clean-up of toxics at parking lot site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (25)	Plan for clean-up of toxics at 8 th Street site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (26)	Plan for clean-up of toxics at Pho restaurant.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
West Bay (27)	Evaluate the removal of nearshore fill.	2010-2014, as redevelopment occurs	City of Olympia—Parks, Arts & Recreation.	Provide transition habitat and improve water quality.

Figure 5.1: Budd Inlet Restoration Projects Which May be Implemented Within 10 Years. See Table 5.1 for project details.



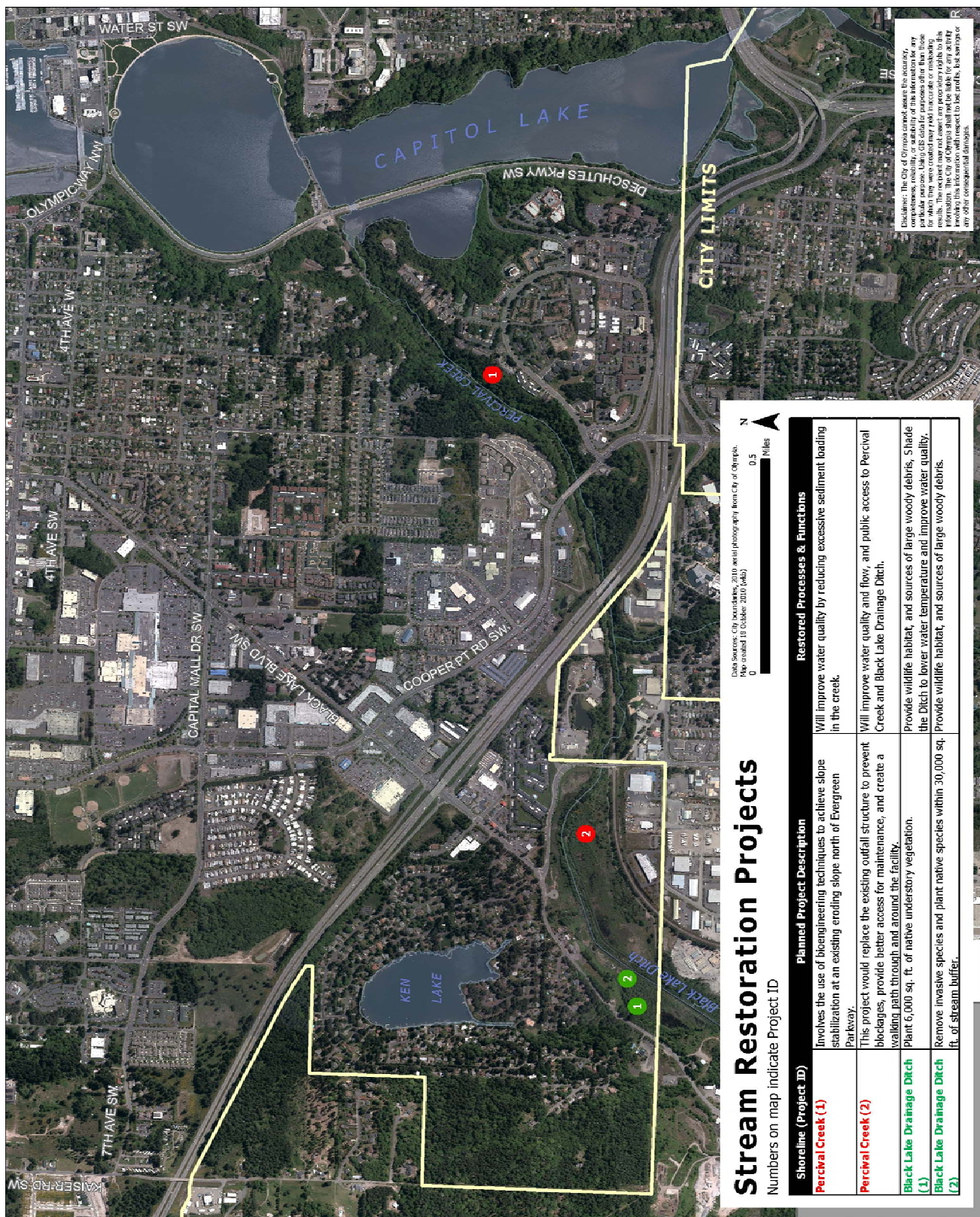
5.2. Restoration Projects for Freshwater Streams and Rivers

The City of Olympia Storm and Surface Water Utility has taken the lead on identifying and planning for future stream shoreline restoration projects. Three projects (Table 5.2) have been identified as contributing to achieving the overall goals and objectives for Percival Creek and Black Lake Drainage Ditch. See Figure 5.2 for project locations.

Table 5.2. Additional Restoration Projects, Implementation Schedules, and Potential Funding Sources for Freshwater Streams and Rivers.

Shoreline (Project ID)	Implementation Schedule	Potential Funding Source	Planned Project Description	Restored Processes & Functions
Percival Creek (1)	2012	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Involves the use of bioengineering techniques to achieve slope stabilization at an existing eroding slope north of Evergreen Parkway.	Will improve water quality by reducing excessive sediment loading in the creek.
Percival Creek (2)	2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	This project would replace the existing outfall structure to prevent blockages, provide better access for maintenance.	Will improve water quality and flow, and public access to Percival Creek and Black Lake Drainage Ditch.
Black Lake Drainage Ditch (1)	2013	Grant Funding— Washington State Dept. of Ecology	Plant 150,000 sq. ft. of riparian vegetation.	Provide wildlife habitat, and sources of large woody debris, Shade the Ditch to lower water temperature and improve water quality.
Black Lake Drainage Ditch (2)	2013	Grant Funding— Washington State Dept. of Ecology	Remove invasive species and plant native species within 150,000 sq. ft. of stream buffer.	Provide wildlife habitat, and sources of large woody debris.

Figure 5.2. Locations for Restoration Projects for Freshwater Streams and Rivers.



5.3. Restoration Projects for Lakes

With the exception of Grass Lake, the remaining lakes regulated under the SMA are surrounded by residential properties. All are subject to many of the same environmental stressors, and can benefit from implementation and continuation of the following restoration programs:

A. The updated SMP, when completed and implemented in 2012, will include regulations that address vegetation conservation requirements specifically to protect and enhance riparian vegetation. The standards for docks will also be updated to include a requirement for the installation of grating, allowing for greater light penetration.

B. Existing education and outreach programs can be expanded through the new SMP update and through the existing Water Resources education framework in 2012 to include programs that address restoration, perhaps including the following topics:

- o Shoreline Stewardship Workshops and outreach
- o Riparian Landscaping Workshops and informational handouts
- o Promote the planting of native trees
- o Increase public awareness about healthy streams, rivers, and lakes
- o Increase the participation of volunteers in city-wide restoration projects that directly benefit shorelines.

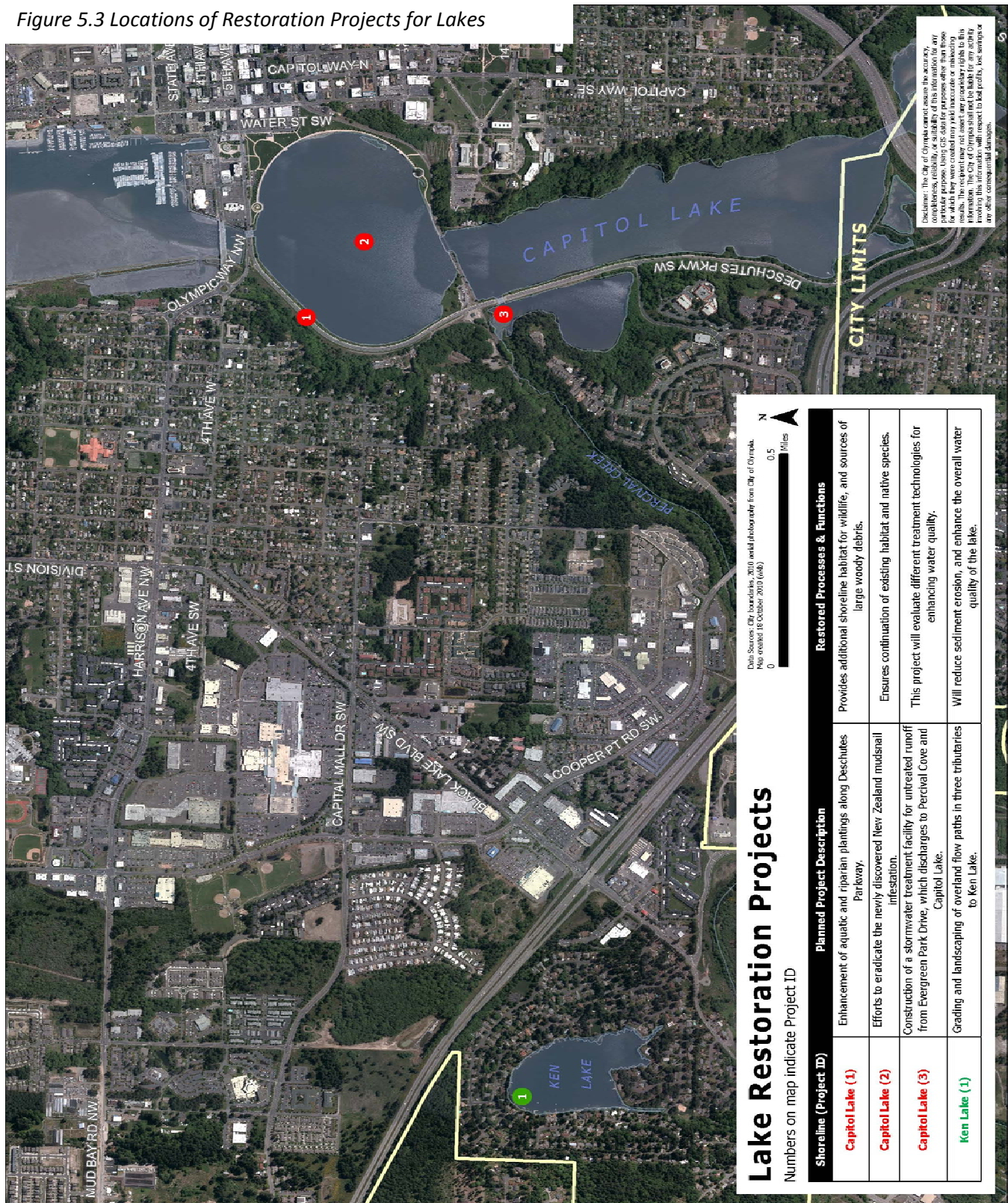
C. The City can explore ways in which to team with local property owners to replace existing armoring with a more natural shoreline that incorporates vegetation and woody debris. Whether through financial assistance, permit expedition, or guidance, it would be most beneficial to target multiple contiguous parcels. The implementation of this program would be ongoing.

Table 5.3 identifies specific restoration projects, implementation timelines, and potential funding sources for Capitol Lake and Ken Lake. See Figure 5.3 for project locations.

Table 5.3. Additional Restoration Projects, Implementation Schedules, and Potential Funding Sources for Lakes.

Shoreline (Project ID)	Implementation Schedule	Potential Funding Source	Planned Project Description	Restored Processes & Functions
Capitol Lake (1)	1-5 years	Washington State Department of General Administration	Enhancement of aquatic and riparian plantings along Deschutes Parkway.	Provides additional shoreline habitat for wildlife, and sources of large woody debris.
Capitol Lake (2)	2010-TBD	Washington State Department of General Administration	Efforts to eradicate the newly discovered New Zealand mud snail infestation.	Ensures continuation of existing habitat and native species.
Capitol Lake (3)	2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Construction of a stormwater treatment facility for untreated runoff from Evergreen Park Drive, which discharges to Percival Cove and Capitol Lake.	This project will evaluate different treatment technologies for enhancing water quality.
Ken Lake (1)	2010-2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Grading and landscaping of overland flow paths in three tributaries to Ken Lake.	Will reduce sediment erosion, and enhance the overall water quality of the lake.

Figure 5.3 Locations of Restoration Projects for Lakes



CHAPTER 6: RESTORATION PRIORITIES

When considering a priority scheme for restoration activities, the Department of Ecology Restoration Plan Guidelines noted the priorities should address where restoration would have a greater ecological benefit for the shoreline(s). Technical and scientific data, such as the *Budd Inlet Restoration and Conservation Planning* (2010) document by the Squaxin Island Tribe, and the *ESA Shoreline Analysis & Characterization Report* (2008) strongly influenced the priorities listed below; however, an evaluation of existing site conditions was not the only important factor. Also taken into consideration were other situational influences unique to the Olympia community, such as existing land uses, educational programs, the human experience, funding opportunities, strong local and regional partnerships and planning efforts, and availability of local resources and expertise.

As a key ecological process, the movement of sediment into, through, and out of shoreline ecosystems influences shoreline morphology, hydrologic and hydraulic characteristics, ability of surface and groundwater to interact, and the type and extent of aquatic habitat. In rivers, channel migration is a natural process, and is essential for the transfer of nutrients between the channel and floodplain, as well as an on-going source for streambed gravels.

Changes in land-use, including a reduction in tree canopy cover, development, and road construction or widening, have generally accelerated production of fine sediment, especially as runoff volumes and peak flows are increased. Increased flows increase in channel erosion and channel destabilization. Increases in fine sediment loading can adversely impact aquatic habitat by filling in the spaces of gravel beds and reducing the exchange of water and oxygen. Fine sediment also transports nutrients, metals, and other pollutants, and is closely linked to water quality. The construction of the dam that created Capitol Lake has also greatly impacted sediment transportation from the Deschutes River and Percival Creek. A significant portion of the sediments delivered by each is retained in Capitol Lake, rather than having emptied into the previously existing Deschutes Estuary.

As technical experts in marine and fresh water issues, such as sedimentation and its impacts, the City of Olympia Storm and Surface Water Utility has a history of providing extensive and comprehensive research and education in the South Sound. Their efforts to understand the existing condition of Budd Inlet, coupled with a work program with a long-standing focus on improving water quality, stormwater management, and community member choices as they impact the environment has momentum and will be important in successful implementation of priorities and projects. There are some priorities for which outreach and education will be necessary and other means may be limited, such as restoration in and around Chambers, Ward, and Ken Lakes, which are all surrounded almost exclusively by private landowners. Coupled with an existing well-developed public education program, outreach becomes a higher priority.

The priorities also recognize that humans have a desire to interact and connect with the natural environment in a way that is restorative, educational, and engaging, but also has little negative impact on that environment. Clean water lapping onto a beach or flowing through a ravine, scattered pieces of large, woody debris, and foot trails to overwater views are elements of a natural experience that can be readily implemented through restoration, and are also powerfully effective in fostering exploration, community education, and investment in environmental preservation and stewardship.

It is essential that priorities, while based on restoration needs readily identified for the South Sound, remain flexible enough to accommodate newly emerging funding and resource opportunities. Budd

Inlet, in particular will see the greatest gains in health and condition from large-scale, costly restoration projects that implement multiple priorities. To respond, priorities must be viewed as fluid enough within an implementation strategy that adapts to the discovery or development of future grants, willing lead partner organizations, or mitigation requirements. The City may also, in the future, wish to invest in or explore the feasibility of other new or currently unavailable means for achieving restoration and preservation, such as conservation easements or mitigation banking.

Olympia has an engaged non-profit and environmentally knowledgeable population. As the state Capital, many of the region's most respected environmental experts live and work locally. Priorities for the City capitalize on and foster partnerships with those members of the community and non-profit arena with access to federal resources, technical expertise, and passionate volunteers. The City also believes that regional and multi-jurisdictional efforts will lead to greater success, and are worth investment. Technical and scientific data and prioritization frameworks, like that developed by the Squaxin Island Tribe, and jurisdictional SMP's and Restoration Plans, can provide direction to multiple organizations seeking a shared framework towards which to allocate efforts. Olympia's extensive marine shoreline ensures a key role for the City in any South Puget Sound restoration planning, implementation, and monitoring.

While not directly influencing the priorities and restoration projects identified, responding to the anticipated effects of climate change will necessitate adaptability in future planning, and potentially a shifting of priorities as future revisions. As a community with a significant amount of marine shoreline, climate change will considerably influence the kinds of restoration implemented, when it is implemented, and how successfully. Known influences of a change in climate have not been confirmed for the South Sound, but potential effects include longer periods of drought, increases instances of flooding, changes and shifts in plant and wildlife populations, reduced snow accumulations and melt, and sea-level rise.

Taking into consideration the above noted data and influences, the following priorities and associated restoration projects have been identified as most beneficial in addressing the four restoration goals of the City of Olympia:

- 1) Improve water quality in Budd Inlet and its tributaries
- 2) Improve natural sediment processes
- 3) Preserve and restore wildlife habitat; and
- 4) Restore shorelines as opportunities for humans to connect with the natural environment.

6.1. Priority 1 - Improve Water Quality

Water quality is the end result of the interaction of water with biota, soils, and urban and rural land uses, and infrastructure. As water moves through an ecosystem, it has the opportunity to cycle mineral and organic constituents that can affect water quality. The longer water is able to contact soil and vegetation, the more cycling can occur. Longer water contact times typically occur in low gradient areas in the landscape, such as riverine and wetland systems, while filling, paving, and channelization reduce water contact times.

The water quality of lakes is highly dependent and sensitive to changes in nutrient loading, which can lead to algal blooms, changes in dissolved oxygen levels, etc. Water temperatures are higher in urban areas where riparian vegetation is lacking and urban runoff is a primary water source. Impervious surfaces and stormwater conveyance infrastructure, which can bypass natural hydrologic pathways that

include infiltration and percolation through soils, can negatively impact water quality by allowing for the build-up of metals, oils, grease, nutrients, and bacteria to be washed off and into water systems during storm events.

The initial results of studies recently conducted in Budd Inlet indicate that surface water runoff and stormwater may be the largest contributing factor in pollutant loading in the Sound, which is characterized by protected bays and narrow inlets, relatively shallow depths, stratification of the water column, slow flushing times, and a high shoreline to water surface-area ratio. The result is that when poor-quality water, such as water with excessive nutrients, enters the Sound from adjacent uplands, rivers, and streams, it is not easily diluted by mixing or flushing.

Ongoing or recommended restoration projects or programs that would address the improvement of water quality and natural sediment processes include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(B)—Water Washington Phase II Municipal Stormwater Permit
- 4.4(C)—2009 Drainage Design and Erosion Control Manual
- 4.4(D)—Public Education
- 4.4(G)— Restoration Projects and Invasive Species Removal
- 4.4(H)— Capital Improvement Projects
- 4.5— Septic to Sewer Conversion Program
- 4.6(B)—Integrated Pest Management and Chemical Free Parks
- 4.6(C)— Park Development and Renovation (West Bay Park and Percival Landing)
- 4.10(A)—Shipping Berth Pilot Interim Cleanup Action
- 4.10(B)— Cascade Pole
- 4.17(A)—Deschutes/Capitol Lake/Budd Inlet TMDL Process
- 4.17(B)—Department of Ecology: Toxics Cleanup Program

Additional Programs and Projects (Chapter 5)

- 5.2—Percival Creek (1)
- 5.2—Percival Creek (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (3)
- 5.3—Ken Lake (1)
- 5.1—Budd Inlet (1-27)

6.2. Priority 2 - Improve Riparian Vegetation

Improved riparian vegetation can address multiple objectives, including providing important shoreline habitat for wildlife, improve water quality, and reduce sediment and pollutant delivery. Riparian vegetation is also the key source of large woody debris (LWD).

LWD significantly influences the form and ecological function of river and lake ecosystems. In a natural system, LWD by way of logs or trees that have fallen into a river, stream or lake, provides organic material to aquatic ecosystems and is considered a principal factor in forming stream structure and associated habitat characteristics (e.g., pools and riffles). Riparian vegetation and LWD provide habitat

in the form of nesting, perching, and roosting as well as thermal protection, nutrients, and sources of food (terrestrial insects) to a variety of fish and wildlife species.

Ongoing or recommended restoration projects or programs that would improve riparian vegetation include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(D)—Public Education
- 4.4(F)—Seasonal Vegetation Management Crew
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.5(A)—Volunteers in Parks
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound

Additional Programs and Projects

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Lakes (C)
- 5.3—Capitol Lake (1)
- 5.1—Budd Inlet (3, 6, 7, 9, and 11)

6.3. Priority 3 - Restore and Improve Wildlife Habitat.

With the exception of the highly urbanized and altered habitats along the head of Budd Inlet, the majority of the marine nearshore environment either supports or has the potential to support valuable and ecologically sensitive resources. Key habitats and species that occur in Budd Inlet and can be targeted for restoration and/or improvement, include: sand and cobble beaches, forage fish spawning areas, mud-flats, shellfish resources, eelgrass and kelp beds, estuaries and intertidal wetlands and marshes, marine riparian vegetation, seabird and waterfowl concentration areas, and marine mammal habitats.

Specifically, Budd Inlet contains several critical saltwater habitat areas for forage fish and salmon. The steep slopes of Priest Point Park provide beach sediment for forage fish, Ellis Cove is relatively intact with a salmon-bearing stream, and some forage fish spawning habitat extends south from Priest Point Park for approximately 0.5 miles. Coho, Chum, and Chinook salmon, and Cutthroat trout have all been identified in Budd Inlet or its tributaries.

Intact nearshore habitat is essential for salmon, as it offers refuge, rest and feeding opportunities for juveniles before they embark on their ocean migrations. Shoreline modifications, such as armoring, prevent natural beach formation, which in turn limits habitat available for prey species favored by salmon.

Ongoing or recommended restoration projects or programs that would restore and improve fish and other wildlife habitat include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.4(E)—Critical Habitat Land Acquisition and Management
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.7—LOTT Alliance
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (1)
- 5.3—Capitol Lake (2)
- 5.1—Budd Inlet (1, 3, 4, 5, 6, 7, 8, and 9)

6.4 Priority 4 – Restore Natural Sediment Transportation Processes

As a key ecological process, the movement of sediment into, through, and out of shoreline ecosystems influences shoreline morphology, hydrologic and hydraulic characteristics, ability of surface and groundwater to interact, and the type and extent of aquatic habitat. In rivers, channel migration is a natural process, and is essential for the transfer of nutrients between the channel and floodplain, as well as an on-going source for streambed gravels.

Changes in land-use, including a reduction in tree canopy cover, development, and road construction or widening, have generally accelerated production of fine sediment, especially as runoff volumes and peak flows are increased. Increased flows increase in channel erosion and channel destabilization. Increases in fine sediment loading can adversely impact aquatic habitat by filling in the spaces of gravel beds and reducing the exchange of water and oxygen. Fine sediment also transports nutrients, metals, and other pollutants, and is closely linked to water quality. The construction of the dam that created Capitol Lake has also greatly impacted sediment transportation from the Deschutes River and Percival Creek. A significant portion of the sediments delivered by each is retained in Capitol Lake, rather than having emptied into the previously existing Deschutes Estuary.

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(B)—Water Washington Phase II Municipal Stormwater Permit
- 4.4(C)—2009 Drainage Design and Erosion Control Manual

- 4.4(D)—Public Education
- 4.4(G)— Restoration Projects and Invasive Species Removal
- 4.4(H)— Capital Improvement Projects
- 4.6(C)— Park Development and Renovation (West Bay Park and Percival Landing)
- 4.10(A)—Shipping Berth Pilot Interim Cleanup Action
- 4.17(A)—Deschutes/Capitol Lake/Budd Inlet TMDL Process

Additional Programs and Projects (Chapter 5)

- 5.2—Percival Creek (1)
- 5.2—Percival Creek (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (3)
- 5.3—Ken Lake (1)
- 5.1—Budd Inlet (1-27)

6.5. Priority 5 - Reconnect Fish Passage to Budd Inlet, and Restore Mouths of Tributary Streams.

Expanding available fish habitat and spawning opportunities for fish is a high priority. Perhaps the most frequently encountered fish passage barriers are culverts that are improperly designed, installed, or maintained, and channel alterations that result in impassable conditions (Harry & Konovsky 1999).

Dams and diversions are also barriers to fish passage. The waters of Percival Creek flow into Capitol Lake, which is backed up behind a tide gate under 5th Avenue in downtown Olympia. Salmon can pass either through the constructed fish ladder or directly through the tide gate when open. Large numbers of Chinook salmon are typically observed downstream of the tide gate in August and early September. While they are milling below the tide gate, however, they are exposed to increased predation from seals and sea lions known to frequent the area (Harry & Konovsky 1999).

Fish can also be impacted at the Capitol Lake tide gate by impaired function of the fish ladder, or low lake levels, which are maintained within a narrow range in part to provide for additional flooding protection to downtown Olympia. At times, the lake elevation does not allow adult salmon to use the ladder, delaying their upstream migration when the tide gate is closed as well, which can result in increased predation by marine mammals (Harry & Konovsky 1999).

Ongoing or recommended restoration projects or programs that would restore and improve fish passage and mouths of tributary streams include:

Existing Programs and Projects (Chapter 4)

- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.7—LOTT Alliance
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.1—Budd Inlet (1, 2, 4, 5, and 12)

6.6. Priority 6 - Reduce Shoreline Armoring, and Restore or Improve Natural Shoreline Conditions and Processes

Physical processes that influence the physical structure of the nearshore include: wind energy and exposure, net shore-drift, coastal bluff landslides and erosion, and fluvial influences. Beaches in the Puget Sound often have two distinct components: a high-tide beach and a low-tide terrace. Waves and wind will deposit sand and gravel from the high-tide beach onto the low-tide terrace, which is generally a gently sloping accumulation of fine grained sediment. Larger rocks, ranging from cobbles to boulders, also accumulate on the low-tide terrace.

Wind-generated wave action gradually erodes beaches and the toe of coastal bluffs as well. Coastal bluffs are the primary source of sediment for Budd Inlet. Bluff composition and wave energy influence the composition of beach sediment. Waves sort coarse and fine sediment and large waves can transport cobbles that small waves cannot. Additionally beaches supplied by the erosion of coarse gravel bluffs will differ in composition from those fed by the erosion of sandy material.

The diversity of beach conditions and existence of feeder bluffs within the marine shoreline environment contribute to the availability of intact habitat for fish and other marine wildlife. Shoreline modifications and other artificial structures, such as boardwalks, bulkheads, and rip-rap, have eliminated the natural shoreline conditions that encourage sediment delivery and transportation. Maintaining existing connections between bluffs and the nearshore is a high priority.

Ongoing or recommended restoration projects or programs that would reduce shoreline armoring and restore or improve natural shoreline conditions and processes include:

Existing Programs and Projects (Chapter 4)

- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.16—People for Puget Sound

Additional Programs and Projects (Chapter 5)

- 5.3—Lakes (C)
- 5.1—Budd Inlet (3, 6, 7, 9, and 11)

6.7. Priority 7 - Reduction of In-Water and Over-Water Structures

Efforts to remove overwater structures and armoring will contribute to restoring natural shoreline conditions and fish habitat. Docks and other overwater structures restrict light, which is needed by fish and other wildlife for development and awareness of their surroundings. Small fish can be preyed upon more easily when forced to venture into deeper water to avoid darkened shallow water near the shoreline.

The use of innovative structure materials, light penetrable grating, and the sharing of existing or future over-water structures by multiple property owners can contribute towards reducing the negative effects of structures. Older docks or other in-water structures in particular can negatively impact water quality through the depositing of toxics, and dampening of natural wave energy attenuation.

Ongoing or recommended restoration projects or programs that would reduce in-water and over-water structures include:

Existing Programs and Projects (Chapter 4)

- 4.5(C)—Park Development and Renovation (Percival Landing)
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.3—Lakes (A)
- 5.1—Budd Inlet (13)

6.8. Priority 8 – Restore and Improve Tree Canopy Coverage in Drainage Basins and Along Shorelines

Trees help protect shorelines by protecting water and soil resources. Healthy trees can reduce the amount of runoff and pollutants in creeks, ponds and other receiving waters. The leaves, branch surfaces, and trunk bark intercept and store rainfall, thereby reducing runoff volumes and delaying the onset of peak flows. Tree root growth and decomposition increase the capacity and rate of soil infiltration by rainfall and reduce overland flow. Lastly, tree canopies reduce soil erosion by diminishing the impact of raindrops on barren surfaces (CUFR 2003). As noted in Priority 6, trees are also a valuable source of large woody debris (LWD), which provides organic material and habitat for shorelines.

Ongoing or recommended restoration projects or programs that would restore or improve tree canopy coverage in drainage basin and along shorelines include:

Existing Programs and Projects (Chapter 4)

- 4.2: Critical Areas Regulations
- 4.4(D)—Public Education
- 4.4(E)—Critical Habitat Land Acquisition and Management
- 4.4(F)—Seasonal Vegetation Management Crew
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.4(J)—Low Impact Development Research and Planning
- 4.5(A)—Volunteers in Parks
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound

Additional Programs and Projects (Chapter 5)

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Lakes (B)
- 5.3—Capitol Lake (1)
- 5.1—Budd Inlet (3, 6, 7, 9, 10 and 12)

6.9. Priority 9 - Restore Estuarine Transition Habitat and Intertidal Influence

The primary ecological functions and biological resources of estuarine shorelines include: flood attenuation, tidal exchange/organic matter exchange, stream base-flow and groundwater support, water quality improvements, erosion and shoreline protection, and biological support and wildlife habitat. The benefits to the health and diversity of wildlife are extensive. Estuaries provide food web support, habitat structure, salinity gradients, and locations of refuge from predators. Kelp and eelgrass beds in intertidal areas are important habitat to forage fish and salmonids.

Estuaries and associate marshes are vital to the enhancement of water quality. The longer water is able to contact soil and vegetation, the more cycling can occur. Longer water contact times typically occur in low gradient areas in the landscape, such as estuaries and wetlands.

Alterations that limit or eliminate estuarine habitat and intertidal influence include structural modifications, such as dams and culverts, and armoring along shorelines, such as seawalls, rip-rap, and bulkheads.

Ongoing or recommended restoration projects or programs that would restore or improve estuarine habitat and intertidal influence include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.1—Budd Inlet (1, 4, 5, and 27)

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Shoreline Environmental Designations - Boundary Descriptions

The coordinates and other descriptions below are provided as an aid in identifying the locations of shoreline environment designation boundaries. See OMC 18.34.310. The coordinates below are in NAD 1983 State Plane Washington South FIPS 4602 Feet. Except as noted below, the lines between environmental designations extend at right angles to the OHWM. These coordinate provide beginning points for determining such lines. Note that the various shoreline environments do not overlap.

Waterbody	Reach	Starting Point X Coordinate	Starting Point Y Coordinate	End Point X Coordinate	End Point Y Coordinate
Budd Inlet	BUDD-2	1037527.8206	642154.5619	1037736.1112	641628.7926
Budd Inlet	BUDD-3A	1037736.1112	641628.7926	1039131.5129	637127.8922
Budd Inlet	BUDD-3B	1039131.5129	637127.8922	1039858.7355	632901.9705
The portion of Reach BUDD-3B designated as "Urban Intensity" is that portion westerly of the easterly rights-of-way lines of West Bay Drive and Olympic Way and westerly of a line extending due south from the point of intersection of Olympic Way and Fourth Avenue rights-of-way. The southern limit of Reach BUDD-3B is the southerly right-of-way line of Fifth Avenue SW					
Budd Inlet	BUDD-4	1039858.7355	632901.9705	1041060.9884	633296.5524
The southern limit of Reach BUDD-4 in the vicinity of Fifth Avenue SW is the southerly right-of-way line of Fifth Avenue; in the area to the east more than 200 feet from Budd Inlet the provisions of Reach CAP-6 are applicable.					
Budd Inlet	BUDD-5A	1041060.9884	633296.5524	1041027.9284	635570.4022
Budd Inlet	BUDD-5B	1041027.9284	635570.4022	1041079.1255	637985.7760
Budd Inlet	BUDD-5C	1041079.1255	637985.7757	1043282.6519	635209.4840
Budd Inlet	BUDD-6A	1043282.6519	635209.4840	1043803.6440	634085.3934
Within Reach BUDD-6A the Urban Conservancy designation is applicable to the upland 100 feet nearest the OHWM and the Urban Intensity designation is applicable to all other upland areas within the Reach.					
Budd Inlet	BUDD-6B	1043803.6440	634085.3934	1043822.3152	636905.9232
Within Reach BUDD-6B the Urban Conservancy designation is applicable to the upland 100 feet nearest the OHWM and the Shoreline Residential designation is applicable to all other upland areas within the Reach.					
Budd Inlet	BUDD-7	1043822.3152	636905.9232	1043107.3278	641373.9303
Budd Inlet	BUDD-8	1043107.3278	641373.9296	1041437.6464	644482.1875
Capitol Lake	CAP-1	1042299.7218	624935.6256	1041307.6874	625538.6874
Capitol Lake	CAP-2	1040979.3475	625709.6949	1041069.5166	625659.6576
Capitol Lake	CAP-3A	1041307.6874	625538.6874	1040019.5879	630041.0383
Capitol Lake	CAP-3B	1040019.5879	630041.0383	1039868.3313	630642.5955
Capitol Lake	CAP-4	1039063.8687	630263.9289	1039603.1153	626209.0554
Capitol Lake	CAP-5	1038621.2019	629911.3368	1039397.8513	628541.6203
Capitol Lake	CAP-6	1039868.3313	630642.5955	1039858.7615	632779.5108
The southwesterly terminus of Reach CAP-6 in the vicinity of Marathon Park is a line 50 feet easterly of and parallel to the the east edge of the sidewalk associated with the Deschutes Parkway. See note above re relationship to BUDD-4.					
Capitol Lake	CAP-7	1039858.7615	632779.5088	1038927.7023	630661.9373
See above regarding relationship to BUDD-3B					

APPENDIX A: RESTORATION PLAN

June 12, 2012



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Olympia City Council

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Nathaniel Jones, Mayor Pro Tem	Jeannine Roe
Jim Cooper	Karen Rogers
Julie Hankins	

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CHAPTER 1: INTRODUCTION

For cities containing any shorelines with impaired ecological functions, Shoreline Master Programs shall include goals, policies, and actions for restoration of such impaired ecological functions (WAC 173-26-186(8)(c).) Specific goals and actions for restoration, as well as existing policies and programs contributing to restoration, shall be identified in an implementable document with a scientifically based prioritization framework. For the City of Olympia, this document is intended to be supportive of planning efforts, and it is expected that this document will be dynamic and able to be updated and amended as existing conditions, scientific data, lead entities, and funding sources develop and evolve.

Restoration is defined under the shoreline guidelines as *“reestablishment or upgrading of impaired ecological shoreline processes or functions.”* While the plan is intended to achieve overall improvements in shoreline ecological functions over time, it is important to note that is in reference to status upon adoption of the master program, and does not imply returning shoreline areas to aboriginal or pre-European settlement conditions.

The existing *Shoreline Master Program for the Thurston Region* was adopted in 1976, and was comprehensively updated in 1984 and 1990. The existing Program does not address restoration in a specific chapter or component. The minimal restoration requirements that were addressed were primarily included in the Urban Waterfront Plan (1993) as Mitigation and Enhancement regulations.

To meet current Shoreline Master Program requirements, at a minimum the Restoration Plan must consider and address the following subjects (WAC 173-26-201(2)(f)):

- Identify degraded areas, impaired ecological functions, and sites with potential for ecological restoration;
- Establish overall goals and priorities for restoration of degraded areas and impaired ecological functions;
- Identify existing and ongoing projects and programs that are currently being implemented, or are reasonably assured of being implemented (based on an evaluation of funding likely in the foreseeable future), which are designed to contribute to local restoration goals;
- Identify additional projects and programs needed to achieve local restoration goals, and implementation strategies including identifying prospective funding sources for those projects and programs;
- Identify timelines and benchmarks for implementing restoration projects and programs and achieving local restoration goals;
Provide for mechanisms or strategies to ensure that restoration projects and programs will be implemented according to plans and to appropriately review the effectiveness of the projects and programs in meeting the overall restoration goals.

Inclusive of the elements listed above, the Restoration Plan is intended to identify shoreline, or areas upland that impact shorelines, that need to be restored to a healthy and functioning condition. The Plan is for the purpose of identifying potential projects and programs that would contribute or achieve restoration for those degraded areas, and can serve as a resource for government agencies, non-profit organizations, new development contractors, and others who need or want to identify potential restoration projects.

CHAPTER 2: SHORELINE INVENTORY SUMMARY

A Shoreline Inventory prepared by Thurston County Regional Planning Council (TRPC) and Shoreline Analysis and Characterization Report prepared by ESA (2008) for TRPC, provide the technical and scientific basis for establishing restoration goals, objectives, and priorities. Specifically, the Shoreline Analysis & Characterization Report provides documentation that assists in identifying existing conditions, evaluating existing functions and values of shoreline resources, and exploring the opportunities for conservation and restoration.

2.1. Shoreline Jurisdiction

The provisions of the Shoreline Program apply to all shorelines of the state, all shorelines of statewide significance and shorelands as defined in RCW 90.58.030. Shorelines under SMA jurisdiction within the City of Olympia, not including Olympia Urban Growth Area (UGA), include: Budd Inlet, Black Lake Drainage Ditch, Percival Creek, Capitol Lake, Chambers Lake, Grass Lake, Ken Lake, and Ward Lake.

2.2. Inventory

A. Budd Inlet

Budd Inlet is located at the southernmost end of South Puget Sound. It encompasses both the West Bay and East Bay sub-basins within the Deschutes River watershed, and includes several marinas and an international shipping port. For the surrounding community, Budd Inlet is a source of economic and tourism revenue, outdoor recreation, cultural identity, and a visually stunning backdrop for daily life.

1. Existing Land Use

Land uses within city limits along Budd Inlet vary greatly. The shoreline of Budd Inlet is zoned into multiple land-use categories, including commercial, government (Port of Olympia), industrial, moderate density single-family residential, multifamily residential, and parks.

Future development is shifting from industrial uses to mixed-use residential and commercial predominantly along West Bay Drive, and the eastern portion of the Port Peninsula. Redevelopment downtown is also likely to occur. The largest parcels of undeveloped or underdeveloped property exist along West Bay drive, approximately half of which have been light or heavy industrial uses that are no longer in use. Other lands are either owned by the City of Olympia Parks, Arts and Recreation Department, or the Port of Olympia.

2. Parks and Open Space/ Public Access

Priest Point Park: Priest Point Park is a 314-acre city park that came into city ownership in 1905. Priest Point has the most intact natural shoreline conditions found in lower Budd Inlet. In particular, the steep slopes along the shoreline provide beach sediment for forage fish, the Ellis Cove estuary is relatively intact with a salmon-bearing stream, there are approximately 4.4 acres of wetland, and quality riparian vegetation is found along the shoreline.

The park offers a combination of formal landscaped areas with play areas, picnic shelters, a rose garden, and miles of trails through predominantly second-growth forest. Visitors also have access to beaches with views of downtown and west Olympia.

West Bay Park: West Bay Park is 17-acres located along the shoreline on the west side of West Bay. A Washington Wildlife and Recreation Program Water Access Grant and an Aquatic Lands Enhancement Grant helped to fund acquisition, development and shoreline enhancement of intertidal and riparian areas. Public access includes a hand held boat launch.

Percival Landing: Percival Landing is a prominent pedestrian boardwalk shoreline path located on the east side of Budd Bay in downtown Olympia. Constructed in 1978, the wooden timbered boardwalk is one of Olympia's premier attractions and main venues for public access to Budd Inlet.

In 2004, the Percival Landing boardwalk structure was inspected by marine engineers who found that the wooden creosote pilings, framing and planks were succumbing to rot and marine organisms. In 2006, a Percival Landing Concept Plan was approved by the Olympia City Council to redesign the park to withstand periods of inundation due to sea-level rise, and to restore the environmental, cultural, and historic values of the shoreline. Planned improvements include a new boardwalk, multiuse flex-space, two interpretive pavilions, and restroom facilities. Additionally, overwater structures will be reduced, and over an acre of shoreline habitat will be restored.

East Bay Waterfront Park: This 1.86-acre park offers benches, interpretive signage, and views of Budd Inlet. Some riparian vegetation restoration efforts are underway to improve the shoreline.

Public Access: Other access points to Budd Inlet include a number of Port of Olympia and privately owned marinas, Port Plaza, the 5th Ave dam, and Seven Oars Art Site, a pocket park located near the west end of the 4th Ave Bridge, and a viewing area on East Bay Drive.

3. Shoreline Modifications

As a heavily developed shoreline with a functioning international port, over 90% of the shoreline of Budd Inlet within the city is significantly modified with armoring, and a large portion of downtown is located directly on fill. As noted above, the Percival Landing boardwalk is an overwater structure. West Bay has been modified with historical industrial uses and other development projects from the base of Budd Inlet to the West Bay Marina. The majority of East Bay Drive private residences have armored shorelines. Budd Inlet includes ten small docks, and three significant and three additional smaller marinas.

4. Biological Resources and Critical Areas

Budd Inlet, despite being highly modified includes a variety of critical areas, and critical saltwater habitat. Priest Point Park has the highest levels of intact and beneficial critical areas and saltwater habitat, including salt marsh, riparian shoreline, estuarine conditions, steep slopes and beach sediment, and a salmon bearing stream.

Salmon have been confirmed in Mission, Moxlie, and Schneider Creeks, which all empty into Budd Inlet. Forage fish spawning grounds and habitat is along Priest Point Park and

small sections of the west shoreline. The Port Lagoon, a functioning wetland with patchy salt marsh, is subject to a Federal Fish and Wildlife conservation easement.

B. Freshwater Streams and Rivers

The only freshwater streams and rivers regulated under SMA in Olympia are Black Lake Drainage Ditch and Percival Creek. Black Lake Drainage Ditch was constructed in 1922 to drain potential agricultural land north of Black Lake. Black Lake Meadows refers to an adjacent city-owned stormwater facility and natural area. Originating from Black Lake, the ditch captures stormwater discharge from many of the commercial districts in west Olympia including from Yauger Park stormwater pond.

Percival Creek is fed by Black Lake Drainage Ditch and empties into Percival Cove, adjacent to Capitol Lake. Percival Creek was significantly altered by the construction of a section of Burlington Northern Santa Fe Railroad in the 1890's, and discharged directly into Budd Inlet until the construction of Capitol Lake in 1951. The railroad line still runs along the north edge of the creek from Percival Cove to Mottman Road. Percival Creek runs through the campus of South Puget Sound Community College, however, only the portion of the creek below its confluence with Black Lake Drainage Ditch and outside the campus is within the jurisdiction of SMA.

1. Existing Land Use

The land-use designations surrounding Black Lake Drainage Ditch are limited to open space, Black Lake Meadows, a storm pond and open space tract owned and managed by the City of Olympia Storm and Surface Water Utility, and a small amount of industrial and residential parcels.

The shorelines along the 1.2 miles of Percival Creek within SMA jurisdiction include a wide variety of land-use categories, including Open Space, High Density Residential, Commercial, and Industrial. Outside the canyon, much of the land in the vicinity of Percival Creek is developed.

2. Parks and Open Space/ Public Access

The shorelines of Black Lake Drainage Ditch are primarily located within an open space and storm pond tract owned and managed by the City of Olympia. No formal public access is available. There are currently no plans to establish a park or public access. Shorelines not under public ownership are adjacent to private property. Ease of access and proximity to west Olympia commercial centers allows for the establishment of homeless encampments within the riparian corridor.

There is no existing formal public access to Percival Creek. Future plans include transitioning the existing privately owned Burlington Northern Santa Fe Railroad into a shared-use trail for public use and access to the Percival Creek canyon. Due to already existing ease of access to the canyon from Deschutes Parkway, a significant number of homeless people establish camps within the riparian corridor.

3. Shoreline Modifications

Black Lake Drainage Ditch is an artificial drainage ditch, and largely functions as a stormwater capture for many of the commercial districts in West Olympia. As noted previously, the construction of the Burlington Northern Santa Fe Railroad in the 1890s

was the first major alteration of the Percival Creek stream channel. The railroad defines the northern edge of the creek. The construction of Black Lake Ditch in 1922 greatly increased the amount of flow into Percival Creek. An estuary at the mouth of the Creek as it discharged into Budd Inlet was lost with the construction of Capitol Lake in 1951. Surrounded by urban development, Percival Creek is highly altered by a system of stormwater ponds and pipes conveying surface water throughout the basin. Highway 101 and Cooper Point Rd. cross over Percival Creek on high bridges, and one mile from Percival Cove, there is a pedestrian bridge crossing.

4. Biological Resources and Critical Areas

Very few critical areas are associated with Black Lake Drainage Ditch within the City of Olympia. While over 160 acres of wetlands are associated with the Ditch in Tumwater, the shorelines under Olympia's jurisdiction are only adjacent to a constructed stormwater facility. The Ditch has been identified as supporting Chinook, Coho, and Chum, with an occasional sighting of a Sockeye salmon. Black Lake Meadows is rich in bird diversity, with a large variety of pond and nesting habitat.

The Percival Creek Canyon is dominated by steep slopes on the south side of the creek, which at times exceed 60%. North of the railroad grade, the slopes are more moderate. Emergent wetlands are colonizing new fill at the mouth of the creek, which was greatly modified with the construction of Capitol Lake. Percival Creek has been identified as supporting Chinook, Coho, Chum salmon, and Cutthroat trout. The Chinook are of hatchery origin.

C. Lakes

Capitol Lake, Ken Lake, Chambers Lake, Grass Lake, and Ward Lake are regulated as SMA shorelines. The area that is now Capitol Lake was once an integral part of Budd Inlet, consisting of intertidal mudflats that typically form at the mouths of estuaries. An earthen dam, concrete spillway, and bridge were constructed in 1951, blocking the tidal exchange with Budd Inlet and flooding the mudflats to form Capitol Lake.

Ken Lake and Ward Lake have a high level of surrounding residential development. Chambers Lake within Olympia is buffered by an extensive wetland, however the shoreline within the City of Lacey is intensely residential. Grass Lake, which is also almost entirely within the city's Grass Lake Refuge, is also surrounded predominantly by a system of wetlands.

1. Existing Land Use

As a focal point for the City of Olympia, and an integral aspect of the Capitol Campus, Capitol Lake is currently surrounded by a variety of land-use designations including commercial, mixed-use, government (Capitol Campus), Parks, and Moderate to High Density Residential. Sixty-seven percent of the shoreline is managed by Washington State General Administration. Future development is expected to increase commercial and residential densities in the downtown core near the lake.

Chambers Lake and Ward Lake are both currently surrounded by a variety of land-uses that include low to moderate density single-family residential, agriculture land, and park and open space. More residential development is expected near these lakes. A 105-acre Urban Village, Briggs Village, will add an additional 234 lots (a mix of residential,

commercial, and multi-family) to the west side of Ward Lake. A city park is planned for a portion of the southern end of the lake.

The shoreline of 26-acre Ken Lake is entirely low to moderate density residential or single-family homes, including two private community beaches. This is unlikely to change in the future.

The 64-acre Grass Lake and Lake Louise system is almost entirely within Grass Lake Refuge, owned and managed by the City of Olympia as a park and open space. Those shorelines not within the refuge are rural, moderate, and high density residential, or commercial. Residential development will continue in the surrounding areas, but will be limited to “low impact” development.

2. Parks and Open Space/ Public Access

The shoreline of Capitol Lake has an extensive network of parks, trails, and viewpoints. Public access is encouraged and integral to the management of the lake. Parks, trails, and other access points include the Capitol Lake Interpretive Center in Tumwater, Heritage Park, Marathon Park, and the 5th Avenue Dam, which provides overlooks to the lake. All public access points are owned and managed by Washington State General Administration.

Chambers Lake is accessed by the public at a Washington Department of Fish & Wildlife (WDFW) Boat Launch. With the City of Lacey, the Chehalis-Western Trail, a former railroad that has been converted to a regional trail, bisects the west and east basins of the lake.

Ward Lake also has one (WDFW) Boat Launch, and three privately owned accesses for residential developments: Holiday Hills, The Cove, and Briggs Village. The City of Olympia owns undeveloped property on the southern end of the lake to be developed as a future park.

Access to Ken Lake is limited to the residents of Lakemoor Homeowner’s Association, who jointly own two private community beaches.

As noted previously, Grass Lake and Lake Louise are almost entirely within Grass Lake Refuge, owned and managed by the City of Olympia as a park and open space. A walking trail circulates through the refuge, and includes a view point for Lake Louise. Plans include future installation of a shared-use trail with interpretive signage, an outdoor instruction area, and a wildlife viewing blind.

3. Shoreline Modifications

Capitol Lake has extensive shoreline modifications. Interstate 5 crosses the lake on a bridge and fill. Deschutes Parkway lies on fill on the west side of the lake. The shoreline of Heritage Park is a concrete bulkhead. Burlington Northern Santa Fe railroad track and trail on fill separates the North and Middle Basins, including an adjacent pedestrian bridge. Three small docks currently exist, and a public pier is located at the Interpretive Center.

With the exception of the former railroad right-of-way, very little shoreline modifications have taken place at Chambers Lake. Ward Lake and Ken Lake have both been modified with the addition of residential landscaped yards and 48 and 32 private docks, respectively. Additionally, Ken Lake was originally dredged with construction of the surrounding subdivision to enhance recreation in the lake. A portion of Grass Lake known as Lake Louise was once mined as a peat bog, but has since been left to return to a natural system.

4. Biological Resources and Critical Areas

High quality riparian shoreline exists along the east shore of the Middle Basin of Capitol Lake, and the west shore of Percival Cove. The wooded hillside of Capitol Lake is the largest connected habitat unit within Olympia. Bald eagle habitat is located within the basin. Heritage Park has been designed and landscaped to provide flood protection to downtown Olympia. Steep slopes can be found along the eastern shore of the middle basin, and the west shore of Percival Cove. Steep slopes are also found west of Deschutes Parkway in the middle and north basins, and to the southeast and south of Heritage Park in the north basin. Capitol Lake has been found to support populations of Chinook, Coho, Steelhead, and Cutthroat salmon. Also identified are Stihel barb and mud minnow.

In 2001, Eurasian water milfoil, an exotic aquatic plant, was discovered in the lake. In summer 2004, the herbicide triclopyr was applied to the lake to control the milfoil infestation. In 2005, some surviving milfoil plants were discovered in the south basin and in the wetland near the Interpretive Center. A number of different agencies, including Washington State General Administration and WDFW are currently responding to the discovery of the New Zealand mud snail in late 2009. Large populations of the 1/8-1/4 inch long snails can consume up to half of the available food in a water body, starving out insects essential to trout and salmon.

Chambers Lake has an extensive variety of wetland habitats surrounding it. Emergent wetlands surround the south isthmus between the basins and the south and east shore of the West Basin. Much of the west shore of the West Basin is surrounded by scrub shrub wetland. The northwest arm of the West Basin supports a unique wetland with acidic organic soils.

As a kettle lake, Ward Lake is spring-fed, occupying a closed pothole with no surface feeder streams, and no surface outlet. Steep slopes can be found on the west, north, and eastern shores of the lake. There exists over a half acre forested wetland in the southeast corner of the lake.

Ken Lake has no noted biological resources or critical areas.

Grass Lake Refuge, surrounding Grass Lake and Lake Louise, is one the largest intact habitat units within Olympia. Wood ducks, mud minnow, and a two-acre stand of Quaking Aspen have been identified as priority habitat and species within the refuge. Along the shorelines there is extensive scrub shrub wetland interspersed with forested, smaller patches of emergent and open water habitats. The lakes and refuge are habitat for a rich variety of bird species.

CHAPTER 3: RESTORATION GOALS AND OBJECTIVES

The goals identified in this Restoration Plan reflect an effort to achieve no net loss and overall improvements in shoreline ecological functions over time ([WAC 173-26-221](#)). Due to Olympia's location at the southernmost tip of Puget Sound, the goals and objectives identified are significantly influenced by the existing conditions of the marine shorelines of Budd Inlet.

As the largest shoreline city in Thurston County, Olympia plays a key role in the condition of Budd Inlet, and recent evaluations of Puget Sound describe a heavily altered and vulnerable biological system. Due to its location at the terminus of Puget Sound, Budd Inlet is especially susceptible to water quality impacts. Northern areas of Puget Sound benefit from strong hydrologic and chemical interactions with the Pacific Ocean. South Puget Sound, including Budd Inlet, is unique in that it provides extensive areas of shallow waters in concert with complex, lengthy shorelines; consequently, adjacent lands interact with and influence the south sound more readily and to a greater degree.

Understanding that the overall health of Budd Inlet also correlates directly to the condition of those shorelines (lakes, streams, wetlands, etc.) that drain into the inlet, the goals listed below, while seemingly focused solely on marine shorelines, simultaneously apply to freshwater river, stream, and lake shorelines as well.

3.1. Restoration Overall Goals

- a) ***Improve water quality in Budd Inlet and its tributaries.*** Improving water quality is necessary to protect and enhance native wildlife and vegetation habitat, restore opportunities for aquaculture, and ensure safe and healthy recreation opportunities. Improving water quality will require a comprehensive, multi-pronged, proactive approach that incorporates a variety of tools including stormwater treatment retrofits, public education, low impact development, sanitary sewer expansion, community-based programs, and site-specific restoration efforts.
- b) ***Improve natural sediment processes.*** Improving natural sediment processes is necessary for healthy aquatic habitat, and is achieved in part by minimizing bulkheads, protecting and enhancing estuaries, creating salt marsh environments, and re-vegetating shorelines.
- c) ***Preservation and restoration of wildlife habitat.*** The South Puget Sound's diverse shoreline habitat and numerous stream corridors support or have the potential to support populations of native fish, shellfish, amphibians, and birds. With ready access to natural areas and educational programming, Olympians desire protection of existing wildlife habitat and restoration of those areas that have the potential to support or promote the recovery of a native wildlife population.
- d) ***Restore shorelines as opportunities for humans to connect with the natural environment.*** When designing and implementing restoration of shorelines, consider the desire and potential for human inclusiveness; provide access and learning experiences for people to feel welcome, engaged, and invested in the natural and restored environment.

3.2. Restoration Objectives for Budd Inlet

- a) Preserve and restore estuarine habitat. Subtidal and intertidal mudflats and salt marshes provide transition habitat between fresh and salt water environments.
- b) Enable natural wave energy attenuation, which is restricted by the hardening of shorelines with bulkheads, revetments, docks, etc.

- c) Improve sediment generation and transport. Bluff erosion processes have been modified as structures (roads, railroads, piers, docks, and bulkheads) at the toe have reduced the frequency of tidal and wave interaction with bluffs.
- d) Improve water quality. Reduction in wetland area has reduced contact time of water with soil, lowering the potential for filtering and cycling of pollutants, which adhere to soil particles. Reduce or eliminate upland sources of pollutants, which have increased as a result of urban and industrial land uses within and near the shoreline, and subsequently, are the result of an increase in stormwater runoff.
- e) Preserve and restore wildlife habitat. Shoreline vegetation provides habitat for invertebrates, birds, amphibians, reptiles, and mammals.
- f) Increase sources and delivery of large woody debris. Removal of mature trees from riparian areas, and from surrounding bluffs has significantly reduced the source of large woody debris to the shoreline.

3.3. Restoration Objectives for Rivers and Streams

- a) Preserve and restore estuarine habitat. Shoreline modifications, such as the introduction of fill, culverts, and dams, have disrupted naturally occurring estuaries. Changes in flow regime due to changing land uses have modified timing and quantities of freshwater flows.
- b) Regulate seasonal flows. Upstream land uses and development have resulted in less water flowing during the summer low-flow periods.
- c) Restore natural sediment generation and transport processes. Due to build-up and wash-off from urban, agricultural industrial land uses, an increasing amount of fine sediment is being transported. An increase in local impervious surfaces is contributing to greater and more frequent flood events, which results in an increase in incidents of stream bank erosion and channelization.
- d) Improve water quality. Upland sources of pathogens and toxins have increased significantly as a result of urban and industrial land uses. Potential storage has decreased through the loss of wetlands and subsequently a reduction in water to soil contact. The increasing installation of impervious surfaces also results in more urban flooding, often resulting in urban stormwater runoff flowing directly into rivers and streams.
- e) Preserve and restore wildlife habitat. Vegetation provides structure for invertebrates, birds, amphibians, reptiles, and mammals.
- f) Increase sources and delivery of large woody debris. Removal of mature trees from riparian areas has significantly reduced the source of large woody debris, which provides structure for streams, readily utilized by fish and other wildlife.

3.4. Restoration Objectives for Lakes

- a) Restore natural sediment retention patterns. Fine sediment loading is elevated due to land cover alterations and increased impervious surface.
- b) Improve water quality. Reduction in wetland area and lacustrine floodplain connection has reduced water contact time with soil, lowering the potential for filtering and cycling of pollutants. Upland sources of pathogens and toxins have increased significantly as a result of urban and industrial land uses, resulting in the growth of invasive aquatic plants and algae, phosphorous loading, and increased water temperatures.
- c) Preserve and restore wildlife habitat. Vegetation provides structure for invertebrates, birds, amphibians, reptiles, and mammals.
- d) Increase sources and delivery of large woody debris. Removal of mature trees has significantly reduced the source of large woody debris.

CHAPTER 4: EXISTING AND ONGOING RESTORATION PROJECTS AND PROGRAMS

4.1. Comprehensive Plan Policies

The City of Olympia's current Comprehensive Plan was adopted by the City Council in 1994 after a three-year community involvement effort. Olympia is currently undergoing an extensive periodic update process, which is slated to be completed in 2012. The Shoreline Master Program update currently underway, and will be made consistent with the update of the Comprehensive Plan in 2012.

The existing Comprehensive Plan contains a number of general and specific goals and policies that direct the City to permit and condition development with consideration for the enhancement and preservation of the natural environment, as well as the preservation and development of public access opportunities. Specific relevant goals and policies include:

Land Use

- Policy 6.6 Provide incentives for restoring degraded wetlands, stream corridors, estuarine shorelines, and other important natural systems.
- Policy 6.7 Protect the viability and productivity of Budd Inlet's marine habitat, water quality, water-dependent uses, public access, and views, from degradation and loss.
- a. Permit over-the-water construction on a limited basis, consistent with the Shoreline Master Program for the Thurston Region and the Urban Waterfront Plan.
- b. Protect Budd Inlet from unnecessary landfills:
- (1) Allow minimal filling of tidelands, consistent with the Shoreline Master Program for the Thurston Region, only as required to: a) Promote access for recreational uses; or b) Make the MacFarland-Cascade site environmentally safe; or c) Allow construction of a fourth shipping berth at the north end of the Port Peninsula; or d) To accomplish a project expressly approved by the City upon finding that:
- (a) The project is a water-dependent or water-related use (as defined by the Shoreline Master Program for the Thurston Region), or is necessary to solve environmental degradation problems;
- (b) The size of the proposed area to be filled is the minimum possible to accomplish the project;
- (c) The benefits of filling cannot reasonably be achieved by other alternatives;
- (d) The predicted community benefits exceed the project's environmental impacts, including any adverse impacts upon affected neighborhoods; and
- (e) Any loss of habitat is appropriately mitigated.
- (2) When evaluating the need for filling a tideland, consider such factors as whether the proposed fill would:

- (a) Lead to increased traffic congestion;
- (b) Detract from Olympia's waterfront orientation and the potential for tourism;
- (c) Further limit the flushing action of Budd Inlet, making it harder to protect water quality, especially respective of the LOTT treatment plant outfall and recreational uses;
- (d) Intensify residential and industrial conflicts;
- (e) Reduce or degrade fish and wildlife habitat, particularly for rearing and migrating salmon;
- (f) Impede the public's right of navigation; or
- (g) Harm the environment.

Any such adverse impacts may be grounds for mitigation or denial of a proposal.

(3) It is the intent of the provisions above to end acceptance of landfill as the inevitable fate of Budd Inlet and to impose on any proposed landfill project the standards of "highest necessity."

c. Regulate development so that it does not prevent or unduly impede established or planned public access to Budd Inlet, particularly in the vicinity of the Port Lagoon on West Bay.

Policy 6.8	Reduce the rate of impervious surface expansion in the community.
Policy 6.9	Olympia will consider and as appropriate may require mitigation of environmental impacts to other public agencies and jurisdictions that may result from development actions within the City.
Policy 18.13	The Port should exercise environmental stewardship. This entails: (a) Assuring that all activities which involve the Port are conducted in a manner which protects the environment; (b) Cleaning up areas or sources of pollution on Port property; (c) Participating in the restoration of the natural environment on and around Port property, where appropriate; (d) Acquiring and protecting such properties as may serve the goals of the Port for mitigation, enhancement, and restoration; and (e) By implementing a pollution prevention program.
Policy 18.14	The Port should work closely with Olympia to offset the risks of contamination to Budd Inlet by Port activities.
<u>Environmental</u> Goal 3	Regional surface and groundwater is conserved, protected, and meets or exceeds all standards for quality and sustainable supply.

Policy 3.10 Carefully control shoreline development to prevent or minimize shoreline erosion, prevent pollution discharges into marine waters, and protect shoreline aesthetics and habitat, as consistent with the Shoreline Master Program, and other local, state, and Federal regulations and policies.

Goal 6 Olympia fully cooperates with inter-jurisdictional and regional efforts to manage natural resources and address common environmental issues.

Policy 6.1 Participate in cooperative storm and surface water, groundwater management and protection efforts among federal, tribal, state, local jurisdictions and community organizations on an aquifer, watershed or regional basis.

Parks, Arts and Recreation

Goal 4 Preserve open space or unique landforms as part of the Olympia area's landscape, character, and overall contribution to urban form and character.

Policy 4.3 Preserve undeveloped lands that provide public access to fresh and marine water beaches.

Policy 4.6 Design open space to define the community, to create outdoor spaces, to protect wildlife habitat and the natural environment, and to create public and civic spaces.

Goal 5 Manage City-owned open space and parks as beneficial places for wildlife.

Policy 5.3 Incorporate habitat considerations in design and development of new parks, parks scheduled for renovation, and in approvals for private developments. Encourage use of plants that attract wildlife to City-owned parks, open space, and landscaping areas.

Policy 6.3 Increase public access to all major water bodies regulated under the Shoreline Master Program for the Thurston Region.

A specific section of the Comprehensive Plan is dedicated to West Bay Drive due to the existing and potential environmental, cultural, and economic benefits of the shoreline:

"Conditions in the West Bay Drive area represent a challenging mix of opportunities and constraints. The shallow waters along this shoreline provide crucial habitat for young salmon when they first leave the Deschutes River basin and enter salt water. Birds, marine mammals, upland mammals and other wildlife species are relatively common for this urban location. Several sites along the shore are significant in Squaxin Island Tribal cultural history...Today's waterfront businesses include a mix of industry and recreation. This plan's ambitious vision is for a vibrant mix of light industrial, office, restaurant, commercial, recreational, and residential uses for this urban waterfront location, along with improved habitat for fish and wildlife."

4.2. Critical Areas Regulations

The City of Olympia Critical Areas Regulations can be found in Olympia Municipal Code Chapter 18.32. Critical areas protection was originally adopted in 1992 and revised in 2005. The intent of the Critical Areas Ordinance is to implement the State of Washington Growth Management Act and its guidelines, the Countywide Planning Policies, and the Olympia Comprehensive Plan by accomplishing the following related to environmental preservation:

1. Protecting critical areas and the functions they perform by regulating their development;
2. Maintaining groundwater recharge and preventing the contamination of groundwater resources;
3. Minimizing damage due to landslides, seismic events, erosion or flooding;
4. Protecting natural flood control and stormwater storage from alterations to drainage or stream flow patterns;
5. Protect wildlife habitat and species where possible throughout the City;
6. Controlling siltation, protecting nutrient reserves and maintaining stream flows and stream quality for fish and marine shellfish;
7. Protecting areas with high potential for marine aquaculture activities from degradation by other types of uses;
8. Minimizing turbidity and pollution of wetlands, streams and fish-bearing waters and maintaining their associated wildlife habitat; and
9. Achieving no overall net loss in acreage and functions of the City's remaining wetlands.

The current regulations categorize streams into five types based on documented salmonid fish use, with standard buffers ranging from 50 feet for streams in ravines to 250 feet for Type 1 streams (shorelines of the State). Standard wetland buffers now range from 50 to 250 feet and are classified using the Department of Ecology's latest *Washington State Rating System for Western Washington*. Management of the City's critical areas using these regulations should help insure that ecological functions and values are not degraded, and impacts to critical areas are mitigated. These Critical Areas Regulations are one important tool that will help the City meet its protection and restoration goals. The City's Critical Areas Regulations are adopted by reference into the Shoreline Master Program to regulate critical areas found within the shoreline area, and, if there is a conflict, the more restrictive regulation would apply.

4.3. Shoreline Master Program

The existing *Shoreline Master Program for the Thurston Region* was adopted in 1976, and was comprehensively updated in 1984 and 1990. Thurston Regional Planning Council authored and up until recently, maintained the regional shoreline master program for Olympia and six neighboring jurisdictions.

While not distinguished as a required component of the existing Shoreline Master Program, restoration requirements are addressed in an Urban Waterfront Plan (1993) as Mitigation and Enhancement regulations. The Urban Waterfront Plan addressed only overwater development on the shorelines of Budd Inlet. Specific policies and subsequent regulations addressing mitigation and enhancements are outlined in Section 4 (I) and Section 5 (10), and include the following:

1. All adverse impacts to fish and wildlife habitat, its functions, values, and acreage, should be mitigated and enhancements made such that the net result of the project is not worsening such conditions

2. Guidelines and standards for mitigation and enhancements should be established in order of preference.
3. A project proposal that includes a less preferred mitigation approach should meet a comprehensive set of standards that assure the public interest is served by the proposal such that the net result is no net loss of habitat function, value, or acreage.
4. The applicant is financially responsible for additional mitigation and enhancement action should any element of the Mitigation and Enhancement Plan fail.
5. The City of Olympia should establish a Habitat Advisory Committee, consisting of experts in the disciplines of fish or wildlife habitat, to review required habitat Mitigation and Enhancement Plans in a consistent and coordinated manner and make recommendations regarding approval to the Olympia Environmental Review Officer.
6. Where habitat is altered, the project applicants should restore or create equivalent areas of habitat in order to compensate for habitat losses.
7. The City should approve a Mitigation and Enhancement Plan as a condition of issuance of any permit which impacts habitat.
8. Mitigation should generally be implemented concurrently with the regulated activity under the permit.
9. In general, on-site mitigation should be required.
10. If adverse impacts cannot be mitigated, permits should be denied.

In 2003, the Washington State Department of Ecology adopted guidelines which required that all local jurisdictions in the state update their Shoreline Master Programs. Ecology sequenced the adoption of the SMP's to fit the seven year comprehensive plan update cycle required by the state Growth Management Act. The deadline for all local jurisdictions within the Thurston region to update their SMP's is December 2011. The SMP update is currently underway, and will be made consistent with the update of the Comprehensive Plan in 2012.

4.4. Storm and Surface Water Utility

Stormwater in Olympia is handled through a system of storm drains, pipes, ponds, and drainage ditches, and much of the water eventually reaches one of the City's eight stream systems, four major lakes, or Budd Inlet. Subsequently, the City of Olympia Storm and Surface Water Utility ("Utility") plays a significant role in ensuring the protection and restoration of Olympia's water bodies. The three goals of the Utility are to:

- Reduce the frequency and severity of flooding so hazards are eliminated, except during major storm events. The Utility will minimize potential flooding associated with new development through regulations for on-site stormwater systems. Flooding arising from existing inadequate public infrastructure will be addressed in a timely manner.
- Improve water quality in all degraded streams and wetlands while maintaining high quality conditions in Green Cove basin. Improvements in water quality will be measurable and result in improved stream health. Olympia drainage basins are managed based on the degree to which water quality is currently impacted by human actions. Unique management approaches are designed to minimize specific impacts in each basin.
- Slow the decline of aquatic habitat health in all degraded streams and wetlands, while protecting healthy habitat from additional impacts as measured by levels of biotic diversity. The relationship between aquatic habitat conditions and land use impacts in urbanizing basins is scientifically complex and managerially challenging. Efforts include protecting high quality habitats while providing tangible improvements to other systems. Community engagement in

environmental issues and the incorporation of innovative development techniques is key to achieving success in Olympia's aquatic habitat goals.

A. Operations and Maintenance

Olympia's stormwater operations crews clean and maintain approximately 130 miles of storm pipe, 3,000 storm drains, and 40 public stormwater retention facilities. Additionally, city staff oversees a program that requires commercial property owners with private stormwater systems to perform regular maintenance and cleaning of their system. The Utility regulates and provides technical assistance to Homeowner's Associations and Neighborhood Associations, who are pond owners as well. These combined actions result in fewer pollutants and sediments entering Olympia's waterways. In addition to the Utility's maintenance and operations activities, the following programs specifically contribute to cleaner water in Olympia's streams, lakes, and Puget Sound.

B. Western Washington Phase II Municipal Stormwater Permit

All stormwater runoff flowing through Olympia's pipes, ponds, and ditches is managed according to the requirements of a permit issued by the Washington State Department of Ecology in January of 2007. The Permit stems from the federal Clean Water Act and shares its intent to restore and maintain the chemical, physical, and biological integrity of our nation's waters. Each year, the permit requires the City to take actions like; educating the public and encouraging non-polluting behaviors, looking for illegal dumping and cross-connections, enforcing erosion and sediment control at construction sites, and using best practices for land management and stormwater system maintenance.

C. 2009 Drainage Design and Erosion Control Manual

Olympia adopted its 2009 Drainage Design and Erosion Control Manual in compliance with the Phase II Municipal Stormwater Permit issued by the Washington State Department of Ecology. The manual fulfills permit requirements for equivalency with the 2005 WDOE Manual. The objectives of the manual are to provide the requirements and design guidance for new and redevelopment stormwater quantity and quality control, so the stormwater generated by these developments complies with water quality standards and sustains healthy fish and wildlife habitat in receiving waters.

D. Public Education

The Utility supports a robust public involvement and education program. The program provides educational and volunteer opportunities for the Olympia community. A few specific programs include:

- Involvement in Stream Team, an inter-jurisdictional education-to-action program for citizens interested in protecting and enhancing local streams, lakes, and Puget Sound. Stream Team frequently implements educational planting activities for participants.
- OLYWater Schools Program for 4th or 5th graders focuses on providing education and training opportunities to improve students' knowledge of local water resources, as well as motivate them to change behaviors that adversely affect water and habitat quality.
- Salmon Stewards trains and organizes volunteers to provide interpretive information about salmon life cycle and recovery at key locations during salmon migrations.

E. Critical Habitat Land Acquisition and Management

The Utility purchases and manages parcels of land throughout Olympia that contribute to water quality and the preservation of critical aquatic habitat. For successful acquisition, the Utility seeks to utilize opportunities to partner with other agencies and willing property sellers to acquire land. Parcels are identified for acquisition because of a unique or valuable aspect of habitat, including wetlands, which

when intact and functioning or when restored are integral to the management of stormwater. Altogether, approximately 15 acres have been acquired for preservation.

F. Seasonal Vegetation Management Crew

The Utility annually hires seasonal staff who implement vegetation management and maintenance practices aimed at restoring or improving the habitat and natural function of these properties. Those practices include invasive vegetation removal, riparian vegetation installation, and maintenance of stormwater facilities to ensure ongoing function.

G. Restoration Projects and Invasive Species Removal

The Utility has been involved in many restoration projects at numerous locations and scales. Often utilizing volunteers and students, projects have included re-vegetating and maintaining vegetation in riparian areas and invasive species removal in riparian and upland areas. Other projects have replaced deteriorating instream culverts and stabilized erosive landslide areas adjacent to streams. Specific recent projects include the following:

- The City of Olympia retrofitted a rain garden on Division Street to improve water quality to Schneider Creek. Completed in 2008, the benefits include: flood flow retention, removal of pollutants and sediment, and increased vegetation for habitat. Rain gardens also promote groundwater recharge.
- The City of Olympia has installed a substantial amount of native plantings on a portion of West Bay Park designated as the 4th Ave Bridge mitigation site. Revegetation with native plantings promotes flood flow retention, and provides erosion control and storage of phosphorus and nitrogen while providing habitat for wildlife.
- The City of Olympia purchased and enhanced 42 acres of impacted wetlands adjacent to Black Lake Drainage Ditch in 1995. Properly functioning wetlands promote flood flow retention, as well as removal of pollutants/sediment through sedimentation and adsorption, thus mitigating upland sediment generation. Wetlands also contribute to groundwater recharge and low summer flows while providing shoreline habitat for wildlife such as invertebrates, birds, amphibians, reptiles, and mammals.
- In partnership with Washington Trout and the Thurston Community Salmon Fund, the City of Olympia installed four small log structures adjacent to the bank of Black Lake Drainage Ditch. Providing a source of large woody debris for the ditch promotes habitat complexity and provides a sink for sediment.
- Five rain gardens have been installed on public land in Olympia, and the Utility continues to support their installation by private property owners by offering educational trainings and often providing small grants.
- In 2010, the City removed invasive vegetation, stabilized slopes, and re-vegetated with native vegetation 4,500 sq. ft. of land at the headwaters of Garfield Creek. Prior to the restoration, the undeveloped lot was riddled with garbage from illegal dumping and homeless encampments.
- In 2010, the City completed a succession planting of native species over 120,000 sq. ft. of stream bank along Black Lake Drainage Ditch, and installed live stakes along 25,000 square feet of stream bank.

H. Capital Improvement Projects

The Utility has also designed and implemented a number of infrastructure improvement projects that will result in improved water quality or stormwater management. Completed in 2008 with a percentage of funds from the Dept. of Ecology, the Decatur low impact development project retrofitted stormwater management along 600 feet of Decatur Street, which flows to Schneider Creek. Low impact roadway development contributes to the infiltration properties of the underlying soil. Additionally, in 2001, an improvement project to R.W. Johnson Road included installation of pervious pavement and an improved culvert to enhance salmon access to Black Lake Drainage Ditch.

Constructed in 2011, the Yauger Park Expansion Phase 1 project expanded the stormwater storage capacity of Yauger Park. New development on the west side of Olympia has necessitated the expansion of the stormwater facility. The expansion restored the disturbed area with landscaping, providing for the recreational use of the facility and expansion area during dry periods. Landscaping will primarily be composed of native vegetation. A future second phase of expansion is planned.

I. Stream Monitoring

Local stream monitoring is performed through a regional water quality program supported by Olympia and its neighboring jurisdictions and administered by Thurston County. The program focuses on high priority streams, collecting water quality data, precipitation and creek flow data, and macro invertebrate samples. City staff collects additional macro invertebrate and water quality data from lower priority streams using volunteer help from students and citizens. Thurston County prepares a biannual report that includes data, trend analysis and comparisons with State water quality standards. This information aids the Utility in determining priority areas for possible habitat restoration or stormwater treatment projects.

J. Low Impact Development Research and Planning

Olympia has been a leader in the state for researching, developing, and implementing new low impact technologies, such as porous and pervious pavements, and bioswale and rain garden installations. The Decatur Street LID Project was completed in 2005 and tested the performance and costs of three different low impact street paving designs. A Porous Sidewalk Maintenance Comparison Study and an Impervious Surface Reduction Study have also been completed.

Currently, with the help of the City's Utility Advisory Committee, the City is evaluating priorities to better meet long-term goals of flood management, water quality improvement, and aquatic habitat enhancement utilizing a detailed GIS analysis of impervious surfaces, forest cover, water quality, macro invertebrate health, and other parameters. With this work, the many traits of the City and its natural environment that affect Budd Inlet have been quantified.

The City recently completed a comprehensive summary of existing low-impact development (LID) projects in Olympia, LID projects in other cities, and draft Department of Ecology (Ecology) requirements. Staff also completed a detailed analysis of the strengths and challenges associated with specific LID techniques in Olympia and recommended implementation.

K. Sea-Level Rise Analysis and Planning

January 2012, City of Olympia staff presented a sea-level rise update to the community. The update contained findings from the first phase of an in-depth analysis of the anticipated affects of sea-level rise

on the Olympia shoreline and potential engineering-based solutions. Work thus far has determined that Olympia is most vulnerable downtown due to increased instances of urban flooding. Future phases are anticipated to include continued analysis of solutions and funding resources.

4.5. Septic to Sewer Conversion Program

There are approximately 4,200 existing septic systems in Olympia and its Urban Growth Areas. Septic systems can pose a threat to public and environmental health, particularly when systems are damaged or poorly maintained. In order to gradually convert onsite sewage systems to gravity sewer service, the City of Olympia Wastewater Utility implements a septic to sewer conversion program. The program is voluntary and provides incentives for residential connection of septic systems to sanitary sewer as well as cost recovery mechanisms for the City to make sewer extension projects possible. The City waives the sewer general facility charge for properties that make a connection within two years of notification of sewer's availability. The first conversion under this program was implemented in 2010.

4.6. Olympia Arts, Parks and Recreation

A. Parks Stewardship Program

The Parks Stewardship Program offers City of Olympia community members opportunities to volunteer for work parties. Tools, gloves, and refreshments are provided for volunteers who participate in maintaining trails, removing invasive species (such as ivy, Scot's Broom, and Himalayan blackberry), and planting new trees and shrubs. There is also a growing offering of recreational and environmental outdoor experiences and classes that focus heavily on environmental stewardship.

B. Integrated Pest Management & Chemical Free Parks

The mission of Parks, Arts & Recreation Pest Management Program is to control pests that are harmful to the health or aesthetic value of park plantings in a manner that is cost effective, safe, and environmentally responsible. The City Council adopted an Integrated Pest Management Plan for park facilities in 2006. Since implementation, the Department has reduced reliance on chemicals once thought to be critical to maintaining parks. At present, the Department uses limited amounts of glyphosate (Round-Up) and synthetic fertilizers on some parks, while many parks are now "chemical free" with no herbicides, pesticides, or synthetic fertilizers used at all. The City also works closely with the Thurston County Noxious Weed Program to eradicate noxious weeds, some of which must be removed under county mandate.

C. Park Development & Renovation

Acquisition and development of the new 4-acre West Bay Park on the west shoreline of Budd Inlet included extensive shoreline intertidal and riparian habitat reconstruction and enhancement, invasive vegetation removal, improved public access, and toxic clean-up. Phase II will include similar enhancements to the remaining undeveloped 13 acres in the future.

In 2004, the City performed a structural analysis of Percival Landing that revealed the need for major repairs and replacements. This created an opportunity for the City to look at not only repairing the Landing but enhancing it. A Concept Design Plan was completed in January 2006. That incorporated input from consultants, a project artist, staff, the community, advisory committees, and the Squaxin Island Tribe. Phase I is complete, which included the removal of the existing overwater boardwalk structure, approximately 200 creosoted pilings, impervious surface area, and included over an acre of reconstructed shoreline to function as a native habitat.

4.7. LOTT Alliance

The LOTT Alliance is a partnership between Lacey, Olympia, Tumwater, and Thurston County to provide wastewater management and reclaimed water production services for the urbanized area of north Thurston County. LOTT invests in capital projects to help preserve and protect public health, the environment, and water resources. LOTT specifically invests in water conservation, water quality and habitat improvement projects in the Deschutes River watershed, including Budd Inlet, as compensation for being allowed to increase wintertime discharges from the treatment plant to Budd Inlet. The Gull Harbor Estuary is an example of a specific mitigation site in which LOTT has been involved in restoration and preservation activities.

4.8. Squaxin Island Tribe

The Squaxin Island Tribe is a historic steward and a conscientious co-manager and protector of natural resources. The Tribe works in cooperation with numerous federal, state and county government agencies and organizations to participate in natural resources enhancement and protection programs.

The Squaxin Island Tribe recently completed an extensive assessment of nearshore habitat restoration opportunities in Budd Inlet. The assessment builds on prior studies and was guided by an expert panel of scientists very knowledgeable on the unique conditions in Budd Inlet. The analysis considers the dynamic interplay of the shoreline and upland contributing areas, and assesses likelihood of success for restoration projects over time. The work emphasizes the importance of physical improvements to the shoreline (minimize bulkheads, re-establish estuaries, re-vegetate) that will enhance marine sediment transport mechanisms as well as water quality improvements in upland areas.

Over 100 recommended restoration projects were identified across the inlet. In heavily urbanized areas, where both shoreline and upland areas have been highly modified, the analysis suggested that clustering of restoration projects is necessary to increase likelihood of successful outcomes. City and Tribal staff met in 2010 to review the Tribe's analysis and discuss implementation opportunities. Restoration projects identified by the Tribe were integrated into Chapter 5: Additional Projects and Programs to Achieve Local Restoration Goals.

4.9. Thurston Conservation District

The Thurston Conservation District promotes voluntary stewardship among private landowners in Thurston County. Conservation Districts (CDs) are legal subdivisions of state government that administer programs to conserve natural resources. The Thurston County District conducts, oversees and participates in various restoration projects throughout Thurston County. Specifically, the district works to restore 'riparian habitats' (any habitats near water) since these areas are crucial for the health of all wildlife, especially 'salmonids' (salmon and trout).

The Conservation District and the City of Olympia have partnered multiple times to restore riparian habitat at city-owned and managed stormwater ponds. Revegetation with native species helps promote flood flow retention, provides erosion control, wildlife habitat, and storage of phosphorus and nitrogen with potential for future large woody debris deposits.

In addition, Thurston Conservation District serves as the Lead Entity for Water Resource Inventory Area (WRIA) 13. Under the Washington Administrative Code 173-500-040 and the Water Resources Act of 1971, Revised Code of Washington 90.54, the major watershed basins of Washington State were divided into 62 WRIA's. The Lead Entity works at the watershed level to develop a strategic plan to guide the

selection and ranking of restoration and protection projects based on the input of a technical committee (made up of local experts that are knowledgeable about the local watershed, habitat and fish conditions) and a citizens committee (made up of local, state, federal and tribal government representatives, community groups, environmental and fisheries groups, conservation districts and regional fisheries enhancement groups).

The Lead Entity serves a critical role as the bridge that combines science based priorities and community priorities to effectively determine projects for proposals that will result in the most balanced socio-economic and technical information regarding salmon habitat protection and restoration.

4.10. Port of Olympia

A. Shipping Berth Pilot Interim Cleanup Action

The Washington Department of Ecology (Ecology) and the Port of Olympia (Port) agreed to allow the Port to remove a portion of dioxin-contaminated sediment from two shipping berths. The two agencies are partnering on efforts to continue testing of Budd Inlet sediments along the nearshore. Higher concentrations of dioxin, as anticipated, are being found nearest the Port berths and stormwater outfalls. The Port, as part of an updated agreement with Ecology in early 2012, is now conducting additional sediment investigations in the East and West Bays. Testing will lead to development of a cleanup plan.

B. Cascade Pole

Cascade Pole operated a wood treatment plant on the site from the 1930s to the 1980s. Creosote, a mixture of several different chemicals used to preserve wood, was released to the environment during the plant's operation. Soil and groundwater were contaminated as a result. The Port has been working on cleaning up the Cascade Pole site for several years. Ecology and Cascade Pole entered into a legal agreement in 1990 to begin cleaning up pollution at the site. Since that time, the Port of Olympia has taken over responsibility for the cleanup. Ecology and the Port have entered into several legal agreements to continue with cleanup efforts. The Port implemented interim actions to remove and cover contaminated soil in the North Point area in 2010, including installation of a new \$3.5 million dollar on-site treatment plant.

4.11. Budd Inlet Restoration Partnership

The Budd Inlet Restoration Partnership is a collaboration of the cities of Olympia and Tumwater, Thurston County, Port of Olympia, and the LOTT Clean Water Alliance, aimed at improving the health and vitality of Budd Inlet. Phase I work, including an assessment of current efforts and solicitation of public input, was completed in 2008.

The Partnership is now working under a Phase II grant from Ecology. Key activities covered under the Phase II scope of work include:

- Support for the nearshore habitat assessment completed by the Squaxin Island Tribe;
- Development of an integrated map of Budd Inlet showing habitat types, public access and recreation points, cleanup sites, zoning, and development activity;
- Identification of approaches to off-site, out-of-kind, and in-kind aquatic permit mitigation; and
- Evaluation of potential structural models for regional restoration efforts.

The future focus and vision for the Budd Inlet Restoration Partnership is still a work in progress. Staff is hopeful that the work under Phase II will help set the stage for more regional leadership and coordination on restoration efforts.

4.12. South Puget Sound Salmon Enhancement Group

The South Puget Sound Salmon Enhancement Group (SPSSEG) is a 501(c)(3) non-profit organization committed to protecting and restoring salmon populations and aquatic habitat with an emphasis on ecosystem function through scientifically informed projects, community education, and volunteer involvement. Part of their mission is to seek out and work in cooperation with other organizations to help plan, fund, carry out, and monitor fishery enhancement and habitat restoration projects. Habitat improvement projects have included: engineered log jams, bulkhead removal, installation of riparian plantings, culvert removal, and other fish passage barrier removals.

The SPSSEG has completed fish passage inventories for WRIA's 13 (Olympia) and 14. The inventories provided a comprehensive survey of all in-stream structures, including culverts, dams, fish-ways, etc., on public and private lands. SPSSEG used the Washington Department of Fish and Wildlife's (WDFW) Fish Passage criteria to determine barrier status. These inventories are the basis for prioritization of fish passage barrier removal projects.

4.13. Salmon Recovery Funding Board

Created in 1999 by the Washington State Legislature, the Salmon Recovery Funding Board (SRFB) provides grant funds to protect or restore salmon habitat and assist in related activities. It works closely with local watershed groups known as lead entities. The board is composed of five citizens appointed by the Governor and five state agency directors. SRFB supports salmon recovery by funding habitat protection and restoration projects. It also supports related programs and activities that produce sustainable and measurable benefits for fish and their habitat. SRFB has helped finance over 900 projects.

4.14. Puget Sound Partnership

The Puget Sound Partnership is a community effort of citizens, governments, tribes, scientists, and businesses working together to restore and protect Puget Sound. Its Action Agenda prioritizes cleanup and improvement projects, coordinates federal, state, local, tribal, and private resources, and encourages jurisdictions, non-governmental organizations, and other entities to work cooperatively toward a shared set of goals. A draft Action Agenda and Biennial Science Work Plan was released for public comment in December 2011, with the final document scheduled for completion in April 2012. The Action Agenda will focus on strategies for reducing five pressures on Puget Sound: land development, shoreline alteration, runoff from the built environment, wastewater, and loss of floodplain function.

4.15. Capitol Land Trust

The Capitol Land Trust conserves important wildlife habitat and natural areas by accepting donations of conservation easements and gifts of land, or by working with partners to purchase lands. Since 1989, Capitol Land Trust has been instrumental in permanently conserving 3,796 acres in Mason, Grays Harbor and Thurston Counties, with 859 of those acres acquired in 2009. The Capitol Land Trust strategic goals specify preservation of marine shorelines, estuaries, and wetlands. A focus area for the organization has

been conserving marine shoreline along Eld Inlet, and wetlands within the Green Cove Basin west of Olympia.

4.16. People for Puget Sound

People for Puget Sound is actively leading efforts to re-vegetate 450 linear feet of marine shoreline on the east bay of Budd Inlet in Olympia. The non-profit organization has engaged the East Bay Neighborhood Association and community volunteers in native plant installations and invasive vegetation control at the site since 2008, and are currently partnering with the City to develop onsite educational signage. People for Puget Sound has also been involved in early efforts supporting future restoration of the Deschutes Estuary and other South Sound restoration sites located on Eld Inlet, Henderson Inlet, and in Tacoma.

4.17. Department of Ecology

A. Deschutes/Capitol Lake/Budd Inlet TMDL process

The Deschutes River/Capitol Lake/Budd Inlet system is classified as an impaired water body under Section 303d of the federal Clean Water Act. In response, the Washington State Department of Ecology (Ecology) initiated technical evaluations in 2003 to determine the main sources of pollution and to determine how much water quality needs to be improved to keep the watershed healthy. This involves setting Total Maximum Daily Loads (or TMDLs) for contaminants of concern, including nutrients, fecal bacteria, temperature, dissolved oxygen, and fine sediment.

The technical evaluations set the stage for the development of a cleanup plan and related public review process. Once the cleanup is approved by EPA, provisions within the plan will be binding. City Storm and Surface Water staff is actively participating in Ecology's TMDL process, along with staff from other regional jurisdictions.

B. Toxics Cleanup Program

Accidental spills of dangerous materials and past business practices have contaminated land and water throughout the state. The Washington State Toxics Cleanup Program works to remedy these situations, which range from cleaning up contamination from leaking underground storage tanks, to large, complex projects requiring engineered solutions. Clean-up sites located in or near Olympia shorelines are listed in Table 4.17.

Table 4.17: Department of Ecology Toxics Clean-up Sites Located Within or near City of Olympia Shorelines.

Site	Date Added to List	Affected Shoreline	Status
West Bay Marina (2100 West Bay Drive NW)	January 2008	Budd Inlet	Remedial investigation underway
Hardel Mutual Plywood (1210 West Bay Drive NW)	July 2007	Budd Inlet	Contaminated soil and free product removal (Summer 2010)
Reliable Steel (1218 West Bay Drive NW)	May 2006	Budd Inlet	Remedial investigation underway
Industrial Petroleum (1117 West Bay Drive NW)	1998	Budd Inlet	Remedial investigation underway
Solid Wood Incorporated	July 2008	Budd Inlet	Interim actions

(900 West Bay Drive NW)			completed on 4 acres (West Bay Park Phase I)
East Bay Redevelopment (915 Washington Street NE)	February 2008	Budd Inlet	Interim Actions underway
Cascade Pole (1503 Marine Dr.)	1990	Budd Inlet	Soil excavation and capping (Summer 2010)
Budd Inlet Sediments Investigation	September 2010	Budd Inlet	Sediment sampling near Priest Point Park (Summer 2010)
Briggs Nursery (4407 Henderson Boulevard SE)	2004	Ward Lake	Site cleanup nearly complete.

4.18. Puget Sound Nearshore Estuary Restoration Project (PSNERP)

PSNERP is a large-scale General Investigation (GI) funded by the U.S. Army Corps of Engineers and the Washington State Department of Fish and Wildlife, with support from other state and local entities. Its mission is to restore and protect the nearshore habitat of Puget Sound, with goals to identify, fund, and undertake construction projects that restore ecosystem health.

PSNERP is currently in its feasibility study phase, having identified a broad list of candidate habitat restoration projects across Puget Sound. A total of five projects were identified in Budd Inlet; the largest being the Deschutes River Estuary Restoration. Three of the five projects fall on City of Olympia property. As the property owner, City staff is currently working with PSNERP on the further scoping and feasibility work on:

- Restoration of the Garfield Creek estuary adjacent to West Bay Park;
- Creation of salt marsh beds at the mouth of Indian/Moxlie Creek in East Bay; and

Removal of a berm across the mouth of Mission Creek is moving forward with the Port of Olympia as the lead partner and funding source. Once scoping and feasibility work is complete on the remaining two projects, PSNERP plans to take a proposal to Congress for possible federal funding. Most recently, PSNERP published a restoration and protection planning model for managing Puget Sound nearshore ecosystems: [Strategies for Nearshore Protection and Restoration in Puget Sound](#).

CHAPTER 5: ADDITIONAL PROJECTS AND PROGRAMS TO ACHIEVE LOCAL RESTORATION GOALS

The following additional projects and programs are organized into three categories: Budd Inlet, Freshwater Streams and Rivers, and Lakes. For each, a general discussion of potential programs precedes a table that lists specific identified projects. Projects and programs identified vary in scale, feasibility, and potential lead entity. The projects listed are not inclusive of every potential restoration project that would benefit the health and condition of shorelines, but are those that have been identified at this time that are scientifically sound, beneficial, and reasonably feasible within the next ten years. The following projects lists are also not limited to within 200 feet of a shoreline, but may be implemented elsewhere and still have significant impact on the health and viability of a shoreline, lake, river, or Budd Inlet.

5.1. Restoration Projects for Budd Inlet

A comprehensive list of projects intended at restoring Budd Inlet was identified by the Squaxin Island Tribe and included in the report *Budd Inlet Restoration and Conservation Planning* (2010). As noted in Section D, the Squaxin Island Tribe completed an extensive assessment of nearshore habitat restoration opportunities in Budd Inlet. The assessment built on prior studies and was guided by an expert panel of scientists very familiar with the unique conditions in Budd Inlet. Of those projects, 53 were identified in or within 500 feet of the City of Olympia.

Of those 53 projects, Table 5.1 includes 27 that have been identified as potentially feasible for evaluation or implementation within the next 10 years with the City of Olympia as the lead or partner agency. The three projects being studied for feasibility by PSNERP are also included. See Figure 5.1 for project locations.

Table 5.1: Budd Inlet Restoration Projects Which May be Implemented Within 10 Years.
The projects included in this table are a subset of restoration projects identified for implementation in Budd Inlet by the Squaxin Island Tribe, and documented in [Budd Inlet Restoration and Conservation Planning \(2010\)](#).

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
West Bay (1)	Reconstruct the mouth of Garfield Creek and estuary.	Feasibility completed in 2011, with implementation to be determined by funding availability	Puget Sound Nearshore Estuary Restoration Project (PSNERP)	Provide transition habitat and improve water quality.
West Bay (2)	Daylight 250 feet of Garfield Creek through West Bay Park.	2014-2020	City of Olympia—Parks, Arts & Recreation	Restore natural sediment generation and transportation processes, enhance fish passage, increase delivery of large woody debris.

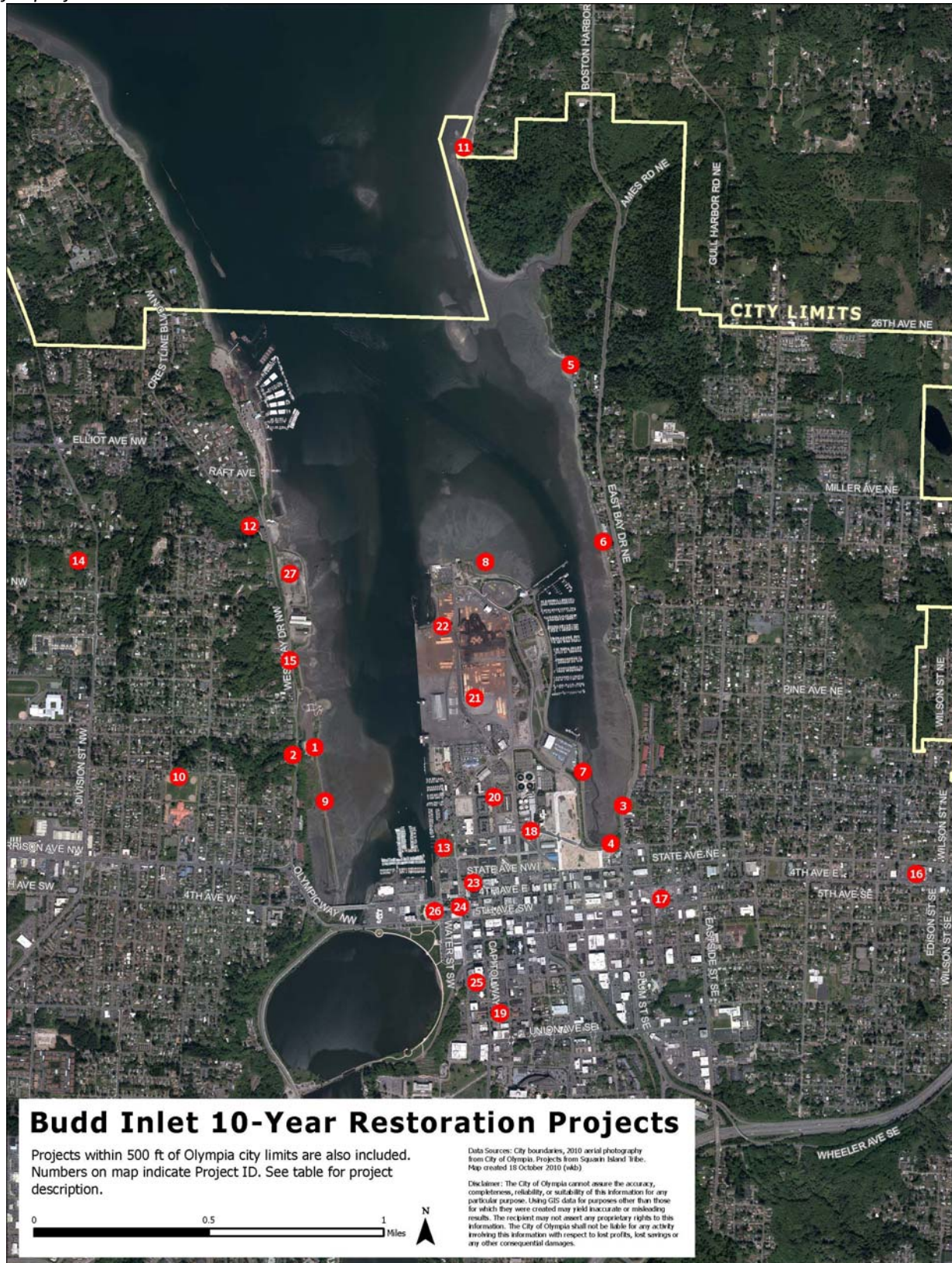
Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
East Bay (3)	Plant 2,300 linear feet of shoreline to create a functional riparian zone.	To be determined by funding availability	City of Olympia—Storm and Surface Water Utility	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (4)	Reconstruct the mouth of Indian/Moxlie Creek and estuary.	Feasibility completed in 2011, with implementation to be determined by funding availability	Puget Sound Nearshore Estuary Restoration Project (PSNERP)	Provide transition habitat and improve water quality.
East Shoreline (5)	Restore the Mission Creek estuary.	Feasibility completed in 2011, with implementation in 2012	Port of Olympia	Provide transition habitat and improve water quality.
East Bay (6)	Plant approximately 1,500 feet of nearshore riparian vegetation along East Bay Drive.	To be determined by funding availability	City of Olympia	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (7)	Plant approximately 4,200 linear feet of riparian vegetation.	To be determined by funding availability	City of Olympia	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
East Bay (8)	Add mussel rafts and Olympia	To be determined by funding	City of Olympia	Preserve and restore wildlife habitat, and

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
	oyster beds to test effects of nutrient removal and reestablish populations. May also be implemented at other suitable locations.	availability		improve water quality.
West Bay (9)	Evaluate the planting of approximately 2,600 linear feet of vegetation along public property to create a functional riparian zone.	2010-2014	City of Olympia—Parks, Arts & Recreation	Restore wildlife habitat, improve water quality, increase sources of large woody debris, and enable natural wave energy attenuation and sedimentation generation and transport.
West Olympia (10)	Install a stormwater demonstration project.	2010-2014	City of Olympia—Storm and Surface Water Utility	Improve water quality.
East Shoreline (11)	Remove 378 feet of shoreline armoring and add large woody debris.	2011	City of Olympia/Thurston County	Provide priority habitat and a sediment source for a forage fish spawning beach.
West Bay (12)	Stabilize 3,000 ft. of channel to prevent erosion in Schneider Creek.	To be determined by funding availability	City of Olympia—Storm and Surface Water Utility	Improve water quality.
West Bay (13)	Plan for clean-up of toxics at Percival Landing.	To be determined by funding and/or redevelopment	City of Olympia-Parks, Arts, & Recreation	Improve water quality.
West Olympia (14)	Plan for clean-up of toxics at Division Nursery site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
West Bay (15)	Plan for clean-up of toxics at Petroleum Distributors site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
East Olympia (16)	Plan for clean-up of toxics at East Side Laundry.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
East Olympia (17)	Plan for clean-up of toxics at Capitol City Studios.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (18)	Plan for clean-up of toxics at Unocal site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (19)	Plan for clean-up of toxics at Clarion.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (20)	Plan for clean-up of toxics at Warehouse One site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (21)	Plan for clean-up of toxics at Cascade Pole site.	Ongoing	Port of Olympia	Improve water quality.
West Bay (22)	Plan for clean-up of toxics at Texaco.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Port of Olympia	Improve water quality.
Downtown (23)	Plan for clean-up of toxics at Key Shop site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (24)	Plan for clean-up of toxics at parking lot site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (25)	Plan for clean-up of toxics at 8 th Street site.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.
Downtown (26)	Plan for clean-up of toxics at Pho restaurant.	To be determined by funding availability and/or redevelopment	Washington State Dept. of Ecology/Private Landowner	Improve water quality.

Location (Project ID)	Planned Project Description	Implementation Schedule	Potential Funding Source or Commitment	Restored Processes & Functions
West Bay (27)	Evaluate the removal of nearshore fill.	2010-2014, as redevelopment occurs	City of Olympia—Parks, Arts & Recreation.	Provide transition habitat and improve water quality.

Figure 5.1: Budd Inlet Restoration Projects Which May be Implemented Within 10 Years. See Table 5.1 for project details.



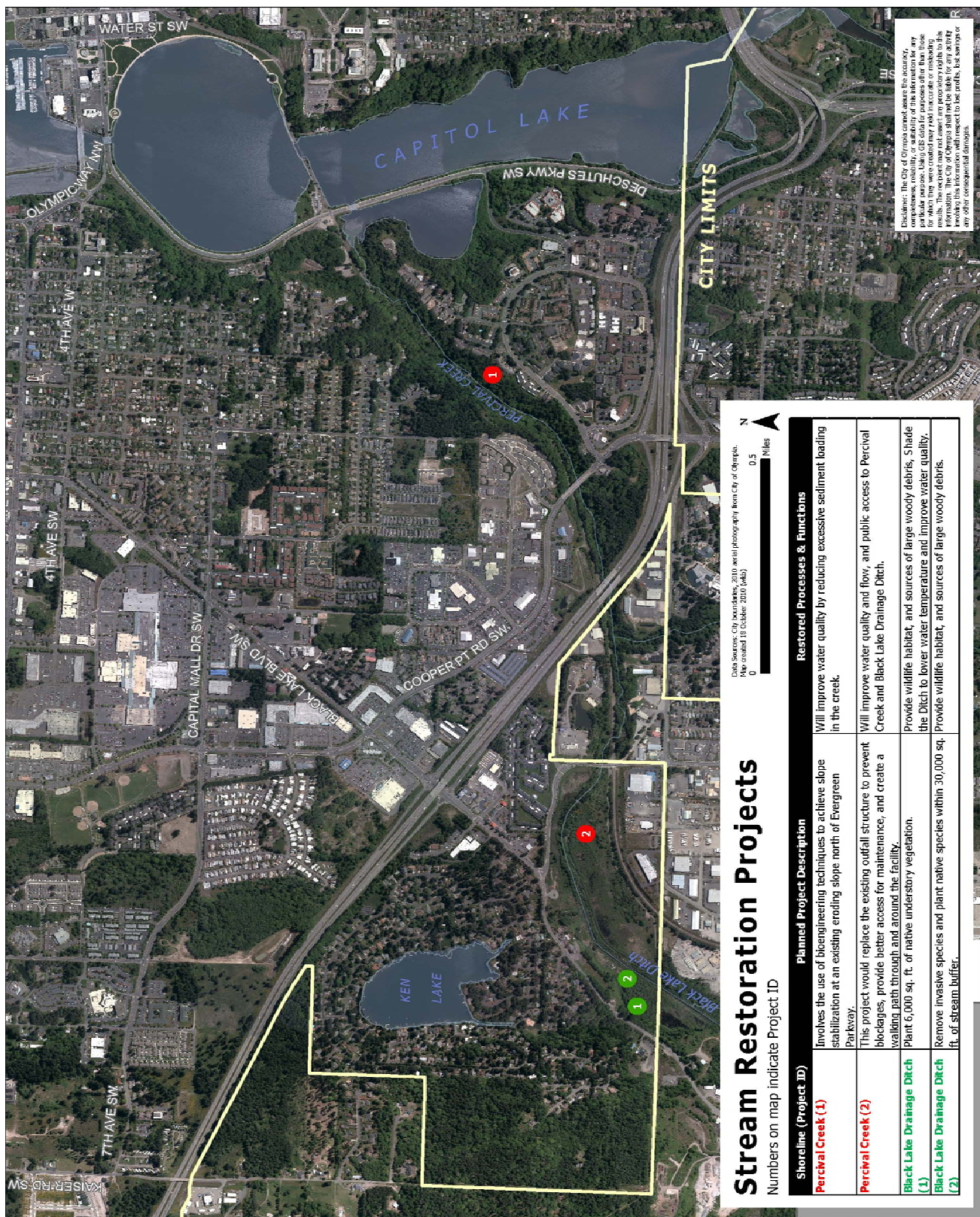
5.2. Restoration Projects for Freshwater Streams and Rivers

The City of Olympia Storm and Surface Water Utility has taken the lead on identifying and planning for future stream shoreline restoration projects. Three projects (Table 5.2) have been identified as contributing to achieving the overall goals and objectives for Percival Creek and Black Lake Drainage Ditch. See Figure 5.2 for project locations.

Table 5.2. Additional Restoration Projects, Implementation Schedules, and Potential Funding Sources for Freshwater Streams and Rivers.

Shoreline (Project ID)	Implementation Schedule	Potential Funding Source	Planned Project Description	Restored Processes & Functions
Percival Creek (1)	2012	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Involves the use of bioengineering techniques to achieve slope stabilization at an existing eroding slope north of Evergreen Parkway.	Will improve water quality by reducing excessive sediment loading in the creek.
Percival Creek (2)	2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	This project would replace the existing outfall structure to prevent blockages, provide better access for maintenance.	Will improve water quality and flow, and public access to Percival Creek and Black Lake Drainage Ditch.
Black Lake Drainage Ditch (1)	2013	Grant Funding— Washington State Dept. of Ecology	Plant 150,000 sq. ft. of riparian vegetation.	Provide wildlife habitat, and sources of large woody debris, Shade the Ditch to lower water temperature and improve water quality.
Black Lake Drainage Ditch (2)	2013	Grant Funding— Washington State Dept. of Ecology	Remove invasive species and plant native species within 150,000 sq. ft. of stream buffer.	Provide wildlife habitat, and sources of large woody debris.

Figure 5.2. Locations for Restoration Projects for Freshwater Streams and Rivers.



5.3. Restoration Projects for Lakes

With the exception of Grass Lake, the remaining lakes regulated under the SMA are surrounded by residential properties. All are subject to many of the same environmental stressors, and can benefit from implementation and continuation of the following restoration programs:

A. The updated SMP, when completed and implemented in 2012, will include regulations that address vegetation conservation requirements specifically to protect and enhance riparian vegetation. The standards for docks will also be updated to include a requirement for the installation of grating, allowing for greater light penetration.

B. Existing education and outreach programs can be expanded through the new SMP update and through the existing Water Resources education framework in 2012 to include programs that address restoration, perhaps including the following topics:

- o Shoreline Stewardship Workshops and outreach
- o Riparian Landscaping Workshops and informational handouts
- o Promote the planting of native trees
- o Increase public awareness about healthy streams, rivers, and lakes
- o Increase the participation of volunteers in city-wide restoration projects that directly benefit shorelines.

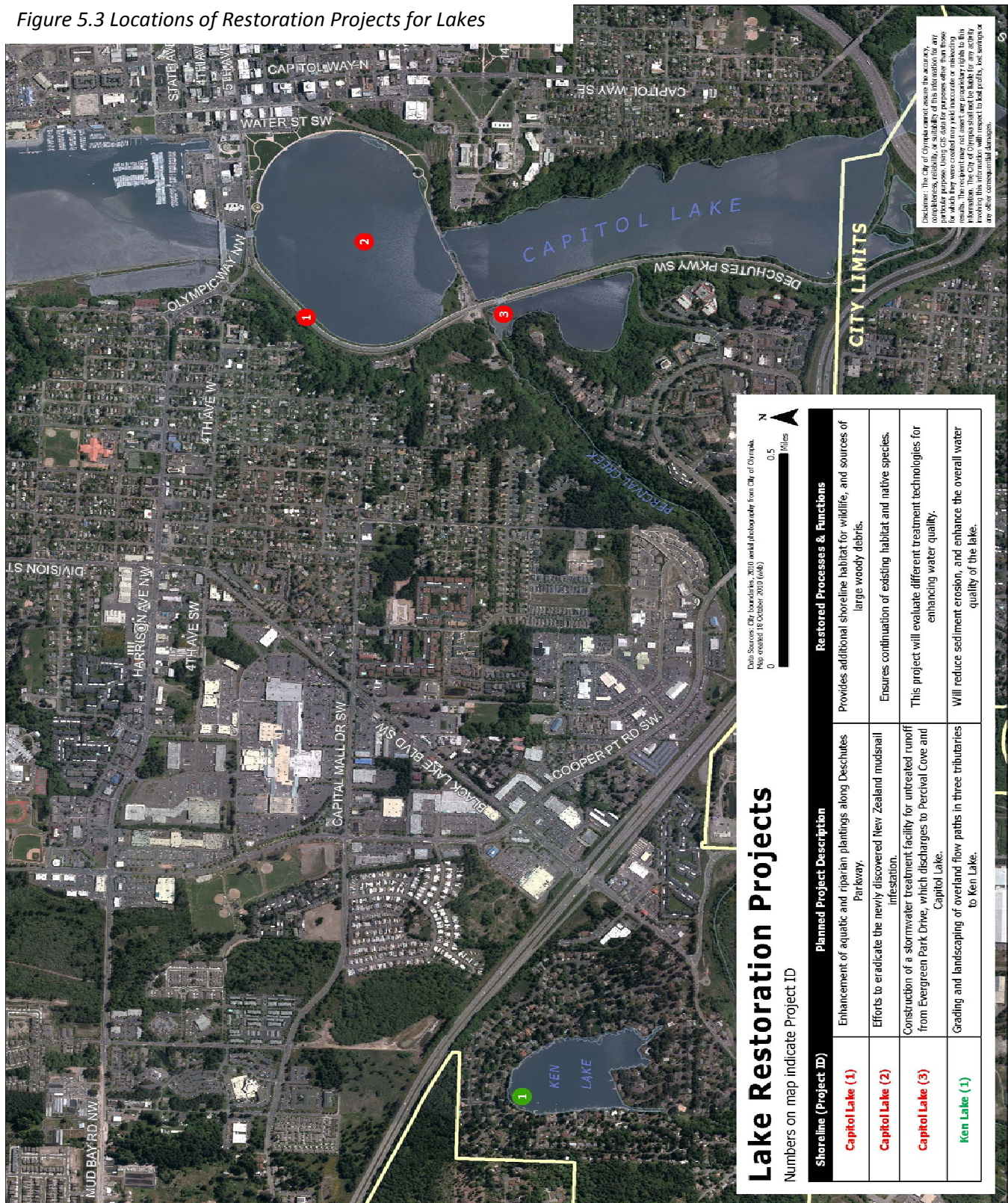
C. The City can explore ways in which to team with local property owners to replace existing armoring with a more natural shoreline that incorporates vegetation and woody debris. Whether through financial assistance, permit expedition, or guidance, it would be most beneficial to target multiple contiguous parcels. The implementation of this program would be ongoing.

Table 5.3 identifies specific restoration projects, implementation timelines, and potential funding sources for Capitol Lake and Ken Lake. See Figure 5.3 for project locations.

Table 5.3. Additional Restoration Projects, Implementation Schedules, and Potential Funding Sources for Lakes.

Shoreline (Project ID)	Implementation Schedule	Potential Funding Source	Planned Project Description	Restored Processes & Functions
Capitol Lake (1)	1-5 years	Washington State Department of General Administration	Enhancement of aquatic and riparian plantings along Deschutes Parkway.	Provides additional shoreline habitat for wildlife, and sources of large woody debris.
Capitol Lake (2)	2010-TBD	Washington State Department of General Administration	Efforts to eradicate the newly discovered New Zealand mud snail infestation.	Ensures continuation of existing habitat and native species.
Capitol Lake (3)	2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Construction of a stormwater treatment facility for untreated runoff from Evergreen Park Drive, which discharges to Percival Cove and Capitol Lake.	This project will evaluate different treatment technologies for enhancing water quality.
Ken Lake (1)	2010-2013	City of Olympia— Storm and Surface Water Utility (Capital Facilities Plan)	Grading and landscaping of overland flow paths in three tributaries to Ken Lake.	Will reduce sediment erosion, and enhance the overall water quality of the lake.

Figure 5.3 Locations of Restoration Projects for Lakes



CHAPTER 6: RESTORATION PRIORITIES

When considering a priority scheme for restoration activities, the Department of Ecology Restoration Plan Guidelines noted the priorities should address where restoration would have a greater ecological benefit for the shoreline(s). Technical and scientific data, such as the *Budd Inlet Restoration and Conservation Planning* (2010) document by the Squaxin Island Tribe, and the *ESA Shoreline Analysis & Characterization Report* (2008) strongly influenced the priorities listed below; however, an evaluation of existing site conditions was not the only important factor. Also taken into consideration were other situational influences unique to the Olympia community, such as existing land uses, educational programs, the human experience, funding opportunities, strong local and regional partnerships and planning efforts, and availability of local resources and expertise.

As a key ecological process, the movement of sediment into, through, and out of shoreline ecosystems influences shoreline morphology, hydrologic and hydraulic characteristics, ability of surface and groundwater to interact, and the type and extent of aquatic habitat. In rivers, channel migration is a natural process, and is essential for the transfer of nutrients between the channel and floodplain, as well as an on-going source for streambed gravels.

Changes in land-use, including a reduction in tree canopy cover, development, and road construction or widening, have generally accelerated production of fine sediment, especially as runoff volumes and peak flows are increased. Increased flows increase in channel erosion and channel destabilization. Increases in fine sediment loading can adversely impact aquatic habitat by filling in the spaces of gravel beds and reducing the exchange of water and oxygen. Fine sediment also transports nutrients, metals, and other pollutants, and is closely linked to water quality. The construction of the dam that created Capitol Lake has also greatly impacted sediment transportation from the Deschutes River and Percival Creek. A significant portion of the sediments delivered by each is retained in Capitol Lake, rather than having emptied into the previously existing Deschutes Estuary.

As technical experts in marine and fresh water issues, such as sedimentation and its impacts, the City of Olympia Storm and Surface Water Utility has a history of providing extensive and comprehensive research and education in the South Sound. Their efforts to understand the existing condition of Budd Inlet, coupled with a work program with a long-standing focus on improving water quality, stormwater management, and community member choices as they impact the environment has momentum and will be important in successful implementation of priorities and projects. There are some priorities for which outreach and education will be necessary and other means may be limited, such as restoration in and around Chambers, Ward, and Ken Lakes, which are all surrounded almost exclusively by private landowners. Coupled with an existing well-developed public education program, outreach becomes a higher priority.

The priorities also recognize that humans have a desire to interact and connect with the natural environment in a way that is restorative, educational, and engaging, but also has little negative impact on that environment. Clean water lapping onto a beach or flowing through a ravine, scattered pieces of large, woody debris, and foot trails to overwater views are elements of a natural experience that can be readily implemented through restoration, and are also powerfully effective in fostering exploration, community education, and investment in environmental preservation and stewardship.

It is essential that priorities, while based on restoration needs readily identified for the South Sound, remain flexible enough to accommodate newly emerging funding and resource opportunities. Budd

Inlet, in particular will see the greatest gains in health and condition from large-scale, costly restoration projects that implement multiple priorities. To respond, priorities must be viewed as fluid enough within an implementation strategy that adapts to the discovery or development of future grants, willing lead partner organizations, or mitigation requirements. The City may also, in the future, wish to invest in or explore the feasibility of other new or currently unavailable means for achieving restoration and preservation, such as conservation easements or mitigation banking.

Olympia has an engaged non-profit and environmentally knowledgeable population. As the state Capital, many of the region's most respected environmental experts live and work locally. Priorities for the City capitalize on and foster partnerships with those members of the community and non-profit arena with access to federal resources, technical expertise, and passionate volunteers. The City also believes that regional and multi-jurisdictional efforts will lead to greater success, and are worth investment. Technical and scientific data and prioritization frameworks, like that developed by the Squaxin Island Tribe, and jurisdictional SMP's and Restoration Plans, can provide direction to multiple organizations seeking a shared framework towards which to allocate efforts. Olympia's extensive marine shoreline ensures a key role for the City in any South Puget Sound restoration planning, implementation, and monitoring.

While not directly influencing the priorities and restoration projects identified, responding to the anticipated effects of climate change will necessitate adaptability in future planning, and potentially a shifting of priorities as future revisions. As a community with a significant amount of marine shoreline, climate change will considerably influence the kinds of restoration implemented, when it is implemented, and how successfully. Known influences of a change in climate have not been confirmed for the South Sound, but potential effects include longer periods of drought, increases instances of flooding, changes and shifts in plant and wildlife populations, reduced snow accumulations and melt, and sea-level rise.

Taking into consideration the above noted data and influences, the following priorities and associated restoration projects have been identified as most beneficial in addressing the four restoration goals of the City of Olympia:

- 1) Improve water quality in Budd Inlet and its tributaries
- 2) Improve natural sediment processes
- 3) Preserve and restore wildlife habitat; and
- 4) Restore shorelines as opportunities for humans to connect with the natural environment.

6.1. Priority 1 - Improve Water Quality

Water quality is the end result of the interaction of water with biota, soils, and urban and rural land uses, and infrastructure. As water moves through an ecosystem, it has the opportunity to cycle mineral and organic constituents that can affect water quality. The longer water is able to contact soil and vegetation, the more cycling can occur. Longer water contact times typically occur in low gradient areas in the landscape, such as riverine and wetland systems, while filling, paving, and channelization reduce water contact times.

The water quality of lakes is highly dependent and sensitive to changes in nutrient loading, which can lead to algal blooms, changes in dissolved oxygen levels, etc. Water temperatures are higher in urban areas where riparian vegetation is lacking and urban runoff is a primary water source. Impervious surfaces and stormwater conveyance infrastructure, which can bypass natural hydrologic pathways that

include infiltration and percolation through soils, can negatively impact water quality by allowing for the build-up of metals, oils, grease, nutrients, and bacteria to be washed off and into water systems during storm events.

The initial results of studies recently conducted in Budd Inlet indicate that surface water runoff and stormwater may be the largest contributing factor in pollutant loading in the Sound, which is characterized by protected bays and narrow inlets, relatively shallow depths, stratification of the water column, slow flushing times, and a high shoreline to water surface-area ratio. The result is that when poor-quality water, such as water with excessive nutrients, enters the Sound from adjacent uplands, rivers, and streams, it is not easily diluted by mixing or flushing.

Ongoing or recommended restoration projects or programs that would address the improvement of water quality and natural sediment processes include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(B)—Water Washington Phase II Municipal Stormwater Permit
- 4.4(C)—2009 Drainage Design and Erosion Control Manual
- 4.4(D)—Public Education
- 4.4(G)— Restoration Projects and Invasive Species Removal
- 4.4(H)— Capital Improvement Projects
- 4.5— Septic to Sewer Conversion Program
- 4.6(B)—Integrated Pest Management and Chemical Free Parks
- 4.6(C)— Park Development and Renovation (West Bay Park and Percival Landing)
- 4.10(A)—Shipping Berth Pilot Interim Cleanup Action
- 4.10(B)— Cascade Pole
- 4.17(A)—Deschutes/Capitol Lake/Budd Inlet TMDL Process
- 4.17(B)—Department of Ecology: Toxics Cleanup Program

Additional Programs and Projects (Chapter 5)

- 5.2—Percival Creek (1)
- 5.2—Percival Creek (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (3)
- 5.3—Ken Lake (1)
- 5.1—Budd Inlet (1-27)

6.2. Priority 2 - Improve Riparian Vegetation

Improved riparian vegetation can address multiple objectives, including providing important shoreline habitat for wildlife, improve water quality, and reduce sediment and pollutant delivery. Riparian vegetation is also the key source of large woody debris (LWD).

LWD significantly influences the form and ecological function of river and lake ecosystems. In a natural system, LWD by way of logs or trees that have fallen into a river, stream or lake, provides organic material to aquatic ecosystems and is considered a principal factor in forming stream structure and associated habitat characteristics (e.g., pools and riffles). Riparian vegetation and LWD provide habitat

in the form of nesting, perching, and roosting as well as thermal protection, nutrients, and sources of food (terrestrial insects) to a variety of fish and wildlife species.

Ongoing or recommended restoration projects or programs that would improve riparian vegetation include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(D)—Public Education
- 4.4(F)—Seasonal Vegetation Management Crew
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.5(A)—Volunteers in Parks
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound

Additional Programs and Projects

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Lakes (C)
- 5.3—Capitol Lake (1)
- 5.1—Budd Inlet (3, 6, 7, 9, and 11)

6.3. Priority 3 - Restore and Improve Wildlife Habitat.

With the exception of the highly urbanized and altered habitats along the head of Budd Inlet, the majority of the marine nearshore environment either supports or has the potential to support valuable and ecologically sensitive resources. Key habitats and species that occur in Budd Inlet and can be targeted for restoration and/or improvement, include: sand and cobble beaches, forage fish spawning areas, mud-flats, shellfish resources, eelgrass and kelp beds, estuaries and intertidal wetlands and marshes, marine riparian vegetation, seabird and waterfowl concentration areas, and marine mammal habitats.

Specifically, Budd Inlet contains several critical saltwater habitat areas for forage fish and salmon. The steep slopes of Priest Point Park provide beach sediment for forage fish, Ellis Cove is relatively intact with a salmon-bearing stream, and some forage fish spawning habitat extends south from Priest Point Park for approximately 0.5 miles. Coho, Chum, and Chinook salmon, and Cutthroat trout have all been identified in Budd Inlet or its tributaries.

Intact nearshore habitat is essential for salmon, as it offers refuge, rest and feeding opportunities for juveniles before they embark on their ocean migrations. Shoreline modifications, such as armoring, prevent natural beach formation, which in turn limits habitat available for prey species favored by salmon.

Ongoing or recommended restoration projects or programs that would restore and improve fish and other wildlife habitat include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.4(E)—Critical Habitat Land Acquisition and Management
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.7—LOTT Alliance
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (1)
- 5.3—Capitol Lake (2)
- 5.1—Budd Inlet (1, 3, 4, 5, 6, 7, 8, and 9)

6.4 Priority 4 – Restore Natural Sediment Transportation Processes

As a key ecological process, the movement of sediment into, through, and out of shoreline ecosystems influences shoreline morphology, hydrologic and hydraulic characteristics, ability of surface and groundwater to interact, and the type and extent of aquatic habitat. In rivers, channel migration is a natural process, and is essential for the transfer of nutrients between the channel and floodplain, as well as an on-going source for streambed gravels.

Changes in land-use, including a reduction in tree canopy cover, development, and road construction or widening, have generally accelerated production of fine sediment, especially as runoff volumes and peak flows are increased. Increased flows increase in channel erosion and channel destabilization. Increases in fine sediment loading can adversely impact aquatic habitat by filling in the spaces of gravel beds and reducing the exchange of water and oxygen. Fine sediment also transports nutrients, metals, and other pollutants, and is closely linked to water quality. The construction of the dam that created Capitol Lake has also greatly impacted sediment transportation from the Deschutes River and Percival Creek. A significant portion of the sediments delivered by each is retained in Capitol Lake, rather than having emptied into the previously existing Deschutes Estuary.

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.4(B)—Water Washington Phase II Municipal Stormwater Permit
- 4.4(C)—2009 Drainage Design and Erosion Control Manual

- 4.4(D)—Public Education
- 4.4(G)— Restoration Projects and Invasive Species Removal
- 4.4(H)— Capital Improvement Projects
- 4.6(C)— Park Development and Renovation (West Bay Park and Percival Landing)
- 4.10(A)—Shipping Berth Pilot Interim Cleanup Action
- 4.17(A)—Deschutes/Capitol Lake/Budd Inlet TMDL Process

Additional Programs and Projects (Chapter 5)

- 5.2—Percival Creek (1)
- 5.2—Percival Creek (2)
- 5.3—Lakes (A)
- 5.3—Capitol Lake (3)
- 5.3—Ken Lake (1)
- 5.1—Budd Inlet (1-27)

6.5. Priority 5 - Reconnect Fish Passage to Budd Inlet, and Restore Mouths of Tributary Streams.

Expanding available fish habitat and spawning opportunities for fish is a high priority. Perhaps the most frequently encountered fish passage barriers are culverts that are improperly designed, installed, or maintained, and channel alterations that result in impassable conditions (Harry & Konovsky 1999).

Dams and diversions are also barriers to fish passage. The waters of Percival Creek flow into Capitol Lake, which is backed up behind a tide gate under 5th Avenue in downtown Olympia. Salmon can pass either through the constructed fish ladder or directly through the tide gate when open. Large numbers of Chinook salmon are typically observed downstream of the tide gate in August and early September. While they are milling below the tide gate, however, they are exposed to increased predation from seals and sea lions known to frequent the area (Harry & Konovsky 1999).

Fish can also be impacted at the Capitol Lake tide gate by impaired function of the fish ladder, or low lake levels, which are maintained within a narrow range in part to provide for additional flooding protection to downtown Olympia. At times, the lake elevation does not allow adult salmon to use the ladder, delaying their upstream migration when the tide gate is closed as well, which can result in increased predation by marine mammals (Harry & Konovsky 1999).

Ongoing or recommended restoration projects or programs that would restore and improve fish passage and mouths of tributary streams include:

Existing Programs and Projects (Chapter 4)

- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.7—LOTT Alliance
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.1—Budd Inlet (1, 2, 4, 5, and 12)

6.6. Priority 6 - Reduce Shoreline Armoring, and Restore or Improve Natural Shoreline Conditions and Processes

Physical processes that influence the physical structure of the nearshore include: wind energy and exposure, net shore-drift, coastal bluff landslides and erosion, and fluvial influences. Beaches in the Puget Sound often have two distinct components: a high-tide beach and a low-tide terrace. Waves and wind will deposit sand and gravel from the high-tide beach onto the low-tide terrace, which is generally a gently sloping accumulation of fine grained sediment. Larger rocks, ranging from cobbles to boulders, also accumulate on the low-tide terrace.

Wind-generated wave action gradually erodes beaches and the toe of coastal bluffs as well. Coastal bluffs are the primary source of sediment for Budd Inlet. Bluff composition and wave energy influence the composition of beach sediment. Waves sort coarse and fine sediment and large waves can transport cobbles that small waves cannot. Additionally beaches supplied by the erosion of coarse gravel bluffs will differ in composition from those fed by the erosion of sandy material.

The diversity of beach conditions and existence of feeder bluffs within the marine shoreline environment contribute to the availability of intact habitat for fish and other marine wildlife. Shoreline modifications and other artificial structures, such as boardwalks, bulkheads, and rip-rap, have eliminated the natural shoreline conditions that encourage sediment delivery and transportation. Maintaining existing connections between bluffs and the nearshore is a high priority.

Ongoing or recommended restoration projects or programs that would reduce shoreline armoring and restore or improve natural shoreline conditions and processes include:

Existing Programs and Projects (Chapter 4)

- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.16—People for Puget Sound

Additional Programs and Projects (Chapter 5)

- 5.3—Lakes (C)
- 5.1—Budd Inlet (3, 6, 7, 9, and 11)

6.7. Priority 7 - Reduction of In-Water and Over-Water Structures

Efforts to remove overwater structures and armoring will contribute to restoring natural shoreline conditions and fish habitat. Docks and other overwater structures restrict light, which is needed by fish and other wildlife for development and awareness of their surroundings. Small fish can be preyed upon more easily when forced to venture into deeper water to avoid darkened shallow water near the shoreline.

The use of innovative structure materials, light penetrable grating, and the sharing of existing or future over-water structures by multiple property owners can contribute towards reducing the negative effects of structures. Older docks or other in-water structures in particular can negatively impact water quality through the depositing of toxics, and dampening of natural wave energy attenuation.

Ongoing or recommended restoration projects or programs that would reduce in-water and over-water structures include:

Existing Programs and Projects (Chapter 4)

- 4.5(C)—Park Development and Renovation (Percival Landing)
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.3—Lakes (A)
- 5.1—Budd Inlet (13)

6.8. Priority 8 – Restore and Improve Tree Canopy Coverage in Drainage Basins and Along Shorelines

Trees help protect shorelines by protecting water and soil resources. Healthy trees can reduce the amount of runoff and pollutants in creeks, ponds and other receiving waters. The leaves, branch surfaces, and trunk bark intercept and store rainfall, thereby reducing runoff volumes and delaying the onset of peak flows. Tree root growth and decomposition increase the capacity and rate of soil infiltration by rainfall and reduce overland flow. Lastly, tree canopies reduce soil erosion by diminishing the impact of raindrops on barren surfaces (CUFR 2003). As noted in Priority 6, trees are also a valuable source of large woody debris (LWD), which provides organic material and habitat for shorelines.

Ongoing or recommended restoration projects or programs that would restore or improve tree canopy coverage in drainage basin and along shorelines include:

Existing Programs and Projects (Chapter 4)

- 4.2: Critical Areas Regulations
- 4.4(D)—Public Education
- 4.4(E)—Critical Habitat Land Acquisition and Management
- 4.4(F)—Seasonal Vegetation Management Crew
- 4.4(G)—Restoration Projects and Invasive Species Removal
- 4.4(J)—Low Impact Development Research and Planning
- 4.5(A)—Volunteers in Parks
- 4.5(C)—Park Development and Renovation (West Bay Park and Percival Landing)
- 4.9—Thurston Conservation District
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound

Additional Programs and Projects (Chapter 5)

- 5.2—Black Lake Drainage Ditch (1)
- 5.2—Black Lake Drainage Ditch (2)
- 5.3—Lakes (A)
- 5.3—Lakes (B)
- 5.3—Capitol Lake (1)
- 5.1—Budd Inlet (3, 6, 7, 9, 10 and 12)

6.9. Priority 9 - Restore Estuarine Transition Habitat and Intertidal Influence

The primary ecological functions and biological resources of estuarine shorelines include: flood attenuation, tidal exchange/organic matter exchange, stream base-flow and groundwater support, water quality improvements, erosion and shoreline protection, and biological support and wildlife habitat. The benefits to the health and diversity of wildlife are extensive. Estuaries provide food web support, habitat structure, salinity gradients, and locations of refuge from predators. Kelp and eelgrass beds in intertidal areas are important habitat to forage fish and salmonids.

Estuaries and associate marshes are vital to the enhancement of water quality. The longer water is able to contact soil and vegetation, the more cycling can occur. Longer water contact times typically occur in low gradient areas in the landscape, such as estuaries and wetlands.

Alterations that limit or eliminate estuarine habitat and intertidal influence include structural modifications, such as dams and culverts, and armoring along shorelines, such as seawalls, rip-rap, and bulkheads.

Ongoing or recommended restoration projects or programs that would restore or improve estuarine habitat and intertidal influence include:

Existing Programs and Projects (Chapter 4)

- 4.2—Critical Areas Regulations
- 4.3—Shoreline Master Program
- 4.12—South Puget Sound Salmon Enhancement Group
- 4.13—Salmon Recovery Funding Board
- 4.15—Capitol Land Trust
- 4.16—People for Puget Sound
- 4.18—Puget Sound Nearshore Estuary Restoration Project

Additional Programs and Projects (Chapter 5)

- 5.1—Budd Inlet (1, 4, 5, and 27)

CHAPTER 7: REFERENCES CITED

Donald Haring and John Konovsky. 1999. *Salmon Habitat Limiting Factors Final Report: Water Resource Inventory Area 13*. Washington State Conservation Commission.

ESA Adolfson. 2008. *Lacey, Olympia, and Tumwater Shoreline Analysis & Characterization Report*. Thurston Regional Planning Council.

"Fact Sheet #4: Control Stormwater Runoff with Trees", Center for Urban Forest Research, Pacific Southwest Research Station, USDA Forest Service, Davis, CA, July 2002.

Squaxin Island Tribe, Natural Resources. 2010. *Budd Inlet Restoration and Conservation Planning Project List*.

Shoreline Environmental Designations - Boundary Descriptions

The coordinates and other descriptions below are provided as an aid in identifying the locations of shoreline environment designation boundaries. See OMC 18.34.310. The coordinates below are in NAD 1983 State Plane Washington South FIPS 4602 Feet. Except as noted below, the lines between environmental designations extend at right angles to the OHWM. These coordinate provide beginning points for determining such lines. Note that the various shoreline environments do not overlap.

Waterbody	Reach	Starting Point X Coordinate	Starting Point Y Coordinate	End Point X Coordinate	End Point Y Coordinate
Budd Inlet	BUDD-2	1037527.8206	642154.5619	1037736.1112	641628.7926
Budd Inlet	BUDD-3A	1037736.1112	641628.7926	1039131.5129	637127.8922
Budd Inlet	BUDD-3B	1039131.5129	637127.8922	1039858.7355	632901.9705
The portion of Reach BUDD-3B designated as "Urban Intensity" is that portion westerly of the easterly rights-of-way lines of West Bay Drive and Olympic Way and westerly of a line extending due south from the point of intersection of Olympic Way and Fourth Avenue rights-of-way. The southern limit of Reach BUDD-3B is the southerly right-of-way line of Fifth Avenue SW					
Budd Inlet	BUDD-4	1039858.7355	632901.9705	1041060.9884	633296.5524
The southern limit of Reach BUDD-4 in the vicinity of Fifth Avenue SW is the southerly right-of-way line of Fifth Avenue; in the area to the east more than 200 feet from Budd Inlet the provisions of Reach CAP-6 are applicable.					
Budd Inlet	BUDD-5A	1041060.9884	633296.5524	1041027.9284	635570.4022
Budd Inlet	BUDD-5B	1041027.9284	635570.4022	1041079.1255	637985.7760
Budd Inlet	BUDD-5C	1041079.1255	637985.7757	1043282.6519	635209.4840
Budd Inlet	BUDD-6A	1043282.6519	635209.4840	1043803.6440	634085.3934
Within Reach BUDD-6A the Urban Conservancy designation is applicable to the upland 100 feet nearest the OHWM and the Urban Intensity designation is applicable to all other upland areas within the Reach.					
Budd Inlet	BUDD-6B	1043803.6440	634085.3934	1043822.3152	636905.9232
Within Reach BUDD-6B the Urban Conservancy designation is applicable to the upland 100 feet nearest the OHWM and the Shoreline Residential designation is applicable to all other upland areas within the Reach.					
Budd Inlet	BUDD-7	1043822.3152	636905.9232	1043107.3278	641373.9303
Budd Inlet	BUDD-8	1043107.3278	641373.9296	1041437.6464	644482.1875
Capitol Lake	CAP-1	1042299.7218	624935.6256	1041307.6874	625538.6874
Capitol Lake	CAP-2	1040979.3475	625709.6949	1041069.5166	625659.6576
Capitol Lake	CAP-3A	1041307.6874	625538.6874	1040019.5879	630041.0383
Capitol Lake	CAP-3B	1040019.5879	630041.0383	1039868.3313	630642.5955
Capitol Lake	CAP-4	1039063.8687	630263.9289	1039603.1153	626209.0554
Capitol Lake	CAP-5	1038621.2019	629911.3368	1039397.8513	628541.6203
Capitol Lake	CAP-6	1039868.3313	630642.5955	1039858.7615	632779.5108
The southwesterly terminus of Reach CAP-6 in the vicinity of Marathon Park is a line 50 feet easterly of and parallel to the the east edge of the sidewalk associated with the Deschutes Parkway. See note above re relationship to BUDD-4.					
Capitol Lake	CAP-7	1039858.7615	632779.5088	1038927.7023	630661.9373
See above regarding relationship to BUDD-3B					